

激光机床  
MACHINES WITH  
LASER SOURCE

**LASER**  
LASER SERIES



**C.B.Ferrari**

ITALIAN EXCELLENCE SINCE 1966

## 公司历史 *OUR HISTORY*

- 1966** 1966年9月1日 C.B.Ferrari公司在位于意大利米兰北部50公里处的瓦雷泽省莫尔纳戈成立。三位创始人分别是负责技术的Renato Bianchi先生和Giuseppe Ferrari先生，以及负责财务的Augusto Caravati先生。成立之初的目标方向是生产适用于加工冲头、模具和复杂零件的小型铣床。  
*C.B.Ferrari is established September 1st in the northern Italian town of Mornago (VA), 50 km north from Milan, by Mr. Renato Bianchi and Mr. Giuseppe Ferrari as technical members and Mr. Augusto Caravati as the financial member and begin the production of small milling machines suited to build punches, moulds and complex workpieces.*
- 1967** C.B.Ferrari 公司研发了自己的直流电机和驱动系统，并生产了第一台直流电机驱动的三轴机床。  
*C.B.Ferrari develops its own DC motors and drives, builds the first 3-Axis machine operated by DC motors.*
- 1973** C.B.Ferrari 为生产的绝大多数机床配备了数控系统并且采用了绝对测量系统。  
*C.B.Ferrari equips the majority of its machines with CNC and adopts absolute measuring systems.*
- 1974** C.B.Ferrari 发布了机床热补偿软件。  
*C.B.Ferrari releases the machines thermal compensation software.*
- 1978** C.B.Ferrari 制造了自己的第一个双摆转台和第一台五轴加工中心。  
*C.B.Ferrari builds its own first 2-Axis rotary table and builds its first 5-Axis machine.*
- 1984** C.B.Ferrari 创立了软件技术部以开发自己的CAM软件。  
*C.B.Ferrari founds Tecnosoft, its CAM software division.*
- 1985** 软件技术部发布了第一版3D CAM软件。  
C.B.Ferrari 和意大利领先的Elexa公司共同研发了第一套基于PC的数控系统。  
*Tecnosoft releases its first 3D CAM software.  
C.B.Ferrari develops the first PC-based CNC in Europe, in cooperation with the Italian CNC leading company Elexa.*
- 1987** C.B.Ferrari 在意大利摩德纳建立了新工厂。  
*C.B.Ferrari opens a new plant in Modena (Italy).*
- 1992** C.B.Ferrari 自主研发并生产了第一根电主轴。  
*C.B.Ferrari builds its own first electro-spindle.*
- 1993** 软件技术部发布了专门应用于透平叶片制造的CAM软件。  
*Tecnosoft releases the CAM software for turbine blades machining.*
- 1994** C.B.Ferrari 售出了第一台用于发电机叶片加工的机床。  
*C.B.Ferrari sells the first machine for power-generation blades manufacturing.*
- 1998** 软件技术部发布了用于模拟加工过程的数字仿真软件。  
C.B.Ferrari 售出了第一台用于航空发动机叶片加工的机床。  
*Tecnosoft releases the software for machining's graphical simulation.  
C.B.Ferrari sells the first machine for aero-engine blades manufacturing.*
- 2003** C.B.Ferrari 生产了第一台配置直线电机和力矩电机的立式五轴加工中心。  
*C.B.Ferrari builds its first vertical 5-Axis Machine equipped with linear and torque motors.*
- 2008** 软件技术部发布了用于分析和优化机床性能表现的软件。  
*Tecnosoft introduces Dynamic Analysis and Tuning software.*
- 2009** C.B.Ferrari 成立了激光技术部。  
*C.B.Ferrari establish its own Laser Division.*
- 2010** 软件技术部改进了CAM软件，使其能够适用于整体叶盘和叶轮的加工。  
*Tecnosoft develops the CAM software for IBR's (blisks) and Impellers machining.*
- 2012** C.B.Ferrari 生产了第一台配有直线电机和力矩电机的卧式五轴加工中心。  
C.B.Ferrari 和瑞士Rofin Lasag 公司在激光技术应用领域签署独家协议。  
*C.B.Ferrari builds its first horizontal 5-Axis Machine equipped with linear and torque motors.  
C.B.Ferrari and Rofin Lasag sign an exclusive agreement for laser application development.*
- 2013** C.B.Ferrari 开发了适用于分度凸轮加工的机床与配套软件。  
*C.B.Ferrari develop machine and software for the cam machining.*
- 2015** C.B.Ferrari 发布了专为中型叶片加工而设计的N316机床。  
*C.B.Ferrari present the new N316 model for the medium size blades machining.*
- 2016** C.B.Ferrari 发布了专为超大型叶片加工而设计的N530机床，同年售出6台。  
*C.B.Ferrari present and supply 6 machines of the new model N530, for the machining of the biggest blades in the world.*



