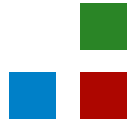


- Packaging | Abrasives
- Tobacco & Paper
- Automotive & Others

MLT Lasersystems  
Versatile & Highly Productive  
Fascination Laser



LASEREXCELLENCE



# COMPANY PROFILE



*Processing @ the speed of light*





Micro Laser Technology GmbH (MLT), located in Kirchheim near Munich is well known in the industry as a qualified & competent manufacturer of tailor-made laser material processing systems for industrial applications and operations, such as Perforation, Scribing/Scoring (defined material weakening), Embossing and Marking.

MLT Laser Machines are already worldwide in operation, mainly in the Packaging Industry (Food, Beverage and Pharmaceutical products), Tobacco- & Paper Converting Industry and Automotive Industry.

Through our mission "Laser Excellence" we actively gather and improve our invaluable in-depth knowledge & experience in order to design and manufacture cutting - edge laser processing systems.

# Micro-, Macro Laser Perforation

# Micro-, Macro Laser Perforation

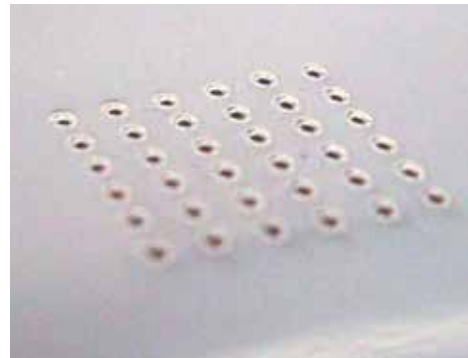


Depending on material specification & perforation pattern, either Optical Multiplexing Technology or Scanner Technology will be implemented for Micro- or Macro laser applications, such as MAP (modified atmosphere packaging).

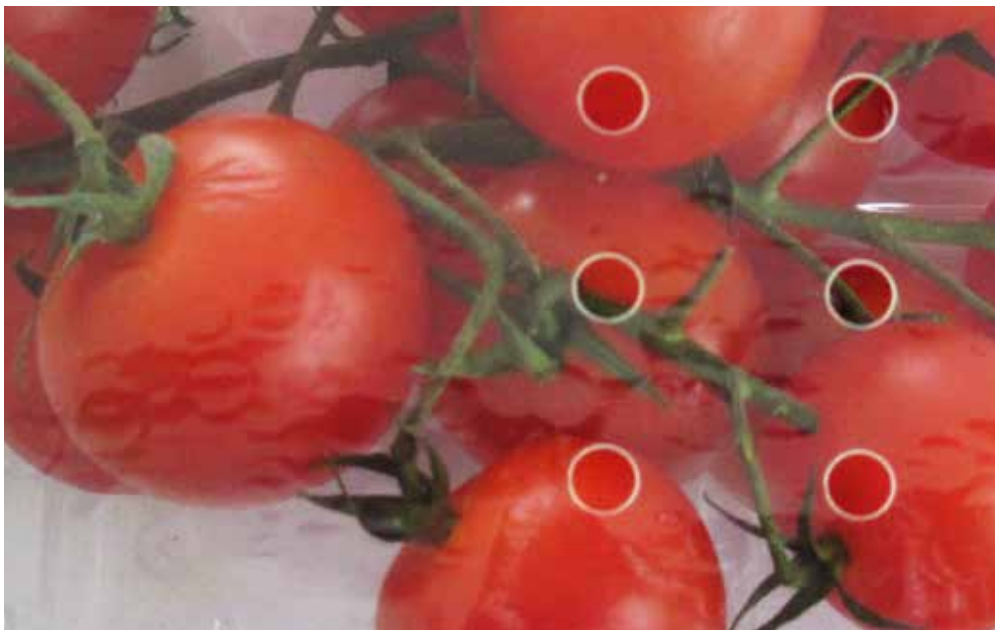
The aim of Macro Laser Perforation is to create an Ideal Ventilation for vegetable packaging, fast exhausting during the filling process of bags, or to regulate the flow behaviour of high viscidly liquids in nearly all established packaging materials.

