

## FEATURE

### Vacuum Pump Sale! . . . . .2

FREE All-In-One filter kit with the purchase of a new Edwards Vacuum Pump. Get a great pump and unique exhaust filter for one low price!

### NEW - ISO-Mono Isolation Valves . . . . .7

S.I.S. can now supply ISO-Mono isolation valves. These valves feature valve bodies that are fabricated from a single piece of aluminum translating to a sleek efficient design with extremely smooth flow paths.

## Digital Microscope System



S.I.S. is proud to offer The Celestron Digital Microscope with an adjustable focusing stand for viewing at 20X or 400X directly onto your PC screen. See pg. 6 of this newsletter for additional details.

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The **Mass Spec Source**  
Spring, 2009

For Mass Spectrometry and Chromatography

# NEWS FROM SIS

## NEW - S.I.S.™ E-mail Newsletter

A new S.I.S. e-mail newsletter is **scheduled to be introduced shortly**. If you sign up for this newsletter you will receive **notices of new products introduced by S.I.S. Special promotions on new products and other news relating to our industry**. Sign up for our new e-mail newsletter at the our booth at Pittcon or visit us online at [sisweb.com](http://sisweb.com).

**NEW! - Visit our New Machining website at:**  
[www.scientificmachining.com](http://www.scientificmachining.com)

**Come Visit Us In Chicago, March 9-12, 2009 at Pittcon**

We are in **Booth #3660**. We have many New Products to show you and are highlighting just a few in this newsletter. **See you in Chicago!**

# S.I.S.™ All-In-One Two Stage Vacuum Pump Filter Kits

## All-In-One Two Stage Vacuum Pump Exhaust System

### Features

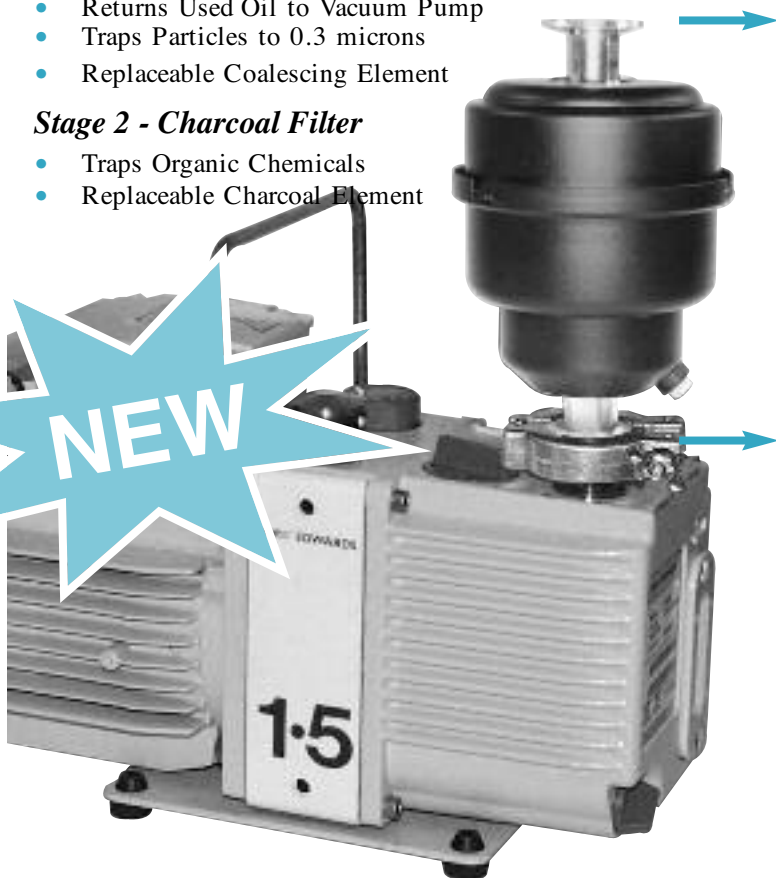
- 6.25" Total Height
- Purifies Vacuum Pump Exhaust Gases
- Provides for a Safe Laboratory Environment
- Low Cost
- Replaceable Elements

### Stage 1 - Oil Mist Eliminator

- Eliminates Pump Oil Fumes
- Returns Used Oil to Vacuum Pump
- Traps Particles to 0.3 microns
- Replaceable Coalescing Element

