

## **INDUSTRIAL LASER MACHINES** For Metals, Ceramics, Non-Metals & Glass

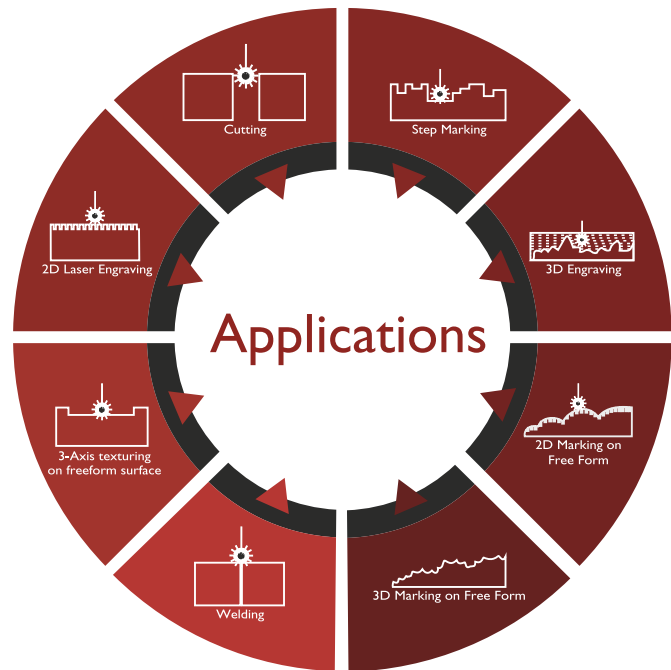
- *Special Purpose Laser Machines*
- *Traceability Solutions*
- *Custom Automations*
- *Laser Welding Solutions*
- *UV, IR, Green, CO<sub>2</sub> Lasers*
- *Special Ultra Short Femto and Pico Lasers*

European Quality Indian Price



# Table of Contents

1	LEO Portable Table Top Laser Machine.....	2
2	MINNIE Robust & Ergonomic.....	3
3	ORION Less is More.....	4
4	URSA Jack of All Trades.....	5
5	HERCULES Great Precision With Big Impression.....	6
6	ROTO Mass Sequential Production.....	7
7	TORQUE Coding & Marking Laser.....	8
8	MARKOTRACER Mark-Read -Validate.....	9
9	Customized Automations.....	10
10	MARKOMARK & Mtrack Laser Marking, Engraving & Traceability Software.....	15
11	Accessories.....	19



## About Markolaser

With traditional factories transitioning into more data-driven connected factories and Industry 4.0, automation, cognitive manufacturing taking the centre stage, Markolaser emerges as a trusted name.

Markolaser is an innovative engineering brand of Spinks World group of companies, a 30+ year old group, with more than 20 years of experience in lasers and machinery business. Headquartered in Gurugram, India, we are cutting edge global suppliers of standalone workstations, SPMs, automation, traceability solutions and in line integrations for marking, engraving, cutting, free form texturing and high power welding.

Markolaser is a rare mix of exceptional quality, in-depth knowledge, reliable after sales support, and trust. True to our commitment of **Affordable European Quality**, we build top-notch workstations with components sourced from the world's best suppliers and do in house manufacturing of parts using machinery from manufacturing giants like **DMG MORI, Carl Zeiss, AGIE Charmilles, GF+, Okamoto** etc. Markolaser gives you the advantage of in house designing, technical consultancy, hardware integrated software development, individualized solutions, smart manufacturing solutions, IOT ready machines, on-site training and constant support of our incredibly qualified and skilled team right from conception to the delivery of product.

Having offered unrivalled after sale services via multiple regional centres extended all over India for decades, we have now evolved as a global company marking our presence in several countries across Europe, Africa, South America and the Middle East. With our focussed R&D in developing AI vision systems, I 4.0 ready solutions and efficient laser welding systems we proactively strive to stay at the forefront of factory automation.

# LEO

Portable Table Top Laser Machine

## Compact, Individual & Effective

This compact laser machine offers an economical entry into laser marking applications. No Chinese component is used. It comes as a tabletop version without motorized Z-axis. Instead, a precise manual Z-axis is supplied with the machine which serves its purpose well for small parts.



Disclaimer: These images are for illustration purposes only, the machine look may vary in real time.

Technical Specifications	LEO
Safety Enclosure	Class IV
Max. Workpiece Weight	< 2 kg
Max Workpiece Size (W/D/H)	100 x 100 x 100 mm
Z Axis	Manual, upto 140mm
Compatible Laser types	Fiber
<b>Options</b>	
Maximum Marking Area	110 x 110 mm

Marking on anodised steel plate



Hallmarking on gold Jewellery



Laser Marking on Name Plate



Laser Marking on Tweezer





## Flexible, Rugged: 24/7

This machine has proved itself as a best seller for years due its compact, convenient and ergonomic design. It accommodates almost all medium-sized jobs with great ease. This machine is used mainly in the metal industry for marking and deep engraving on metals. Most rugged machine for 24/7 use and mass production.

Technical Specifications	MINNIE
Safety Enclosure	Class IV
Max. Workpiece Weight	< 15 Kg
Max Workpiece Size (W/D/H)	400 x 300 x 200 mm
Z Axis	Motorized, upto 300 mm
Compatible Laser types	IR, CO <sub>2</sub>
Options	
Maximum Marking Area	100 x 100 mm
Code Reader integrated laser marking head	<input type="checkbox"/>
Rotary Axis	<input checked="" type="checkbox"/>
Vision System (Positioning/Adjustment)	<input type="checkbox"/>
Vision System (Recognition)	<input type="checkbox"/>
Sliding Mechanism for Cutting	<input checked="" type="checkbox"/>
3 Axis Marking	<input type="checkbox"/>

▪ Yes    □ No

Step Marking on Brass



Engraving on Harden cold working SS



Deep Engraving on Copper Electrode



Marking on Hardened Tools



## Compact & Modular Design

Orion, a table top laser machine, delivers outstanding results for small individual parts. Because of its table top structure, the machine can be easily set up at any workstation. Super fine marking and light engraving on curve part is possible with 3-axis movement. Its areas of application are in Jewelry, tool industry.



