SINCE 1956

DAY BY DAY QUALITY PRESTIGE

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POLISHING MACHINES

大板磨机系列

MIRROR SERIES

GASPARI MENOTTI

PRESTIGE ADVANTAGE

cienza dei vari
mponents

- Sensors adopt IO-Link standards, detecting the state of efficiency of the various components
  传感器采用IO链路标准，检测各部件的效率状态
- New structure with spindles located in front face of the beam
  新结构的磨机，主轴是位于横梁的正面
- Brushless motors
  无刷电动机
- Incomparable performances,
  beam reaches working speeds up to 75 m/min!
- 无与伦比的效益，
  横梁摆动的工作速度最高可达到75 米/分钟!

POLISHING MACHINE
大板磨机

MIRROR
型号: 咪若 (MIRROR 镜面系列)

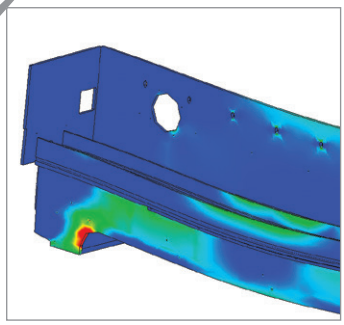
MARBLE, GRANITE AND QUARTZ SLAB POLISHING MACHINES
大理石、花岗岩、石英石大板磨机

FAST
快速

TECHNOLOGICAL
技术的

Mirror slabs line polisher available in marble, granite and quartz versions, represents the vanguard in his category thanks to a solid and compact structure, an endearing design and last generation technological solutions.

