WAFER SUBSTRATE BONDING UNITS

Premium bonding for the processing of fragile semiconductor wafers whilst retaining the highest quality of sample yield.

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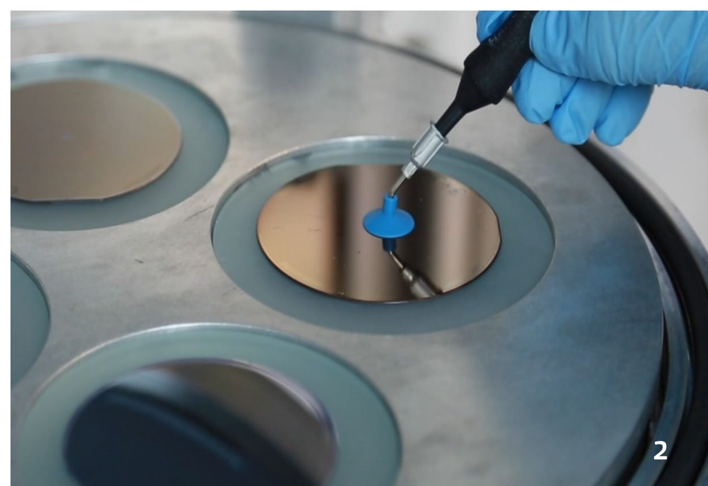
The Logitech Wafer Substrate Bonding Units (WSBU's) offer premium bonding for the processing of fragile semiconductor materials such as indium phosphide and gallium arsenide. The bonding units are designed to minimise breakage with these expensive materials, whilst retaining the highest quality of sample yield.

The WSBU's are designed to meet the stringent requirements of todays wafer processes. Available as a single or three station unit, this highly automated bonder incorporates both vacuum and pressure bonding facilities.



KEY FEATURES & FUNCTIONALITY

- Available as a single or three station benchtop unit with a wafer process capacity of 4"/100mm or 6"/150mm - bond three part or whole wafers consistently with a high standard of support carrier parallelism.
- The WSB300 floor standing model allows operators to bond materials and wafers up to 300mm/12" (or smaller multiple samples using a template) in diameter to the exacting standards achieved by the benchtop WSBU's - this makes the WSB300 ideal for high throughput bonding requirements.
- The WSBU range allows operators to bond single or multiple wafers simultaneously.
- The WSBU range provide consistent bond thickness and excellent dimensional accuracy due to precise control of a flexible diaphragm within the bonding chamber.
- The recipe mode on the WSBU's allows users to create and re-call recipes to ensure easy process repeatability and consistency even across different operators - these can be exported and uploaded via the USB port.
- Process conditions set and controlled via the Graphical User Interface - including bonding temperature up to 200°C and required vacuum.
- Full pressure bonding process completed within the bonding chamber; when the bonding temperature has been reached and the mounting adhesive applied the sample is place upon the carrier within the chamber, air is then evacuated from the sample chamber creating a vacuum, the unit then enters the 'soak' phase where the bonding temperature is maintained along with the vacuum, the bond phase is then entered as the temperature is maintained as positive downward pressure is then applied to the sample from the diaphragm chamber, once the bond is completed the unit then enters the 'cooling' phase to the predetermined temperature and then the bonded sample can be safely removed from the chamber.
- The full bonding process - evacuation of wafer chamber, heating, pressure bonding and cooling can be completed automatically by the WSBU's in 45 minutes (depending on the mounting media, wafer size and parameter combination).

Image 1: Single stations Wafer Substrate Bonding Unit

Image 2: Bond multiple samples simultaneously on the WSB300

Image 3: Triple station Wafer Substrate Bonding Unit

Image 4: The WSB300 has the ability to bond wafers up to 300mm(12")

TECHNICAL SPECIFICATIONS

	Single Station WSBU	Triple Station WSBU	WSB3000
Height:	350mm	390mm	1750mm
Depth:	580mm	600mm	1110mm
Width:	652mm	1160mm	930mm
Net Weight: (not including plate)	58kg	80kg	250kg
Power Supply:	240v/110v Single Phase		
Water Supply:	Mains pressure cold water		
Pressurised Air:	Regulated to 2bar +/- 0.2bar max		5 - 8bar
Vacuum Pump:	4" model: Torr 1.5×10^{-3} 6" model: mbar 2.0×10^{-3}		Torr 1.5×10^{-3} mbar 2.0×10^{-3}

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