

ABV

Sprue drilling machine



ABV

SPRUE POINT DRILLING MACHINE

The ABV machine is developed for the automatic sprue point drilling of alloy wheels after the casting process. It's a strong and reliable machine, setting the standard for flexibility and efficiency.

Compared to the punching process, drilling of the sprue gives a lot more flexibility regarding size and thickness of the wheel hub area. An advantage which becomes more and more important due to the continuously increasing wheel size and material thickness.

Distortion and deformation caused from the punching process can be fully avoided with the drilling system. Tool diameters up to 60 mm can be used without any problems. Fast feed rate and drilling speed can be programmed in speed and length. Prior to the drilling machines, a design recognition system can be used to divide and send the wheels to the drilling machine with the most suitable drilling tool (diameter). Different options can be added to the machine, i.e. mist cooling, exhaust connection and chip conveyor.

Your advantages

▶ **LESS CONSTRUCTION LIMITS FOR HUB AREA**

No limitation of material thickness and sprue diameter brings advantage to casting speed and process efficiency

▶ **LOW MATERIAL STRESS**

The drilling process causes a much lower material stress to the hub area compared to punching. Also at bigger material thickness, no danger of deformation or cracks.

▶ **COST REDUCTION THROUGH RECYCLING**

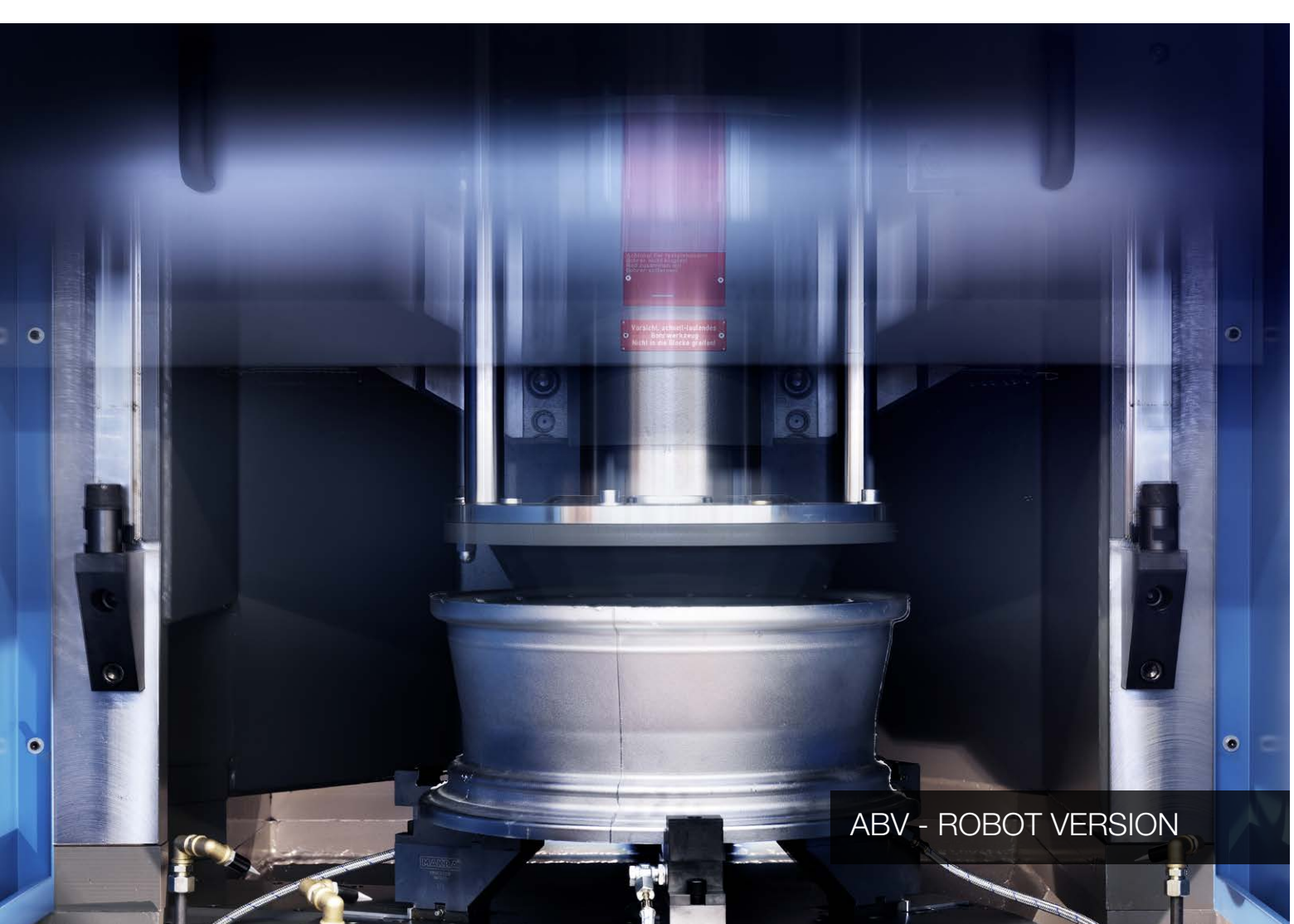
The used metal screen will be chipped completely, the metal parts can be separated with a magnetic conveyor and the remaining material can be recycled to 100 %.

