

LASER TEXTURING:

Una soluzione innovativa per le finiture di superfici



Key figures (2018)

+GF+

Founded

1802

Headquartered

Switzerland

Employees worldwide

15,835

Sales CHF billion

4.15

Countries

34

Companies, service
and sales centers

136

Productions
plants

57

Centers of
Competence

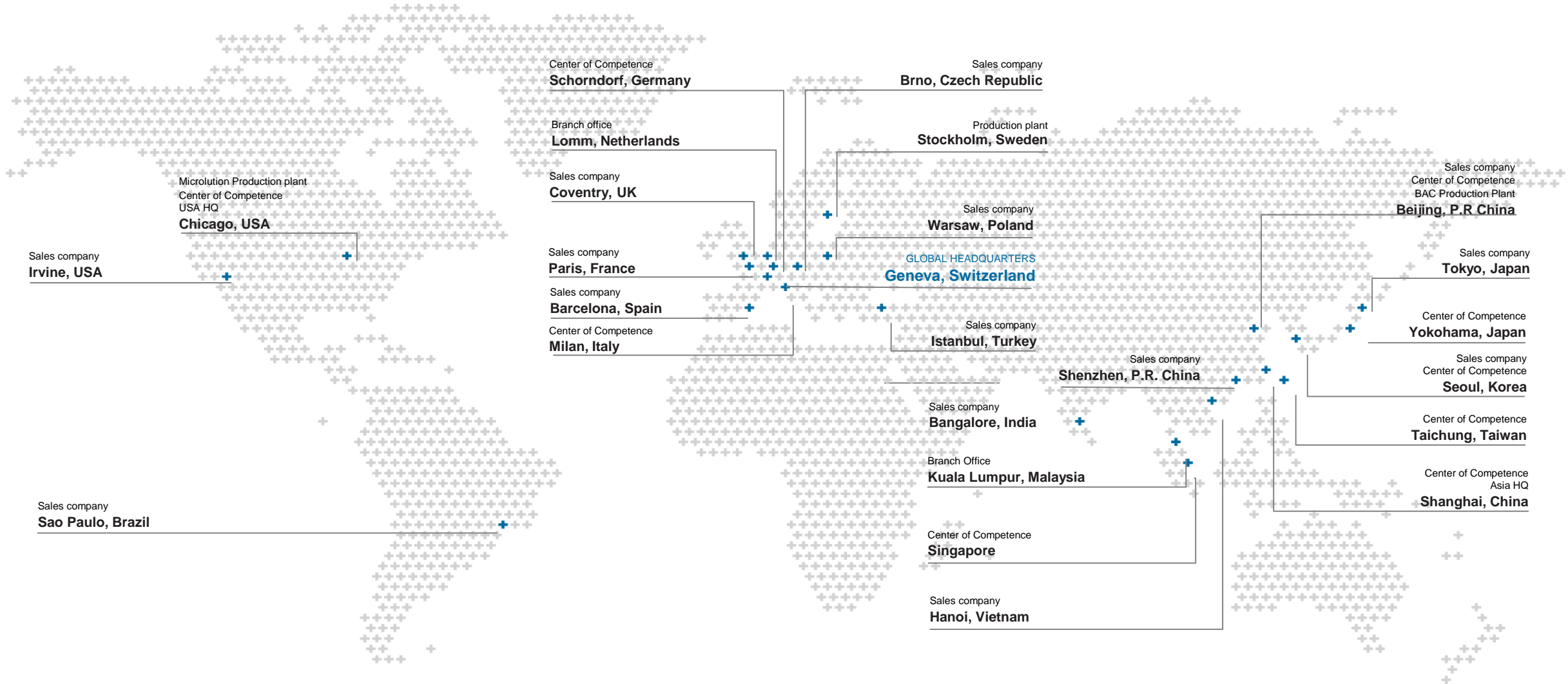
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GF Piping Systems

