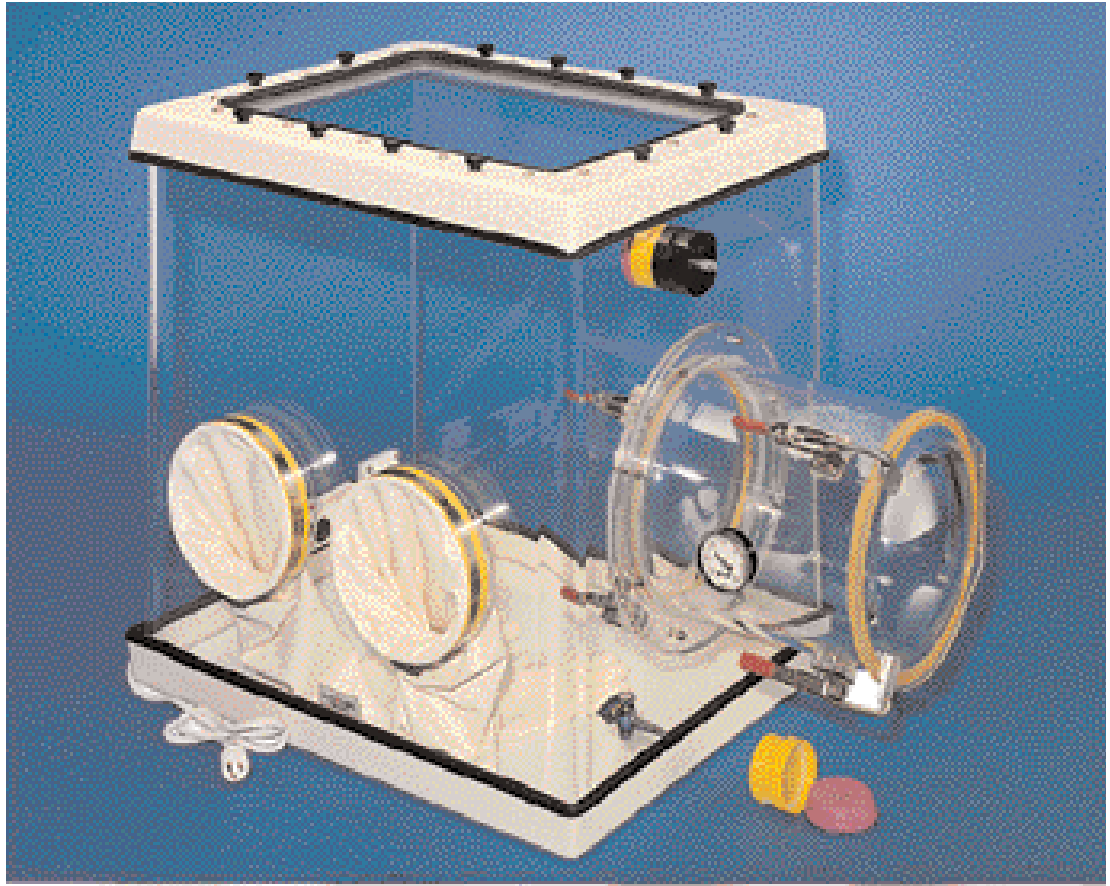


OPERATION MANUAL

#830-SERIES CHAMBERS (DOMESTIC & EXPORT MODELS)



PLAS ■ LABS, INC.

401 E. North Street, Suite #1

Lansing, MI 48906 USA

800-866-7527

517-372-7177

517-372-2857 fax

PlasLabs@aol.com e-mail

www.Plas-Labs.com web site

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**#830-SERIES OPERATION MANUAL
(Domestic & Export Models)
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CONTROLLED ATMOSPHERE
830-SERIES Compact Glove Boxes
(Domestic & Export Models)

This chamber has been designed to provide an enclosure which will enable the operator to replace the ambient room atmosphere with alternative choices, such as NITROGEN, ARGON, PLASMA or other inert type gases.

IT IS NOT TO BE USED
WITH EXPLOSIVE GASES
OR
OPEN FLAMES.

