

GIGA 690 AutoFab

High Performance Cluster System



Batch type microwave plasma treatment for maximizing back end efficiency

High throughput at small footprint

The GIGA 690 AutoFab is a high-throughput plasma platform with a compact, modular multi-cluster architecture. Using the 690 IL with a dual-arm robot, it achieves advanced batch processing of up to six wafers, panels, or trays simultaneously. Optimized for wafer-level and panel-level packaging as well as flip chip underfill, it delivers scalable automation for advanced semiconductor manufacturing.

Plasma Applications

- Cleaning before die bonding
- Cleaning before wire bonding
- Activation before molding
- Activation before underfill
- Cleaning before solder ball attach

Auto Fab System



- Dual robot arm
- Two loadports (8"/12") FOUP
- GIGA 690 Inline used as basis platform
- Up to 3 loadports possible
- Additional reject zone possible

Technical Data GIGA 690 AutoFab

Robot system	Dual-arm robot with rail to serve system, pre aligner and cooling station for wafers up to 300 mm	
Key components	Wafer ID Reader	Notch & OCR (Optical character recognition)
	Cooling Station	2 - 3 CCD sensors for video recording
	Wafer mapping	Cooling station pre aligner + reject zone
	FFU filter / HEPA	Ionizer above plasma chamber

GIGA 690 AutoFab in connection with the robot system

Process chamber	Material	Aluminium
	Volume	64 liter (optional 91 liter) 400 x 400 x 400 mm (optional 450 x 450 x 450 mm)
	Microwave plasma generator	Frequency: 2.45 GHz Output power: 0 - 1000 Watts - puls free operation Continuously adjustable magnetron, air cooled
Gas channels	Venting	Stainless steel solenoid vent valves
	Process gas	2 gas channels with separate mass flow controllers

Vacuum system	Vacuum connection	DN 63 ISO K
	Ultimate pressure	< 0.01 mba
	Process pressure	Approx. 0.1 - 1.5 mbar
	Vacuum gauge	Range 0.1 - 1.5 mbar
Control	PC based system	17" touch screen Energy saving function Graphical user interface
		Ethernet, USB, Light tower system status r/y/g
Functions and Software	Graphical real-time operating system	
	Real-time process monitoring, recipe management	
	SEMI S2 and CE compliant	
	Real-time data logging and monitoring of process data	
	User password level protection, software and hardware interlocks	
	Process recipe warnings, alarm message dialogues and self test routines	
Supply	Power:	Different voltages and frequencies available
	Process gas:	¼" Swagelok-connector
	Compressed air:	Connector 6 mm Festo, input pressure 4 - 6 bar, oil free
Dimensions	W x H x D	1700 mm x 2000 mm (incl. light tower) x 2000 mm
	Weight:	Approx. 795 kg (incl. vacuum pump)

Optional Features - Hardware finetuning for specific process requirements

- A comprehensive selection of vacuum pumps, from oil-sealed to dry models, with varying pumping capacities.
- SECS-GEM host communication for seamless integration into production environments.
- Hydrogen process gas option, featuring a safety-certified gas box and an integrated hydrogen generator.
- Customizable product carriers, including multiple magazine sizes, wafer treatment configurations, and specialized part carriers
- Chemraz sealing for fluorine processes, enhancing organic removal efficiency

Our promise

We combine deep consulting expertise in plasma, solution-oriented thinking, and the highest quality standards across all technology fields. This results in future-proof high-tech systems with industry-leading process technology and top-tier quality – Made in Germany.

We support our customers throughout the entire project with expert, personalized service – from the initial consultation to reliable after-sales support. Our customers value our flexibility, backed by the financial strength of the publicly listed PVA TePla AG.

This is how we consistently fulfill our promise: the best system technology for even better materials.



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