

传承
与创新
TRADITION
& INNOVATION

COMPANY
PROFILE

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 was founded on 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 financing partner starting 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 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.
- 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 develops 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 presents 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
- 机床大修
- 全面的技术培训



C.B.Ferrari offers comprehensive consulting, including:

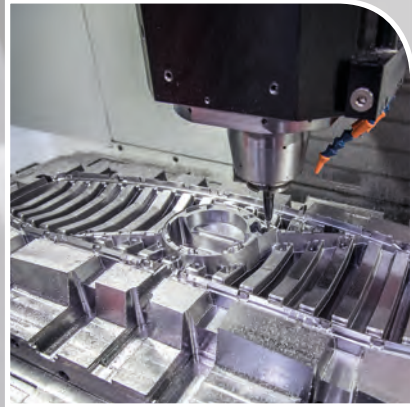
- *Worldwide Sales and Service Network*
- *Proprietary Spindles and Dividing Heads Manufacturing and Repair*
- ***Proprietary CAM and Simulation Software products***
- *Turnkey Projects*
- *Machine Demonstration and Time Studies*
- *Accuracy and Repeatability Tests*
- *Customized Automation Solutions*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



MILLING DIVISION

应用一览

APPLICATION SECTORS



航空航天
模具制造
医用医疗
透平叶片
汽车行业
刀具行业
精密机械
能源发电

AEROSPACE
MOULDS AND DIES
MEDICAL
TURBINE BLADES
AUTOMOTIVE
TOOLS
PRECISION MACHINERY
POWER GENERATION





电主轴 *ELECTROSPINDLES*

C.B.Ferrari 所有机床配备自主设计并制造的电主轴，
可以为其用户提供以下卓越的优势：

- 库存有充足的备用电主轴
- 响应时间短且主轴易于更换
- 低廉的维修费用
- 减少机床停机时间

同时包含：

- 陶瓷球轴承
- 集成同步电机
- 温度控制功能
- 液体冷却系统
- 刀具轴向热变形自动补偿

可倾电主轴的摆动可为机械驱动或力矩电机驱动（选配）

C.B.Ferrari design and manufactures in house all the electrospindles its machines are equipped with, offering remarkable advantages to its customers:

- *Spare spindles always available*
- *Easy of replacement with minimum intervention time*
- *Low repair cost*
- *Reduced machine downtime*

Also include:

- *Ceramic ball bearings*
- *Integrated synchronous motor*
- *Temperature controlled operation*
- *Liquid cooling system*
- *Automatic compensation of thermal expansion along the tool axis*

The tilting of the head can be mechanical or torque (optional)

40.000 RPM	HSK E40	10/14 kW	5/7 Nm	A - B - GM - GT - MCL MCO - ML - D - N - S
28.000 RPM	HSK E40	25,5/32,5 kW	18/23 Nm	
24.000 RPM	ISO V40-HSK A63	30 kW	42/59 Nm	
20.000 RPM	ISO V40-HSK A63	28 kW	63/83 Nm	
16.000 RPM	ISO V40-HSK A63	33 kW	105/140 Nm	
16.000 RPM	HSK A63	52 kW	150/240 Nm	
9.000 RPM	ISO V40-HSK A63	31/42 kW	130/175 Nm	
16.000 RPM	HSK A63	53/64 kW	170/236 Nm	D - N - S
16.000 RPM	ISO V45	53/64 kW	170/236 Nm	
12.000 RPM	ISO V50	53/64 kW	170/236 Nm	
10.000 RPM	ISO V50	63/82 kW	300/410 Nm	
6.500 RPM	ISO V50	41/45 kW	265/340 Nm	

铣削加工中心

MILLING MACHINES • MACHINING CENTRES

B 130

三轴机床 • 3 AXIS VERSION

行程 Travels XYZ	650-320-320 mm
进给速度 Feed rates XYZ	40-30-30 m/min.
主轴转速 Spindle speed	32000-40000 RPM
装夹范围 Clamping area	1200x400 mm



