



24

## 24 Series

Powerful, single and double spindle  
machining centers for highly-productive  
machining of large workpieces

# Compact, strong and fast

for productive cutting

Range of applications	[04–05]
Machine design	[06–07]
Extension options	[08–17]
Services	[18–19]



The CHIRON series 24 offers the optimal prerequisites for powerful, highly-productive cutting and machining results. Whether your focus is on flexible single-unit production, or high volume precision manufacturing – due to its modular design and numerous configuration possibilities, every series 24 basic machine can be assembled into a perfect individualized solution.

#### Your benefits:

- Powerful spindle drives
- Ample work space
- Reliably high productivity
- Highest precision and processing quality
- High dynamics
- Fast set-up
- High stability
- Simple operation
- Easy maintenance

#### DZ 24 W

Twin-spindle machining center Pick-up-tool changer (2 x 28 tool places) and workpiece changing device 0°/180°, enabling loading and unloading during machining.



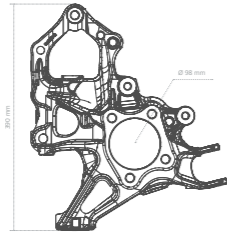
Series 24 precision machining centers are available as single and twin-spindle machines and have enormous reserves for powerful milling performance.

# Precision without compromise

Wide variety of workpieces – excellent quality

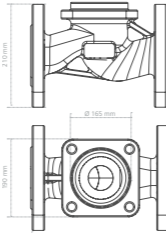
## Automotive

5-axis complete machining of undercarriage components, e.g. steering knuckles.



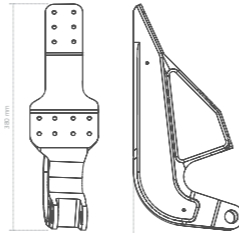
## Mechanical Engineering

e.g. 4-sided complete machining of components for Measuring and Control Technology, e.g. valve housing made of stainless steel.



## Aerospace

Heavy duty cutting of aerospace components, e.g. hinges made of titanium.

