



# Series VDZ

CNC vertical turning machines for complete machining

**SCHERER**

**FEINBAU**

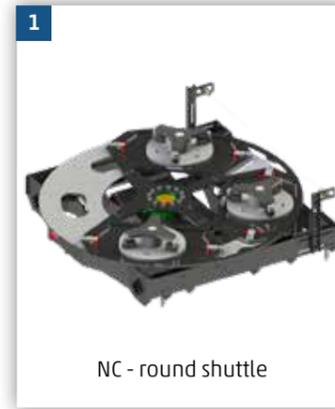
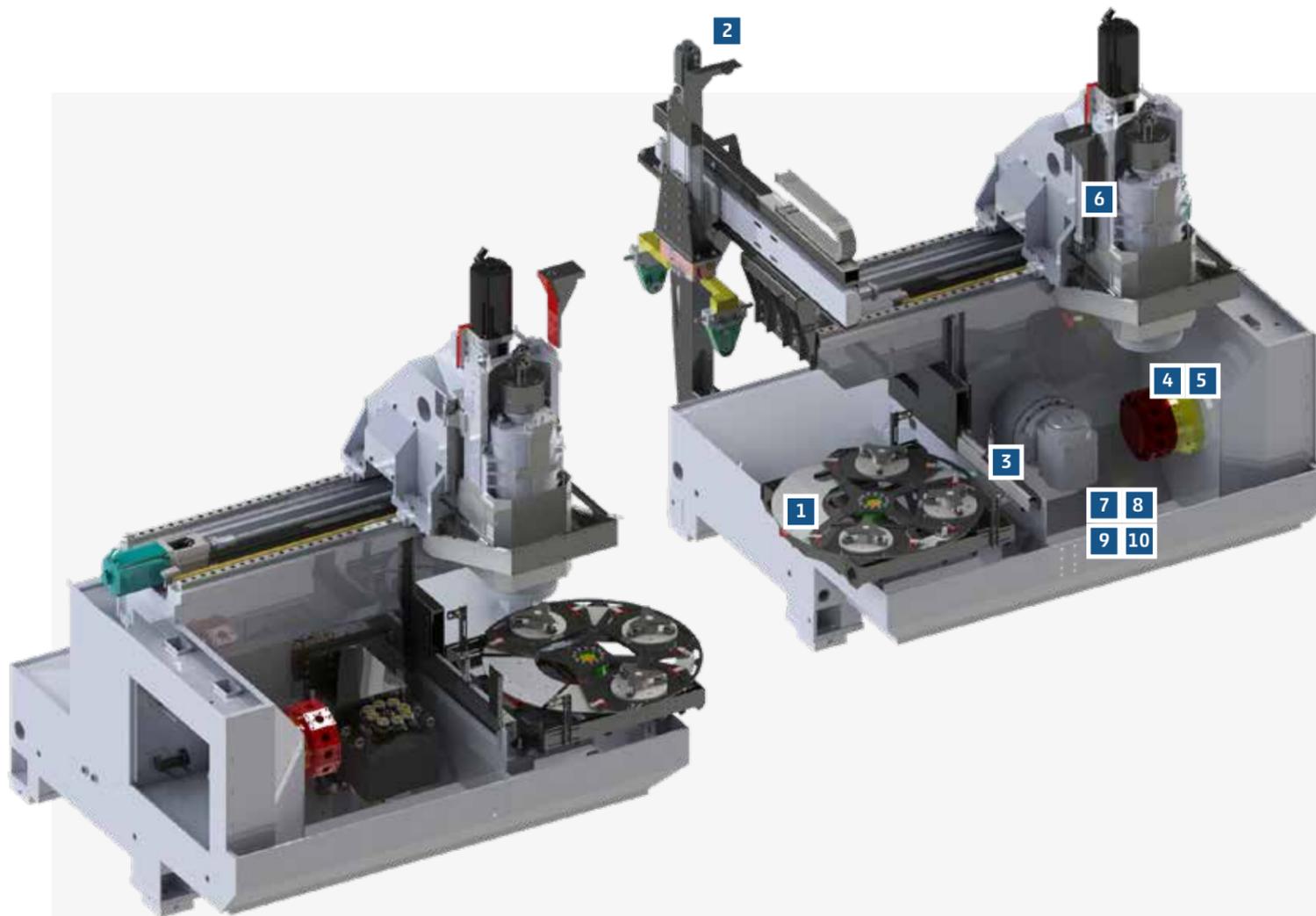
# Custom CNC vertical turning machines from SCHERER

