

O Ring Vacuum Sealed Flange Window Glove Box

Item Number: ST19



Introduction

Engineered for high-purity inert atmosphere research, this O-ring vacuum sealed flange window glove box features monolithic gantry-machined sealing grooves, seamless elastomer seals, and an ultra-low leakage rate under 0.0006 vol%/h for advanced battery chemistry and material synthesis.

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Application	Description	Key Benefit
Solid-State Battery Assembly	Preparation, pressing, and encapsulation of moisture-sensitive sulfide and oxide solid electrolyte cells.	Prevents hydrolytic degradation and dangerous gas evolution through ultra-low leak-rate containment.
Lithium-Ion Battery R&D	Electrolyte filling, pouch cell stacking, and sealing under strict sub-ppm moisture and oxygen parameters.	Ensures consistent electrochemical cycling and eliminates ambient moisture contamination during critical cell closure.
Perovskite Photovoltaics	Spin-coating, thermal annealing, and packaging of organic-inorganic halide perovskite thin-film modules.	Eliminates phase degradation caused by atmospheric ambient humidity and oxygen exposure.
Organometallic Chemistry	Synthesis, purification, and storage of pyrophoric, hygroscopic, and air-sensitive catalytic reagents.	Total isolation from ambient air protects unstable transition-metal complexes and maximizes reaction yields.
Additive Manufacturing Powder Handling	Sieving, mixing, and loading of reactive titanium, aluminum, and nickel-based superalloy metal powders.	Eliminates oxidation risks and explosion hazards during reactive fine-powder processing.
Inert Gas Arc Welding	Specialized micro-TIG and laser hermetic welding of refractory metals and aerospace-grade alloys.	Guarantees pristine weld pools free from discoloration, embrittlement, or oxide inclusion defects.
Semiconductor Device Packaging	Cleanroom-grade assembly and hermetic sealing of advanced optoelectronic chips and MEMS sensors.	Delivers a stable, ultra-dry inert envelope to prevent junction contamination and moisture trapping.

Specification Parameter	ST19-Pro	ST19-Super-Pro	ST19-Super
Main Chamber Dimensions (L × W × H)	1220 mm × 750 mm × 900 mm	1220 mm × 750 mm × 900 mm	1220 mm × 750 mm × 900 mm
Flange Window Sealing Structure	Monolithic "O"-Ring Vacuum Flange	Monolithic "O"-Ring Vacuum Flange	Monolithic "O"-Ring Vacuum Flange
Window Flange Fabrication Method	Thick-plate CNC Gantry Machined	Thick-plate CNC Gantry Machined	Thick-plate CNC Gantry Machined
Flange & Groove Flatness	< 0.1 mm/m	< 0.1 mm/m	< 0.1 mm/m
Chamber Leakage Rate	< 0.0006 vol%/h	< 0.0006 vol%/h	< 0.0006 vol%/h
Chassis Weld Inspection	Non-Destructive Testing (NDT)	Non-Destructive Testing (NDT)	Non-Destructive Testing (NDT)
Seal Ring Design	Seamless Integrated Elastomeric Ring	Seamless Integrated Elastomeric Ring	Seamless Integrated Elastomeric Ring
Large & Small Antechamber Geometry	Rectangular (Dual Chamber)	Rectangular (Dual Chamber)	Circular (Dual Chamber)
Antechamber Door Actuation	Automatic Door Operation	Manual Door Operation	Manual Door Operation
Viewing Panel Interface	Quick-Release Serviceable Mounting	Quick-Release Serviceable Mounting	Quick-Release Serviceable Mounting
Application Compatibility	Vacuum Equipment Windows & Doors	Vacuum Equipment Windows & Doors	Vacuum Equipment Windows & Doors