

Site Preparation Specification

Purpose of Procedure

Your site must meet this specification or set of requirements to assure a successful and timely installation of your 6820 gas chromatograph (GC). This checklist is designed to prevent delays during installation, familiarization, and the initial use of the GC system in your application. This checklist outlines the space and utility requirements for a 6820 GC. It also recommends tools and consumables that may help you get started. Use it along with the 6820 Site Preparation and Installation documentation and Consumable Catalog. This information is available from Agilent Technologies, Inc.'s website.

Customer Responsibilities

Make sure your site meets this specification, including: the necessary space, electric outlets, gases, tubing, operating supplies, consumables and other usage dependent items such as columns, vials, syringes and solvents required for the successful installation of instruments and systems. If Agilent is delivering installation and familiarization services, users of the instrument should be present throughout these services; otherwise, they will miss important operational, maintenance and safety information.

Important Information

If you need assistance, please contact your local Agilent Technologies office. Assistance with this checklist and with user specific applications is available and will be contracted separately.



Dimensions and Weight

Select the laboratory bench space before your system arrives. Pay special attention to the total height requirements. Avoid bench space with overhanging shelves. Allow at least 20 cm clearance between back of GC and wall to dissipate heated air.

Average weight	60 kg	132 lbs
Height	50 cm	20 in
Width	68 cm	27 in
Depth	52 cm	21 in

A simple system that includes a GC and a computer would require about 153 cm or 5 feet of bench space.



Power Consumption

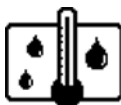
The number and type of electrical outlets depends on the size and complexity of your system. The GC power consumption and requirements depend on the type of oven that you ordered and the country the unit is shipping to.

Oven ramp	Line voltage	Frequency	Current (amps)	Power
6820 Standard	Americas: 120V AC (1) single phase (-10% / + 5%)	47.5-63 Hz	18.8	2250 VA
6820 Standard	220V single/split phase (-10% / + 10%)	47.5-63 Hz	10.2	2250 VA
6820 Standard	230/240V single/split phase (-10% / + 5%)	47.5-63 Hz	9.8 / 9.4	2250 VA
200V Japan	Japan: 200V split phase (-10% / + 5%)	47.5-63 Hz	14.8	2950 VA

Notes

1. Americas 120V requires 20 amp dedicated line.
2. The GC power supply expects to see a sinusoidal waveform. Some power line conditioner, such as, voltage regulating transformers, change the wave form and interfere with detector baselines.
3. It is very important that the power PCA configuration, main PCA power configuration jumper, and power cord are matched and appropriate for the electrical outlet and supply.

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Environmental Conditions and heat dissipation

Operating the GC within the recommended ranges insures optimum instrument performance and lifetime. Instrument needs space for proper convection of heat and ventilation. Performance can be affected by sources of heat and cold from heating, air conditioning systems, or drafts. Maximum heat output is also listed in the table, which may help to calculate the additional BTU's of heat dissipation from this new equipment.

Oven ramp option	Output BTU/hr maximum	Recommended Operating Temp Range	Recommended Operating Humidity Range	Max. Altitude
Standard	7681 max	20 ~ 27 °C	50 ~ 60%	4000 m
200V Japan	10071 max	20 ~ 27 °C	50 ~ 60%	4000 m

Note: For storage or shipping, the allowable temperature range is -40°C to 70°C and the allowable humidity range is 5-95%, non-condensing.



