AtmosPure™ Re-Gen Gas Purifiers

INTRODUCTION

The AtmosPure Re-Gen Gas Purifier produces an ultrapure inert atmosphere inside a controlled atmosphere glove box for materials sensitive to moisture and/or oxygen. It circulates an inert gas in the glove box, removing oxygen and moisture. Compatible with any Protector® or Precise® Controlled Atmosphere Glove Box, the AtmosPure allows these glove boxes to meet or exceed ISO 10648-2 test methods. The Purifier has the capacity to remove up to five liters of oxygen (13,500 ppm) and 660 grams of moisture (18 million ppm) at standard temperature and pressure (STP). Depending on the application, glove box liner material and frequency of use, regeneration may be necessary only once every one to three months and completed in only 13 hours.

Indicator lights show each step of the 13 hour regeneration process. Once complete, regeneration may only be needed again every one to three months.

Start/stop button initiates and ends the regeneration process.

Indicator lights show isolation valve status (closed/open).

Blower button toggles circulation air purifier blower between ON, OFF and AUTO. Indicator lights show status.

Connections for glove box, vacuum pump and gas mixture are easily accessible from the back of the Purifier.





Vacuum release button may be used, if desired, to momentarily release vacuum after regeneration is complete.

Main Power On/Off switch

Two 3/4" manually-operated ball valves isolate the AtmosPure from the glove box during regeneration.

Flow control valve sets the 4% hydrogen/inert gas mixture flow rate from 10 to 25 CFH during regeneration.

Tests show that ultra low oxygen and moisture levels are attainable with the AtmosPure Re-Gen Gas Purifier.	Gas Permeant	Controlled Atmosphere Glove Box Type/Liner Material		
		Protector/ Stainless Steel	Protector/ Fiberglass	Precise/ Polyethylene
Attainable Purity (ppm)*	O_2 H_2O	0.2 1	0.4 2	3.5 5
Oxygen Permeation at -4" w.g. per ISO 10648-2 Test Method (ppm/min)	O_2	0.16	0.30	0.60
ISO 10648-2 Acceptance Level for Class I Controlled Atmosphere Glove Boxes (ppm/min)	O_2	<1.67	<1.67	<1.67
Normal Permeation with Pressure from -1" w.g. to +1" w.g. (ppm/min)	O_2 H_2O	0.14 0.10	0.16 0.17	0.33 0.21

Results were attained at Labconco Corporation under controlled conditions. Actual results may vary.

AtmosPure™ Re-Gen Gas Purifiers

SPECIFICATIONS & ORDERING INFORMATION

All models feature:

- Automatic regeneration process may be completed in as little as 13 hours and while unattended.
- Internal cylinder contains 5 pounds of copper catalyst capable of removing up to 5 liters of oxygen (13,500 ppm) and 5 pounds of molecular sieve capable of removing 660 grams of moisture (18 million ppm) with normal oxygen and moisture permeation rates 0.3 ppm/min or lower.
- Fully factory-regenerated cylinder is ready to use. Isolation valves arrive closed to maintain molecular sieve and copper catalyst capacity.
- From a 1000 ppm starting condition, able to reduce oxygen to 1 ppm in less than 2 hours.*
- From a 1000 ppm starting condition, able to reduce moisture below 15 ppm in 2 hours, below 10 ppm in 6 hours, below 5 ppm in 16 hours, below 2-3 ppm in 2 days, and as low as 1 ppm in 3-6 days.*
- System automatically compensates for power outages and starts the regeneration process over if interrupted for 10 minutes or longer. This feature ensures complete regeneration of the copper catalyst and molecular sieve since proper regeneration cannot occur if the system has cooled.
- Factory leak-tested with a mass spectrometer while pressurized with helium at 5 inches of water gauge. No detectable leaks greater than 1 x 10^{-6} ml/sec.
- Internal stainless steel gas purification lines have oxygen and moisture permeation below 0.1 ppm/min.
- Achieved less than 1.67 ppm/minute oxygen permeation when using ISO 10648-2 test methods at -4 inches of water gauge on Protector Fiberglass and Stainless Steel and Precise Controlled Atmosphere Glove Boxes. Lowest attainable oxygen levels are 0.2 ppm for stainless steel, 0.4 ppm for fiberglass, and 3.5 ppm for polyethylene. Lowest attainable moisture levels are 1 ppm for stainless steel, 2 ppm for fiberglass and 5 ppm for polyethylene.*



