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Product Brochure



ACRYLIC GLOVE BOX

GBT Series Acrylic Glove Box

GBT

GBT acrylic glove box provides a transparent enclosed workspace for handling air- and moisture-sensitive materials, with multiple sizes and vacuum options.

<https://www.gloveboxs.com/products/acrylic-glove-box/gbt-acrylic-glove-box.html>

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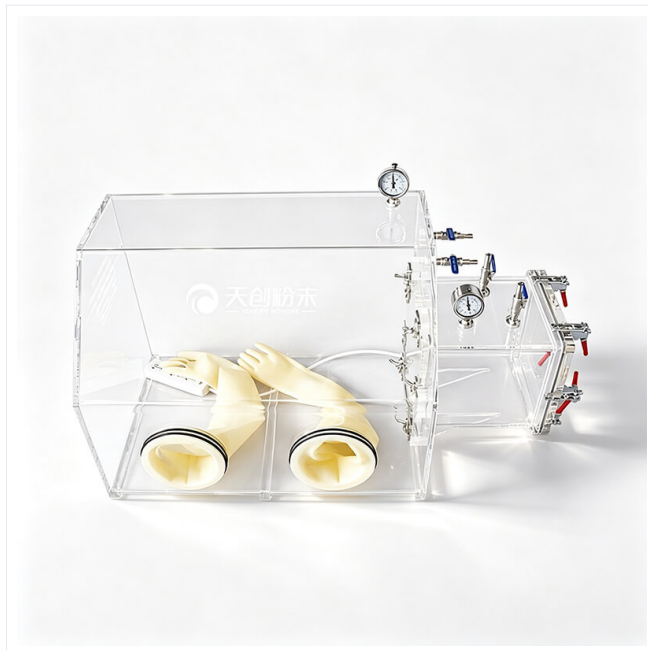


