α-800V Vacuum Glovebox

Functional characteristics

- Standards comparable to our all-welded design
- Purifier regeneration frequency once per year
- Regeneration averages ~ once per year
- Automatic antechamber control
- Oxygen Analyzer / Moisture Analyzer
- Auto Vacuum
- Color LCD touch panel and PLC controller
- Energy Save mode, automatically reducing power consumption by up to 90% during idle periods
- Automatic regenerable H_2O/O_2 purifier
- Attainable purity O_2<1 ppm , H_2O<1 ppm (Dew point also available for moisture reading)
- Glovebox vacuum ⩽-1 bar
- Industry leading low leak rate of <0.05 vol%/h at -10 mbar
- Circulation capacity more than 20 m^3/h (12cfm) at ΔP = 60 mbar (60 Hz)
- Compatible with world-wide voltage standards
- Integrated high vacuum feedthroughs
- Conform to CE

NICHWELL

750 SE Sherman Street, Albany, OR 97321| 888-999-6186 | 541-2509190 | Info@nichwell.com

www.nichwell.com

SPECIFICATIONS

Material : Stainless steel 1.4301 (SUS Type 304) , 5 mm in thickness

Glovebox interior dimensions: 31.5" x 23.6" x 25.6", 800mm (L) x 600mm (W) x 650mm (H)

Feedthrough : DN 40 ISO-KF blank and 3/8" compression bulkhead

Internal Power : Electrical feedthrough

Shelving : 3 - height adjustable , 304 stainless steel

gloves : Butyl, 0.4 mm in thickness

Filters : 1 Inlet/ 1 Outlet HEPA

Lighting : Fluorescent lamp,Front mounted

Electrical voltage : 100-120V or 200-240 VAC 50/60 Hz 20 A

Leak Rate : <0.05 vol%/h (ISO 10648-2)

LARGE ANTECHAMBER

15.7" x 9.8" x 9.8"

Bolt on left or right side

Internal tray : Stainless steel 304

Automatic control : Evacuate/refill

Leak rate : < 10^{-5} mbar · l /s

GAS PURIFICATION SYSTEM

Available as single purifier with solvent removal.

Purity level : <1ppm O_2 and <1ppm H_2O

O_2 capacity = 23 L per purifier column

H_2O capacity = 1000 g per purifier column

Variable speed circulation blower

PLC control system 7" color touch screen

Automatic pressure control : ± 12 mbar

Blower : Automated speed control , O_2 level adjusts blower speed

Circulation capacity more than 17 m^3/h (10 cfm) at ΔP = 60 mbar

Pressure control : Automatic box pressure control with foot switch （-12mbar，+12mbar）

Purge valve : O_2 Level, Timer or manually controlled

Vacuum pump : 20 m^3/h (12 cfm) rotary pump with oil misteliminator shuts pump off for energy reduction