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Technical Specifications	ORION
Safety Enclosure	Class I
Max. Workpiece Weight	< 15 Kg
Max Workpiece Size (W/D/H)	200 x 150 x 250 mm
Z Axis	Motorized, upto 250 mm
Compatible Laser types	IR, UV, CO <sub>2</sub> , Green
<b>Options</b>	
Maximum Marking Area	175 x 175 mm
Code Reader integrated laser marking head	<input checked="" type="checkbox"/>
Rotary Axis	<input checked="" type="checkbox"/>
Vision System (Positioning/Adjustment)	<input checked="" type="checkbox"/>
Vision System (Recognition)	<input checked="" type="checkbox"/>
Sliding Mechanism for Cutting	<input type="checkbox"/>
3 Axis Marking	<input checked="" type="checkbox"/>

Yes    No

Micro Engraving on Gold Jewellery



Marking on SS Tool



Laser Marking on Plastic Enclosure



Micro Engraving on Hardened SS





## All in One Expert

Offers high performance and quality with a different range of footprints according to application and workpiece sizes. Appropriate machine for mass production in laser marking & engraving applications. High precision fine laser marking, 3D micro engraving, micro-drilling & texturing. Suitable for medium sized parts.

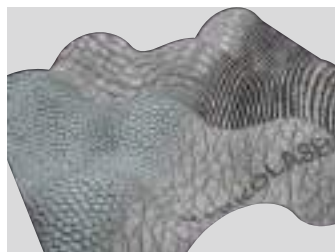
Technical Specifications	URSA I	URSA II
Safety Enclosure	Class I	Class I
Max. Workpiece Weight	< 35 Kg	< 40 Kg
Max. Workpiece Size (W/D/H)	150 x 150 x 180 (mm)	170 x 170 x 380 mm
Mechanical Traverses (W/D/H)	0/0/250 (mm)	0/0/300 (mm)
Compatible Laser Types	IR, UV, CO <sub>2</sub> , Green	IR, UV, CO <sub>2</sub> , Green
<b>Options</b>		
Max Marking Area	150 x 150 mm	200 x 200 mm
Vision System (Positioning/Adjustment)	■	■
Vision System (Recognition)	■	■
With linear X Axis	0/0/250 (mm)	0/175/300 (mm)
Code Reader integrated laser marking head	■	■
Rotary Axis	■	■
Granite work table base and Z axis portal	□	■
Sliding Mechanism for Cutting (SLIDE X)	□	■

■ Yes □ No

3D Engraving on Mobile Die



3D Texturing on 3D Surface



Micro Drilling



Micro Fine Cutting of Watch Part



# HERCULES

Great Precision With Big Impression

## A Versatile Automation Ready

An all-rounder laser machine suitable for big parts with easily accessible working area. It provides ample space for workpieces to be processed. Automation ready machine. High-strength steel, and optionally, in combination with vibration-free and temperature-stable granite makes HERCULES a perfect fit for industrial use.



Disclaimer: These images are for illustration purposes only, the machine look may vary in real time

Technical Specifications	HERCULES
Safety Enclosure	Class I
Max. Workpiece Weight	< 45 Kg
Max. Workpiece Size (W/D/H)	250 x 250 x 300 (mm)
Mechanical Traverses (W/D/H)	350/350/500 (mm)
Compatible Laser Types	IR, CO <sub>2</sub> , UV, Green
<b>Options</b>	
Max Marking Area	180 x 180 mm
Vision System (Positioning/Adjustment)	■
Vision System (Recognition)	■
With linear X Axis	0/0/300 (mm)
Code Reader integrated laser marking head	■
Rotary Axis	■
Granite work table base and Z axis portal	□
Sliding Mechanism for Cutting (SLIDE X)	□

■ Yes   □ No

Engraving & Texturing on Shoe Die



Engraving & Texturing on Freeform Surface



Engraving & Texturing on Bottle Mold & Die



Engraving & Texturing on Mold & Die





## Series Production Simple Operation

3-Axis marking, engraving laser system. Track and trace ready. Integrated optical inspection system. Semi-automatic with high productivity. High precision & selectable multistation functionality.

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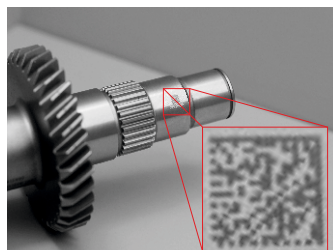
Technical Specifications	ML ROTO S	ML ROTO M	ML ROTO L
Enclosure Safety	Class I	Class I	Class I
Base Diameter	550 mm	750 mm	950 mm
Station selection	2/4 (selectable mode)	2/4	2/4
Max. Work Piece Weight	5 kg	10 kg	15 kg
Max. Work Piece Size (W/D/H)	100 x 100 x 100 mm	200 x 200 x 150 mm	250 x 250 x 200 mm
Compatible Laser Types	Fibre, UV, CO2, Green	Fibre, UV, CO2, Green	Fibre, UV, CO2, Green
<b>Options</b>			
Code Reader Integrated Laser Marking Head	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dual Laser Heads (2 Station Mode)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Auto Loading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Auto Unloading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Max. Marking Area	110 x 110 mm	150 x 150 mm	225 x 225 mm
Pre-inspection vision system (OCR, Dents, positioning, other defects*)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Yes    No

Marking on Plastics



DPM on Carbon Steel 55C8 Gear



Marking of Data Matrix on ABS Plastic



Marking on Labels





## Mark on the Fly

No consumables like inks & cartridges, easy marking on stationary and moving objects, low maintenance cost, low wear and tear, compact, continuous high quality printing & marking on uneven surfaces and adjustable marking styles. Laser marks and engraves on the consumable goods moving on conveyer belt with high speed.