- Vacuum pump outlet is rated at 115 volts, 8 amps or 230 volts, 4.5 amps.
- Three microprocessor-controlled solenoid valves, located on the back, for connection to 4% hydrogen/inert gas mixture, vacuum pump and vent exhaust.
- Communications port, located on the back, allows for shared access to the vacuum pump with the glove box. An optional accessory 6-Pin Cable 5442000 is available for communication between the AtmosPure and Auto Pressure Controller of the Protector Controlled Atmosphere Glove Box or accessory Auto Pressure Controller used with the Precise Glove Box.
- Flow control valve sets 4% hydrogen/inert gas mixture between 10-25 CFH.
- Blower button toggles circulation gas purifier blower between ON, OFF and AUTO. ON allows the blower to run continuously, OFF shuts the blower off, and AUTO allows the blower to be programmed for auto mode and controlled by the oxygen or moisture control ranges.
- Start/Stop button initiates and ends the 13 hour regeneration process.
- Regeneration heater delivers 180 watts for 5 hours of the 13 hour regeneration cycle.
- 3/4" Inlet/outlet compression fittings for connection to Protector Fiberglass or Stainless Steel Controlled Atmosphere Glove Boxes. Accessory 3/8" adapter is available for connection to Precise Controlled Atmosphere Glove Boxes or other glove box models.
- Compact dimensions. Designed to fit on the accessory Glove Box Base Stand beneath the transfer chamber without interfering with the operator's leg space. Dimensions: 14.9" w x 31.8" d x 21.9" h (38 x 81 x 56 cm).
- Durable epoxy-coated steel housing.
- ETL listing. UL 61010-1 and CAN/CSA C22.2 No. 1010.1 conformity (North America models).
- CE Conformity Marking (International models).
- Shipping weight 90 lbs. (41 kg)

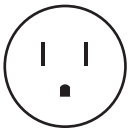
See page 18 for AtmosPure accessories.

Exclusive Feature **Results were attained at Labconco Corporation under controlled conditions. Actual results may vary.*

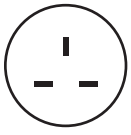
Catalog Number	Electrical Requirements	Plug Type
5121810	100-115 volts, 50/60 Hz	North America, 100-115 Volts
5121831	208/230 volts, 50/60 Hz	British (UK)
5121835	208/230 volts, 50/60 Hz	Schuko
5121840	208/230 volts, 50/60 Hz	China/Australia
5121845	208/230 volts, 60 Hz	North America, 208-230 Volts

Plug Configurations & Electrical Requirements

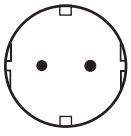
North America, 110-115 volts
100-115 volts, 50/60 Hz,
10 amps



British (UK)
208-230 volts, 50/60 Hz,
10 amps



Schuko
208-230 volts, 50/60 Hz,
10 amps



China/Australia
208-230 volts, 50/60 Hz,
10 amps



North America, 208-230 volts
208-230 volts, 60 Hz,
10 amps



AtmosPure™ Re-Gen Gas Purifiers

ACCESSORIES

5441500 AtmosPure Roughing Prefilter Kit. Filters the inlet and outlet of the glove box as the inert gas is purified. Includes two roughing prefilters and clamp plates to mount inside Protector Glove Boxes. Shipping weight 5 lbs. (2 kg)

5441600 AtmosPure P100 Particulate Filter Kit. Filters the inlet and outlet of the glove box as the inert gas is purified. Includes two P100 particulate filters and mount housings. Shipping weight 5 lbs. (2 kg)

5441700 AtmosPure Regeneration Plumbing Kit. Includes flexible tubing and fittings required to make the regeneration plumbing connections to the 4% hydrogen/inert gas mixture, vacuum and vent. Shipping weight 2 lbs. (1 kg)

AtmosPure Circulation Tubing Kits. Include the plumbing to make the connection from the AtmosPure to the glove box.

