GEMINI®

Next-gen 300 mm Automated Production Wafer Bonding System

Introduction

Integrated modular high-volume manufacturing system for aligned wafer bonding

Experience the next level of innovation with the 300 mm EVG GEMINI automated production wafer bonding system. Based on the global industry standard for high-volume manufacturing wafer bonding, the new GEMINI equipment platform includes a newly designed high-force bond chamber (up to 350 kN) that ensures excellent bond quality and yield. The GEMINI system is particularly suited for next-generation MEMS (Micro-Electro-Mechanical Systems) manufacturing up to 300 mm, offering exceptional performance in wafer-level vacuum or overpressure encapsulation but also in advanced system integration. The equipment provides full flexibility and supports a wide range of processes, including metal, anodic, glass-frit, fusion, and adhesive bonding.

Modular Concept

The modular design of the GEMINI enables maximum flexibility to meet both current and future customer needs. With up to 4 bond modules, alignment verification and various pre-processing options, the system enables configurations optimized for both high-volume manufacturing and R&D.

Features

- Fully automated and integrated wafer bonding platform
- Field-proven SmartView® bond alignment system
- Newly designed high-force bond chamber
- Bond force up to 350 kN
- High pressure uniformity
- Rapid heating and cooling
- Optimized temperature uniformity
- High vacuum and overpressure capability
- Accurate chamber pressure control
- Modular concept for full process flexibility
- Smart process control and data analysis
- Simplified, user-friendly interface

Bond Module Options

					New	New
Max. Bond Force	**10 kN**	**20 kN**	**60 kN**	**100 kN**	**200 kN**	**350 kN**
Force Range	100 N – 10 kN	200 N – 20 kN	700 N – 60 kN	1,5 kN – 100 kN	10 kN – 200 kN	10 kN – 350 kN
Substrate Size	200 mm – 300 mm					
Gas pressure range	$5x10^{-6}$ mbar – 1300 mbar abs.				$5x10^{-6}$ mbar – 2000 mbar abs.	
Max. Temperature	550 °C				450 °C	

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