



boschman
advanced packaging technology

SINTERTOOL SOLUTIONS



SINTERING SOLUTIONS

Unique flexibility & Maximum control

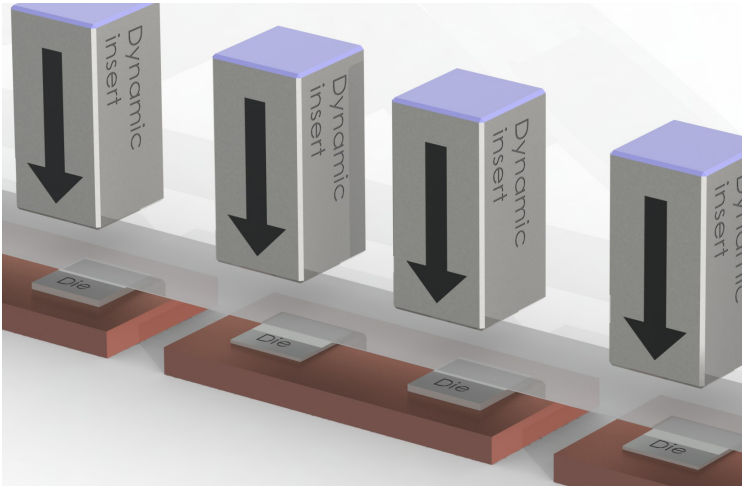


The market for Ag sintering equipment and tools is characterized by many different designs and layouts, wide variety of products and die dimensions, process requirements due to use of different Ag-layer technologies and types (paste, film and other) and automation concepts. This requires different and tailor designed Ag-sinter tooling solutions. Boschman offers a wide range of Sinter tool solutions which fit on all of our sintering systems.

The core technology we use is dynamic insert technology (patented). The sintering pressure is precisely controlled and monitored during the complete sintering process. The sinter pressure is programmable via the MMI (man-machine- interface). The dynamic controlled inserts automatically compensate for die height differences, resulting in a controlled and predictable sinter force, enabling a very consistent Bond Line Thickness (BLT).

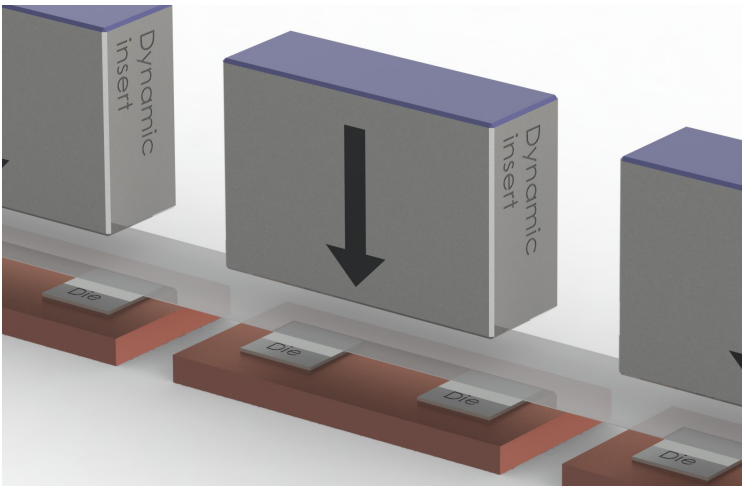


DYNAMIC INSERT TECHNOLOGY



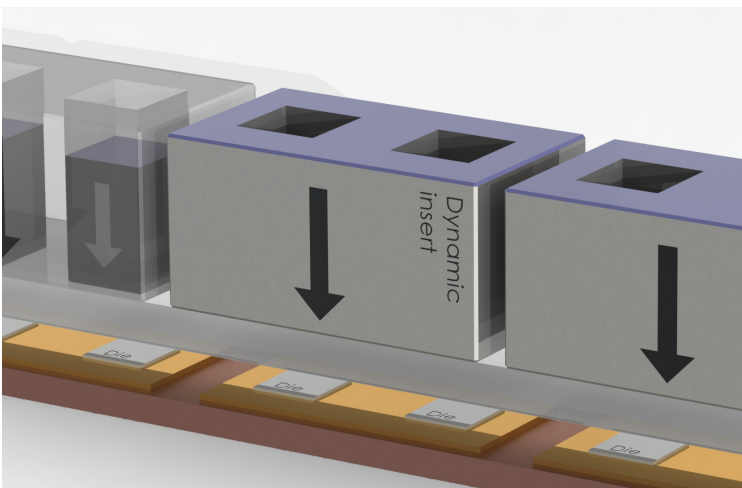
Individual dynamic insert technology:

Each insert presses on one individual die. Ideal for modules which have different die heights



Group dynamic insert technology:

Each insert presses on more than one individual die. Ideal for modules which have multiple dies with same die height.

