Agilent CrossLab
From Insight to Outcome

Agilent CrossLab Start-Up Services

SP1 8890 GC SP1-0716 Transformer Oil Gas Analyser Site Preparation Checklist

Thank you for purchasing an instrument from **Agilent Technologies**. CrossLab Start-Up is focused on helping customers shorten the time it takes to start realizing the full value of their instrument investment. Installation, Introduction, and Familiarisation are service engagements to get your new instrument and lab productive. Success starts here.

Correct site preparation is the key first step in ensuring that your instruments and software systems operate reliably over an extended lifetime. This document is an **information guide and checklist** prepared for you and outlines the supplies, space, and utility requirements for your equipment.

Agilent

Introduction

Customer Responsibilities

Ensure that your site meets the following specifications before the installation date. For details, see specific sections within this checklist, including:

- ❑ The necessary laboratory or bench space is available.
- ❑ The environmental conditions for the site as well as laboratory gases, plumbing and extraction.
- ❑ The power requirements related to the product (e.g. number and location of electrical outlets).
- ❑ The required operating supplies necessary for the product and installation.
- ❑ If Agilent is delivering Installation and Introduction services, users of the instrument should be present throughout these services. Otherwise, they will miss important operational, maintenance, and safety information.
- ❑ For more detailed Site Preparation information Consult the **Agilent 8890 Gas Chromatograph Site Preparation Guide.**
- ❑ Please consult the Special Requirements section for other product-specific information.
- ❑ When using hydrogen (H2) be aware that hydrogen gas can flow into the GC oven and create an explosion hazard. Therefore, be sure that the supply is turned off until all connections are made and ensure that the inlet and detector column fittings are always either connected to a column or capped when hydrogen gas is supplied to the instrument.

Hydrogen is flammable. Leaks, when confined in an enclosed space, may create a fire or explosion hazard. In any application using hydrogen, leak test all connections, lines, and valves before operating the instrument. Always turn off the hydrogen supply at its source before working on the instrument.

Please refer to the Hydrogen Safety Guide which is shipped with the Instrument.

Customer Information

- ❑ If you have questions or problems in providing anything described as a Customer Responsibility, please contact your local Agilent or partner support service organization for assistance before the scheduled installation. In addition, Agilent and/or its partners reserve the right to reschedule the installation dependent upon the readiness of your site.
- ❑ Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-arrange any services that have been purchased.
- ❑ Other optional services such as extra training, compliance services and consultation for user-specific applications may also be provided at the time of installation. Please discuss with your Agilent Sales representative before the installation is scheduled.
- ❑ Please refer to the other products (i.e.Headspace Sampler etc.) for site preparation requirements.

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Important Customer Web Links

- For more information about ***Agilent Technologies Services***, please visit our website using the following URL: http://www.agilent.com/en-us/products/crosslab-instrument-services/service-repair
- The **Agilent Community** is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit https://community.agilent.com/welcome
- To access **Agilent University**, visit http://www.agilent.com/crosslab/university/ to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- A useful **Agilent Resource Center** web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: https://www.agilent.com/en-us/agilentresources
- Need technical support, FAQs, supplies? – visit our **Support Home page** http://www.agilent.com/search/support
- **Videos** about specific preparation requirements for your instrument can be found by searching the ***Agilent YouTube*** channel at https://www.youtube.com/user/agilent

Site Preparation

Dimensions and Weight

Identify the laboratory bench space before your instrument arrives based on the following table.

Pay special attention to the total height and total weight requirements for all system components you have ordered and avoid bench space with overhanging shelves.

Special notes

- ❑ Requires 30 cm (12-inch) open space above GC.
- ❑ Requires 27 cm (10.7-inch) open space in front of GC.
- ❑ Requires 25 cm (10-inch) clearance between back of instrument and wall to dissipate hot air and allow for routine maintenance.

Instrument Description	Weigh		Height		Depth		Width	
	Kg	lbs	cm	in	cm	in	cm	in
8890 Series GC	50	112	50	19.2	54	21	59	23
7697A Headspace Sampler	37	84	60.6	23.9	68	26.8	62.9	24.8
7697A HSS with Tray	46	101	80	31.5	68.9	27.1	66.5	26.2

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Environmental Conditions

Operating your instrument within the recommended temperature ranges ensures optimum instrument performance and lifetime.

Special notes

- Performance can be affected by sources of heat and cold, e.g., direct sunlight, heating/cooling from air conditioning outlets, drafts, and/or vibrations.
- The laboratory's ambient temperature conditions must be stable for optimum performance.
- During normal operation of the GC with many detector and inlet types, some of the carrier gas and sample vents outside the instrument through the split vent, septum purge vent, and detector exhaust. If any sample components are toxic or noxious, or if hydrogen is used as the carrier gas or detector fuel gas, these exhausts must be vented to a fume hood.

