

# Agilent Technologies

5973x

5975x

5977x

7000x

7010x

7200x

7250x

GCMS systems

Safely venting:

Rough pump exhaust

GC inlets

GC oven exhaust

## Rough pumps:

Do not install or use any rough pump in an environment exposed to atmospheric agents (rain, snow, ice), dust, aggressive gases, or in explosive environments or those with a high fire risk.

If placing the pump inside an enclosure, provide ample room to supply ambient air to the pump front and rear air intakes.

Operate the pump within the required ambient temperature constraints, otherwise damage to the pump or shortened operating life may result.

- Temperature                    +5C to +40C        41F to 104F
- Relative Humidity        0 to 95% (non-condensing)

# Rough pump exhaust:

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

- Exhaust vent system should not be part of an environmental control system that recirculates air inside of a building.
- Exhaust venting requirements need to comply with all local environmental and safety codes.
- If the exhaust is non-toxic/not flammable and will not be vented, then an oil mist filter should be used on the foreline pump exhaust. (For example: **do not use a mist filter on systems running Chemical Ionization**)
- An oil mist filter is included with systems shipped with oil pumps. It is a customer replaceable consumable. It is replaced during yearly PMs if covered under a hardware maintenance agreement.
- Agilent requires that no additional traps be added after the supplied mist filters.



5977B + 9000



5977B + 8890



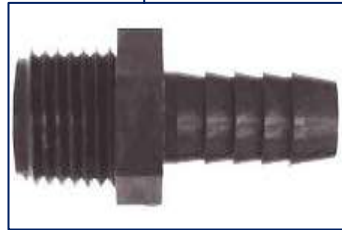
7010B + 8890



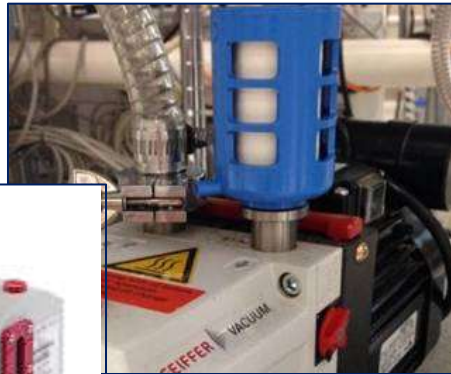
7250A + 8890

# Rough pump exhaust: 5973x, 5975x, 5977x

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



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



Pfeiffer oil rough pump



IDP-3 Dry Scroll  
Rough Pump



MVP-070-3 Diaphragm  
Rough Pump

G3170-80029  
Fitting and seal



# 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 or added onto 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" i.d tygon 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.



## Inlet exhaust:

If a Split/Splitless or Multimode Injection port are on the GC, then the split vent exhaust fitting on top of the instrument may also need attention, as there may be sample residue exiting along with the split vent flow.

- It can be:
  - ✓ Vented to a snorkel, as shown on slide 10
  - ✓ Vented with 3/8" tygon tubing pressed over the 1/8" Swagelok fitting
  - ✓ Vented with 1/8" tubing connected with the appropriate Swagelok fittings