B 166

三轴机床 • 3 AXIS VERSION

行程 Travels XYZ	850-520-420 mm
进给速度 Feed rates XYZ	40-30-30 m/min.
主轴转速 Spindle speed	16000-20000-24000 32000-40000 RPM
装夹范围 Clamping area	1500x500 mm

五轴机床 • 5 AXIS VERSION

双摆转台 Tilting and rotary table	A 360° B 0° -115°
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10

SERIE A • A SERIES

VERSIONE A 3 ASSI • 3 AXIS VERSION

行程 Travels XYZ	A236 1220-310-465 mm NEW! A152 850-420-420 mm A156 850-520-420 mm A176 1050-520-420 mm A196 1620-520-420 mm
进给速度 Feed rates XYZ	40-40-30 m/min.
进给速度 Feed rates XYZ	50 m/min. - NEW A236!
主轴转速 Spindle speed	9000-16000-20000 24000-32000-40000 RPM

四轴机床 • 4 AXIS VERSION

连续摆动主轴头 Continuous head	B2 +/-91°
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五轴机床 • 5 AXIS VERSION

固定主轴头+2轴分度头 Fixed head + 2 axis dividing head	A 360° B1 +45° -135°
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六轴机床 • 6 AXIS VERSION

连续摆动主轴头+2轴分度头 Tilting Head + 2 axis dividing head	A 360° B1 -45° +135° B2 +/-91° A 360° B1 -15° +90° B2 +/-120° NEW A236!
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B系列 • B SERIES

三轴机床 • 3 AXIS VERSION

行程 Travels XYZ	B176 1050-520-420 mm B186 1450-520-420 mm
进给速度 Feed rates XYZ	40-40-30 m/min.
主轴转速 Spindle speed	9000-16000-20000 24000 32000-40000 RPM

四轴机床 • 4 AXIS VERSION

连续摆动主轴头 Continuous head	C +/-91°
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五轴机床 • 5 AXIS VERSION

旋转工作台+连续摆动主轴头 Rotary table + Head	A 360° C +/-91°
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M 110

三轴机床 • 3 AXIS VERSION

行程 Travels XYZ	1100-600-520 mm
进给速度 Feed rates XYZ	40 m/min.
主轴转速 Spindle speed	9000-16000-20000 24000 32000-40000 RPM
装夹范围 Clamping area	1200x600 mm

GM 85

五轴机床 • 5 AXIS VERSION

行程 Travels XYZ	850-600-520 mm
进给速度 Feed rates XYZ	40 m/min.
主轴转速 Spindle speed	9000-16000-20000 24000 32000-40000 RPM
装夹范围 Clamping area	Ø 550 mm
双摆转台 Tilting and rotary table	C 360° A +125° -35°



GT系列 • GT SERIES

三轴机床 • 3 AXIS VERSION

行程 Travels XYZ	GT1200 1200-620-620 mm GT1600 1600-820-850 mm GT2000 2000-820-850 mm
进给速度 Feed rates XYZ	30 m/min.
主轴转速 Spindle speed	16000-20000 RPM

四轴机床 • 4 AXIS VERSION

连续摆动主轴头 Continuous head	B +/-91°
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五轴机床 • 5 AXIS VERSION

旋转工作台+连续摆动主轴头 Rotary table + Head	C 360° B +/-91°
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配置直线电机和力矩电机的铣削加工中心

LINEAR AND TORQUE MOTORS MILLING MACHINES MACHINING CENTERS

ML 45

三轴机床 • 3 AXIS VERSION

行程 Travels XYZ	320-320-320 mm
进给速度 Feed rates XYZ	60 m/min.
主轴转速 Spindle speed	32000-40000 RPM

五轴机床 • 5 AXIS VERSION

双摆转台 Tilting and rotary table	C 360° B +/-100°
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12



