

## External cutoff saw

Herbert Arnold GmbH & Co. KG Weilburg  
Amtsgericht Limburg HRA-Nr. 2032 P.h.G.: H. u. W. Arnold GmbH Weilburg  
Amtsgericht Limburg HRB-Nr. 3071 Geschäftsführer: Dipl.-Ing. Wolfram Arnold

**Address**

Herbert Arnold GmbH & Co. KG  
Weilstrasse 6  
D-35781 Weilburg

Telephone: +49 (0) 64 71 93 94 -0  
Telefax: +49 (0) 64 71 20 65  
E-Mail: [info@h-arnold.de](mailto:info@h-arnold.de)  
Website: [www.h-arnold.de](http://www.h-arnold.de)

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## Band saw

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## Band saw 72/375-MU

Item number: VT1-00181

Category: Band saw

This machine is suitable for cutting of multi crystalline silicon workpieces up to diameter format of max. 210 x 210 mm with a workpiece length between 100 and 500 mm. Minimum segment length is 10 mm. The fully automatic machine excels by the following advantages:

- equipped with two loading areas for manual and fully automatic loading, for instance with help of an industrial robot
- compact construction
- pneumatic clamping of workpiece and segment
- machine uptime 97%
- cutting force supervision for optimization of cutting process and avoiding of tool damages based on SiC-inclusion
- high throughput

Workpiece: 156 x 156 mm<sup>2</sup>

Cycle time: 10 Min

Machine capacity: approx. 47.000 cuts/year (based on 24/7-production)

Quality data of workpiece:

- angularity: 0,2 mm
- evenness: 0,2 mm
- chips, cracks, steps: 0,5 mm



- CPU Siemens S7/317
- high end industrial PC with dual core processor
- 15" touch panel with HMI, visualisation on WinCC flexible
- integrated recipe management
- band torsion via adjustable hydro pneumatic clamping unit
- positioning of table at manual loading via linear drive
- lifting table with AC-servo motor, with drive via toothed wheel and toothed rack
- Optional: ARPAT – “Arnold Remote Production Analysis Tool” – machine internal MES

Workpiece length	100 - 500 mm
Machine (LxWxH)	2500 x 2600 x 200 mm
Machine weight	6000 kg
Connected load	20 kW
Coolant grease	water
Length sawing band	5.500 mm
Height sawing band	50 mm
Width sawing band	0,75 mm

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## Squaring saw

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## Squaring saw 72/475

Item number: VT3-00016

Category: Squaring saw

with two parallel arranged diamond precision cutting disks. Machine is suitable for squaring of mono crystalline ingots as grown with workpiece diameter of 100 x 100 mm up to 156 x 156 mm. Machine is equipped with 5 workpiece carrier supports for processing workpiece length of 3 x 800 mm resp. 4 x 550 mm all at once. The fully automatic machine excels by the following advantages:

- equipped with two loading areas for manual loading
- high flexible machine concept
- flexible and easy processing of different ingot lengths and diameters
- low investment costs
- ingot as grown can be processed without preparation

Quality data of workpiece:

- average value Ra <math>\leq 0,6 \mu\text{m}</math>
- angularity <math>\leq \pm 6,5</math> min
- geometric tolerance block width <math>\leq \pm 0,2\text{mm}</math>



- SPS Simatic – S7
- operator manual OP 17
- machine table driven via AC-servo motor, toothed belt and ballscrew
- cutting aggregate driven via AC-servo motor with infinitely variable torque adjustment
- precision spindle bearing with air protection
- pneumatic clamping of workpiece
- fixation and hold of the slabs via vacuum
- cutting spindle with centrifugal cooling
- Optional: ARPAT – „Arnold Remote Production Analysis Tool“ - machine internal MES (option)

## Squaring saw 72/476

Item number: VT3-00261

Category: Squaring saw

With two parallel arranged diamond precision cutting disks. Machine is suitable for squaring of mono crystalline ingot work pieces with workpiece diameter of 100 x 100 mm up to 156 x 156 mm. Workpiece length of 800 – 2500 mm can be processed. The fully automatic machine excels by the following advantages:

- equipped with two loading areas for manual and fully automatic loading with the help of an industrial robot
- high flexible machine concept
- flexible and easy processing of different ingot lengths and diameters
- low investment costs
- high process safety
- low tool costs
- high lifetime of cutting disk
- low kerf-loss by thin blade guidance <math>\leq 1,7 \text{ mm}</math> waste
- high technical machine availability 97%
- thin blade guidance for precision cutting blades thickness <math>\leq 1,2 \text{ mm}</math>
- cutting force supervision for optimization of cutting process and avoiding tool damages based SiC-inclusion
- ingot as grown can be processed without preparation

Quality data of workpiece:

- average value: <math>Ra \leq 0,6</math>



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## Special applications

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