▶ **CYCLE TIME REDUCTION AT MACHINING AREA**

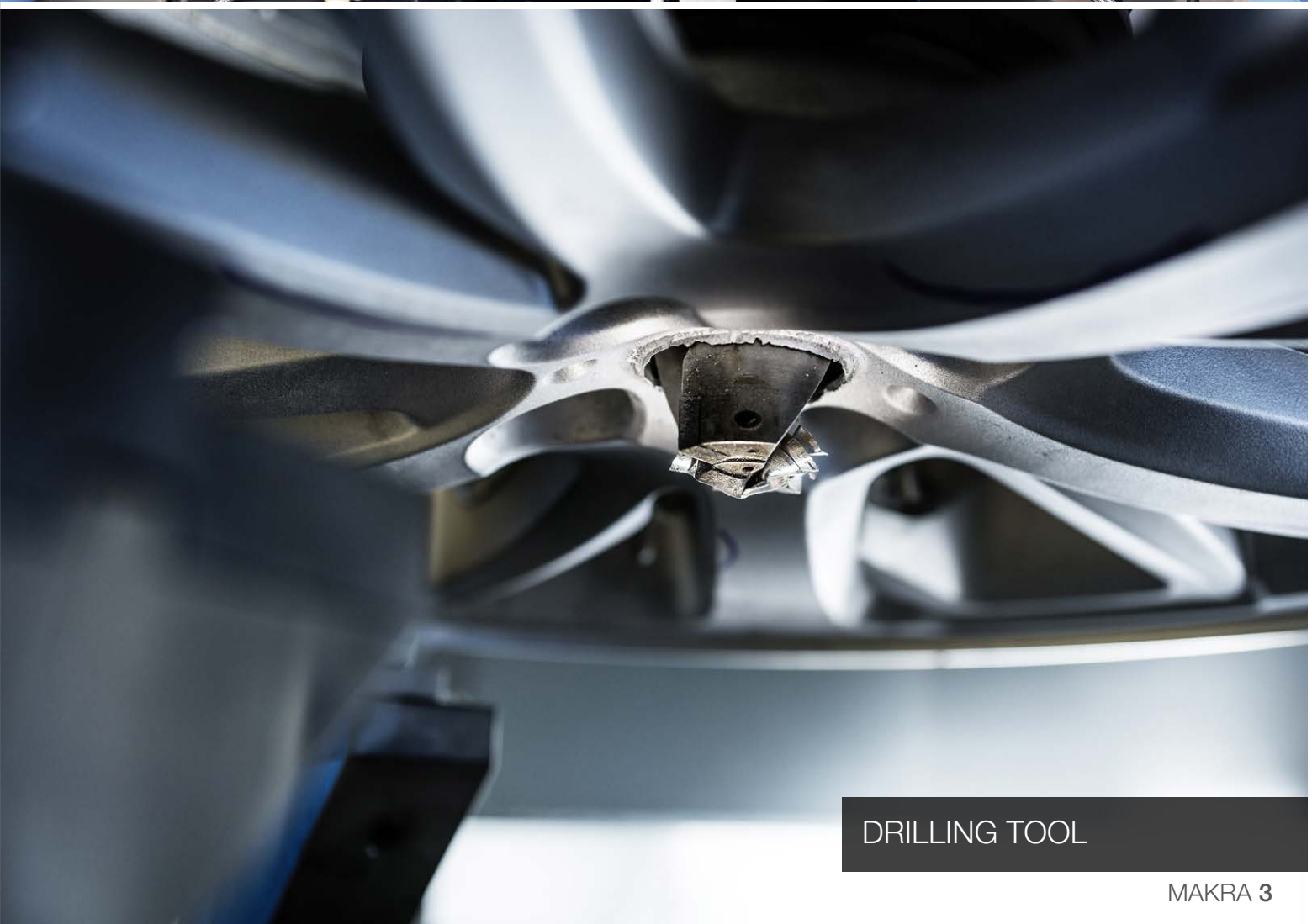
The drilling diameter can be close to machining value, less cycle time is needed in the OP1 machining operation

▶ **FLEXIBLE PRODUCTION**

With a short changing time of the tool, the actual drilling diameter can be adjusted to the production need. By using more drilling machines, each machine uses a different tool diameter to be more flexible.



ABV - ROBOT VERSION



DRILLING TOOL

The ABV machine can be loaded with a standard industrial robot or with a gantry loading system. The wheels will be held in place with the well-proven MAKRA standard chucking system, including 3 step jaws. With the clamping stroke of 3 inch, a wheel diameter range of up to 9 inch can be chucked without any manual change.