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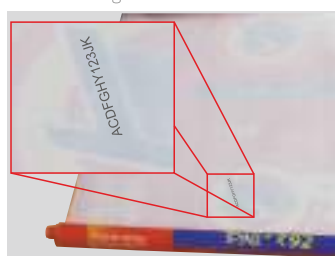
Technical Specifications	TORQUE
Safety Enclosure	Class IV
MOTF functionality	■
Integrated code reader and vision lightings	■
Z Axis	□
Compatible Laser types	IR, CO <sub>2</sub>
<b>Options</b>	
Maximum Marking Area	100 x 100 mm
Code Reader integrated laser marking head	■
Special Control BOX with HMI and M-Track GUI	■
Vision System (Positioning/Adjustment)	■
Multi-Laser heads processing	■
3 Axis Marking	■

■ Yes   □ No

Marking on Medicine Strip



Marking on FMCG Products

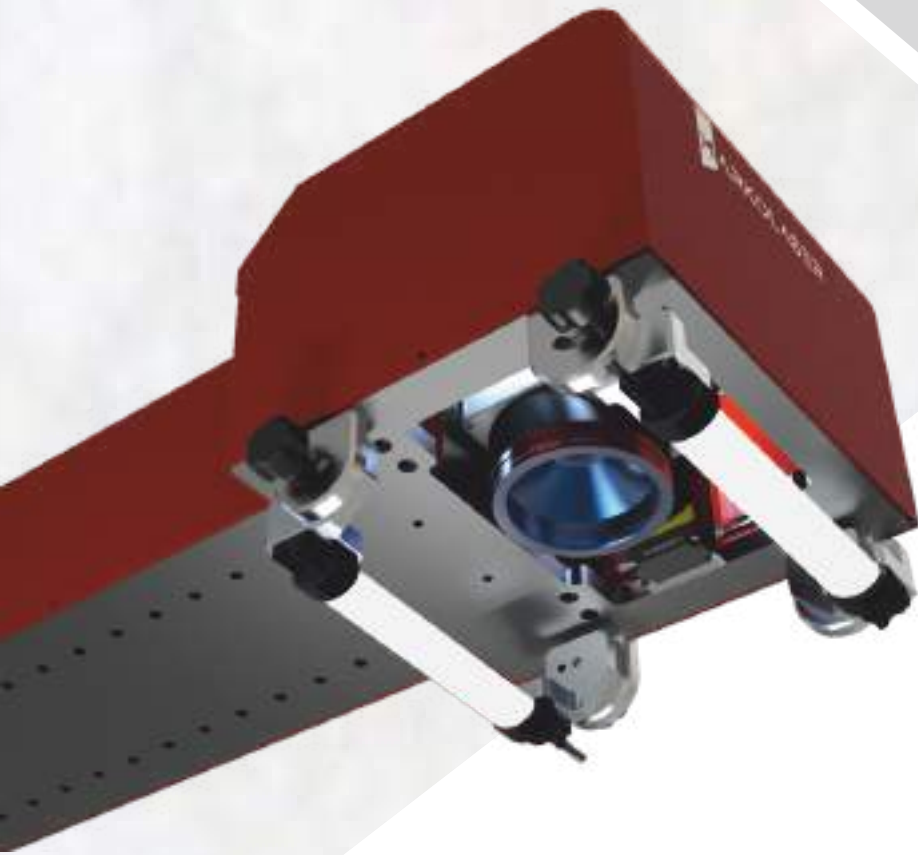


Marking on Bottle



Laser Marking on Cap





## Track and Trace Ready 3-Axis Laser Marking Heads

The new Markotracer is a complete Track and Trace solution from Markolaser for direct plug & play in-line integrations as well as for OEM integrators. The marking head consists of a 3-Axis laser marking system integrated with camera system and vision lights for code reading and validation purpose. The solution also comes with a customizable M-Track™ : control software with user-friendly GUI for traceability.

Technical Specifications	TORQUE
Safety Enclosure	Class IV
Weight of Marking Head	25 KG
Integrated code reader and vision lightings	■
Cooling method	Forced Air Cooling
Compatible Laser types	Co <sub>2</sub> , IR, UV, Green
<b>Options</b>	
Maximum Marking Area	120x120/300x300 mm
Marking Head Installation Direction	All Directions
Special Control BOX with HMI and M-Track GUI	■
Vision System (Positioning/Adjustment)	■
Interface	RS-232C/USB2.0/Ethernet
3 Axis Marking	■
<b>MTRACK</b>	■

■ Yes    □ No



DPM on Automotive gear



DPM on Aluminum Housing



Marking of Data Matrix on Medical Implants



Datamatrix on Electronic PCB



# SOLUTIONS

## Customized Automation

### Semi-Automatic, Dual Head Laser Marking System on LED Bulbs

This remarkable solution is exclusively designed to achieve high production rates. LED bulbs require laser marking on two opposite sides. Our solution employs a system with linear transport mechanism and dual laser marking heads to mark simultaneously on the two opposite faces (180°) via single window process control.