GF Casting Solutions

GF Machining Solutions

GF Machining Solutions: Global Reach



Market Segmentation

Aerospace



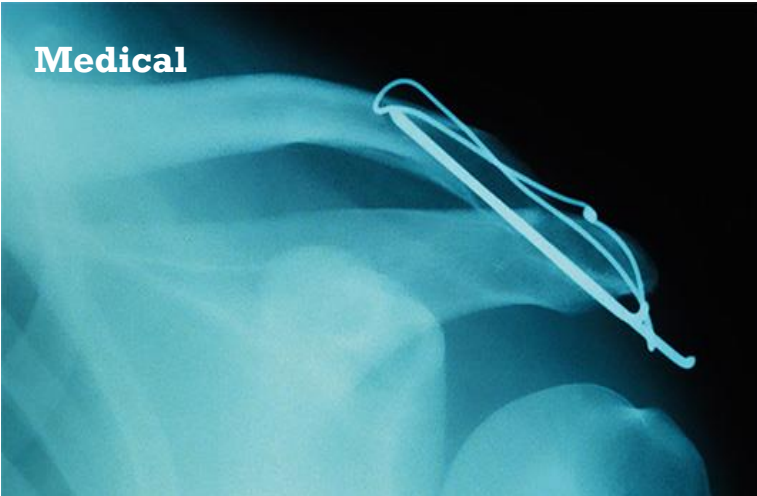
ICT



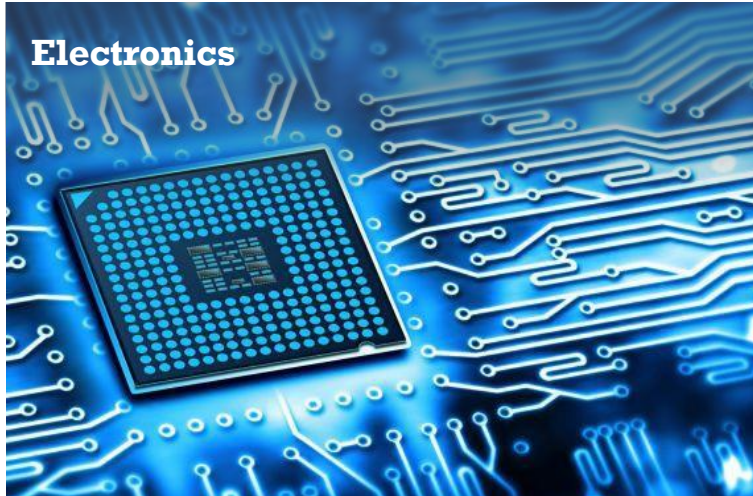
Automotive



Medical



Electronics



Energy



GF Machining Solutions: Technology Brands

AgieCharmilles

Wire-cutting, die-sinking and hole-drilling EDM solutions, Additive Manufacturing and Laser texturing

Mikron Mill

High-speed, high-performance and high-efficiency Milling technologies

Microlution

Specialized in five-axis Milling, femtosecond laser for hole-drilling and micro-cutting in a wide range of industries

