12 Series

Fast, compact single and double-spindle, precision machining centers
Highly productive, compact and multifunctional
for the lowest cost per piece

The CHIRON 12 series machining centers are among the best machines in their class in terms of speed, compact construction and versatility of use. 12 series machining centers can be supplied as single-, double spindle or MillTurn versions:

- Highly productive and reliable
- Highest precision and processing quality
- Minimum floor space requirements
- Fast set-up
- Simple operation
- High stability and dynamics
- Easy maintenance

Due to its modular design and numerous configuration possibilities, every 12 Series machine can be assembled into a perfect individualized solution.

Your benefits: Workpiece production at the lowest cost per piece with the lowest tolerances and excellent surface quality.
Synchronized production quality
with perfection down to the smallest detail

Automotive
Complete machining of integral components, such as casing covers for water pumps made of aluminum [120 mm x 55 mm x 80 mm]

Medical
Bone plate made of titanium [110 mm x 48 mm x 1.5 mm]

Machine construction
Milling, drilling, thread cutting and turning in one set-up for example, complex processing tools made of steel [130 mm x 43 mm]

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 12 Series reduce processing times, produce excellent surfaces and compress your manufacturing process into the smallest space possible. 12 series machining centers are the perfect tools to implement your product ideas quickly and with micron-level precision.

Market leaders trust us.

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

CHIRON
12 Series
Modular concept:
- Vertical traveling column principle
- Compact installation area from width 1,490 mm x depth 3,200 mm (S)
- Mineral cast machine bed
- High rigidity and thermal stability
- Motor spindles with water cooling
- Precision glass scales on all axes
- Dynamic direct drives and precision guides
- Robust CHIRON rotary axes
- Fully enclosed work area, stainless steel covers
- Smooth, steep walls for ideal chip flow directly into the chip conveyor
- Ergonomic operating and loading concept
- Service friendly access to all auxiliary units
- High durability, low maintenance

Spindles & spindle systems:
- FX: 2-axis swivel rotary table with AC kinematics and one or two face plates (diameter: 1 x 280 / 2 x 245 mm) for single or multi-spindle multi-sided machining.
- W: Workpiece changing device with table loading capacity of up to 300 kp per side and large clamping surfaces (2 x 660 x 350 mm), borehole pattern, central distributor for energy supplies.

Tool changing systems:
- Automatic tool change with the pick-up method (as fast 0.9 s in single or double version for the provision of up to 128 tools (HSK 40 / HSK 50 / HSK 63).
The right machine for each component
Variants and extension options

Process advantages:
- Maximum path [X–Y–Z]: 550–400–420 mm
- Maximum electrical power: 40 kW (40% ED)
- Spindle clearance DZ: 250 mm
- Maximum spindle speed: 40,000 rpm
- Chip-to-chip time starting from: 2.2 s
- Maximum axis acceleration [X–Y–Z]: 1–1.5–2 g
- Rapid feed as fast as: 75 m/min
- Max. number of tools: 128
- Tool taper: HSK 40 / HSK 50 / HSK 63
- Maximum tool weight: 5.0 kg
- Maximum tool diameter: 125 mm
- Max. tool length: 250 mm
- Automatic workpiece change: from 2.0 s
Variety and flexibility as a foundation
Proven technology and the highest precision is our standard

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

- 3-axis basic machining center based on the vertical traveling column principle
- Compact installation area from width 1,490 mm x depth 3,200 mm (S) / 1,700 mm x 3,600 mm (W)
- Mineral cast machine bed
- High rigidity and thermal stability
- Clear, easily accessible work area
- Work area for larger workpieces or multiple set-ups
- Automatic tool change using the pick-up method
- Chip-to-chip time starting from 2.2 s
- Loading and unloading with tool changing device during machining (workpiece change time 2.0 s)
- Workpiece changing device with central splash guard and optimal accessibility
- Expandable to 4 axes with the basic device or to 5-axis machining with the 2-axis tilt rotary table
- Optional fully integrated automation solutions (Variocell)
- Machine tool construction "Designed and Made in Germany"
Precision in one set-up

Complete machining with CHIRON Five axis

Integrated CHIRON 2-axis rotary table, maintenance-free TORQUE drive technology and automatic tool change using the pick-up method.

