

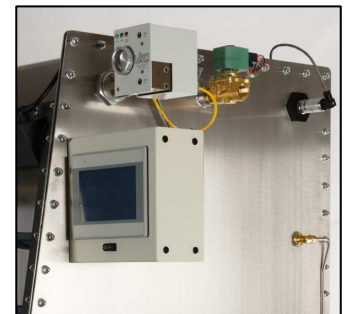


NEXGEN Glovebox System with Next Generation Inert Gas Purification

Description: The **NEXGEN** System is designed with our patented cartridge based inert gas purifiers. This system has independent purifiers for the removal of moisture and oxygen. Both purifiers have dedicated blowers that are monitored and controlled via the PLC-based control system and touchscreen user interface maximizes efficiency and assures the integrity of the box atmosphere. The controller adjusts the blower speed to maintain moisture and/or oxygen levels in the glovebox (this feature requires the VAC moisture and/or oxygen analyzers). With **NEXGEN** technology operators can now control moisture and oxygen independently depending on the application. **NEXGEN** will maintain moisture and oxygen levels of less than 1 ppm with easily replaceable cartridges eliminating time consuming regeneration and the need for regeneration gas. The cartridges have a life expectancy of greater than one year (based on a clean dry and empty glovebox with an O₂ diffusion rate of 1.5 ppm/hr per pair of gloves).

The **NEXGEN** Glovebox System provides universities, industry and the national

laboratories with a full feature system setting a new standard in glovebox performance and flexibility. The depth of the glovebox is 30" and is designed so it can be positioned flush against a laboratory wall. Choosing the **NEXGEN** means your precious laboratory space is preserved. The glovebox is stainless steel with removable end panels. The rectangular antechamber and doors are also stainless steel. The **NEXGEN** glovebox system is supplied complete with vacuum pump, gloves, LED lighting, shelving, and purge valve – just plug in the utilities and you are ready to start. Systems are available with a full compliment of popular accessories. Custom configurations based on customer requirements are available and quoted upon request.



NEXGEN System Specifications

GLOVEBOX AND GENERAL FEATURES

Glovebox:

Available in a variety of standard configurations (see table on page 4 for dimensions). The glovebox and removable end panels are constructed from stainless steel. The flanged-out design allows for easy expansion to dual length systems. The full view window is ¼” scratch-resistant polycarbonate, with aluminum glove ports. The antechamber panel includes one dual electrical junction box inside the glovebox. Customer selected interface assemblies are located on the end panel opposite the antechamber as standard. Custom locations quoted upon request.

Stand:

Steel construction includes casters and height levelers.

Antechamber:

Rectangular 10” x 10” x 12” (254 x 254 x 305 mm) stainless steel, mounted on right end panel, stainless steel hinged doors, and large pass-through capacity with rapid evacuation speed.

LED Light:

Energy efficient glovebox light, 4500 K color temperature for optimum visibility in glovebox. One light is provided over each window.

Adjustable Shelves:

One set of three stainless steel shelves; 8” deep X 24” wide (203 X 610 mm), per single length glovebox.

Evacuatable Glove Port Cover:

Allows glove change without contamination of inert atmosphere.

Gloves:

Included with each system.

Vacuum Pump:

4.1 CFM (7.0 m3/h) pump included with each system.

Leak Certification:

Helium leak check to 1 X 10⁻⁶ cc/sec.

Power:

110 or 220 VAC, 50/60 Hz, cord connected.

Control System:

The **NEXGEN** system comes with an easy to use 7” color operator interface for monitoring and control of system functions.