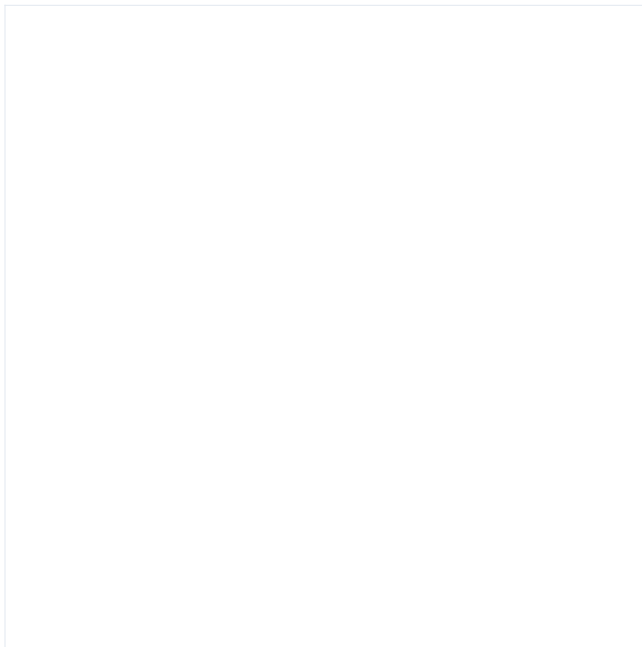
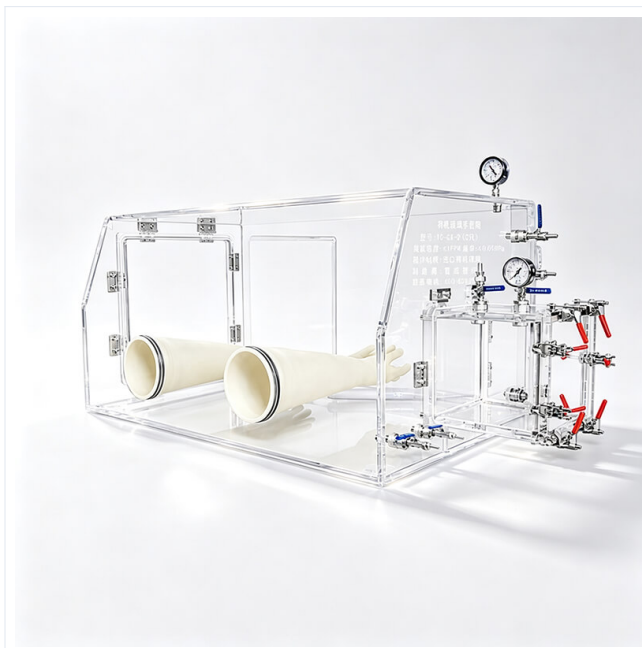
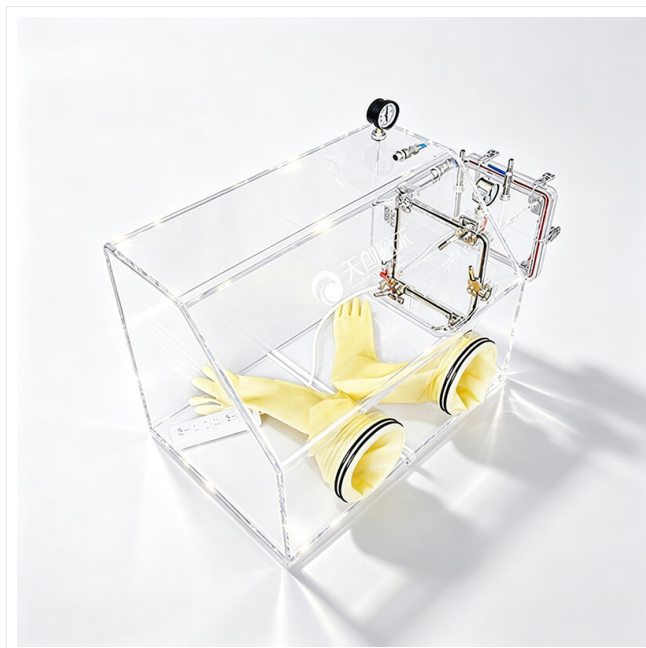
Product Overview

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Technical Parameters

Parameter	GBT
Parameter 1	
Parameter 2	





Product Introduction

GBT Series Acrylic Glove Box

The GBT Series Acrylic Glove Box is a transparent enclosed handling system designed for laboratory operations that require isolation from the surrounding atmosphere. It provides a controlled workspace where samples can be transferred, handled, processed and tested while minimizing exposure to ambient air, moisture, dust and other environmental contaminants.

The transparent acrylic construction provides excellent visibility of the entire working chamber, allowing operators to observe experimental procedures clearly while performing operations through the integrated glove ports. Its lightweight structure, simple configuration and convenient operation make it suitable for laboratories, research institutes, pharmaceutical

applications, biochemical experiments and other controlled-atmosphere operations.

Different configurations are available according to the required chamber size, wall thickness and atmosphere-control capability. Basic models are suitable for isolation and dust protection, while thicker chamber configurations can support slight vacuum or vacuum operation for atmosphere replacement. Selected configurations can also be combined with a gas purification system when lower moisture and oxygen levels are required.

The glove box can be customized in material thickness, dimensions, chamber shape and other structural details according to specific experimental or process requirements.

Model Identification

GBT represents the Transparent Glove Box series. The numerical designation indicates the chamber material thickness specification, while the letters A, B, C and D identify different chamber size configurations.

