

# 16 Series

Dynamic, highly precise machining centers for high-performance  
and productive machining of complex workpieces





**DZ 16 W**  
Highly productive double-spindle machining center DZ 16 W with workpiece changing device and intuitive TouchLine operating system, a task-oriented and context-sensitive user interface.

# Visionary percision

## Productive manufacturing with highest accuracy

Developed and driven by the demands of leading manufacturers, the new CHIRON FZ / DZ 16 combines the highest levels of precision, dynamics and cutting capabilities. Intensive dialog within multiple market segments has resulted in a fundamentally new machining platform with mobile gantry design – achieving unmatched surfaces on increasingly complex workpieces. Maximum productivity, precision and flexibility are no longer contradictions.

Reliably high productivity

Highest precision and processing quality

Low space requirement

Fast set-up

Simple operation

High stability

High dynamics

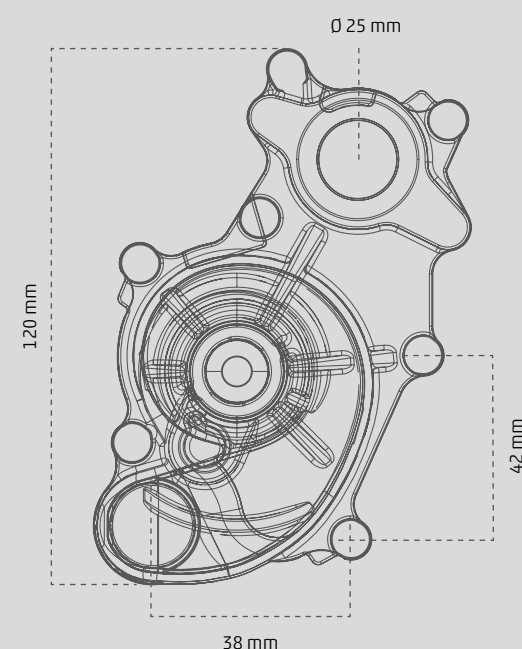
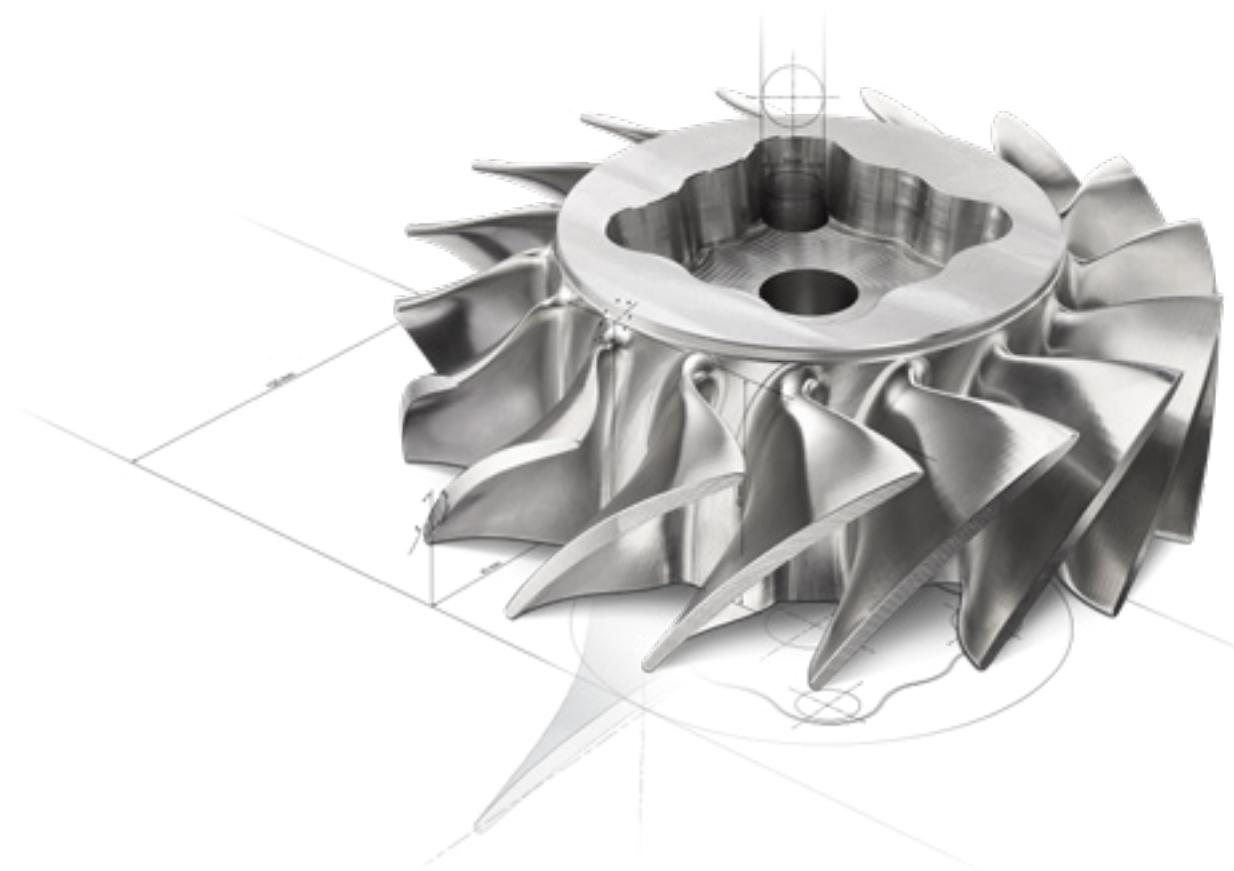
Easy maintenance