### Stage 2 - Charcoal Filter

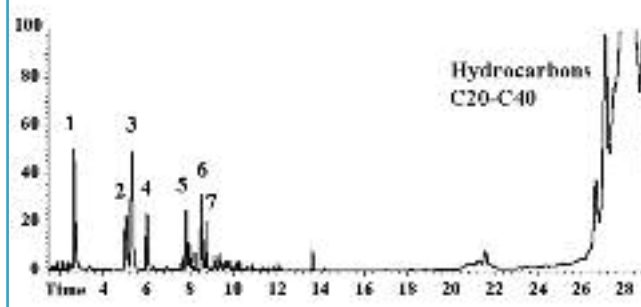
- Traps Organic Chemicals
- Replaceable Charcoal Element



### Pump Exhaust After Charcoal Trap



### Pump Exhaust With No Filtering



S.I.S.™ All-In-One Two Stage Vacuum Pump Exhaust Filter

Vacuum pumps are widely used for mass spectrometers and other vacuum equipment and can be a major source of indoor air contamination. It is recommended that vacuum pumps be vented outside the room or to a laboratory exhaust hood. However this is not always practical.

Air contamination by vacuum pumps originates from pump oils and oil contamination. Eventually these organics are exhausted from the pump into the laboratory air. These chemicals can present a serious environmental health problem in the laboratory.

The All-In-One Vacuum Pump Exhaust Filter System has proven to be effective for removing volatile and semi-volatile organics from exhaust of vacuum pumps and helping maintain a safe environment.

Without any exhaust filters, organic contaminant's from the pump oil and hydrocarbons from the pump oil exhausted out of the vacuum pump (bottom chromatograph).

During initial pump down or when using the gas ballast valve, oil vapors exhaust from the vacuum pump. The oil mist eliminator (Stage 1) traps the heavy hydrocarbons in this exhaust .

The charcoal trap (Stage 2) absorbs and traps the volatile and semi-volatile organics from the pump exhaust and prevents these organics from entering the laboratory environment (top chromatogram).

It is recommended that both filters in the All-In-One be replaced on a regular basis. The Carbon Filter (AC-10S) every 30 days and the Coalescing Filter (GL-915R) every six months. When the All-In-One filter is used on a vacuum pump exhaust port, the exhaust from the final stage of filtering has been shown to be cleaner than normal laboratory air.

Part No.	Description
FK201B	SIS All-In-One Exhaust Filter Kit for Edwards Pumps Models E1M5/8/12, E2M2/3/5/8/12, RV3/5/8/12
FK251B	SIS All-In-One Exhaust Filter Kit for Edwards Pumps Models E2M0.7, E2M1, E2M1.5
AC-10S	Replacement Charcoal Filter Element
GL-915R	Replacement Coalescing Filter (Oil Mist Eliminator)

# Edwards Vacuum Pump Special

# FREE

## All-In-One Filter System!

With the purchase of any Edwards Vacuum Pump

**A \$199.00 Value!**



Part No.	Displacement cfm
<b>RV3 Vacuum Pump</b>	
A652-01-906-KT	Edwards Model RV3, 115V Pump/Filter Kit
A652-01-903-KT	Edwards Model RV3, 220V Pump/Filter Kit
A652-01-905-KT	Edwards Model RV3, 220V 3 phase Pump/Filter Kit
<b>RV5 Vacuum Pump</b>	
A653-01-906-KT	Edwards Model RV5, 115V Pump/Filter Kit
A653-01-903-KT	Edwards Model RV5, 220V Pump/Filter Kit
A653-01-905-KT	Edwards Model RV5, 220V 3 phase Pump/Filter Kit
<b>RV8 Vacuum Pump</b>	
A654-01-906-KT	Edwards Model RV8, 115V Pump/Filter Kit
A654-01-903-KT	Edwards Model RV8, 220V Pump/Filter Kit
A654-01-905-KT	Edwards Model RV8, 220V 3 phase Pump/Filter Kit
<b>RV12 Vacuum Pump</b>	
A655-01-906-KT	Edwards Model RV12, 115V Pump/Filter Kit
A655-01-903-KT	Edwards Model RV12, 220V Pump/Filter Kit
A655-01-905-KT	Edwards Model RV12, 220V 3 phase Pump/Filter Kit
<b>E2M1.5 Two Stage Rotary Pump</b>	
A371-22-902P-KT	Edwards E2M1.5 110-120V, 60Hz Pump/Filter Kit
A371-22-919P-KT	Edwards E2M1.5 220-240V, 60Hz Pump/Filter Kit
HPP7011MSD-KT	Edwards E2M1.5 110V Pump/Filter Kit with cord for Agilent MSD

