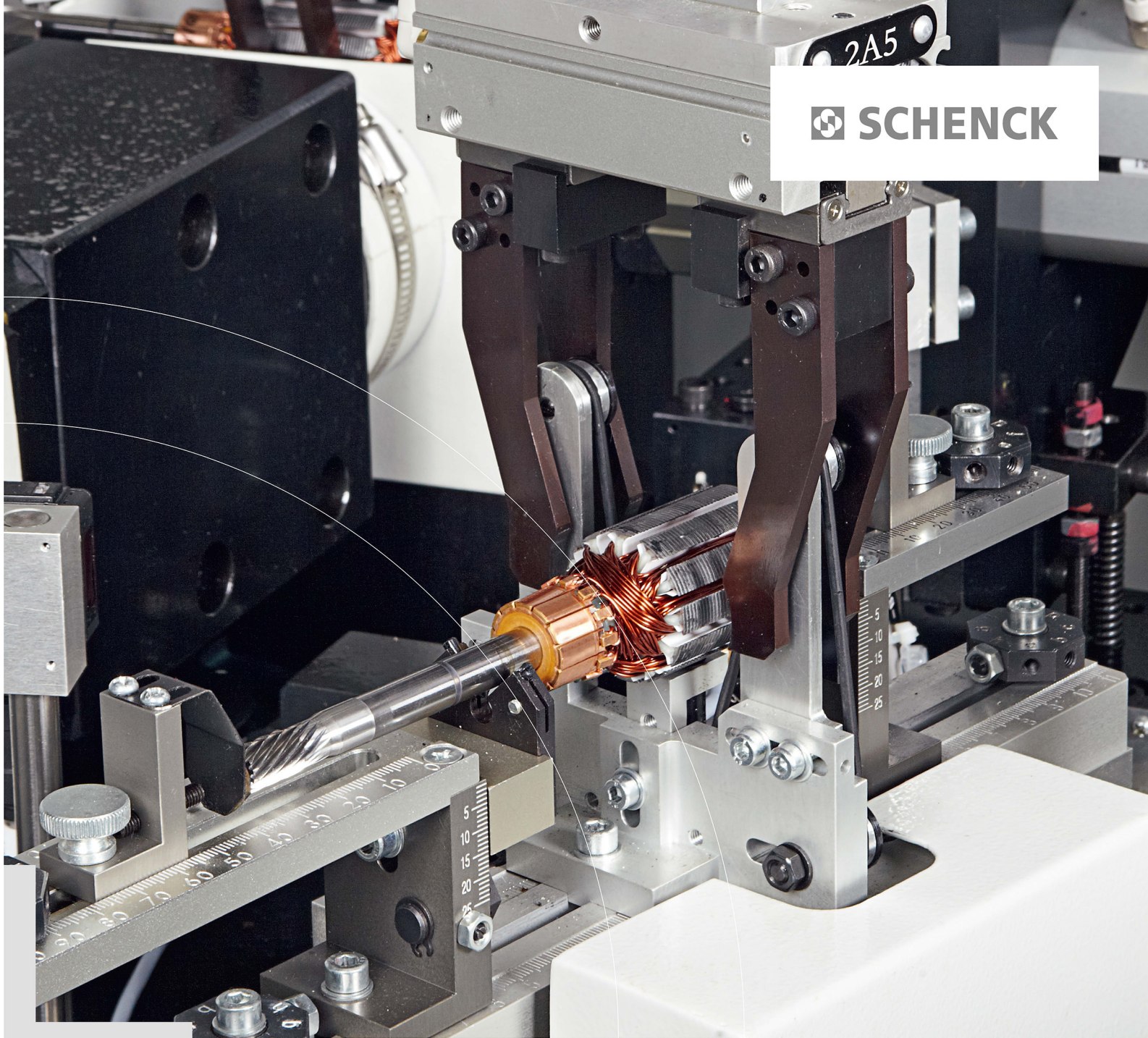


 **SCHENCK**



CIVO

Fully automatic balancing machine for electric armatures

电枢转子全自动平衡机



Passion for Balancing



CIVO

Compact, quick and precise
紧凑、快速和精确

5 stations for the efficient balancing in electric armature production
在电枢转子的生产中，五个工位可以提供高效的平衡工艺。

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.

