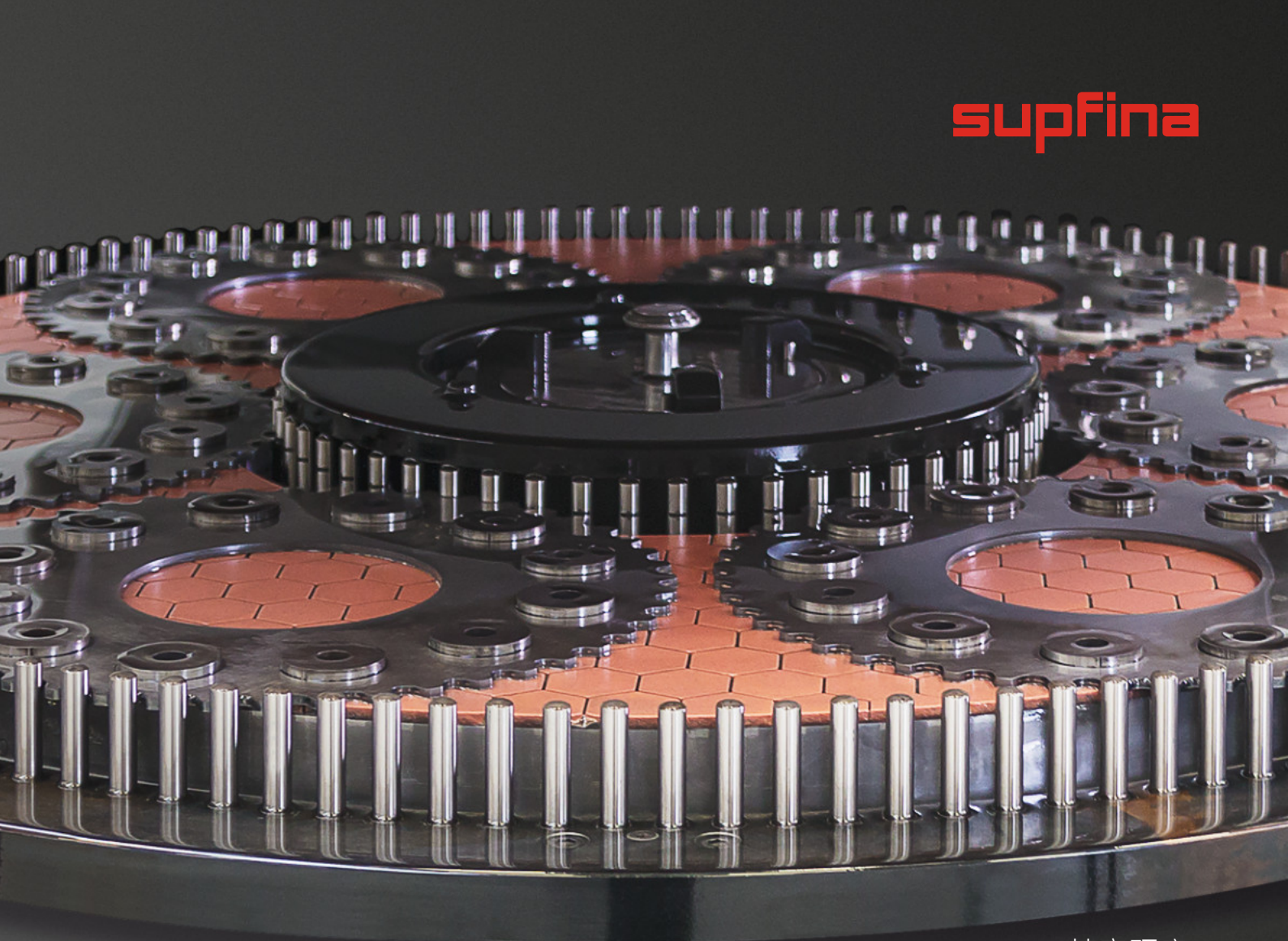




supfina

精密研磨

Fine Grinding

SPIRO

“Spiro 是 Supfina 公司不斷致力於研發尖端高品質表面加工技術最新例證。目前技術已經擴展至精密磨削領域。Spiro 機型可以用很低的單位成本，準確地加工幾乎任何高精度的表面。”

精密磨削 經過驗證的精準度

Fine grinding
with proven Supfina precision

“Spiro is the latest example of Supfina’s ongoing commitment to cutting-edge technology that yields the highest quality — now extended to fine grinding. The Spiro can machine virtually any surface with high precision and at a low cost per unit.”