Every basic machine of 16 Series can be expanded to a perfect individual solution. Your advantage: Outstanding productivity, highest accuracy and maximum flexibility are guaranteed from immediately no more objections.

## Precision without compromise – Large variety of workpieces and excellent surface quality

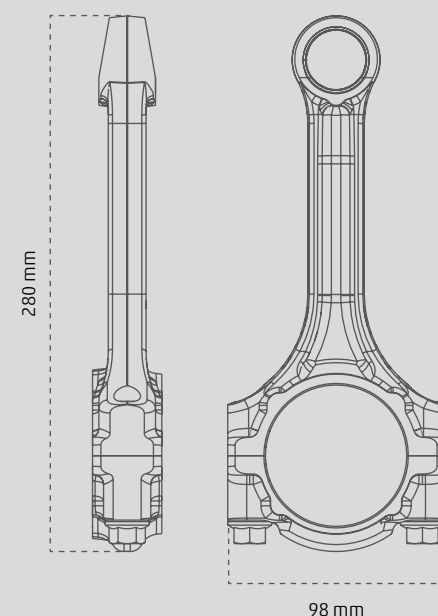
### We love perfection

That's why we view every detail as an exciting challenge. Whether automotive, aerospace, mechanical engineering, medical or precision engineering – the highquality machining centers of the CHIRON 16 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.



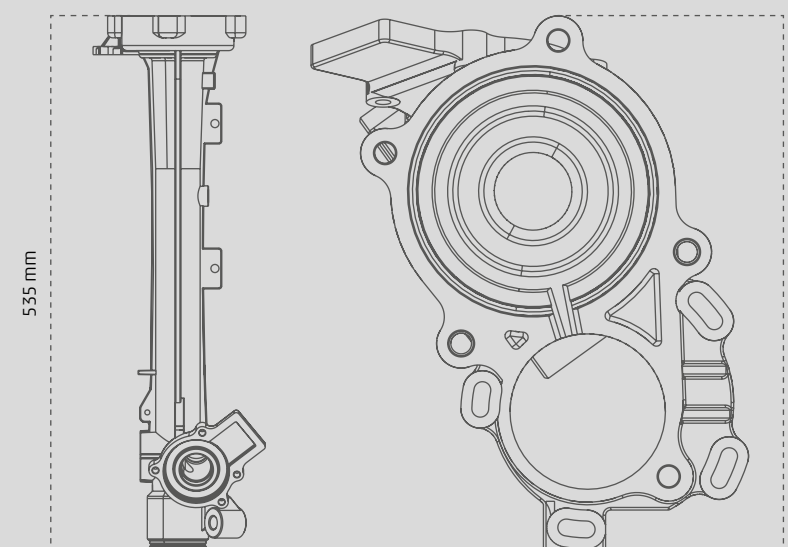
#### Automotive

Complete machining of integral components, such as casing covers for water pumps made of aluminum [120 mm x 55 mm x 60 mm]



#### Automotive

Lowest cost-per-piece, complete machining of vehicle components such as: connecting rods and cylinders



#### Automotive

E. g. machining of casing or steering boxes [535 x 100 x 100 mm]

# High variability due to high-tech modules – Perfectly matched for every application



Intuitive and context-sensitive TouchLine operating system

## Modular concept

- Mobile gantry design
- Small footprint even with a large number of tools
- Mineral casting machine bed, inherently stiff and vibration-damping
- High static and dynamic stiffness
- Excellent thermal stability
- Highly productive motor spindles
- Rotary axes with torque direct drive
- Actively cooled drive components
- Ideal chip flow through hanging cradle and steeply sloping walls
- Loading and unloading of tools during machining
- Context-sensitive and intuitive TouchLine operating system
- Condition monitoring at the control panel via IO-Link and ProfiNet
- Service-friendly accessibility to all components

## Spindles and spindle systems



Proven single-spindle machining center in a vertical traveling column design.