## 公司简介 THE COMPANY

### 传统与创新

伴随着自1966年起的不断突破、创新以及坚持对性能与精度的不懈追求，C.B.Ferrari 在广泛的加工应用领域内皆游刃有余，获得了市场的肯定与信任，这奠定了其在世界上高精度五轴加工中心生产商中的领导地位。

意大利是欧洲第二大机床生产国，也是世界第五大机床生产国。目前C.B.Ferrari在意大利运营两家工厂，共有170余名积极的高技术员工，在生产高精度机床上具备丰富的经验与优秀的传统，同时自主生产包含电主轴和旋转工作台在内的绝大多数机床部件，这一切使得C.B.Ferrari能保证产品优异的质量和可靠性。

C.B.Ferrari在世界范围内安装超过4500台机床，并就近提供及时的销售和售后服务。C.B.Ferrari确保客户能够获得极高水平的技术支持，并享受业内顶尖水准的机床性能与精度。

### TRADITION AND INNOVATION

*Since 1966 constant innovation, performance based approach and market recognized and consolidated superior accuracy, achieved in a wide variety of manufacturing applications, have led C.B.Ferrari to a world leading position in high precision 5-Axes CNC machining centers solutions.*

*Currently C.B.Ferrari operates with two manufacturing facilities in Italy, the second major machine manufacturing country in Europe and the fifth in the World. 170 skilled and highly motivated employees, enjoying the homeland long-standing tradition in precision mechanics, design and manufacture all machines in house including electro-spindles and rotary tables, ensuring extraordinary quality and reliability over the time.*

*With more than 4500 machines successfully installed worldwide, supported by a complete and prompt sales and service network, C.B.Ferrari ensures its customers the ultimate manufacturing support, achieving state-of-the-art results in terms of accuracy and performances.*

# 全面服务 *SERVICES*



## 服务内容 SERVICES



C.B.Ferrari 提供广泛的技术服务，包括：

- 全球范围的销售和服务网络
- 专有主轴、分度头的制造与维修
- **顶尖的专有CAM软件和仿真模拟软件**
- 交钥匙解决方案
- 机床操作示范及加工效率优化
- 精度和重复定位精度测试
- 定制自动化解决方案
- 旧机床翻新
- 全面的技术培训



*C.B.Ferrari offers comprehensive consulting, including:*

- *Worldwide Sales and Service Network*
- *Proprietary Spindles and Dividing Heads Manufacturing and Repair*
- ***Proprietary CAM and Simulation Software products***
- *Turnkey Projects*
- *Machine Demonstration and Time Studies*
- *Accuracy and Repeatability Tests*
- *Customized Automation Solutions*
- *Used machines Overhauls*
- *Training programs*

# LASER DIVISION



6

## 激光机床 *MACHINES WITH LASER SOURCE*

C.B.Ferrari 制造全系列三轴或五轴机床，配备国际知名品牌激光源。

*C.B.Ferrari manufactures a complete line of 3 or 5-Axes machines with Laser source of the major world brands.*

# 应用一览

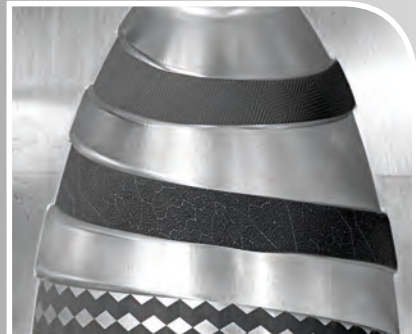
## APPLICATION SECTORS



2D纹理  
2D ENGRAVING



3D纹理  
3D ENGRAVING



3D纹理  
3D TEXTURING

航空航天  
医用医疗  
家用电器  
汽车行业  
电子产品  
模具制造  
手表珠宝  
能源发电  
刀具制造  
精密机械

AEROSPACE  
MEDICAL  
WHITE GOODS  
AUTOMOTIVE  
ELECTRONICS  
DIES AND MOULDS  
WATCH & JEWELRY  
ENERGY  
CUTTING TOOLS  
PRECISION COMPONENTS



