

## CIVO

Fully automatic balancing machine  
for electric armatures







# CIVO

Compact, quick and precise

5 stations for the efficient balancing in electric armature production

CIVO gives you maximum balancing performance in minimal space. With impressively short cycle times, electric armatures are freed from their unbalance in one process. The CIVO is designed for medium and large quantities, up to approx. 2 million electric armatures p.a.

Small footprint, good accessibility to all components and easy handling makes the CIVO the perfect partner for your production.

Thanks to a flexible design, it can be easily combined with automation and feed equipment - from the conveyor to the pallet. The balancing is performed by milling into the stack of sheets at one or two planes.



## Easy integration into your production

### Efficient use of space and best accessibility

- ▶ Narrow front silhouette – easy to integrate into existing production lines
- ▶ Small footprint – increased flexibility in your production
- ▶ Fast commissioning thanks to crane hook design – position, connection electricity and compressed air, and the machine is ready for use.
- ▶ Easily accessible: the switch cabinet is located beneath the machine assembly
- ▶ Refitting and maintenance-friendly as a result of the open machine design



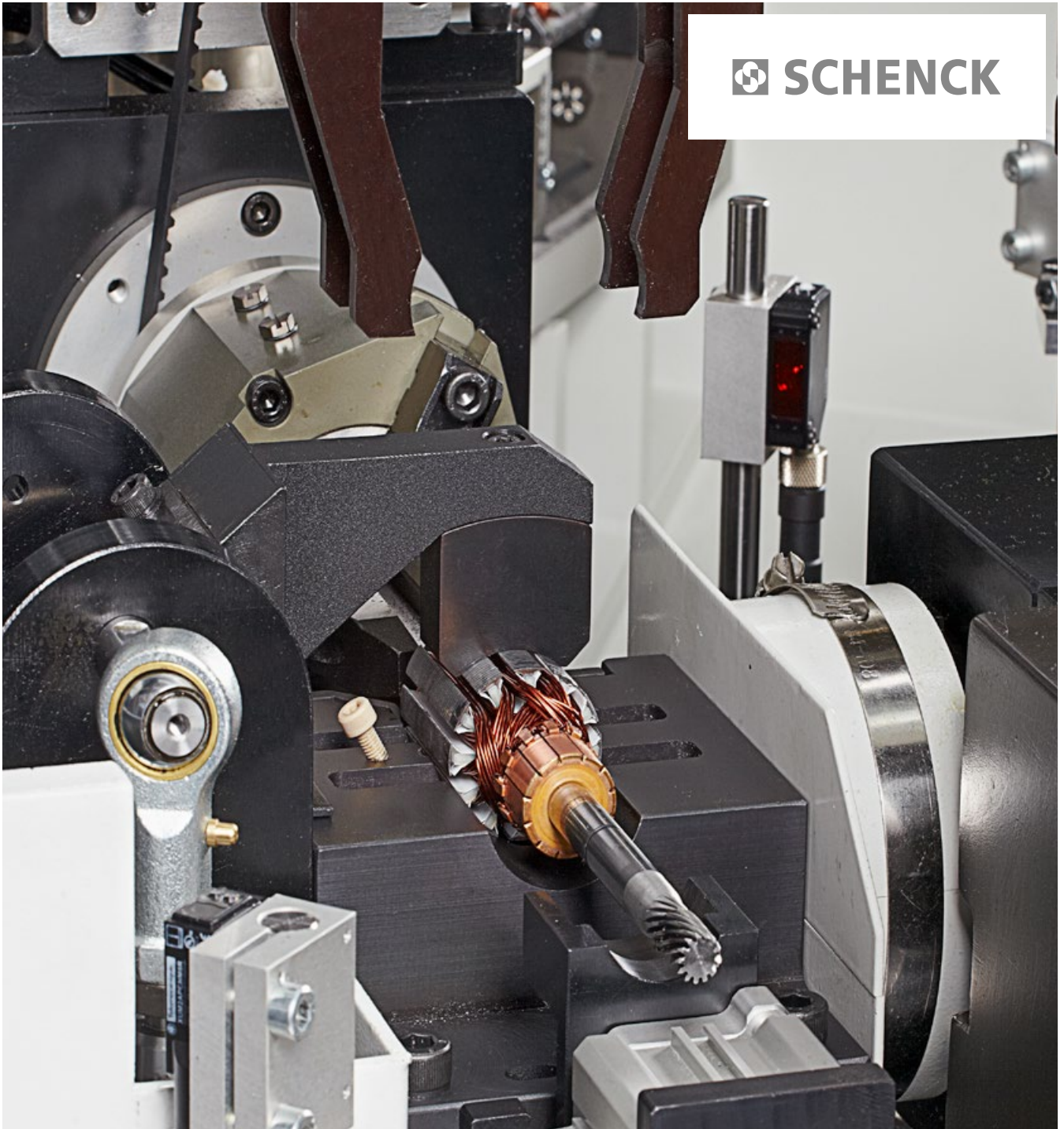
## The technology

### Safe and reliable for high process reliability



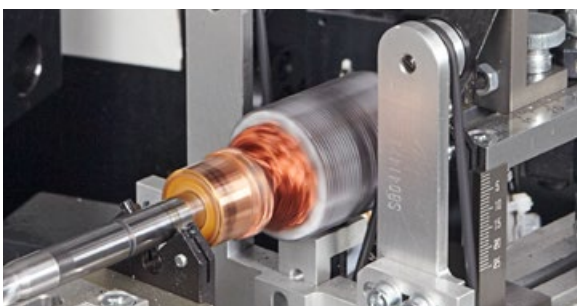
- ▶ Flexible degree of automation – loading and unloading can either by pallet conveyor or a manually activated drawer.
- ▶ High level of process reliability through fully automatic working process
- ▶ Jolt-free acceleration and precise positioning through lift and turn transport unit
- ▶ Low noise level and CE-conform safety equipment





## Flexibility when correcting unbalances

Best adaptation to your rotors



- ▶ Unbalances corrected by milling into the stack of sheets – at one or two planes
- ▶ Measuring and correction of the unbalance of electric commutator armatures and similar rotors that permit milling correction
- ▶ High levels of flexibility by using single and multiple milling cutters, based on the pole pitch
