

Multi Station Glove Box Inert Gas Purification Glovebox

Item Number: ST17



Introduction

Engineered for advanced battery research and materials processing, this multi-station inert gas purification glovebox delivers ultraclean environments with water and oxygen levels below 1 ppm, automated Siemens PLC control, robust stainless steel construction, and integrated smart cloud monitoring.

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Application	Description	Key Benefit
Solid-State & Lithium Battery Assembly	Electrode stacking, electrolyte filling, lithium foil handling, and coin/pouch cell crimping under inert gas.	Prevents passivation and moisture degradation of highly reactive lithium, sodium, and sulfide-based solid electrolytes.
Perovskite & OLED Photovoltaic R&D	Spin coating, vapor deposition staging, and encapsulation of organic/hybrid semiconductor thin films.	Eliminates hydrolytic degradation and trap-state formation caused by trace moisture and ambient oxygen exposure.
Organometallic & Catalysis Chemistry	Handling pyrophoric reagents, metal alkyls, Grignard reagents, and synthesizing air-sensitive coordination compounds.	Ensures complete operator safety while preventing volatile reagent combustion and catalyst deactivation.
Advanced Powder Metallurgy & AM	Storing, sieving, and conditioning fine reactive titanium, aluminum, and spherical superalloy powders for 3D printing.	Inhibits surface oxidation, maintaining raw powder sphericity, flowability, and metallurgical integrity.
Hermetic Laser & TIG Welding	Enclosed micro-joining of titanium alloys, medical implants, nuclear fuel claddings, and aerospace sensor assemblies.	Delivers pristine, discoloration-free weld beads without porosity or embrittling oxide inclusions.
Semiconductor Packaging & Sensor Assembly	Microelectronic wire bonding, wafer die attach, and hermetic sealing of MEMS devices and optoelectronic packages.	Guarantees cleanroom-compatible particle filtration and prevents bond-pad oxidation during high-reliability packaging.

System Subsystem	Specification Parameter	Value / Range (ST17 Series)
Model Configuration	Base Product Identifier	ST17
Main Enclosure	Box Material	304 Stainless Steel (Thickness: 3.0 mm)
	Internal Surface Finish	Oil-film brushed surface
	External Surface Finish	304 Stainless steel brushed / industrial coat
	Chamber Length Options	1500 mm / 1800 mm / 2440 mm / 3660 mm / 4880 mm
	Chamber Depth Options	750 mm / 1000 mm / 1200 mm
	Chamber Height	900 mm
	Front Window	Tilted transparent tempered safety glass (Thickness: 8.0 mm)
	Glove Ports	POM / Machined Aluminum Alloy with dual O-ring sealing
	Gloves	High-integrity Butyl Rubber (Thickness: 0.4 mm, Diameter: 7" / 8")
	Dust Filtration	0.3 μm HEPA gas inlet and exhaust filters (1 inlet, 1 outlet)
	Internal Shelving	2-Tier stainless steel adjustable height shelving unit
	Illumination	Internal glare-free LED lighting enclosed in sealed housing
	Feedthrough Ports	DN40KF blank feedthroughs (multiple spare ports) + 1x 220V power port

System Subsystem	Specification Parameter	Value / Range (ST17 Series)
Purification Unit	Purification Column Type	Single-column hermetic purification train
	Column Construction	304 Stainless steel
	Purifier Charge	5 kg Copper Catalyst + 5 kg Molecular Sieve
	Purification Capacity	Deoxidation: 60 L O ₂ ; Moisture Removal: 2.0 kg H ₂ O
	Attainable Gas Purity	Moisture (H ₂ O) < 1 ppm; Oxygen (O ₂) < 1 ppm
	Compatible Working Gases	Nitrogen (N ₂), Argon (Ar), Helium (He)
	Circulation Blower Flow	90 m ³ /h standard (Optional upgrades: 145 m ³ /h, 180 m ³ /h)
	Column Regeneration	Automated PLC cycle using forming gas (Working gas + 5%~10% H ₂)
	Main Isolation Valves	DN40KF Electro-pneumatic angle valves
	Auxiliary Control Valves	Integrated solenoid manifold blocks
Antechambers	Large Antechamber Dimensions	Diameter: Ø360 mm (Optional: Ø400 mm), Length: 600 mm
	Large Chamber Construction	304 Stainless steel, sliding load tray, dual vertical 10 mm Al doors
	Large Chamber Control	Fully automated cycle evacuation and inert gas refill
	Small Antechamber Dimensions	Diameter: Ø150 mm (Optional: Ø100 mm), Length: 300 mm
	Small Chamber Construction	304 Stainless steel, dual hinged doors, manual ball valve operation
	Pressure Indication	High-precision analog dial vacuum gauges on both chambers
Vacuum System	Rotary Vane Vacuum Pump	Flow rate options: 8 m ³ /h, 12 m ³ /h, or 16 m ³ /h
	Pump Protection	Exhaust oil mist filter and gas ballast control valve
Control & Instrumentation	Automation Platform	Siemens PLC with color HMI touchscreen display
	Pressure Control Range	Freely adjustable within ±15 mbar; Auto-protection at ±16 mbar
	Operator Pressure Assist	Dual-pedal foot switch for direct gas fill and evacuation
	Oxygen Analyzer	Solid-state sensor, measuring range: 0 to 1000 ppm
	Dew Point Analyzer	Capacitive/impedance sensor, measuring range: 0 to 500 ppm
	Data Logging & Safety	Automated parameter memo, alarm history, and power-off auto-restart