

# Technical Bulletin VAC 105320 NEXUS-II Glovebox System

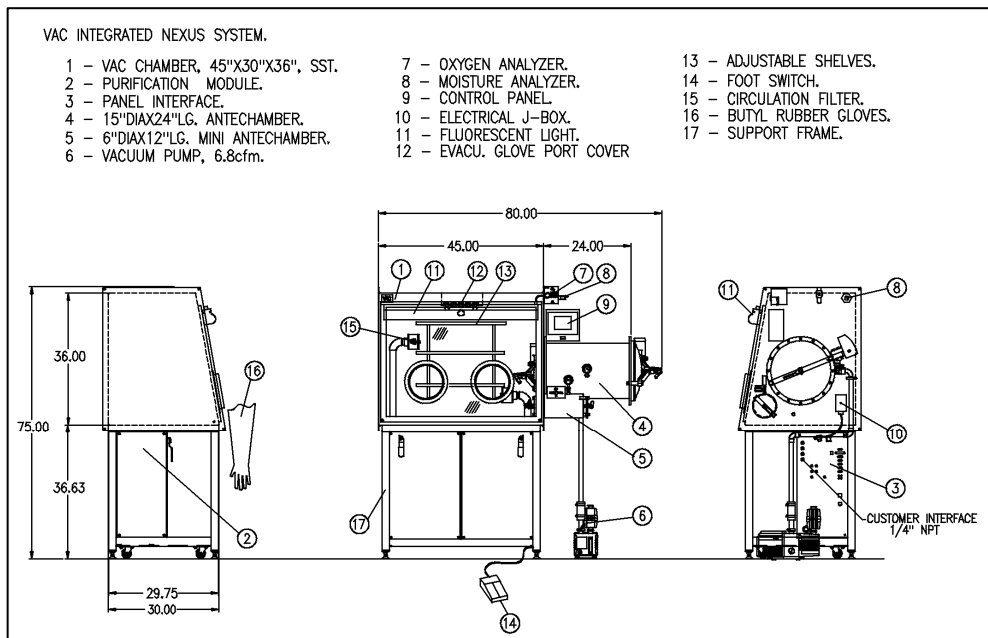


**Description:** The NEXUS-II Glovebox System provides universities, industrial firms and the national laboratories with a full feature system and a new standard in glovebox performance and features. The new VAC integrated inert gas purifier has a very thin depth and compactly fits entirely under the glovebox. The purifier is only 16" in depth and is located at the rear to allow more leg room (14") for more space for under glovebox storage or equipment. This allows the NEXUS-II to be the ideal platform for custom integrations of cold wells, spin coaters, special heating wells and other equipment for your special projects. The depth of the NEXUS-II glovebox is 30" and VAC designed the system so it may be flush mounted against a laboratory wall. Choosing the NEXUS-II means your precious laboratory space is preserved. A new feature is a color touch screen control and display panel. A 5.7" is standard and a 10.4" is optional. Both choices mean fast and easy access to your glovebox settings. As with all

VAC inert gas purifiers, the NEXUS-II will achieve less than 1-ppm oxygen and moisture equilibrium. The purifier is available in both single and dual column model; both with automatic circulation valves and manual glovebox isolation valves. Choose a dual column model to allow simultaneous purification and regeneration. The system will also control antechamber evacuation/refill, glovebox pressure and glovebox purge.

The glovebox comes in single, extra (3 port) and double (4 port) lengths, single sided or dual sided. The glovebox is stainless steel with removable end panels. The large 15" diameter and small 6" diameter antechambers and doors are stainless steel.

The NEXUS-II glovebox system comes complete with vacuum pump, gloves, shelving, and purge valves – just plug in the utilities and you are ready to start.



## NEXUS-II Glovebox Specifications

### GLOVEBOX & GENERAL FEATURES

**Glovebox:**

Available in single or dual sided and single, extra or double length. See table below for dimensions. Stainless steel construction with removable end panels. Flanged out design for easy expansion to dual length systems. Full view 1/4" LEXAN front panels, with aluminum glove ports. One (1) dual electrical junction box inside of glovebox. Customer specified interface penetrations may be located on the end panel or custom ordered in the back of the glovebox.

**Stand:**

Steel construction stand has casters, seismic hold down straps and height levelers.

**Antechamber:**

15" dia. X 24" long (380 X 610 mm), stainless steel, mounted on right end panel (standard location). Light weight, domed stainless steel doors. Stainless Steel sliding tray included.

**Mini-Antechamber:**

6" dia. X 12" long (152 X 305 mm), stainless steel, welded to right end panel.

**Fluorescent Light:**

30 watts with reflector. One light over each LEXAN window.

**Adjustable Shelves:**

One or two sets of three stainless steel shelves, 8 inches deep X 24 inches wide (203 X 610 mm).

**Evacuatable Glove Port Cover:**

Allows glove change with evacuation of glove volume to prevent contamination of inert atmosphere.

**Gloves:**

Included with each system, see options for selection.