Highly productive double-spindle machining centers with a spindle clearance of 320 mm.

## Table options



Swivel rotary table in A & A-C kinematics with one or two face plates (Ø 1 x 450 mm / 2 x 319 mm) for single or double-spindle machining.



Workpiece changing device with table loading up to 750 kg per side and large clamping surfaces up to 2 x 900 x 500 mm, borehole pattern, central distributor for energy supply.

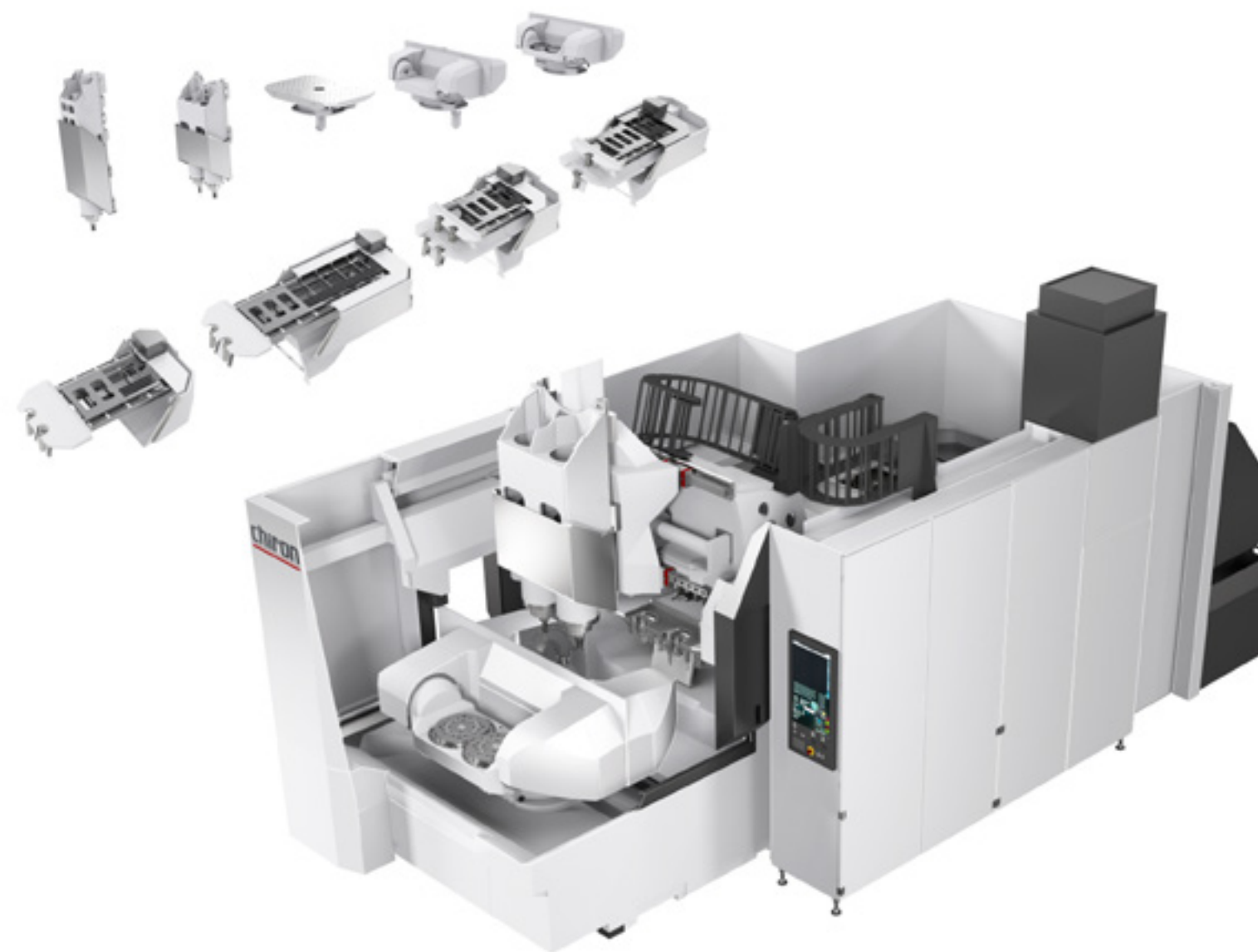


Integrated workpiece changer in A & A-C kinematics with one or two face plates (Ø 1 x 319 mm / 2 x 319 mm) for single or double-spindle machining.