The units are shipped as complete systems and nothing needs to be added except your gas of choice.

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#830-ABC SERIES “Compact Glove Boxes”

Plas-Labs’ #830-Series “Compact Glove Boxes” have been engineered to be self contained, compact, and easily portable on a standard laboratory cart (trolley). The unit is very useful when working with toxic substances, asbestos fibers, sewage residue, and harmful liquid vapors.

CHAMBER HOUSING INFORMATION

The basic housing is formed of .375 thick optically clear acrylic plastic to eliminate the possibility of through the wall leakage between exterior and interior atmospheres. The Transfer Chamber wall thickness is .500” thick rigid acrylic plastic and the formed doors are .375” thick. Included with the glove box is a white plastic leveling tray which is useful for transferring into and out of the chamber. The clear acrylic provides constant visual awareness of the Transfer Chamber contents. Hidden or dark spots are minimized. The top section is removable to allow for insertion of large pieces of equipment such as “Top Loaders’ and Analytical Balances.

CHAMBER FEATURES

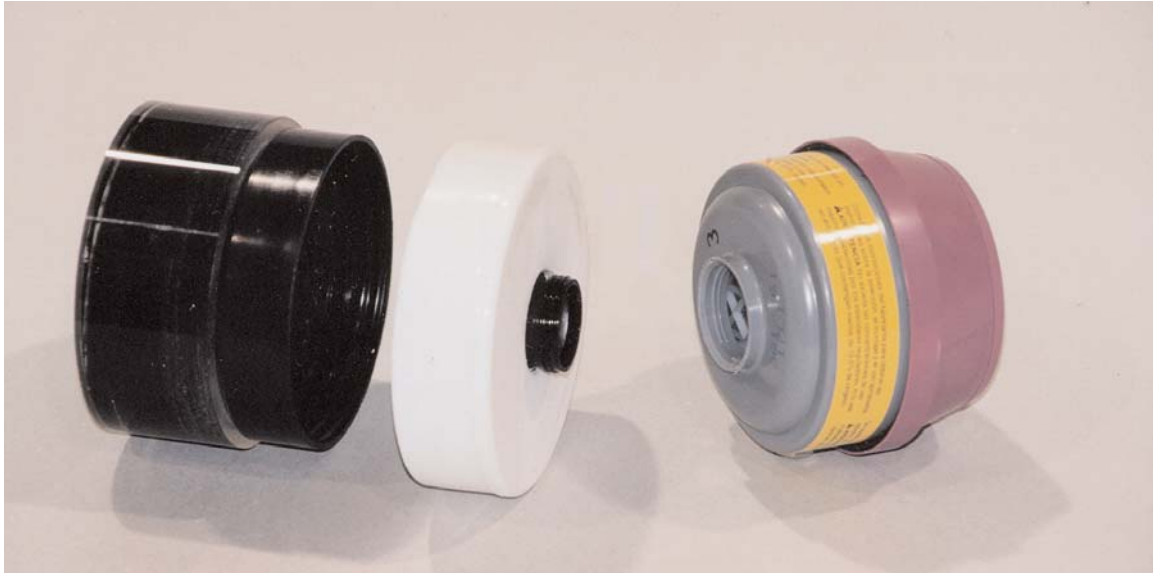
Standard features included with the glove box are;

- A. White ambidextrous Hypalon gloves
- B. One (1) hospital grade multiple electrical outlet strip.
 - 1. 115-120 Volts for domestic USA units.
 - 2. 220-240 volts for export models.
- C. Four (4) ground key cock valves for purging.
- D. All door clamps are stainless steel and adjustable.
- E. A six (6’) foot long electrical power cord is also included.
- F. Pressure Relief Valve and exhaust filter Catalog #830-FILTER

PRESSURE RELIEF “POP” VALVE

A small “pop” or relief valve has been installed to minimize glove “fight back” when using the gloves. As the gloves are pushed into the chamber, the excess positive pressure is released through the pop valve. Before it can escape into the room atmosphere, it is filtered through a small canister type filter device. The filter (Catalog #830-FILTER) is comprised of both HEPA and Activated Carbon materials. Refer to photos on pages 5 and 6.