**Vacuum Pump:**

6.9-CFM (11.7 m<sup>3</sup>/h) pump included with each system, see options for other choices.

**Isolation Valves:**

Manual ball valves

**Leak Certification:**

Helium leak check to 1 X 10<sup>-6</sup> cc/sec.

**Safety Certification:**

Conforms and certified to UL Std 61010-1 and CSA Std C22.2 NO 1010.1, certified for CE conformity

**Power:**

110 or 220 VAC, 50 or 60 Hz, 15 amps.

**System Weight:**

1300 to 1700 lbs. (590 kg to 780kg)

	Width	Depth	Height	Glove Ports
Single Length, Single Sided	45"	30"	36"	2
Extra Length, Single Sided	68"	30"	36"	3
Double Length, Single Sided	90"	30"	36"	4
Single Length, Dual Sided	45"	45"	36"	4
Extra Length, Dual Sided	68"	45"	36"	6
Double Length, Dual Sided	90"	45"	36"	8

Internal Glovebox Dimensions

### INERT GAS PURIFIER & CONTROL SYSTEM

**Performance:** < 1 ppm oxygen & moisture

**Flow Rate:** 0 to 40 CFM (0-68 m<sup>3</sup>/hr)  
(Nitrogen, Helium or Argon).

**Purification Capacity:**

Per purifier, 20 liters of O<sub>2</sub> and 2.3 kg of H<sub>2</sub>O absorption capacity (per mfg. specs).

**Regeneration:**

System has a completely automatic regeneration cycle using evacuation and purging the off-line purifier. Available with user selectable special solvent regeneration cycle. Requires 3-5% hydrogen mixture gas (nitrogen or argon).

**Control System:**

Complete NEXUS-II system with an easy to use menu driven interface and a color, touch screen LCD color display. Built in programmed control of purifier regeneration, glovebox pressure and purging. Controls antechamber evacuation and refill with user programmed timed purge and evacuation. Built in system diagnostics.

**Purifier Circulation Valves:**

Automatic Valves

**Antechamber Control:**

Controls evacuation/refill with antechamber mounted solenoid valves. User may program the automatic timed evacuation/refill or control the evacuation/refill manually through the touch screen. Optional control of antechamber evacuation with Pirani pressure gauge or inert gas purging. Manual evacuation and refill valving available.

**Pressure Control:**

Controls glovebox pressure. The user may program both the high and low pressure control points. User may specify a special negative pressure only control process. The glovebox pressure and pressure control points are displayed on the touch panel. The system includes a footswitch for manual pressure control.

**System and Analyzer Display:**

The large 5.7" touch screen LCD displays glovebox pressure, blower speed, analyzer levels and system status. The operator may note antechamber operation and regeneration status at a glance. An alarm panel shows any out of tolerance condition for operator acknowledgement or correction. The system interfaces to VAC oxygen and/or moisture analyzer assemblies. A larger 10.4" screen size is available. Contact factory for information.

**Over Pressure Limit:**

Will sound built-in alarm and shutdown electrical power to all valves if glovebox exceeds user programmed over pressure limits.

**Popular Accessories**

**Analyzer Assy, Oxygen:**

with sample pump, calibration and electrolytic fuel cell. Control system monitors and displays the glovebox levels from 1 PPM to 25% oxygen.

**P/N VAC 105627**

**Analyzer Assy, Moisture:**

with Aluminum oxide probe and NIST traceable calibration. Control System monitors and displays the glovebox levels to 1-PPM moisture (-80°C dew point).

**P/N VAC 105628**

**Cold Storage Assy:**

Refrigerator. Storage capabilities to -35°C. Mounted to glovebox on customer interface panel and provides immediate access from the inside of the glovebox. Separate condensing unit installed in the stand. Includes extension module to mount refrigerator outside of glove box for increased space savings. See System Configuration drawing for standard location. Other locations available, call factory.

**P/N VAC 100595 (110 VAC, 60 Hz)**

**P/N VAC 100583 (220 VAC, 50 Hz)**

**Interface Assy, 20 amp:**

5-way binding pos feedthru for electrical signals.

**P/N VAC 100626**

**Interface Assy, NPT:**

Welded feed thru penetrations into a glovebox. Also Vacuum feedthru with 1/4" valves on interior and exterior of glovebox.

Size	Part Number
1/4"	VAC 100171
3/8"	VAC 100172
1/2"	VAC 100173
3/4"	VAC 100174
1"	VAC 100175
1½"	VAC 100176
1/4 w valves	VAC 100594

**Interface Assy, BNC:**

Feed thru electrically connects instruments into a glovebox with BNC connector

**P/N VAC 100627**

**Vacuum Oven Assy, 200°C:**

Single wall stainless steel cylinder, 15" dia X 24" long. Unit is complete with internally mounted INCONEL sheathed radiant heaters; 10" wide X 9" high X 23" long, three-shelf black anodized muffle; compound Bordon Tube gage; and insulation blanket. Temperature range to 200°C. Vertical acting doors, two "J" thermocouples provided. See System Configuration drawing for standard location. Includes oven controller; 6.9-CFM vacuum pump with each oven.