## Tool changing systems



Automatic tool change using the pick-up method from 2.5 s with 42 / 60 / 90 / 162 tools (DZ 2 x 28 / 44 / 64 / 80).



# The right machine for each component

## Proven modules for customized configurations



**FZ 16 S five axis**  
The single spindle machine is designed for precise 5-axis machining. Industry-leading dynamics result in a machine that truly shines, ensuring maximum productivity for each application.

In short: Produce more parts, with unrivaled precision.



**DZ 16 W**  
The double-spindle machine with workpiece changing device allows loading and unloading while machining – the ultimate competitive advantage for high volume production. With even greater dynamics, this machining center produces complex parts with unprecedented precision.

In short: Highly precise parts at maximum productivity.



## Process advantages

- Travel X – Y – Z max.
- Power max.
- Spindle distance DZ
- Spindle speed max.
- Torque max.
- Chip-to-chip time
- Axis acceleration X – Y – Z max.
- Rapid feed max.
- Number of tools max.
- Tool taper
- Tool weight max.
- Tool diameter max.
- Tool length max.
- Automatic workpiece change from
- Face plate

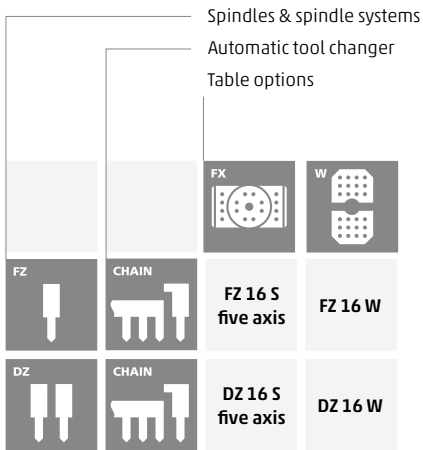
## FZ 16 S five axis

660 – 660 – 400 mm  
61 kW  
20,000 rpm  
200 Nm  
2.5 s  
15 / 13 / 18 m/s<sup>2</sup>  
75 m/min  
162  
HSK-A63 / HSK-T63  
10.0 kg  
160 mm  
450 mm  
1 x Ø 468 mm

## DZ 16 W

340 – 450 – 400 mm  
61 kW  
320 mm  
20,000 rpm  
200 Nm  
2.5 s  
12 / 12 / 14 m/s<sup>2</sup>  
75 m/min  
2 x 80  
HSK-A63 / HSK-T63  
10.0 kg  
160 mm  
300 mm  
3.5 s  
2 x Ø 319 mm

## Variants and expansion options





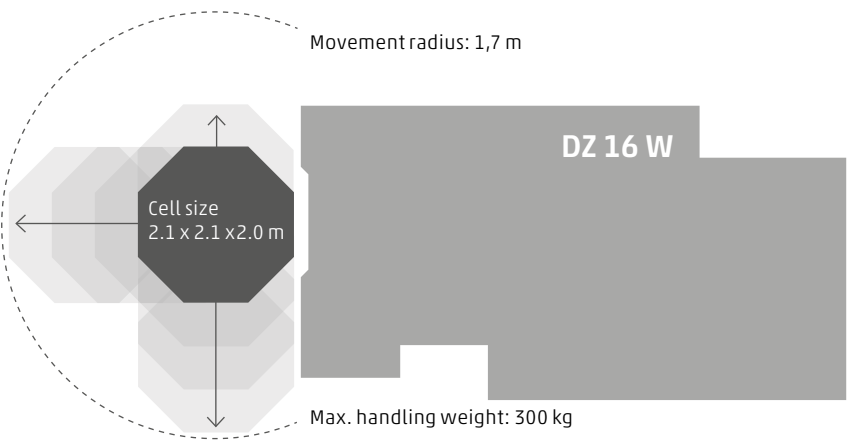
# VariocellPallet: automatic machining of complex workpieces

**An innovative solution, specially developed for the new FZ / DZ 16 series**  
With the objective of processing small batch sizes more dynamically and flexibly, VariocellPallet enables various raw parts to be clamped on a rotary indexing table with up to ten prefabricated pallets. The handling system supplies raw part after raw part to the machining center and removes the workpieces together with the pallet following the successful machining process. This significantly increases productivity.