Just as no workpiece resembles another, CNC vertical turning machines from SCHERER also differ

SCHERER Feinbau turning machines are modular, single-unit products that are produced on a workpiece-specific and customer-specific basis – based on standard modules. Show us the component that you would like to manufacture and we will present you the machine solutions for cost-optimized piece production.

We are a medium-sized company, our technicians and engineers advise you directly, personally, comprehensively and competently. We communicate directly and make quick, well-informed decisions.

SCHERER Feinbau GmbH was founded in 1978 and has been a member of CHIRON Group since 2012. The worldwide sales and service network of the group is fully available to our customers.



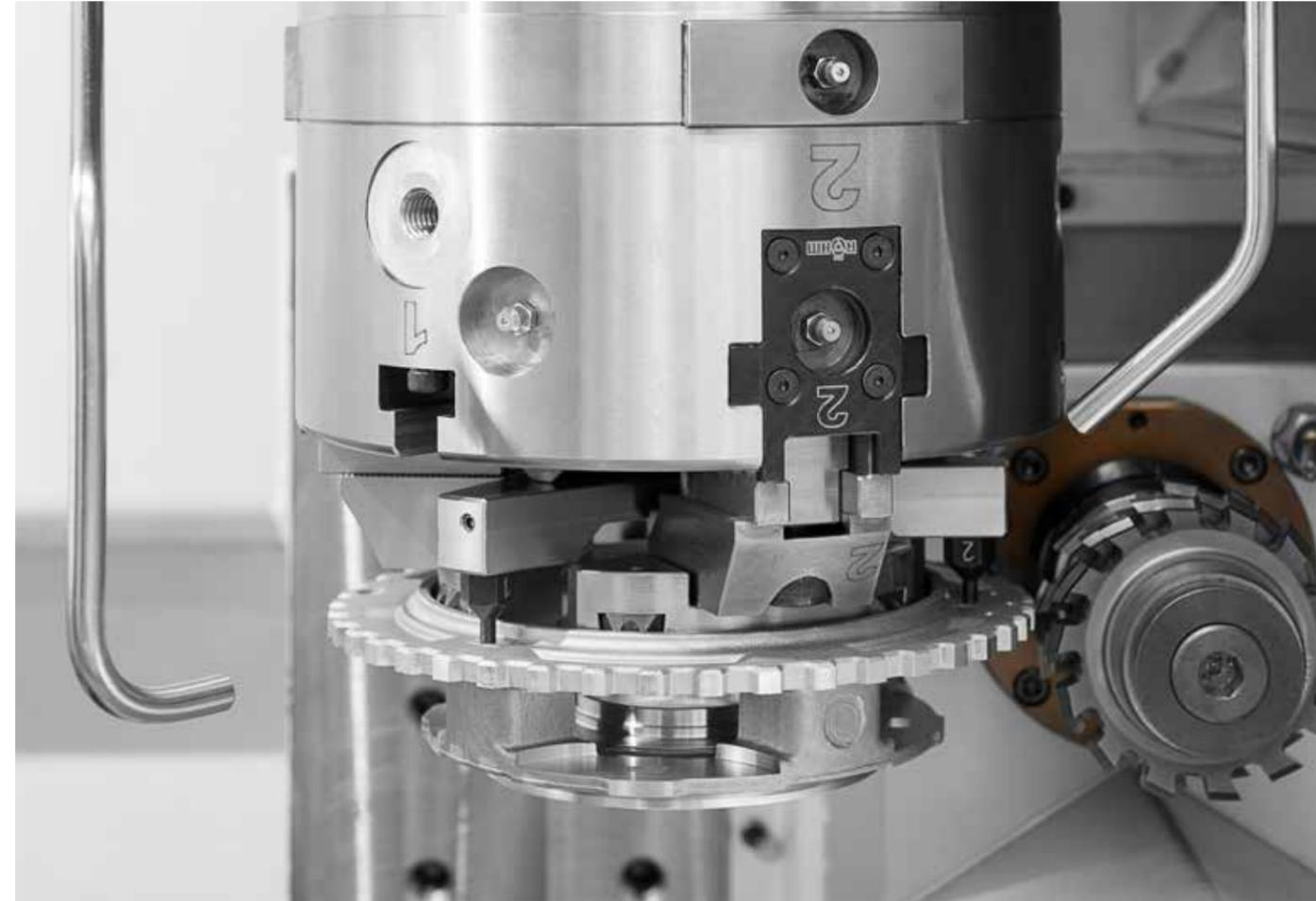
# VDZ 100 DS

## Compact and productive

Our smallest model offers you high productivity on a few square meters: The double-spindle VDZ 100 DS CNC vertical turning machine comes with an installation space of 2200 x 3000 mm (W x L).

In a small footprint, you can process two workpieces at the same time - more economically as with two machines. With a stroke of 495 mm in X and 250 mm in the Z-axis, it is suitable for workpieces up to 100 mm in height and 175 mm in diameter. The direct-driven spindles with a maximum rotation speed of 7000 RPM provide power of 23 kW and a torque of 130 Nm. Driven and non-driven tools up to 180 mm in length can be used. On the VDZ 100 DS CNC vertical turning center, for example ball hubs, wheel flanges, pinions, sliding sleeves, pump wheels and synchronizer rings get machined.

The two separate machine beds for the two spindles and their workspaces made of Hydropol, a mixture of special concrete and steel, effectively dampen the vibrations that occur and ensure high accuracy through an excellent static- dynamic stiffness in machining. For all the VDZ models, all the axes are monitored by glass scales.



### Technical data

|                      |     |       |
|----------------------|-----|-------|
| Chuck diameter       | mm  | 200   |
| Drive power (100%ED) | kW  | 23    |
| Torque ( 100%ED)     | Nm  | 130   |
| Rotation speed max.  | rpm | 7000  |
| X-stroke             | mm  | 495   |