米诺(MIRROR 镜面系列)大板磨机提供抛光大理石，花岗岩和石英石的版本，表现了他在此类别的先锋，感谢坚实和紧凑的结构，窝心的设计和最新一代的技术解决方案。

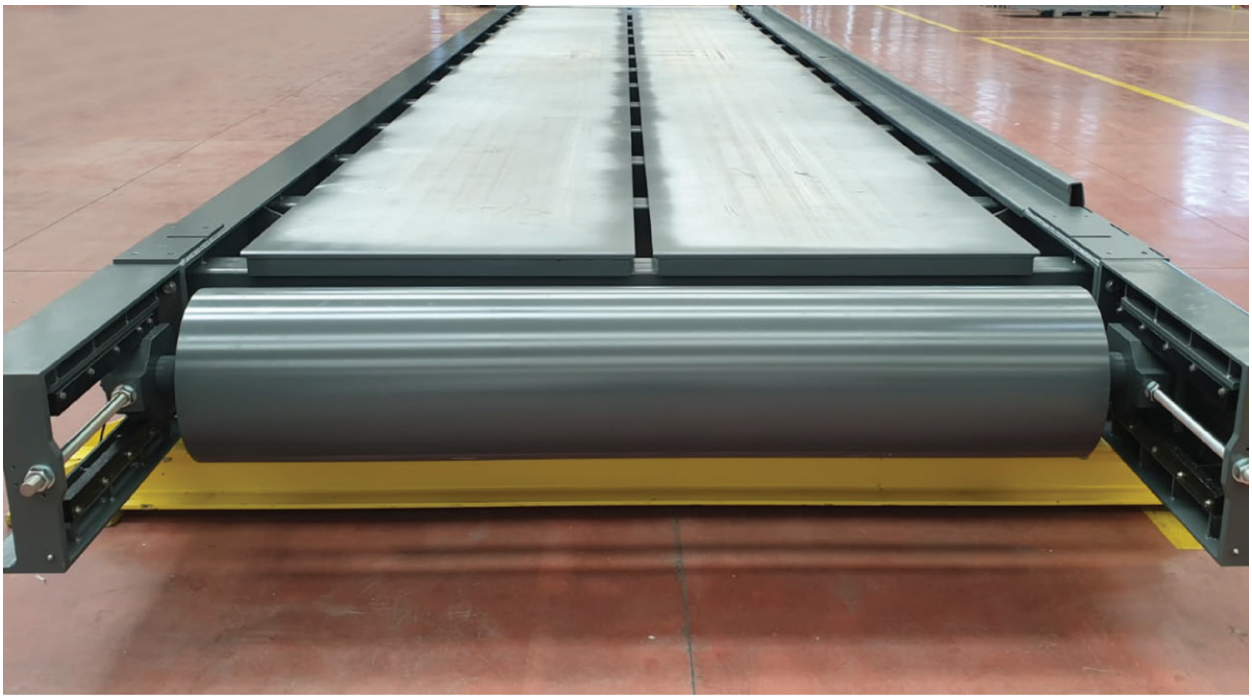


BENCH AND BEAM SUPPORTS
磨机的床台和横梁支架

The bench and the beam supports are built-in an electro-welded, monoblock steel structure studied through the Finite Element Method (FEM) to best respond to the mechanical stresses to which they are subjected.
In the bench, to maximize accuracy and planarity, all the surfaces related to the belt sliding have been processed with CNC machines.
In particular, the water discharges located on the two sides of working bench were modified to improve the drainage of water containing polishing residues, while the belt is constantly kept cleaned thanks to a washing unit with water jet and scrapers.
The conveyor belt movement is obtained by means of two large-diameter rollers driven by a brushless motor coupled to an epicyclical reduction gear.

磨机床台和横梁支架内置于电焊整体式钢结构中，通过有限元法（FEM）软件的研究，能以最佳地对应去承受机械应力施加给它们的压力。
磨机工作床台，为了最大限度地提高精度和平面度，所有与皮带滑动有关的表面都是用数控机床精细加工的。

特别是，对磨机工作床台两侧的排水口进行了增强，以改善含有抛光残留物水的排放，同时，由于带有喷水装置和刮刀的清洗装置，能始终保持皮带的清洁。



SPINDLE HOLDING BEAM
主轴支撑梁

The spindle holding beam is made of a monoblock structure built in electro-welded steel with a closed trapezoidal section that guarantees an extreme rigidity, as verified through the Finite Element Method (FEM), and at the same time containing of weight.
The spindles are located in the front face of the beam, increasing the rigidity of the whole system and improving its dynamicity.
In the rear part of the beam, in a position easy for inspection and maintenance operations, is located the accessories compartment where electro-electronic, pneumatic, lubrication and transmission controls are situated.
This compartment includes two reducers driven by brushless motors synchronized in electro-axis, which drive two units of rack and pinion systems, constantly grease lubricated.
The generous sizing of the motorization, added to the extreme rigidity of the structure, allows the beam to reach working speeds up to 75 m/min with reduced time of acceleration and deceleration, in order to improve the quality and the uniformity of the polishing results.

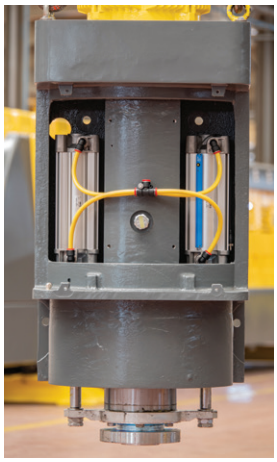
主轴支撑梁是由电焊钢制成的一整体性结构，具有封闭的梯形截面，同时还在承载重量状态下，通过有限元法（FEM）软件验证，该结构可保证极端刚度。

主轴位于横梁的正面，增加了整个系统的刚度，提高了系统的动态性。

在横梁的后部，在一个便于检查和维护操作的位置，有电子、气动、润滑和传动控制装置的隔件室。
该隔件室包括两个减速器，由电轴同步的无刷电机驱动，驱动齿轮齿条系统的两个单元，润滑系统持续输送润滑脂。