The range of the jaws will be designed according to actual customer requirements individually for each project. The cleaning of the chucking system is done with high pressure air nozzles. The drilling is done usually with mist cooling through the tool. The chips and the sprue will be fed out with a standard chip conveyor.

Machine series in full enclosed design

Massive machine frame

Operator panel Siemens Simatic OP 17

MAKRA chucking system

Central lubrication

Chip conveyor can be positioned on 3 sides

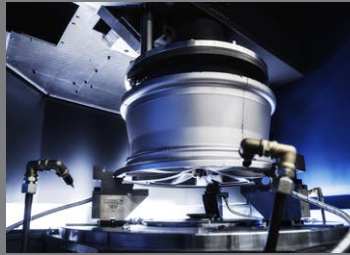
Chips funnel





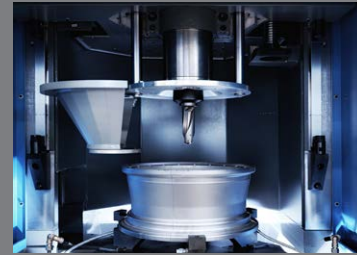
TOOL HOLDER

Different tools and tool holders for economical operation and flexibility are available



CLAMPING JAWS

Customized jaws with up to 3 steps for automatic or manual loading available

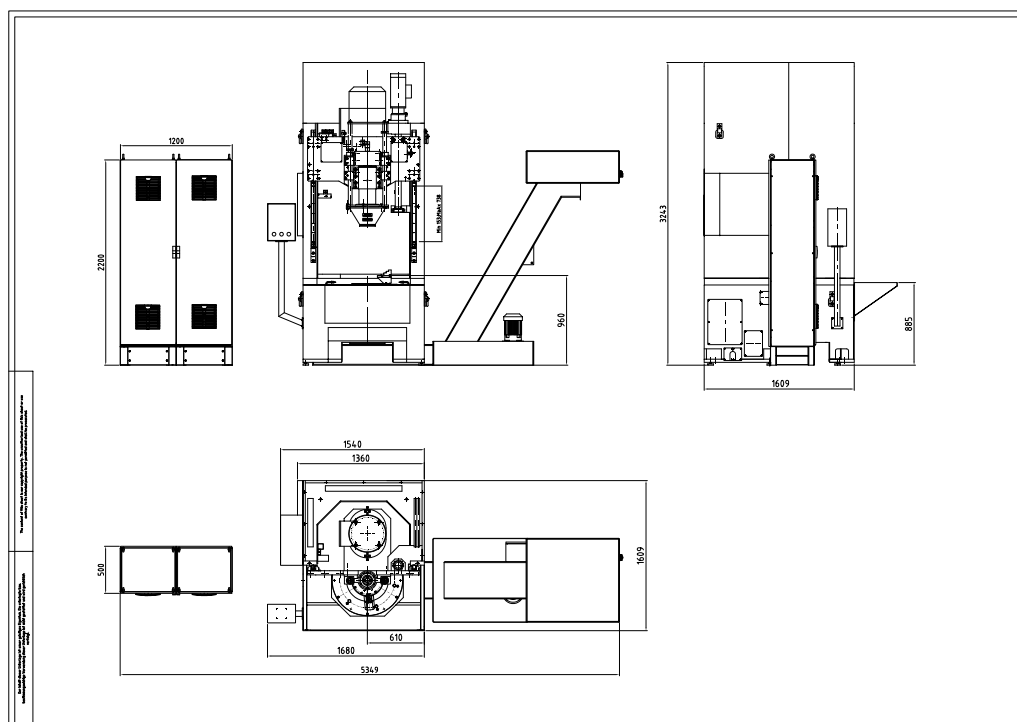


MAKRA CHUCKING SYSTEM

Pneumatic long-stroke chucking system with up to 70 mm stroke per jaw

TECHNICAL DATA

Wheel dimensions	Wheel size	12" to 24"
	Wheel width	12" to 14"
MAKRA chucking system	pneumatic long stroke chucking system with 140 mm total stroke clamping jaws with standard 3 steps for 3" sizes standard clamping range of 9" (i.e. from 14" - 22")	
Tool holder	i.e. „Komet ABS ® “ quick change size 63 or size 80 „Whistle Notch“ Ø 40	
Motor	AC-Motor 30 KW	
Spindel	Speed up to 4.000 rpm Feed rate adjustable, 1 mm/s to 24 mm/s Mist cooling/lubrication through drilling tool	
Production capacity	up to 150 wheels / hour	
Control system	Siemens S7-300, with operator panel OP17	
Pneumatic supply	Compressed air, min. 6 bar	
Physical size	Machine: 2200 x 1800 x 3250 mm Control cabinet: 600 x 1400 x 2400 mm	



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