PLAS ■ LABS, INC.
Lansing, MI U.S.A.
#830-SERIES Glove Boxes
830-FILTER System



**Black cylinder
for mounting
original filter**

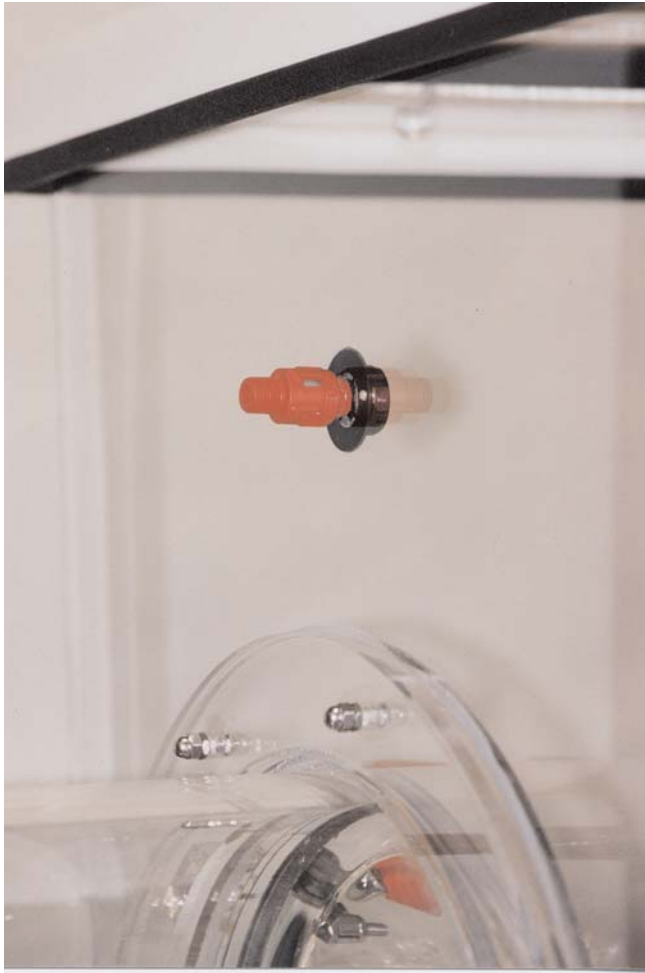
**White plastic adapter
cap #MS2138 with
threaded mount #MS2137**

**New filter assembly
with female threads.
Catalog #830-FILTER**



Assembled system for new filter adapter.

Catalog #830-FILTER
(Two [2] filters per package)



**Close up of pressure relief valve.
Notice: threads inside glove box.**



**Close up view of new filter mounted
inside #830-ABC (black cylinder
not shown)**

SET UP PROCEDURES

All #830-SERIES Compact Glove Boxes

1. Place glove box in your desired laboratory location. **NOTE:** If you have one of the larger units, be very careful when moving the box through narrow door ways.
2. Inspect the gloves for any tears or cuts. If there are any, you will need to replace them before using the glove box. Please refer to the “[Glove Change Out procedures](#)” in this manual.
3. Carefully remove the white top section of the unit by loosening the black knobs on top. If necessary, clean the inside walls and top section of the unit. Make sure all the black gaskets on the doors and top section are clean. Please refer to “[Cleaning Procedures](#)” in this manual.
4. Install all large pieces of equipment inside the glove box. Plug the device into the interior electrical outlet.
5. Carefully replace the top white section on the glove box. Make sure it is in the same position as when you removed it. Make sure the holes line up and both the top and bottom section are aligned properly. **Be careful not to “cross thread” the knobs.** At first only partially tighten each knob using a “criss cross” pattern. Once each knob has been started into it’s respective hole, back track your steps and tighten each knob. Use the same “criss cross” pattern.
6. All clamps have be pre-set at the factory. Over time during shipping, they may become loose and need re-adjusting. They can be adjusted by loosening the nut(s) and retightened. Be careful not to over compress the clamps or gaskets.
7. You may now attach your incoming inert gas line. In most cases, you will want to use the ground key cock valve located by the transfer chamber. Please refer to the section “[Purging the Main Working Chamber.](#)”
8. **(Optional)** If you ordered a unit with the top vent outlet port, attache the exhaust connection at this time. This is normally a three (3”) inch outlet. It is also important you seal the connection with vinyl sealing tape to ensure chamber integrity.