A SOLID AND COMPACT STRUCTURE
坚固紧凑扎实的结构

POLISHING SPINDLE GROUP
抛光主轴组



The spindle body is made in cast iron, thus allowing a high rigidity and an exceptional capacity to absorb vibrations. The "backpack" assembly of the spindle group helps to reduce length of spindle-shaft contributing to its rigidity.
This, combined with the large diameter twin pistons system, featuring counterpressure, and the minimum lifting of the heads from the slab surface, results in very fast up/down movements and consequently in polishing quality.
As a standard equipment, the working pressure of the heads is controlled by PLC through proportional valves.
The spindle is equipped with an automatic abrasive wear control system, which has the dual function of signalling the need to replace the abrasive itself and to ensure the minimum lifting of the head from the slab surface.
The use of particular design solutions and special materials allowed eliminating the necessity to lubricate the mechanical components of the spindle facilitating their maintenance.

主轴体由铸铁制成，因此具有很高的刚度和吸收振动的特殊能力。

主轴组的“背包式”组件有助于减少主轴的长度，从而提高其刚性。

这与大直径双活塞系统相结合，该系统具有反压力的特点，并且能让磨头头部从石板表面只做最小限度的提升，这允许磨头能作非常快速的上/下运动，从而提高抛光质量
作为标准设备，磨头的工作压力由PLC通过比例阀控制。

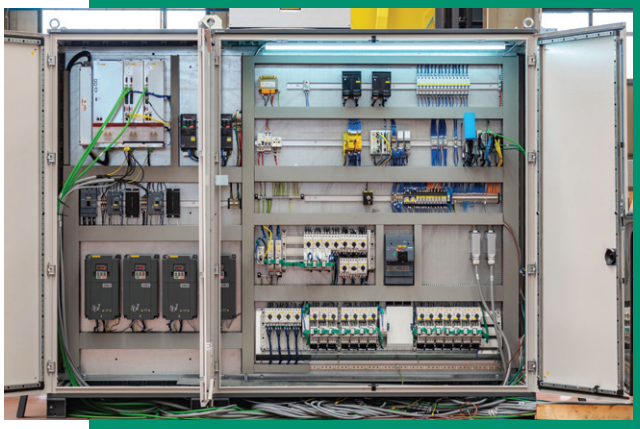
主轴配备有自动磨料磨损控制系统，该系统具有双重功能，即发出更换磨料的信号，并确保将磨头从石板表面提升到最低限度。

使用特殊的设计解决方案和特殊材料，无需润滑主轴的机械部件，便于维护。

SAFETY PROTECTIONS
安全防护装置

The safety guards system is composed by two different kinds of barriers:
- the first, consisting of soundproof and shatterproof sliding doors made of ABS sandwich and polyurethane foam, and equipped with a locking system that inhibits their opening while the machine is in operation;
- the second, consisting of an aluminium splashguard placed in front of the heads, equipped with automatic lifting for the change of the abrasives.

安全防护系统由两种不同类型的屏障组成：
-第一种是由ABS夹层和聚氨酯泡沫制成的隔音和防碎滑动门，并配有一个锁止系统，可在机器运行时阻止其打开；
-第二个，包括放置在操作员头部前面的铝制防溅罩，配备有自动升降装置，以便更换磨料。



