Cressington EM Vacuum Coating Systems

We are distributors for the complete line of high quality compact desktop vacuum coating systems manufactured by Cressington Scientific Instruments. The complete line includes Sputter Coaters, Carbon Coaters, High-Resolution Sputter Coater for FESEM, Turbo Carbon Coaters, precision thickness monitors and high performance 12" chamber coating systems.

The Cressington Coaters are the most technologically advanced coaters available today with a wide range of applications for TEM, FESEM, SEM/EDS, SEM/EBSD and microprobe techniques. Dedicated thickness monitors and controllers offer exceptionally precise control over the desired coating thickness.

The new 308UHR has been specifically designed for the most demanding high resolution imaging tasks in FESEM and TEM.

308R-EM Desktop Modular Coating System

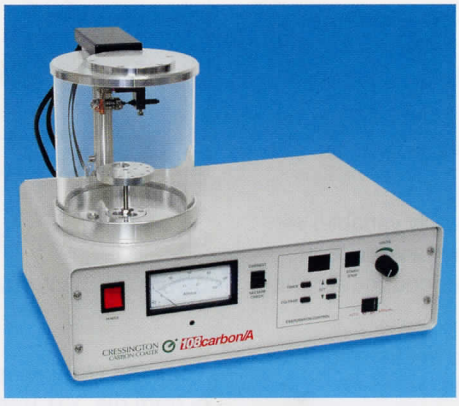
208HR High Resolution Sputter Coater for FE-SEM

208C High Vacuum Turbo Carbon Coater

108 Auto/SE Sputter Coater

108 Auto Sputter Coater

108 Manual Sputter Coater



108C Auto/SE Carbon Coater

108C Auto Carbon Coater

108 Manual Sputter Coater

ideal for sample preparation for scanning electron microscopy

108 Sputter Coater

The 108 Manual Sputter Coater is an ideal system for sample coating with Au of non-conducting samples for standard SEM imaging. The economical desktop unit is simple to operate, offers rapid pumpdown times, fine grain coatings and negligible sample heating. The safety interlocked sputtering supply is fully variable and the sputter current setting is not influenced by the vacuum level. Cool, fine-grain sputtering is achieved with a very efficient low voltage DC magnetron head.

Main Features

Although it is our simplest coater, this model has an excellent specification:

- This coater is ideal for routine SEM sample preparation. It is compact, economical and simple to operate. It offers rapid pumpdown times, fine-grain coatings and negligible sample heating.
- The standard manual coater has fully variable current control, digital process timer with "pause", variable height specimen table, hinged top plate and O-ring sealed vacuum chamber.
- Sputtering is achieved with an efficient DC magnetron. A quick-change target allows for a range of metals to be used. (Au, Au:Pd). Au target is included as standard.
- The current controller allows independent choice of sputter current and argon pressure. Coverage and grain size are optimized for any specimen.
- The safety interlocked sputtering supply is fully variable; setting the sputter current is not influenced by vacuum level. The optional thickness monitor is recommended for accurate measurements of depositions.
- The 108 Manual Sputter Coater can be factory fitted or retrofitted at any time with our Prod. No. 93004, MTM-10 High Resolution Thickness Monitor (optional).

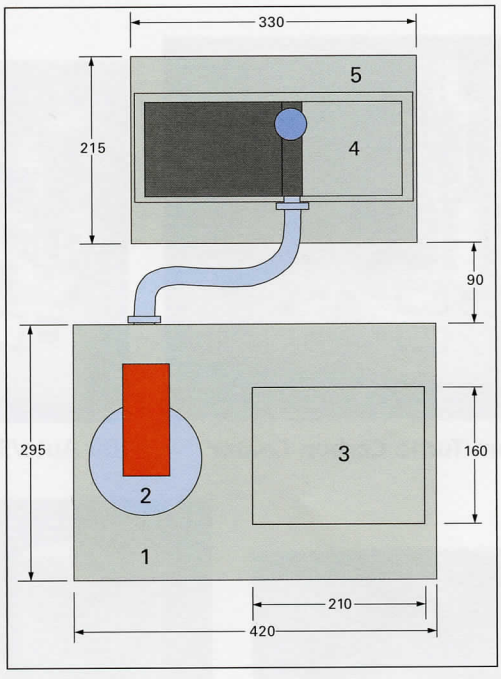
Desktop Dual-Vacset

Dual-Vacset used to connect two coaters to one pump

The 108 Manual Sputter Coater can be combined with the 108C Auto Carbon Coater using one pumping system. This has the advantage of using 2 dedicated units for sputtering and carbon coating without any cross contamination.