MCL85 立式 • VERTICAL

五轴机床 • 5 AXIS VERSION

行程 Travels XYZ	600-850-520 mm
进给速度 Feed rates XYZ	60 m/min.
主轴转速 Spindle speed	9000-16000-20000- 24000 32000-40000 RPM
双摆转台 Tilting and rotary table	C 360° B +35° -125°

MCO85 卧式 • HORIZONTAL

五轴机床 • 5 AXIS VERSION

行程 Travels XYZ	800-650-780 mm
进给速度 Feed rates XYZ	60 m/min.
主轴转速 Spindle speed	9000-16000-20000- 24000 32000-40000 RPM
双摆转台 Tilting and rotary table	C 360° A +125° -35°



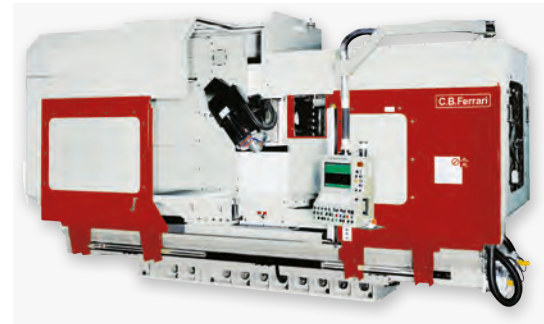
S系列 • S SERIES

四轴机床 • 4 AXIS VERSION

行程 Travels XYZ	S620 2000-820-1120 mm S630 3000-820-1120 mm
进给速度 Feed rates XYZ	40 m/min.
主轴转速 Spindle speed	12000-16000-20000 RPM
连续摆动主轴头 Continuous head	C +/-91°

五轴机床 • 5 AXIS VERSION

旋转工作台+连续摆动主轴头 Rotary table + Head	A 360° C +/-91°
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N系列 • N SERIES

六轴机床 • 6 AXIS VERSION

行程 Travels XYZU	N316 1400-620-820-1400 mm N516 2580-620-820-2580 mm N530 3000-820-820-3000 mm
进给速度 Feed rates XYZU	40 m/min.
主轴转速 Spindle speed	12000-16000-20000 RPM
同步分度头+连续摆动主轴头 Double dividing head + Tilting head	A 360° a 360° C +/-100°

13

D系列 • D SERIES

三轴机床 • 3 AXIS VERSION

行程 Travels XYZ	D230 1600-1600-820 mm ¹ DU2600 1040-1000-820 mm ² DU2300 1040-1270-820 mm * D420 2000-1600-820 mm * D430 3000-1600-820 mm * D422 2000-2200-820 mm * D432 3000-2200-820 mm
进给速度 Feed rates XYZ	40 m/min.
主轴转速 Spindle speed	12000-16000-20000 RPM

四轴机床 • 4 AXIS VERSION

连续摆动主轴头 Continuous head	A +/-91°
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五轴机床 • 5 AXIS VERSION

旋转工作台+连续摆动主轴头 Rotary table + Head	C 360° A +/-91°
双摆头 Bi-rotary head	A +/-100° C +/-240°