Oxygen Analyzer : Range 0-1000 ppm

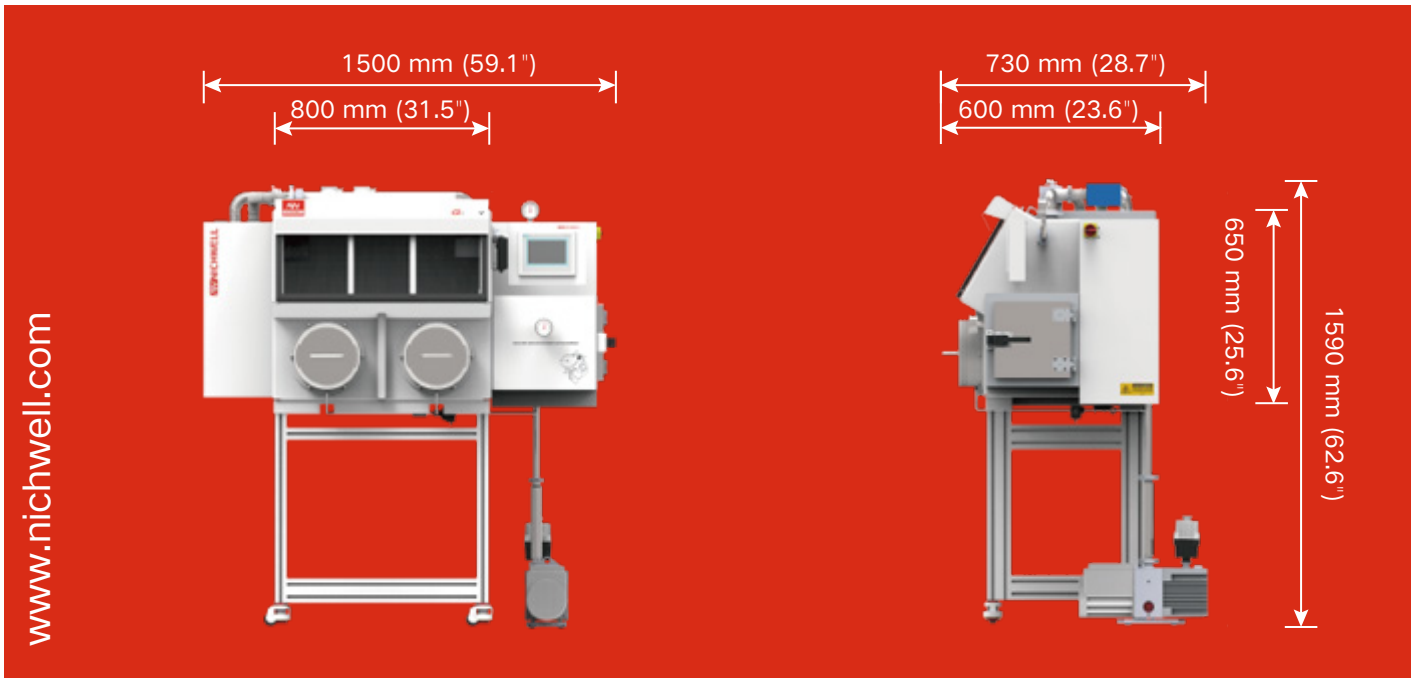
Moisture Analyzer : Range 0-500 ppm

SYSTEM APPLICATIONS

Additive (3D) Manufacturing
Aerospace
Automotive
Chemistry
Lamp Manufacturing
Lithium Ion Battery
Medical Device
Nuclear
OLED
Pharmaceutical
Semiconductor
Solar
Specialty Chemical
Thin Film
Many Other Applications

OPTIONAL

- Double Sided Access
- Left Sided Antechambers
- Vacuum Oven
- Freezer Temperature -35˚C
- Through Flow Antechambers
- Laminar Flow
- Cold Well With Cover
- Regenerable Solvent Adsorber
- Dual Purification Columns
- Circular Glove Ports
- Polycarbonate Window
- Dry Vacuum Pump
- Solvent Purification System
- Other Customizations



Package List

Part Description	Quantity	Part Image
Quick Clamp KF 25	3 pcs	
Bellows Metal KF 25	1 pcs	
Glovebox Glove	2 pcs	
Oxygen Analyzer	1 pcs	
Moisture Analyzer	1 pcs	
Oil Mist Filter	1 pcs	
RV-12 Vacuum Pump	1 pcs	

Configuration Options

	Acrylic	Mini	Vacuum	Standard
25.6" 650 mm		Customizable	Customizable	Customizable
31.5" 800 mm	Customizable			Customizable
39.4" 1000 mm	Customizable			Customizable
47.3" 1200 mm	Customizable			
59.1" 1500 mm				
70.8" 1800 mm	Customizable			
94.5" 2400 mm	Customizable	Customizable	Customizable	

