

# Sintering System SIN 20

## Vacuum assisted, small scale for R&D and small series production

The new SIN 20 sintering equipment has been developed to support R&D departments and institutes in the setup, evaluation, and optimization of sintering processes. The SIN 20 uses PINK's well-known, approved, and patented equilibrated vacuum technology, based on the technical principle of pressure equalization. This allows sintering in perfect N<sub>2</sub> atmosphere as well as in reductive atmosphere like formic acid. Cu substrates as well as substrates with an Au or Ag finish can be sintered. The top tool system can be easily installed and changed. This allows a quick change between different tools. Moreover, the soft tool solution of PINK enables the user to perform sintering of different layouts without changing the top tool. The flexibility of this tooling is resulting in short development cycles and minimized R&D costs. Even a one-step multilayer sintering is possible with this Softtool. The SIN 20 offers short set-up times. The intuitive user interface supports the process engineer setting up and analyzing different process steps. Based on its size and flexibility the equipment is suited for R&D as well as small-scale manufacturing of a wide range of components.

### System features

- Flexible top tooling system  
(high force Softtool or Hardtool)
- Target applications:
  - Die attach on substrate and lead frame
  - Attach of substrate to baseplate
  - Die top interconnect
  - High power LED attach

### Equipment specifications

- Hermetic sealed process chamber
- Process area:
  - Sintering: up to 100 x 100 mm
  - Max. product height: 50 mm
  - Min. distance between products: 0 mm



- Heating system:
  - Heating plate temperature up to 350 °C
  - Separate cooling and heating zone
- Top tool system:
  - Dynamic adaptable pressing force from 1 kN up to 200 kN
  - Continuous force: 175 kN
  - Dynamic adaptable pressure up to 30 MPa with Softtool and up to 60 MPa with Hardtool
  - Dynamic controlled and monitored pressure ramps
  - Drive speed: upwards up to 17.5 mm/s, downwards up to 27.5 mm/s
- Atmosphere Control System:
  - Exact control of inherent gas atmosphere (N<sub>2</sub>, N<sub>2</sub>/O<sub>2</sub>, N<sub>2</sub>/H<sub>2</sub>, HCOOH)
  - Atmospheric pressure range: 1 - 960 mbar
- Process Control and User Interface:
  - Freely programmable controlled and monitored temperature, atmospheric pressure and pressure profiles
  - Permanent process control
- Connectivity:
  - Ethernet interface
  - Remote maintenance (VPN)
- Low energy and process media consumption
- Remote maintenance (VPN)