¹ 配备三个托盘 With 3 pallets

² 配备双摆转台 With rotary-tilting table

*可选 Z= 1000 mm



LASER DIVISION



14

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



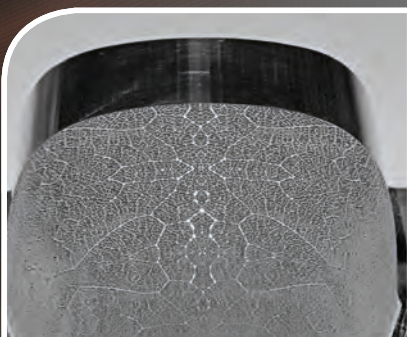
3D纹理
3D ENGRAVING



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



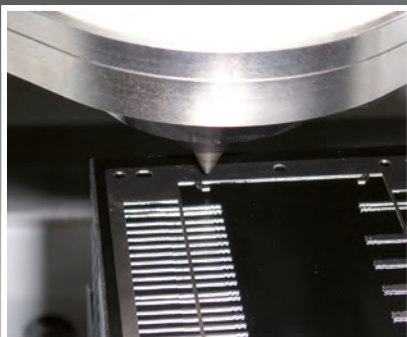
3D纹理
3D TEXTURING



3D纹理
3D TEXTURING



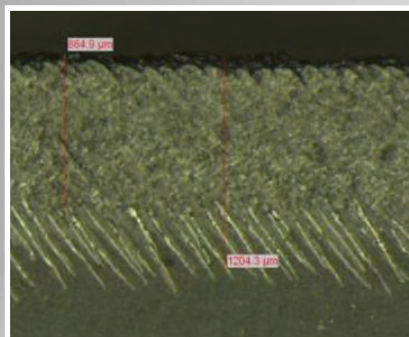
焊接
WELDING



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



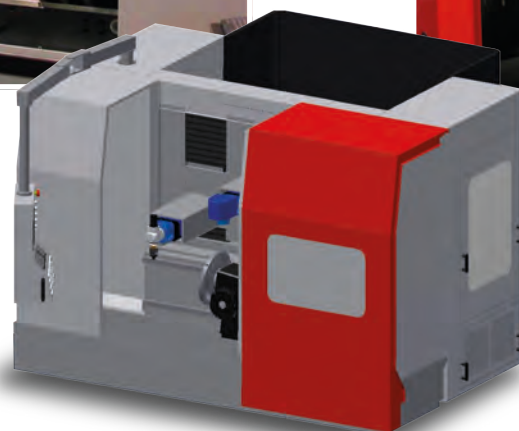
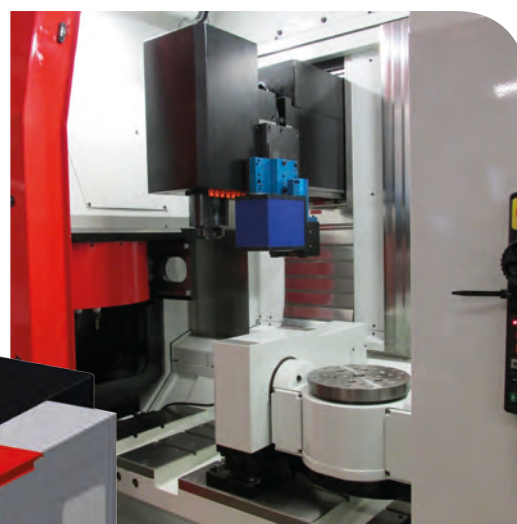
LASER 1500