不論工件物質是柔軟或者堅硬？從鋁到鍍鋅，從軟塑料到硬陶瓷等各類材質。無論何種特性的工件，Spiro 都能提供最實用的精密磨削解決方案，以實現高度精確的平面及平行度。此外，無論何種材料，都可以達到最嚴格微米級公差要求，這樣的精準度表現，正是您可以從 Supfina 產品預期的。

更重要的是，這樣的精準度得以完全滿足客戶的具體需求。驅動性能、工件裝載選項、過濾和冷卻系統、工具優化；Supfina 與每位客戶緊密合作，以確保給您最適合特定加工任務的解決方案，以達最佳效益。

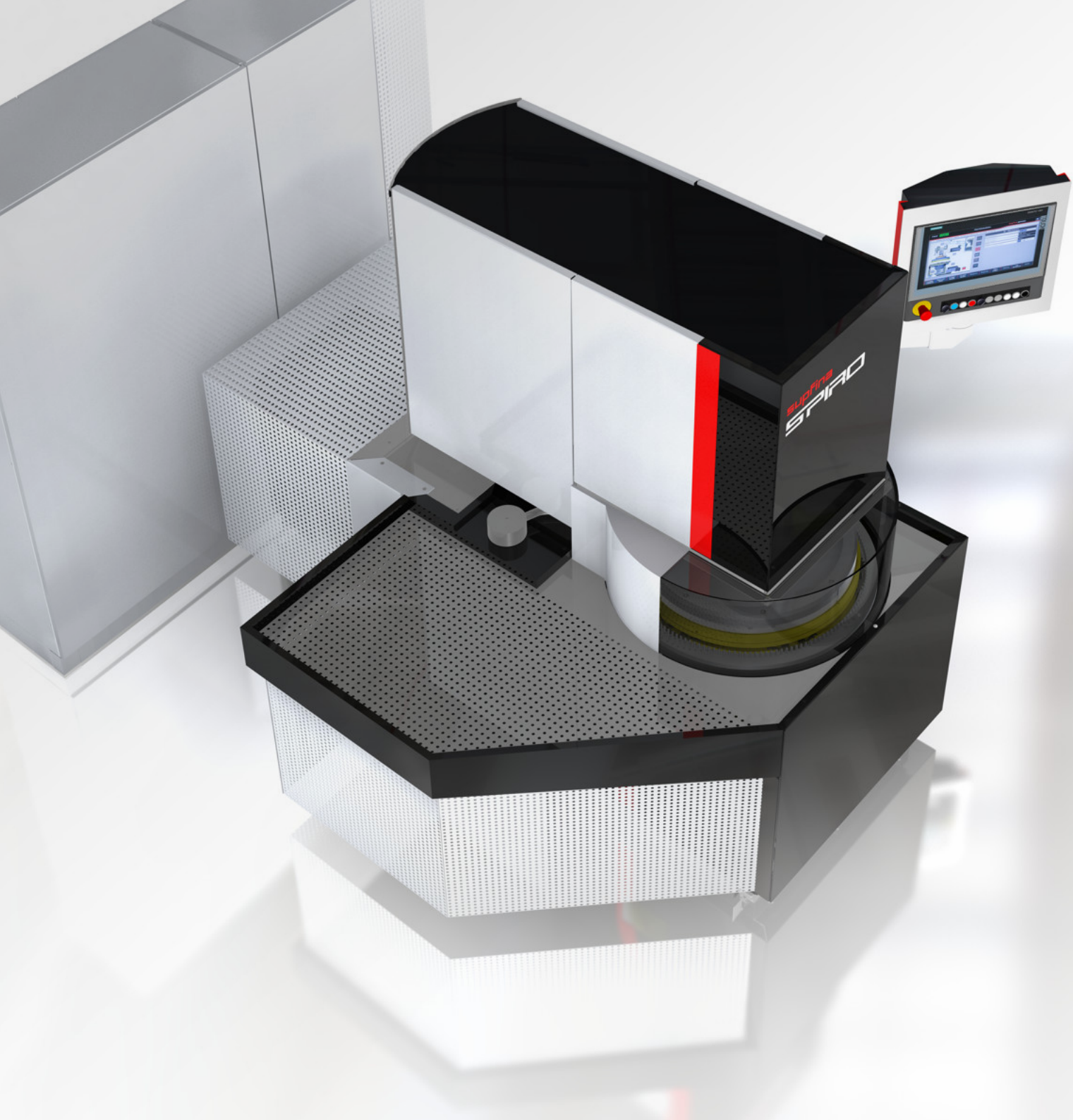
Soft or hard? From aluminum to zinc, from soft plastics to hard ceramics: No matter the workpiece properties, Spiro provides the best fine-grinding solution for achieving highly precise plane parallelism. And whatever the material, the job can be done to the most stringent tolerance requirements in the micron range, with the precision that you've come to expect from Supfina.