Instrument description	Operating temperature range °C (F)	Operating humidity range (%)	Heat dissipation (BTU)
8890 Series GC	15 to 35 °C (59 to 95 °F)	5 to 95%	7681
8890Series GC (Fast ramp oven)	15 to 35 °C (59 to 95 °F)	5 to 95%	10,071
7697A Headspace Sampler	10 to 40 °C (50 to 104 °F)	5 to 95%	2900 BTU
7697A HSS with Tray	10 to 40 °C (50 to 104 °F)	5 to 95%	2900 BTU

Heat Dissipation

Your facilities manager may wish to know the amount of heat that the system generates in order to establish its contribution to the overall room ventilation requirements.

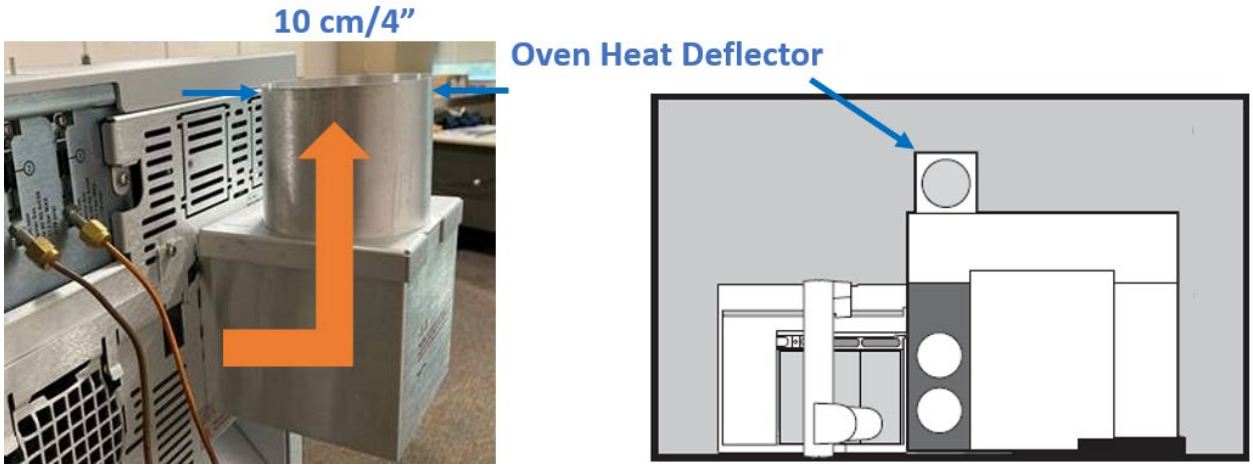
The following table may help you calculate the additional BTU's of heat dissipation from this new equipment. Maximums represent the heat given off when heated zones are set for maximum temperatures.

Refer to the "Heat Dissipation" section of the " Agilent 8890 Gas Chromatograph Site Preparation Guide " for more detail.

Oven type	Heat dissipation
Standard oven ramp	**7,681 BTU / hour maximum**
Fast oven ramp (options 002 and 003)	**10,071 BTU / hour maximum**

Venting the Oven - Oven Heat Deflector Option 306 or Part Number G3450-81650

The following is a picture that shows the back view of an installed 8890 GC - with the Oven Heat Deflector installed. **The exhaust duct exit is 10 cm (4 inches) in diameter**.



The connecting duct should provide unrestricted flow for the oven air and be as short and straight as possible.

With the exhaust deflector installed the exhaust is about 65 CFM (ft3/min /1.840 m3/min). Without the deflector, the exhaust rate is about 99 CFM (ft3/min /2.8 m3/min).

Allow at least 25 cm (10 in) clearance between back of GC and wall to dissipate heated air.
Installing the optional oven heat deflector reduces the required clearance to 14 cm (5.5 in)

Although the deflector adds 14 cm (5.5 inches) to the back of the GC, the GC can be installed closer to the wall because hot air is vented up and away from the GC/wall.

Refer to the "Exhaust Venting" section of the " Agilent 8890 Gas Chromatograph Site Preparation Guide" for more detail.

Power Requirements

Refer to the table of Power Cord and Plug terminations for your specific country at the end of this document.

The GC power consumption and requirements depend on the type of oven that you ordered and the country the unit is shipping to. **All 8890 GC's require dedicated circuits**.