Liechti

Leader for five-axis airfoil machining solutions to the turbine industry

Step-Tec

High-end motor spindles and subassemblies

System 3R

Productivity-boosting Automation, Tooling and Software systems



Additive Manufacturing

- DMLS Powder bed
- For Mold & Die



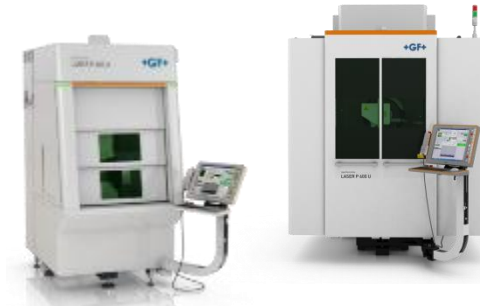
Microlution

- Laser Micro Cutting
- Laser Micro Drilling
- Laser Micro Turning

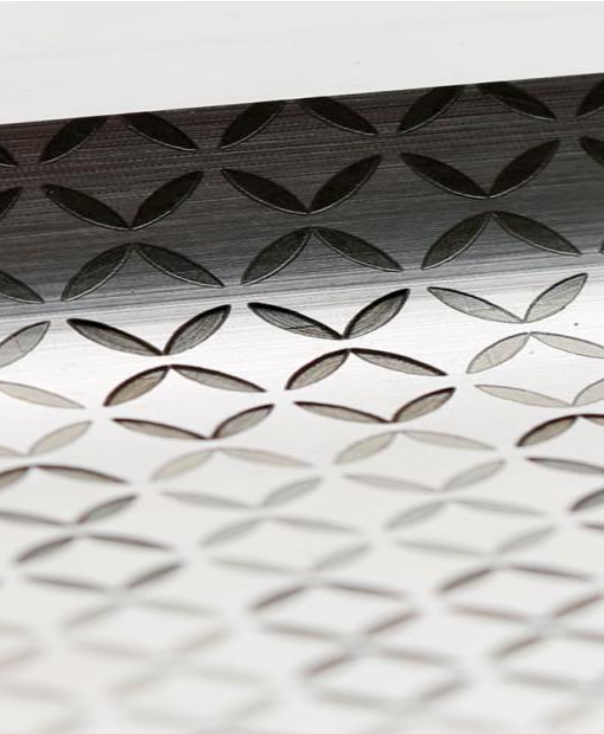


Laser TSE

- Texturing
- Structuring
- Engraving



Laser TSE: Texturing machines



Texturing

Achieve perfect repeatability without limits in design or quality and address new business opportunities with high-definition Laser texturing.



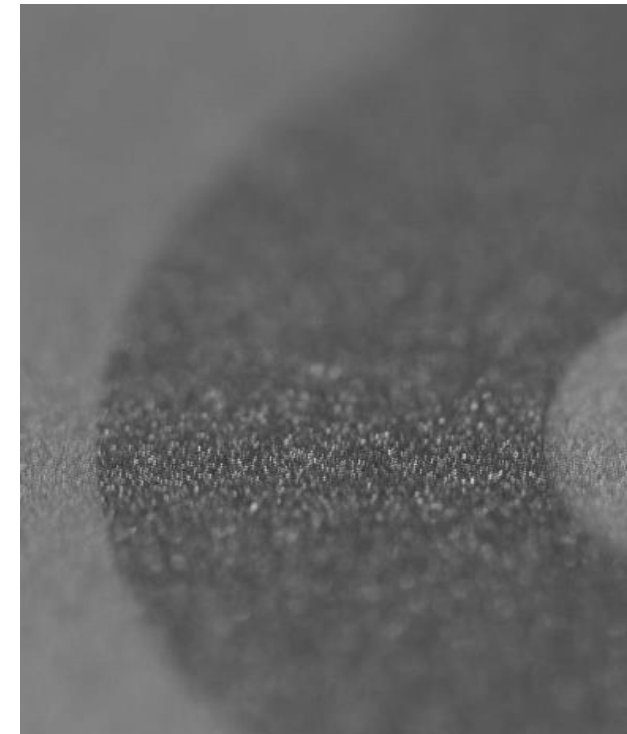
Marking and labeling

Open up new design horizons for marking and labeling products.



Engraving

Achieve fast, infinitely repeatable engraving results without difficulty in one setup and on one machine.



Structuring

Enables you to make your mark by ensuring precise structuring down to the micron.