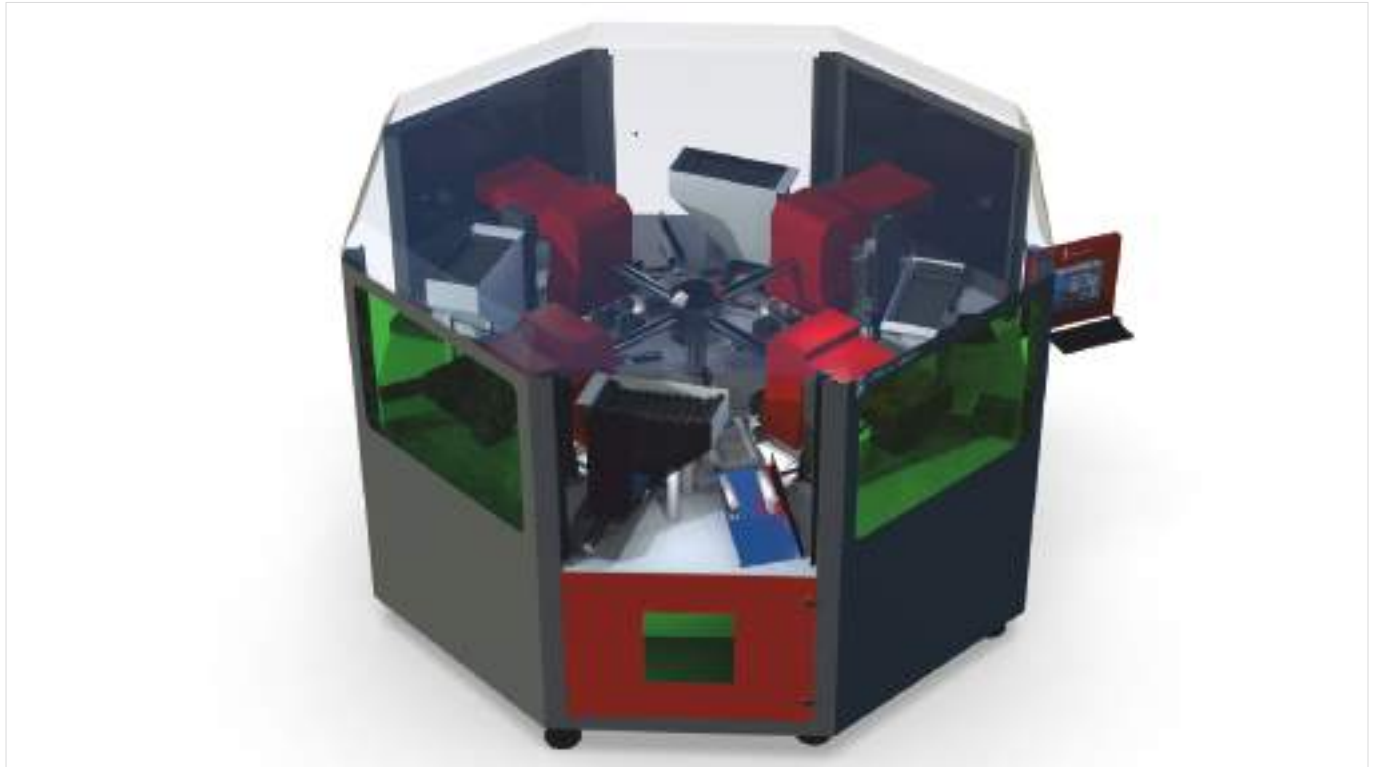
### Fully Automatic Robot Integrated, Laser Marking of Variable Data on Electric Contactors

It is a fully automatic pad printing and laser marking machine. In this automation pad printing machine prints on 3 positions with 2 colours. Laser marking head is employed for marking MCB ratings on its two sides.



## Fully Automatic Laser Paint Removal of Printed Silicon Tubes

This machine is used to remove paint from plastic materials so that plastic can be recycled. The paint is collected in dust collector and further incinerated in toxic waste. Silicon non-disposal tube can also be reused. We have built a conceptual automated machine to clean the silicon tube.



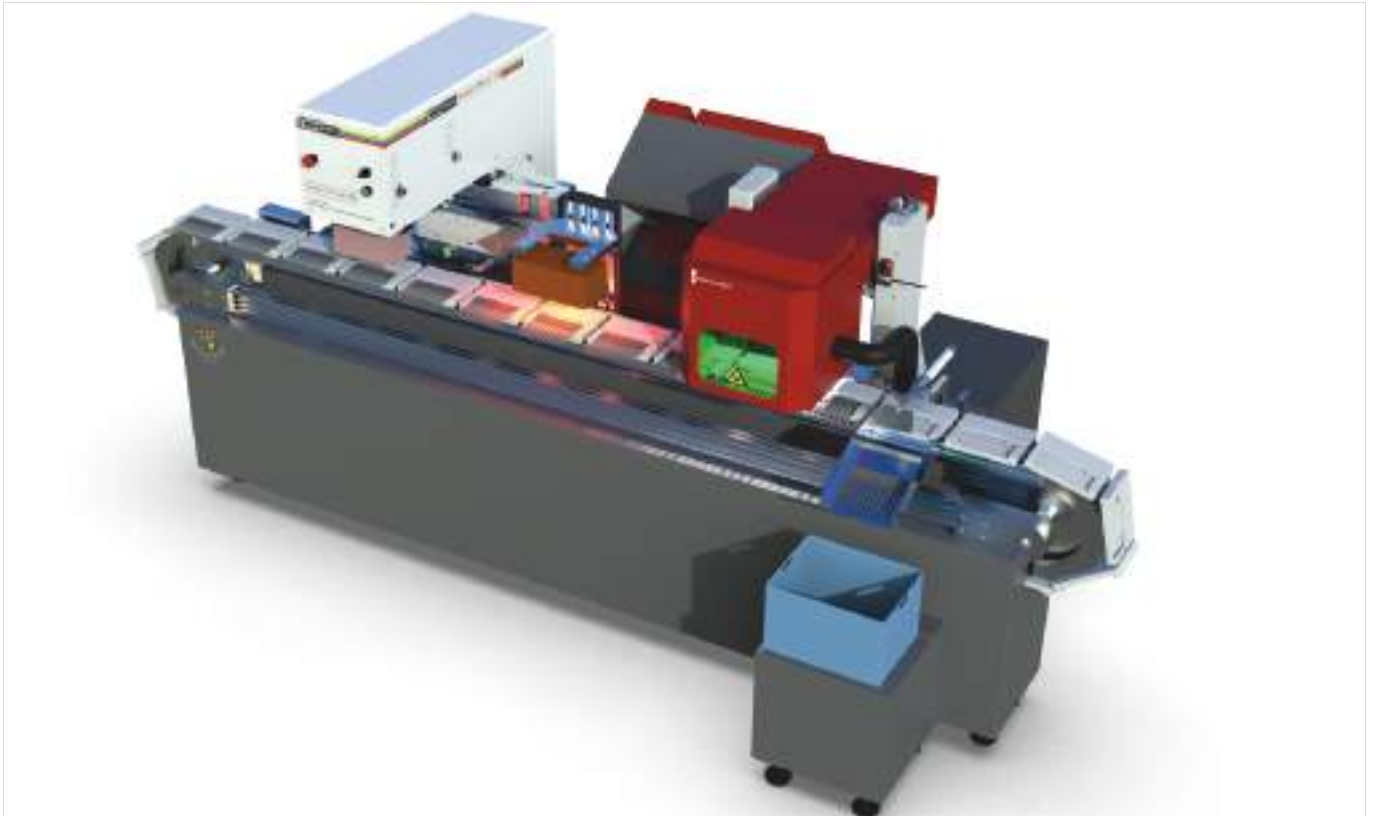
## Laser Marking of Data Matrix Codes on Automotive Gears for Traceability

