

POWER MODULE

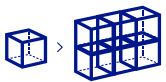
Everything from one source



INFOTECH POWER MODULE

Infotech offers solutions for subprocesses, complete Production Cells or entire Production Lines in close collaboration with our partners.

Every customer specified process can be realized by means of a desktop machine as well as by means of an autonomous production line. Variable transport systems enable the processing of customer specific work piece carrier with a width of up to 330 mm and are therefore compatible with oversized vacuum soldering systems. The work piece carrier can be returned within the production line and circulate autonomously through the process steps "assembling", "soldering" and "unloading".



From the compact Desktop machine to the inline-capable fully automatic Production Line



DBC assembly process from one source

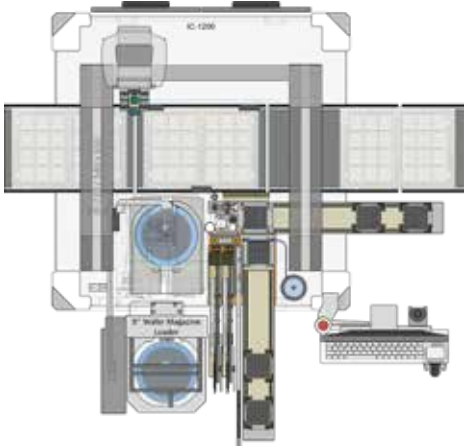


Setting innovation milestones in the field of Power Module Production

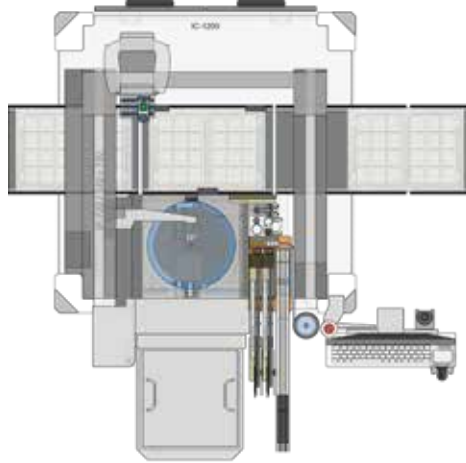


POWER MODULE BONDER

Power Module-Bonder 8" Wafer



Power Module-Bonder 12" Wafer



- Die, preform, spacer, NTC-Bonder
- Wafer, preform, bulk goods, tape feeder
- Processing directly into oven WPC

PRODUCTION LINE



Module assembling – Vacuum soldering (PINK) – Module unloading – Work piece carrier (WPC) lift – Return conveyor on lower level – WPC lift

PROCESSES

- Loading base plates
- Assembling of DBC-substrates from stack
- Laser marking of DBC substrates with inspection
- Loading fixtures
- Dispensing solder paste
- Dispensing flux or primer
- Inspecting the dispensed media
- Assembling preforms supplied on reel
- Wetting preforms from bottom side
- Assembling dies, IGBTs, diodes from wafer
- Wetting dies bottom up
- Assembling SMDs, e.g. thermistors
- Assembling spacers, clips and bridges
- Unloading of soldered power modules
- Wetting spacers bottom up
- Transferring of assembled power modules
- Storing power modules in magazines
- Returning oven work piece carrier
- Cleaning of oven work piece carrier
- Traceability tracking of all process parameters with MES communication
- Synchronized interfaces with vacuum ovens VADU 300 / 400 supplied by the company PINK GmbH Thermosystems

TRANSPORT SYSTEMS

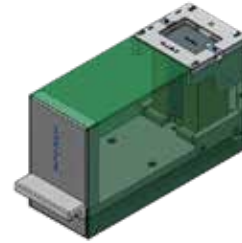
- **XL Transport system:** Fixed width for work piece carrier 460 mm x 330 mm
- **XL Transport system:** Manually adjustable 85 mm ... 330 mm
- **XXL Transport system:** With fixed width for work piece carrier 650 mm x 330 mm
- Lift- and centering station to fix XL- or XXL work piece carriers (with indexing)
- Optional **transport system extension** for the output buffer
- Optional **return transport system** for 330 mm wide work piece carrier
- Optional **interface with vacuum oven** VADU 300/400 of the company PINK



PREFORM FEEDER



- **Preform feeder PF2-14**
(Tape width 2 mm ... 14 mm)
- **Preform feeder PF12-26**
(Tape width 12 mm ... 26 mm)
- **Preform feeder PF22-36**
(Tape width 22 mm ... 36 mm)
- **External prepare station** to the preform feeders PF2



- **Preform stack feeder PS32-66**
(Preform size 32 mm ... 66 mm)

DISPENSING AND WETTING PROCESSES

Instead of using e.g. graphite jigs wetting processes are often used. The wetting of the substrate, solder preforms or dies keep the product in place during the transport to the inline vacuum oven. The adhesion promoters are cleaned out in the first chamber of the vacuum oven. Various types of adhesion promoters can be dispensed using Infotech dispense equipment or peripherals. The wetting of the bottom side of the components is preferred, as the solder preform and the dice can be wetted just before the placement process.

Dispensing top down:

All Infotech Component Matrix dispense valves and peripherals can be used

Dispensing bottom up:

Infotech offers special jet-dispense valves, which can process low viscose adhesion promoters e.g. Ethanol to the bottom side of the solder preforms or the dice. If multiple assembly heads are used, the wetting process can be performed

Apply top down wetting processes:

- Within a separate dispense cell
- Within an additional platform
- Within an assembly cell
- On the same robot as the assembly process using a separate dispense head

APPLICATION EXAMPLES



IC-1200 Production cell with 8" wafer changer

- Die, preform, SMD or spacer bond process
- Inline transport and return transport system
- Dispense head to apply solder paste
- Waffle pack 4" Stack Tray Feeder
- Full traceability using SECS / GEM
- Up to six assembly heads simultaneously



IC-2000 Production cell with various dispense functions

- Polyimide Substrate Jet-Dispenser
- Nitrogen or plasma clean module
- Housing sealing dispense process
- Ink-jet unit to mark on housings
- Internal cure stations
- Optional load and unload module



IC-1200 Production cell with electrical test controllers (CREA)

- 8" wafer changer and wafer feeder
- Move the die to the test station
- Dynamic and static tests
- Use of different temperature profiles
- Sorting in up to 8 different classes
- Different types of output feeders

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