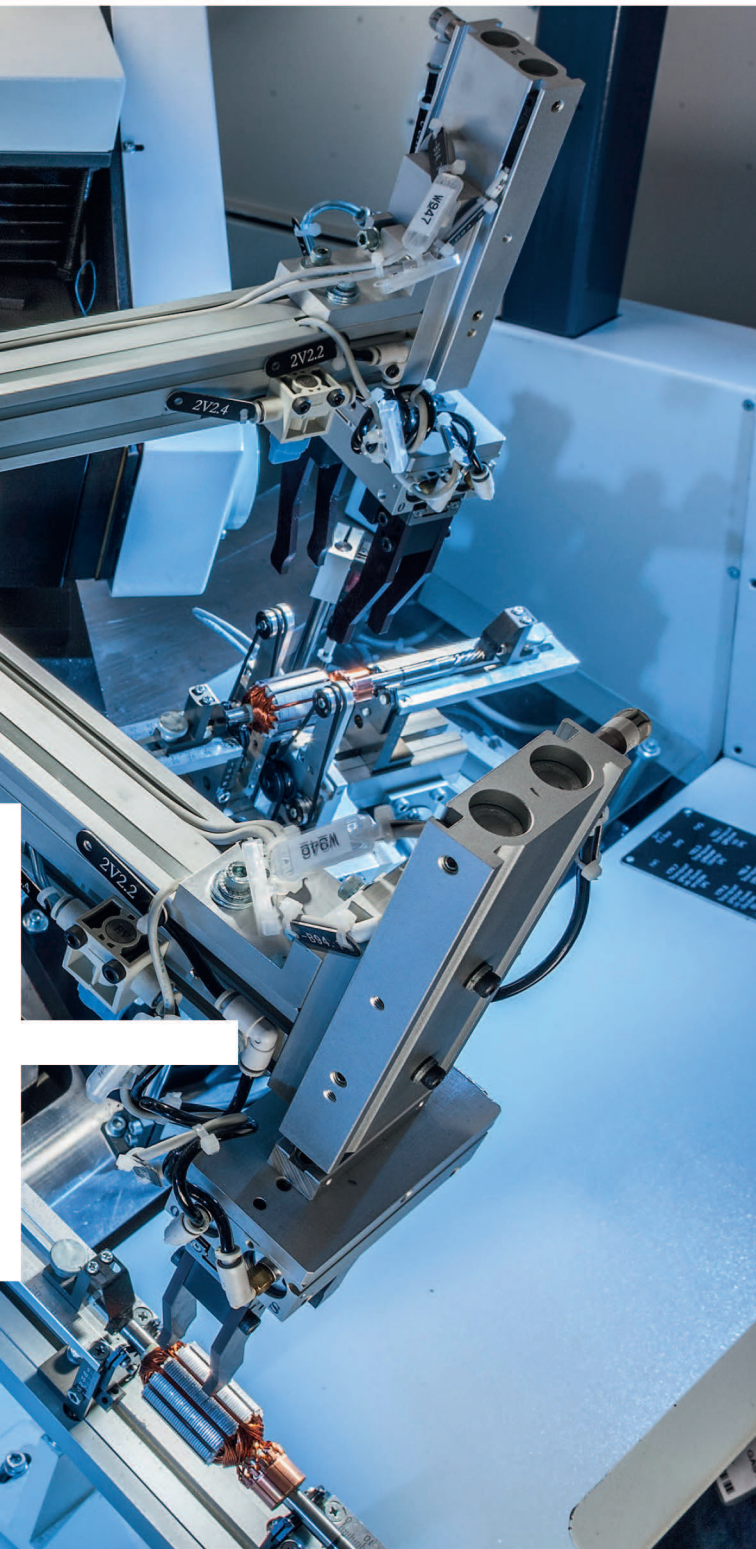
Thanks to a flexible design, it can be easily combined with automation and feed equipment - from the conveyor to the pallet. The balancing is performed by milling into the stack of sheets at one or two planes.