三轴或五轴机床 • 3 OR 5 AXIS VERSION

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

17

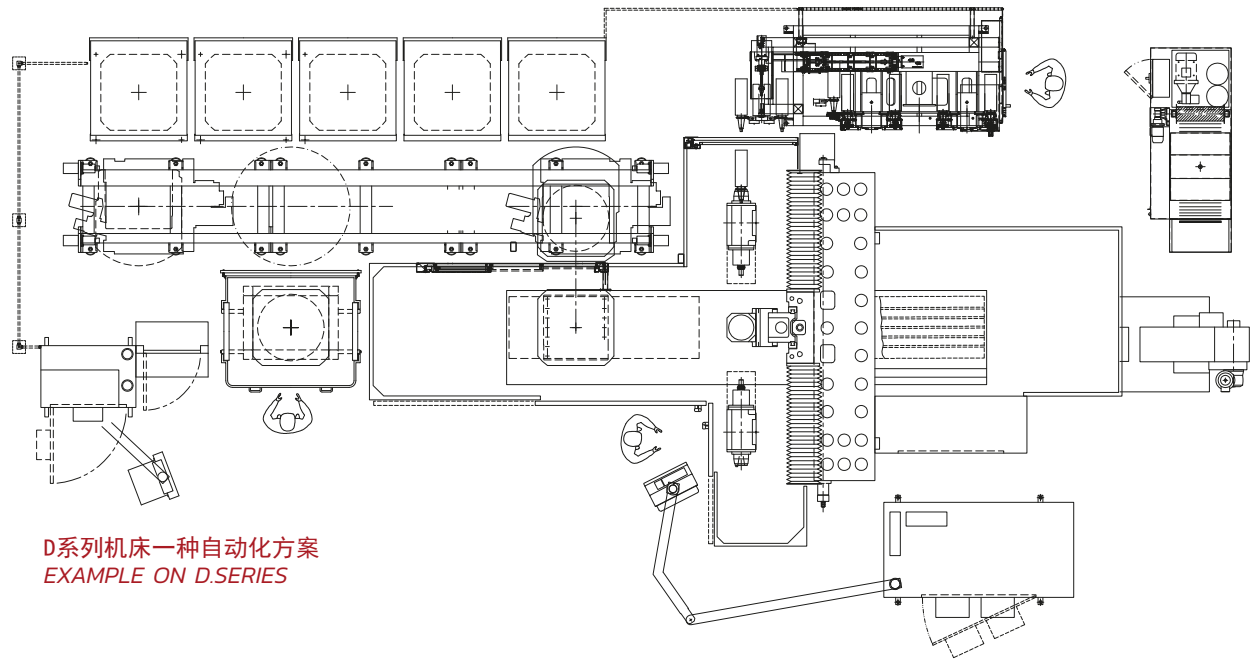
个性化机床 *SPECIAL MACHINES*



自动化解决方案 AUTOMATION SOLUTIONS

自动上下料的机械化系统
机床可配置由C.B.Ferrari或其他供应商提供的自动化装载机械手。

*ROBOTIZED SYSTEM FOR THE AUTOMATIC PIECES CHANGE
On the machining is possible to apply automatic loader, which can be produced by C.B.Ferrari
or from external suppliers.*



D系列机床一种自动化方案
EXAMPLE ON D.SERIES

18

数控系统选项 AVAILABLE CONTROLS

绝对测量系统 ABSOLUTE MEASURING SYSTEM



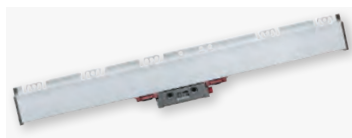
西门子 840D SL

海德汉 TNC 640



所有回转轴标配海德汉绝对编码器
分辨率达到0.0001°

*All rotary axes are equipped with Heidenhain
absolute encoders. Resolution 0,0001°*



所有机床标配海德汉绝对光栅尺

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

也可选用博世数控系统 *Also available Bosch CNC.*

配件一览 ACCESSORIES

机床可安装以下标准配件：

- 适用于钢件加工的排屑器
- 用于铝合金钛合金加工的排屑器
- 废气过滤器
- 75bar主轴中心出水
- 刀具气冷系统
- 刀具油气冷却系统
- 2D或3D接触式测头
- 接触式对刀仪
- 激光对刀仪
- 旋转视窗
- 根据要求可安装其他配件

The machine can be equipped with the following STANDARD accessories:

- Chips conveyor for Steel
- Chips conveyor for Aluminium/Titanium
- Exhaust filter
- Through spindle coolant system 75 bar
- Tool blower air system (standard)
- Tool blower air/oil system
- 2D or 3D Touch probe
- Touch tool setting device
- Laser tool setting device
- Spin window on door (rotoclear)
- Other options available on request



中心出水冷却单元 - 75 BAR
460升水箱 - 鼓式过滤器

THROUGH SPINDLE COOLANT GROUP - 75 BAR
460 lts tank - Drum filter



2D-3D 工件测量系统
2D-3D control piece group



激光对刀仪
Laser tools setting device



接触式对刀仪
Contact tools setting device

可对旧机床的工作台、分度头
以及电主轴进行升级。

Possibility to update
C.B.Ferrari used machines, with
new tables, dividing heads
and electrospindles.



C.B.Ferrari

C.B. FERRARI S.r.l. a socio unico
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