Micro- perforated films offer the possibility to tailor the OTR (Oxygen Transfer Rate) to suit the produce being packaged. The aim is the customised permeability of the controlled gas exchange of CO<sub>2</sub> and O<sub>2</sub> for flexible bags or lidding films to enhance the product's shelf life.

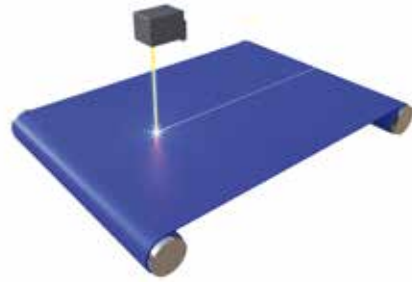
*Micro Perforation for MAP*



*Macro Perforation for Ideal Ventilation*



# Laser Scribing / Scoring



MLT offers Laser Scribing/Scoring Systems enabling the selected weakening of mono film and multi-layer film during the converting process (offline) and on packaging machines (online).

To create, e.g. an Easy Opening feature, materials can be processed in Machine Direction (MD), Cross Direction (CD) or in all variations of free-form contour scribing. Selected weakening of materials can be adjusted with a high level of precision ensuring the barrier properties are not damaged during the scribing process.

*Processing Heads*



*Online Scribing Modul*



*Tear Tab with Notch*



A lot of examples for Easy Opening-, Bending-, Embossing Solution can be found in numerous areas of the food / non-food industry. The most recent introduction of the solutions are replacement of tear strip, microwave openings or very customer-specific applications, e.g. embossing for brand awareness purpose.

Our modular design of Laser base frames enables a combined system structure containing all three scribing forms, which can also be retrofitted and up-graded at a later date.

# Selective Material Weakening



SELECTIVE MATERIAL  
6

# Selective Material Weakening

Compact Laser Scribing modules, used in filling and packaging machines, are designed and manufactured according to individual customer-specific requirements.

These online modules ensures tolerance compensation during the packaging process, guarantees the fastest response time to any product

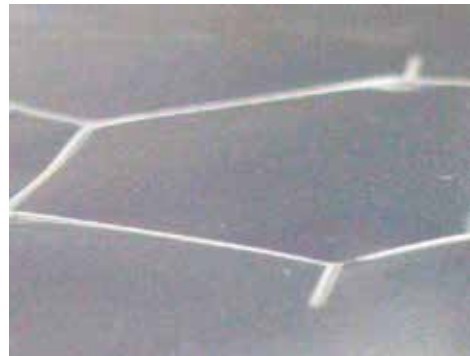
or format changes which may occur and also allows for independent selection of film supplier. MLT`s specially developed software allows "On-the-Fly" processing (set-point tracing) of the laser beam. This is requested during winding or pulling phase of the packaging machine while scoring/cutting in Cross Direction or in Free-form.

*Easy Opening with Reclose Function*



*Replaces Tear Strip*

*Microwave Function*





LASER EXCELLENCE

# Laser Perforation Systems

LASER PERFORATION

8

## Laser Perforation Systems



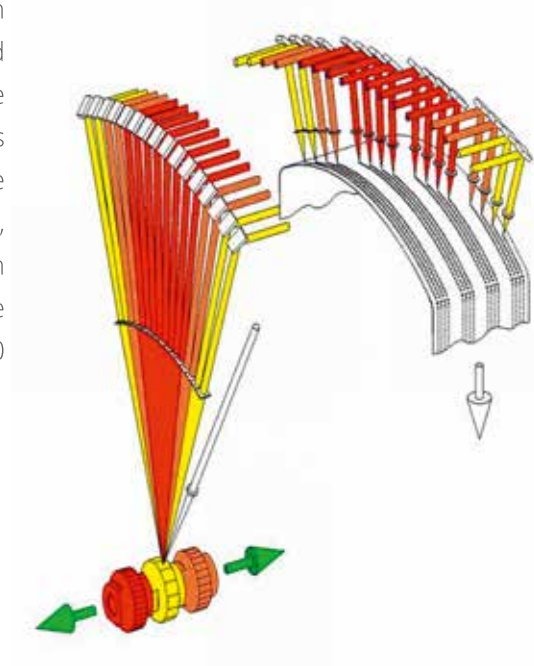
MLT Laser Perforation Systems can be found worldwide in the Tobacco and Paper Converting Industry. Our Laser machines are based on high standards with customer-specific adaptability and cutting-edge laser processing technologies.

