



MoundTechnical Solutions, Inc.

965 Capstone Dr. POB 203 Miamisburg, OH 45343 USA

937.865.3715

www.moundtech.com

TRITIUM BUBBLER MODEL MRB500



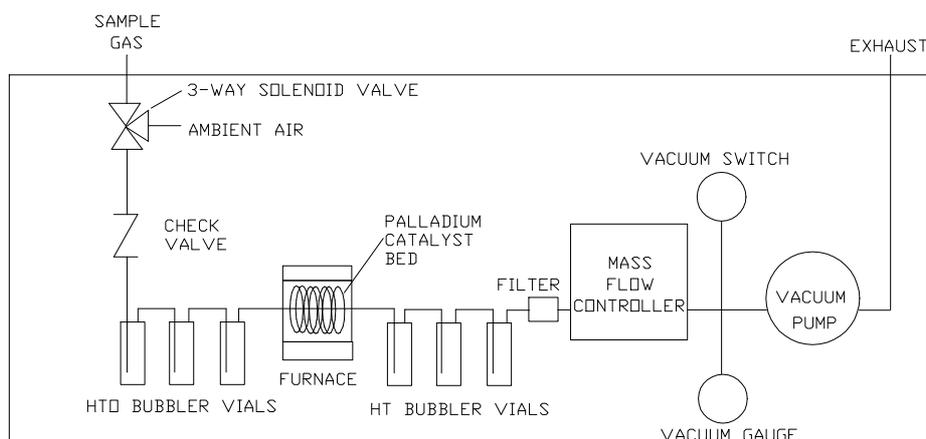
The MRB500 Tritium Bubbler is the state-of-the-art discriminating tritium collection instrument. The Tritium Bubbler was developed and introduced by the DOE's Mound facility in Miamisburg, Ohio in the early 1980's. Those same scientists founded Mound Technical Solutions in 1996.

MTS UNIQUELY OFFERS

- ◆ Experience in the design, fabrication, maintenance, and installation of Bubbler instruments since 1981
- ◆ Evaluation of several designs and components over several years has established a knowledge base for quality and reliable construction
- ◆ Well documented operating and maintenance procedures provide detailed information
- ◆ Comprehensive Quality Assurance testing performed and documented on each production unit
- ◆ Capabilities include follow-up calibration of mass flow controller and complete instrument operational evaluation and calibration
- ◆ On-site, telephone, fax, and e-mail support are provided during and after the one year guarantee of materials and workmanship
- ◆ All makes of scintillation vials can be used with the instrument

**Mound Technical Solutions • 965 Capstone Drive Suite 326 • P.O. Box 203 •
Miamisburg, Ohio 45343-0203
phone: 937-865-3715 • fax: 937-865-4890 • www.moundtech.com**

PRINCIPLE OF OPERATION



Sample gas enters the instrument and flows through three (3) standard scintillation counter ready vials of ethylene glycol which retain the HTO component. The sample gas, now less the tritiated water vapor, flows through a heated palladium sponge catalyst bed which oxidizes the sample gas. The oxidized sample gas flows through three (3) more vials of ethylene glycol that retain the remaining tritium components (originally HT and tritiated organics). A precision mass flow controller regulates the sample flow through the instrument. The user has control over the flow rate and catalyst bed temperature.

SPECIFICATIONS

Dimensions:Cabinet footprint: 16" W (19" rack mount ears on front) x 8.50" H x 22.0" D

.Overall w/impingers & gates: 16"W x 8.50" H x 27.0"D

Weight:.....35 lbs (16 kg).

Collection efficiency:.....>99% when catalyst bed temperature is set to specified level.

Power:120 VAC, 2A nominal, 3A maximum; other available by order

Catalyst bed:.....Custom bed containing quality inspected palladium sponge catalyst surrounded by front panel adjustable furnace (0 to 600°C) Over/under temperature alarm and temperature overrun protection included.

Flow control:.....Electronic mass flow controller (20-200 sccm/min) with flow rate and total flow display and adjustment located on front panel. Pressure and flow alarm indication warns of out-of-spec operation.

System protection:.....Check-valve and venting mechanism to protect against glycol back-flow; Vacuum gauge to monitor pump performance; Pressure gauge to monitor system performance; Audible and dry contact fault alarm.

Operating parameters:5 to 40°C and 0 to 95% rh non-condensing.

Sensitivity:.....Detection limit of ambient air is at least 1E-10 $\mu\text{Ci/cc}$