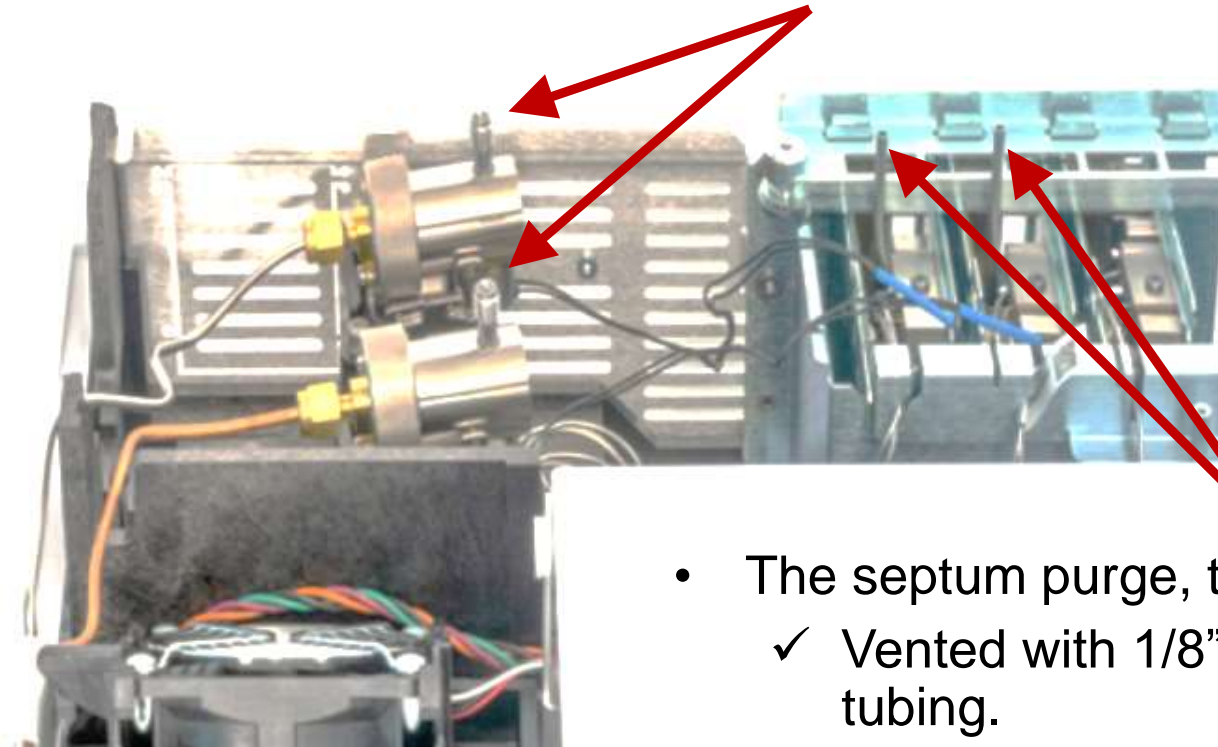
Split vent exhaust trap

- ✓ Agilent sells a carbon filter that can be connected: **RDT-1020 --- trap with three cartridges.** This is plumbed with a short piece of 1/8" copper tubing to the split vent exhaust using appropriate Swagelok fittings.
- ✓ 1/8" tubing can be pressed over the exit to route it to a laboratory system.



## Inlet exhaust:

- The split vent, two on this system, can be:
  - ✓ Vented with 3/8" tygon tubing pressed over the 1/8" Swagelok fitting
  - ✓ Vented with 1/8" tubing connected with the appropriate Swagelok fittings



- The septum purge, two on this system, can be:
  - ✓ Vented with 1/8" tubing pressed over the tubing.

# Oven exhaust: Intuvo, 8890x, 8860x 7890x, 7820x, 6890x, 6850x

Fume exhaust and hot air from the oven exhaust are frequently/usually handled with two separate systems. The foreline pump exhaust from the GCMS and the split vent line from the GC may have sample in them, so they should go to a laboratory vent hood type exhaust system. The oven exhaust is just hot air. It is nice to vent it out of the lab, but not required as it is not hazardous.

An optional oven exhaust deflector is available and can improve oven cooling by deflecting the exhaust air up and away from the instrument. The exhaust deflector requires at least 14 cm (5.5 inches) behind the instrument. For GCs with the exhaust deflector option installed, the exhaust is about **65 ft<sup>3</sup>/min** (1.840 m<sup>3</sup>/min).

The 8890x, 8860x, 7890x, 7820x, 6850x deflector outlet diameter is 10 cm (4 in)  
The Intuvo deflector outlet diameter is 7.62 cm (3 in).



G3450-81650 for 8890x, 8860x  
G1530-80650 for 7890x, 7820x, 6890x



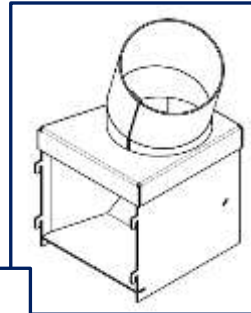
G4580-68300  
for Intuvo



G2630-60710  
for 6850x



The G3450-81651 for 8890x and the G3850-80650 for 7890x used on the 7200x/7250x. The exhaust is at an angle to miss the QTOF flight tube.



A connector can be used or a snorkel arrangement.



# Part numbers:

All:

33-9019	25' of <b>1/8" id</b> x 1/4" od silicone tubing
G3170-60100	20' of <b>3/8" id</b> x 15/32" od tygon tubing.
62-9030	50' of <b>1/2" id</b> x 3/4" od clear pvc tubing
4005-0016	by the foot <b>1/2" id</b> x 3/4" od clear pvc tubing
1400-1234	hose clamp
RDT-1020	Trap, split vent and 3 cartridges

Single Quadrupole oil pump and IDP-3 dry scroll pump. Adapts exhaust to 3/8" tubing.  
G3170-80006 3/8" male BSP to barb fitting

Single Quadrupole MVP-70-3 and MVP-070-3C diaphragm pump. Adapts exhaust to 3/8" tubing:  
G3170-80029 Oil-Less Pump Exhaust Adapter and seal

Tandem Quadrupole and QTOF oil pumps. Adapts exhaust to 1/2" tubing:

G1960-20003	NW25 to 5/8" hose adapter
0100-0549	NW 20/25 Clamping Ring
0905-1592	O-Ring, Size 2-320, Fluorocarbon

Tandem Quadrupole IDP-10 dry scroll pump. Adapts exhaust to 1/2" tubing:

G1099-20531	KF16 Hose adapter
KC16AV	KF16 O-Ring
0100-1397	NW10/16 Clamping Ring

QTOF IDP-15 dry scroll pump. Adapts exhaust to 1/2" tubing:

G1099-20531	KF16 Hose adapter
KC16AV	KF16 O-Ring
0100-1397	NW10/16 Clamping Ring

# Part numbers:

Oven Exhaust vent deflector/adapters:

G4580-68300 for Intuvo

G3450-81650 for 8890, 8860

G1530-80650 for 7890x, 7820x, 6890x

G3850-80650 for 7890x with the 7200x/7250x

G2630-60710 for 6850x

[Find more information on Agilent.com](#)



# Agilent

Trusted Answers