Glovebox Pressure Control:

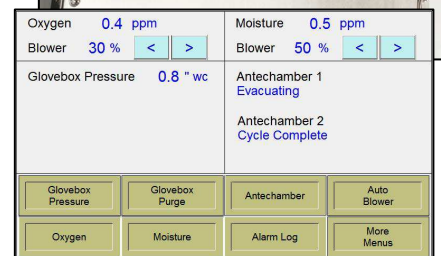
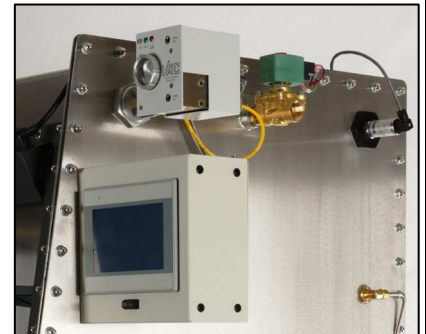
The glovebox pressure is displayed on the main screen. The system automatically controls pressure based on a user-programmable pressure control window. Manual control is via a pressure control footswitch. In an over pressure situation, the system shuts down electrical power to all valves, turns off vacuum pump, and activates visual and audio alarms.

Glovebox Purge Control:

Several programmable purge modes may be selected by the user: Timed Purge, Smart Purge (purging down to a programmable oxygen set point), or Safe Purge (starts purging if the oxygen level exceeds a programmable oxygen setpoint). The system may be configured by the user for negative pressure purge.

Moisture and Oxygen Monitoring/Control:

With the optional oxygen analyzer and/or moisture probe, the main screen displays moisture and oxygen levels and blower speeds. The blower speeds may be controlled separately, either manually or automatically based on the moisture or oxygen levels. Visual and audio alarms may be enabled to indicate elevated impurity levels.



Antechamber Control:

The antechamber is supplied with manual evacuation and refill valves as standard. Optional programmed evacuation/refill with antechamber mounted valves is available. With this option operators 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 is also available.

POPULAR ACCESSORIES

Oxygen Analyzer:

Includes sample pump and calibratable electrolytic fuel cell. Displays the glovebox oxygen levels from 0.1 ppm to 25% oxygen.

P/N VAC 109902

Moisture Analyzer:

Includes aluminum oxide probe and NIST traceable calibration. Displays the glovebox levels from 0.5 ppm moisture (-80° C dewpoint).

P/N VAC 110000

Cold Storage (Freezer):

Storage capabilities to -35°C. Installed on end panel opposite antechamber and provides access from the inside of the glovebox.

P/N VAC 110956 (110 VAC, 60 Hz)

P/N VAC 111170 (220 VAC, 50 Hz)

P/N VAC 111169 (220 VAC, 60 Hz)

Interface Assembly, 20 amp:

5-way binding post feedthru for electrical signals.

P/N VAC 100626

Interface Assemblies, NPT:

Welded feed thru penetrations into a glovebox.

Interface Assembly, BNC:

Feed thru electrically connects instruments into a glovebox with BNC connector

P/N VAC 100627

NPT Interface Options

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

Vacuum Ovens:

