

动柱式
加工中心

MOBILE COLUMN
MACHINING CENTRE

GT 系列
GT 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 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*

充满现代感的全新设计

NEW AND MODERN DESIGN

C.B.Ferrari



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扎实稳固、紧凑简洁、应用广泛、性能强劲

STRONG, COMPACT, VERSATILE AND POWERFUL



应用一览

APPLICATION SECTORS



模具制造
医用医疗
汽车行业
精密机械

MOULDS AND DIES
MEDICAL
AUTOMOTIVE
PRECISION MACHINERY



GT 1200 - GT 1600 - GT 2000 系列

GT 1200 - GT 1600 - GT 2000 SERIES

新GT系列机床呈现了诸多亮点，尤其是引人瞩目的外观设计和广阔的加工范围：

GT 1200 X= 1200 Y= 620 Z= 620 mm
GT 1600 X= 1600 Y= 820 Z= 850 mm
GT 2000 X= 2000 Y= 820 Z= 850 mm

充足的行程范围使得GT系列机床的三个型号在同类产品中脱颖而出。
轴向运动的高动态性能和依旧稳定的高精度使得GT系列尤其适合模具行业以及表面精加工等级要求高的精密部件制造行业。

GT1600和GT2000皆有3轴、4轴或5轴配置。

5轴配置下将会在固定工作台的基础上配备一个旋转工作台。

在GT1200上，固定工作台的尺寸为700x700 mm，旋转工作台直径为630 mm，而在GT1600 / 2000版本中，固定工作台的尺寸为1000x1500 mm，旋转工作台直径为750或840 mm。
关于电主轴，可以在我们生产的两种标准类型的电主轴之间进行选择：

- 9.000 RPM - 31/42 kW - 130/175 Nm
 - 16.000 RPM - 33 kW - 105/140 Nm
 - 20.000 RPM - 28 KW - 63/83 Nm
 - 刀柄 HSK A63 或 ISO V40
- 参数不同的其他类型的电主轴也可在评估后配备。

刀库类型亦有不同的选择：

GT 1200可以配置24刀位的斗笠式刀库或者60刀位的带机械手的链条式刀库。
GT1600/2000可以配置30刀位的斗笠式刀库或者60刀位的带机械手的链条式刀库。

CNC数控系统可选择Heidenhain TNC 640或Siemens 840D sl.

The new GT Series presents several innovations, in particular the new very attractive design and above all a very large working area:

GT 1200 X= 1200 Y= 620 Z= 620 mm
GT 1600 X= 1600 Y= 820 Z= 850 mm
GT 2000 X= 2000 Y= 820 Z= 850 mm

*The wide travels bring the three model at the top of their categories.
Its precision and the high dynamics of the axis movements, make it particularly suitable for the dies&mould industry and for machining that requires high accuracy with elevate degrees of finishing surfaces.*

*The GT's models can be configured with 3, 4 or 5 continuous Axes.
In the 5-Axes version the rotary table is incorporate in a fixed table.
On the GT1200, the shaped fixe table has 700x700 mm dimensions and one faceplate of 630 mm diameter, while in the GT1600/2000 version, the shaped fixed table has 1000x1500 mm dimensions, with faceplate of diameter 750 or 840 mm.*

Concerning the spindle motorization, is possible to choose between two standard types of our production electrospindles:

- 9.000 RPM - 31/42 kW - 130/175 Nm
 - 16.000 RPM - 33 kW - 105/140 Nm
 - 20.000 RPM - 28 KW - 63/83 Nm
 - Taper HSK A63 or ISO V40
- The application of other motorization can be evaluated.*

*Is possible to choose to different type of Tool Magazines:
On the GT1200 the 24T, or the 60T chain type with exchanging arm.
On the GT1600/2000 the 30T, or the chain type with 60T and exchanging arm .*