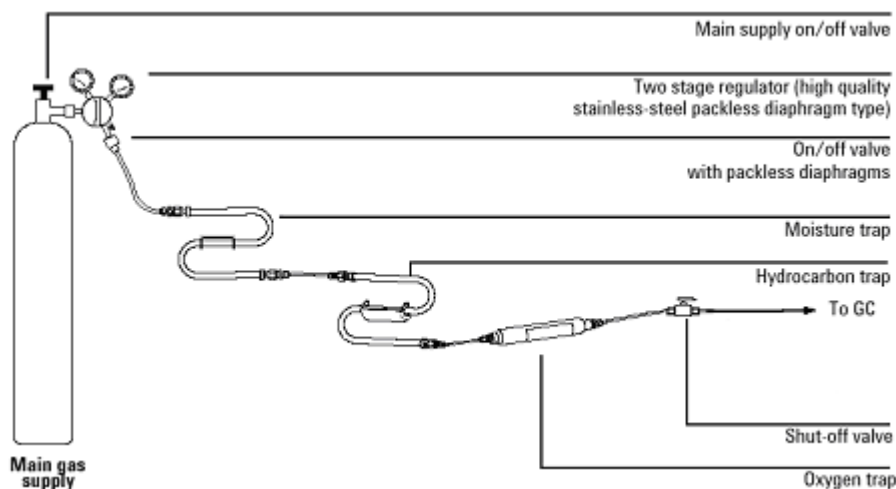
Gas Supply

The GC gases are supplied by tanks, internal distribution systems, or gas generators. Tank supplies require two staged, pressure regulation. We recommend that you order the installation kit 19199M. This includes tubing, Swagelok fittings, and tools for connecting your gas supplies to the GC.

We cannot predict which gas distribution system you have. **To connect the tubing from the instrument to the supply, you must have one 1/8-inch Swagelok® female connector for each gas. Also if your order does NOT include the 19199M, you must also supply pre-cleaned, 1/8-inch copper tubing and a variety of 1/8-inch Swagelok® fittings to connect the gas supply(s).**

Agilent also recommends using traps to remove water, hydrocarbons, and oxygen or a combination trap that removes all three.

If you gas supply is shared by more than one GC, you may need secondary pressure regulators to isolate the GCs. This is available in Accessory G4323A.



Accessory G4323A

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This table lists some of the Agilent recommended gas supply parts that you might need.

Description	Part number
Moisture trap: preconditioned, metal casing, s-shaped. Contains Molecular Sieve 5A, 45/60 mesh, and 1/8 inch fittings.	5060-9084
Hydrocarbon trap: metal casing, s-shaped trap filled with 40/60 mesh activated charcoal and 1/8-inch fittings	5060-9096
Oxygen trap: glass, indicating, and 1/8-inch fittings.	IOT-2-HP
Teflon™ tape (Never use liquid thread sealer to connect fittings.)	0460-1266
MPC Plumbing Kit: One 1/8-inch Swagelok brass TEE; Two 1/8-inch Swagelok brass nut and ferrule sets; Two 1/8-inch ball valves; Twelve feet of 1/8-inch copper tubing.	G1290-60515
Pressure regulators, Swagelok fittings, tubing, and NPT fittings (Described in Publication 5988-5847)	See catalog
Install Kit for GCs without Gas Purifiers. Contains tubing, tubing cutter, Swagelok® fittings, and tools.	19199M
Auxiliary 2-channel gas regulator, 100 psi	G4323A

The following table lists minimum pressures in psi and MPa for inlets and detectors measured at the bulkhead fitting at the back of the instrument.

	NPD		FID		TCD		ECD		Split/splitless		Purged packed	
	psi	Mpa	psi	MPa	psi	MPa	psi	MPa	psi	MPa	psi	MPa
Hydrogen	45	0.31	45	0.31								
Air	60	0.41	60	0.41								
Make up	60	0.41	60	0.41	60	0.41	50	0.34				
Reference					60	0.41						
Carrier max									120	0.83	120	0.83
Carrier min									20(0.15Mpa) psi above pressure used in method			

Conversions: 1 psi = 0.0068947 MPa = 0.068947 Bar = 0.068 ATM

Notes

1. Nitrogen is used as carrier gas in China. With few exceptions, TCD will not be supported with Nitrogen.
2. Valve actuation requires a separate supply of pressurized, dry air. For each valve that switches at the same time, you need about 20 psi. For most systems, you need 40 psi.
3. Never use liquid thread sealer to connect fittings. Never use chlorinated solvents to clean tubing or fittings.



Gas Selection

Agilent recommends that carrier and detector gases be 99.9995% pure. Air needs to be zero grade or better. Agilent also recommends using traps to remove hydrocarbons, water, and oxygen.

The following table lists gases for capillary columns.

