Additional items needed when purchasing a GC or GCMS system
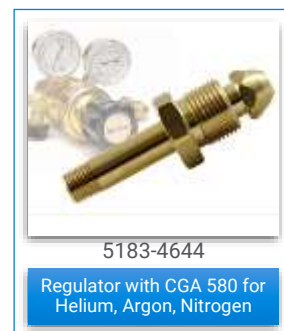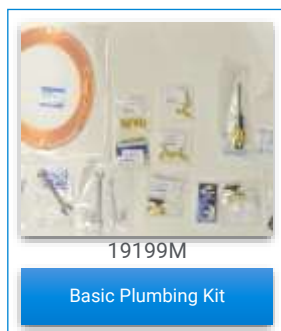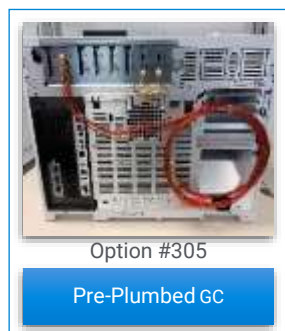
When purchasing an Agilent GC or GCMS, many items are not included in the instrument specific ship kits that are necessary and required for the installation to be completed successfully. They are part of site readiness and discussed in the site preparation documentation.
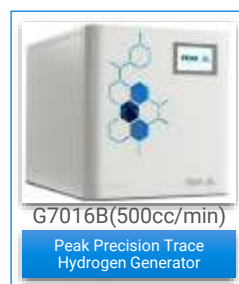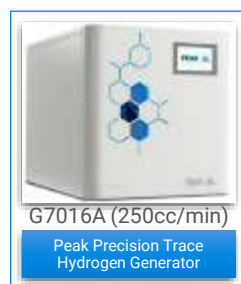
These are the bare minimum supplies typically needed to install a GC or GCMS system. Regulators and plumbing supplies will be dependent on the instrument configuration, detectors purchased, and gas types.
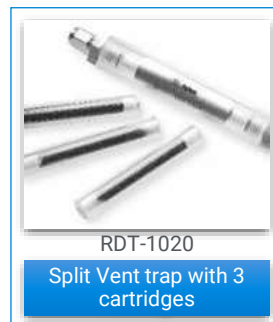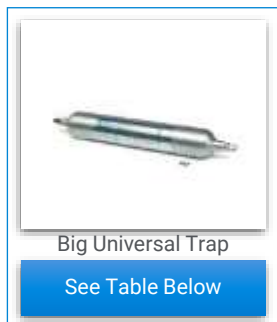
Option #305	19199M	19199N	5183-4644
Pre-Plumbed GC	Basic Plumbing Kit	Plumbing Kit w/Gas Filters	Regulator with CGA 580 for Helium, Argon, Nitrogen

5183-4642	5183-4645	5183-4643
Regulator with CGA 350 for Hydrogen, Argon/Methane	Regulator with CGA 590 for Zero Air	Regulator with CGA 540 Fitting for Oxygen (XCD)

Recommend supplies when running with hydrogen carrier gas.

Agilent now sells Peak Hydrogen generators. These can take the place of tanks of hydrogen at the laboratory. They can be used to supply hydrogen carrier or to a GC flame ionization detector (FID) or flame photometric detector (FPD).

For GCMS systems not purchased with the HydroInert Ion Source, a larger orifice extractor or drawout lens should be installed in the ion source when used with hydrogen carrier gas. (He to H2 Carrier gas conversion guide link below)

19199S	G7016A (250cc/min)	G7016B(500cc/min)
Stainless Steel Plumbing Kit	Peak Precision Trace Hydrogen Generator	Peak Precision Trace Hydrogen Generator

5182-9211	G3870-20449	G3440-20022
Glass Indicating Moisture Traps	9 mm Extractor Lenes	9 mm Drawout Lenes

Additional items that would be nice to have.