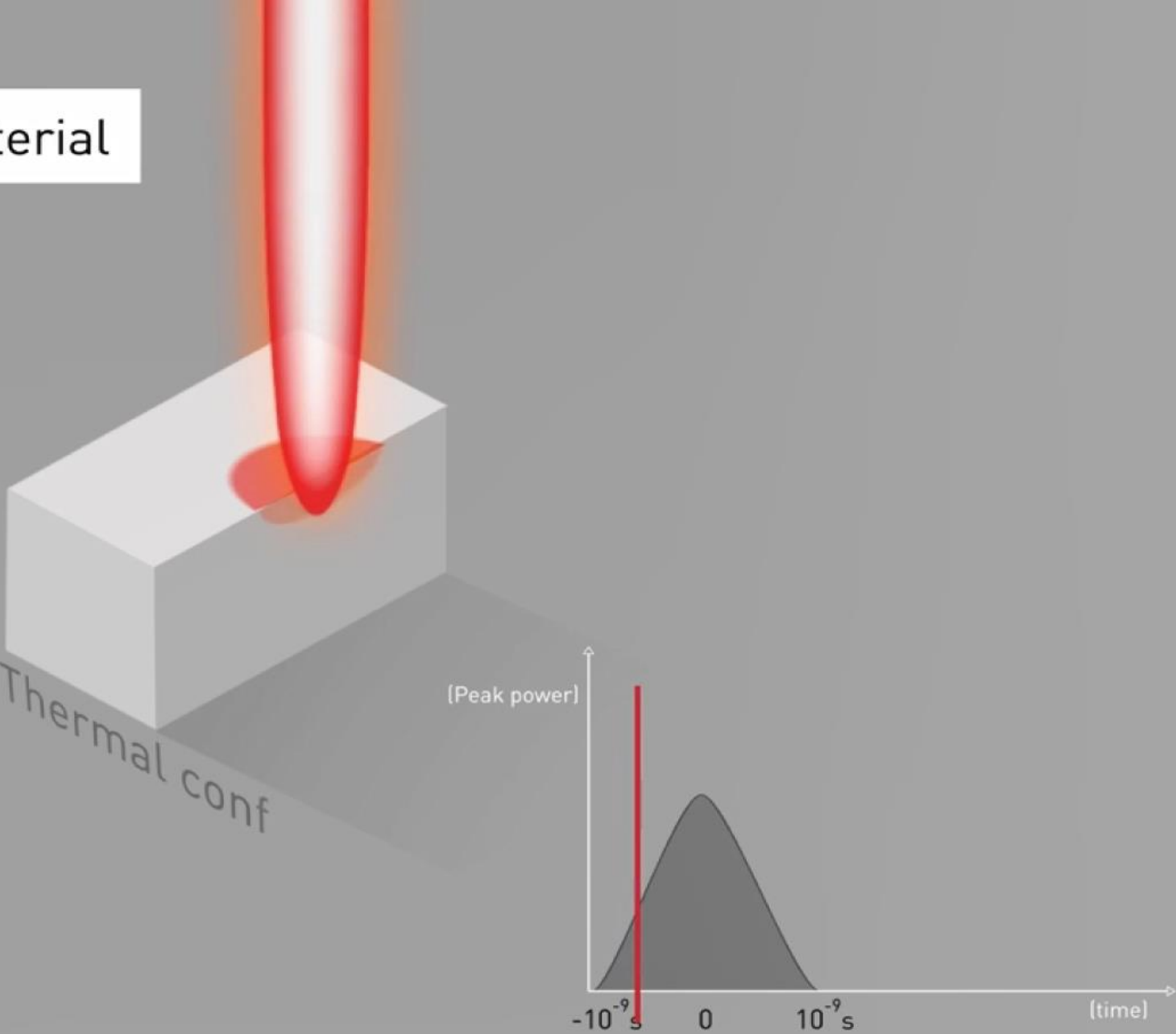
GF Laser TSE

Fundamentals of the Technology:

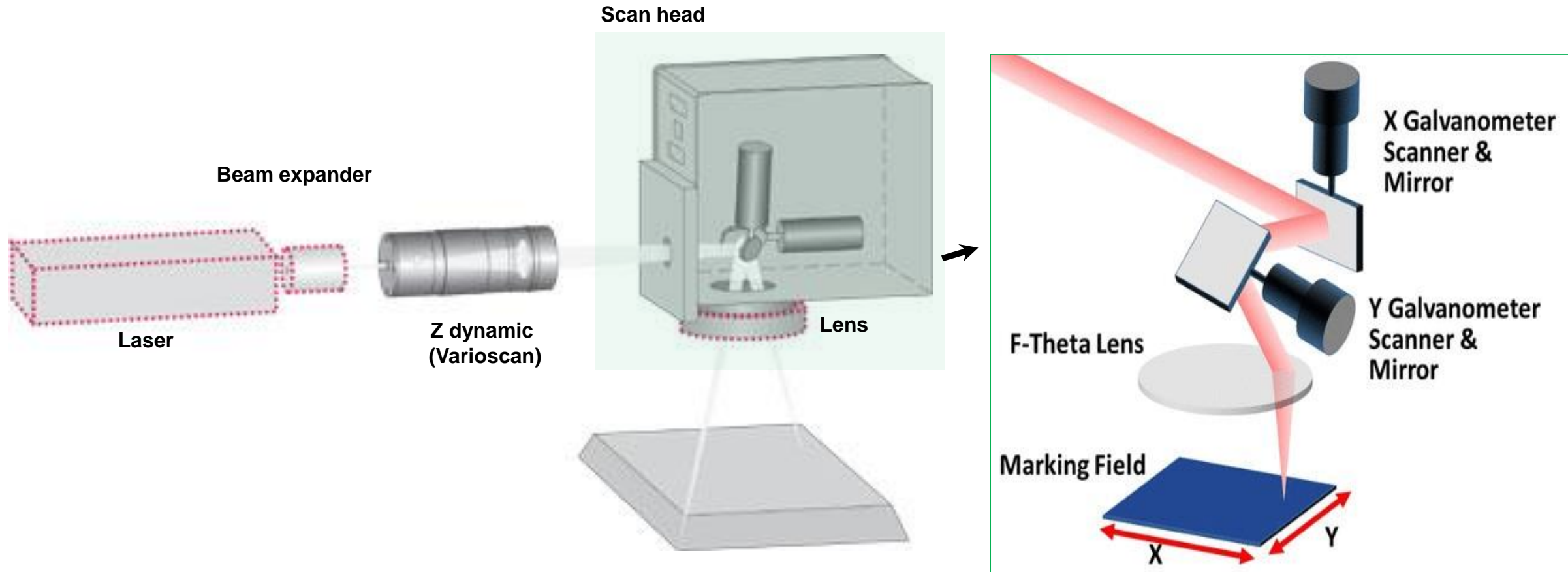
What is a LASER ?

