

# GC Supplies

## SGE ms-NoVent™

### How the ms-NoVent™ Works

The ms-NoVent™ prevents air and water from entering the MS during column change-over. The key to the ms-NoVent is the unique Flow Director Orifice and deactivated fused silica interface tube which are located at the MS interface as part of the ms-NoVent Tee.

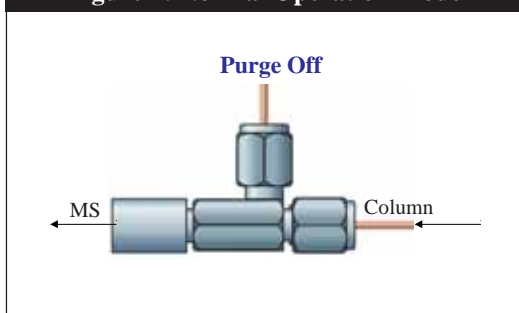
Before the column is removed from the interface, a helium purge is turned on. The fused silica restrictor/interface tube limits the flow of helium into the mass spectrometer. As shown in **Figure 1**, after the column has been removed from the GC, the Flow Director Orifice prevents air from entering the mass spectrometer. Thus, the flow of helium through the orifice acts as a dynamic seal preventing air being sucked back into the MS.

### Normal Operation Mode

In normal operation mode the helium purge is turned off. The column flow is directed through to the MS via the fused silica transfer tube.

(Note: the transfer tube and tee in normal operation are under vacuum through the MS interface vacuum).

**Figure 2: Normal Operation Mode**

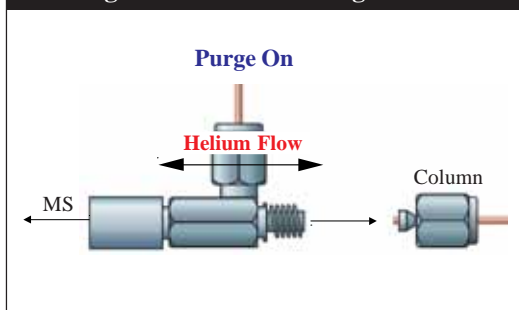


### Column Change Mode

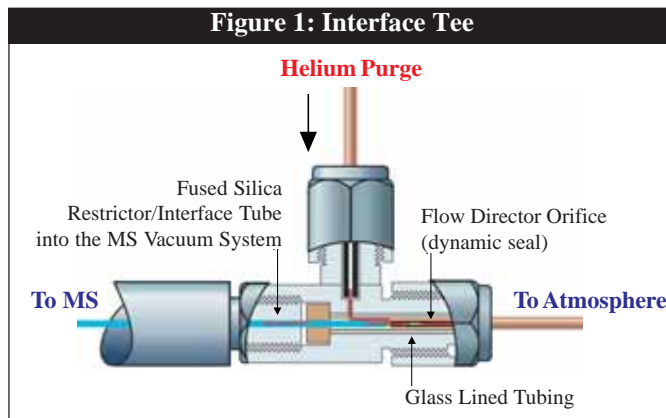
In the column change mode a helium purge is applied to the interface tee. The column can then be disconnected without shutting down or “venting” the MS. The existing column or a new column can then be connected and the ms-NoVent switched back to normal mode for standard operation.

(Note: there is no time limit as to how long the MS system can be left in the column change mode, as long as helium is available).

**Figure 3: Column Change Mode**



**Figure 1: Interface Tee**



### ms-NoVent™ Ordering Information

Cat. No.	Description
113400*	Standard ms-NoVent™
113402*	ms-NoVent™ for Agilent 6890
113401*	ms-NoVent™ for PE TurboMass/Gold

\* Instrument specific restrictor (and adapter if applicable) is not included and must be ordered separately.

### Restrictors – No Adapters Required for Installation

Instrument Mfg	Model	Cat. No.	Qty.
Agilent	5970	113405	2
	5971, 5972	113407	2
	5973	113409	2
	GCD	113408	2
	5988A	113424	2
	5989 Engine	113422	2
Perkin Elmer	Turbomass	113435	2
Shimadzu	MS 5000/5050	113411	2
	MS 5000/5050	113429	2

### Restrictors – Adapters Required for First Installation

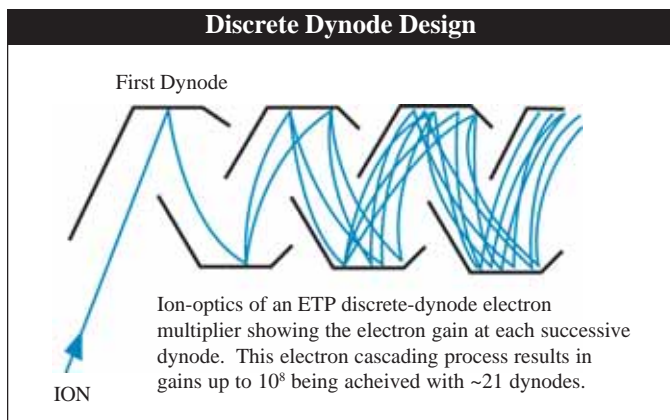
One adapter is included when ordering the catalog numbers below.