The following table Lists the AC Power requirements for various 8890 GC configurations:

Instrument Description	Line Voltage and Frequency (V, Hz)	Maximum Power Consumption (VA)	Power Outlet Current Rating
8890 Series GC (Standard Oven)	Americas: 120 VAC single phase (+/−10%) 48 - 63 Hz	2250	20 amp dedicated
8890 Series GC (Standard Oven)	220/230/240 VAC single/split phase (+/−10%) 48 - 63 Hz	2250	10 amp dedicated
8890 Series GC (Fast ramp oven)	220/230/240 VAC single/split phase (+/−10%) 48 - 63 Hz	2950	15 amp dedicated
8890Series GC (Fast ramp oven)	North America 240 VAC – Instrument option #002 208 VAC requires 220 VAC Instrument option # 003	2950	15 amp dedicated
8890 Series GC (Fast ramp oven)	Japan 200 VAC split phase (+/−10%) 48 - 63 Hz	2950	15 amp dedicated
G4556A, 7697A Headspace Sampler	Americas: 120 single phase (−10% / +10%) 50/60 Hz	850	
G4556A, 7697A Headspace Sampler	200/220/230/240 single/split phase (−10% / +10%) 50/60 Hz	850	
G4557A, 7697A Headspace Sampler with Tray	Americas: 120 single phase (−10% / +10%) 50/60 Hz	850	
G4557A, 7697A Headspace Sampler with Tray	200/220/230/240 single/split phase (−10% / +10%) 50/60 Hz	850	

Notes

1. The number and type of electrical outlets depends on the size and complexity of your system. For example, in addition to the dedicated outlet for the GC, a system with a computer, monitor, printer, and HUB/Switch requires 4 additional outlets on a separate circuit.
2. The GC will have a label next to the power cord connector that describes the line voltagerequirements.

3. Power line conditioners that contribute any power line distortion should not be used with the Agilent 8890 GC.

Refer to the "Power Consumption" section of the " Agilent 8890 Gas Chromatograph Site

Required Operating Supplies by Customer for Installation

Use the following checklist to ensure that the site is properly prepared for GC system installation.

- ❑ Ensure that the appropriate installation hardware has been acquired.
- ❑ Ensure that the location in which the GC system is being installed meets the requirements for environmental conditions.
- ❑ Prepare bench space for the GC system. Ensure that the bench has the size and weight capacity to accommodate the GC and associated components.
- ❑ Ensure that system components are oriented so that they can be connected properly.
- ❑ Ensure that appropriate venting is provided for the GC system.
- ❑ Ensure that a dedicated power circuit is available for each device in the system.
- ❑ Ensure that appropriate gas and reagent supplies are provided for the GC system.
- ❑ Ensure that appropriate gas plumbing is provided for the GC system.
- ❑ If the GC system being installed includes a data system, ensure that the PC meets the requirements necessary to properly support the GC system. For more information, see the site prep guide for your data system.
- ❑ If the GC being installed is to be connected to a site LAN, ensure that the appropriate cabling is available.

Special notes

- ❑ Download the **Essential Chromatography and Spectroscopy Supplies Catalogs** for a complete overview about available supplies for your new and existing Agilent Instruments https://www.agilent.com/en-us/products/lab-supplies

Special Requirements

Available Kits for 8890 GC system installation:

Kit	Part	Contents
Recommended for GCs with FID, NPD, FPD		
GC Supply Gas Installation Kit with Gas Purifiers	19199N	Includes Gas Clean Filter system kit CP736530 (with 1 oxygen, 1 moisture, and 2 charcoal filters), 1/8-inch brass nuts and ferrules, copper tubing, 1/8-inch brass tees, tubing cutter, 1/8-inch brass caps, universal external split vent trap with replacement cartridges, and 1/8-inch ball valve
Recommended for GCs with TCD/ECD, MS, and MSD		
GC Supply Gas Installation Kit	19199M	Includes 1/8-inch brass nuts and ferrules (20), copper tubing, 1/8- inch brass tees, tubing cutter, 1/8-inch brass caps, 7-mm nut driver, T-10 Torx driver, T-20 Torx driver, 4 open-end wrenches, and 1/8-inch ball valve.
Gas Clean carrier gas filter kit, 1/8-inch	CP17974	

Available GC Pressure regulators:

All Agilent regulators are supplied with the 1/8-inch Swagelok® female connector.