## Edwards Vacuum Pump Specifications

	E2M10.5	RV3	RV5	RV8	RV12
<b>Displacement @60Hz, ft<sup>3</sup>min<sup>-1</sup> (m<sup>3</sup>h<sup>-1</sup>)</b>	1.3 (2.2)	2.6 (4.5)	4.1 (7.0)	6.9 (11.7)	10 (17.0)
<b>Speed (Pneurop) @60Hz, ft<sup>3</sup>min<sup>-1</sup> (m<sup>3</sup>h<sup>-1</sup>)</b>	1.2 (2.0)	2.3 (3.9)	3.6 (6.2)	5.9 (10)	8.4 (14.2)
<b>Number of Stages</b>	2	2	2	2	2
<b>Ultimate Vacuum mbar - high vacuum mode</b>					
gas ballast closed	2.5 x 10 <sup>-3</sup>	2.0 x 10 <sup>-3</sup>	2.0 x 10 <sup>-3</sup>	2.0 x 10 <sup>-3</sup>	2.0 x 10 <sup>-3</sup>
gas ballast open	2.5 x 10 <sup>-3</sup>	3.0 x 10 <sup>-2</sup>	3.0 x 10 <sup>-2</sup>	3.0 x 10 <sup>-2</sup>	3.0 x 10 <sup>-2</sup>
<b>Ultimate Vacuum mbar - high throughput mode</b>					
gas ballast closed	-	3.0 x 10 <sup>-2</sup>	3.0 x 10 <sup>-2</sup>	3.0 x 10 <sup>-2</sup>	3.0 x 10 <sup>-2</sup>
gas ballast open	-	6.0 x 10 <sup>-2</sup>	6.0 x 10 <sup>-2</sup>	4.0 x 10 <sup>-2</sup>	2.0 x 10 <sup>-2</sup>
<b>Max. water vapor pumping rate kg/hr<sup>1</sup></b>					
	0.0016	0.22	0.22	0.22	0.22

# NIST GC Library with Retention Indices

## Newly Released - November 2008

The *NIST GC Library* is a chemical library for gas chromatography. It is a subset of the full NIST '08 (NIST/EPA/NIH) library, containing only the GC data.

The database provides 44,008 chemical compounds common in GC analysis, including structure, retention index data, and gas chromatographic conditions on polar and non-polar stationary phase with packed and open tubular columns.

## Main Components

Database of 44,008 compounds common in GC analysis with

- Name
- Synonyms
- Chemical formula
- Chemical structure diagram
- ID/CAS number
- GC retention index citations (approximately 7 per compound or 293,247 total), each with corresponding GC column type/conditions and literature reference.
- Search program to search and browse the database.
- Documentation in Windows Help file.