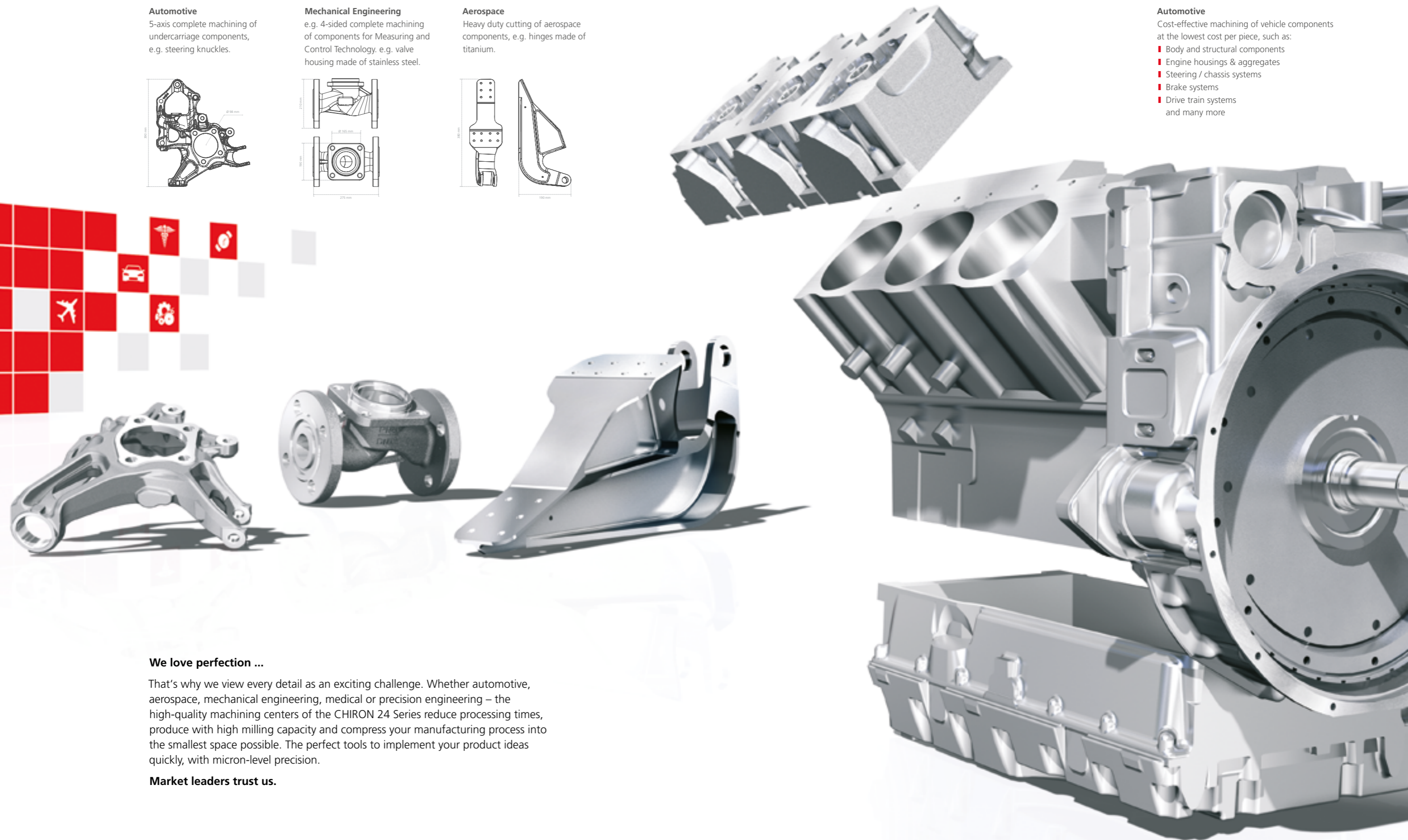


▶ Range of applications	[04–05]
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## Automotive

Cost-effective machining of vehicle components at the lowest cost per piece, such as:

- Body and structural components
- Engine housings & aggregates
- Steering / chassis systems
- Brake systems
- Drive train systems and many more