Gas Type	CGA Number	Pressure Range	Part Number
Air (medical grade)	346	0-125 PSIG (8.6 Bar)	5183-4641
Hydrogen, Argon/Methane	350	0-125 PSIG (8.6 Bar)	5183-4642

Oxygen	**540**	**0-125 PSIG (8.6 Bar)**	**5183-4643**
Helium, Argon, Nitrogen	**580**	**0-125 PSIG (8.6 Bar)**	**5183-4644**
Air (Zero grade, for GC applications)	**590**	**0-125 PSIG (8.6 Bar)**	**5183-4645**

Instrument and System Dimensions and Gas Requirements

The following tables list minimum and maximum pressures in psi for each electronic pneumatic control module (EPC). These requirements are for the input to the EPC module located at the back of the gas chromatograph.
Conversions: 1 psi = 6.8947 kPa = 0.068947 Bar = 0.068 ATM
Detectors

	FID	TCD
Hydrogen	35-100	
Air	55-100	
Make up	55-100	55-100 (Argon)
Reference		55-100 (Argon)

Inlets

	PCM-C
Argon	40-120

Valve actuation Gas.

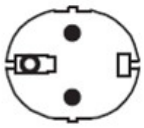
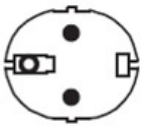
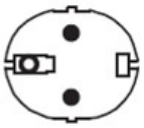
The valves are pneumatically operated. The recommended gas can be either air or nitrogen. As the gas does not come into contact with any inlet or detector and is used solely to actuate valves we only recommend that the gas be dry. The pressure needed for actuation is 50psi but should not exceed 80psi.

Gas purity and selection

Agilent recommends that carrier and detector gas purity of 99.9995% or better. Air for flame detectors should be zero grade. Agilent also recommends using traps to remove hydrocarbons, water, and oxygen.

Power Cord and Plug Terminations

Part Number	Country	Voltage	Amps	Length-m	Type	Wall Termination	Plug Termination
8121-0675	Argentina	240	16	4.5	C19	AS 3112	
8120-1369	Australia, New Zealand	240	10	2.5	C13	AS 3112	
8120-8619	Australia	240	16	2.5	C19	AS 3112	
8121-1787	Brazil	240	16	2.5	C19	IEC 60906-1	
8121-1809	Brazil	240	10	2.5	C13	IEC 60906-1	
8120-6978	Chile	240	10	2.5	C13	CEI 23-16	
8121-0070	China	220	16	2.5	C19	GB 1002	

8121-0723	China	220	10	2.5	C13	***GB 1002***	
8120-3997	Denmark, Greenland	230	10	2.5	C13	AFSNIT 107-2-01	
Part Number	**Country**	**Voltage**	**Amps**	**Length-m**	**Type**	**Wall Termination**	**Plug Termination**
8120-8622	Denmark, Switzerland	230	16	2.5	C19	Swiss/Denmark 1302	
8120-8621	Europe	220/ 230/ 240	16	2.5	C19	CEE/7/V11	
8121-1222	Korea	220/ 230/ 240	16	2.5	C19	CEE/7/V11	
8121-1226	Korea	220/ 230/ 240	16	2.5	C13	CEE/7/V11	
8121-0710	India, South Africa	240	15	2.5	C19	AS 3112	
8120-5182	Israel	230	10	2.5	C13	Israeli SI32	

8120-0161	Israel	230	16,16 AWG	2.5	C19	Israeli SI32	
8120-6903	Japan	200	20	4.5	C19	NEMA L6-20P	
8120-8620	**United Kingdom, Hong Kong, Singapore, Malaysia**	240	13	2.5	C19	BS1363/A	
Part Number	**Country**	**Voltage**	**Amps**	**Length-m**	**Type**	**Wall Termination**	**Plug Termination**
8120-8705	**United Kingdom, Hong Kong, Singapore, Malaysia**	240	10	2.3	C19	BS1363/A	
8120-6894	North America Canada, Mexico, Untied States	120	20	2.5	C19	NEMA 5-20P	
8121-0075	North America Canada, Mexico, Untied States	240 (Option 002) Also for 208 VAC Power – the GC is configured for 220 VAC (Option 003)	15	2.5	C19	NEMA L6-15P	
8120-6360	Taiwan, South America	120	20	2.5	C19	NEMA 5-20P	
8121-1301	Thailand	220	15	1.8	C19		

Refer to the "Power Consumption" section - "Common Instrument Power Cord Plugs" - of the " Agilent 8890 Gas Chromatograph Site Preparation Guide" for more detail.

Service Engineer Review (Optional)

Use this page to document a review of the Site Preparation requirements between the Customer and the Service Engineer.

Service Engineer Comments

If there are any specific points that should be noted as part of performing the site preparation review or other items of interest for the customer, please write in this box.

Site Preparation Verification

Service Order Number _____

Date of Site Prep Review _____

Service Engineer Name _____