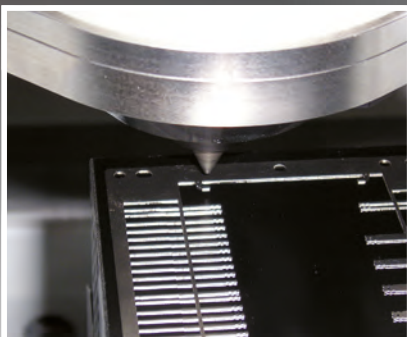
3D纹理  
3D TEXTURING



3D纹理  
3D TEXTURING



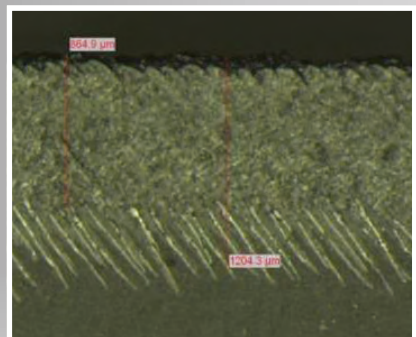
焊接  
WELDING



切割  
CUTTING



打孔  
DRILLING



连杆划线  
CONROD SCRIBING

## 激光机床

### MACHINES WITH LASER SOURCE

#### LASER 513

一轴或三轴机床 • 1 OR 3 AXIS VERSION

行程 Travels <b>XYZ</b>	*150-140-250 mm
外形尺寸 Dimension	700x1250x1800 mm
重量 Weight	700 kg
电压 Power supply	230 V ± 10%

\*可选项 Option = 320-140-320 mm



#### LASER 813

三轴或五轴机床 • 3 OR 5 AXIS VERSION

行程 Travels <b>XYZ</b>	320-320-320 mm
外形尺寸 Dimension	1100x1900x2200 mm
重量 Weight	1500 kg
电压 Power supply	400 V ± 10%



#### LASER 813 NANO

三轴或五轴机床 • 3 OR 5 AXIS VERSION

行程 Travels <b>XYZ</b>	320-320-320 mm
外形尺寸 Dimension	1100x1900x2200 mm
重量 Weight	2000 kg
电压 Power supply	400 V ± 10%

#### LASER 1100

三轴机床 • 3 AXIS VERSION

行程 Travels <b>XYZ</b>	630-250-320 mm
外形尺寸 Dimension	1500x2000x2100 mm
重量 Weight	1500 kg
电压 Power supply	400 V ± 10%





## LASER 1300

三轴或五轴机床 • 3 OR 5 AXIS VERSION

行程 Travels <b>XYZ</b>	650-320-320 mm
整机尺寸 Dimension	2400x2200x2300 mm
重量 Weight	4000 kg
电压 Power supply	400 V ± 10%



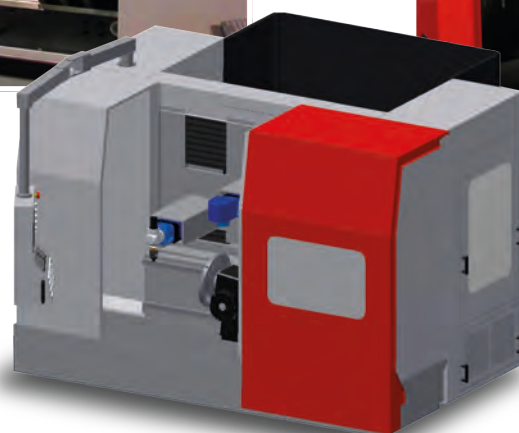
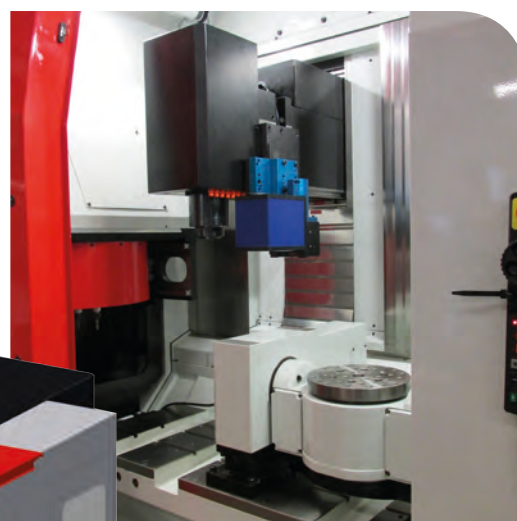
## LASER 1500

