



MCL 85

C.B.Ferrari

www.cbfeerrari.com

The background of the page is a dark, high-contrast photograph of a complex industrial machine, likely a CNC lathe or mill, with various components like cables and structural parts visible. The lighting is dramatic, highlighting the metallic surfaces and the intricate design of the machinery.

C.B.Ferrari

**TRADITION AND
INNOVATION**

公司简介 COMPANY

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游刃有余，获得了市场的信任与肯定，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和优秀的传统，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和精度。



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 fourth in the World. 160 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 over than 4300 machines successfully installed worldwide, supported by a close 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.

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MCL 85

MCL 85 - 高速高精度

新型5轴立式加工中心MCL85配置直线电机，其设计和开发的初衷是在保证高精度的基础上，显著减少加工时间。

现代生产加工需要更高的速度和加速度，同时还要具有很高的定位精度和可靠性，同时减少维护时间。

凭借优秀的机床结构，新型MCL85具有非常高的动态性能，并在各种应用中具有很高的加工精度，例如：模具构造，精密机械，汽车和航空航天。

直线电机、扭矩电机和电主轴具有温度补偿功能，从而确保了机床的完整热稳定性。

得益于C. B. Ferrari设计和制造的电主轴的高功率和高扭矩，MCL85可以最高效率地进行粗加工和精加工。

摇篮式转台的两个轴皆配置力矩电机，保证了极大的运动流畅性和很高的表面光洁度。

MCL85配备了新的Siemens 840D sl或Heidenhain iTNC 640 CNC，它们通过易于使用的图形界面为操作员提供了极高的性能、可靠性、安全性和稳定性。

得益于C. B. Ferrari最新一代的专有校准系统，MCL85能够获得比其他类型的解决方案快得多的加工时间。

MCL 85 - HIGH SPEED MACHINING WITHOUT COMPROMISE

The new 5 linear axes **vertical** machining center **MCL 85**, is designed and developed to provide high accuracy, combined with short machining times.

The modern production cycles require high speed and accelerations, combined with maximum positioning accuracies with longer service life and reduced maintenance time.

The new MCL 85, thanks to its rigid but extremely dynamic design concept, allows to achieve both high performance and constant precision in a wide variety of machining applications such as: mold manufacturing, precision mechanical components, automotive and aerospace industries.

Temperature-controlled linear, torque and spindle motors all combine to deliver full thermal stability.

With the high power and torque of the electrospindles, designed and built by C.B. Ferrari, on MCL 85 it is possible to perform both finishing and roughing processes achieving maximum efficiency.

The integration of the rotary and tilting table, thanks to its two continuous torque motors driven axes, contributes to achieve motion smoothness and extremely high surface finishes.

The MCL 85 can be either equipped with Siemens 840D-sl or Heidenhain iTNC 530 CNC providing a stable, secure and reliable performance with an operator-friendly graphical user interface. C.B. Ferrari proprietary, next generation, performance based tuning system delivers the fastest cycle times on complex shaped parts, dies, cavities and cores compared to other solutions.



MCL 85

直线电机五轴加工中心
5-AXIS LINEAR MACHINING CENTER

技术参数 FEATURES

行程 SLIDE TRAVELS

X - Longitudinal	600 mm
Y - Cross	850 mm
Z - Vertical	520 mm

测量系统 MEASURING SYSTEM

海德汉绝对光栅尺 Absolute optical linear scales

轴 AXES

进给速度 Feed rates XYZ	60 m/min
推力 Thrust	15000 N

加速度 ACCELERATION

直线轴 Linear XYZ	10 m/s ²
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操作系统 CNC-CONTROL

Heidenhain	iTNC 640
Siemens	840D sl

刀库 TOOL CHANGER

带机械手的链条式刀库 Chain type with exchanging arm

数量 Positions	60
屑-屑换刀时间 Changing time chips/chips	5 s
刀具最大长度 Max. tool length	230 mm
刀具最大直径 Max. Tool diameter	150 mm
刀具最大重量 Max tool weight	5 kg

