Agilent Technologies

5975T LTM GC/MSD – Site Preparation Checklist

Thank you for purchasing an Agilent instrument. To get you started and to assure a successful and timely installation, please refer to this specification or set of requirements.

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 that outlines the supplies, consumables, space and utility requirements for your equipment for your site.

For additional information about our solutions, please visit our web site at http://www.chem.agilent.com/en-US/Pages/HomePage.aspx

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Customer Responsibilities

Make sure your site meets the following **prior to the installation date using the checklist below. For details, see specific sections within this document**, including:

- the necessary **laboratory and/or bench space is available.**
- the **environmental conditions for the lab** as well as laboratory gases, tubing,
- the **power requirements** related to the product (e.g. **number & location** of electrical outlets – typically 5-8 outlets will be required)
- the **required operating supplies** and consumables necessary for the product and installation
- please consult **Other/Special Requirements** section below for other product-specific information
- For mobile lab, six holes should be drilled on the bench where the instrument will sit if customer wants to mount the instrument on the bench in a mobile lab. For regular lab, customer can decide whether the instrument should be fixed to the bench.
- The decision on where the gas filter will be located. If the gas filter is required to be mounted on the instrument back, back side space must >= 360mm for easy access to the gas filter. Otherwise, 200mm should be the minimum clearance at the back.
- For more details, please refer to the 5975T LTM GC/MSD Site Preparation guide.
- **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 Customer Information

1. If you have questions or problems in providing anything described as a *Customer Responsibilities* above, please contact your local Agilent or partner support/service organization for assistance prior to delivery. In addition, Agilent and/or it's partners reserve the right to reschedule the installation dependent upon the readiness of your laboratory.

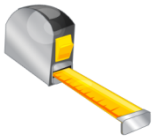
2. Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-arrange any services that have been purchased.

3. Other optional services such as additional training, operational qualification (OQ) and consultation for user-specific applications may also be provided at the time of installation when ordered with the system, but should be contracted separately.

WARNING

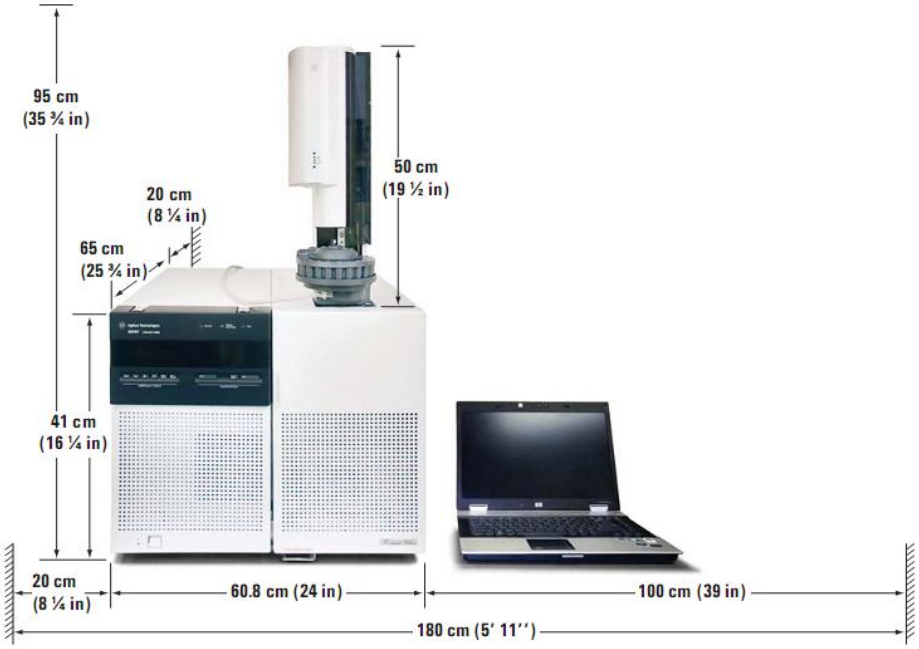
When using hydrogen (H_2) as the carrier gas or fuel gas, be aware that hydrogen gas can flow into the LTM GC/MSD system and create an explosion hazard. Therefore, be sure that the supply is turned off until all connections are made and ensure that the inlet and detector column fittings are either connected to a column or capped at all times 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.



Dimensions and Weight

Identify the laboratory bench space before your system arrives based on the table below.
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. Also pay special attention to the total weight of the modules you have ordered to ensure your laboratory bench can support this weight.

