

Direct Insertion Probe *for the HP 5973 MSD*



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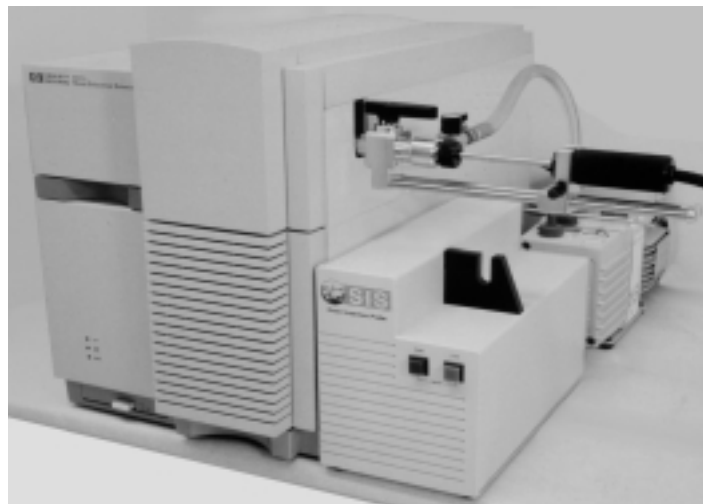
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Direct Insertion Probe

Direct Insertion Probe for the HP 5973 MSD

System Features

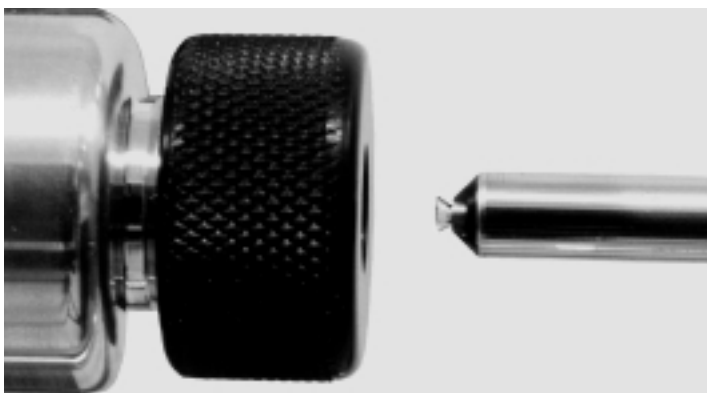
- Easy to Install - mounts on the GC/MS Inlet Port
- PC Software for the Control of Temperatures and Ramp Rates
- Ballistic Ramp Rate >500 degrees per minute
- Up to 25 Levels of Programmable Temperature Ramping
- Probe PC Control Software fully Integrated with the HP ChemStation Software
- Can be used with either the turbo pump or diffusion pump version of 5973



Complete Direct Probe System mounted on the HP 5973 MSD

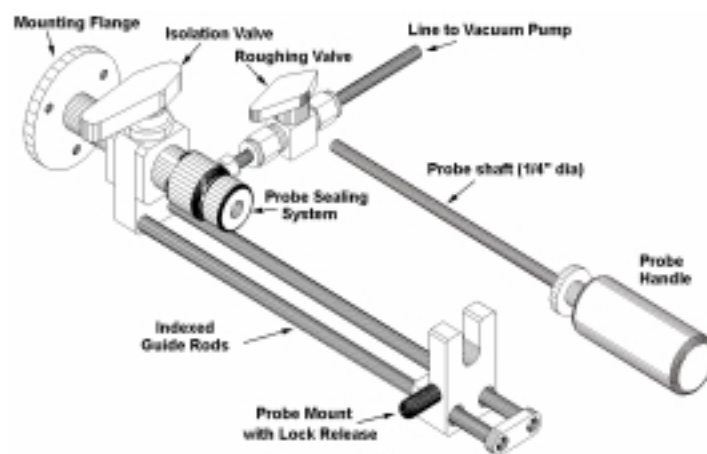
Direct Probe sample analysis can be accomplished on the HP 5973 MSD with the new Direct Probe Inlet System from Scientific Instrument Services. The probe inlet mounts onto the GC/MS transfer line port and uses an indexed probe introduction guide to permit the direct insertion and removal of the probe from the MSD source without venting the MSD or scoring the probe rod. The probe can be heated ballistically at ramp rates in excess of 500 degrees per minute or can be temperature programmed with up to 14 ramp rate levels. The probe temperatures, ramp rates, hold times, start and stop are all PC controlled and fully integrated with the HP ChemStation™ software. This enables the storage of the probe analysis parameters in the sample data files and the method files.