CIVO能在最小的空间内提供最大的平衡性能。电枢转子在一次修正过程中就能摆脱它们的不平衡量，同时这只需极短的节拍；CIVO是为了电枢转子中批量和大批量的生产而设计的，年产量能达到约200万个。

占地面积小、所有部件可接触性和简易操作使得CIVO成为你生产的最佳拍挡。

由于灵活的设计，它能很便捷地接入从传送带到托盘的自动化流水线。通过在铁芯叠片的一个面或两个面上的铣削来实现平衡修正。



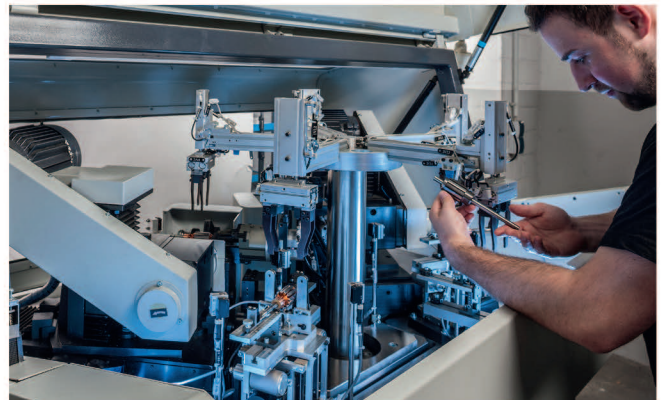


Easy integration into your production 易于接入您的生产线

Efficient use of space and best accessibility
可有效利用空间并达到最好的可访问性

- ▶ 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

- ▶ 狭窄的前部外形-易于接入已有生产线
- ▶ 占用空间小-增加生产的灵活性
- ▶ 基于钢丝绳悬垂设计的快速调试-只要设备定位、连接好电源和压缩空气即可使用
- ▶ 装配方便：电气柜被安置在机器的下方
- ▶ 易于改造和便于维护-源于机器的开放性设计