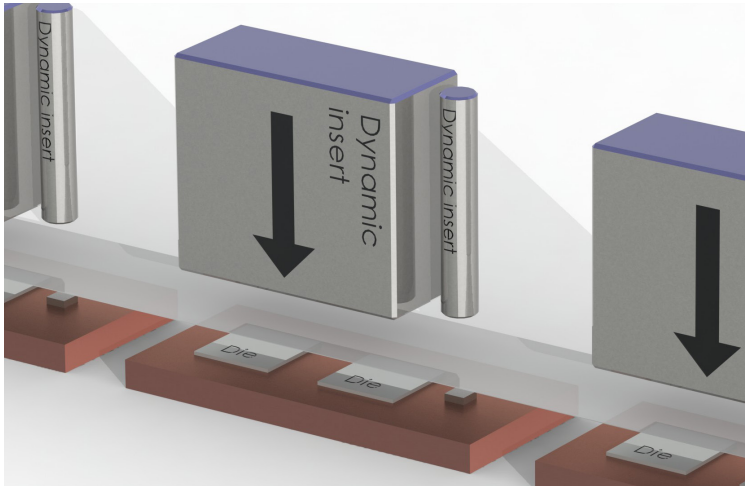


Insert in Insert dynamic insert technology:

In one sinter cycle we can sinter multiple areas and levels. I.e. die to dbc and dbc to heatsink.

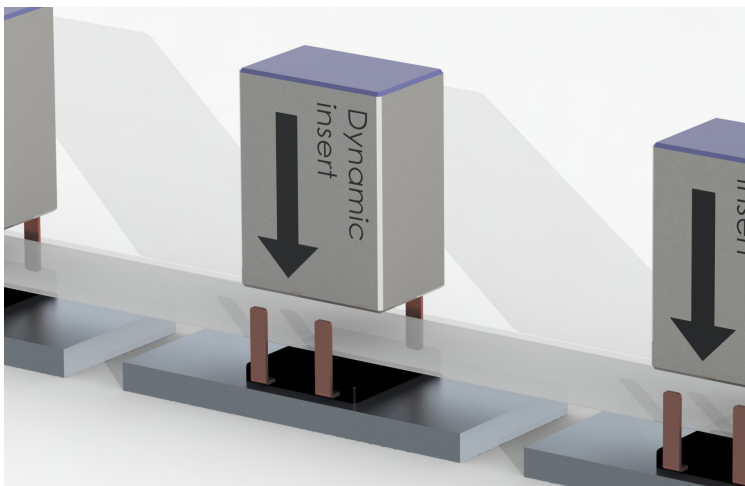


DYNAMIC INSERT TECHNOLOGY



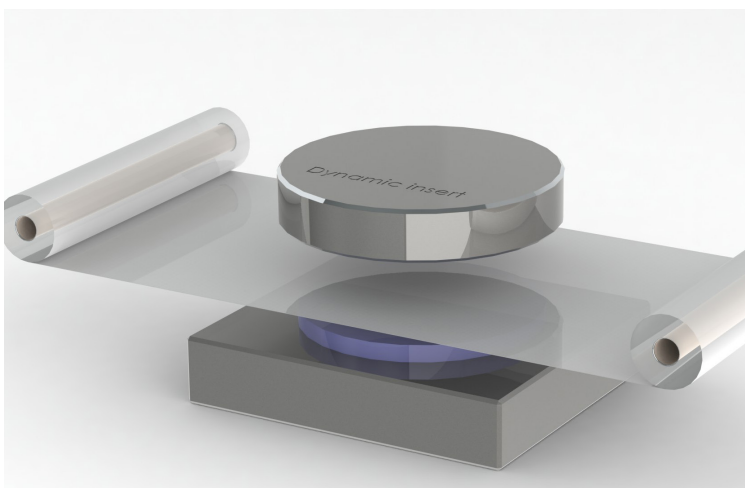
Combination group and Individual dynamic insert technology:

I.e. in case thermistors need to be sintered in one cycle together with IGBT/FRD dies.