Big Universal Trap

See Table Below

UMC-5-2

Big Universal Trap mounts

UMC-2

CI Methane Gas trap mount

RDT-1020

Split Vent trap with 3 cartridges

G6699A

CrossLab CS Bundle

Big Universal Traps

Parts Number	Description
RMSH-2	Big universal trap, Helium, 1/8 in, 250 psig
RMSHY-2	Big universal trap, Hydrogen, 1/8 in, 250 psig
RMSN-2	Big universal trap, Nitrogen, 1/8 in, 250 psig

When used in line with Gas Clean Filters they add additional capacity. Traps are <u>always</u> recommended, whether it's the Gas Clean or Big Universal Trap. With a GC detector like the μECD it is required for peak performance. Kit 19199N includes (1 Oxygen, 1 moisture, and 2 hydrocarbon Gas Clean Filter).

Which rough pump should be on the order?

Oil Bath Pump: The oil must be changed often. It is recommended to be done at least twice per year. The failure mode is usually an oil leak. Oil bath rotary vane rough pumps rarely have vacuum issues. They last a long time. They can be used with all gases.

SQ – Pfeiffer Duo 3.0   **TQ** – Edwards RV5   **QTOF** – Agilent DS202

Dry Scroll Pump: The scroll tip seals <u>must</u> be changed at least once per year or more. They are quiet. The failure mode is slow degradation of vacuum as the tip seals wear out. There is no oil to replace, so less laboratory waste disposal. Dry scroll pumps can be used with all gases except for ammonia chemical ionization reagent gas.

SQ – Agilent IDP-3   **TQ** – Agilent IDP-10   **QTOF** – Agilent IDP-15

Diaphragm Pump: There is essentially no maintenance, just keeping the cooling fan clean. When it fails the entire pump is replaced. They are quiet. The failure mode is an internal leak or failure of one of the four diaphragms. Diaphragm pumps can be used for all gases except for ammonia chemical ionization reagent gas which would require the MVP-070-C Corrosion resistant version.

SQ – Pfeiffer MVP-070   or   Pfeiffer MVP-070-C – Only necessary for corrosive gases

TQ and **QTOF** – No diaphragm pump available

Rough Pump Exhaust Venting

Rough pump exhaust:

Agilent recommends that all GC/MS system foreline pump exhausts are vented outside of the laboratory environment.

G3170-80006 3/8" male **BSP** to 3/8"barb fitting. Replaces oil mist filter on Duo 2.5 and Replaces silencer on IDP-3

IDP-3 Dry Scroll Rough Pump

Pfeiffer oil rough pump

G3170-80029 Fitting and seal

MVP-070-3 Diaphragm Rough Pump

Rough pump exhaust: 7000x/7010x

Agilent recommends that all GC/MS system foreline pump exhausts are vented outside of the laboratory environment.

Oil mist filter mounted on Edwards RV5 pump

This NW25 to 5/8" fitting is included with the RV5 pump to adapt either the rough pump exhaust directly, if running Chemical Ionization or corrosive samples that could damage the mist filter, or to vent the exhaust after the oil mist filter.

IDP-10 Dry Scroll Rough Pump

A vent line may be attached in place of the silencer.

An Exhaust silencer is attached to the NW16 fitting on an IDP-10 dry scroll rough pump. A vent line may be attached in place of the silencer.

Not included with IDP-10:
G1099-20531 KF16 Hose adapter
KC16AV   KF16 O-Ring
0100-1397   NW10/16 Clamping Ring

Rough pump exhaust: 7200x/7250x

Agilent recommends that all GC/MS system foreline pump exhausts are vented outside of the laboratory environment.

DS202 rough pump

DS202 rough pump oil mist filter

This NW25 to 5/8" fitting is included with the DS202 pump to adapt either the exhaust directly, if running Chemical Ionization or corrosive samples that could damage the mist filter, or to vent the exhaust after the oil mist filter.

IDP-15 Dry Scroll Rough Pump

An Exhaust silencer is attached to the NW16 fitting on an IDP-15 dry scroll rough pump. A vent line may be attached in place of the silencer.

Not included with IDP-15:
G1099-20531 KF16 Hose adapter
KC16AV   KF16 O-Ring
0100-1397   NW10/16 Clamping Ring

Rough pump exhaust:

A 6 meter (20ft.) length of 3/8 inch i.d. PVC/vinyl tubing is available for venting the foreline pump exhaust. It should be cut to length for the location of the instrument and not exceed 20 feet. The foreline pump exhaust should not be shared with exhaust tubing from another instrument. Separate 3/8 inch hose barbs are required to connect the tubing to the exhaust vent.