三轴或五轴机床 • 3 OR 5 AXIS VERSION

行程 Travels <b>XYZ</b>	850-420-420 mm
整机尺寸 Dimension	2600x2200x2300 mm
重量 Weight	5500 kg
电压 Power supply	400 V ± 10%

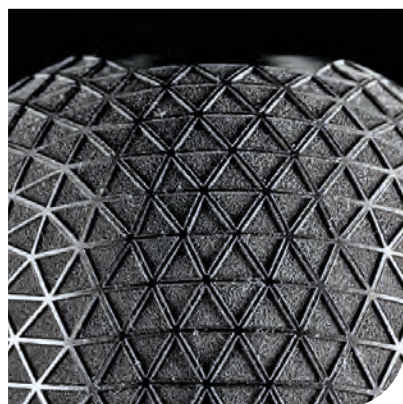
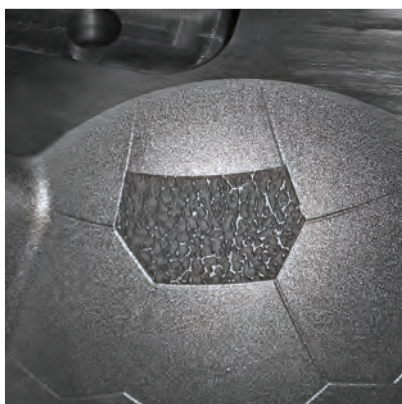
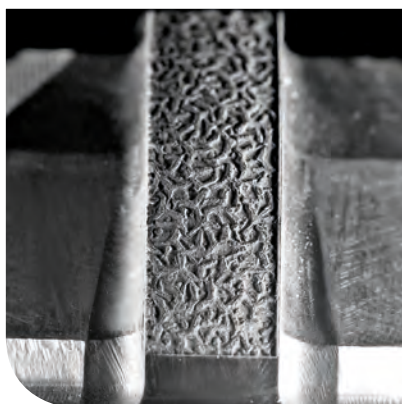
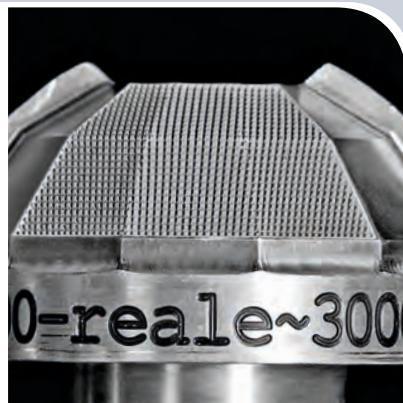
9

## 个性化机床 SPECIAL MACHINES

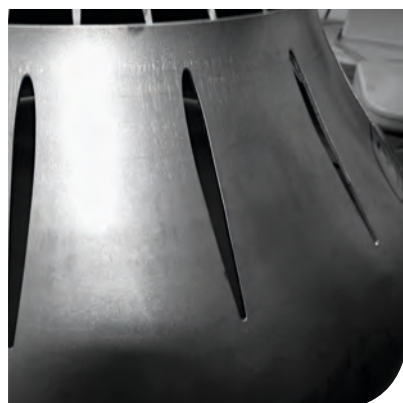
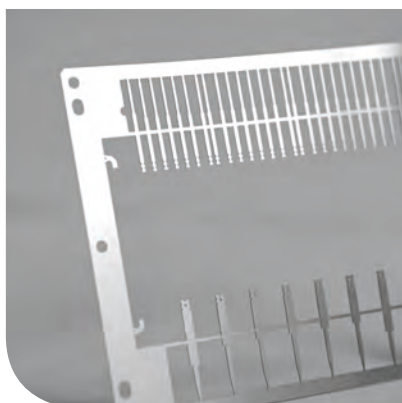