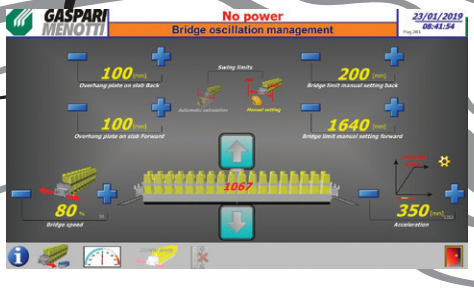
ELECTRO-ELECTRONIC ARCHITECTURE

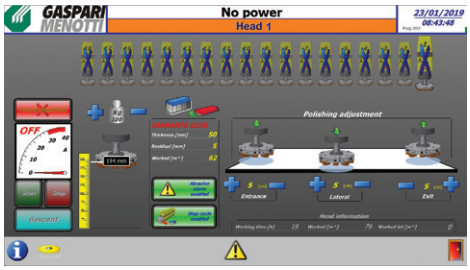
电气电子工艺

The new polishing machine is completely wired in FIELD BUS SYSTEM, with consequent simplification of the wiring, ensuring a reduction in the possibility of failures and, in case, a more rapid and punctual search for them. We followed the guidelines indicated by "industry 4.0", in order to make the machine already compatible with the new technologies. In this view, all the installed sensors adopt the IO-Link standards, thus acquiring the capacity to talk to the main control and not only carrying out the task of detecting the measurements required but, at the same time, providing data on the state of efficiency of the various components. The system has been developed in order to avoid breakages and machine stops through the request of preventive maintenance.
The user interface is designed to maximize its ease of use and encloses all the features needed to allow the access by remote.

Our customer service thus has the ability to connect directly to the software interface and to all the most important components such as drivers, safety PLC and inverters, in order to carry out a real time diagnosis and to guide the customer to the fault solution, reducing machine stops.

新型的磨机完全采用现场总线系统接线，从而简化了接线，确保减少了故障的可能性，并在万一的情况下，可以更快速、更及时地查找故障。
我们遵循“工业4.0”的指导方针，以使机器已经与新技术兼容。
从这个观点来看，所有安装的传感器都采用IO-Link标准，从而获得与主控制器对话的能力，并且不仅执行检测所需测量的任务，同时还提供关于各个组件的效率状态的数据。
该系统的开发是为了通过预防性维护的要求避免机器损坏和停机。
用户界面的设计是最大限度化地提高了易用性，并包含了允许网络远端访问所需的所有功能。
因此，我们的客户服务能够直接连接到软件接口和所有最重要的组件，如驱动器、安全PLC和变频器，以便进行实时诊断并指导客户解决故障，减少机器停机。