2轴摇篮式转台 2 AXIS SWIVELING ROTARY TABLE

夹持区间 Clamping area	Ø 500-600 mm
旋转、摆动范围 Rotary and tilting	A 360° B +35 -125°
速度 Feed rates	A B 80 RPM
推力 Axis thrust	A 700 N B 1600 N
主轴鼻端与台面距离 Distance spindle nose-table	80-600 mm
最大负载 Max. table load	300 kg

尺寸与重量 DIMENSION AND WEIGHTS

整机尺寸 Dimensions	4200x2400 H=3410 mm
重量 Weight	12000 kg
功率 Rating power	45 kW

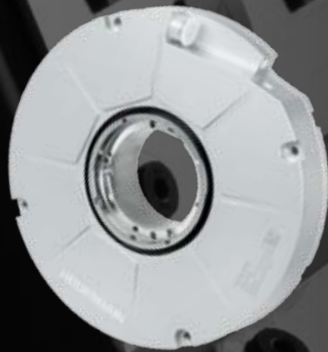
CNC操作系统 AVAILABLE CONTROLS



Siemens 840D sl



Heidenhain iTNC 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°



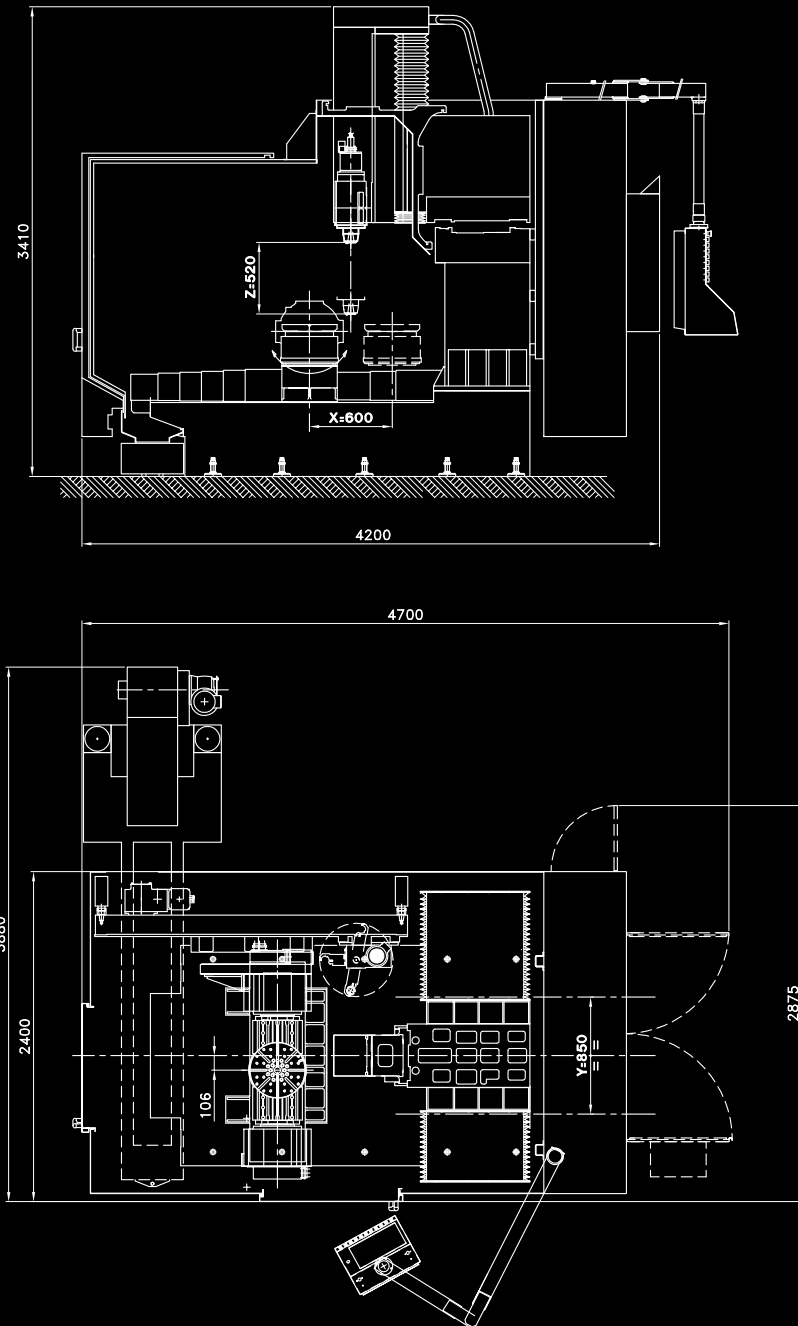
所有机床标配海德汉绝对光栅尺

All machines are equipped with
Heidenhain absolute linear scales.

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机床平面图 MACHINE LAYOUT



行程 SLIDE TRAVELS

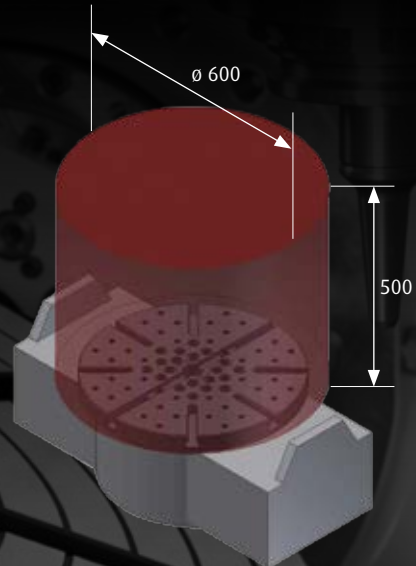
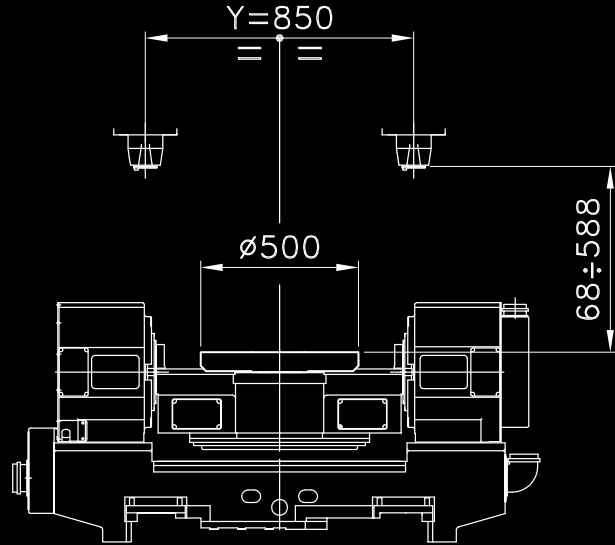
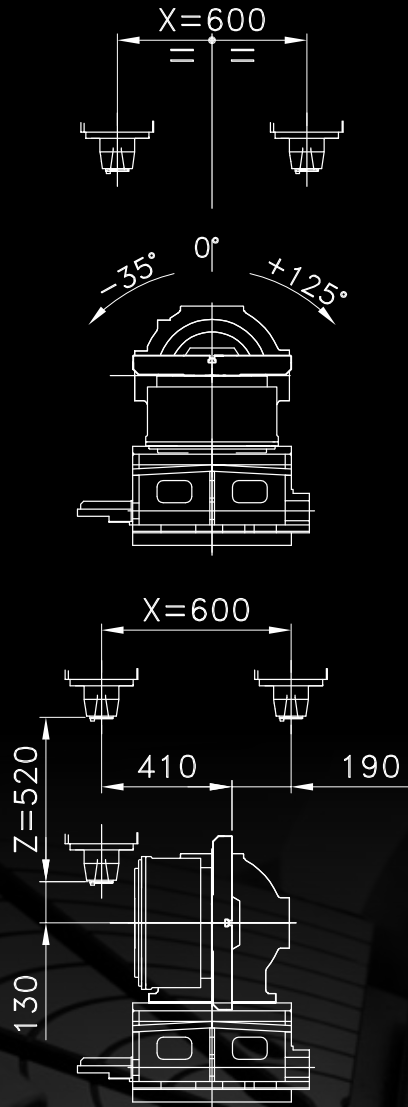
X - Longitudinal	600 mm
Y - Cross	850 mm
Z - Vertical	520 mm