What's more, such precision can perfectly meet a customer's specific needs. Drive performance; loading options; filtration and cooling; optimal tooling: Supfina works closely with each customer to determine what solution works best for that particular machining task.

精密磨削
最大的效率和高精確度

Fine grinding
Maximum efficiency and high precision





supfina SPIRO

	Spiro F5	Spiro F7	Spiro F7 自動化	Spiro F12
盤面直徑 Disk diameter	445 / 475 mm	720 mm	720 mm	1160 mm
環寬 Ring width	120 / 150 mm	200 mm	200 mm	341 mm
最大壓力 Maximum pressure	400 daN	1800 daN	1800 daN	3000 daN
工件直徑 Workpiece diameter	4 – 150 mm	5 – 220 mm	5 – 220 mm	6 – 420 mm
工件厚度 Workpiece thickness	0,3 – 50 mm	0,6 – 80 mm	0,6 – 80 mm	1 – 100 mm

外型和功能
全部尺寸的精密磨削

Form and function
Fine grinding in all sizes



supfina
SPIRO

Supfina Spiro F5 是專門為小型工件研磨而開發的。磨削較小的工件，需要高度精確的平面平行度。而 Supfina Spiro F5 完美地滿足了您的需求。

此機型的問世，使得 Supfina 公司繼續成功地擴大其高精度的 Spiro 產品線--致力於為了客戶的成功和盈利最大化。

優勢

- 可儲存 100 組加工程式
- 整合了銳化程式
- 最多七個加工循環
- 可選的裝載台

The Supfina Spiro F5 was specially developed for fine grinding smaller workpieces that require highly precise plane parallelism. It's the perfect fit for your needs.

With this machine, Supfina continues to successfully expand its high-precision Spiro line — all for our customers' success and profitability.

Advantages

- 100-program storage
- Integrated sharpening programs
- Up to seven process cycles
- Optional loading table

Spiro F5 精密磨床

緊湊設計，性能卓越

Spiro F5

Compact design, great performance

靈活的 Spiro F7 精磨機是精準研磨直徑 5 毫米到 220 毫米的工件，您的理想選擇。

氣動控制的壓力系統可以在加工過程中可配備高達 1800 daN 的力。工件高度可通過一個非接觸的測量系統在運作過程中持續調整。該系統監控所需的高度公差和平行度，以產生所需的平整度。

優勢

- 存儲空間可容納 192 個程式
- 堅固的床身設計
- 友善的操作介面，可視化過程控制

The flexible Spiro F7 fine-grinding machine is ideal for creating precise flat surfaces on workpieces made from a wide variety of materials and with diameters of 5 mm to 220 mm.

The pneumatically controlled pressure system can be equipped with a force of up to 1800 daN for the process. Workpiece height is continuously adjusted with a no-contact, in-process measuring system that monitors required height tolerances and parallelism to produce the desired flatness.