Light **A**mplification by **S**timulated **E**mission of **R**adiation

Interaction with the material



WHAT'S AN OPTICAL SCANNER / SCANHEAD ?

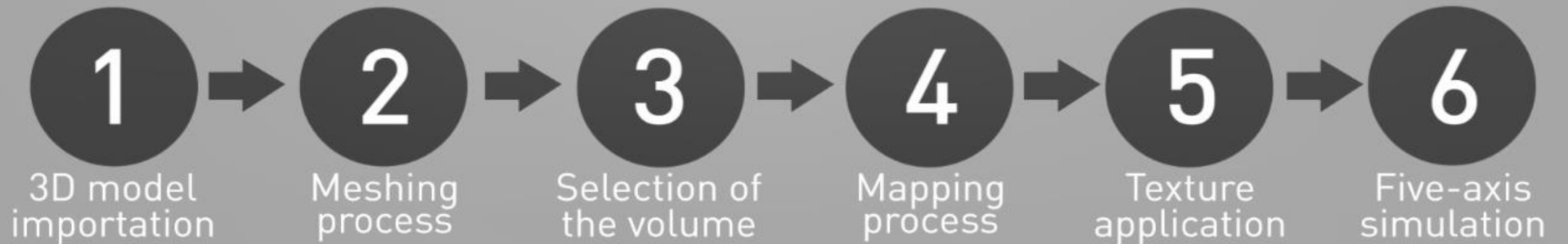


Laser Texturing Process



STEP 7

Five-axis machining



Laser Texturing



LASER portfolio 2018

> 350 mc installed, since 2010.



LASER P 400 U



LASER P 600 U



LASER P 1000 U



LASER P 1200 U



LASER P 1200 U Tire



LASER P 4000 U

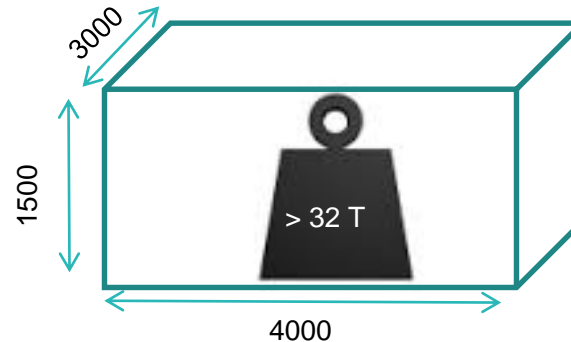
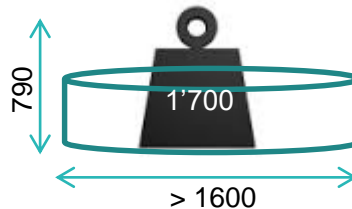
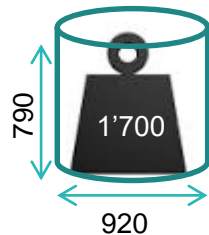
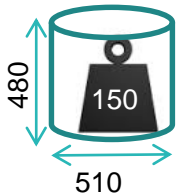


LASER S 1000 U
1000 x 550 x 880



LASER S 1200 U
1200 x 900 x 1200

Max. work piece dimensions in 5-axis operation (mm)



A futuristic, curved tunnel with a white hexagonal lattice pattern on its walls. A bright blue light source is visible at the end of the tunnel, creating a lens flare effect. The overall scene is set against a dark, metallic background.

