
McAllister Technical Services

Manufacturers of surface analytical instruments and devices

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THANK YOU for your purchase of MTS' Organo-Metallic Precursor Doser (OMP). It is the finest of its kind available. We appreciate the confidence you have placed in our company. Under normal conditions it will provide years of trouble-free service.

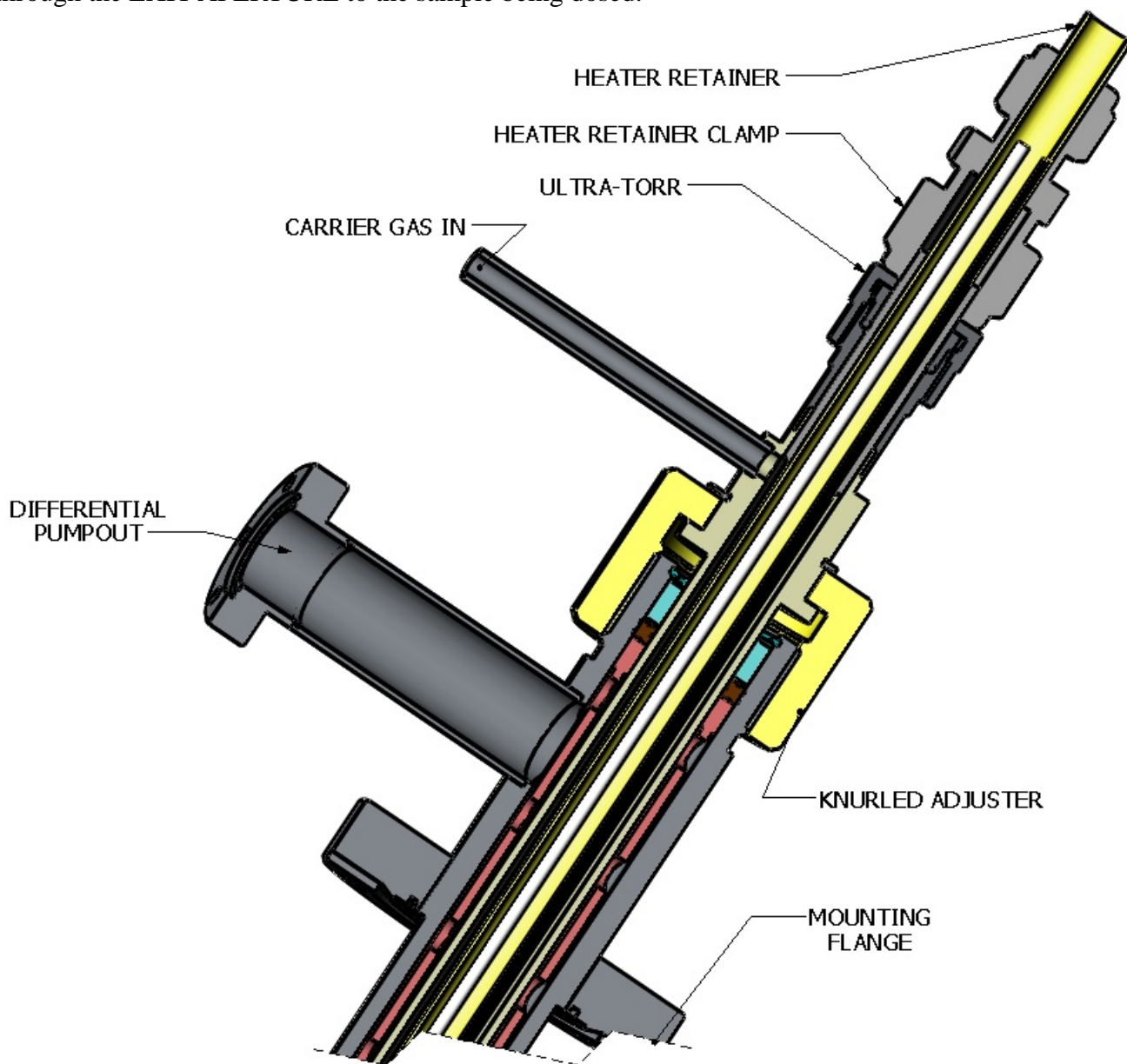
OMP is an ultrahigh vacuum-compatible device based on a design from the Department of Chemistry, University of Western Ontario, London, Ontario, Canada. It allows the volatilization of low vapor-pressure precursors used in chemical vapor deposition processes while minimizing their dissociation. A differentially pumped system places the precursor close to the target substrate and also allows loading and unloading of the precursor reservoir without breaking vacuum. The OMP allows the volatilization of low vapor-pressure solid precursors by passing a preheated carrier gas through the precursor which is placed between two fritted disks. The gas is then directed to the sample being dosed.

Leak Check Certificate

Model	Date	Job #	Checked by
OMP _____			

This is to certify that the above-referenced product has been checked on a Helium Mass Spectrometer leak detector having a sensitivity of _____ X 10-_____ std. cc/sec and has been found to have no measurable leak.