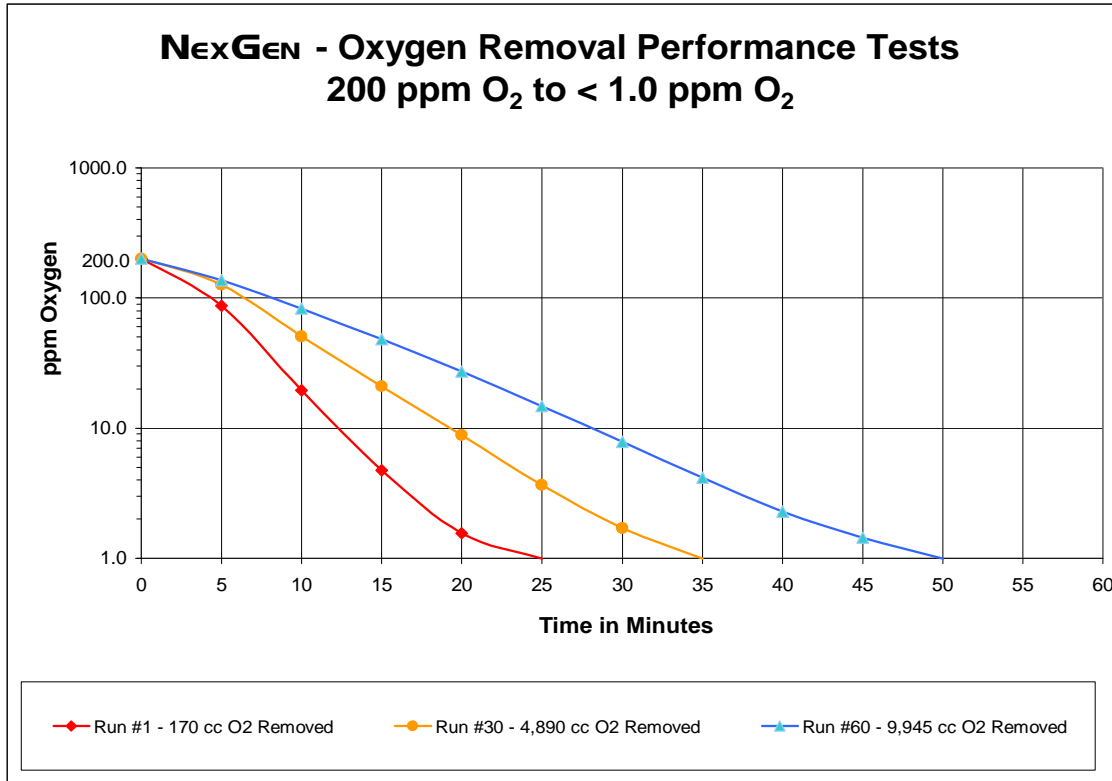
Two versions are available: a water jacketed oven for operation to 600°C (model VTW, shown) and a heat reflective, insulation blanketed oven for operation to 200°C (model VTB). Both units have SST cylinders, 15" diameter x 24" long, with counterweighted vertically swinging doors. Inconel sheathed heating elements are internally mounted. VTW has a single SST internal shelf; VTB has an anodized muffle with three shelves. The ramp/soak touchscreen controller allows programming of up to 80 timed segments for ramp, soak, evacuation, and inert gas refill from the glovebox. Both models come standard with a 6.9 CFM vacuum pump. Options include Pirani gauge, oven purge, door interlocks and RS-232 data logging.

P/N VAC 107841 (VTB Oven Assembly)

P/N VAC 108438 (VTW Oven Assembly)



CALL FOR FULL LIST OF ACCESSORIES



NexGEN Performance Tests - Time From 200 ppm to <1.0 ppm Oxygen

RUN	Time in Minutes														Total O ₂ Removed	
	0	5	10	15	20	25	30	35	40	45	50	55	60	in ppm	in cc	
1	200.00	87.40	19.60	4.73	1.56	0.99									236	170
6	200.00	79.10	19.20	5.23	1.02	0.99									1272	916
12	202.00	81.70	21.40	6.87	2.24	1.24	0.99								2688	1935
18	201.00	96.20	32.90	10.80	4.02	1.97	1.09	0.99							4068	2929
24	200.00	109.00	43.30	16.00	6.29	2.58	1.34	0.99							5376	3871
30	200.00	127.00	50.90	21.00	8.85	3.66	1.71	0.99							6792	4890
36	200.00	118.00	56.80	26.10	11.40	5.25	2.40	1.28	1.07	0.99					8208	5910
42	200.00	132.00	65.20	32.30	15.50	7.50	3.54	1.84	1.13	0.99					9876	7111
48	200.00	132.00	74.60	40.30	20.60	11.20	5.56	2.89	1.68	1.17	0.99				11328	8156
54	202.00	130.00	75.20	41.50	21.40	11.10	5.80	3.00	1.66	1.14	0.99				12564	9046
60	200.00	137.00	83.20	48.40	27.30	14.70	7.80	4.17	2.28	1.43	0.99				13812	9945

Internal Glovebox Dimensions					
	Width	Depth	Height	Glove Ports	Weight
Single Length, Single Sided	45"	30"	36"	2	700 lb
Extra Length, Single Sided	68"	30"	36"	3	850 lb
Double Length, Single Sided	90"	30"	36"	4	950 lb
Single Length, Dual Sided	45"	45"	36"	4	800 lb
Extra Length, Dual Sided	68"	45"	36"	6	950 lb
Double Length, Dual Sided	90"	45"	36"	8	1050 lb



US Patents 9,878,283; 10,549,004

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