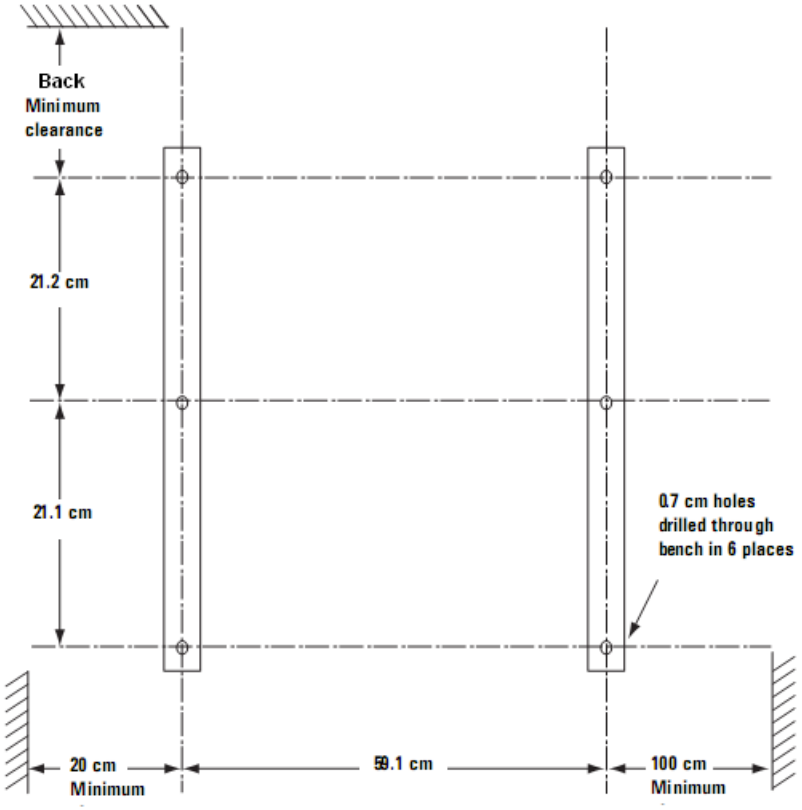


Instrument Description	Weight		Height		Depth		Width	
	Kg	lbs	cm	in	cm	in	cm	in
5975T LTM GC/MSD	31.8	70	41	16.25	65	25.75	60.8	24
G4513A injector	3.9	8.6	51	20	16.5	6.5	16.5	6.5
Foreline pump, Wet	15.5	34						
Foreline pump, Dry	4.5	10						
Foeline pump, Pfeiffer	16.2	36						

Instrument Description	Weight		Height		Depth		Width	
	Kg	lbs	cm	in	cm	in	cm	in
Mainframe shipping container	25.85	57	93.9	37	84.4	32.23	100	38.88
Accessories Shipping container	19.05	42	73.6	29	82.9	32.66	68.6	27
Data System	Data system size and weight depend on the components included in the data system. Reserve at least 100 cm (39 in) of bench space for the data system. A typical data system weight is 34 kg (75 lb).							

Special Notes:

1. Space requirement if we need to install at mobile lab. If customer doesn't install the gas filter at the back, the Back Minimum clearance will be 20cm and customer can install the gas filter as where as he likes. If customer needs to install the gas filter at the instrument back, the Back Minimum clearance will be 360mm. The bench holding the instrument requires (6) 7-mm diameter holes to allow through-bolts to secure the instrument to the bench. See following figure for the layout location of these holes that must be provided in the bench top.



2. At least 20 cm (8 1/4 inches) to the left of the 5975T LTM GC/MSD and at least 20 cm (8 1/4 inches) behind must be kept clear. Allow 100 cm (39 inches) to the right of the instrument for the data system.

3. Benches must be vibration-free and sturdy enough to support the weight of the entire system. Two foreline pump types are available: the wet pump is an oil-sealed rotary vane pump, the dry pump is oil-less. All pump types can be located on the laboratory bench or on the floor. It must be close to

the 5975T LTM GC/MSD because it is connected by a 160 cm (63 inch) hose. The hose is stiff and cannot be bent sharply. The use of a dry foreline pump we recommend the exhaust to be plumbed to an exhaust hood or exhaust line.

