Automation solutions

Flexible automation solutions and highly productive complete systems for greater productivity
Fully automated process solutions: individual and economical

Loading and unloading, turning, milling, drilling, measuring, cleaning, coding of workpieces: The companies of the CHIRON Group offer powerful, fully automated complete solutions for almost every application. They combine constantly high production quality, flexibility, low unit costs and short order processing times for an optimal process.

VARIOCELL UNO – Integrated automation in the smallest space with 6-axis robot, workpiece storage for up to 24 raw part pallets and turning station.

VARIOCELL SYSTEM – Individually configurable automation solutions to meet the highest customer requirements.

Customized automation solution for example, autonomous production using a feed and discharge conveyor belt.
VARIOCELL UNO

Integrated and cost-effective automation in the smallest possible space

VARIOCELL UNO is a compact unit consisting of a handling robot and a workpiece storage unit for loading and unloading workpieces during machining. The optional equipment of the VARIOCELL UNO includes multiple gripper, turning station, brushing station, blowing station, pressing station, measuring station, washing station, labeling station and other components. It enables great flexibility all the way up to 6-sided machining.

Your advantages with Variocell UNO

- Machine and automation as unit
- Simple set-up and commissioning
- High efficiency
- High storage capacity
- Simple operation and programming
- Raw and finished part pallets can be replaced during machining
- Robot double gripper for fast workpiece changes
- Integrated measuring part discharge (for instance, SPC parts)
- Unrestricted access to the work area during manual operation
- Robot can be used for additional tasks

Technical data

<table>
<thead>
<tr>
<th></th>
<th>Variant 1</th>
<th>Variant 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. footprint</td>
<td>1.5 m²</td>
<td>2.0 m²</td>
</tr>
<tr>
<td>Max. load-bearing capacity</td>
<td>5 kg</td>
<td>10 kg</td>
</tr>
<tr>
<td>Max. number of pallets</td>
<td>24</td>
<td>24</td>
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<tr>
<td>Pallet size</td>
<td>400 x 300 mm</td>
<td>600 x 400 mm</td>
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<tr>
<td>Max. pallet weight</td>
<td>10 kg</td>
<td>10 kg</td>
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</table>
**VARIOCELL UNO**

Modules and options for greater manufacturing efficiency

*Integration of a measuring machine*

*Pallet storage for max. 24 raw part magazines (400 x 600 mm / 300 x 400 mm) at a distance of 3". For larger workpieces, the number of pallets is reduced. Pallets for raw and finished parts can be exchanged any time.*

*Workpiece gripper in the main spindle for machine-integrated workpiece handling.*

*Many standardized options support the design and realization of project-specific requirements.*

*Customized pallet inlays with a robot with double gripper.*

*In-process measurement: measurement solution for individual production and small series production.*

*Marking of components with subsequent reading of a DMC code.*

*Handling of customer-specific workpiece inlays with alignment station and workpiece depositing.*
VARIOCCELL SYSTEM

Individually configurable automation solutions

With the VarioCell SYSTEM you significantly increase the efficiency of your machining center. Because VarioCell SYSTEM offers a variety of space-saving solutions to meet the most demanding requirements.

VarioCell SYSTEM components

- Handling systems, such as industrial robots, portal systems
- Workpiece storage for raw and finished parts
- Pallet storage
- Feeding and discharging equipment
- Safety equipment, protective enclosures
- Gripper systems
- Host computer systems
- Peripheral units for cleaning, deburring, marking, testing, measuring, separating etc.

VARIOCELL SYSTEM at CHIRON

Maximum flexibility in the design of your production systems, taking into account customer requirements, cost-effectiveness and efficiency.

VARIOCELL SYSTEM at STAMA

The combination of a robot cell and a STAMA machining center makes it possible to optimally realize a continuous control and operating concept for machine tools and robotics with peripherals.

