Thin Film Deposition

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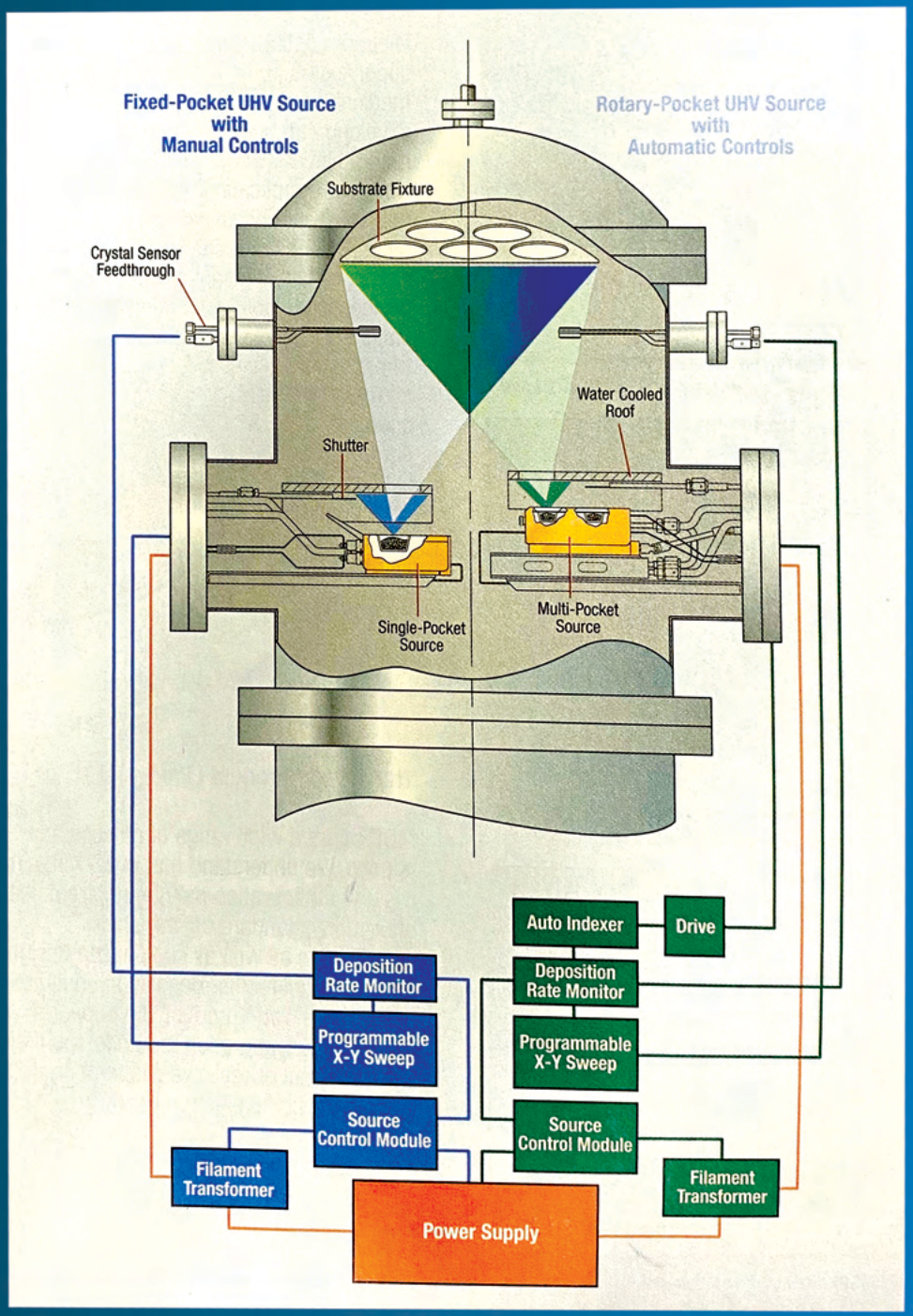
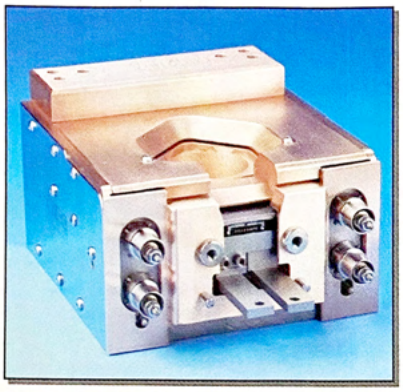
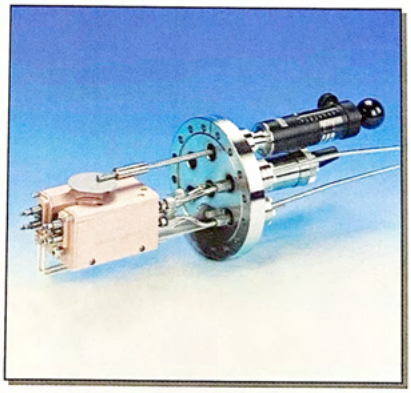