The 108 Manual Sputter Coater can be factory fitted or retrofitted with an MTM-10 High Resolution Thickness Monitor

Head tilted back showing stage



1. Control unit
2. Vacuum chamber
3. Thickness monitor
4. Rotary pump
5. Anti-vibration base

6002 108 Manual Sputter Coater, 115VAC* . . . . . .each

6006 108 Manual Sputter Coater, 220VAC* . . . . . .each

*The 108 Manual Sputter Coater includes: 91110 Gold Target, (57mm dia. x 0.1mm); 7021 Specimen Mount Stage for 12 pin mounts; Operating Instructions.

108 Auto Sputter Coater

ideal for routine sample preparation for scanning electron microscopy

The 108 Auto Sputter Coater, compact, modern desktop sputtering system with fast cycle times

The 108 Auto Sputter Coater is ideally suited for high quality coating of non-conducting samples for standard SEM imaging. The added functionality of the automatic features enable fine grain coating on a range of samples with a choice of target materials. The automatic purge and leak functions together with the optional MTM-20 High Resolution Thickness Controller offer consistent thickness for optimized conductive coating results. Cool, fine-grain sputtering is achieved with a very efficient low voltage DC magnetron head. The quick change target method allows a range of metals to be used.

Main Features

This model is a step above our 108 Manual and has an excellent specification:

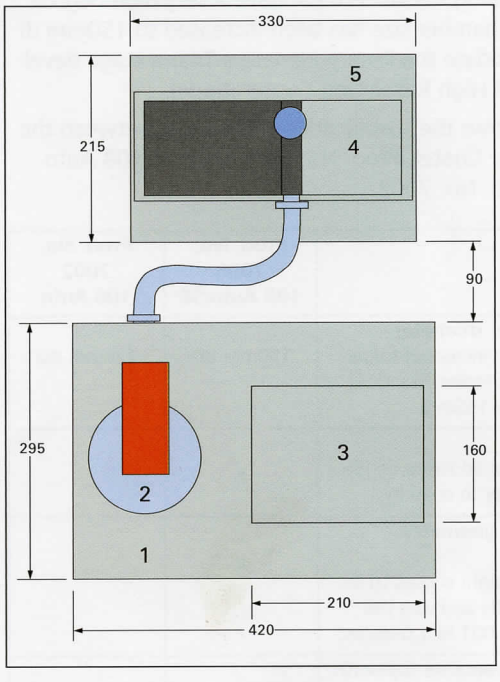
- The 108 Auto Sputter Coater offers the choice of fully automated or manual operation. The specifications also include automatic vent (with a choice of vent gas) and argon purge control.
- In automatic mode the coater can be controlled in two ways. The digital timer can be used to give repeatable coatings or the MTM-20 High Resolution Thickness Controller (optional) can be used to terminate the sputtering process at the desired thickness. Alternatively, the MTM-10 High Resolution Thickness Monitor (optional) may also be used for manual termination.
- The digital sputter current control is fully independent of the argon gas pressure in the sputtering chamber to achieve consistent sputtering rates and optimum specimen coverage.
- The efficient DC magnetron operates on a low voltage for "ultra-cool" sputtering to avoid effects on sample surface.
- Separate electronic valves for leak, purge and vent, coupled with a precise needle valve, ensures quick and easy operation.
- Quick target change allows for a range of materials used: Au, Au/Pd, Pt, Pt/Pd (Au fitted as standard).
- The 108 Auto Sputter Coater can be factory fitted or retrofitted at any time with our Prod. No. 93007, MTM-20 High Resolution Thickness Controller (optional).

Desktop Dual-Vacset

Dual-Vacset used to connect two coaters to one pump

The 108 Auto Sputter Coater can be combined with the 108C Auto Carbon Coater using one pumping system. This has the advantage of using 2 dedicated units for sputtering and carbon coating without any cross contamination.