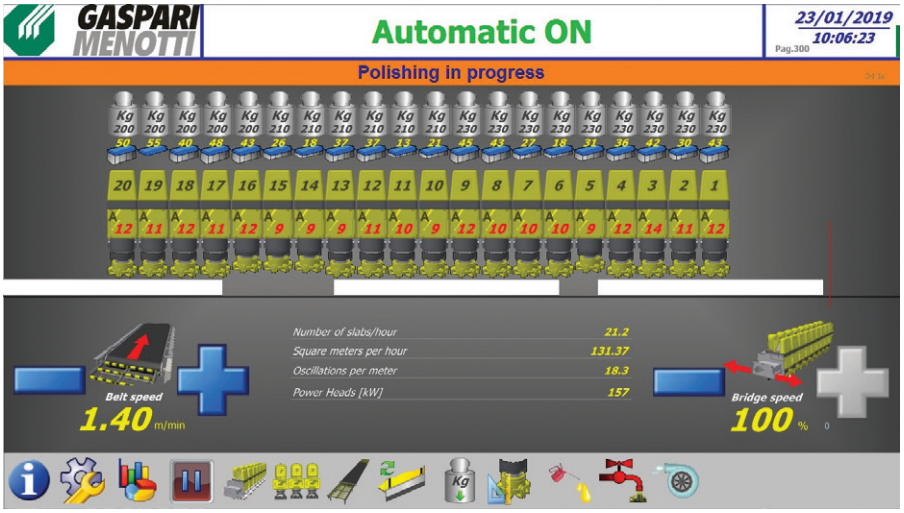


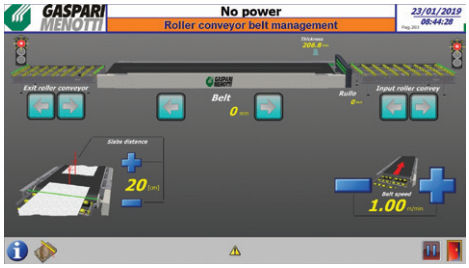


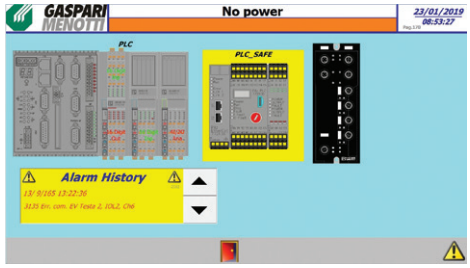
THE SOFTWARE
软件

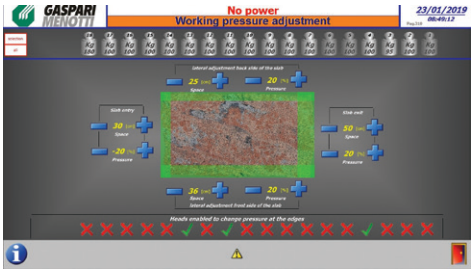
The software installed allows the operator to check, to program and, if necessary, to change the processing parameters of the machine in order to optimize the results of the finished product in terms of quantity and quality, in addition to collect data related to the operation of the machine itself.

所安装的软件允许操作员检查、编程，并在必要时更改机器的加工参数，以便在数量和质量方面优化成品的结果，此外还可以收集与机器本身操作相关的数据。









THE WHOLE MACHINE UNDER CONTROL WITH A SIMPLE TOUCH

用简单的触摸就能控制整个机器

The polishing machine is equipped with a coloured touch screen monitor with graphic interface, thanks to which it is possible to perform various functions including:

- **Variation of the time that head stays on the slab surface acting on the descent / ascent times of the head itself**
- **Management of working pressure with possibility of dynamic variation inside the slab**
- **Management of beam speed and trajectory with particular regard to the inversion points**
- **Management of any breakage of slabs being processed with the possibility of modifying the profile red at the entrance of the slab itself**
- **Abrasive wear management**
- **Management of lubrication times and intervals**

磨机配有带图形接口的彩色触摸屏显示器，因此可以执行各种功能，包括：

- 不同时间磨头的下降/上升与磨头停留在大板表 面的 时间对磨头本身产生的影响
- 对磨头工作压力进行管理，大板内部可能发生动态变化
- 横梁摆速和轨迹管理，特别是与反演点相关的管理
- 对处理正在加工中任何破损大板的进行管理，并可能 在大板进入磨机前进行修改剖面图
- 磨料磨损管理
- 润滑时间和间隔的管理

STATISTICS MANAGEMENT: ALL PRODUCTION DATA DISPLAYED IN REAL TIME

统计管理：实时显示所有生产数据

Thanks to a punctual and precise data collection it is possible to have, in real time, detailed information on all the processing parameters both cumulatively and for individual production lots.
Furthermore, it is possible to collect data relating to abrasives consumption.

由于数据收集及时而精确，因此可以实时获得所有加工参数的详细信息，包括累计的和单个生产批次的详细信息。
此外，还可以收集与磨料消耗有关的数据

ALARM AND DIAGNOSTIC MANAGEMENT: THE HEALTH OF YOUR POLISHING MACHINE IN CONTINUOUS MONITORING

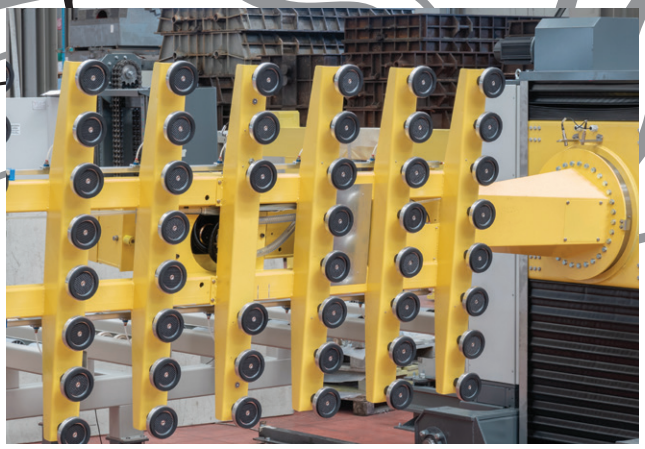
警报诊断管理：对您磨光机的健康状况进行连续监控

Through a series of sensors that adopt IO Link standards and a dedicated software module, all the main functions of the machine are continuously controlled and monitored on the screen in order to make the processing safe and to obtain information on the individual devices of the machine useful to generate a history of the problems and thus to accurately predict the average life of the individual components, making maintenance more and more precise, targeted and effective.