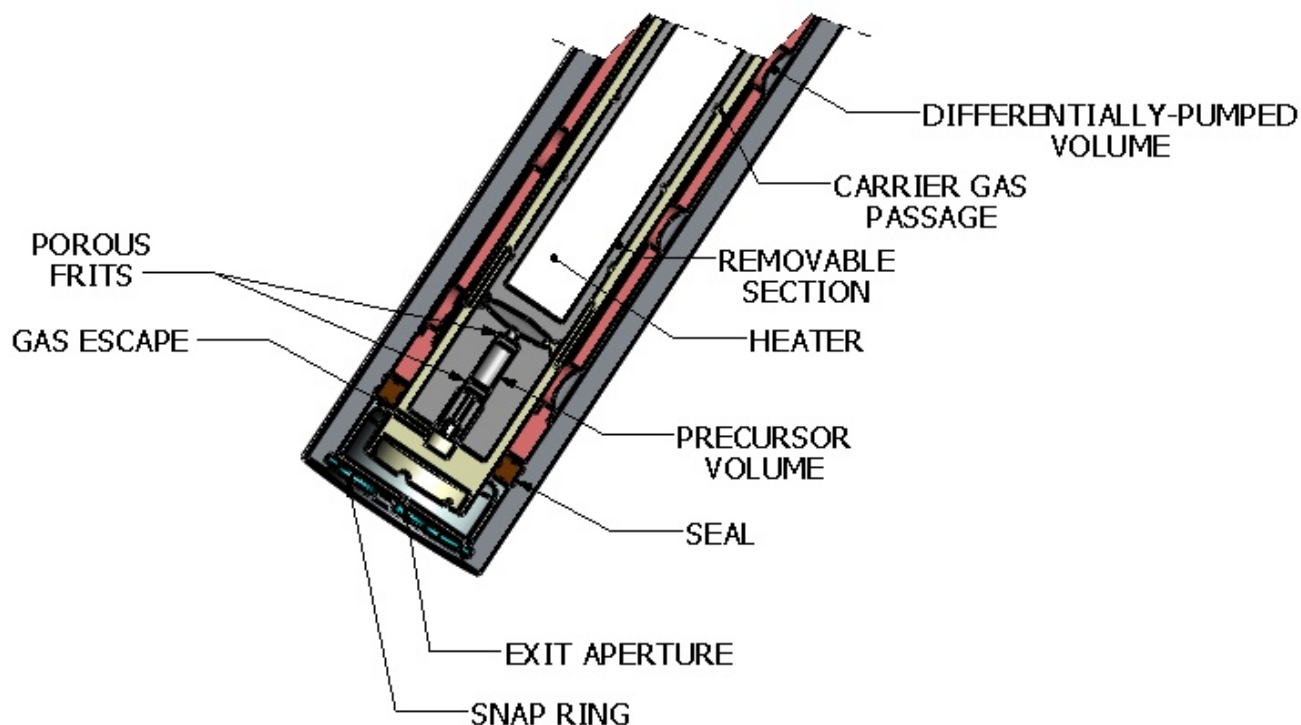
The carrier gas enters through the 1/4" tube labeled CARRIER GAS IN and passes through the CARRIER GAS PASSAGE around the REMOVABLE SECTION where the gas is heated by the HEATER. The carrier gas then passes through the first POROUS FRIT, through the PRECURSOR VOLUME, through the next POROUS FRIT, and then out the GAS ESCAPE and around the end through the EXIT APERTURE to the sample being dosed.



When the KNURLED ADJUSTER is turned counter-clockwise (when viewed from the HEATER RETAINER), it causes the GAS ESCAPE to be retracted behind the SEAL, which isolates the GAS ESCAPE from UHV. When the KNURLED ADJUSTER is turned so the GAS ESCAPE is all the way forward touching the EXIT APERTURE, it should take about 3.25 revolutions to retract it behind the SEAL. At that position, the ULTRA-TORR can be loosened and the REMOVABLE SECTION can be removed for exchange / replacement of the PRECURSOR material without venting the system.

The HEATER is a cartridge type with internal thermocouple, rated for up to 110VAC, 50-60 Hz. Because the SEALS are Viton, we do not recommend temperatures above ~200C.

To remove the HEATER, loosen the HEATER RETAINER CLAMP and slide the HEATER RETAINER out with the HEATER.



The OMP Doser is supplied with several EXIT APERTURES of various sizes. To exchange or replace the EXIT APERTURE, simply remove the SNAP RING.

As with any piece of ultra-high vacuum equipment, clean tools and gloves should be used when handling this device. Do not bake out the Doser to above 150 degrees C without removing the gas lines and electrical connectors.

See **Rev. Sci. Instrum., Vol. 67, No. 10, October 1996, pg 3672** for detailed performance information.

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