## 案例展示 *APPLICATIONS*

### 纹理雕刻 *ENGRAVING*

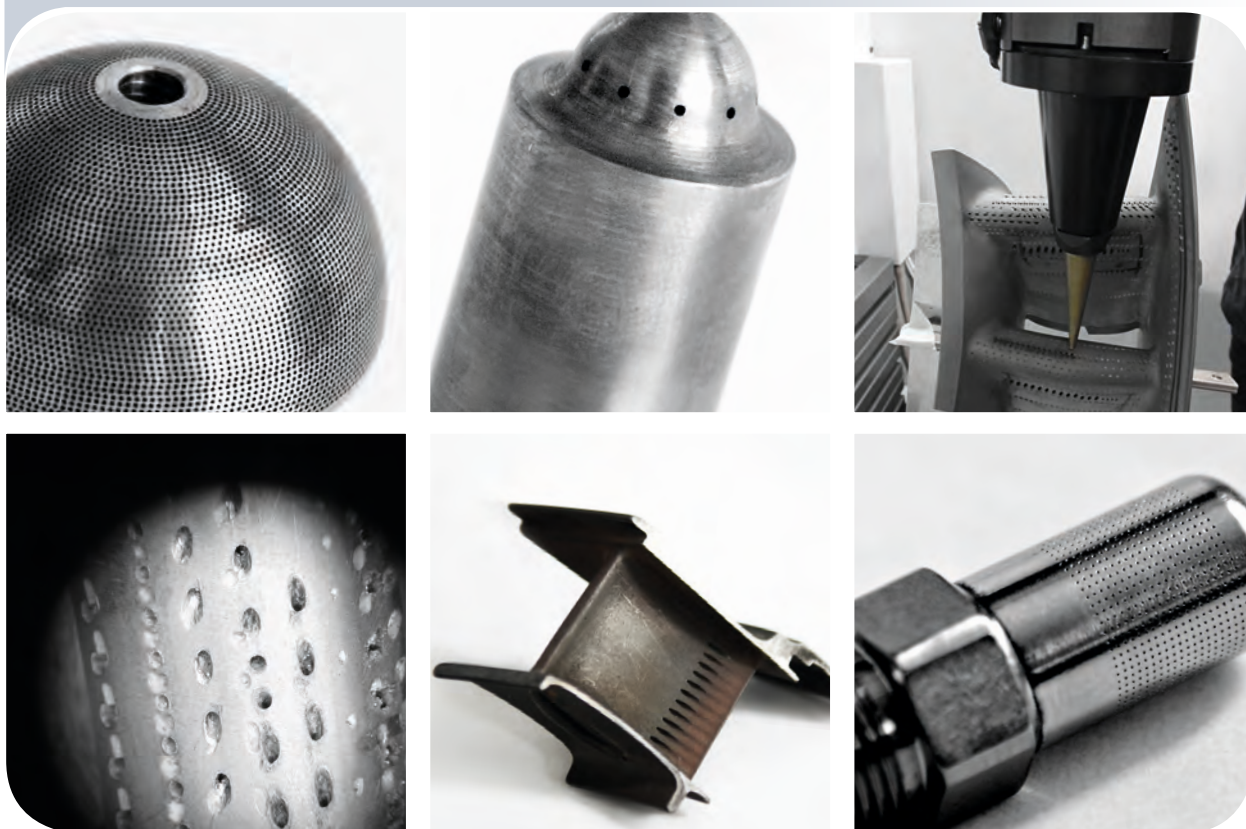


### 激光切割 *CUTTING*



## 案例展示 *APPLICATIONS*

### 激光打孔 *DRILLING*



### 激光焊接 *WELDING*



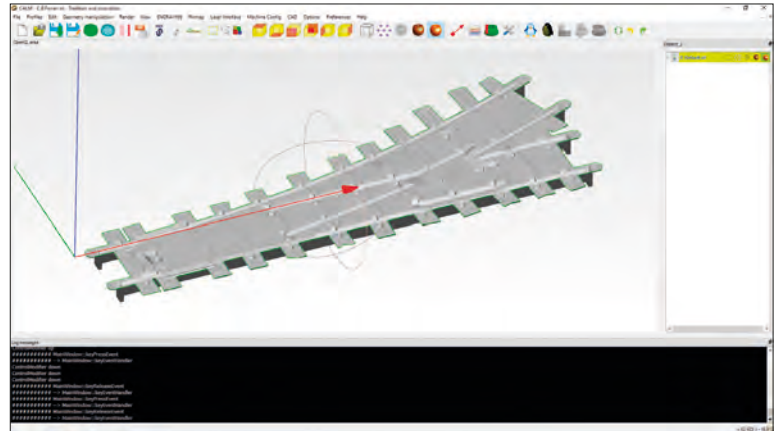
# CALM COMPUTER AIDED LASER MANUFACTURING

专为激光熔融制造而设计的界面友好的CAM软件

*User friendly CAM dedicated to laser ablation manufacturing*

软件采用模块化设计  
*Modular architecture software*

- 通过检流计扫描头激光打标  
*Marking with galvo head*
- 3轴深度雕刻  
*3 axis deep engraving*
- 4或5轴深度雕刻  
*4-5 axis deep engraving*

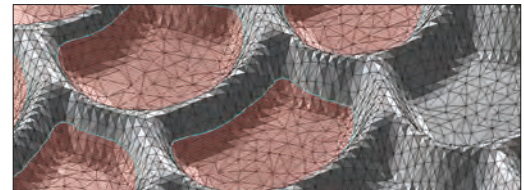


支持多种输入文件格式  
*Different input file formats*