NICHWELL

750 SE Sherman Street, Albany, OR 97321| 888-999-6186 | 541-2509190 | Info@nichwell.com

www.nichwell.com

α-800V Vacuum Glove Box With Auto Purging System

External Structure			
Chamber Capacity	Approximately 10.9 cu. F.t (0.31 m^3)		
Overall Dimensions	59.1" L x 28.7" W x 62.6" H, 1700 mm (L) x 730 mm (W) x1590 mm (H)		
Overall Weight	660 lbs (300 kg)		
Electrical Voltage	• 230 VAC/50-60 Hz, 10 A • 115 VAC/50-60 Hz, 20 A • 100 VAC/50-60 Hz, 20 A		

Glovebox Chamber

Description	Material	Stainless steel 304, 5 mm in thicknes, Glovebox vacuum ⩽-1 bar	
	Internal Dimensions	31.5" L x 23.6" W x 25.6" H, 800 mm (L) x 600 mm (W) x 650 mm (H)	
Inclined Front Window	Material	Acrylic, 15 mm in thickness, Lexan (polycarbonate) 10 mm in thickness upon request	
	Dimensions	30.3" L x 15.0" W, 770 mm (L) x 380 mm (W)	
Glove Ports 	Tekaform	8.6"(220 mm) in diameter, O-ring sealed	
	Dimensions	Hard aluminum alloy or polyaldehyde upon request	
Gloves 	Material	Butyl rubber	
	Thickness	0.4 mm (standard) 0.8 mm upon request	
HEPA Filters 		Inlet and outlet filters eliminate particles with the size >0.3 μm	
Lighting		Fluorescent lamp, front-ceiling mounted	

NICHWELL

750 SE Sherman Street, Albany, OR 97321| 888-999-6186 | 541-2509190 | Info@nichwell.com

www.nichwell.com

Leakage Rate		Typically <0.05 vol%/hr at -10 mbar, ・By oxygen leak decay test method according to ISO 10648-2: 1994 ・By pressure change test method according to ISO 25412	

Gas Purification System

Description	• Automated removal of H_2O and O_2 • Single column, automated column regeneration; dual purification columns (optional) • Closed stainless steel loop for gas recirculation and purification		
Operating Gas	Working gas	Nitrogen, Argon, or Helium (purity >99.999%)	
	Regeneration gas	Mixture of H_2 (5-10%) and working gas	
Vacuum Pump 	Description	Rotary vane pump, installed with oil mist filter, oil circulator, and automatic gas ballast control; dual-stage. or dry pump upon request	 
	Pumping rate	7.0 cfm (12 m^3/h)	
	Ultimate vacuum	< 2 x 10^{-3} mbar	
Circulation Unit	Blower	Integrated blower, oil-free, highly efficient	
	Flow Rate	47 cfm (80 m^3/h)	
Valves		Electro-pneumatic DN40	
Leakage Rate		Typically <0.05 vol%/hr at -10 mbar, ・By oxygen leak decay test method according to ISO 10648-2: 1994 ・By pressure change test method according to ISO 25412	

Antechamber

Main Antechamber	Material	Stainless steel 304; 6.0 mm in thickness
	Internal Dimensions	15.7" L x 9.8" W x 9.8" H, 400 mm (L) x 250 mm (W) x 250 mm (H)
	Vacuum	1 x 10^{-2} mbar

Purging System

Function	By setting up the purging time and pressure, the system automatically purges the chamber O_2 level, timer or manually controlled

Analyzers

O_2-Analyzer 	Dimensions	8" L x 3.1" W x 2.4" H, 205 mm (L) x 80 mm (W) x 60 mm (H)	
	Measurement Range	0 to 1000 ppm	
	Other Analyzer	GE oxy.IQ™ Oxygen Transmitter upon request	
H_2O-Analyzer 	Dimensions	8" L x 3.1" W x 2.4" H, 205 mm (L) x 80 mm (W) x 60 mm (H)	
	Measurement Range	0 to 500 ppm	
	Other Analyzer	GE VeriDri™ Dew-Point Transmitter	