- Agilent sells the tubing and clamps:
  - ✓ G3170-60100 20' of 3/8" tubing.
  - ✓ 1400-1234 hose clamp
- Make sure that there are:
  - ✓ No restrictions, no kinks, Very few sharp radius bends, and no low spots where oil could pool.

No additional traps should be added after the supplied mist filters.

Links for Customers
Agilent.com links

GC Productivity Roadmap

Top Supplies To Optimize Your 8890 GC Workflow (agilent.com)

5990-8819EN_5973_5975_5977_Supplies_QRG.pdf

Discover the Possibilities with GC/MS solutions | Agilent

Agilent EI GC/MS Instrument Helium to Hydrogen Carrier Gas Conversion

Agilent University:

GC-0GEN-1001e - Gas Management Best Practices

GC-8890-1201e - Getting Prepared for Your New GC System

GC-9000-1201e - Preparing for Your New Agilent Intuvo 9000 GC

Items Included in Kits

Item	ICt	Component	Component description	Quantity	Un
0030 L		5080-8750	Fittings 1/8inch Brass 20/...	1	PK
0040 L		5180-4121	Cap, 1/8inch Brass, 6/Pk	1	PK
0050 L		5180-4160	Tee, 1/8inch Brass Union ...	2	PK
0060 L		5180-4196	1/8in x .065in Copper Tu...	1	EA
0190 L		0100-2144	1/8inch Ball Valve	2	EA
0200 L		5182-3456	GC Install Kit with Tools	1	EA
0210 L		9300-0311	Leak detector 8oz	1	EA

19199M Install Kit for GCs w/out Gas Purifiers

Item	ICt	Component	Component description	Quantity	Un
0030 L		5080-8750	Fittings 1/8inch Brass 20/...	1	PK
0040 L		5180-4121	Cap, 1/8inch Brass, 6/Pk	1	PK
0050 L		5180-4160	Tee, 1/8inch Brass Union ...	2	PK
0060 L		5180-4196	1/8in x .065in Copper Tu...	1	EA
0140 L		8710-1709	Cutter, tube	1	EA
0160 L		9300-0311	Leak detector 8oz	1	EA
0250 L		CP716530	Gas Clean Filter FID Kit 1	1	EA
0290 L		RDT-1020	Trap, SplitVent and 3 PK ...	1	EA
0300 L		0100-2144	1/8inch Ball Valve	2	EA

19199N Install Kit for GCs w/Gas Purifiers

Item	ICt	Component	Component description	Quantity	Un
0010 L		0100-0542	TEE, 1/8 SS	1	EA
0020 L		0101-1028	1/8 Ball Valve	1	EA
0030 L		5080-8751	Fittings, 1/8in stainless ste...	1	PK
0040 L		5182-3456	GC Install Kit with Tools	1	EA
0050 L		7157-0210	Stainless Steel Tubing, 1/...	1	EA
0060 L		RMSH-2-SS	Big Universal Trap, SS 1/...	1	EA

19199S Install Kit for GCs, Stainless Steel

Item	ICt	Component	Component description	Quantity	Un
0010 L		1420-0940	Battery AA Alkaline-Zn-M...	3	EA
0040 L		8121-2820	Cable-Assembly USB-A ...	1	EA
0050 L		G6691-40500	ADM Flow Meter Case	1	EA
0060 L		G6691-60500	Flow Meter Mainframe As...	1	EA
0070 L		G6691-90005	ADM Flow Meter Quick S...	1	EA
0080 L		G6691-90030	ADM Flow Meter DOC	1	EA
0090 L		G6692-60500	Flow Meter Cartridge Ass...	1	EA
0120 L		G6694-64000	Electronic Leak Detector ...	1	EA
0130 L		G6695-98050	Bundle Assy	1	EA
0150 L		K9010-00055	PACKAGE SET,PRINTER,...	1	EA
0160 L		9320-6682	RoHS Addendum for Han...	1	EA
0170 L		G6693-90040	UK DOC for Electronic Le...	1	EA
0180 L		G6691-90040	UK DOC for ADM Flowm...	1	EA
0190 L		G6693-90030	EU DOC for Electronic Le...	1	EA

G6699A CrossLab CS Bundle: ADM Flow Meter and Electronic Leak Detector