Our stand-alone Laser Perforation Systems (offline) are currently applied for micro perforation of cigarette tipping paper. The MLP Series enables the production of various cigarette tipping paper perforation pattern, e.g. an ultra-fine micro perforation of 4 rows and 50 holes/cm or a fine micro perforation of 1 row with 10 large holes/cm.

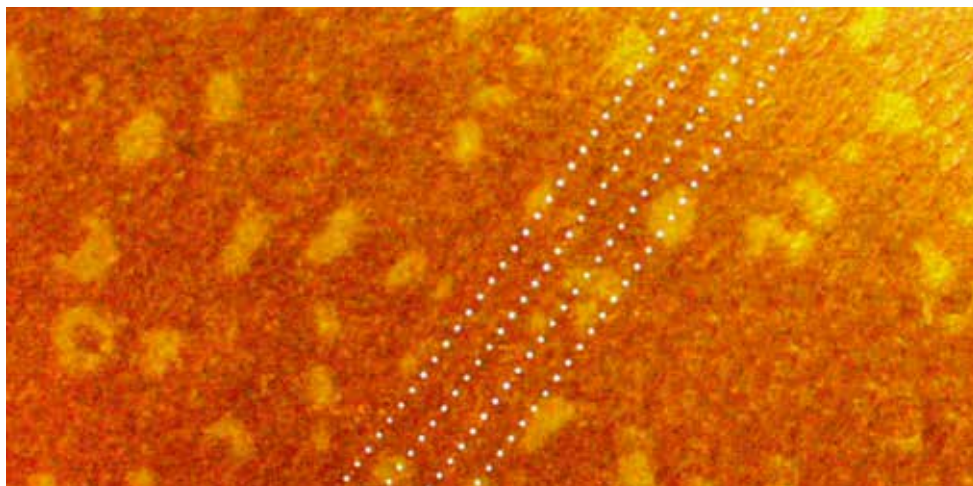


With MLT`s unique designed VARIO-POLYGON-Technology ventilation degrees can be changed fast and fully automatically while using the most efficient laser power set-up.

*Unique Vario Polygon Technology (patented)*



*Laser Perforated Cigarette Tipping Paper*





# Cigarette Ventilation

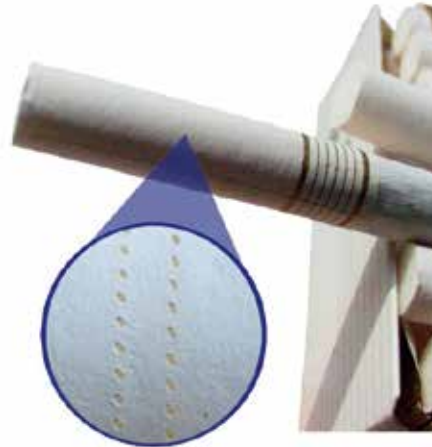


The MLP 5/ 10 Perforation Machine Series are designed to run single- or double 2-fold bobbins. 4 to 8 Perforation heads with 200 Watt or 400 Watt laser power are generating up to 40.000 holes/sec.