Package sintering to heatsink with individual dynamic insert technology:

Each insert presses on one individual package with exact pressure control.

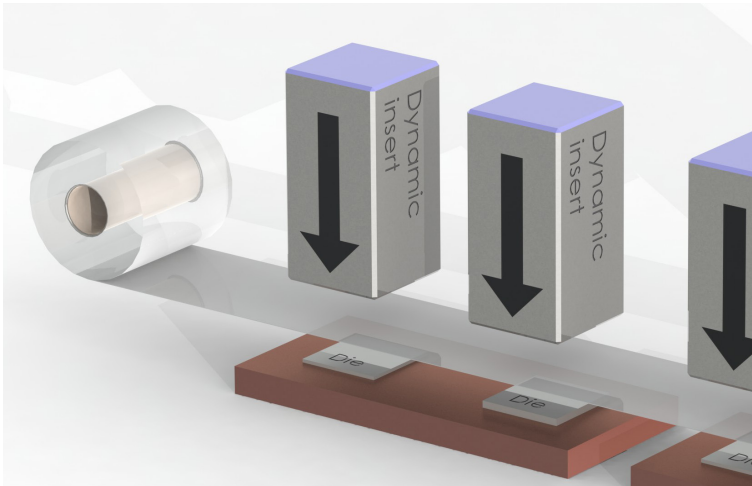


Flat tool with sintering:

For large area sintering without multiple different heights (I.e. wafers and thyristors).

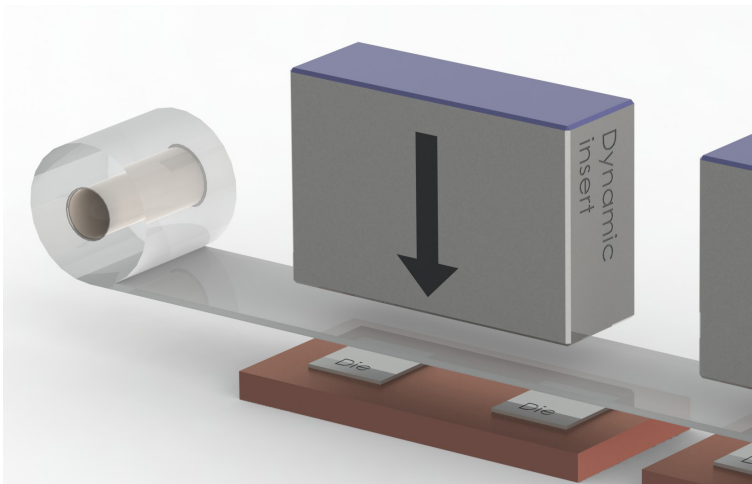


FILM HANDLING CONFIGURATIONS



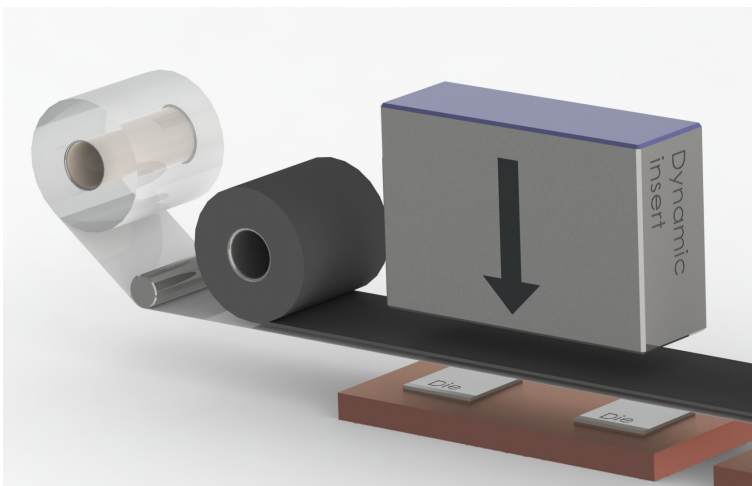
Standard film configuration:

We use a standard 50 um protection film between inserts and dies.



Thick film configuration:

We can use up to 300 um protection film which also serves to equalize pressure on dies which have a small die height difference.



Dual film configuration:

Double film handling. A thick compensation layer can be handled in combination with a protective layer.

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Stenograaf 3 6921 EX Duiven T +31 26 319 4900 E info@boschman.nl

www.boschman.nl