**TECHNIQUE FOR PURGING THE
MAIN WORKING CHAMBER
#830-SERIES Glove Boxes**

R/4-03

From this point on, **use the gloves as an indicator of pressure within the glove box.** Watch them carefully as they move in and out of the main chamber. Positive pressure pushes the gloves out and negative pressure draws the gloves back into the chamber.

STEP # 1

Attach the hose for your choice of inert gas:

If using Nitrogen (N₂) attach the incoming gas line (hose) to the key cock valve on the upper left side of the glove box. Connect a small vacuum pump to the key cock valve on the lower right side of the glove box.

If using an inert gas such as Argon, attach the incoming gas line (hose) to the key cock valve on the lower right side. Connect a small vacuum pump to the key cock valve on the upper left side of the glove box.

For vacuum pump data, refer to “[Glove Box Accessories](#)” on page twelve (12).

STEP # 2

Set the incoming gas source **OR** cylinder (bottle) regulator to 25-50 PSI. (170 kPa maximum.) Blow in a slow flow of the inert gas. Raise the level of gas input until the gloves extend out of the glove box approximately 14” inches (34 or 35 cm).

STEP # 3

Turn off the incoming gas and turn on the vacuum pump. This will exhaust the inner atmosphere until the gloves extend into the glove box. The vacuum should be left on until the gloves extend into the glove box approximately 14” inches (34 or 35 cm).

STEP # 4

Repeat steps #2, #3, and #4 at least eight (8) or nine (9) more times (purge cycles) then turn off the gas and vacuum pump.

You have now successfully “purged” your glove box and the inner atmosphere is primarily your inert gas of choice.

ENTRY THROUGH THE TRANSFER CHAMBER

The transfer chamber is used for inserting materials into and out of the main working chamber without disturbing the the main chamber atmosphere.

It is important to keep both transfer chamber doors closed during normal operation. This is a safeguard in case the outer door is opened by mistake.

1. With the inner door closed and locked, open the outer door and place the desired materials inside the chamber. The white plastic tray is useful for liquids.
2. Close and lock the outer door.
3. Open the vacuum valve and turn on the vacuum chamber pump. Draw a vacuum down to 20" of Hg. When that level is reached, turn off the vacuum pump and close the vacuum valve.
4. Now open the ground key cock valve to introduce your gas of choice. Continue this until the gauge reads "O"

TIP: Slow down the gas flow when the gauge nears five (5") inches. You can control the procedure easier.

According to the U.S. Centers for Disease Control protocol

REPEAT THIS PROCEDURE A TOTAL OF THREE (3) TIMES

5. Upon completion of the third (3rd) sequence, you may safely open the inner door and transfer your materials into the main chamber.

TIP: The white plastic leveling tray is helpful when transferring liquids.

Additional questions???

Contact our Technical "Hot Line"

at

Tel: 1-800-866-7527

Tel: 1-517-372-7177

Fax: 1- 517-372-2857

"e" Mail @ plaslabs@aol.com

GENERAL MAINTENANCE SCHEDULE

All #830-SERIES “Compact Glove Boxes”

It is strongly recommended that operators remove all jewelry during use of the glove box (isolator).

- Weekly:** General cleaning (refer to our cleaning procedures)
NOTE: This will vary as to your in house protocol.
- Monthly:** Check gloves and gasketing for excessive wear and tear.
Check to see if any clamps need adjusting.
- Semi Annually:** Perform your standard main chamber leak test.
- Annually:** Replace the Hypalon gloves. Check all gasketing for excess wear and tear. Make sure mechanical fasteners (screws) have not vibrated loose. If so, tighten them carefully.

Glove Change

Out Procedure: See following page. (Page eleven [11])

Refer to “*Replacement Parts and Useful Accessories*” sections of this manual.