## We love perfection ...

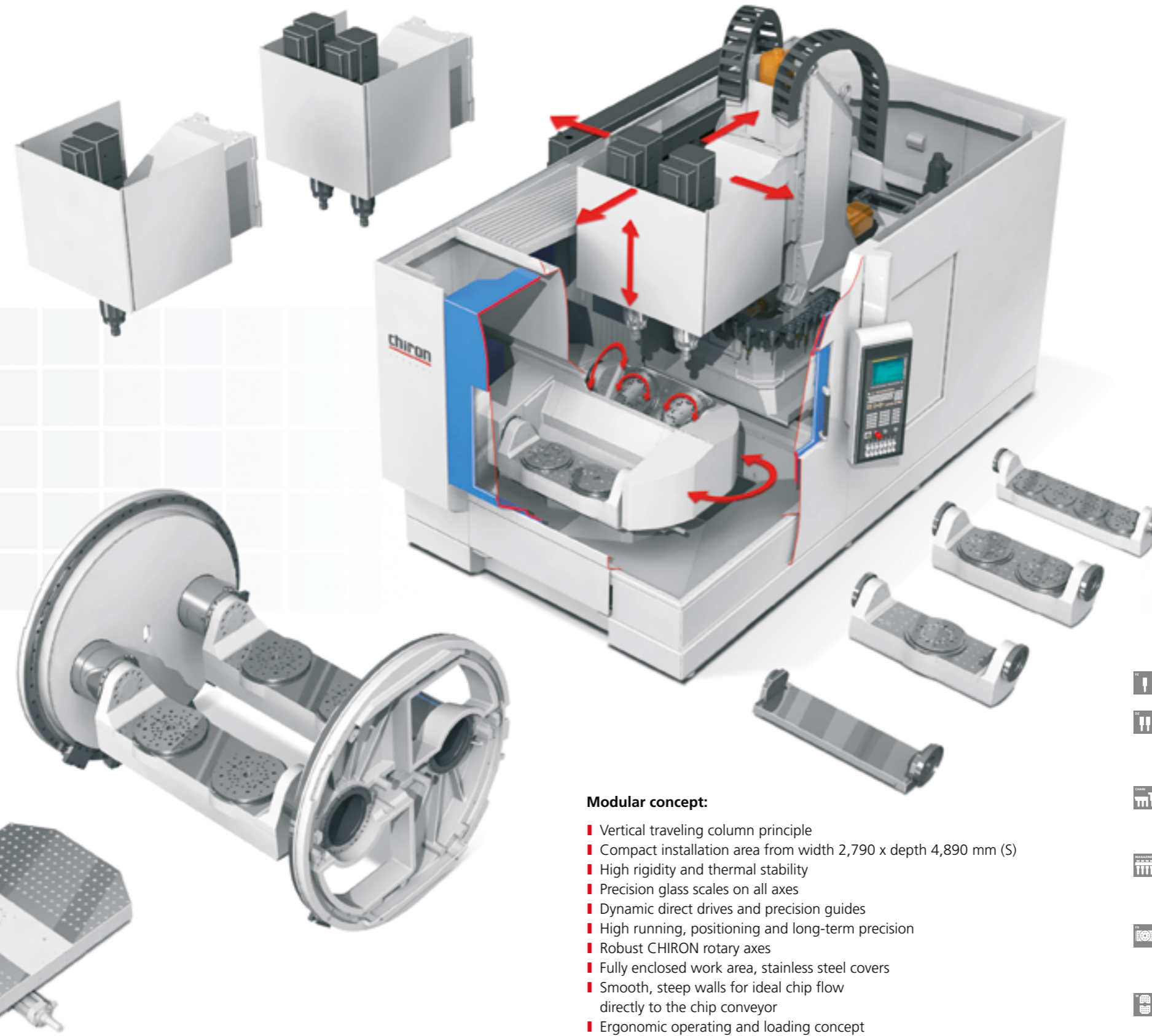
That's why we view every detail as an exciting challenge. Whether automotive, aerospace, mechanical engineering, medical or precision engineering – the high-quality machining centers of the CHIRON 24 Series reduce processing times, produce with high milling capacity and compress your manufacturing process into the smallest space possible. The perfect tools to implement your product ideas quickly, with micron-level precision.

**Market leaders trust us.**

# Versatility through high-tech modules

Perfectly suited for any application

Range of applications	[04–05]
▶ Machine design	[06–07]
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Services	[18–19]



## **DZ 24 W**



Compact, fast twin-spindle machining center with integrated workpiece changing device 0°/180° for easy loading and unloading during machining.

CNC controls of the 24 series: Siemens, Fanuc



### Modular concept:

- Vertical traveling column principle
- Compact installation area from width 2,790 x depth 4,890 mm (S)
- High rigidity and thermal stability
- Precision glass scales on all axes
- Dynamic direct drives and precision guides
- High running, positioning and long-term precision
- Robust CHIRON rotary axes
- Fully enclosed work area, stainless steel covers
- Smooth, steep walls for ideal chip flow directly to the chip conveyor
- Ergonomic operating and loading concept
- Service friendly access to all auxiliary units
- Low-maintenance and durable



### Spindles & spindle systems:

-  FZ: Proven single-spindle machining centers in the vertical traveling column design.
-  DZ: Highly productive twin-spindle machining centers with spindle distance 400 or 600 mm.

### Tool changing systems:

-  Automatic tool change with the pick-up procedure in as little as 1.0 seconds with 60 tool places (DZ: 2 x 28 / 30 HSK 63). High productivity due to the shortest chip-to-chip times starting from 2.7 seconds.
-  Background magazine for the provision of up to 114 tools during machining.