Instrument Mfg	Model	Cat. No.	Qty.
Thermo Finnigan	GCQ	113419	2
	SSQ7000	113426	2
	Voyager	113433	2
Varian	Saturn2000	113412	2
	Saturn1, 2, 3	113414	2

### Replacement Restrictors – Adapters Required

Adapter is NOT included when ordering the catalog numbers below.

Instrument Mfg	Model	Cat. No.	Qty.
ThermoFinnigan	GCQ	113420	2
	SSQ7000	113427	2
	Voyager	113434	2
Varian	Saturn2000	113413	2
	Saturn1, 2, 3	113416	2



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### About the ETP Electron Multiplier

- Air stable
- 2 year shelf life guarantee
- Discrete dynode design—extended operating life

For a typical ETP electron multiplier for GC-MS, the total active dynode surface area is ~ 1000mm<sup>2</sup>. This can be compared to a standard continuous-dynode multiplier that has a total channel surface area of only around 160mm<sup>2</sup> (for a channel with 1mm diameter and 50mm length). This increased surface area spreads out the 'work-load' of the electron multiplication process over a larger area, effectively slowing the aging process and improving operating life and gain stability.

### GC/MS and LC/MS Electron Multipliers Ordering Information

#### Agilent Technologies

Cat. No.	Description	Analyzer Type
14511	5970 (All)	Quadrupole
14516	5971, 5972, GCD	Quadrupole
14617	5973 (includes mount)	Quadrupole
14616	5973 (replacement)	Quadrupole
14612	5988 ± ions	Quadrupole
14512	5988 + ions	Quadrupole
14613	5989 (No HED)	Quadrupole
14511	599x	Quadrupole

#### Inficon

14532	Auditor	Quadrupole
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#### Perkin Elmer

14138	Ion Trap GC-MS	Ion Trap
14532	Q-Mass	Quadrupole

#### PE-Sciex

14610	API 2000	Quadrupole
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#### Shimadzu

14533	QP5000	Quadrupole
14627	QP5050 & 8000 (incl. mount)	Quadrupole
14625	QP5050 & 8000 (replacement)	Quadrupole

#### Thermo Finnigan

14139	4000 (PPINICI)	Quadrupole
14138	Bench-top ion pre-GCQ	Ion Trap

#### Varian

14138	Saturn (pre 2000)	Ion Trap
14147	Saturn 2000, 2100, 2200	Ion Trap

#### Please note:

On some models, first time installation of ETP multiplier requires mount.

### ICP/MS Electron Multipliers

#### Agilent Technologies

Cat. No.	Description	Analyzer Type
14573	4500	Quadrupole
14222	7500	Quadrupole

#### LECO

14833H	Renaissance	TOF
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#### PE-Sciex

14561	ELAN 500	Quadrupole
14570*	ELAN 5000	Quadrupole
14571	ELAN 5000A	Quadrupole
14210	ELAN 6000, 6100, DRC	Quadrupole

#### Thermo Elemental

14562	PQ (12-12 rods)	Quadrupole
14562A	PQ (SXP) PQ3, Excel (Seq)	Quadrupole
14214	PQ3, Excel (Simultaneous)	Quadrupole

#### Thermo Jarrel Ash

14574	POEMS	Quadrupole
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#### Varian

14566	Ultramass	Quadrupole
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#### VG Analytical

14568H	Genesis	Quadrupole
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\* First time installation of ETP Multiplier requires adapter obtained from PerkinElmer.

### TOF/MS Electron Multipliers

Cat. No.	Manufacturer	Model
14820	Bruker	Various TOF
14824	Comstock	MiniTOF
14870	Kratos	AXIMA
14820	Kratos	Kompact MALDI (I-IV)
14833H	LECO	Renaissance
14823H	Sensar/Larson-Davis	TOF2000
14831H	SRS	Profiler

### Magnetic Sector Electron Multipliers

14133	Cameca	SIMS 3F, 4F
14133H	Cameca	SIMS 5F, 6F
14185	JEOL	AX, SX Series
14132	Kratos	MS25, MS50, MS80
14131	ThermoFinnigan	MAT 95
14180	ThermoFinnigan	MAT262, Neptune
14130	VG Analytical	ZAB, 7070 Series