| Z-stroke             | mm  | 250   |
| Tool system          | VDI | 30+40 |
| Spindle interface    |     | A5    |

d: 175 mm | H: 100 mm





### For workpieces up to 250 mm in diameter

With axes travels of 625 mm in X, +100/-80 mm in Y and 250 mm in Z, you can process workpieces up to 200 mm in height and 250 in diameter in our single- spindle and double- spindle VDZ 220 and VDZ 220 DS vertical turning centers. The synchronous spindles are driven each with 37,7 kW, a torque of 300 Nm and a maximum rotation speed of 5500 RPM. Typical components are ball cages, ball hubs, pinions, sliding sleeves, pump wheels, flanges, synchronizer rings, bearing rings and joint pins.

The machine beds are made of Hydropol, a mixture of special concrete and steel, which ensures maximum smoothness and precision even with larger components and powerful machining.

#### Technical data

|                      |     |          |
|----------------------|-----|----------|
| Chuck diameter       | mm  | 315      |
| Drive power (100%ED) | kW  | 37,7     |
| Torque (100%ED)      | Nm  | 300      |
| Rotation speed max.  | rpm | 5500     |
| X-stroke             | mm  | 625      |
| Y-stroke             | mm  | +100/-80 |
| Z-stroke             | mm  | 250      |
| Tool system          | VDI | 30+40    |
| Spindle interface    |     | A6       |

d: 250 mm | H: 200 mm



# VDZ 320 / VDZ 320 DS

Specialists for medium sized parts

For machining medium-sized components up to 400 mm in diameter and 300 mm in height with tools up to 240 mm in length, we developed the VDZ 320 CNC vertical turning centers. In addition to the version with one spindle, the VDZ 320 DS version is available with two spindles for doubled productivity.

The powerful synchronous drives with a performance of 67.4 of kW, 585 Nm nominal torque and rotation speed up to 4000 RPM provide great dynamics and high performance. The high-precision in-process measurement, which is standard in the VDZ 320 series, guarantees maximum precision. Brake discs, hubs, wheel hubs, steering knuckles, universal joint forks and differential housings are typical large-series components that are economically manufactured with VDZ 320 and VDZ 320 DS vertical turning centers.