Advantages

- Memory for 192 programs
- Rigid machine concept
- User-friendly, thanks to visual-process control

Spiro F7 精密磨床

適用大規模加工的精密磨床

Spiro F7
Fine grinding in large-scale production





Spiro F12 是 Spiro 系列中最大的 Spiro 機床，設計用於加工直徑為 6 毫米至 420 毫米之間，且有特殊高度、平行度、平面度要求的工件，適用於所有具有高精度要求和成本效益考量的客戶。

除了其非常高剛性設計--使得加工穩定之外--還非常重視該機器的人機工程學和視覺化操作的重要性。

優勢

- 高效節能、低維護的驅動理念
- 非常好的可及性
- 簡單操作介面，可視化過程控制
- 與不同的裝載系統靈活連接

The Spiro F12 — our largest Spiro machine — is designed to process workpieces with diameters of 6 mm to 420 mm and with special height, parallelism, and flatness requirements, all with high precision and cost-effectiveness.

In addition to its very rigid design — allowing for stable processing — great importance was paid to the machine's ergonomic and visual operation.

Advantages

- Energy-efficient, low-maintenance drive concept
- Very good accessibility
- User-friendly, thanks to visual-process control
- Flexible connection to different loading systems

Spiro F12 精密磨床 適用於大型工件的精密磨削

Spiro F12
For large workpieces

客戶需要多種多樣的裝載和卸載選擇——從短週期時間到減少停機時間，縮短設置時間到靈活的輸送系統，又或者可視化過程控制。Supfina 為各種情況提供合適的解決方案。

Spiro 的新型平行裝載系統使得精細研磨更加高效 - 包括彈性設置而優化的半自動生產。

優勢

- 設置時間短
- 靈活的進料選擇
- 視覺化的過程控制
- 加工循環時間短

Customers require a wide range of loading and unloading options — everything from short cycle times to reduced downtime, short setup times to flexible feeding systems to visual-process control. Supfina offers the right solution for every situation.

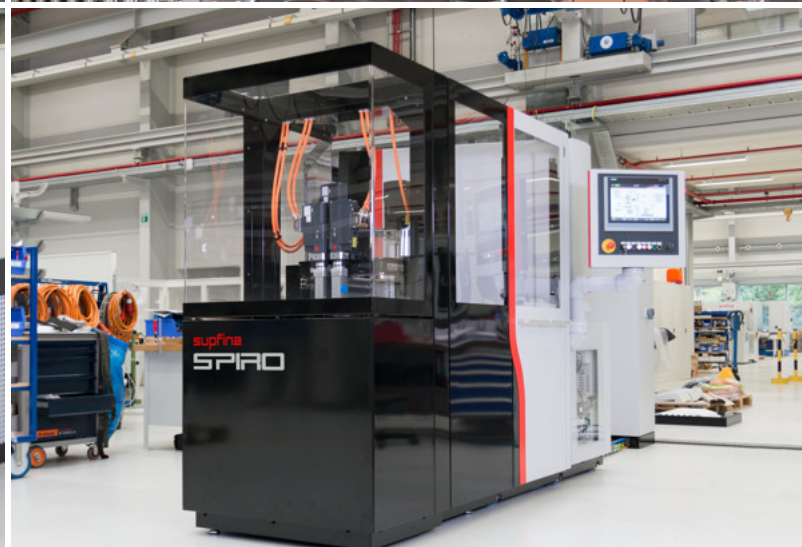
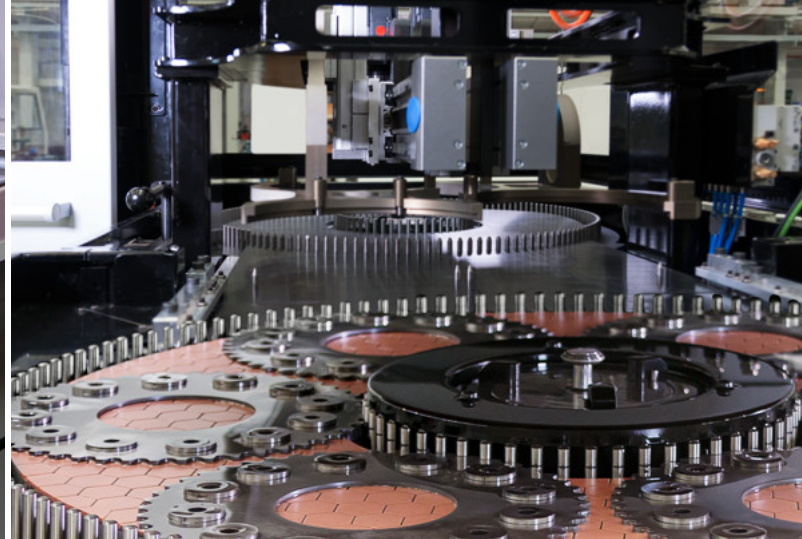
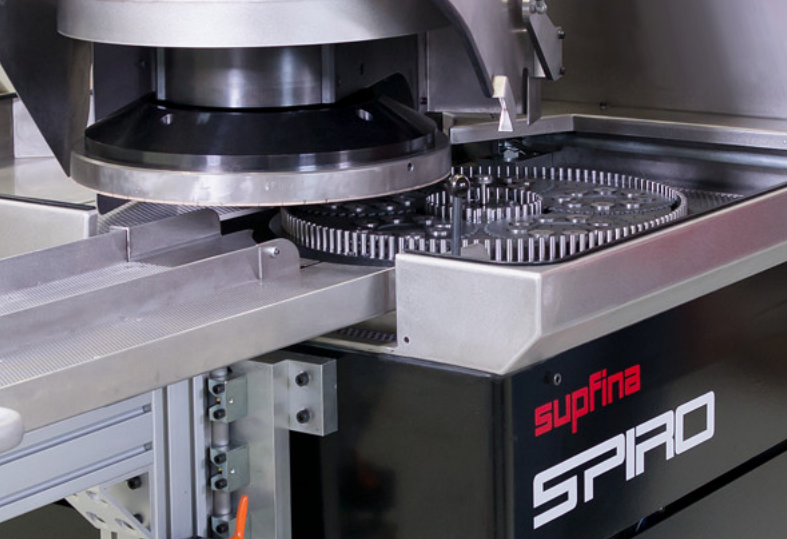
The Spiro's new parallel loading system makes fine grinding even more efficient — including semi-autonomous production that's optimized by flexible setup.