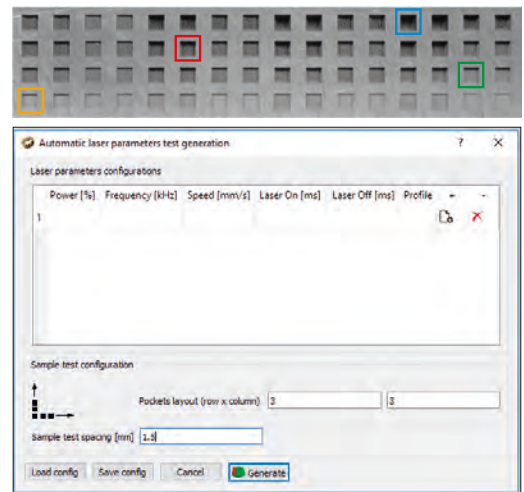


12

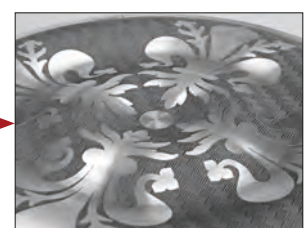
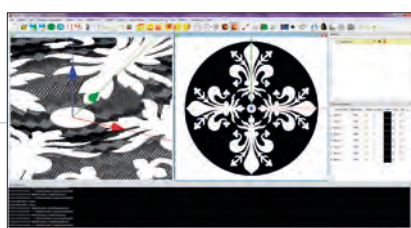
3D模拟激光熔融的过程  
*Possibility to simulate the laser ablation process in 3D*



自动设置激光参数  
*Automatic routines for laser parameters setting*



简单操作即可实现模型到模具  
*From model to mould in one click*



## TS 115

专为激光切割和激光打孔设计的界面友好的CAM软件

*User friendly CAM dedicated to laser cutting / drilling manufacturing*

支持多种输入文件格式

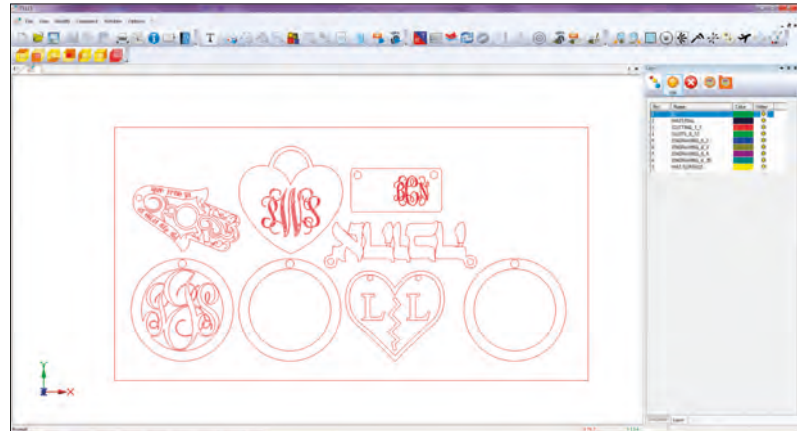
*Different input file formats*

- CAD文件 (AutoCAD DXF, 2D-IGES)
- CNC的G代码数据格式
- 文本格式 (字体模块)