AtmosPure 3/4" to 3/8" Adapter Kits. Fittings permit 3/4" ID neoprene hose included with 5441800 and 5441801 Kits (sold separately above) to attach to glove box's 3/8" inlet/outlets. Two fittings included with each kit. Not required on current Protector Glove Boxes (manufactured after November 2010).

Catalog #	Description	For Use with	Shipping Wt.
5441900	Elbows	Precise Glove Boxes	5 lbs. (2 kg)
5441901	Reducers	Pre-2011 Protector Glove Boxes	5 lbs. (2 kg)

5442000 AtmosPure 6-Pin Communication Cable. Required for use when AtmosPure and glove box configured with Auto Pressure Controller are sharing one vacuum pump. Shipping weight 2 lbs. (1 kg)

5442100 AtmosPure 9-Pin Oxygen/Moisture Monitor Cable. Required for use when the AtmosPure is used in AUTO mode. Allows for automatic control of the AtmosPure blower from an accessory Oxygen or Moisture Monitor (sold separately). Shipping weight 2 lbs. (1 kg)

Catalog #	Circulation Tubing Kit Description	For Use with	Shipping
5441800	3/4" ID Neoprene-lined flexible hose	All glove boxes, single width	5 lbs./2 kg
5441801	3/4" ID Neoprene-lined flexible hose	All glove boxes, double width	8 lbs./4 kg
5441802	3/4" OD Stainless steel, hard-ducted	Protector Glove Boxes, single width	10 lbs./5 kg
5441803	3/4" OD Stainless steel, hard-ducted	Protector Glove Boxes, double width	20 lbs./9 kg

Protector® Controlled Atmosphere & Combination Glove Boxes

ACCESSORIES

Automatic Pressure Controllers. For use with Protector Controlled Atmosphere Glove Boxes without Automatic Pressure Controller. Easily reduce glove box oxygen and moisture levels by automating the evacuation/purge process. Automatically regulate pressure and vacuum within the main chamber and transfer chamber and automate evacuation/fill cycles up to 499 for the main chamber and 199 for the transfer chamber. Vacuum and pressure may be regulated between -5 to +5 of w.g. in the main chamber and between 0 to -29 inches of mercury in the transfer chamber. A mutable, audible alarm sounds when pressure/vacuum level is outside set limits. Consist of epoxy-coated steel casing with a front panel LCD display and a rear panel with power switch, power inlet connection with circuit breakers, electrical receptacle for connection to vacuum pump (sold separately), electrical connection for foot pedal, two solenoid valves for controlling gas in and gas/vacuum out to transfer chamber, and two solenoid valves for controlling gas in and gas/vacuum out to main chamber. Unit of measure display options are inches of water, inches of mercury, and mBar. A three-position foot pedal (increase gas/fill, off, evacuate/decrease gas) provides hands-free control of the gas inlet and vacuum outlet valves. Include mounting bracket, 3/16" ID polyvinyl tubing, 3/32" ID polyvinyl tubing, and power cord with plug. Shipping weight 20 lbs. (9 kg)



Catalog #	Electrical Configuration
5238600	100/115 volts, 50/60 Hz operation
5238601	230 volts, 50/60 Hz operation





Gas and Vacuum Tubing Connection Kits
Include the flexible vinyl tubing and fittings necessary to connect user-supplied inert gas supply tank and rotary vane vacuum pump to valves located on the glove box.

Catalog #	Description	For Use with	Shipping Wt.
5245100	Manual Valve Gas and Vacuum Connection Kit	All Protector Glove Boxes	2 lbs. (0.9 kg)
5245200	Automatic Pressure Controller Gas and Vacuum Tubing Connection Kit	5238600 5238601	2 lbs. (0.9 kg)

5075619 Electrical 9-Pin Sealed Pass-Through Kit. Provides a leak-tight connection for data transfer from an electronic device inside the glove box to computer, printer or other electronic device outside the glove box. For example, an interior-mounted Oxygen or Moisture Monitor may transfer data through the Pass-Through port to the AtmosPure Re-Gen Gas Purifier connected to a 5442100 Cable. Includes sealed 9-pin connector (D-subminiature with male pins on one side and female pins on the other) and 10' cord. Shipping weight 1 lb. (0.5 kg)