



Universal Glove Box Specification

From Single to Multiple workstation systems, to be operated either side by-side or face to face with integrated Gas purification system (1 Purifier), PLC controller and HMI, incl. sealed box, In and outward transfer antechamber, inclined operation sides with replaceable sight glass and vacuum pump etc. Attainable purity of the glovebox is $H_2O < 1 \text{ ppm}$, $O_2 < 1 \text{ ppm}$

1. Features

Closed Loop Gas Circulation – Inert gas in a closed loop. The gas is circulated by the blower and purifier, H_2O , O_2 can be removed continuously.

Auto Purging – The replacement of the atmosphere inside the glove box can be achieved automatically by the purging valves.

Automatic Regeneration – H_2O and O_2 removal material can be regenerated. The regeneration process can be program controlled.

Pressure Control in the Glove Box – The pressure in the glove box is controlled automatically by the Programmable Logic Controller (PLC). Working pressure can be set between +10mbar and -10mbar. If the pressure goes over +/- 12mbar, the system will be protected automatically.

Automatic Vacuum Pump Control – The vacuum pump will be activated automatically when necessary, and will turn off after a period of idle time.

ECO Mode - The vacuum pump will be activated automatically when necessary, and will turn off after a period of idle time. Blower frequency will be switched to 25Hz when moisture and oxygen level reaches to less than 1 ppm



2. Basic Configuration (For Universal 2440/750)

- Two - Housing made from 3mm - 304 Stainless Steel (acid resistant),
1220mm (48") wide x 750mm (29.5") deep x 900mm (35.4") high
900mm (35.4") Stand high
- One - Main Antechamber, made from Stainless Steel,
360mm (14.2") diameter x 600mm (23.6") long, right or left side
- One - Mini Antechamber, made from Stainless Steel,
150mm (5.9") diameter x 300mm (11.8") long, right or left side
- Two - Sight Glass with 2 glove ports
- Two - Pair of Butyl Glove
- Two - Lighting System
- Two - Dust Filters: 0.3 μm - [One Gas Inlet Filter and One Gas Outlet Filter]
- Four - Stainless Steel Shelf with Two Shelves attaches to the back wall
- One - High Performance Ventilator [90 cubic meters/hour]
- One - Vacuum Pump [8 cubic meters/hour]
- One - Power Cord Feedthrough and three KF40 Blind Flanges
- One - Foot Switch
- Two - Set of Rollers for Stand

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3. Specifications

Glove Box Chamber

- Modular length: 1220mm/1500mm/1800mm/2440mm/3660mm/4800mm (48.0"/59.1"/70.9"/ 96.0"/144.1"/189.0")
- Modular depth: 750mm/1000mm/1200mm (29.5"/39.4"/47.2")
- Modular height: 900mm (35.4")
- Material: Stainless steel type 304, thickness 3mm (1/8")
- Sight Windows: Inclined, Safety Glass, thickness 8mm (1/3")
- Gloves Ports: POM (Polyoxymethylene), 220mm (8.7") Diameter
- Gloves – Butyl – 8" cuff diameter - .015" Thick – 32" Length
- Dust Filter: HEPA 0.3 μ , one gas inlet, one gas outlet
- Shelving: Stainless Steel, two adjustable shelves for each work station
- Lighting: External fluorescent lamp, front mounted above sight glass
- Feedthroughs: One power feedthrough, 3 blind-flanges for each work station

Main Antechamber

- Large Antechamber – 304 Stainless Steel – 360mm (14.2") Diam. – 600mm (23.6") Long (Right or left sided)
- Sliding Tray on Stainless drawer slides
- Spindle Lock Door with Vertical Operation
- Automatic operation via solenoid valves

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Mini Antechamber

- One – Mini Antechamber – 304 Stainless Steel – 150mm (5.9") Diam. – 300mm (11.8") Long (Right or left sided)
- Hinge Door
- Manual Operation via Hand Valve

Gas Purification

- Removal of H₂O and O₂
- Gas Container – 304 Stainless Steel
- Absorber Unit: Copper Catalyst: 5Kg – Molecular Sieve: 5Kg
Capacity to remove oxygen, 60L. Capacity to remove moisture, 2000g
- Attainable Purity: H₂O - Less than 1ppm; O₂ - Less than 1ppm
- Capsulated Blower – 90 cubic meters/hour with frequency converter
- Regeneration – PLC controls all processes including heating, filling mixed gas (working gas / 5-10% H₂ mixture), etc.