This is an outstanding example of a full "Traceability Solution." This semi-automatic machine laser marks and verifies the marked data matrix code on all gear transmission assembly parts. Additionally, it is equipped with an integrated traceability system, M-Track™, a user friendly track and trace control software indigenous to Markolaser, specially customized for the project. M-Track links multiple processes and factory floor hardware, synchronises recorded data from server to the laser marking system, makes use of vision code reader to verify the marked data and generate the reports in real time environment.



## Print and Laser Hybrid Solution for Container Tags

This high speed, semi-automatic 'HYBRID' solution comes with automatic unloading and uses two print technologies i.e., pad printing and laser. First, a white patch is printed on container tag by pad-printing process then via laser processing, a permanent, high contrast, beautiful linear barcode is generated.



## Data Matrix Code Marking on Engine Push Rods– an Automotive Part for Traceability

This machine is engineered to laser mark Data Matrix Code (DMC) on engine push rods with high productivity. Auto-focussing system, meticulously designed complex fixtures, tooling to accommodate numerous part-variants, facilitating fast & convenient loading/unloading of the parts by operators are some of its key features.



## FullyAutomatic Dual Head Laser Marking System on ACBs (Air Circuit Breakers)

Air Circuit Breaker (ACB) is an electrical device that provides protection against over-currents and short-circuits. This classic case requires laser marking of validated electrical data on two opposite faces (top and side) of the special plastic surface. Our unique solution comes with a customized client control interface that synchronises variable data from central server to the marking system. The user-friendly GUI provides real time events/alerts/live status of the machine. And, the sophisticated dual laser marking heads come with extremely specialized optical configuration, optimized to create good, fast and legible marking effect on special plastic materials.



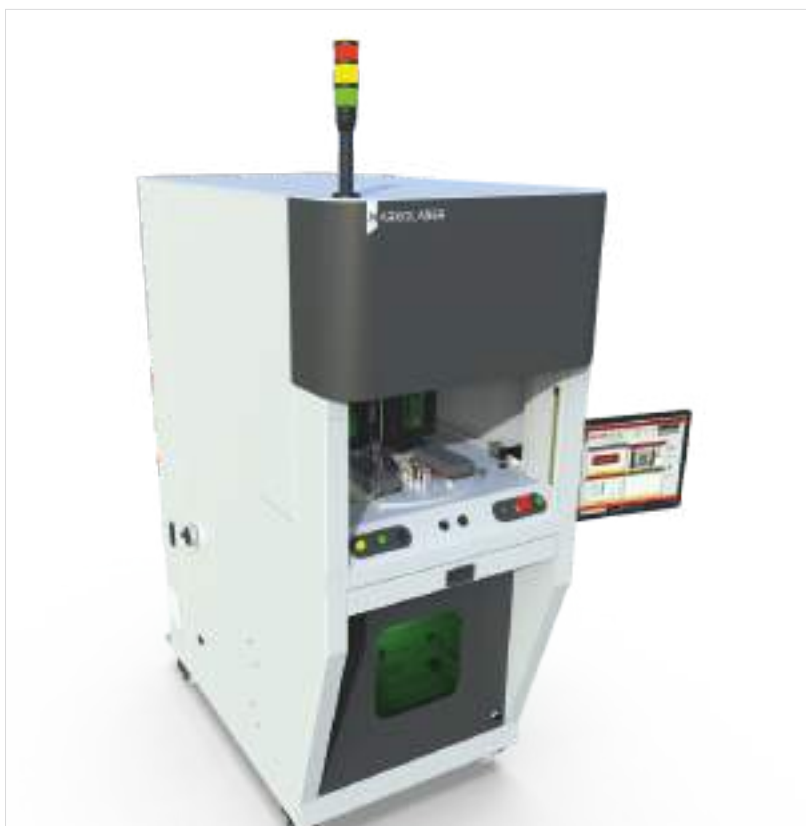
## Fully Automatic Laser Marking, and Cutting Solution for Labels, Tapes

Laser label marker allows precise marking of labels on different sized labels straight from the roll and cut them out without employing additional tools. After the marking, Tapes can be separated by a cutter or externally rewound. In between marker & cutter a vision camera is employed for code quality. Laserable tapes from 3M or Tesa are some of applications



## Marking on Automotive Parts

The marking solution involves 4-station rotary table with a vision solution to mark on parking sensors. The criticality of the problem lies in the fact that marking on a parking sensor is done in multiple colors (around 42 colors). Our solution comes with an intelligent vision system which allows laser marking on the right sensor in predefined color matrix.



## Laser Marking on (Electrical) LED Drivers

It is a semi-automatic machine to mark on black painted housing of LED drivers. This automation consists of a dual laser head for marking and an intelligent customized interface that enables the machine to judge the part orientation and consequently, perform the right marking. This specialized machine comes with a complete range of trace and track features.