Advantages

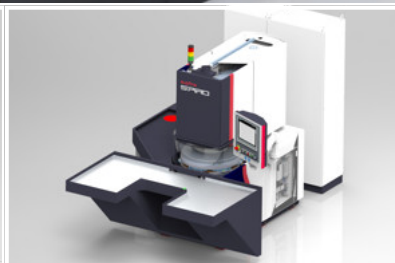
- Short setup time
- Flexible feeding option
- Visual process control
- Short cycle time

Spiro 雙端面精密磨床 優化的全自動加工

Spiro
Optimized automation



手動裝載
Manual loading



轉盤更換器
Manual loading table



手動上料台
Rotor disk changer



機械手裝載+料盤單元
Robot loading from stacking cell

從工程設計階段，Supfina 也注重成本效益，這就是為什麼我們為每個 Spiro 型號都進行對於所有操作相關的機器區域都具有容易進行維護及更換的特性設計。例如，上面的研磨單元可以旋轉出工作區域，以方便更換刀具，同時也可以方便地進行所有日常維護工作。由於佔地面積最小，部件佈置靈活，Spiro 機床只需要很小的空間。

而模組化系統則可適用於手動和自動裝載。當然，這些系統可以根據客戶的個別要求進行定制，或者進行改裝，以適應新開發的組件。

根據不同的材料、工件尺寸、表面光潔度和切除要求，單台機器就能滿足客戶的要求。Spiro 每小時可以完美地精磨數千個工件。

Even in the engineering phase, Supfina focuses on cost-effectiveness. That's why we designed each Spiro model to have excellent, everyday accessibility to all relevant machine areas. For example, the upper grinding unit swings out to facilitate tooling changes, and there's easy access to perform all routine maintenance tasks. With a minimal footprint and flexible arrangement of the components, a Spiro machine requires little floor space.