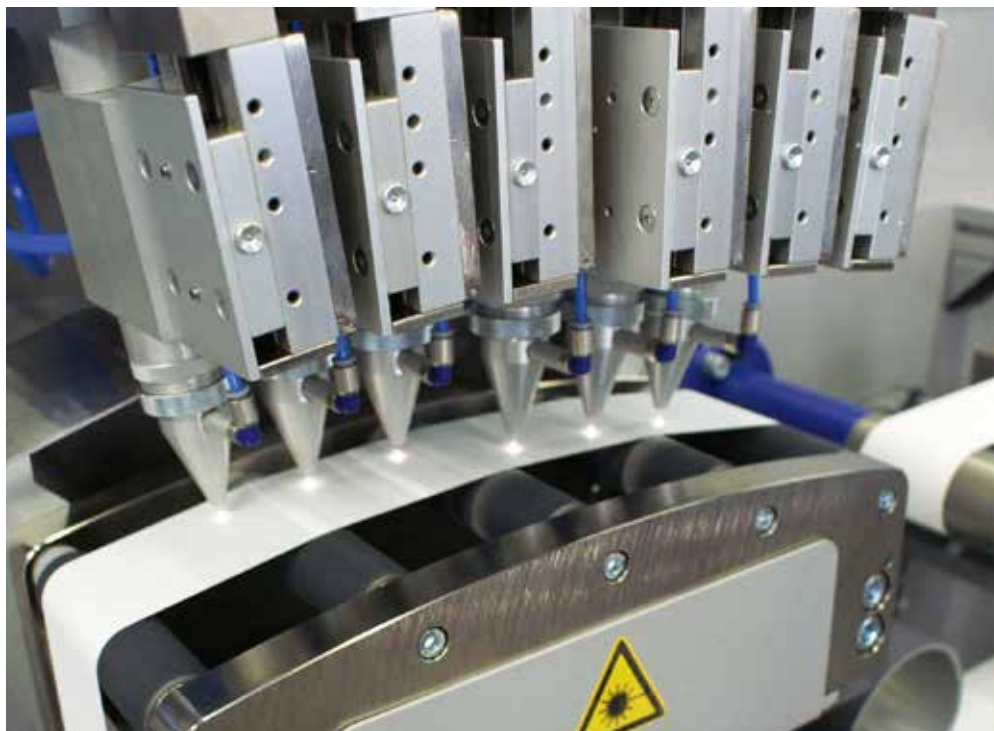
All systems are retrofittable and can also be combined with an On-Line-Porosity-Detection System (OPD) and a Good-to-Core-Device, so called 0-Meter Module.

## *Laser Perforated Cigarettes*

The MLP 50/ 50Twin Series are manufactured to run 4-fold or 5-fold bobbins. Up to 32 Laser Perforation Heads with either 1000/1500/2000/ or even 4000 Watt laser power are generating **up to 1.000.000 holes/ sec.**



## *Laser Processing Heads*



# Laser Processing



LASER PROCESSING  
10

Whether Automotive, Medical or Pharmaceutical Industry - the field of application in laser processing is increasing constantly. Some examples of where laser perforation is applied are: insulating tapes, wooden interior design for the Automotive Industry, membrane film for fuel cell and tablets in the medical industry.

The laser material processing (controlled weakening process) of e.g. airbag films, drinks packaging paperboard or tray packaging for consumer goods.

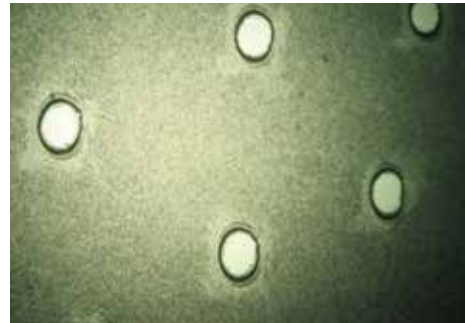
The Labeling, embossing and Safety Coding of e.g. anti-counterfeit film for car license plates, traffic signs, holography labels for original car spare parts or high quality cosmetics.

Laser Processing

*Authentic Certification of License Plates*



*Breathable Membrane for Fuel Cell*



*Isolation tape, perforated*



*Glass cutting*



# Laser Marking Systems



Turn-key Marking Laser Systems from Micro Laser Tech fulfil the most stringent and significant quality standards when marking materials. Film materials which can be treated include e.g. PP, PET, PE, PA, Aluminium, and combinations thereof, as well as materials with a smooth surface.

MLM (Micro Laser Marking) systems can be mounted/ supplied with various

*Combination of Scribing and Marking Process*



*Serial Number of Holographic Label*



laser sources to superimpose e.g. Barcodes, Company Logo, Security Features or a number-combination on varied materials such as metal, paper or plastic.

Our Micro Laser Marking Systems generate exact and high-precision markings during all machine sequencing such as "On-the-fly" or Interval Cycle.

*Individual Marking and cutting of Cigarette Packet*



*Laser Cutting and Marking of Smart Cards*





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