**BE INSPIRED
SUCCESS STORIES**

CONSOLIDATE PACKAGING

CUSTOMER CHALLENGES & BENEFITS

Lead time
Cost per parts

Digital Process
Repeatability

Flexibility
Replicate EDM process Quality

CUSTOMER
PROFILE

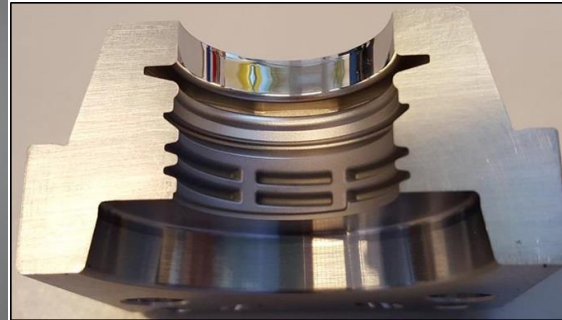
APPLICATIONS

LASER BLASTING

VDI scale

ENGRAVING

Copper Insert
Neck Ring Reference Number



CONSOLIDATE MEDICAL PACKAGING



CUSTOMER CHALLENGES & BENEFITS

Lead time
Cost per parts

Digital Process
Full Process control

Flexibility
from outsourcing to Internal

CUSTOMER
PROFILE

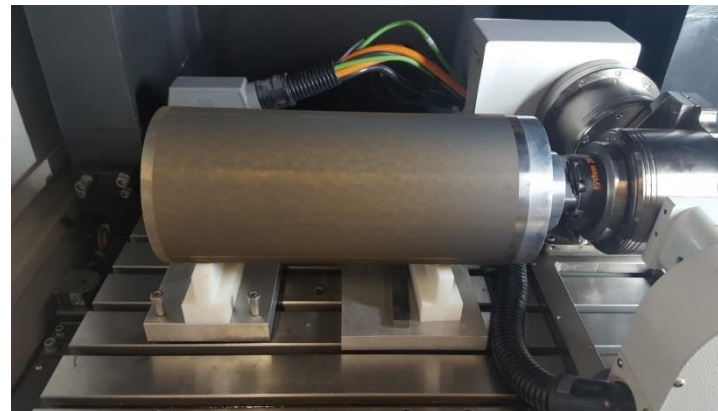
APPLICATIONS

LASER ENGRAVING NANO

LASER ENGRAVING FEMTO

Embossing Plates

Embossing rolls



CONSOLIDATE COSMETIC



CUSTOMER CHALLENGES & BENEFITS

Differentiation
Competivness

Digital Process
Repeatability

Flexibility
No Electrodes

CUSTOMER
PROFILE ?

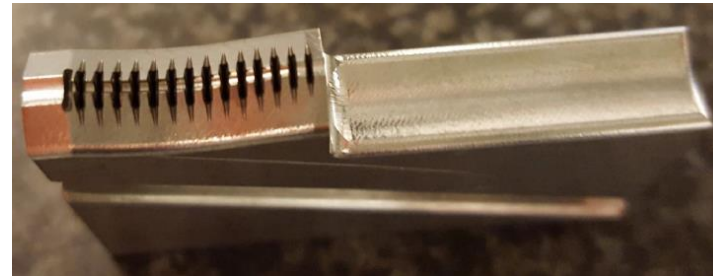
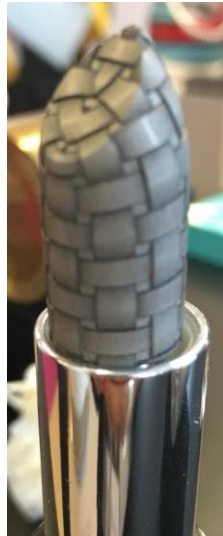
APPLICATIONS

