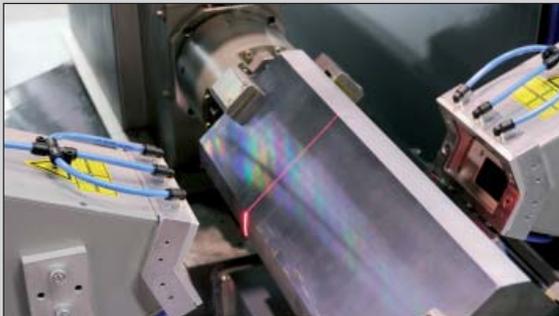




## 72 | 856

CHAMFER & ROUND GRINDING MACHINE



This machine is suitable for chamfer and round grinding of squared mono-crystalline silicon work pieces in the format of 125 x 125 mm and 156 x 156 mm, with three grinding aggregates (2x pre-, 1x fine grinding) and one additional grinding aggregate for OD grinding. Work piece lengths of 180 up to 1000 mm can be processed.

#### The fully automatic machine excels by following advantages:

- edge grinding of flat (45°) and round chamfers
- fully automatic machine concept
- adaptive Grinding Process Control
- unique, pneumatic clamping and centring of the work pieces, even in case of a rectangular brick shape
- the squared ingots can be processed without preparation (for instance glueing of centering or clamping pieces)
- automatic edge detection and adjustment of grinding tools with ingot length detection, for an optimized cycle time, by using high-resolution measurement systems
- detection and evaluation of the work piece specific quality data after grinding, for instance chamfer size, chipping and unground chamfer sections
- automatic wheel correction
- high process stability
- high machine availability 97% acc. to SEMI E10
- equipped with two loading zones for manual and fully automatic loading, for instance with the help of an industrial robot
- high throughput, even when a high removal of silicon is achieved by using 4 grinding wheels with a separate pre-, fine- and finish grinding process

#### Specifications:

- arithmetical surface roughness Ra  $\leq 0,15\mu\text{m}^1$
- average surface roughness Rz  $\leq 1,5\mu\text{m}^1$
- geometric tolerances  $\pm 0,05\text{ mm}$
- angularity  $90^\circ \pm 0,05^\circ$

#### Throughput round grinding:

- cycle time  $\leq 13,5$  minutes (incl. loading, truning and unloading)
- diameter as grown  $\varnothing 210\text{ mm}$ , grinded diameter  $\varnothing 200\text{ mm}$  and a work piece length of 500mm

<sup>1</sup> surface quality depends on used grinding wheel diamond sizes <sup>2</sup> In a long-term test with more than 1,000 workpieces we were able to demonstrate that we deliver at a geometric tolerance of  $\pm 0,05\text{ mm}$  (height/width), a process capability index (Cpk) of higher than or equal 1.67. This means that of more than 1,000,000 workpieces, less than 1 workpiece is outside the tolerance range.

Machine	72/856.600 - 156/210	72/856.600 - 125/156	72/856.1000 - 156/210	72/856.1000 - 125/156
Item number	VT4-00221	VT4-00222	VT4-00223	VT4-00224
Work piece format	156 x 156 210 x 210	125 x 125 156 x 156	156 x 156 210 x 210	125 x 125 156 x 156
Work piece length	180 - 600		450 - 1000 mm	