Environmental Conditions

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

Special Notes:

1. Performance can be affected by sources of heat & cold e.g. direct sunlight, heating/cooling from air conditioning outlets, drafts and/or vibrations.
2. The site's ambient temperature conditions must be stable for optimum performance.

Instrument Description	Operating temp range °C (F)	Operating humidity range (%)	Heat Dissipation (BTU)
5975T LTM GC/MSD Operation	15 °C to 35 °C (59 °F to 95 °F)	40% to 80%	1200 Watts (4000 BTU/h)
5975T LTM GC/MSD Storage	–20 °C to 70 °C (–4 °F to 158 °F)	0% to 95%	NA

Power Consumption

Special Notes:

If a computer system is supplied with your instrument, be sure to account for those electrical outlets. Current rating is 15A users using 120V for the power source will need to prepare for a 20 amp power outlet for the system.

Instrument Description	Line Voltage & Frequency (V, Hz)	Maximum Power Consumption (VA)	Maximum Power Consumption (W)
5975T LTM GC/MS	200-240 /120-127 VAC, 50/60 Hz	1450 VA (400 VA for foreline pump only)	
ChemStation PC/laptop, printer	200-240 /120-127 VAC, 50/60 Hz	1000VA	

The turbo pump, foreline pump, and optional vacuum gauge are powered by the 5975T LTM GC/MSD. The 5975T LTM GC/MSD and data system must each have a separate circuit breaker. All of the equipment must share a common ground.

Required Operating Supplies by Customer

1. ***Special Notes:***
   For information on Agilent consumables, accessories and laboratory operating supplies, please visit http://www.chem.agilent.com/en-US/Products/consumables/Pages/default.aspx
2. Your GCMS comes with a few basic tools and consumables depending on the specific inlet and detector that you ordered. Here is a general list which one will get with the instruments or should have on-hand.

Tool	Used for
Inlet wrench	Replacing inlet septa and liners
T-10 and T-20 Torx wrenches	Remove covers to access GC and MSD modules, traps, and possible leaks
¼-inch nut driver	Transfer line, column inlet, guard column nuts
Column cutter	Column installation
1/8-inch Tee, Swagelok, brass	Connect carrier gas supply
1/8-inch nuts & ferrules, Swagelok, brass	Connect carrier gas supply
Inlet septa	Injection port seal
Inlet liner	Injection port
1.5 mm and 2.0 mm hex driver	Ion source maintenance (disassembly)
Tool bag	Used to hold GCMS tools
Q-Tips	Used to clean source parts
Cloths	Used to keep surfaces clean and parts clean
Gloves	Used to reduce contamination on parts in the sample stream
Wrench for SilTite ferrules (G2855-60200)	Tool for SilTite ferrules pre-swaging
Allen Wrench, 4mm, long handle(PN: HMI 00306 A)	Tool for SilTite

MSD maintenance supplies

Item Description, (including dimensions etc)	Vendor/Part Number(if applicable)	Recommended Quantity
Abrasive paper, 30 µm	5061-5896	
Alumina powder 1kg sample	8660-0791	
Cloths, clean (package of 300)	05980-60051	
Cloths, cleaning (package of 300	9310-4828	
Cotton swabs (package of 100)	5080-5400	
Foreline pump oil, Inland 45	6040-0834	
Foreline pump tip seal for the IDP3 pumps only	IDP3TS	
Gloves, clean, large	8650-0030	
Gloves, clean, small	8650-0029	
Grease, Apiezon L, high vacuum	6040-0289	
Blue Mist Oil Filter	G1099-80039	

Nuts and Ferrules

Item Description, (including dimensions etc)	Vendor/Part Number (if applicable)	Recommended Quantity
Blank, graphite-Vespel	5181-3308	
GC/MSD interface		
MS interface column nut	05988-20066	
0.3-mm id, 85% Vespel 15% graphite, for 0.10-mm id columns	5062-3507	
0.4-mm id, 85% Vespel 15% graphite, for 0.20-mm id and 0.25-mm id columns	5062-3508	
0.5-mm id, 85% Vespel 15% graphite, for 0.32-mm id columns	5062-3506	
Inlet		
Column nut	05921-21170	
0.3-mm id, 85% Vespel 15% graphite, for 0.1-0.20 mm id columns	5062-3516	
0.40-mm id, 85% Vespel 15% graphite, for 0.25-mm id columns	5181-3323	
0.5-mm id, 85% Vespel 15% graphite, for 0.32-mm id columns	5062-3514	
SilTite Ferrules for LTM column connection		
Internal column nut G	G2855-20530	
0.3-mm id, for < 0.25 mm id column	5188-5361	
0.4-mm id, for < 0.32 mm id column	5188-5362	
SS Wire .015 inch DiaX40mm	G2855-60593	
Plug for microfluidic manifold or unions	G2855-60570	
CPM Union, Inert	G3182-60580	
CPM Union, Oven Wall Clip	G3182-00100	
Siltite Nut	G2855-20555	