Direct Probe for the HP 5973



Probe Tip with Sample Vial Ready for Introduction into the MSD

The SIS probe for the HP 5973 MSD is only 1/4" in diameter which enables it to easily slide through the probe sealing system and into the MSD. It is light in weight and comfortably fits in your hand for ease of use. The Probe tip with sample vial can be heated up to 450 degrees C either ballistically or following a programmable ramp rate. In the ballistic mode it will ramp up to temperature in excess of 500 degrees per minute or alternatively it can be used in the temperature ramp mode which has 14 levels of ramping capabilities to provide for the ultimate control of probe tip temperature. Compressed air is used for cooling the probe. This permits the cool-



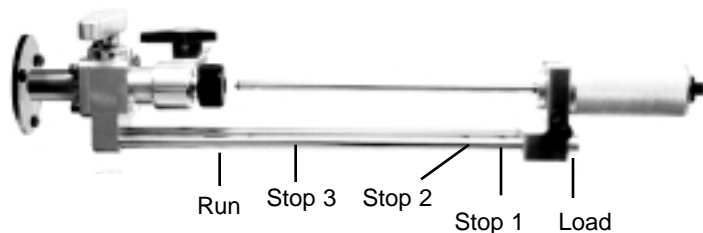
Direct Insertion Probe and Probe Inlet System

ing of the probe after sample analysis and before the probe is removed from the MSD through the vacuum seals and prevents damage to the probe inlet vacuum seals.

The probe tip incorporates a small spring to gently hold the sample vial in place. The probe is designed for using glass flared sample vials. These flared sample vials permit the efficient introduction of both solid and liquid samples and enable the easy insertion and removal of the vials from the probe tip without breakage.

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Probe Inlet System

The SIS Probe Inlet System mounts on the GC/MS Transfer line port on the HP 5973 MSD. It permits the quick and easy introduction of the SIS direct probe through the MSD Vacuum manifold and into the MSD source. It incorporates an indexed dual guide rod system that accurately guides the probe through the vacuum system valves. The guide rods are indexed at three positions in addition to the fully inserted and fully extracted positions.

Load - fully extended - probe load position

Stop 1 - at the first vacuum seal - to permit the rough pump-out of the probe inlet seals