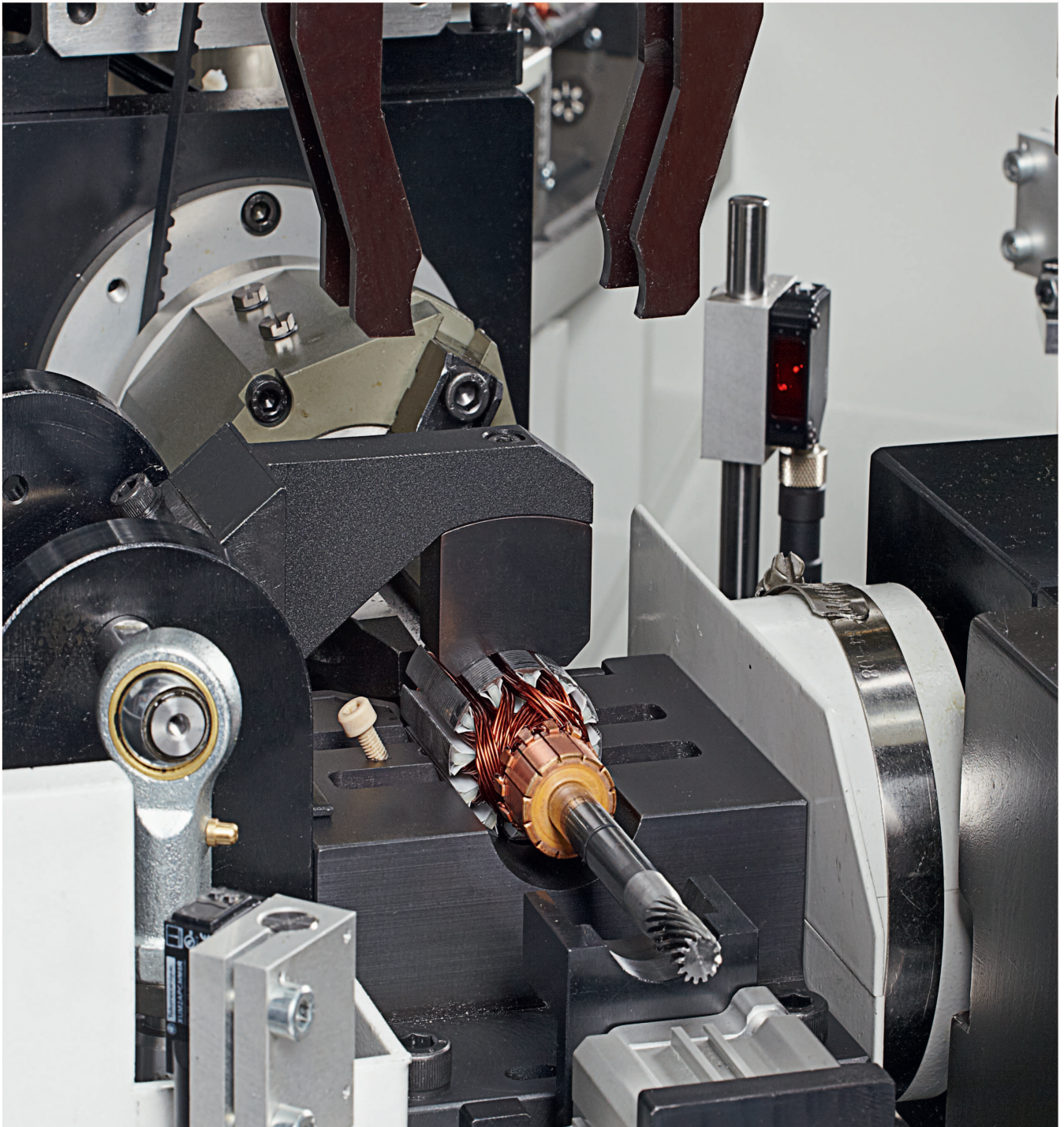
The technology 技术

Safe and reliable for high process reliability
安全和可靠的加工工艺



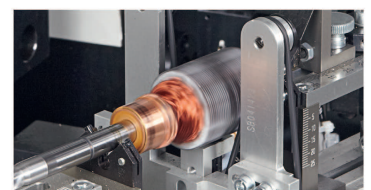
- ▶ Flexible degree of automation – loading and unloading can either by pallet conveyor or a manually activated drawer.
- ▶ High level of process reliability through fully automatic working process
- ▶ Jolt-free acceleration and precise positioning through lift and turn transport unit
- ▶ Low noise level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

- ▶ 灵活的自动化程度-上下料既能通过流水线托盘也能通过人工来实现。
- ▶ 通过全自动的过程工艺来保证高水平的工艺可靠性。
- ▶ 通过举升和旋转搬送装置保证工件自由晃动的加速和精密定位。
- ▶ 低噪音等级和CE安全等级。



Flexibility when correcting unbalances 修正不平衡量时的灵活性

Best adaptation to your rotors
最大限度地适应你的转子



- ▶ 不平衡量的修正通过在铁芯叠片上铣削-在一个面或两个面上。
- ▶ 用于带有换向器的电枢转子和类似的允许铣削的转子的不平衡量的测量和校正。
- ▶ 基于极坐标，用单把和多把铣刀来实现高灵活性。
- ▶ 斜槽和直槽转子的修正工艺。
- ▶ 在相应的极坐标测量不平衡量的矢量分布。