## Technical data

|                      |         |          |
|----------------------|---------|----------|
| Chuck diameter       | mm      | 400      |
| Drive power (100%ED) | kW      | 67,4     |
| Torque ( 100%ED)     | Nm      | 585      |
| Rotation speed max.  | rpm     | 4000     |
| X-stroke             | mm      | 1300     |
| Y-stroke             | mm      | ±140     |
| Z-stroke             | mm      | 450      |
| Tool system          | VDI/CDI | 40+50/80 |
| Spindle interface    |         | A 8      |

d: 400 mm | H: 300 mm



# VDZ 420 XL / VDZ 520 XL

The strong ones for large parts

For efficiently processing components with diameters of up to 550 mm and heights of up to 400 mm with a focus on turning, the optimum choice is the VDZ 420 and VDZ 520 CNC vertical turning machines with a synchronous spindle and their double-spindle VDZ 420 XL DS and VDZ 520 XL DS versions.

Both series offer a performance of 64.4 of kW and a torque of 820 Nm, rotation speed of up to 3500 RPM (for VDZ 420/DS) and 2800 RPM (for VDZ 520/DS). With strokes of 1785 mm in X, ± 140 mm in Y and 450 mm in Z, there is room for machining large workpieces such as brake discs, gear parts, differential housings, hubs and wheel hubs for passenger cars and commercial vehicles. Here, driven and non-driven tools up to 210 mm in length can be used.



## Technical data

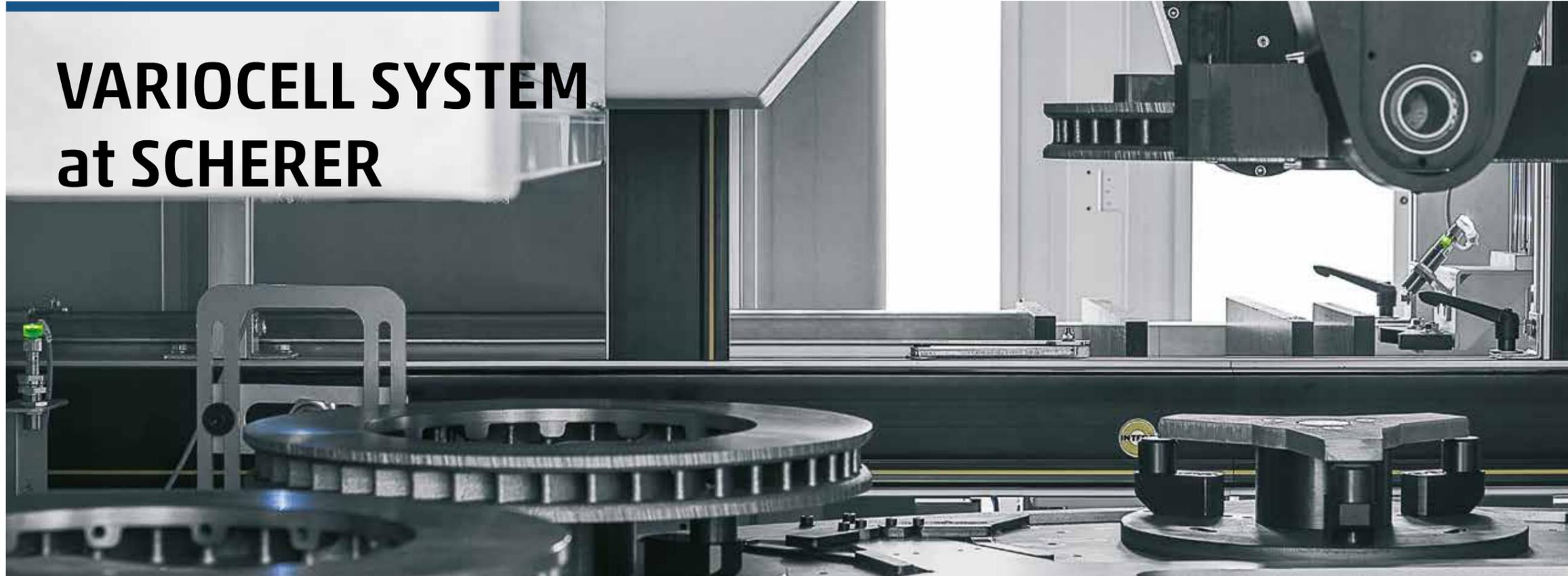
|                      |         | VDZ 420 XL / -DS | VDZ 520 XL / -DS |
|----------------------|---------|------------------|------------------|
| Chuck diameter       | mm      | 550              | 600              |
| Drive power (100%ED) | kW      | 64,4             | 64,4             |
| Torque ( 100%ED)     | Nm      | 820              | 820              |
| Rotation speed max.  | U/min   | 3500             | 2800             |
| X-stroke             | mm      | 1785             | 1785             |
| Y-stroke             | mm      | +/-140           | +/-140           |
| Z-stroke             | mm      | 450              | 450              |
| Tool system          | VDI/CDI | 40+50/80         | 40+50/80         |
| Spindle interface    |         | A 8 / A 11       | A 8 / A 11       |