尺寸与重量 DIMENSION AND WEIGHTS

整机尺寸 Dimensions	4200x2400 H=3410 mm
重量 Weight	12000 kg
功率 Rating power	45 kW

2轴摇篮式转台

2 AXIS SWIVELING ROTARY TABLE



夹持区间 **Clamping area**
 旋转、摆动范围 **Rotary and tilting**
 速度 **Feed rates**
 推力 **Axis thrust**
 主轴鼻端与台面距离 **Distance spindle nose-table**
 最大负载 **Max. table load**

$\phi 500-600$ mm
A 360° **B** $+35 -125^\circ$
A **B** 80 RPM
A 700 N **B** 1600 N
 80-600 mm
 300 kg

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MCL 85

ELETTROMANDRINI 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

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
- Ease of replacement with minimum intervention time
- Low repair cost
- Reduced machine downtime

陶瓷球轴承 Ceramic ball bearings

集成同步电机 Integrated synchronous motor

温度控制功能 Temperature controlled operation

液体冷却系统 Liquid cooling system

极短的加速和制动时间 Short acceleration and brake time

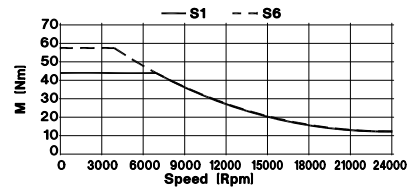
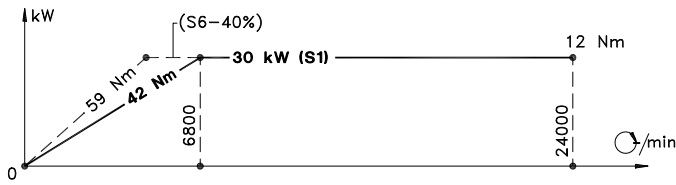
极短的加速和制动时间 Short acceleration and braking times

刀具轴向热变形自动补偿

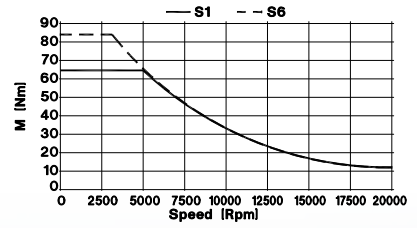
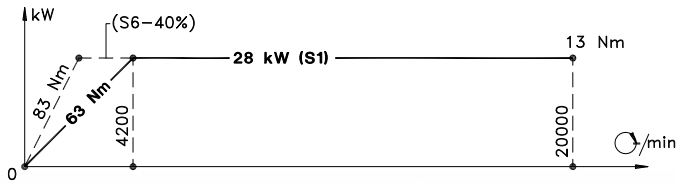
Automatic compensation of thermal expansion along the tool axis



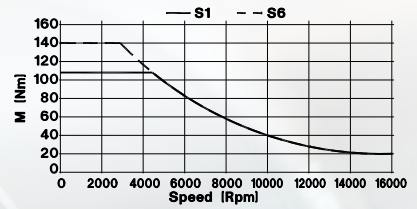
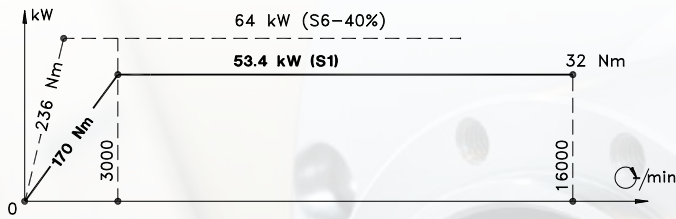
24000 RPM
30 kW
42/59 Nm