**P/N VAC 100596**

**CALL FOR FULL LIST OF ACCESSORIES**  
**Including Oxygen and Moisture Analyzers, Solvent Traps, Ovens,**  
**Video Microscopes, Freezers, Safety Glass, Cold Wells, and Inert Gas Coolers**

**Trap Assy, Internal, Solvent:**

For solvent removal from inert atmosphere. Factory installed in place of purifier inlet filter. Filled with ~ 4 lbs. of molsiv or activated charcoal.

**P/N VAC 100625**

**Trap Assy, External, Solvent:**

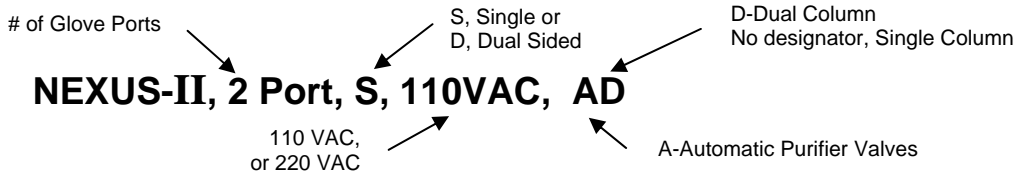
for solvent removal from atmosphere, includes isolation and bypass valves. Factory installed under the glovebox, in-line with purifier. Call factory for available chemicals (20-lbs. capacity.)

**P/N VAC 104211**

**CONFIGURATION and ORDERING OPTIONS**

Order Part Number

- 1. VAC 1053xx for NEXUS-II Assy
- 2. Glove Style choice by part number
- 3. Vacuum Pump choice by part number
- 4. Accessories by part number



Option	Part Number	Option	Part Number
2 Port, S, 110VAC, A	VAC 105320	2 Port, S, 220VAC, A	VAC 105321
2 Port, S, 110VAC, AD	VAC 105322	2 Port, S, 220VAC, AD	VAC 105323
3 Port, S, 110VAC, A	VAC 105324	3 Port, S, 220VAC, A	VAC 105325
3 Port, S, 110VAC, AD	VAC 105326	3 Port, S, 220VAC, AD	VAC 105327
4 Port, S, 110VAC, A	VAC 105328	4 Port, S, 220VAC, A	VAC 105329
4 Port, S, 110VAC, AD	VAC 105330	4 Port, S, 220VAC, AD	VAC 105331
4 Port, D, 110VAC, A	VAC 105332	4 Port, D, 220VAC, A	VAC 105333
4 Port, D, 110VAC, AD	VAC 103334	4 Port, D, 220VAC, AD	VAC 105335
6 Port, D, 110VAC, A	VAC 105336	6 Port, D, 220VAC, A	VAC 105337
6 Port, D, 110VAC, AD	VAC 105338	6 Port, D, 220VAC, AD	VAC 105339
8 Port, D, 110VAC, A	VAC 105340	8 Port, D, 220VAC, A	VAC 105341
8 Port, D, 110VAC, AD	VAC 105342	8 Port, D, 220VAC, AD	VAC 105343

**Glove Options**

Type	Part Number	Note
Gloves, Butyl Rubber, Ambidextrous 0.030"	VAC 2682	Choose one type
Gloves, Butyl Rubber, L & R, 0.030"	VAC 2682-2	"
Gloves, Butyl Rubber, Ambidextrous 0.015"	VAC 2681	"
Gloves, Butyl Rubber, L & R, 0.015"	VAC 2681-2	"
Special gloves quoted upon request	Call Factory	

**Vacuum Pump Options**

Type	Part Number	Note
Vacuum Pump Assy, 6.9 CFM (11.7 m <sup>3</sup> /h)	VAC 100618	Included in std price
Vacuum Pump Assy, 10 CFM (17.0 m <sup>3</sup> /h)	VAC 100619	See quote for price
Vacuum Pump Assy, Dry Scroll, 6.5 CFM (11.0 m <sup>3</sup> /h)	VAC 400711	See quote for price
Vacuum Pump Assy, Dry Scroll, 8.8 CFM (15.0 m <sup>3</sup> /h)	VAC 400006	See quote for price
No Vacuum Pump	N/A	See quote for credit

6.8 CFM & 10 CFM pumps include outlet mist filter and gravity oil return kit



Vacuum Atmospheres Company  
 4652 W. Rosecrans Ave.  
 P.O. Box 1043  
 Hawthorne, CA 90251-1043  
 Telephone: (310) 644-0255  
 Fax: (310) 970-0980  
 e-mail: info@vac-atm.com

Vacuum Atmospheres Company  
 US East Coast Office  
 110 Haverhill Rd.  
 Amesbury, MA 01913  
 Telephone: (978) 388-3600  
 Fax: (978) 388-3611  
 e-mail: info@vac-atm.com

Web site: <http://www.vac-atm.com>