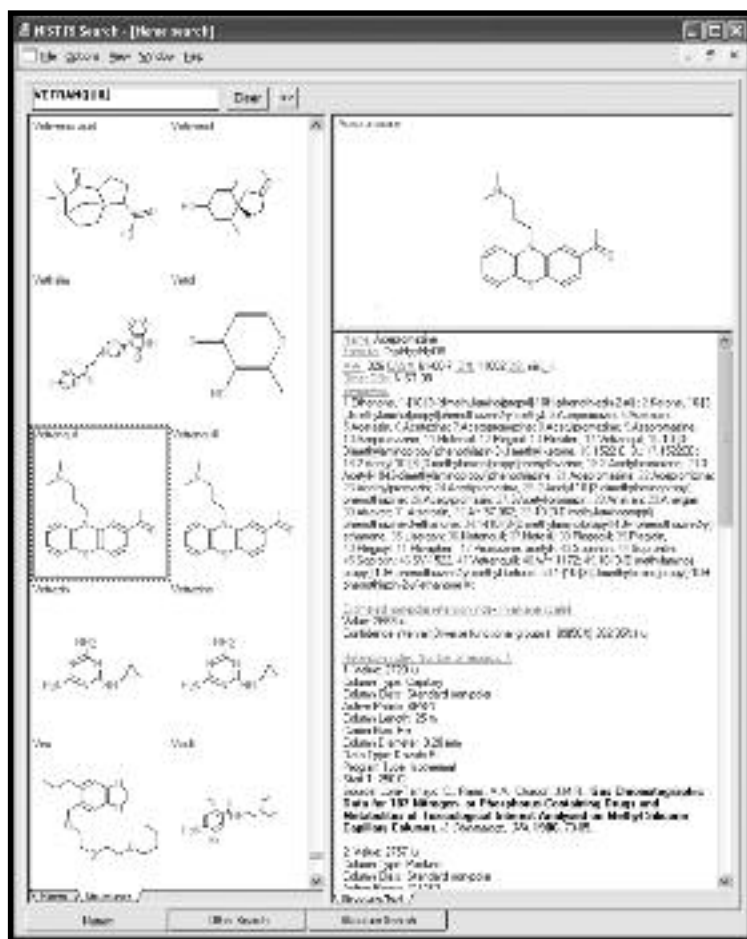


Fig. 1 - Search program showing a selected compound and database information on that compound.

## GC Data:

The database contains a total of 293,247 citations (retention index values and GC methods) for the 44,008 compounds. Each citation contains the complete bibliographical information and title of the research paper it was taken from. Details of the gas chromatographic method used to obtain the retention index are also provided. If a compound is in the NIST/EPA/NIH Mass Spectral Database (NIST '08), as about half are, it is so noted in the text information provided about the compound. In addition, estimated non-polar retention index (n-alkane series) values, based on structure, are provided for comparison.



# NIST GC Library with Retention Indices

## Parametric Search:

Many of the compounds are indexed by multiple names (synonyms). All the compounds are indexed by elemental composition (Formula), nominal mass (MW), Chemical Abstracts Services registry number (CAS#), and a sequence number corresponding to their position in the NIST Retention Index Database (ID#). Each contains a chemical structure.

## Quality:

The NIST GC Database was developed by the same people at the National Instruments of Standards and Technology (NIST) who brought the NIST '08 (NIST/EPA/NIH) Mass Spectral Library. Most index values were abstracted from the open literature and then compared to replicate values (average 10 per compound) and estimates to find and remove errors.

## Search Program Description

A search program (nistmsri.exe) is included for browsing and searching the database (see Figures 1 & 2). Data can be retrieved through an incremental search of name, CAS#, MW, formula, or structure. In addition, the database can be searched by multiple variables that can be used to constrain the above-mentioned searches: molecular weight (nominal mass) range, number of each element present, and fragment names present in the name or synonym list. The search results for individual hits can also be constrained according to column type (packed or capillary), stationary-phase type (polar or non-polar), GC temperature conditions (isothermal or temperature programmed), and/or retention index type (Lee or Kovats). It can also search for a list of compounds having a structure similar to a submitted structure.



Fig. 2 - Specifying advanced search criteria

Part No.	Description
641010GC*	NIST GC Database 2008

\* System Requirements - Windows XP SP2, VISTA, Wine/Linux, or later. 180 MB of disk space

# NIST '08 NIST/EPA/NIH Mass Spectral Library - Version 2008

**A Major NEW Release of the world's most widely used, fully evaluated, and trusted mass spectral reference library.**

***NIST '08 is a collection of electron ionization (EI) mass spectra. It also includes MS/MS spectra, GC data, and software for mass spectral analysis.***

Part No.	Description
641010	NIST 08 Library & Search Program, Standard Version
641010UG	NIST 08 Library & Search Program, Standard Version (Upgrade)
641010HP	NIST 08 Library & Search Program, Agilent ChemStation Version
641010HPUG	NIST 08 Library & Search Program, Agilent ChemStation Version (Upgrade)

For further details, including our full NIST MS, visit our website at  
<http://www.sisweb.com/nistgc>

# Digital Microscope System

## The Celestron Digital Microscope with an adjustable focusing stand for viewing at 20X or 400X directly onto your PC screen

A major breakthrough in microscope design! The Celestron Digital Microscope has a digital camera and LED illuminator built into a small, compact package.

You view and capture images (snapshots or video) at 20x or 400x on a PC or laptop computer with the attached USB cable.

S.I.S. has custom designed an adjustable stand to hold the microscope for convenient use and easy focusing. Alternatively the microscope can be removed from the stand and be used as a hand-held microscope. This microscope can be used in virtually every area that a traditional microscope is used.

