



# LC TECHNOLOGY SOLUTIONS INC.

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## LC-1 Stand Alone Glovebox

### Installation Requirements





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## Section 1: Power Requirements

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1. The glovebox and gas purification system requires one (1) 115V, 15 amp outlet or one (1) 220V, 8 amp outlet for the main power.
2. The electrical feedthrough requires one (1) 115V, 10 amp outlet or one (1) 220V, 5 amp outlet.

Note: If system is equipped with a freezer it will require one (1) additional power outlet. One (1) 115V, 15 amp outlet or one (1) 220V, 8 amp outlet.

Note: If system has special features or additional electrical feedthroughs it may require more outlets than listed above.

Note: If system is supplied with an Evaporator, please refer to Section 6 for additional electrical requirements.

**The Project Number is located on a sticker, on the back of your system and above the PLC screen. Please have this number available when calling for service information.**



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## Section 2: Working Gas Requirements

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The working gas (inert gas) used for the glovebox and gas purification system are nitrogen, argon, or helium. A quality of 99.995% or better is required to operate the system correctly.

The following will be needed to operate the system.

1. One (1) nitrogen, argon, or helium regulator that is capable of delivering 60 PSI.
2. The regulator should be equipped with a shut off/needle valve and have a 3/8" hose barb connection.



3. One (1) gas cylinder or gas source that is capable of delivering at least 200L/min flow rate of inert gas selected. This is a typical standard gas cylinder.

Note: The system will be supplied with 10-12' of reinforced tygon tubing. This line will be marked with a tag labeled "Gas". This is the working gas connection that should be attached to the regulator.

Note: If you need to purchase this regulator, please contact LC Technology at (978) 255-1620.

<u>Part No.:</u>	<u>Cost:</u>
GA-101-01, Arg/Nit/Hel Regulator	\$395.00



### Section 3: Regeneration Gas

This is standard regeneration gas or commonly referred to as forming gas. Regeneration gas is normally 3-5% hydrogen and the balance is either nitrogen or argon. The following will be needed to regenerate the gas purification system:

1. One (1) regulator for regeneration/forming gas; this is a special regulator. The regulator needs to measure accurately down to 15 PSI. The regulator will need a needle valve on the outlet and the flow rate will need to be adjusted to 15L/min.
2. The regulator will need to have a 3/8" hose barb on the outlet.

Note: The system will be supplied with 10-12' of reinforced tygon tubing. This line will be marked with a tag labeled "Reg Gas". This is the regeneration gas connection that should be attached to the regulator.

Note: A typical regeneration will use half of a standard regeneration gas tank. You should be able to perform two regenerations from one tank.



**NOTE:** If you need to purchase this regulator, please contact LC Technology at (978) 255-1620.

<u>Part No.:</u>	<u>Cost:</u>
GA-102-01, Regeneration Gas Regulator	\$495.00





## Section 4: Venting



### Common Vent Line:

Systems will come with a common vent line. All exhausts from pumps, purge outlets, etc. are plumbed to this common vent line. This vent line will have a 1 ½" OD connection point and exhaust 8 CFM.

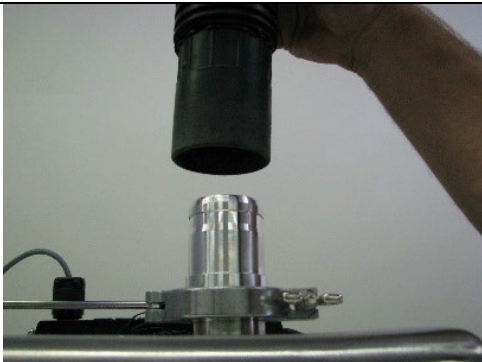
**NOTE:** It is **highly** recommended that this line be vented to an exhaust system.

Vent Line drain Port



### Preferred Method of Vent Connection:

Vent the glovebox using a loose fit duct work adapter (Snorkel Connection).



**NOTE:** If System was supplied with an over pressure relief device. Do not place the fume hood connection directly on the automatic pressure relief/exhaust valve. Place the connection over the valve as shown.

Placing the connection directly on top of the automatic pressure relief valve will cause it to malfunction.



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## Section 5: Purging System at Start-Up

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When the glovebox system is first set-up it will need to be purged with a large amount of inert gas before the gas purifier can be turned on. The following will be needed for each glovebox module:

1. Three (3) cylinders of nitrogen, argon, or helium.

**NOTE:** This amount is needed per glovebox module. If you have a double length system you will need twice the amount listed above.

**NOTE:** Special size glovebox systems may require more gas than above. Please contact LC Technology for special instructions.

Below is an example of gas needed at Start-Up by Model Number:

Time and Gas Required:	# of 300 c/f Cylinders needed at Start UP
Glovebox Model No.: LC-100	2.5 cylinder, 750 c/f      2 hours
Glovebox Model No.: LC-150	3.5 cylinder, 1050 c/f      2 hours 30 min
Glovebox Model No.: LC-180	4.0 cylinder, 1200 c/f      3 hours
Glovebox Model No.: LC-200	5.0 cylinder, 1500 c/f      3 hours 30 min





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## Section 6: Special Requirements

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If the system is supplied with two gas purification systems you will need to double all of the items listed above. For example: Two (2) inert gas regulators, two (2) regeneration gas regulators, two (2) vent connections, etc.

If the system is supplied with an Evaporator additional electric requirements are required:

- 30 amp, 208V, 3 phase outlet with 5 wire connection (3 hot, 1 neutral and 1 ground).
- LC Technology systems have a male plug on them (See <http://www.mcmaster.com/#7184k34/=uo0241>). You will need to install the female outlet.