System Control

- SIEMENS PLC (Programmable Logic Controller)
- Features include: Circulation Control, Purging Control, Regeneration Control, Pressure Control, as well as self-diagnosis, power failure re-start and password protection
- Siemens 7-inch color touch screen with operation interface, indication of status, box pressure, moisture and oxygen value and system records
- The pressure in the glove box can be controlled with either the foot pedals or the PLC. The pressure can be set between +/- 10mbar. If the pressure goes over +/- 12mbar the system will protect itself automatically

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- Various valves to be integrated into a valve-seat made of stainless steel, less pipe connectors to reduce leakage

Vacuum Pump

- EDWARDS Rotary Vane Vacuum Pump with oil mist and gas ballast control. Capacity is 8 cubic meters/hour. Dual stage portion with ultimate vacuum at 3×10^{-2} mbar

4. Accessories

Moisture Analyser

- Measuring range: 0~500ppm
- P₂O₅ Sensor: Corrosion resistant, widely used in field of Lithium battery and organometallic, the sensor can be renewed by acid-cleaning while contaminated by HF or other corrosive atmosphere.

Oxygen Analyser

- Measuring range: 0~1000ppm
- ZrO₂ Sensor: Solid sensor, long life, to be exposed in the air without consumption.

5. Option Accessories

Internal Solvent Absorber

- To be built inside glove box to absorb solvent vapor
- Absorbent: Activated carbon 1.25kg

External Solvent Absorber/HF Absorber

- Rapid removal of Hydrofluoric Acid and other solvent vapors
- Absorbent: 50% Activated Carbon & 50% Aluminum Oxide



- Manual purging and evacuation control
- Bypass system allows user to easily replace material for simple maintenance
- Installed in line with purification system allowing removal of harmful solvents from the glove box atmosphere

Heated Antechamber

- Temperature range: From ambient temperature to 200°C
- Temperature controller
- Insulation layer
- Water cooling system

Refrigerator

- Left-mounted, door inside of Box
- Inside dimension: L*W*H=250*200*400-Volume:20 liter; Compressor power 1/2 HP; Lowest temperature: -35°C
- To be flange-connected with glove box, compressor to be installed on the ground
- With temperature controller to Protect compressor from being initiated frequently; Temperature dropping amplitude can be controlled by temperature controller or time relay

Cold Well

- Stainless steel well to be built on the bottom of glove box
- Size: Dia. 150mm, Deep 190mm, (customized size on request)
- DEWAR is filled with liquid Nitrogen coolant for low temperature work

Microscope Unit

- Type: TV Microscope, 1/3" CCD colourful
- Magnification: Max. 300 times, continuously adjustable

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- Monitor: PHILIP 17", with flexible support
- Up and Down lighting source: LED Ring Light
- Platform: Movable, easy to align the objective and lens centre

Ionizer without fan

- Effectively remove localized static charges
- Effective ionization range: 12"
- Pulse rate and ionic balance controls allow for effective calibration and adjustment of the Counter SPI
- To reach optimum ion balance and output

Feedthroughs

- Power Cord feedthrough
- Gas/Fluid feedthrough
- BNC feedthrough
- USB feedthrough
- Binding Posts feedthrough

6. Other Options

Customized box sizes

Integrating customer's instruments into glovebox (like evaporator, ALD system and Spin Coater etc.)

Polycarbonate Window(s)

Quick Release Window(s)

Antechamber with interlocking door;



Small chamber with sliding tray

Antechamber purging with no vacuum

Antechamber refilling from Gas cylinder instead of box

Rectangular Antechamber

Flexible shelves - adjustable up & down - adjustable back & forth

12m³/h Rotary pump

Dry scroll pump

Prompt service

**All models can be made to custom specifications

**Contact us for more information

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