- ▶ 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

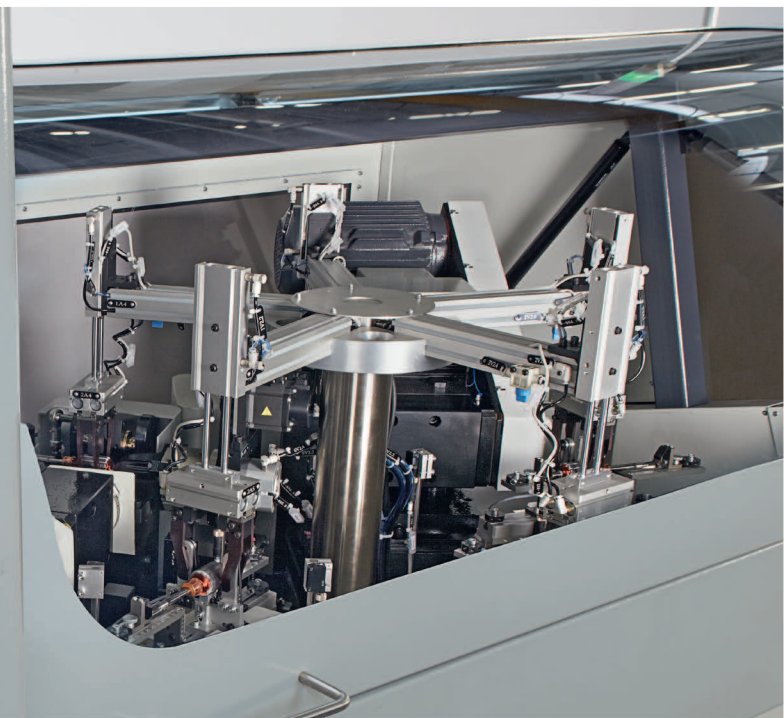


CAB 870 测量系统

State of the art measuring technology
测量技术的艺术呈现

- ▶ 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

- ▶ 触摸屏-简单和直接输入所有测量数据并进行数字和矢量显示
- ▶ 逻辑控制的概念-清晰直观地显示相应的图标来匹配触摸屏控制
- ▶ 直观的操作向导
- ▶ 生产控制系统为一体化界面
- ▶ 自动设置流程、诊断程序和统计软件



Technical data 技术参数

ROTOR DIMENSIONS 转子尺寸

▶ Rotor weight 转子重量:	60 - 3000 g
▶ Shaft length between the shaft ends 轴长:	80 - 230 mm
▶ Shaft diameter 轴径:	3 to 15 mm
▶ Stack diameter 铁芯直径:	18 to 70 mm
▶ Stack length 铁芯厚度:	15 to 70mm

MASCHINE 设备参数

▶ Width, depth, height 宽度、深度、高度:	approx. 1800 x 1300 x 2100 mm
▶ Total weight 总重:	approx. 1800 kg
▶ Noise level (without suction) 不带吸尘器的噪音水平:	max. 75dB(A)
▶ Mains connection 电源:	380V \pm 10% / 50 Hz \pm 2% / 3Ph
▶ Input power 输入功率:	9 kW
▶ Max. prefuse by customer 最大电流:	25 A
▶ Control voltage 控制电压:	24 V DC
▶ Internal device voltage 内部设备电压:	230 V AC
▶ Paint 外观涂色:	RAL 7035 (light grey)
▶ Smallest achievable measuring uncertainty (workpiece-dependent): 最小可达测量精度 (根据工件实际情况而定) :	0,01 gmm
▶ Smallest achievable tolerance (workpiece-dependent): 最小的可实现的公差范围 (根据工件实际情况而定) :	0,1 gmm
▶ Technical availability 技术的可用性:	99% according to VDI 3423

MEASUREMENT DEVICE 测量系统

▶ CAB 870 with touchscreen controls 带有触摸屏控制的CAB870
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