VARIOCELL SYSTEM at SCHERER

The highly productive SCHERER systems are well-suited for the entire range of your production - from an isolated application all the way to a fully automatic production line.
A fully automated CNC machining center from CHIRON combines a consistently high production quality, flexibility, low unit costs and short lead times for an optimal process. With the individually configurable CHIRON Variocell SYSTEM automation solutions, you can significantly increase the efficiency of your machining center. Because Variocell SYSTEM offers a variety of space-saving solutions to meet the most demanding customer requirements.
Perfect teamwork on all levels

One major challenge in automated production processes is the coordination of the interfaces between machine and automation. The combination of a robot cell and a STAMA machining center makes it possible to optimally realize a continuous control and operating concept for machine tools and robotics with peripherals.

Modular standard means flexibility

A VARIOCELL SYSTEM solution from STAMA can operate one or two machining centers, around the corner or facing each other. The feeding and removal of raw and finished parts is variable. All interfaces have been created.

Industry 4.0 ready

A touch panel visualizes the automated production process. The status of the individual system components can be queried at any time. The integration of new automation components or the retrofitting of gripper units is simple and is supported by logical menu guidance. That is clearly structured and saves time.

The interface structure and the control concept of VARIOCELL SYSTEM are designed intelligently, in keeping with Industry 4.0. New system components, docked as extensions to the robot cell, automatically identify themselves by special algorithms. This allows a great system variety with minimum engineering times.
Maximum performance for the most demanding requirements

Flexibility is the best!
The highly productive SCHERER systems are well-suited for the entire range of your production – from an isolated application all the way to a fully automatic production line. All types of the VDZ and WDZ series therefore offer many options for process improvement and optimization: such as automation variants including belts, shuttles and robotic systems for feeding and discharging parts as well as additional processing modules such as milling spindles, special drilling heads, thread cutting devices and grinding units. And, if necessary, integrate in-process probes, measuring stations, washing, deburring, drying systems and much more – for maximum productivity.

The integrated milling spindle enables the internal processing of differential housings in one set-up.
Complete systems

Automated turning and milling from a single source

Why complicated when simple also works? Use the system expertise of the CHIRON Group and combine turning and milling in one system. You benefit from fewer interfaces and get everything from a single source.

Integration of drilling and threading operations? No problem. And CHIRON-SCHERER systems are also well-prepared for secondary operations such as washing, balancing, measuring or labeling.

Advantages of a CHIRON-SCHERER system

- Optimally coordinated work operations – piece time optimized for greatest output
- Consistent automation with cell-optimized material flow
- Joint use of units, for example, coolant preparation and coolant cooling, extraction)
- Optimized utilization of resources (energy, area, personnel)

Project example
Complete machining of bearing housings for turbochargers
Annual requirement: 240,000 pieces

<table>
<thead>
<tr>
<th>Process procedures</th>
<th>OP10 + OP20</th>
<th>OP30 + OP40</th>
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<tr>
<td>System components</td>
<td>SCHERER</td>
<td>CHIRON</td>
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<td>Machining time [sec]</td>
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<td>140</td>
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<td>Loading and unloading time [sec]</td>
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<td>incl.</td>
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<tr>
<td>Total cycle time [sec]</td>
<td>70</td>
<td>140/2+70</td>
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Multifunctional & smart

Automated complete machining of extruded profiles

Whether series or variant production, the CHIRON MultiProfile machining centers (MP) are the perfect solution for 4-sided complete machining of extruded profiles. The CHIRON MP is compact and optimizes internal processes. Milling, drilling, thread-cutting, countersinking, reaming, deburring, and cutting: anything is possible. With CHIRON MP, components (such as airplane seat rails) can be flexibly manufactured with a high level of production quality. The main advantages are quick conversions and maximum flexibility for short parts starting from 10 mm up to long parts of any length.

Your advantages with CHIRON MP

- Cyclical automatic workpiece production
- Passage up to 150 x 150 mm
- Highest availability
- Lower unit costs thanks to high productivity
- Spindle speeds up to 20,000 rpm
- High production quality due to machining in one set-up
- Cost-effective clamping concept
- Minimum set-up time for changing batch sizes and variants
- Fast retooling for variant production
- Autonomous production
- Can be automated with different loading and unloading systems
- Low maintenance and durable

The profiles are precisely guided between two synchronized NC rotary axes, accurately positioned and firmly clamped. The raw material is automatically fed by a feed unit. The workpiece is discharged via a practical unloader.