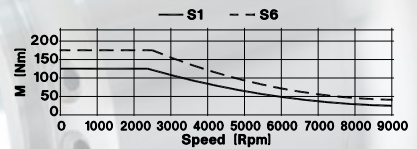
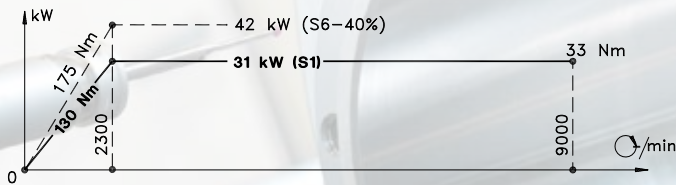
20000 RPM
28 kW
63/83 Nm



16000 RPM
53.4/64 kW
170/236 Nm



9000 RPM
31/42 kW
130/175 Nm



电主轴参数 ELECTRO-SPINDLE HEADS

24000 RPM	ISO V40	30 kW	42/59 Nm	Type 050486
24000 RPM	HSK-A63	30 kW	42/59 Nm	Type 050488
20000 RPM	ISO V40	28 kW	63/83 Nm	Type 051556
20000 RPM	HSK-A63	28 kW	63/83 Nm	Type 051557
16000 RPM	ISO V40	33 kW	105/140 Nm	Type 050477
16000 RPM	HSK-A63	33 kW	105/140 Nm	Type 050478
9000 RPM	ISO V40	31/42 kW	130/175 Nm	Type 050498
9000 RPM	HSK-A63	31/42 kW	130/175 Nm	Type 050499

机床附件 ACCESSORIES

机床根据要求可安装以下标准配件

THE MACHINE CAN BE EQUIPPED WITH THE FOLLOWING ACCESSORIES ON REQUEST

用于铝合金钛合金加工的排屑器 Chips conveyor for Aluminium/Titanium

废气过滤器 Exhaust filter

75bar 主轴中心出水 Through spindle coolant system 75 bar

刀具气冷系统 Tool blower air system (standard)

刀具油气冷却系统 Tool blower air/oil system

2D或3D测头 2D or 3D Touch probe

接触式对刀仪 Touch tool setting device

激光对刀仪 Laser tool setting device

圆形视窗 Spin window (rotoclear)

