

# ESEC Die Bonder

## 16 kHz Fieldbus



- 47 Axes
- Fieldbus cycle time: 0.0625 ms
- Customized control algorithms

### The application

A die bonder places semiconductors on a substrate. It is therefore a specialized "pick and place". The edge length of the semiconductors ranges from 0.25 mm to 25 mm. Some of them are wafer-thin: 20  $\mu\text{m}$  and less. Depending on the process, they are attached with a type of adhesive (epoxy) or are soldered.

In addition to maximum reproducibility, the process also requires high speeds: Up to 18,000 UPH (units per hour) can currently be produced. This means that the "pick and place" mechanism moves back and forth five times per second.

### The system

A single Indel GIN-SAM3 fieldbus master coordinates all axes and IOs of this machine. Thanks to its 1Gbit/s, the Indel GinLink offers enough

power to operate the fieldbus nodes with 16kHz closed-loop.

### Special control algorithms

In addition to existing standard control algorithms, highly optimized, customer-specific algorithms are also used, which take into account the mechanical properties and minimize vibrations.

**Ideal axis control thanks to Gigabit fieldbus.  
That is Indel Automation.**