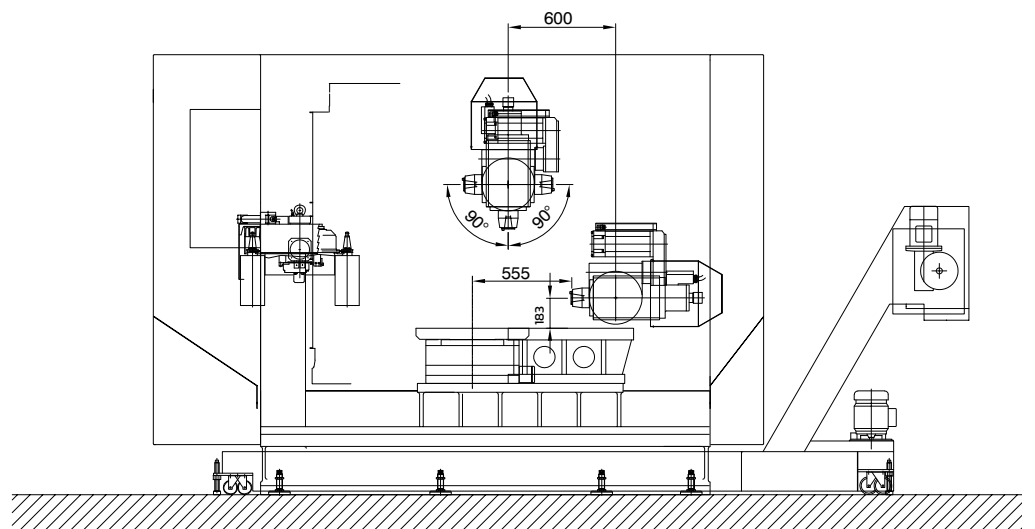
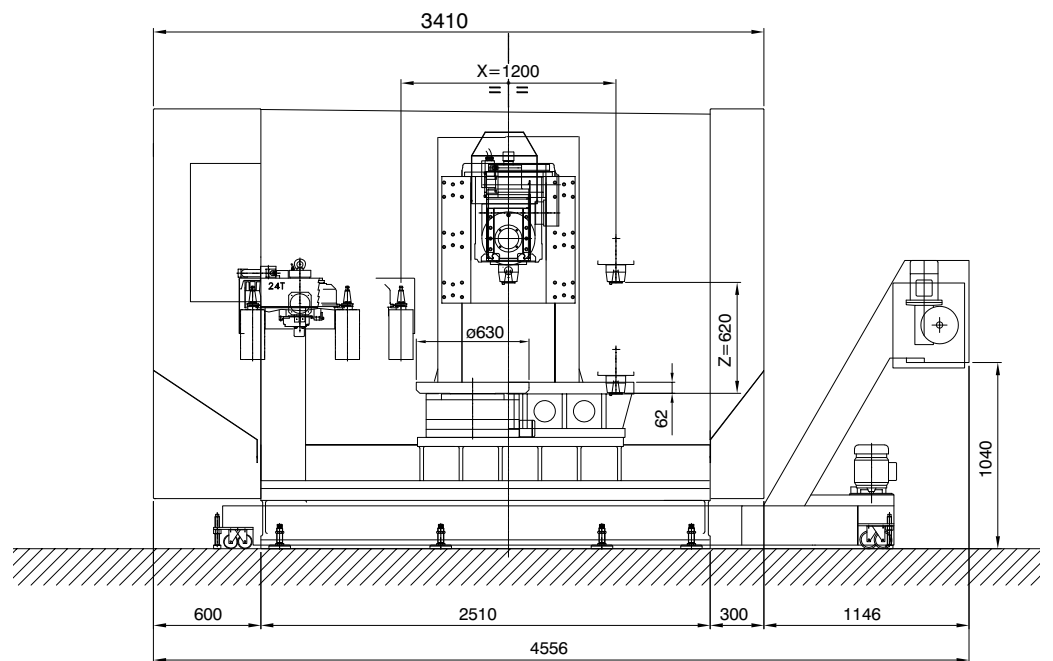
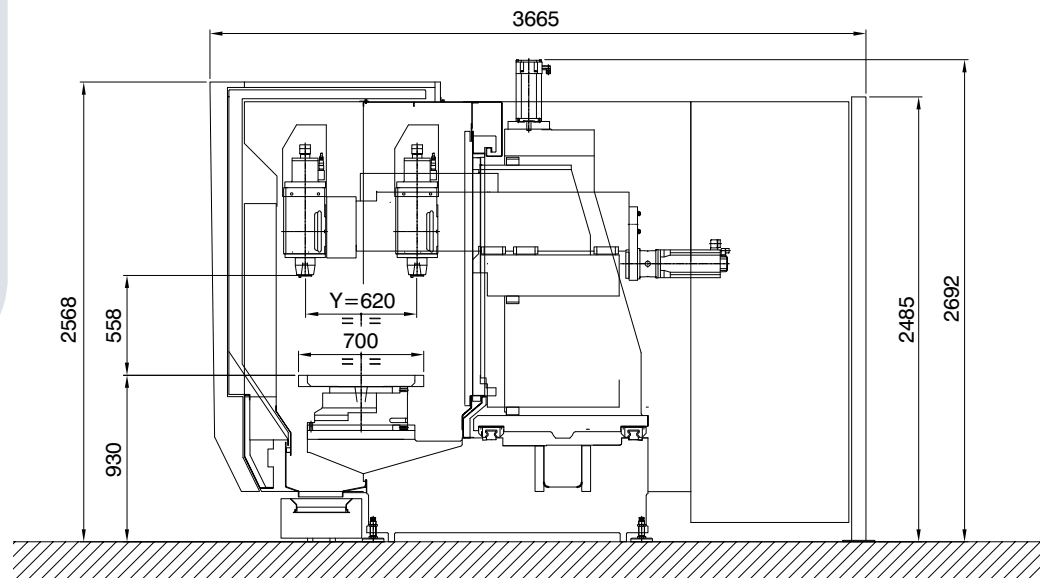
Are available two NC controls: Heidenhain TNC640 or Siemens 840D sl.