Solvent Purification System

Description	Column Material	Stainless steel 304; 3.0 mm in thickness
	Inside Dimensions	8.6"(Φ) x 17.7"(L), 220 mm (Φ) x 450 mm (L)
	Packing Material	High-quality activated carbon

Optional Components

Vacuum feedthrough with two valves		Special design to KF40 joint, you can lead the water or gas into the box
Electrochemical signal feedthrough (4 or 8 pins)		Stainless steel 1.4301
Freezer	Location	Integrated on the side panel of the glovebox
	Inside Dimensions	16.6" L x 10.5" W x 6.4" D, 420 mm L x 266 mm W x 162 mm D
	Capacity	18 L or 32 L, 5 shelves with adjustable height
	Minimum Temperature	-35 ℃

Microscope with CCD Camera Systems	Equipment for microscopic analysis of glovebox contents, video-assisted motion can be customized upon request
Cold Well with Cover	Different capabilities of cold wells for low-temperature storage and low-temperature reaction manipulations
Dual Purification Columns	More efficient to remove oxygen and moisture
Organic Solvent Absorber	Regenerable, more efficient to purify organic solvent
Cooling Fan	Accelerate the gas flow in the glovebox chamber
Heating Element	Installed in main antechamber; Maximum 200 °C; Temperature control ±1 °C.

Other Information

Compliance	UL . ISO9001. CE
Warranty	• One year limited warranty with lifetime support • Rusting and damage due to improper storage condition or maintenance are not covered by warranty • Gloves are consumable items and are NOT covered by warranty • The Oxygen Sensor is a consumable component NOT covered by warranty. Please follow the videos below for proper operations 1) Replacing a worn unit 2) Storing the sensor to ensure maximum longevity when not in use
Application Notes & Warnings	• The interconnections between the glovebox chamber and the gas purification system must be unimpeded during the purification cycles • The use of corrosive gases is prohibited because they will damage the water and oxygen sensors • Regularly perform regeneration of gas purification columns to maintain the optimum purification efficiency • The O_2 removing rate is highly dependent on the type of purging gas used. To obtain faster chamber purging, Nitrogen is preferred to Argon due to its lighter molecular mass • Corrosive liquid (such as LiPF6 solution) must be sealed in a container inside the glovebox. Otherwise, liquid vapor may condense and corrode the steel chamber and/or purification pipelines

Order Information

α	*	1	2	3	4	Description
Vacuum Glovebox	800					Dimensions 31.5" L × 23.6" W × 25.6" H
	1000					Dimensions 39.4" L × 23.6" W × 25.6" H
	1200					Dimensions 47.2" L × 23.6" W × 25.6" H
	1500					Dimensions 59.1" L × 23.6" W × 25.6" H
	1800					Dimensions 70.9" L × 23.6" W × 25.6" H
Structure configuration		V				One Glovebox
		S				Split Glovebox
		D				Double Sided Glovebox
Function option			P			Purging System
			G			Gas Purification System，H2O、O2≤1ppm
			O			Solvent purification system
Other function options				A5		Square Antechamber 15.7" L × 9.8" W × 9.8" H
Antechamber					FW	Openable Front Window

* No. is the basic required option, 1,2,3,4 for the optional order number, according to the needs of their own configuration. If you have special requirements, you can contact us.

Order No. Example:
①α-1000VPGO-A5, said the single-station 1000mm long glove box with automatic cleaning, water oxygen purification system, volume adsorption system, as well as the configuration of a square transitional tank;
② α-1500VPG-A5, said the split 1500mm single-sided duplex glove box with automatic cleaning, water and oxygen purification system, and the configuration of a square transitional tank.

Thank you for downloading this electronic catalog file. This document is part of a printed catalog of the NICHWELL catalogs. Once there is a new or revised version, the electronic file will also be updated, and the electronic file will be updated in a more timely manner than the printed version. For more help, please contact us.