Five axis machining with the CHIRON rotary table program:
- Robust and reliable technology – developed and made by CHIRON
- Pre-tensioned, backlash-free precision gear with high overload capacity and high transmittable torque
- Turning option due to precise torque technology

Your advantages with CHIRON FX:
- Compact installation area from width 2,100 mm x depth 3,200 mm
- Mineral cast machine bed
- High rigidity and thermal stability
- Highest precision in positioning and simultaneous operation
- CHIRON motor spindle speeds of up to 30,000 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 +/- 120°
- 5th axis with TORQUE drive up to 1,000 rpm for turning work
- Automatic machine compensation due to the 3D touch probe TS27
- Optional fully integrated automation solutions (Variocell)
- Machine tool construction “Designed and Made in Germany”

Max. workpiece dimension (FZ12 FX)
- Ø 280 x 385 mm
- up to Ø 650 mm

Max. workpiece dimension (DZ12 FX)
- Ø 610 x 200 mm
- Ø 650 mm

Your advantages with CHIRON FX:
Manufacture up to 75% faster
with CHIRON multi-spindle processing

The multiplier effect – more spindles, more cutting, more profit:
The combination of 2 spindles and a 4-fold clamping device results
in a cost saving of up to 50%. 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
- Water-cooled motor spindles up to 24,000 rpm
- Spindle clearance DZ 250 mm
- High rapid-feed speeds of up to 75 m/min
- Highest precision in positioning and simultaneous operation
- Precision glass scales on all axes
- Chip-to-chip time as fast as 2.2 s
- CHIRON 2-axis swivel rotary table possible
- Optional fully integrated automation solutions (Varicell®)
- Machine tool construction “Designed and Made in Germany”
Simultaneous turning and milling
in the smallest work area, with CHIRON MillTurn

Your advantages with CHIRON MT:
- Simultaneous turning and milling in one machine
- High productivity through parallel machining functions
- Full-fledged turning function due to turning spindle (up to 8,000 rpm / IT6)
- Turning revolver with up to 12 driven tools (Capto C4)
- Reduction of the throughput time due to 6-sided complete machining from the bar (Passage up to 65 mm)
- Opposed spindle for rear-sided turning operations and 5-axis simultaneous milling
- Automatic tool change (main spindle) with the pick-up method
- Highly dynamic linear motors in the ZR and V axis
- Automatic tool change (main spindle) with the pick-up method with 24 / 48 / 64 tool places HSK 40 / HSK 50
- Mineral cast machine bed, high cutting capacity and precision
- Integrated finished part removal (chute, drawer)
- Compact installation area (width 2210 mm x depth 3510 mm)
- Machine tool construction “Designed and Made in Germany”

FZ12 MT
CHIRON MT: The fastest 6-sided complete machining with swivel head, turning spindle, turning revolver and opposed spindle for simultaneous milling and turning from bars.

The modular design of the FZ12 MT enables customized configuration for its various applications in many industries.

Direct path-measuring systems on all (up to 10) axes and high-dynamic drives ensure top precision in positioning and simultaneous operation.
Turnkey customization completely from one source

Individual automation and engineered solutions for greater productivity

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

Variocell UNO
Machining center and robot cell as unit
Flexible and economical solution as a compact unit consisting of machining center, handling robot and workpiece storage unit for low-manpower operation and greater process reliability.
Integrated automation in the smallest area (< 1 sq. m), transported together, no separate set-up, no need for additional alignment of the robot cell or for more protective equipment.

CHIRON turnkey solutions
- Comprehensive process design
- Expert engineering
- Experienced project management
- Validation of statistical process capability
- Ensuring targeted productivity
- Production support during the start-up phase
- Training in operation and programming
- CHIRON Service available around the world

From the planning stage to serial production
Today, manufacturing excellent machining centers alone is not enough. The user rightly expects a solution, which is as individual as it is intelligent. Starting from one specific machining task, a “Turnkey process” is 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.