The complete system (part # 44301) includes the hand held digital microscope with USB cable to connect to your PC, adjustable microscope stand, PC software to capture images and control the image quality, and the digital microscope manual. The handheld microscope is also available without the microscope stand (part #44300).



Celestron Microscope with S.I.S. Adjustable Stand

### Celestron Digital Microscope General Features

- View and/or capture images or video with your computer
- Adjustable focusing stand for ease of use.
- Powers Available - 20X and 400X
- White LED illumination.
- USB 2.0 cable to connect to PC.
- Knurled ring for focusing
- Compact size - 5" x 1.375" (127 mm x 35 mm)
- CD-ROM Driver
- Software enables picture capture and adjustment
- CE, FCC, and RoHS compliant



Digital Microscope for Hand Operation



Electrospray Tip at 400x

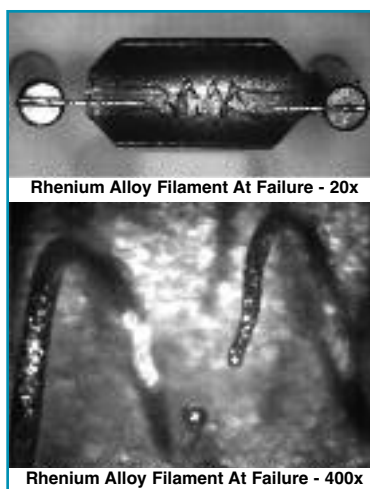
### Computer System Requirements

#### Windows:

Microsoft Windows 98/2000/ME/XP/Vista

#### Macintosh:

Apple Macintosh OS X 10.3 or later  
New driver can be downloaded also



Rhenium Alloy Filament At Failure - 20x

Rhenium Alloy Filament At Failure - 400x

### Applications

- Dynamic tuning/ monitoring electrospray
- Monitoring MALDI targets
- Forensic work
- Examine circuit boards and welds

Part No.	Description
44301	Digital Microscope with Stand
44300	Handheld Digital Microscope

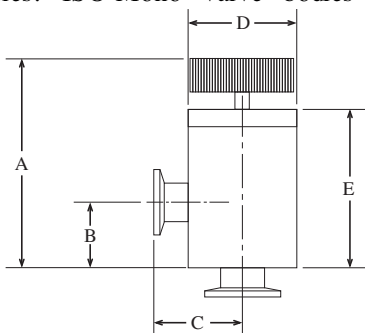
# ISO-Mono Isolation Valves

## General Features

- Compact, one piece, "Mono-Valve" design
- Reliable, low particulate, formed bellows assemblies
- Viton sealed bonnet and poppets
- Manual and pneumatic operation
- Right angle and inline mounting configurations

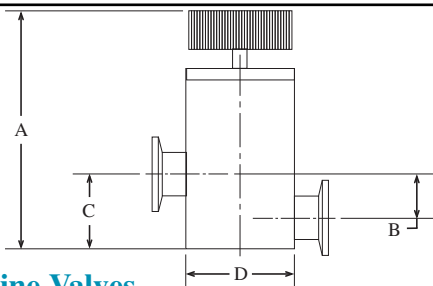
ISO-Mono valves feature valve bodies which are fabricated from a single piece aluminum. This translates to a sleek efficient design, with extremely smooth flow paths. There are no seams, virtually all leaks are eliminated, and valve bodies are very easy to clean. ISO-Mono valve bodies are light, strong, and have a high fluorine resistance. Aluminum also has excellent, uniform thermal conductivity. This allows the body to reach a uniform temperature quickly, thereby minimizing cold spots, making ISO-Mono valves a great choice for CVD applications. Furthermore since the valve body is machined completely from one piece of material, flange interfaces are flat, straight, square, and abide by ISO mounting principles.

The pneumatic versions of the ISO-Mono valves are versatile and reliable shut-off valves. They are fail safe, single acting (spring loaded, normally closed), and will function in any position. ISO-Mono valves are provided with a 120/60 solenoid and valve assemblies. ISO-Mono valve bodies are bakeable to 150° C.