通过一系列采用IO-Link标准的传感器和专用软件模块，机器的所有主要功能都在屏幕上连续控制和监控，以确保加工安全，并获得机器各个设备的信息，从而生成问题历史记录，从而准确预测单个部件的平均寿命，从而使维护工作更加频繁更精确、更有针对性、更有效。

ACCESSORIES FOR MARBLE AND GRANITE POLISHING LINES

大理石和花岗岩抛光线的配件



TRONIC

ROBOT FOR LOADING AND UNLOADING OF SLABS

大板装卸机器人

Completely automatic and equipped with a comb shape roller conveyor, it is used to load and unload the slabs, also allowing the slab to be worked "book-match" process. The robot is equipped with 54 suction cups and has a maximum capacity of 1.200 kg

全自动并配有梳齿形滚轮输送机，用于装卸大板，也可使大板进行“对纹”加工。该机器人配有54个吸盘，最大容量为1.200公斤

WAXING MACHINE FOR SLABS

大板打蜡机

It allows the polished slab to be treated with protective wax, which is applied to the surface of the slab itself using plates equipped with special brushes

它允许抛光后的大板用保护性蜡处理，保护蜡在装有特殊刷子的磨盘涂到石板表面

AUTOMATIC LOADING TROLLEY FOR SLABS

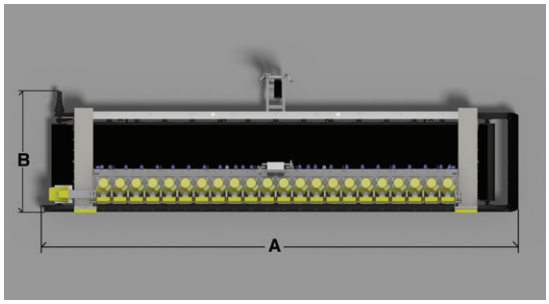
自动上板台车

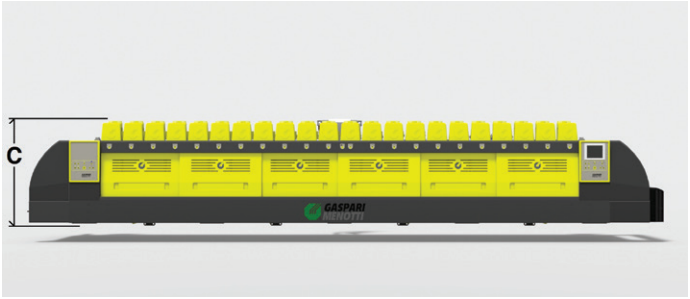
Equipped with 18 suction cups, it allows the loading of the slabs. The trolley has a maximum capacity of 1.000 kg.

