Shape Sorter v4.2

Vollstädt
diamant

Our Flagship Model

Shape Sorter v4.2

Our Shape Sorter sorts industrial diamonds or other grains of a similar size range based on their varying shapes. It includes an oscillating table, an oscillating storage reservoir, and 15 collection boxes.

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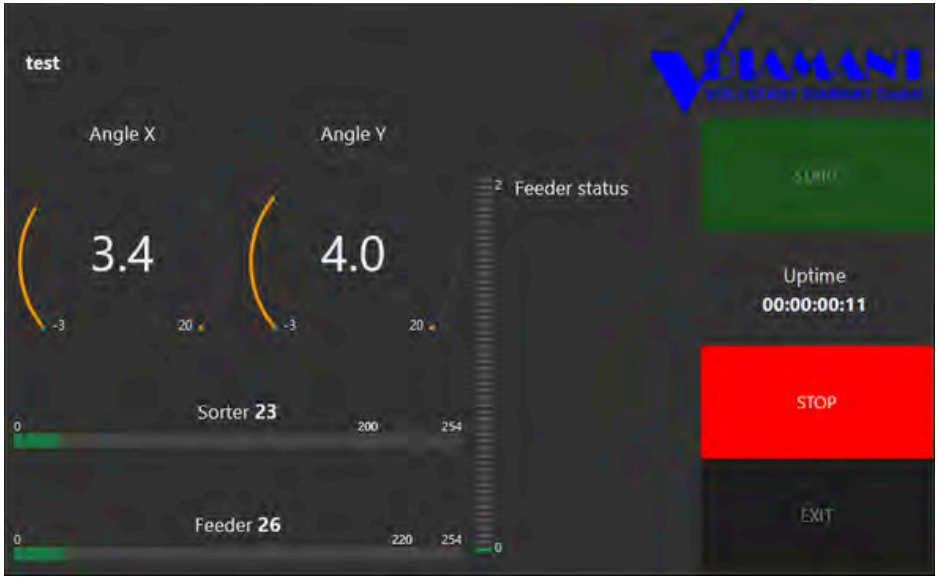
Manual vs. Automatic

Flexibility

Manual mode



Automatic mode

The shape sorter can operate in both manual and automatic modes. In manual mode, all parameters can be adjusted freely. In automatic mode, parameters for different materials are saved in product definitions, which can all be used in automatic operation.

The device is controlled using a separate tablet PC. The user-friendly interface allows for easy adjustments and monitoring, providing precise control over the device's settings and operations.

Cutting Edge Technology.
Replication Guaranteed.

The table surface inclination can be adjusted using electrical drives, with the angles measured by sensors and displayed on the Tablet-PC.

The oscillation frequency of the table is electronically controlled, ensuring that fluctuations in the mains frequency do not affect the sorting process. An acceleration sensor is utilized for precise control of the oscillation amplitude, making the device insensitive to mains voltage changes. This electronic control system facilitates the replication of machine settings for sorting different materials.

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Laser Light Monitored

Material Feeder

A continuous material feed is achieved through an electronically controlled vibrating conveyor, monitored and regulated by laser light barriers.

Operating Principle.

The operating principle relies on the distinct movement behavior of particles on an inclined oscillating table.

The system effectively separates various shapes such as spheres, cubes, cubooctahedrons, broken particles, irregular shapes, and platelets.

During oscillation, diamonds are transported from the backside corner of the sorting tray towards the open edge with the collecting receptacles at the opposite corner.

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Laws of Physics.
Effectively Used.

The inclination of the sorting table produces the following effect:

- Blocky crystals, resembling rolling balls, move downward and collect in the lower boxes.
- Irregularly shaped crystals, unable to roll, are propelled upward by the oscillation and are collected in the upper boxes.

Optimal sorting angle and vibration amplitude must be selected based on the specific sorting task.

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Special Features.

- Tablet PC control
- Manual or automatic Mode
- Simple product database creation
- Protection cover against external influences like touches or air currents from air-conditioning
- Pivoting protective cover
- Insensitivity to mains frequency, fluctuations, system angle, and load
- Laser-controlled material supply regulation system
- Adjustable output particle feed rate
- Status signals "Feeder empty" or "Feeder full"
- LED interior lighting

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Technical Data.

Power supply	230 V, 50/60 Hz, 4 A (100 / 115 V upon request)
Protection class	IP 42
Dimensions	Closed: 100 x 97 x 140 cm, Opened: 100 x 97 x 210 cm
Weight	ca. 125 kg
Inclination (max.)	X-axis: 0 ... 15°, Y-axis: 0 ... 15°
Sorting tables	Type 0: D46 ... D76 Type 1: D91 ... D126 Type 2: D151 ... D251 Type 3: D301 ... D601 Type 4: D601+ ...
Edge length	800 mm
Surface material	Aluminium
Yield	30/40 mesh: ca. 800 cts./h 40/50 mesh: ca. 500 cts./h 325/400 mesh: ca. 100 cts./h
Atmospheric conditions	20 ... 25°C / 45 ... 60 % relative humidty
Cleaning	With alcohol

Technical Data.

Feeder	
Type	Closed-Loop Controlled Particle Feeder
Control range	0 … 200.000 particles/min
Reservoir volume	ca. 3.5 liters
Material	Stainless steel

Sorting boxes	
Quantity	15
Volume	ca. 500 ml
Material	Stainless steel

Control unit	
Tablet PC	Raspberry Pi 10
Software	VDiamant ShapeSorter v4.2
Display	7” Touchscreen

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