Frame 5 Electron Beam Source



Mighty Source™ mounted on a 6-inch CF flange

XY Programmable Sweep Controller

CVS High Voltage Power Supply

e-Vap® Summary

Vacuum coating technology has evolved from an art form to a precise science over the past 40 years. It is now commonplace to evaporate metals, alloys, compounds and polymers, and control their desired thicknesses from mere atomic layers to actual microns.

Thin Film Deposition

MDC produces state-of-the-art thin film vacuum coating equipment. We currently supply users in the optical, metallurgical, medical, semiconductor, research & development, university and OEM marketplace.
Numerous applications include sunglasses, mirrors, laser optics, camera lenses, optical filters, infrared detectors, anti-reflective coatings, nano-technologies, medical devices, superconductors, telecommunications, automotive decorative trim, costume jewelry, corrosion resistant coatings, stage & entertainment lighting, fiber optic coating, display technologies and MEMs technology.

For all e-Vap® products visit our website: www.mdcvacuum.com

The e-Vap® Product Line

MDC offers a wide range of choices and options. We understand that every vacuum system configuration may be different. We offer many standard off-the-shelf components as well as customized designs to suit your particular deposition equipment need. The *e-Vap®* product line supports two distinct evaporation methods: the first being thermal or resistive evaporation and the second being electron beam evaporation.

Resistive Evaporation

The *Re-Vap™* resistive sources are by far the most economical and reliable method of depositing thin films onto surfaces. In general terms, electric current passes through a resistive element that generates sufficient heat to melt and evaporate various coating materials. Materials commonly evaporated include iron, nickel, aluminum, copper, tin, silver, gold and chrome. Three basic resistive element designs are offered: filament coil, metal foil and oxide crucible types. Filament coil designs are the most popular. All resistive elements are relatively inexpensive and can be discarded after each use or after several uses.

Electron Beam Evaporation

MDC offers an unprecedented selection of electron beam evaporation sources and control electronics. Electron beam evaporation is the most versatile means of vacuum evaporation and deposition. This technique allows the production of thin film coatings from pure elements, numerous alloys and compounds. Electron beam evaporation offers several advantages over competing processes including precise control of low or high deposition rates, excellent material utilization, sequential & co-deposition and uniform low temperature deposition. It also offers relatively high evaporation rates, freedom from source contamination, precise film compositions and cooler substrate temperatures. The materials used for evaporation are available in near limitless shapes and forms, the most common being pellets, slugs and disks. Since the 1950s, the development of higher performance films and complex coating processes has been obstructed by the lack of modern electron beam evaporation equipment and technology. The *e-Vap®* product line has taken this challenge head-on and provides electron beam evaporation sources and control electronics that incorporate leading edge technologies unmatched in the industry.


e-Vap® Source
Single pocket • Multi pocket • UHV • Flange-mounted
Mighty Source™
Multi pocket
Flange-mounted UHV Source
Re-Vap™ 900 System
e-Vap® 3000
Single pocket
Accessories
For a complete listing of all e-Vap® products, visit our website at...
www.mdcprecision.com

Blank