LASER ENGRAVING

TEXTURING

Brush

Lipstick insert



CONSOLIDATE MINT



CUSTOMER CHALLENGES & BENEFITS

5Ax
Femto

Digital Process
tool less than 30 um

Flexibility
Software

CUSTOMER
PROFILE

APPLICATIONS

LASER BLASTING

ENGRAVING

Laser Blasting
Laser Frosting

Coins
Punches

LES
GRAVEURS



CONSOLIDATE FASHION



CUSTOMER CHALLENGES & BENEFITS

Lead time
New design

Digital Process
Full Process control

Flexibility
High Brand design

CUSTOMER
PROFILE

APPLICATIONS

LASER ENGRAVING NANO

Punch & die

Casting Molds



CONSOLIDATE MOLD FOR SHOE & SOLE

CUSTOMER CHALLENGES & BENEFITS

Lead Time
Cost efficiency

Digital Process
3 Processes in 1

Actual design limitation
Not toolshop operator

CUSTOMER
PROFILE



APPLICATIONS

LASER ENGRAVING

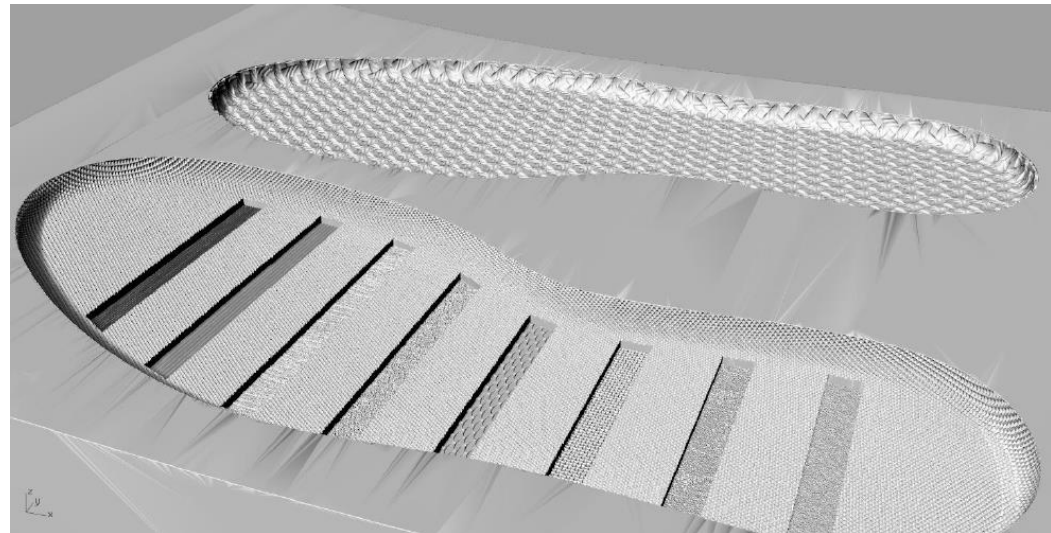
TEXTURING

BLASTING

LOGOS & DATAS

Design

Blasting after milling



CONSOLIDATE MOLD FOR AUTOMOTIVE LIGHTING MOLDS

CUSTOMER CHALLENGES & BENEFITS

Lead Time
Cost efficiency

Digital Process
Delivery time to OEM

No Etching
R&D

CUSTOMER
PROFILE

APPLICATIONS

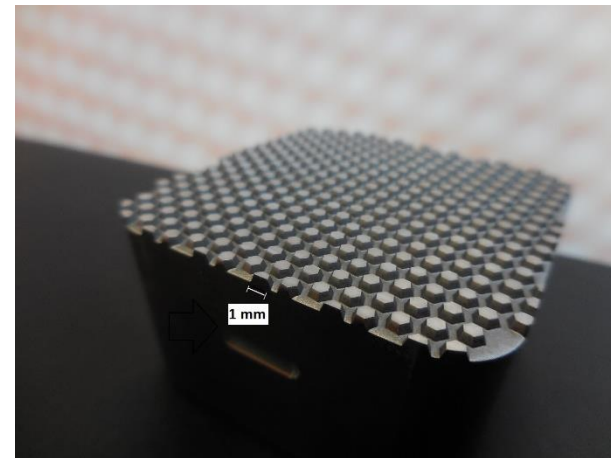
LASER
TEXTURING/BLASTING

ENGRAVING

LOGOS & DATAS

Design

Blasting after milling



Thank you!