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GLOVE CHANGE OUT PROCEDURE

R-6/2003

(Refer to page 12 for Replacement Parts.)

The glove change out procedure should be well defined and practiced before the actual change out takes place. Establish a contingency plan in case containment is lost.

The glove box (isolator) is equipped with glove ports, each with an 8.75"Ø machined groove for the glove ring. Before you remove a glove, be sure to have a glove port "plug" (#800-PLUG) inside the chamber. The glove port plug is used to seal the inside of the glove port during the change out. **NOTE:** It is very useful to keep a glove port plug inside the chamber at all times.

1. Insert your hand into the glove that is to be changed. Pull the glove port plug into the inside glove port opening and tighten securely. It is tightened by rotating the big **RED** knob clockwise. Make sure you have the damaged glove completely out of the chamber.

NOTE

You do not need to use the glove port plug if the glove box is shut down for periodic cleaning.

2. Remove the old yellow vinyl tape and stainless steel worm gear clamp.
3. Remove the old damaged glove. **NOTE:** You may want to place a disposable plastic bag around the old glove when you pull it off the machined groove on the port ring.
4. Make sure there is **no debris on the glove port ring**. It must be completely clean before mounting the new glove.
5. Insert the new glove into the port ring (and glove box). Make sure the thumb is pointed up, and the glove end (BEAD) is securely placed into the machined groove.
6. Retape and seal the beaded end of the glove to the glove port ring. Wrap the tape three (3) times around the glove and port ring. **NOTE:** It is important you do not have any wrinkles in the tape.
7. Re-attach the stainless steel worm clamp making sure it covers the beaded end of the glove. Secure it snugly, but do not over tighten.
8. To remove the glove port plug, reverse the original procedure as in Step #1. Turn the red knob counter-clockwise until the plug is released.

STERILIZATION/CLEANING

Most components in Plas■Labs products consist of thermoplastic and 304 stainless steel. Like any piece of fine laboratory equipment, care should be taken to avoid dropping, mishandling, and misapplication

Sterilization

This isolator can be sterilized with a diluted alcohol solution such as; 70-30 isopropyl alcohol/filtered water or 70-30 ethanol alcohol/filtered water. Manually wipe down the isolator walls with the solution and then rinse with filtered water. NOTE: It is recommended that the HEPA filter remains dry.

Good all around sterilants are;

- A. Bacteria - Isopropyl Alcohol and Water (70/30)
- B. Virocidal - Ethanol Alcohol and Water (70/30)

Cleaning

Cleaning thermoplastics is best accomplished with a non-abrasive soap or detergent and water solution. In cases where residues left by the agents is undesirable, special cleaning solvents may be used. Soaps and detergents will not harm plastics, but several common solvents will.

Recommended cleaners include: Novus™ Plastic Polish #1, Brillianize™ cleaner, and Rez-N-Kleen™

In general, aromatic and chlorinated hydrocarbons will attack most plastic surfaces. This applies to all plastics used in Plas■Labs products.

Examples of these products include, but are not limited to, acetone, ether, gasoline, lacquer thinner, methyl-ethyl-keytone, methylene chloride, and toulene.

Polishes

While the above cleaning solutions have some polishing capabilities, they will not remove scratches from plastic. This can only be done with automotive type waxes or the finer grades of rubbing or polishing compounds. These products should be specifically for acrylic enamels and lacquer base paint.

Scratch Removers

Deep scratches should be first sanded with a fine grit (600 or finer) wet sandpaper. Steel wool (0000 finest grade) is also very helpful. Use the polishing materials (rubbing compounds) mentioned above for the final stage.

Stainless Steel Components

Stainless steel is resistant to all solvents and detergents. Polishing can be accomplished by using fine grades of steel wool and/or #707 Scotch™ Brite pads. For the final stage use any type of stainless steel spray polish.