## Manual Right Angle Valves

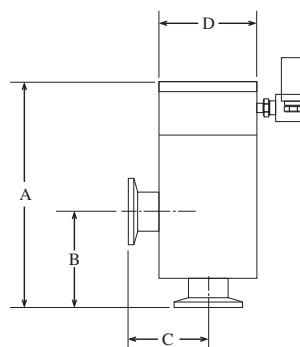
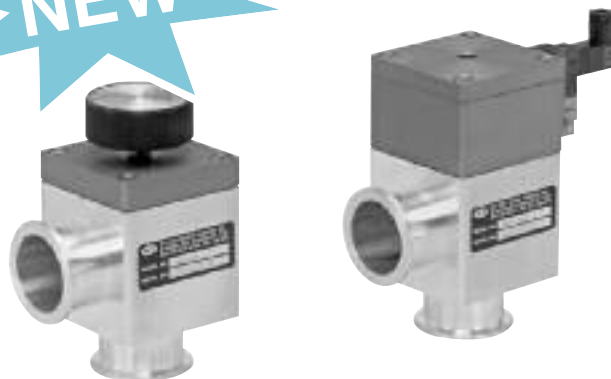
Part No.	Flange Size	A	B	C	D	E
KAIV-16	NW 16	4.10	1.57	1.57	2.05	3.12
KAIV-25	NW 25	4.50	1.97	1.97	2.05	3.50
KAIV-40	NW 40	6.00	2.57	2.57	3.05	4.70
KAIV-50	NW 50	6.79	2.80	2.80	3.89	5.38



## Manual Inline Valves

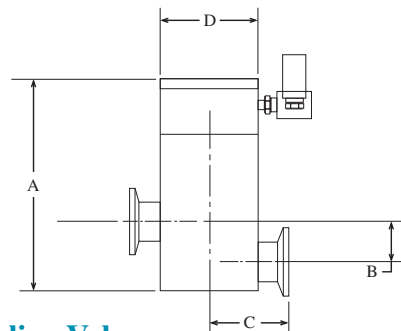
Part No.	Flange Size	A	B	C	D
KAIV-16	NW 16	4.35	0.87	1.58	2.05
KAIV-25	NW 25	4.75	1.25	1.98	2.05
KAIV-40	NW 40	6.61	1.77	2.57	3.05

**NEW**



## Pneumatic Right Angle Valves

Part No.	Flange Size	A	B	C	D
KAIV-16-P	NW 16	4.50	1.57	1.57	2.05
KAIV-25-P	NW 25	4.90	1.97	1.97	2.05
KAIV-40-P	NW 40	6.00	2.57	2.57	3.05
KAIV-50-P	NW 50	7.10	2.80	2.80	3.89



## Pneumatic Inline Valves

Part No.	Flange Size	A	B	C	D
KAIV-16-P	NW 16	6.25	0.87	1.58	2.05
KAIV-25-P	NW 25	6.67	1.25	1.98	2.05
KAIV-40-P	NW 40	8.17	1.77	2.57	3.05

## Pneumatic Valve Options (Add option code to suffix of part number)

Description	Option Code
24 Volt DC Solenoid	-24VDC
24 Volt AC Solenoid	-24VAC
220 Volt AC Solenoid	-220VAC
Mechanical Limit Switches	-LS
No Solenoid	-NS

## ISO-Mono Isolation Valves (cont. from pg. 7)

### “Soft Goods” (Viton) Manual Valves

Part No.	Description
OR-KAAV-16	Fits NW 16
OR-KAAV-25	Fits NW 25
OR-KAAV-40	Fits NW 40
OR-KAAV-50	Fits NW 50



**KAAV-40 Right Angle Manual Valve**



### “Soft Goods” (Viton) Pneumatic Valves

Part No.	Description
OR-KAAV-16-P	Fits NW 16
OR-KAAV-25-P	Fits NW 25
OR-KAAV-40-P	Fits NW 40
OR-KAAV-50-P	Fits NW 50



**Replacement Bellows Assembly**

### Replacement Bellows Assemblies

Part No.	Description
AVB-16	Fits NW 16
AVB-25	Fits NW 25
AVB-40	Fits NW 40
AVB-50	Fits NW 50

## NEW! 5973/5975 Source Heater from SIS

A NEW cost effective source heater replacement for your 5973/5975 MSD. SIS now offers a direct heater replacement at a fraction of the cost. Ready to plug-N-play!



Part No.	Description
HPC5	5973/5975 Source Heater

Scientific Instrument Services  
1027 Old York Rd.  
Ringoes, NJ 08551

**RETURN POSTAGE GUARANTEED**

Bulk Rate US Postage <b>PAID</b> Permit No.388 Somerville, NJ
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