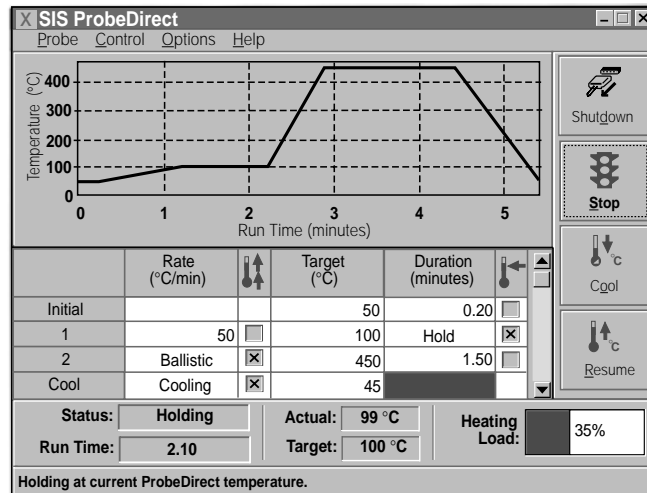
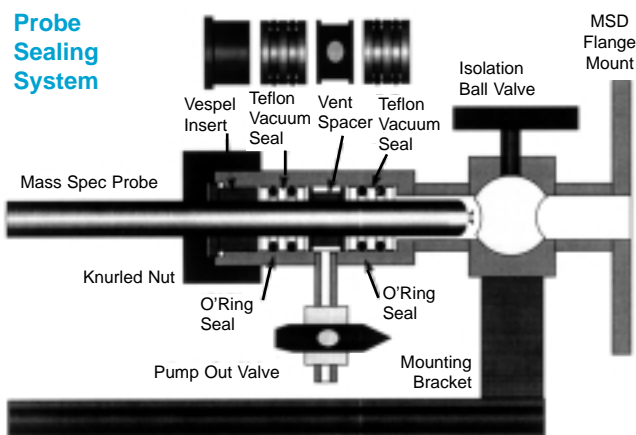
Stop 2 - at the second vacuum seal - to enable the user to open the isolation valve

Stop 3 - 1 cm from the source - cooling position after the sample is analyzed

Run - fully inserted - sample analysis Run position

At each indexed position the probe will automatically stop until the lock release lever is pulled up to enable the probe to be inserted to the next indexed position. This accurate positioning and locking of the probe in set positions prevents closing the isolation valve on the probe (which would score or bend the probe rod), or the inadvertent venting of the instrument.

The probe interface includes the SIS dual Teflon sealing system which will provide for excellent vacuum sealing around the probe rod and long seal life. If the seals need to be replaced a seal extraction tool is included which enables the quick removal and replacement of the seals without venting the MSD. The 1/4 turn ball isolation valve permits the introduction of the probe through this valve and into the MSD source.



PC ProbeDirect™ Software for the Control of the SIS Direct Probe for the HP 5973 MSD

The user interface for the control and monitoring of the direct probe for the HP 5973 probe is via ProbeDirect™ Software from SIS. This software is fully integrated with the HP ChemStation™ software. The user can enter, load, and save temperature profiles for controlling the probe. This information may be saved with the data acquisition method as part of the ChemStation™ data files. ProbeDirect™ communicates with the direct probe electronics console via an RS232 interface. The probe can be programmed in the ballistic mode with ramp rates greater than 500 degrees per minute to target temperatures between 25° and 450°C. In the programmable ramp mode the user inputs the ramp rate, the final temperature and the duration time (hold time). Program rates from 1° to 400° per minute can be used to increase the temperature of the probe. In addition, a temperature increase can be manually halted and held in the middle of a run. Up to 14 levels of programmable ramping steps are permitted through this software interface. A visual graphic presentation of the temperature profile indicates the ramp and hold temperatures as a function of time. In addition the status portion of the screen shows the probe status, time of analysis, the target and actual probe temperatures and the power used to heat the probe (Heating Load). Controls are also present to permit the start and cool down (stop) of the probe from the PC software. These start and stop manual controls are also available on the front of the electronics console. The starting of the probe can also initiate the data acquisition sequence for the 5973 MSD. The probe is automatically cooled at the end of the sample analysis using compressed air controlled by a solenoid valve in the direct probe electronics console. This will cool the probe to speed the removal of the probe through the vacuum sealing system.

For additional information and pricing on the
HP 5973 Probe (part #HPP7)

call SIS at

908-788-5550

or

visit our WEB site at

<http://www.sisweb.com>



**Visit our WEB site for information on the Direct Probe for the HP
5973**

- **System Components**
- **System Description and Theory of Operation**
- **Ordering Information**
- **Accessory Equipment and Supplies**
- **Installation Directions**
- **Application Notes**

E-mail: sis@sisweb.com

Home Page: <http://www.sisweb.com>