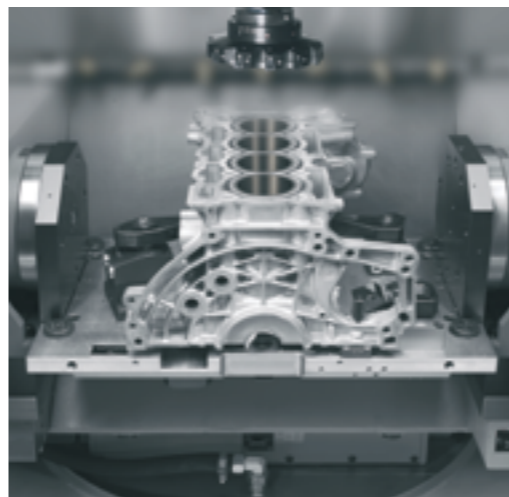
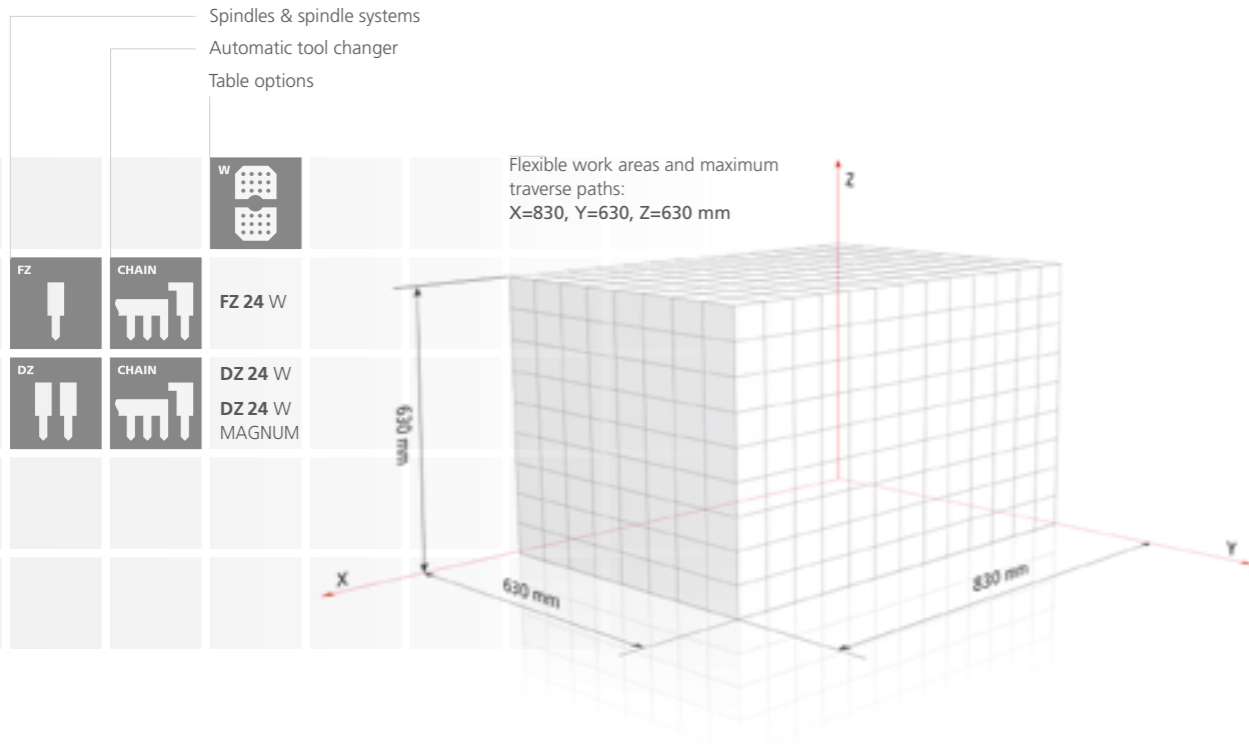
### Table options:

-  FX: 2-axis swivel rotary table with one, two or four face plates (Ø 1 x 280 / 2 x 280 / 2 x 400 / 4 x 280 mm) for single or twin-spindle multi-sided machining.
-  W: Workpiece changing devices (IWW, TWW) with table loading capacities of up to 1,000 kg per side, borehole pattern, central distributor for energy supplies.