Split, splitless, direct, and direct connect inlet liners

Item Description, (including dimensions etc)	Vendor/Part Number (if applicable)	Recommended Quantity
Split, Low-pressure drop, glass wool, single taper, 870 µL	5183-4647	
Split, Glass wool, 990 µL N	19251-60540	
Split, —Manual only Empty pin and cup, 800 µL	18740-80190	
Split, —Manual only Packed pin and cup, 800 µL	18740-60840	
Splitless, Single taper, glass wool, 900 µL	5062-3587	
Splitless, Single taper, no glass wool, 900 µL	5181-3316	
Splitless, Dual taper, no glass wool, 800 µL	5181-3315	
Splitless—Direct inject, 2-mm id, quartz, 250 µL	18740-80220	
Splitless—Direct inject, 2-mm id, 250 µL	5181-8818	
Direct inject —Headspace or purge and trap, 1.5-mm id, 140 µL	18740-80200	
Direct column connect, Single taper, splitless 4-mm id	G1544-80730	
Direct column connect, Dual taper, splitless 4-mm id	G1544-80700	

Other consumables and parts for the split/splitless inlet

Item Description, (including dimensions etc)	Vendor/Part Number (if applicable)	Recommended Quantity
Septum retainer nut for headspace	18740-60830	
Septum retainer nut	18740-60835	
11-mm septum, high-temperature, low-bleed, 50/pk	5183-4757	
11-mm septum, prepierced, long life, 50/pk	5183-4761	
Merlin Microseal septum (high-pressure)	5182-3444	
Merlin Microseal septum (30 psi)	5181-8815	
Nonstick fluorocarbon liner O-ring (for temperatures up to 350 °C), 10/pk	5188-5365	
Nonstick fluorocarbon liner O-ring for Flip Top Inlet Sealing System, 10/pk	5188-5366	
Graphite O-ring for split liner (for temperatures above 350 °C), 10/pk	5180-4168	
Graphite O-ring for splitless liner (for temperatures above 350 °C), 10/pk	5180-4173	
Split vent trap PM kit, single cartridge	5188-6495	
Retaining nut	G1544-20590	
Gold-plated seal (standard application)	5188-5367	
Gold-plated seal with cross (high split flows) (includes SS washer)	5182-9652	
Stainless steel washer (0.375-inch od), 12/pk	5061-5869	
Reducing nut	18740-20800	
Column nut, blanking plug	5020-8294	
Capillary inlet preventative maintenance kit, split	5188-6496	
Capillary inlet preventative maintenance kit, splitless	5188-6497	

Guard Columns

Column ID (mm)	Length (m)	Part Number
0.1	1	160-2635-1
0.1	5	160-2635-5
0.18	1	160-2615-1
0.18	5	160-2615-5
0.2	1	160-2205-1
0.2	5	160-2205-5
0.25	1	160-2255-1
0.25	5	160-2255-5

Parts and samples

Item Description, (including dimensions etc)	Vendor/Part Number (if applicable)	Recommended Quantity
Electron multiplier horn for the Triple Axis Detector	G3170-80103	
Filament assembly (EI)	G2590-60053	
Octafluoronapthalene (OFN), 1 pg/ul	5188-5348	
Perfluorotributylamine (PFTBA), certified (10 gram)	8500-0656	
Perfluorotributylamine (PFTBA) sample kit	05971-60571	
PFHT	5188-5357	
Sample, evaluation A, hydrocarbons	05970-60045	

If you need more information on LTM column modules, please refer to ELSA.

Gas Selection

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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.

5975LTM Carrier and Reagent Gases Purity

Carrier and reagent gas requirements	**Purity**	
Helium (Carrier)	99.9995%	hydrocarbon free
Hydrogen (Carrier)	99.9995%	SFC Grade

For both the GC and MSD it is recommend two (2) step regulators be used with 1/8” size outlets.

Other/Special Requirements