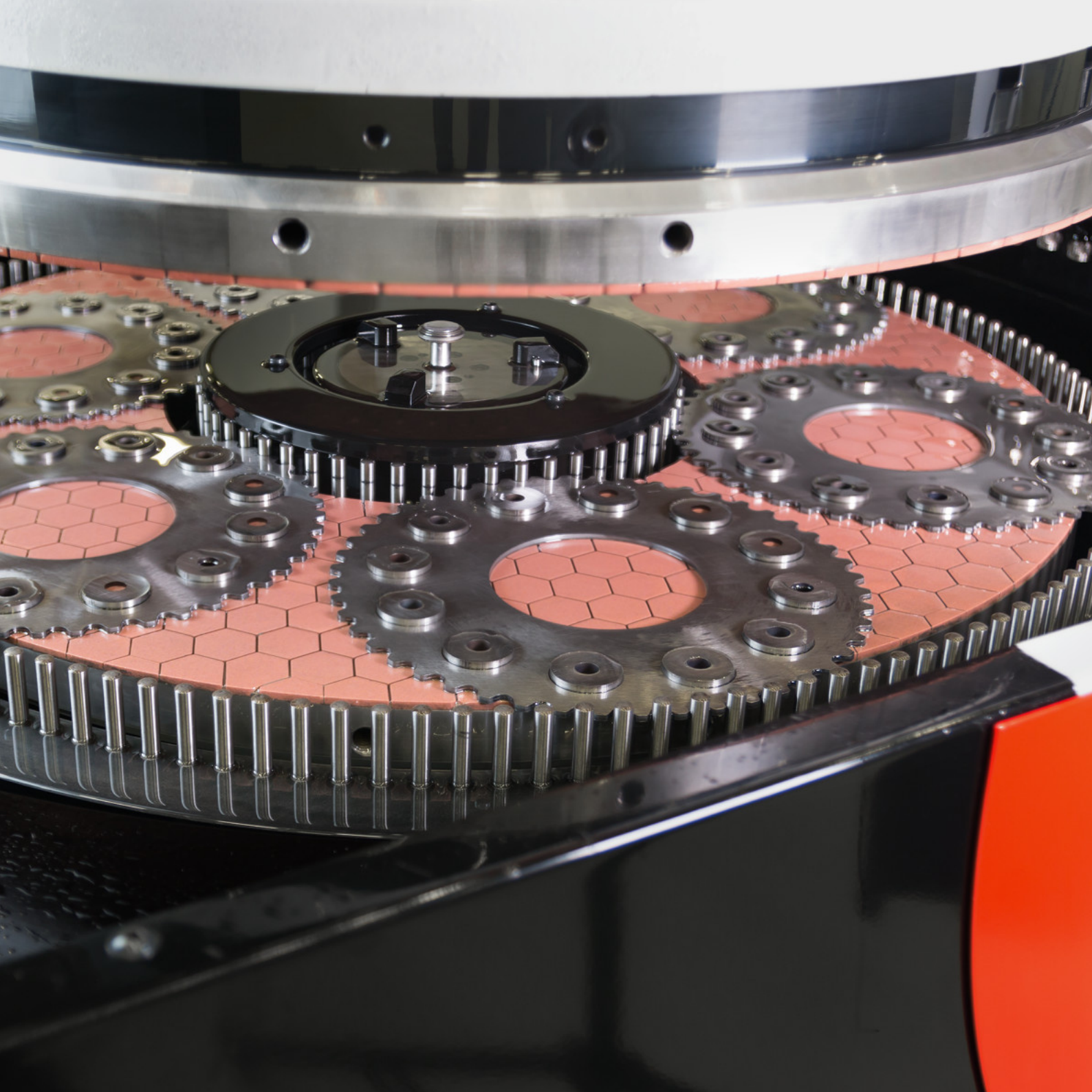
Modular systems are available for manual and automatic loading. Naturally, these can be customized to individual customer requirements or enhanced to accommodate newly developed components.

Depending on the material, workpiece dimensions, surface finish, and removal requirements, a single Spiro can perfectly fine-grind several thousand workpieces per hour.

精密磨削
下一個偉大的進程

Fine grinding
The next great process





- 高驅動性能
- 為許多應用提供最大的靈活性
- 可獨特定制，實現最佳高精度解決方案
- 由低振動特性的機器床體與防護罩的設計，可有效降低刀具的損耗 - 高精度、非接觸的測量控制
- 可視化過程控制，實現持續的高精度
- 使用者友好和直觀的操作
- 非常容易上手

- High drive performance
- Maximum flexibility for many applications
- Individually customizable for optimal machining results
- Reduced tool wear thanks to the low-vibration machine stand and guard
- High-precision, noncontact measurement control
- Visual process control for consistently high precision
- User-friendly and intuitive operation
- Great accessibility

事實 主要特點

Facts Key features

Engineering with High Precision



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