# The right machine for each component

Proven modules for customized configurations

Range of applications	[04–05]
Machine design	[06–07]
► Extension options	[08–17]
Services	[18–19]



## Process advantages:

■ Maximum traverse path [X–Y–Z]	830–630–630 mm
■ Maximum power	65 kW (25% ED)
■ Spindles / distance DZ	2 / 400 or 600 mm
■ Maximum spindle speed	15,000 rpm
■ Chip-to-chip time starting	from 2.7 s
■ Axis acceleration X–Y–Z max.	8-12-12 m / s <sup>2</sup>
■ Rapid feed as fast as	75 m / min
■ Max. number of tools	114
■ Tool taper	HSK 63
■ Maximum tool weight	8 kg
■ Maximum tool diameter	160 mm
■ Max. tool length	370 mm
■ Automatic workpiece change starting	from 3.5 s



**FZ 24 W**

Powerful machining center with a pick-up tool changer, integrated workpiece changing device (0°/180°) for loading and unloading during machining.



**DZ 24 W**

Powerful twin-spindle machining center (spindle distance 400 mm) with automatic tool change using the pick-up method and a integrated tool changing device (0°/180°) for loading and unloading during machining.



**DZ 24 W MAGNUM**

Powerful twin-spindle machining center (spindle distance 600 mm) with automatic tool change using the pick-up method and large Trunnion workpiece changing device (TWW) for loading and unloading during machining.