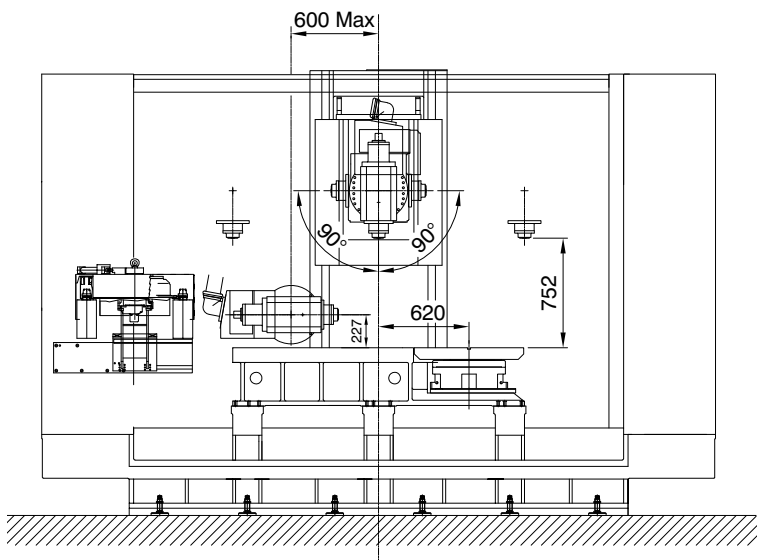
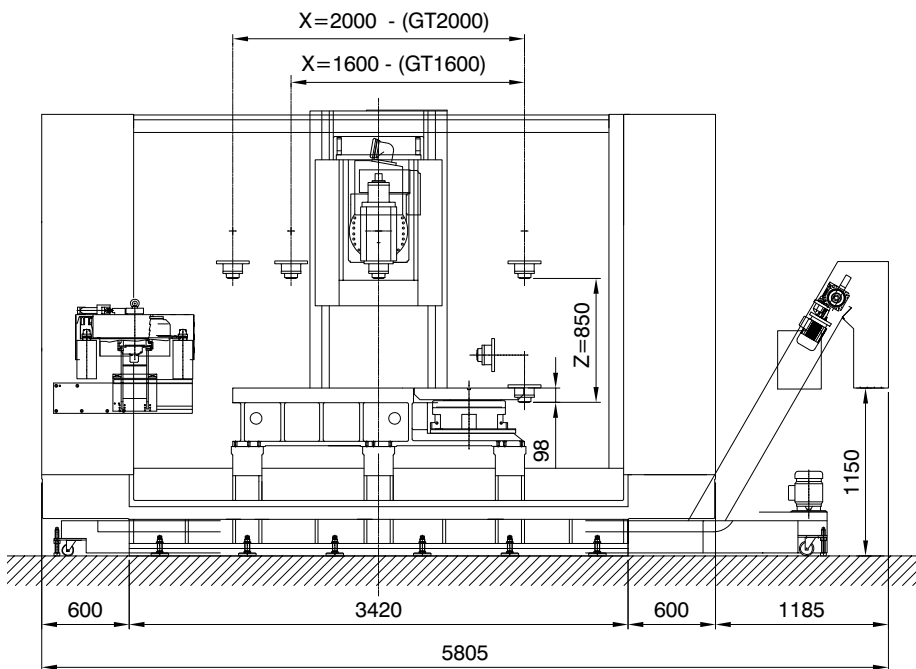
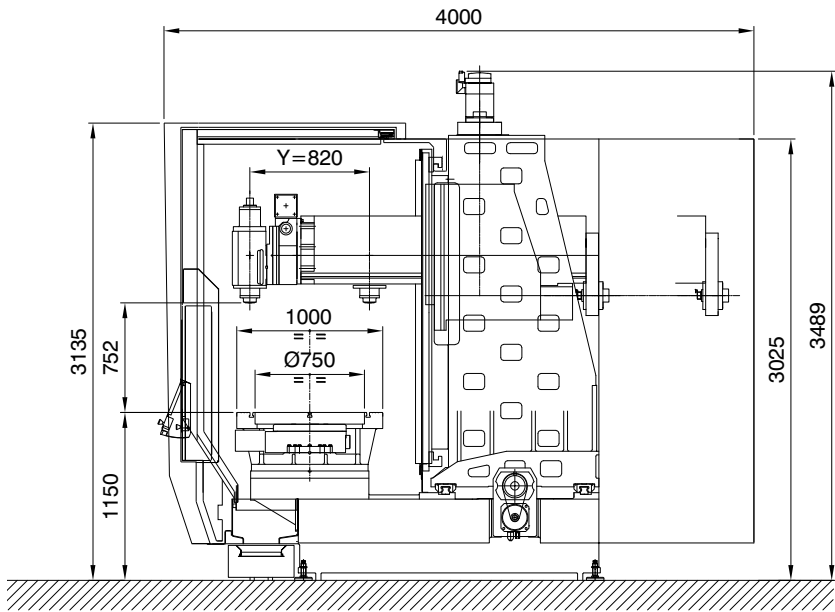
产品参数