Technical Specifications

Model	Main Chamber Size (mm)	Material	Chamber Thickness (mm)	Transfer Chamber	Configuration / Description
GBT-10A	700 × 450 × 500	Acrylic	10	None	Isolation and dust protection; non-vacuum configuration
GBT-15A	700 × 450 × 500	Acrylic	15	240 × 240 × 240 mm	Slight-vacuum operation; optional moisture and oxygen purification system
GBT-30A	700 × 450 × 500	Acrylic	30	240 × 240 × 240 mm	Vacuum operation up to -0.1 MPa for atmosphere replacement
GBT-10B	1000 × 500 × 500	Acrylic	10	None	Isolation and dust protection; non-vacuum configuration
GBT-15B	1000 × 500 × 500	Acrylic	15	240 × 240 × 240 mm	Slight-vacuum operation; optional moisture and oxygen purification system
GBT-30B	1000 × 500 × 500	Acrylic	30	240 × 240 × 240 mm	Vacuum operation up to -0.1 MPa for atmosphere replacement
GBT-10C	1200 × 600 × 600	Acrylic	10	None	Isolation and dust protection; non-vacuum configuration
GBT-15C	1200 × 600 × 600	Acrylic	15	240 × 240 × 240 mm	Slight-vacuum operation; optional moisture and oxygen purification system
GBT-30C	1200 × 600 × 600	Acrylic	35	240 × 240 × 240 mm	Vacuum operation up to -0.1 MPa for atmosphere replacement
GBT-10D	1200 × 800 × 700	Acrylic	10	None	Isolation and dust protection; non-vacuum configuration
GBT-15D	1200 × 800 × 700	Acrylic	15	240 × 240 × 240 mm	Slight-vacuum operation; optional moisture and oxygen purification system
GBT-30D	1200 × 800 × 700	Acrylic	35	240 × 240 × 240 mm	Vacuum operation up to -0.1 MPa for atmosphere replacement

Available Chamber Thickness: 10–35 mm, depending on model and configuration.

Customization Options: Chamber material, dimensions, shape and other structural requirements can be customized for specific laboratory or process applications.

Working Principle

Working Principle

Many experimental materials are sensitive to oxygen, moisture or other components of the ambient atmosphere. Direct exposure to air may cause oxidation, moisture absorption, degradation or other changes that interfere with sample preparation, chemical reactions and analytical results. The GBT Series Acrylic Glove Box creates an enclosed operating space that separates samples from the external laboratory environment.

The operator performs experimental procedures through the glove ports while the samples and instruments remain inside the sealed chamber. This allows weighing, transferring, mixing, handling, reaction preparation and other operations to be carried out without directly opening the main working chamber to the surrounding environment.

Isolation Operation

For basic GBT configurations, the enclosed chamber functions primarily as an isolation and dust-protection workspace. After samples and equipment are placed inside, the chamber is closed and operations are carried out through the gloves. This configuration is suitable for applications where physical isolation and contamination control are required but vacuum atmosphere replacement is not necessary.

Slight-Vacuum and Controlled-Atmosphere Operation

Selected models with increased chamber thickness can operate under slight vacuum conditions. When connected to an appropriate vacuum and gas supply system, part of the air inside the chamber can be removed and replaced with the required process gas. Repeated evacuation and gas-filling cycles can progressively reduce the amount of atmospheric oxygen and moisture inside the working space.

For applications requiring more stable control of oxygen and moisture, compatible configurations may be equipped with an optional gas purification system. The purification system continuously treats the circulating chamber atmosphere to support a cleaner and more controlled working environment.

Vacuum Atmosphere Replacement

The heavier-duty GBT configurations are designed to support vacuum operation up to approximately -0.1 MPa. During atmosphere replacement, the chamber is evacuated and subsequently filled with the selected working gas. The evacuation and refill procedure can be repeated according to process requirements to reduce residual air before sample handling begins.

Sample Transfer

Models equipped with a transfer chamber allow samples, tools and small containers to enter or leave the glove box with less disturbance to the atmosphere inside the main chamber. Items are placed in the transfer chamber, isolated from the external environment and then transferred into the main workspace through the inner door. This configuration helps reduce unnecessary opening of the primary operating chamber.