d: 550 mm | H: 400 mm



# VARIOCELL SYSTEM at SCHERER



Round shuttle with pick & place unit and swivel module



Complete processing with additional units

## Let your VDZ work for you

**You already have an automation solution and would like to integrate your new VDZ vertical turning machine? No problem, we combine both of them and create a smooth interaction. You want to fully automate your new machine? There is almost nothing that we cannot automate.**

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 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.

## Our automation:

- Supply and removal of raw and finished parts via robotic systems and transport by means of belts and shuttle.
- Integration of additional work steps and tasks such as measuring, washing, deburring, drying, labeling.
- Linking of several vertical turning centers to a production line.
- Complete systems comprised of SCHERER vertical turning centers and CHIRON machining centers for complex workpieces with a high percentage of turning and milling operations.



Carrier system adapted to the respective workpiece



Integrated milling unit



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

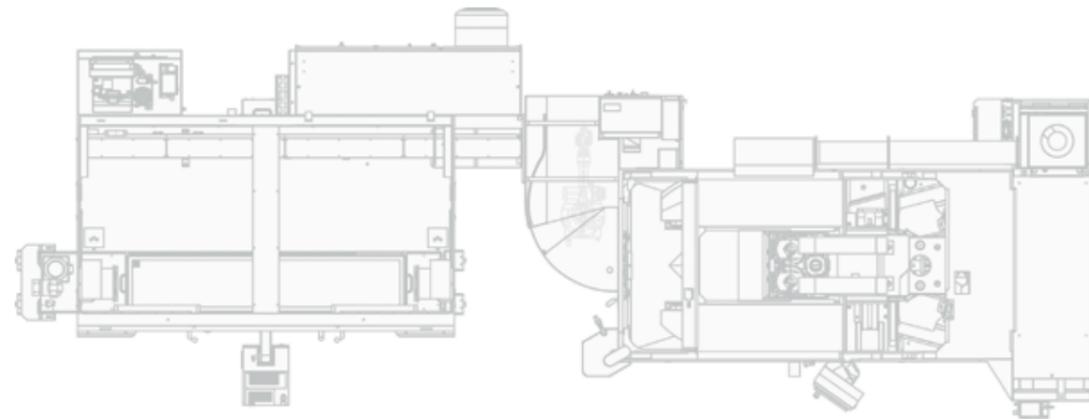
Why complicated when simple also works? Use the system expertise of the CHIRON Group and combine turning and milling in one system. You benefit from fewer interfaces and get everything from a single source.

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



Raw part

|                                  |                         |                        |
|----------------------------------|-------------------------|------------------------|
| Process procedures               | OP10 + OP20<br>Turning  | OP30 + OP40<br>Milling |
| System components                | SCHERER<br>1 x VDZ1000S | CHIRON<br>1 x DZ12 W   |
| Machining time [sec]             | 70                      | 140                    |
| Loading and unloading time [sec] | incl.                   | incl.                  |
| Total cycle time [sec]           | 70                      | 140/2=70               |



## ■ Members of the CHIRON Group



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