FEATURES

	GT 1200	GT 1600	GT 2000
行程 • SLIDE TRAVELS			
X轴 Longitudinal (mm)	1200	1600	2000
Y轴 Cross (mm)	620	820	
Z轴 Vertical (mm)	620	850	
A轴 (旋转工作台) Rotary (table)	360°		
B轴 (可倾主轴头) Tilting (head)	+/- 91° (有效角度 implementable)		
XYZ轴 进给速度 Feed rates (m/min)	30		
工作区 (三轴配置) • WORKING AREA (3 Axes version)			
固定工作台尺寸 Fixed table dimension (mm)	1400x700x160	2500x820x160	
工作台高度 Height of the working table (mm)	782	910	
主轴鼻端至工作台距离 Distance spindle nose table (mm)	+86 +706	+142 + 992	
固定工作台最大载荷 Max. load on fixed table (kg)	3000	5000	
工作区 (五轴配置) • WORKING AREA (5 Axes version)			
固定工作台尺寸 Fixed table dimension (mm)	Ø 630	Ø 750/840	
工作台高度 Height of the working table (mm)	930	1150	
主轴垂直时鼻端至工作台距离 Distance spindle nose table with vertical head 0° (mm)	-62 +558	-98 + 752	
主轴水平时鼻端至工作台距离 Distance spindle nose table with vertical head 0° (mm)	+183 +803	+227 +1077	
旋转工作台最大载荷 Max. load on rotary table (kg)	1000	2000	
固定工作台最大载荷 Max. load on fixed table (kg)	3000	5000	
尺寸与重量 • WEIGHT AND DIMENSIONS			
整机尺寸 Passage measures (m)	3,4 x 4,2 x h 2,7	4,6 x 4 x h 3,5	
整机重量 Netto weight (kg)	12000	18000	