	Carrier	Preferred makeup	2 nd choice	Detector, anode purge, or reference
ECD	Hydrogen Helium Nitrogen Argon/methane	Argon/methane Argon/methane Nitrogen Argon/methane	Nitrogen Nitrogen Argon/methane Nitrogen	Anode purge must be same as makeup
FID	Hydrogen Helium Nitrogen	Nitrogen Nitrogen Nitrogen	Helium Helium Helium	Hydrogen and air for detector
TCD	Hydrogen Helium	Must be same as carrier and reference	Must be same as carrier and reference	Reference must be same as carrier and makeup
NPD	Helium Nitrogen	Nitrogen Nitrogen	Nitrogen Nitrogen	Hydrogen and air for detector

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Non-Agilent computer

These are some additional specifications if you are controlling the 6820 with Cerity NDS for Chemical QA/QC software version A.04.05 or higher. It requires,

1. Microsoft® Windows® 2000 Professional with service pack 2 (or higher) or Windows® XP Professional.
2. Internet Explorer 5.5 service pack 2 or higher.
3. The minimum requirements for the computer include: a Pentium III processor operating at 450 MHz or higher, one USB port and at least 256 MB of RAM for a single instrument, CE-ROM and at least 6 GB capacity of hard driver.
4. Communication between the computer and the 6820 GC is based on an RS232 serial connection. At 6820GC side it is RS232 port, it will be converted to USB port and connected to the PC.

For more details on software and hardware compatibility, please contact your sales representative. The following are tested computer manufacturers: Hewlett-Packard®, Compaq®, Legend®, and Dell®.



Other considerations

Your 6820 GC comes with an analytical column: 125-1017 (DB-1, 15 meter, 0.53mm x 0.5µm). Our checkout standards are designed to work with this column. In many cases, you will need to select a different column for your application. Ask your sales representative about column options. Also refer to <http://www.chem.agilent.com/cag/cabu/gcreflib.htm> for information on column selection, phase selection, guard columns, retention gaps, conditioning, and method development.

Your GC comes with a few basic tools and consumables depending on the specific inlet and detector that you ordered. Here is a general list of what you will get with your instrument

Tool or consumable	Used for
Inlet wrench	Replacing inlet septa and liners.
T10 and T20 Torx screw drivers	Removing covers to access inlet components, traps, and possible leaks.
¼-inch nut driver	FID jet replacement.
¼-inch x 5/16-inch wrench	Column connections
Small flat blade screwdriver	Adjusting detector flows
FID flow measuring insert	Measuring FID gases flow.
Column cutter	Column installation and maintenance
1/8-inch nuts & ferrules, Swagelok, brass	Connecting gas supplies
Inlet septa appropriate for type	Injection port seal
Inlet insert or liner	Injection port

The following table lists the tools included in 19199M start up kit. These tools are required to complete the installation.

Description	Used for	Part number
Fittings 1/8" Brass 20/PK	Connect gas supplier of 1/8" tubing	5080-8750
Cap, 1/8" Brass 6/PK	Cap gas supplier of 1/8" tubing	5180-4121
Tee, 1/8" Brass Union 2/PK	Connect gas supplies	5180-4160
Copper tubing, 1/8" od 50 ft length	Connect gas supplies	5180-4196
TOOL, WRENCH (5/16" and 1/4")	Capillary column nut and inlet/detector adaptor secured	8710-0510
Wrench, open end 7/16" and 9/16"	Swagelok connection (1/8" and 1/4" fittings)	8710-0803
Wrench, open end 1/2" and 7/16"	Capillary inlet reducing nut and 1/8" Swagelok fittings.	8710-0806
Open end wrench 7/16" and 3/8"	1/8" Swagelok Cap and Tee union.	8710-0972
Nut driver, 7-mm	Accessory installation	8710-1217
Cutter, tube	Cut tubing	8710-1709
Leak detector 8oz	Liquid for gas leakage detection and bubble meter	9300-0311
Torx Screwdriver, T20 Size	Remove covers to access inlet components, traps, and possible leaks.	5182-3465
Torx Screwdriver T10 Size	Remove inlet/detectors, electronics components.	5182-3466