- ▶ Correction process for diagonally and straight-grooved armatures
- ▶ Vectorial distribution of the measured unbalance at corresponding pole pitches

## CAB 870

State of the art  
measuring technology



- ▶ Touchscreen – easy and direct input of all data and display of the measurement results as numbers and vector diagrams
- ▶ Logical control concept – clear and distinct displays with icons that match the touchscreen controls
- ▶ Visualised operator guide
- ▶ Interfaces for integrating superordinate production control systems
- ▶ Automatic setting processes, diagnostics programs, statistical software



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## ROTOR DIMENSIONS

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- ▶ Rotor weight: 60 - 3000 g
  - ▶ Shaft length between the shaft ends: 80 - 240 mm
  - ▶ Shaft diameter: 3 to 15 mm
  - ▶ Stack diameter: 18 to 70 mm
  - ▶ Stack length: 15 to 70mm
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## MASCHINE

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- ▶ Width, depth, height: approx. 1800 x 1300 x 2100 mm
  - ▶ Total weight: approx. 2500 kg
  - ▶ Noise level (without suction): max. 75dB(A)
  - ▶ Mains connection: 400V  $\pm 10\%$  / 50 Hz  $\pm 2\%$  / 3Ph
  - ▶ Input power: 9 kW
  - ▶ Max. prefuse by customer: 25 A
  - ▶ Control voltage: 24 V DC
  - ▶ Internal device voltage: 230 V AC
  - ▶ Paint: RAL 7035 (light grey)
  - ▶ Smallest achievable measuring uncertainty (workpiece-dependent): 0,01 gmm
  - ▶ Smallest achievable tolerance (workpiece-dependent): 0,1 gmm
  - ▶ Technical availability: 99% according to VDI 3423
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## MEASUREMENT DEVICE

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- ▶ CAB 870 with touchscreen controls
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## OPTIONS

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- ▶ Set-up rotor with test weights
  - ▶ Belt feed with centring system
  - ▶ Lifting device
  - ▶ Swarf vacuum
  - ▶ Drawer/loading door
  - ▶ Design with or without CE
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