## Variants

Features	MarkoMark Basic	MarkoMark Advanced	MarkoMark Premium
Client Control Interface	No	Yes	Yes
Mark on the fly (MOTF)	No	Yes	Yes
Splitting functionality	No	Yes	Yes
3D Free Form	No	No	Yes
Supported File Formats	Limited	All vector files	All vector files
Motion Controls	No	Yes	Yes
Multi Head option	No	No	Yes



The cerebrum and taskmaster for our champion laser machines, MARKOMARK™, original 32-bit WYSIWYG LASER marking software. Ready to import AI or vector graphics file, auto generation of bar codes, data matrix codes, variable fonts, sequential number, text merging, real-time date and time are standard features. Alphanumeric & Halftones can be easily done.

Remote correction and control service options leave zero downtime for software errors. Digital settings of critical laser parameters guarantees next level of marking experience, operator friendly GUI ensures usability of less-skilled operators. Automation lines integration is enabled, thanks to our flexible programming platform and open interface architecture.



## Laser Parameter Finder

For Laser marking on new materials for different applications, the laser parameter finder PARAFINDER is an ideal tool. For marking different material you can easily find the correct parameter (three variables frequency, speed and power). Depending upon the laser application (annealing, engraving, foaming, colour change etc) and the material (metal, plastic etc) being used, finding the appropriate material parameters is always a question of concern while working with the laser – especially for new materials and new applications. With PARAFINDER it has become so easy.

For most commonly used materials there exists a pre-defined optimized laser parameter database. The substrates database is easy to use and helps to reduce set-up time for regularly used materials.

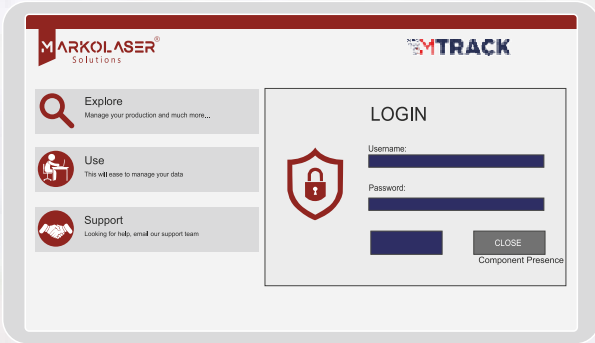


# TRACEABILITY SOLUTIONS



## We Follow DPM & Label Code Quality Standards

ISO/IEC	ISO/IEC	ISO/IEC	ISO/IEC	DOD	SAE	FDA	FDA
TR 29158	TR 24720	16022	15415	UID	AS9132	GS1	CFR21

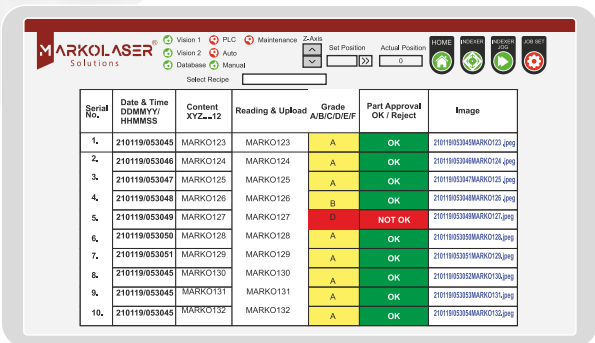
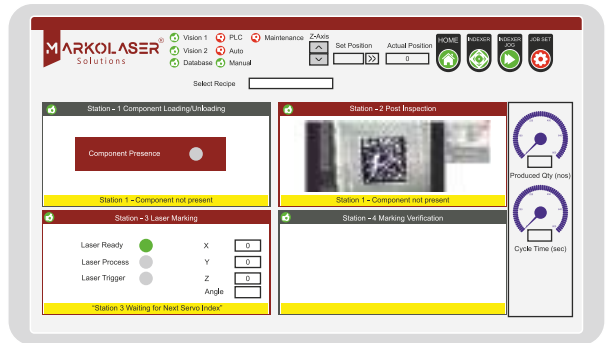


## Administration Level & Authenticity

Various access levels can be set for operators, plant heads, retailers, vendors, etc. Unique login can be created for added security for different levels of data to be accessed.

## Traceability

Generating code and serializing the products, components, processes, materials & sub parts across the hierarchical flow. Marking with laser (DPM) or RFID according to situation and condition helps in data collection and updation to the server database/cloud for all levels like lot no., unit id, date, time, etc.

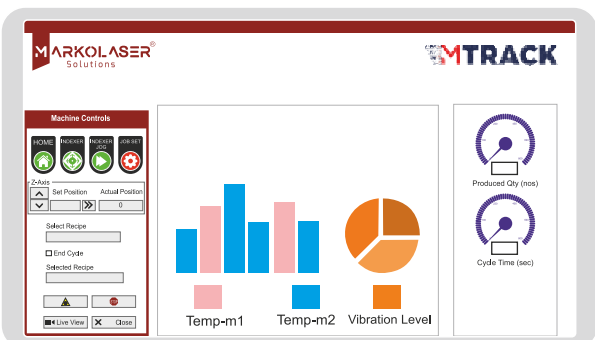
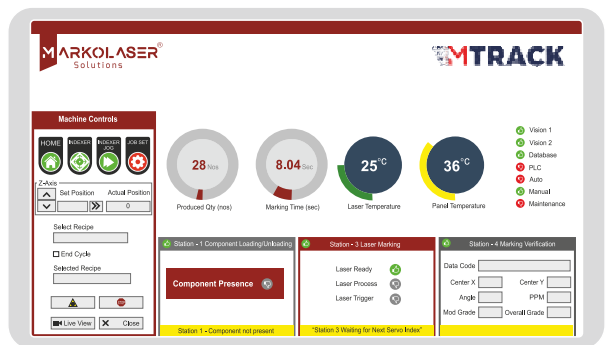


## Quality Inspection

The quality of unique code marked can be scanned and the grade can be updated to the server if laser marking is done. Managing and tracking the equipment and tools for inspection and the collected data can be integrated to the cloud.

## Sensor Control Interface

Sensor Control Portal gives us a facility to monitor the parameters that we need to activate so that we can get an alarm if there is any emergency.