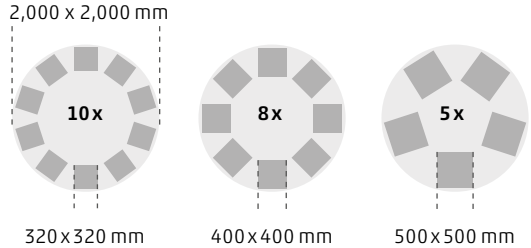
Additional benefit: While one pallet is being processed, a second can be loaded in parallel. One particularly attractive feature of VariocellPallet is the flexible operator access to the machining center: The motorized transfer trolley with rollers can be moved in two directions without needing rail systems. The pallet automation does not require much space and can be loaded and unloaded manually if necessary. An alternative automation solution for the FZ/DZ 16 is the modular, customer-specific configurable VariocellPallet.



Size and composition



Pallet places





## CHIRON TURNKEY

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

## Turnkey customization completely from one source

### Individual automation and engineered solutions for greater productivity

#### VariocellUno

Flexible and inexpensive: a compact machining center, handling robot, workpiece storage and workpiece changing device (0° / 180°) for loading and unloading during machining.

### Customized automation solutions

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



### Your advantages with CHIRON VariocellUno

- Integrated automation in the smallest possible space (< 1.5 m<sup>2</sup>)
- Machine and automation as a unit
- Simple installation and set-up, as well as in-plant repositioning
- High efficiency for more profit
- High storage capacity
- Simple operation and programming
- Raw and finished part pallets can be replaced during machining
- Double gripper robot for quick workpiece change (option)
- Integrated measuring part discharge (for instance SPC parts)
- Unrestricted access to the work area in the manual mode
- Robots can be used for additional tasks

Today, manufacturing excellent machining centers is not enough. Users expect a solution, which is as individual as it is intelligent. From one specific machining task, a »Turnkey process« is to be developed around the workpiece based on the specifications 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.

Analyzing

Conceptual  
designing

Specifying

Implementing

Profiting



# SmartLine

## The path to »digitally enhanced machining« is prepared

Intelligent machine control, digital networking, mutual machine communication, if »digitally enhanced machining« is mentioned, CHIRON may already has something to say. With the SmartLine program, the CHIRON Group provides a modular software system that enables customers to unlock the full potential of the digital manufacturing process.



**Machine**  
TouchLine, ProtectLine,  
ConditionLine



**Factory**  
DataLine, ProcessLine,  
ConditionLine



**Cloud**  
RemoteLine,  
ConditionLine

### An overview of all software modules

### User

ConditionLine	– Early detection of unusual operation behavior	– Maintenance engineer
	– Constant monitoring and analysis of the machine condition	– Service
	– Customized degree of networking	
ProtectLine	– Collision monitoring in all types of operation	– Machine operator
	– Preventative collision protection	– Maintenance engineer
	– Safety during machining	
TouchLine	– Context-sensitive information	– Machine operator
	– Machine-specific support	– Maintenance engineer
	– User-guided operation	– Installer
RemoteLine	– Machine remote access	– Maintenance engineer
	– Rapid assistance in event of fault	– Service
	– Automatic notifications	
	– Optimum data security	
DataLine	– Visualization of machine condition and process progress	– Production planner
	– Configurable system	– Head of manufacturing
	– Real-time information about all machinery	– Controlling
ProcessLine	– Digital twin and post-processor	– Production planner
	– »Digital« process run-in	
	– Collision-tested NC program	



# Trainings and workshops

## Ahead through qualification, because knowledge leads to success.

To enable you to use your CHIRON CNC machining center optimally, we offer a comprehensive range of qualification measures, training courses and training for operators, setup personnel and service technicians.

The training programme is characterised above all by flexibility in implementation. In addition to the courses in our CHIRON training centre, these can also take place at your location. Our trainers are able to offer courses in German and English. Optionally we offer further languages with the help of an translator.

In the CHIRON Training Center, we get interested persons, both beginners and pros, up-to-date with the latest technology, step by step. With a number of individually combinable machine courses and programming courses. In this way we qualify your employees while increasing the productivity of your CHIRON CNC machining center. This leads to more success for your company, since qualified and motivated employees are an important success factor.

Our training courses are designed didactically according to the latest teaching methods. By doing practical work in small groups, we take into account the field of interest and the level of knowledge of the participants.

Our philosophy is to strongly qualify the participants through their own work on our training objects. Subsequently, what has been learned can be directly put into practice in routine work.

### CHIRON training, courses and training are available for the following topics:

- Service and maintenance
- Operation
- Programming
- Components
- Robots
- Customer-specific





## Members of the CHIRON Group



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