它配备了18个吸盘，可以上载板。台车的最大承载能力为1.000 kg。

MACHINE FOR MARBLE 大理石磨机		MIRROR 6	MIRROR 8	MIRROR 12	MIRROR 16	MIRROR 18
Useful working width / 有效工作宽度	cm	220	220	220	220	220
Maximum workable thickness / 可加工最大厚度	cm	11	11	11	11	11
Minimum workable thickness / 可加工最小厚度	cm	1	1	1	1	1
Number of working plates / 工作磨盘数量	n°	6	8	12	16	18
Working plates motor power / 工作磨盘电机功率	kw	15	15	15	15	15
Spindle beam translation power / 主轴梁平移功率	kw	8,7	8,7	8,7	8,7x2	8,7x2
Belt advancement motor power / 皮带前进电机功率	kw	4,8	4,8	4,8	4,8	4,8
Cleaning brush power / 清洁刷功率	kw	1,5	1,5	1,5	1,5	1,5
Total installed power / 总装机功率	kw	105	135	195	263,7	293,7
Polishing plate diameter / 抛光磨盘直径	mm	570	570	570	570	570
Number of abrasives per plate / 每个磨盘的磨料数量	n°	9	9	9	9	9
Spindle beam translation speed / 主轴梁平移速度	m/min	0÷75	0÷75	0÷75	0÷75	0÷75
Belt advancement speed / 皮带前进速度	m/min	0÷5	0÷5	0÷5	0÷5	0÷5
Water requirement / 需水量	l/min	180	240	360	480	540
Compressed air requirement / 压缩空气要求	Nl/min	480	640	960	1280	1440
Approx total machine weight / 机器大约总重量	Kg	18000	20500	24250	29150	31000
Machine length (A) / 机器长度（A）	mm	6760	8220	10300	12800	13750
Machine width (B) / 机器宽度（B）	mm	3485	3485	3485	3485	3485
Machine height (C) / 机器高度 （C）	mm	2300	2300	2300	2300	2300

MACHINE FOR GRANITE AND QUARTZ 花岗岩和石英石磨机		MIRROR 12	MIRROR 14	MIRROR 16	MIRROR 18	MIRROR 20	MIRROR 22
Useful working width / 有效工作宽度	cm	220	220	220	220	220	220
Maximum workable thickness / 可加工最大厚度	cm	11	11	11	11	11	11
Minimum workable thickness / 可加工最小厚度	cm	1	1	1	1	1	1
Number of working plates / 工作磨头数量	n°	12	14	16	18	20	22
Working plates motor power / 工作磨头电机功率	kw	11	11	11	11	11	11
Spindle beam translation power / 主轴梁平移功率	kw	8,7	8,7	8,7x2	8,7x2	8,7x2	8,7x2
Belt advancement motor power / 皮带前进电机功率	kw	4,8	4,8	4,8	4,8	4,8	4,8
Cleaning brush power / 清洁刷功率	kw	1,5	1,5	1,5	1,5	1,5	1,5
Total installed power / 总装机功率	kw	147	169	199,7	221,7	243,7	265,7
Polishing plate diameter / 抛光磨头直径	mm	470	470	470	470	470	470
Number of abrasives per plate / 每个磨头的磨料数量	n°	6	6	6	6	6	6
Spindle beam translation speed / 主轴梁平移速度	m/min	0÷75	0÷75	0÷75	0÷75	0÷75	0÷75
Belt advancement speed / 皮带前进速度	m/min	0÷5	0÷5	0÷5	0÷5	0÷5	0÷5
Water requirement / 需水量	l/min	360	420	480	540	600	660
Compressed air requirement / 压缩空气要求	Nl/min	960	1120	1280	1440	1600	1760
Approx total machine weight / 机器大约总重量	Kg	25200	26000	28400	29200	30000	32000
Machine length (A) / 机器长度（A）	mm	10300	10300	12800	12800	12800	13750
Machine width (B) / 机器宽度（B）	mm	3485	3485	3485	3485	3485	3485
Machine height (C) / 机器高度（C）	mm	2300	2300	2300	2300	2300	2300





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GASPARI MENOTTI TECHNOLOGIES SRL
Operation/Project financed under the POR FESR Toscana 2014-2020
POR FESR Toscana 2014-2020 项下供资的业务/项目

Le ali alle tue idee

POR CreO
Unione Europea
Fondo Europeo di Sviluppo Regionale
REPUBBLICA ITALIANA
Regione Toscana

Descriptions, drawings and weights are not binding. The manufacturer reserves the right to make changes, even substantial, without prior notice, thus not allowing third parties the right to challenge or retaliation whatsoever.
The machines are supplied without lubricants.

说明、绘图和权重没有绑定。制造商保留在没有事先通知的情况下进行更改的权利，甚至是实质性的更改，因此不允许第三方提出任何质疑或报复的权利。
这些机器没有润滑油。

GASPARI MENOTTI
PRESTIGE ADVANTAGE

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