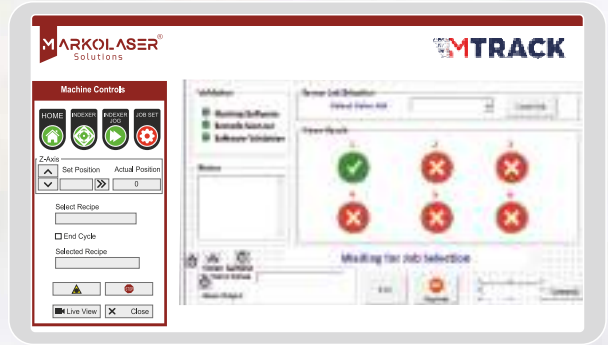
## Analysis

Intelligent sensors in combination with marko-controller and MTRACK makes it possible to collect and monitor the data of components and machines or system in real time. For example, temperature, power and vibration. With the analysed data we will be able to correct the error and help in reducing the consumption of energy due to fault occurred in the system.

Disclaimer: These images are for illustration purposes only, the machine look may vary in real time.

## Vision System Integration

Vision Inspection Portal helps in integration of vision system for vision measurement and color etc. To identify any type of flaw for right inspection and segregation, the integrated vision system helps in easy analysis of production performance.

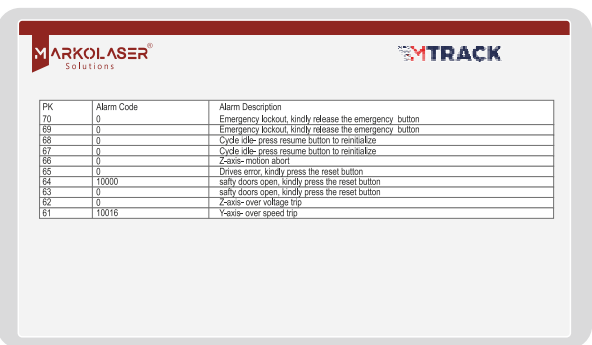
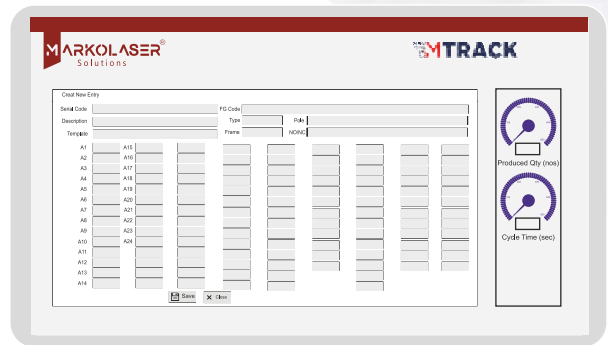


## Automation Operation

Automation portal provide us a clear visualization for automation. For better automation the value of x,y,z axis can be set manually. The integrated sensor help in adjusting x,y,z values of moving parts.

## Flexible Customizable Portal

We provide our clients the flexibility and an open platform where any amount of data can be updated against the unique code and can be managed. The data can be later updated to the server/database/cloud.

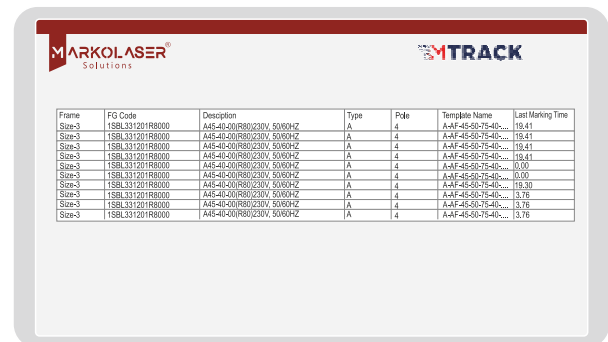


## Alarm/Event Management

The custom command can be set according to the requirements related to production. For example, threshold can be set according to the quality of marking, production outputs & alerts can be auto sent via email & sms.

## Reports Generation

The system provides us the ability to generate reports which contain all the critical data. The data is further used for analysis of all the different processes and the conditions.



# Accessories



Sliding Mechanism

## Sheet Sliding Module

Sheet sliding module is exceedingly helpful product in jewellery industry. It offers automatic sheet feeding mechanism and thus increasing the production. Following are the specifications of the sliding module:

- ✓ Ideal for cutting small jewellery & watch parts etc.
- ✓ Options are available: Manual or automatic
- ✓ Sheet width(30-90 mm)
- ✓ Sheet thickness(0.3-1mm)



GoldWin

## GoldWin

Markolaser presents a superb gold collection system adapted to jewellery industry. The GoldWin is based on turbine technology, which collects precious metal fumes during laser processing, in an easy to remove tray and the collection in the filter can further be reduced to ashes to recover the metal This is a powerful system.

Standard Features:

- ✓ Continuous gold collection & lockable for security
- ✓ Special filtration system & reasonably priced
- ✓ Minimal loss of gold
- ✓ Unique sub micron dust collection filtration up to 3 microns



Smart Vision Camera

## Smart Vision Cameras

Vision System can be used for following purposes-

- ✓ Vision inspection, guide, alignment & measurement etc.
- ✓ To check the marking presence on the part
- ✓ To inspect the marking quality of the print
- ✓ Code reading (Alphanumeric, 1D & 2D) vision inspection
- ✓ Color identification vision inspection



Rotary Indexer

## Rotary Attachment

We have one of the most reliable and robust indexing attachments available worldwide. The rotary attachment runs smoothly and no jerk is observed while indexing. The rotary attachment can be controlled precisely with our "Markomark" marking software.