# Diversity and flexibility

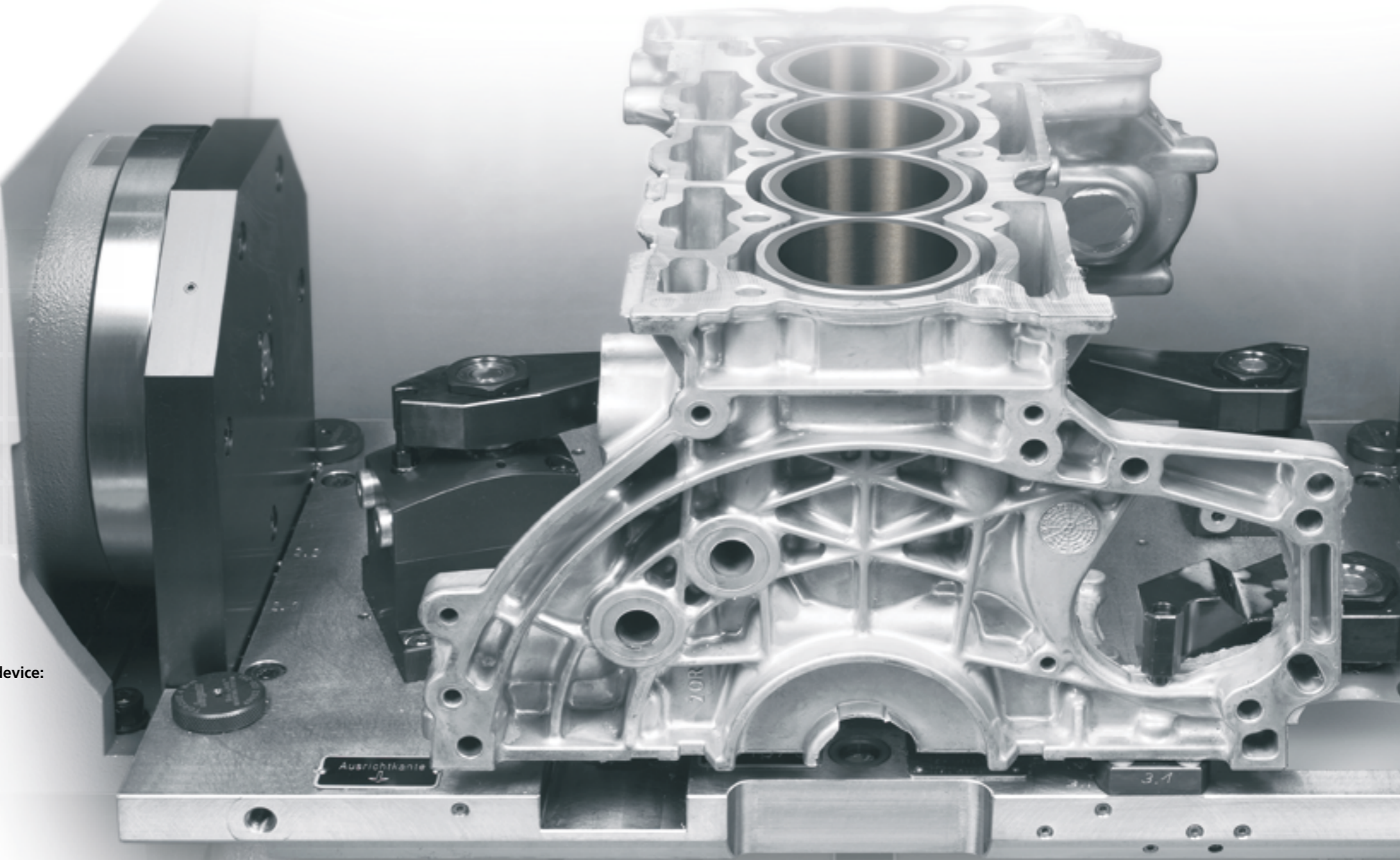
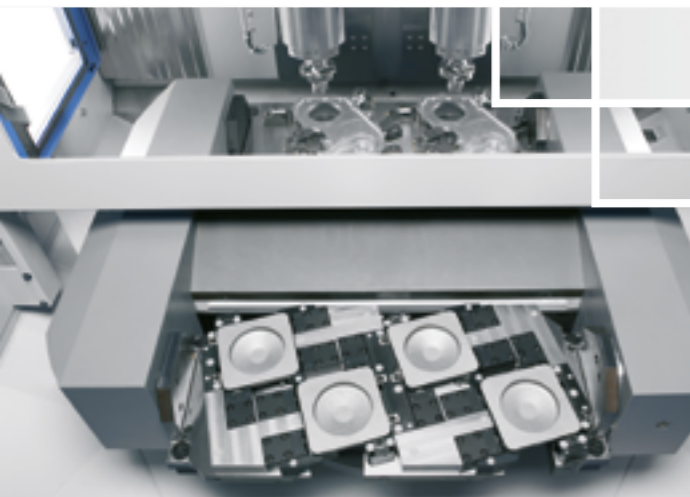
Proven technology and high precision as a foundation



Range of applications	[04–05]
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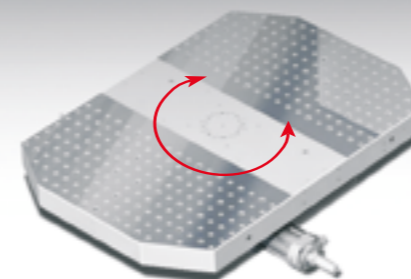
## DZ 24 W

Highly productive precision twin-spindle machining center with an integrated workpiece changing device (0°/180°) for loading and unloading during machining.