The exact operating procedure should be selected according to the glove box configuration, required atmosphere, sample characteristics and experimental conditions.

Product Features

High-Transparency Acrylic Chamber

The transparent acrylic construction provides a clear view of the internal workspace, samples and instruments. Operators can directly observe experimental procedures from multiple angles, making the glove box particularly convenient for laboratory research, sample preparation and operations requiring frequent visual inspection.

Simple and Practical Structure

The glove box features a straightforward enclosed-chamber design that is easy to operate and integrate into laboratory workflows. Compared with more complex controlled-atmosphere systems, it is suitable for applications requiring a practical balance between atmosphere isolation, visibility and operational convenience.

Multiple Chamber Sizes

Four standard chamber size configurations are available, ranging from compact laboratory models to larger working chambers. Users can select an appropriate internal workspace according to the dimensions of their experimental equipment, sample containers and operating procedures.

Multiple Atmosphere-Control Configurations

The GBT Series includes non-vacuum, slight-vacuum and vacuum-capable configurations. This allows the system to be matched more closely to different levels of environmental control, ranging from basic dust isolation to atmosphere replacement for oxygen- or moisture-sensitive materials.

Optional Transfer Chamber

Selected models are equipped with a 240 × 240 × 240 mm transfer chamber. Samples and tools can be introduced into or removed from the glove box without directly exposing the entire main chamber to ambient air, helping maintain a more stable internal operating environment.

Optional Moisture and Oxygen Purification

Compatible slight-vacuum configurations can be equipped with an optional moisture and oxygen purification system for applications that require enhanced atmosphere control. This provides additional flexibility for laboratories working with materials that are sensitive to air or humidity.

Integrated Electrical Access

The chamber can be configured with internal electrical outlets, allowing compatible laboratory instruments and small electrical devices to operate inside the enclosed workspace without compromising routine experimental convenience.

Good Chemical and Environmental Resistance

The acrylic chamber provides stable physical form under normal operating conditions and offers good resistance to common environmental exposure and suitable laboratory chemicals. The transparent structure also combines relatively low weight with convenient visual observation.

Flexible Customization

In addition to the standard models, the glove box can be customized in chamber dimensions, material thickness, shape and other structural details. Customized configurations can be developed to accommodate specific equipment layouts, experimental procedures and workspace requirements.

Typical Applications

Air- and Moisture-Sensitive Material Handling: Provides an enclosed environment for sample preparation, transfer, weighing and handling where direct exposure to ambient air should be minimized.

Chemical Research: Suitable for laboratory preparation, qualitative and quantitative chemical analysis and other procedures requiring an isolated operating space.

Biochemical and Pharmaceutical Laboratories: The transparent enclosure and glove-operated workspace are suitable for selected biochemical, pharmaceutical and laboratory sample-handling procedures requiring environmental separation.

Microbiological Operations: Can provide an enclosed workspace for selected microbiological handling and inoculation procedures where isolation from the surrounding laboratory environment is required.

Powder and Advanced Material Research: Suitable for handling powders, precursor materials and experimental samples that require reduced contact with atmospheric moisture, oxygen or airborne contaminants.

University and Research Laboratories: Suitable for teaching, materials research, sample preparation and experimental procedures requiring a visible, enclosed and manually accessible workspace.

Typical Use Scenarios

The GBT Series Acrylic Glove Box can be used for sample weighing, powder transfer, reagent preparation, specimen storage, small-scale reactions, material pretreatment, analytical sample preparation and other laboratory procedures performed within an enclosed environment.

With multiple sizes, chamber thicknesses and atmosphere-control configurations available, the system can be selected according to the required level of isolation, vacuum capability and workspace volume.

Accessories & Customization

Accessories

Grinding jars, heating elements, sample holders, control modules and other matching accessories can be selected according to the product configuration.

Customization

For voltage, capacity, chamber size, process temperature or application requirements, please contact TENCAN for a suitable configuration.