REPLACEMENT PARTS

<u>Plas Labs Part #</u>	<u>Description</u>
CH6015	#1 Novus™ Cleaner
CH6016	#2 Novus™ Cleaner
800-GH	White ambidextrous Hypalon gloves (pair)
HW3124	9” worm drive clamp
MS2027	Yellow 3M vinyl tape
830-FILTER	Multipurpose filter Cartridge (two [2] per pack)
MS2046	Gasket, Neoprene, for transfer chamber door
MS2029	Gasket, Neoprene, 1” wide x .500” thick
MS2028	Gasket, Neoprene, 2” wide x .500” thick

USEFUL ACCESSORIES

<u>Plas Labs Part #</u>	<u>Description</u>
800-PLUG	Glove Port Plug (pair)
800-PUMP	Vacuum Diaphragm Pump with 5’ hose on intake side Open Flow: 1.1 CFM (31 LPM) 115/Volt, 60Hz.
800-PUMP/EXP	220/Volt, 50Hz.
800-AS/SPI	Work Station Ionizer. Effectively eliminates all static charges within 36” of unit. Non-air assisted. 115/Volt, 60Hz.
800-AS/SPI/EXP	220/Volt, 50Hz.
830-CART	Stainless Steel Support Cart with casters
800-DOI	Digital Oxygen Analyzer (0-10,000 ppm) 115/Volt. 60Hz.
800-DOI/EXP	220/Volt, 50Hz.
800-DHI	Digital Humidity Indicator (0-100% Rh) 115/Volt, 60Hz.
800-DHI/EXP	220/Volt, 50Hz.
800-DPI	Digital Pressure Indicator (-2-0-2” of WC) 115/Volt, 60Hz.
800-DPI/EXP	220/Volt, 50Hz.
800-PRV	Pressure Relief Valve

Visit www.plas-labs.com for product specification sheets

PRODUCT INFORMATION

Materials of Construction:

Main Working Chamber:

- Walls: .375" thick clear cast acrylic
- Bottom: .250" thick white cast acrylic
.375" thick white cast acrylic (830-ABD only)
- Top and Bottom: .250" thermoformed white Noryl™
- Top viewing panel: .250" thick clear cast acrylic
- Top Gasketing: 1" wide x 1" thick black "skinned" Neoprene
- Gas Key Cock Valves: Nickle plated brass

Transfer Chamber:

- Doors: .500" thick clear cast acrylic
- Gaskets: .500" Ø neoprene
- Clamps: Rivets: type 430 stainless steel
Stamped parts: 302/304 stainless steel
Handle: pvc
- Hinges
- Fasteners 18-8 type stainless steel
- Pop Valve Body: polypropylene
O-ring: Buna-N
Springs: type 316 stainless steel

Product Specifications

Recommended Operational Pressures

For containment purposes: -0.5" of water column

For isolation purposes: 0.5" of water column

Main chamber:

- Max. pressure +6" of WC (11.2 torr)
- Max. vacuum -6" of WC (11.2 torr)

Transfer chamber:

- Max. pressure Not engineered to support positive pressure
- Max vacuum -26" of Hg. (660 torr)

PLAS■LABS LIMITED WARRANTY

Plas■Labs, Inc., warrants all materials and components used in the manufacture or assembly of its' products against defects in materials and workmanship for a period of twelve (12) months after shipment. In the event of product failure of operation, the obligation of

Plas■Labs under this warranty shall be limited to repairing or replacing at its' option, any part of said equipment which upon **Plas■Labs** inspection is determined defective.

Defective items are to be returned to **Plas■Labs**, Lansing, Michigan. All transportation charges are to be prepaid.

Contact us at 1-800-866-7527 for a "RETURN AUTHORIZATION NUMBER."

This warranty does not apply to equipment or parts which fail because of abuse; accident, alteration, misuse, erosion, improper installation, or improper replacement of a repaired item.

The buyer assumes all risks for results obtained from these products, whether used alone or in combination with other items. It is expressly understood that we are not responsible and will not be held liable for damage and/or injury caused by the use of our products.

This warranty is in lieu of any other warranty, expressed, or implied, including merchantability of fitness, and of all other obligations or liability whatsoever on **Plas■Labs** part.

For information regarding service, product maintenance, or operation, telephone us at 1-517-372-7177 (US). Or e-mail us at plaslabs@aol.com.