### Your advantages with the CHIRON fixed table or workpiece changing device:

- 3-axis machining center based on the vertical traveling column principle
- CHIRON basic device for 4-axis machining or 2-axis swivel rotary table for 5-axis machining.
- High rigidity and thermal stability
- Clear, easily accessible work area
- Work area for larger workpieces or multiple set-ups
- Chip-to-chip time starting from 2.7 s
- Loading and unloading with workpiece changing device during machining (Workpiece change times starting from 3.5 s)
- Workpiece changing device with central splash guard and optimal accessibility
- High table loading
- Individual automation solutions available
- Machine tool construction "Designed and Made in Germany"



Depending on the customer's requirements, the workpiece changing device can be configured with individual table assemblies for 3-, 4-, or 5-axis machining. It offers plenty of space for devices and is equipped with a central distributor for energy supplies.

Downtimes are greatly reduced, due to the capability of loading and unloading workpieces during machining.

## FZ 24 W

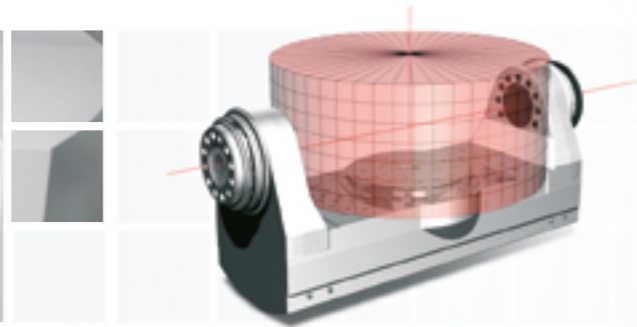
Powerful precision machining center with a pick-up tool changer, integrated workpiece changing device (0°/180°) and NC-rotary table device.

# Precision and dynamics in one set-up

## Five-Axis Machining with the CHIRON rotary table program

Range of applications	[04–05]
Machine design	[06–07]
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Services	[18–19]

2-axis swivel rotary tables	CASD 280	CASD 280-2	CASD 340-2	CASD 340-4
■ Max. workpiece dimensions	Ø 800 x 340 mm	2 x Ø 400 x 340 mm	2 x Ø 600 x 500 mm	4 x Ø 300 x 500 mm
■ Interference range	Ø 570 mm	Ø 570 mm	Ø 800 mm	Ø 800 mm
■ Swivel range	-10° / +138°	-10° / +138°	-40° / +200°	-40° / +200°
■ Face plate (s)	Ø 280 mm	2 x Ø 280 mm	2 x Ø 400 mm	4 x Ø 280 mm
■ Borehole pattern	M 16 x Ø 15H7 x 50 mm	M 16 x Ø 15H7 x 50 mm	M 16 x Ø 15H7 x 50 mm	M 16 x Ø 15H7 x 50 mm



- Solid and reliable technology – developed and manufactured by CHIRON
- Backlash-free preclamped precision gears with high overload capacity and large holding torque
- Rotation option due to highly dynamic torque drives

### DZ 24 W

Highly productive twin spindle machining center with spindle distance 400 mm, with the CHIRON pick-up tool changer, integrated workpiece changing device (0° / 180°) and a 2-axis swivel rotary table with one or two face plates.

#### Your advantages with CHIRON Five-Axis Machining:

- Highest precision in positioning and simultaneous operation
- High rigidity and thermal stability
- Spindle speeds up to 15,000 rpm
- Excellent surface quality
- Integrated CHIRON 2-axis swivel rotary table with direct measuring systems
- Integrated 6-way energy supply for clamping device on the face plate
- Zero-point clamping systems can be integrated
- Fourth axis with a pivoting range of up to 240°
- 5th axis with TORQUE drive up to 1,000 rpm for turning work
- Automatic machine compensation due to the 3D touch probe TS27
- Individual automation solutions available
- Machine tool construction “Designed and Made in Germany”



### DZ 24 W MAGNUM

Flexible twin-spindle machining center with spindle distance 600 mm for powerful machining of heavy workpieces with a large trunnion workpiece changing device (TWW) for loading and unloading during machining.



Trunnion workpiece changing device (TWW) for loading and unloading during machining. 5-axis machining with two double-spindle, 2-axis swivel rotary tables. Combined with fast rapid feeds and the dynamic NC swivel rotary tables, non-productive times are reduced to a minimum.