遥控手轮 Remote handwheel

根据要求可安装其他备件 Other options available on request



中心出水冷却单元 - 75 BAR
500升水箱 - 鼓式过滤器

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



2D-3D 工件测量组件
2D - 3D CONTROL PIECE GROUP



激光对刀仪
LASER TOOLS SETTING DEVICE



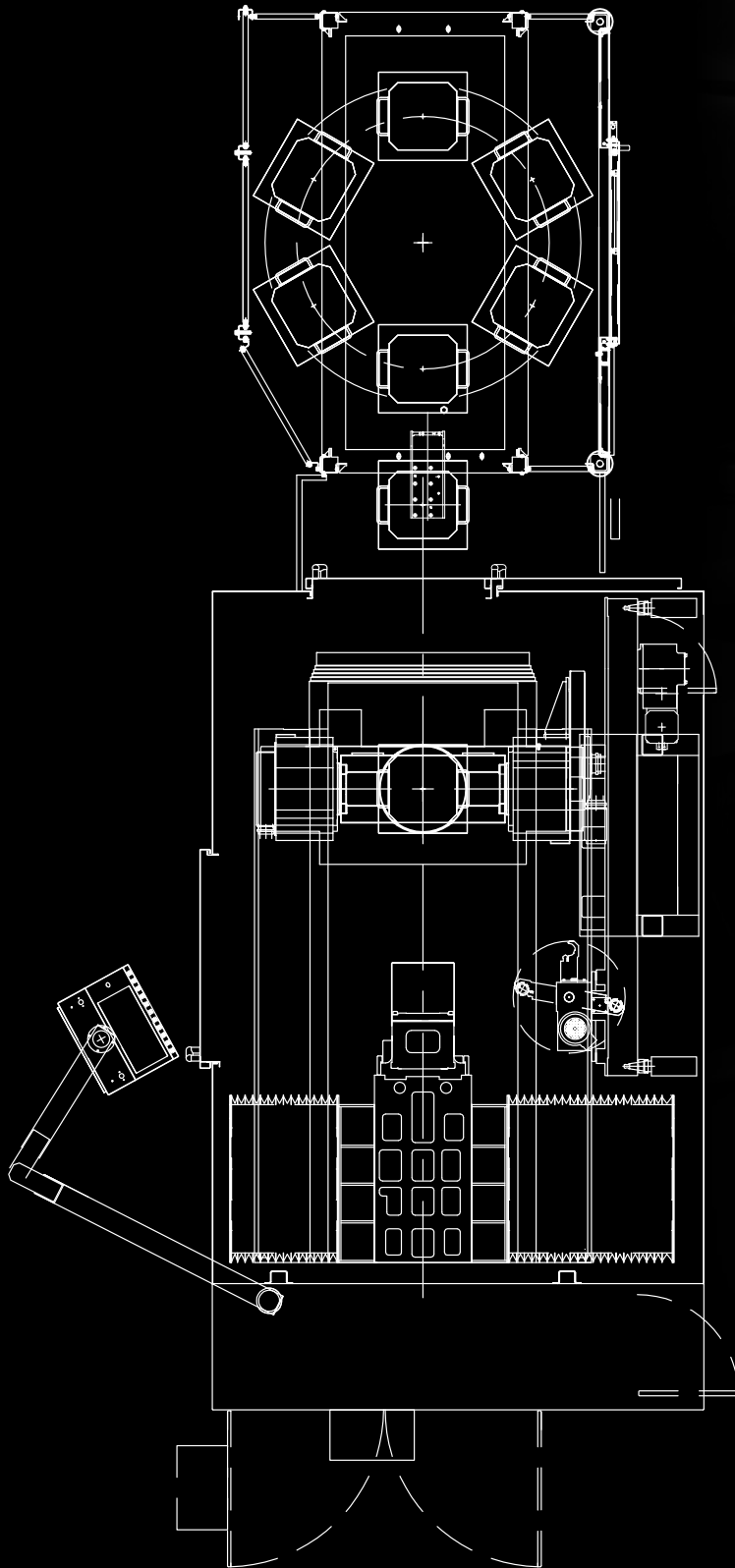
接触式对刀仪
CONTACT TOOLS SETTING DEVICE

自动化方案

AUTOMATION SOLUTIONS

在MCL85加工中心上，可以使用自动托盘交换系统，该系统可以由C. B. Ferrari或其他外部供应商生产。

On the machining Center **MCL 85** is possible to apply automatic loader, which can be produced by C.B.Ferrari or from external suppliers.



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MCL 85



直线电机5轴加工中心 5-AXIS LINEAR MACHINING CENTERS



GM 85

行程 TRAVELS XYZ: 850-600-520 mm



ML 45

行程 TRAVELS XYZ: 420-320-320 mm



MCO 85

行程 TRAVELS XYZ: 800-650-780 mm

其他型号
OTHERS TYPE AVAILABLE

激光机床 MACHINES WITH LASER HEAD

C. B. Ferrari 生产完整的3轴和5轴激光机床，用于以下应用：
标记、切割、3D雕刻、钻孔、焊接、划线
索取以获得产品目录

C.B. Ferrari manufactures a complete line of 3 or 5-Axes machines with Laser head for the following applications:
MARKING-CUTTING ENGRAVING 3D-DRILLING-WELDING-SCRIBING Require the specific catalogue



TRADITION **AND** INNOVATION



C.B. Ferrari

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