Cressington *208carbon* high vacuum carbon coater

Illustrated:-
coater 208carbon with:-
thickness monitor MTM-10

The most advanced Carbon Coater with wide applications for TEM, SEM and microprobe techniques. The modular design permits rapid change between a variety of applications with optimised operation conditions.

The main features are:

- Voltage controlled rod source gives multiple evaporation capability.
- Automatic evaporation control gives ease of use in a busy environment.
- Low cost thickness monitor gives reproducible results.
- 80 l/sec turbo pump on a 150mm chamber gives very rapid pumpdown.
- Reduces operating costs several ways:
  - No diffusion pump to leave on continuously.
  - No need for water cooling.
  - No need for LN_2 (dry nitrogen gas optional).
- Compact, space saving modern benchtop design.

Evaporation supply

Fully integrated electronic feedback-controlled power control. Current and voltage are monitored by sensor wires in the head where the evaporation source is part of the feedback loop. This gives the conventional rod fed source unusual stability and reproducibility. The evaporation source can be operated in "pulse" or automatic "continuous" modes. The pulsed mode, when used in conjunction with the optional MTM-10 thickness monitor, gives absolute control over the desired thickness of the carbon coating.

Specimen chamber

Modular design to accept a range of attachments. Simple, rapid adjustment from long to short working distances. A unique HIGH-VAC, LOW-VAC pressure adjustment system utilizing a precision needle valve. A **rotary-planetary specimen table** with adjustable tilt that holds a wide variety of samples including 3/4" stubs for GSR. Special attachments for metal evaporation and shadowing, glow discharge and aperture cleaning are available.

Accessories

The Cressington 208 is designed as a modular system to adapt to the many different needs demanded by modern EM sample prep techniques. The basic system can be fitted with different accessories to customize a specialist system for TEM (support films, shadowing, aperture cleaning, glow discharge, etc.) or SEM (high vacuum for microprobe or polished substrates - low vacuum for coarse or granular substrates) or both.

Illustrated:-

coater 208carbon with:-
rotary-planetary-tilt stage;
thickness monitor MTM-10;
metal evaporation accessory;
auxilliary power supply

Metal Evaporation This compact, modular evaporation head is inserted through the 90mm port in the 208 top-plate. It uses tungsten filaments or baskets and has an integrated shutter mechanism. The tungsten filament is shielded from the rod source to minimize contamination. **Glow Discharge** The glow discharge unit is designed to remove hydrocarbons from TEM grids. All integrated design with it's own top-plate and table for holding the TEM grids. **Aperture Cleaning** The aperture cleaning accessory is a separate unit with integral top-plate. The apertures are held in a molybdenum or platinum boat which is heated to remove contamination.

Illustrated:-

auxilliary power supply with:-
aperture cleaning accessory;
metal evaporation accessory;
glow discharge accessory

Auxiliary Power Unit The Auxilliary Power Unit is designed to operate the Metal Evaporation, Aperture Cleaning or Glow Discharge accessories under optimum conditions. It has digital power control/timer for reproducibility and ease of use. The unit supplies high voltage for the Glow Discharge and low voltage for the Metal Evaporation and Aperture Cleaning accessories.
It features an innovative "smart cable" which configures the power unit to the correct parameters for the fitted accessory.
The power unit also protects the Metal Evaporation or Aperture Cleaning accessories from over temperature and vacuum safety interlocking is incorporated with all accessories.

Cressington *208 carbon*
specification

High vacuum carbon coater

Chamber size	150mm Ø (5.9") Variable height, 165mm - 250mm (6.5" - 9.8")
Evaporation source	Bradley type (6.15mm Ø rods) Heavy duty stainless steel construction
Evaporation supply	Microprocessor based Feedback loop controlled with remote current/voltage sensing Safety interlocked Variable, 180A max. with over-current protection
Sample stage	Static table holds 12 SEM ½" stubs Height adjustment through 60mm
Analogue metering	Vacuum, d Atm - 0.001mb $1x10^{-3}$mb - $5x10^{-6}$mb Current, 0- 200A
Control method	Automatic evaporation control using programmed voltage and timer Full manual override with pulsed or continuous operation Digital timer, 1 - 30 seconds Digital voltage setting, 0.1 - 5.5V Automatic vent
Thickness monitoring	Optional, MTM-10 only

Pumping system

Configuration	Turbo/rotary pump combination
Pumping speed	80 lires/sec
Pumpdown time	1.5 min. to $1x10^{-4}$mb
Ultimate pressure	$5x10^{-6}$mb
Desktop system	Rotary pump is mounted on desktop compatible anti-vibration table All metal vacuum coupling system

Thickness monitor

MTM-10	Microprocessor based 4 digit display with push button zero 5 times/sec. display update rate 6 MHz crystal with life-time check
Thickness range	0 - 999.9nm
Resolution	Better than 0.1nm
Density range	0.50 - 30.00gm/cm^3

Tooling factor range	0.25 - 8.00

Services required

Supply	100 - 120 or 200 - 240 VAC, 50/60Hz (specify on order)
Power	1200 VA max.

System dimensions

Size	Width 600mm (23.6"), Depth 600mm (23.6"), Height 360mm (14.2")
Weight	45Kg (99.5 lbs)