机床布局 GT 1200 MACHINE LAYOUT





机床布局
GT 1600
GT 2000
 MACHINE
 LAYOUT

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

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

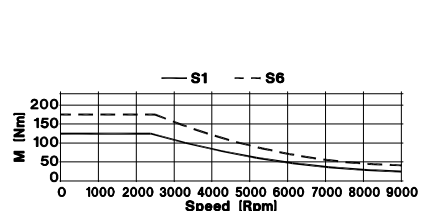
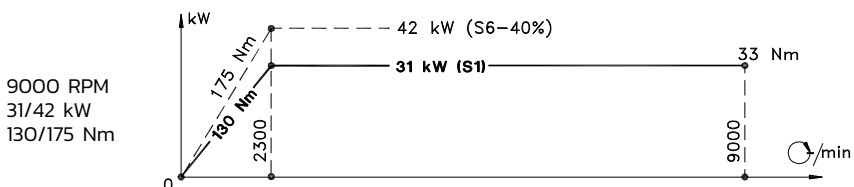
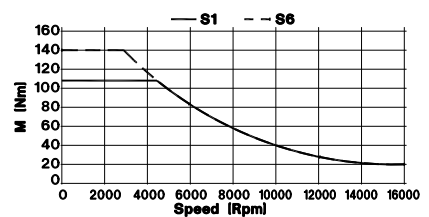
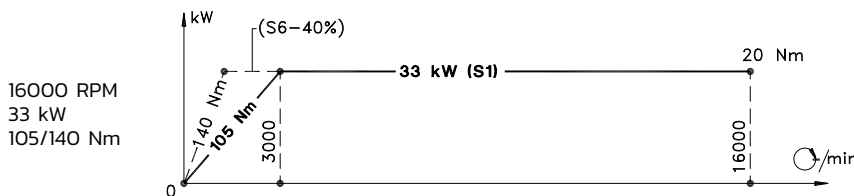
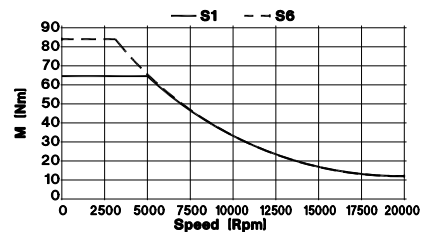
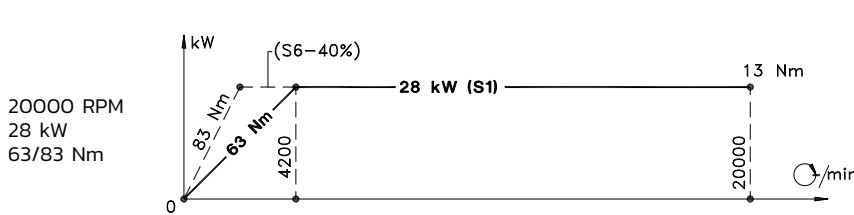
Also include:

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



适配主轴数据 *AVAILABLE MOTORIZATIONS*

20.000 RPM	HSK A63 / ISO V40	28 kW	63/83 Nm
16.000 RPM	HSK A63 / ISO V40	33 kW	105/140 Nm
9.000 RPM	HSK A63 / ISO V40	31/42 kW	130/175 Nm

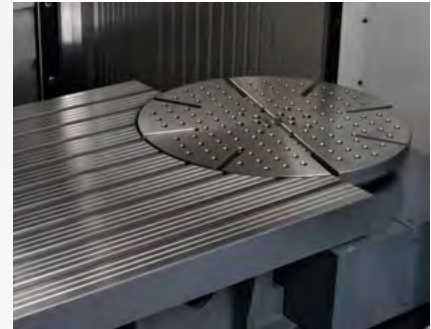


旋转工作台 • ROTARY TABLE

	GT 1600 GT 2000	
	标准	力矩
分辨率 Resolution	0.0001°	
A轴速度 A axis speed (rpm)	0 ÷ 11	0 ÷ 50
扭矩 Working torque (Nm)	2200	1250
工件最大重量 Max workpiece weight (kg)	2000	
尺寸 Faceplate (mm)	ø 750/840	
固定工作台尺寸 Shaped halftable (mm)	1500x1000	

旋转工作台 • ROTARY TABLE

	GT 1200 力矩	
分辨率 Resolution	0.0001°	
A轴速度 A axis speed (rpm)	0 ÷ 60	
扭矩 Working torque (Nm)	400	
工件最大重量 Max workpiece weight (kg)	1000	
尺寸 Faceplate (mm)	ø 630	
固定工作台尺寸 Shaped halftable (mm)	700x700	



斗笠式刀库

MOVABLE ROTARY TOOL CHANGER

	GT 1200	GT 1600 GT 2000
刀柄 Taper	ISOV40-HSKA63	
数量 QT	24	30
最大刀具直径 ø max (mm)	65/135 ALTERN.	67/125 ALTERN.
最大刀具长度 L max (mm)	300	
最大刀具重量 Kg max	5	



带机械手的链条式刀库

CHAIN TOOL MAGAZINE WITH ARM

刀柄 Taper	ISOV40-HSKA63
数量 QT	60
最大刀具直径 ø max (mm)	75/130 ALTERN.
最大刀具长度 L max (mm)	315
最大刀具重量 Kg max	5



数控系统选项 AVAILABLE CONTROLS



西门子 840D SL



海德汉 TNC 640

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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°

*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.*

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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