快速CNC程序设计:

从CAD到CNC文件只需四步

*Quick CNC program design: from CAD to CNC file in 4 steps.*

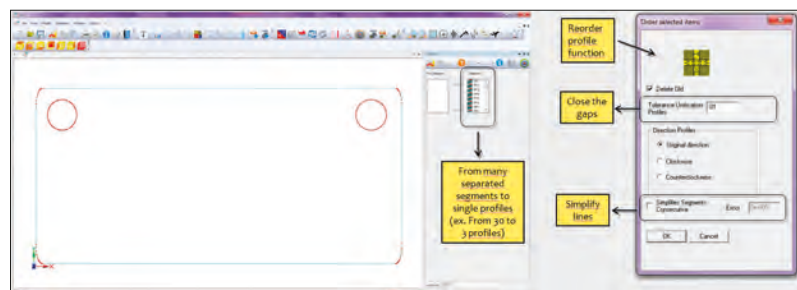


功能先进的系统

- 可将CAD数据转换为各类曲线 (多段线、样条曲线和圆等)
- 修复各元素连接时可能会产生的缝隙或多余线条
- 轻松实现以下功能:  
调整激光路径方向 (逆时针<->顺时针)、  
显示元素起止点、计算重心位置、  
测量距离等
- 激光半径补偿功能减少了更换机床时可能会产生的误差
- 可为每个轮廓单独设置偏移量或缩放量

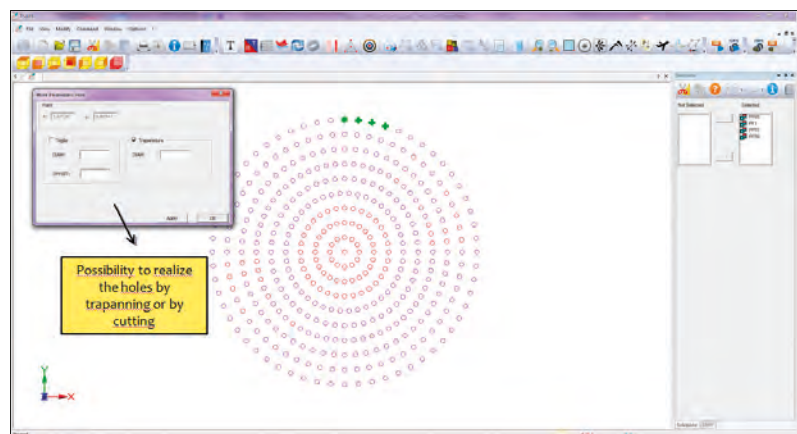
*Advanced functions system*

- *CAD data conversion into curves (polylines, splines, circles...)*
- *repair function to close the gaps and the autointersections*
- *Easy functions to invert rotation profile (CCW<->CW), draw profile nodes, calculate barycenter, measuring distance...*
- *Laser radius compensation for easy switching to a different machine*
- *individual offset values for contours*



自动识别剖面内的孔

*Automatic identification of holes inside profiles*



## 数控系统选项 AVAILABLE CONTROLS



西门子 840D SL



海德汉 TNC 640



博世 L45/L65

14

## 绝对测量系统 ABSOLUTE MEASURING SYSTEM



所有回转轴标配海德汉绝对编码器  
分辨率达到 $0.0001^\circ$

*All rotary axes are equipped with Heidenhain absolute encoders. Resolution  $0.0001^\circ$*



所有机床标配海德汉绝对光栅尺

*All machines are equipped with Heidenhain absolute linear scales.*



# C.B.Ferrari

**C.B. FERRARI S.r.l. a socio unico**  
*Società soggetta a direzione  
e coordinamento di  
Jingcheng Holding Europe GmbH  
Coburg, Germany*

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