## Double productivity with CHIRON multi-spindle processing

### DZ 24 W

The combination of two spindles (distance 400 mm) a workpiece changing device 0°/180° and a double clamping device results in cost savings of up to 50%.

Range of applications	[04–05]
Machine design	[06–07]
▶ Extension options	[08–17]
Services	[18–19]

### DZ 24 W MAGNUM

A perfect combination of two spindles with a trunnion workpiece changing device. The MAGNUM model is delivered with a spindle distance of 600 mm.

The multiplier effect – more spindles, more cutting, more profit: Doubled productivity on one machine means a reduction of machining time of nearly 50%. There is also the option of multi-side machining through NC controlled rotary axis.

#### Your advantages with CHIRON multi-spindle machining:

- Reduction of energy and space requirements
- Reduction of the total processing time
- Simplification of the material flow
- Reduced investment costs
- Reduced staff resources
- Spindle speeds up to 15,000 rpm
- High productivity
- High rapid-feed speeds of up to 75 m/min
- Highest precision in positioning and simultaneous operation
- Precision glass scales on all axes
- Shortest chip-to-chip times starting from 2.7 s
- CHIRON 2-axis swivel rotary table possible
- Individual automation solutions available
- Machine tool construction “Designed and Made in Germany”



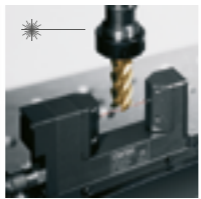
# Automatically a step further

Customized automation solutions and options for your production

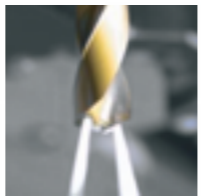
Range of applications	[04–05]
Machine design	[06–07]
► Extension options	[08–17]
Services	[18–19]

## Variocell SYSTEM – Customized automation solutions:

- Machine-integrated spindle grippers
- Portal and articulated-arm solutions
- Load and unload devices
- Pallet changing systems
- Pallet storage for raw and finished parts
- Interlinked systems and much more



**CHIRON laser control** for tool breakage checks, for tool measurement and for machine compensation.



**Internal cooling through the spindle** up to 70 bar; also available with a frequency-controlled pump.

Background magazine for the provision of up to 114 tools during machining.

**Stationary 3D probing system TS 27** for tool length measurement, tool breakage checks as well as machine compensation.

### Series 24 – further options:

- High Speed Plus package
- Reinforced spindle drive
- Work area suctioning unit
- Connection for central suctioning unit
- Energy-efficiency package with an intelligent energy-saving control
- Automatic doors
- Zero point clamping systems
- Oil package with fire-extinguishing system
- Robot interface and much more

# From planning stage to serial production

Global competence from one source – CHIRON TURNKEY

Range of applications	[04–05]
Machine design	[06–07]
Extension options	[08–21]
▶ Services	[18–19]

**Analyzing:**  
Your requirements are our challenges



**Conceptual designing:**  
Innovative technologies efficiently implemented



**Specifying:**  
Perfection – to the finest detail



**Implementing:**  
Precisely the agreed upon performance



Today, it's no longer enough to manufacture machining centers only. The user rightly expects a solution, which is as individual as it is intelligent. Starting from one specific machining task, a „Turnkey process“ is to be developed around the workpiece based on quantity structure and constraints. The CHIRON TURNKEY makes it possible to optimally solve complex tasks.

Together with perfectly adapted technology modules, CHIRON engineers create the most economical solution from one source to meet the customer's special needs. This ensures decisive competitive advantages for CHIRON customers. CHIRON not only offers the machining solution itself, but also the support to keep manufacturing running at an optimal level.



## CHIRON TURNKEY solutions

- Comprehensive process design
- Expert engineering
- Experienced project management
- Validation of statistical process capability
- Ensuring targeted productivity
- Production assistance during the initial phase
- Operation and programming training
- CHIRON Service available around the world

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