Rotary: DIA-150  
Maximum diameter: 150mm  
Maximum weight\* that can be clamped: 1.5 Kg

Rotary: DIA-75  
Maximum diameter: 75 mm  
Maximum weight\* that can be clamped: 1.5 Kg



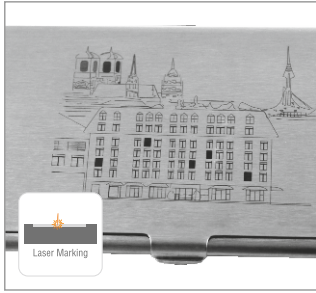
Fume Extractor

## Fume Extractor

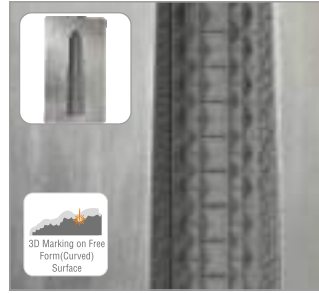
**Smart** has been designed to work with the new generation of laser systems where effective fume extraction is needed in order to maintain safe operator working conditions and assure product quality.

The **FORCE 3+** is an intelligent solution for more demanding customer who benefit from the ease of operation & clarity of real time information. Downloadable performance & operation parameters for evaluation.

# Sample Gallery



Laser Marking on Metal



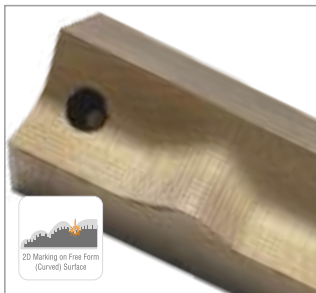
Texturing on Watch Strap Die



Traceability Mark for Automotive Part



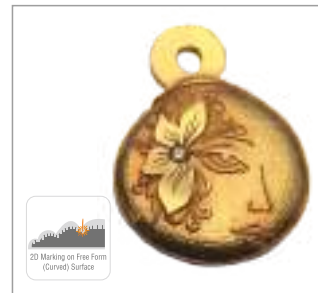
Laser Cutting on Watch Part



Surface Texturing on Free Form



Step & Cylindrical Marking on Electrical Parts



Deep Engraving on Free Form for Jewellery



Laser Engraving on Circumferential Area of Jewellery



Laser Marking on Medical Glass



Marking on Automotive Day/Night Component



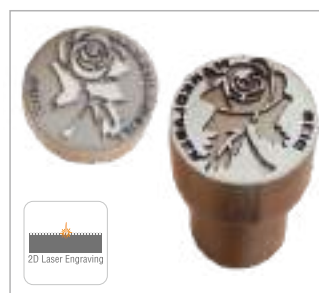
3D Engraving on Cold Hard Metal



Laser Processing of Watch Die



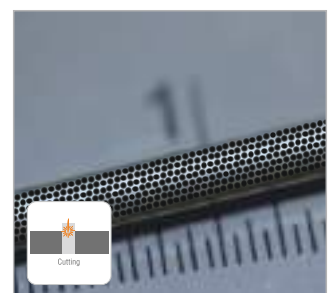
3D Engraving on Coin



Deep Engraving of Male-Female Embossing Punch Dies



Salt Spray Test Proof Laser Marking on Bath Fittings

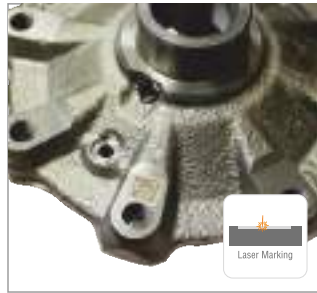


Perforation Drilling on Thin Metal Sheet

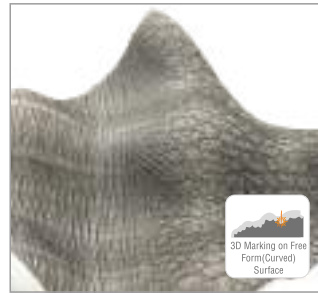
# Sample Gallery



Laser Marking on Plastic



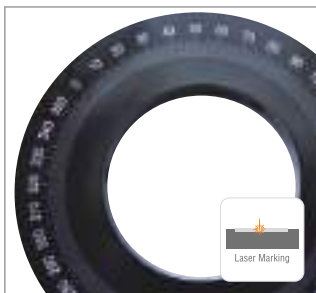
Traceability Mark for Automotive Part



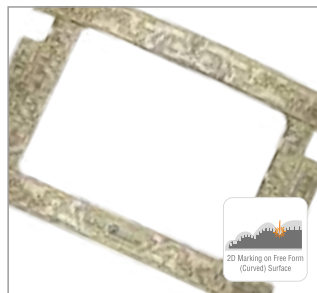
Texturing on Mold Die



Laser Paint Removal on Name Plate



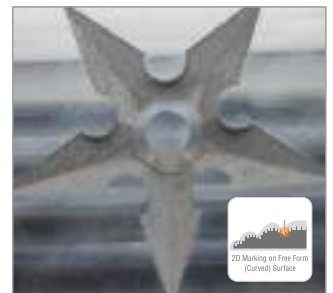
Precise Scale Marking on Cylindrical Part



Deep Engraving on Free Form for 2D Jewellery



3D Coin Die



Surface Texturing on Free Form



Laser Processing of Watch Dial



Laser Surface Cleaning



Step Marking on Electrical Switch



Laser Engraving on Automotive Part



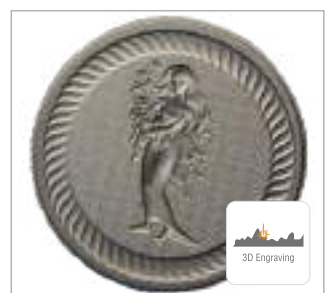
Perforation Drilling on Thin Metal Sheet



Salt Spray Test Proof Laser Marking on Bath Fittings



Deep Engraving on Punch Dies



3D Engraving on Coin Die

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**Spinks India :** Plot no.135, Pace City-I,  
Sec 37 Gurugram 122001, Haryana. India.  
+91 9210626626

**Email :** [info@markolaser.com](mailto:info@markolaser.com)

**Website :** [www.markolaser.com](http://www.markolaser.com)  
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