The 108 Auto Sputter Coater with the MTM-20 High Resolution Thickness Controller (optional)



1. Control unit
2. Vacuum chamber
3. Thickness monitor
4. Rotary pump
5. Anti-vibration base

7008 108 Auto Sputter Coater, 115VAC* . . . . . .each

7008-220 108 Auto Sputter Coater, 220VAC* . . . . . .each

*The 108 Auto Sputter Coater includes: 91110 Gold Target, (57mm dia. x 0.1mm); 7021 Specimen Mount Stage for 12 pin mounts; and Operating Instructions.

108 Auto/SE Sputter Coater

for applications where the coating thickness must have a very high degree of uniformity

The 108 Auto/SE Sputter Coater

The 108 range of sputter coaters has been expanded to include a new Special Equipment version of the Automatic Coater Product No. 7002. The new 108 Auto/SE is intended for use in applications where the coating thickness must have a very high degree of uniformity. The chamber size has been increased to 150mm diameter to accommodate the Rotary-Planetary-Tilting stage developed for the 208HR High Resolution Coater model.

The table below shows the specification differences between the 108 Auto/SE Sputter Coater, Prod. No. 7008 and the 108 Auto Sputter Coater, Prod. No. 7002:

	Prod. No. 7008 108 Auto/SE	Prod. No. 7002 108 Auto
1. Increased chamber diameter Chamber size has been increased to permit coating of larger samples. Standard Chamber 150mm dia x 165mm	150mm dia	120mm dia
2. Target shutter Target shutter has been added to condition special targets prior to coating	X	–
3. Variable chamber geometry (option) Adjustable chamber height is used to improve coating uniformity and vary the deposition rate from 0.001 to 1.0nm/sec	X	–
4. Sample stage movements (option) Separate rotary, planetary and tilting sample movements to optimize coating distribution and coverage	X	–
5. Superior sputter head design Stronger magnetic field for improved deposition rate	X	–

R-P-T and R-T Stages

The 108 Auto/SE Sputter Coater can be equipped with the optional R-P-T or R-T stage to accommodate multiple or large samples. Please refer to accessories for ordering information, see page 115.

Rotary-Planetary-Tilting Stage with adjustable tilt (optional)

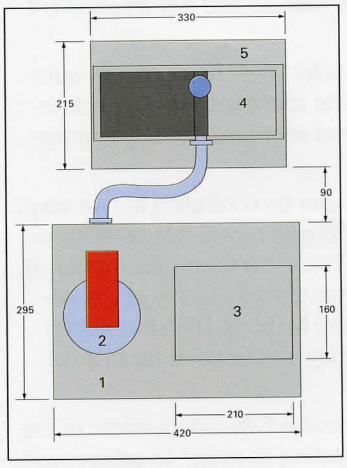
Rotary-Tilting Stage (optional)

The 108 Auto/SE Sputter Coater with the MTM-20 High Resolution Thickness Controller and Rotary-Planetary-Tilting (RPT) Stage (optional - see Accessories, page 115)

Desktop Dual-Vacset

Dual-Vacset used to connect two coaters to one pump

The 108 Auto/SE Sputter Coater can be combined with the 108C Auto Carbon Coater using one pumping system. This has the advantage of using 2 dedicated units for sputtering and carbon coating without any cross contamination.



1. Control unit
2. Vacuum chamber
3. Thickness monitor
4. Rotary pump
5. Anti-vibration base

7008 108 Auto/SE Sputter Coater, 115VAC* . . . .each

7008-220 108 Auto/SE Sputter Coater, 220VAC* . . . .each

* The 108 Auto/SE Sputter Coater includes: 91110 Gold Target; 7021 Specimen Mount Stage for 12 pin mounts; Telescopic Top Plate Support; 150mm dia. Chamber; and Operating Instructions.

108 Auto Sputter Coater

ideal for routine sample preparation for scanning electron microscopy

The 108 Auto Sputter Coater, compact, modern desktop sputtering system with fast cycle times

The 108 Auto Sputter Coater is ideally suited for high quality coating of non-conducting samples for standard SEM imaging. The added functionality of the automatic features enable fine grain coating on a range of samples with a choice of target materials. The automatic purge and leak functions together with the optional MTM-20 High Resolution Thickness Controller offer consistent thickness for optimized conductive coating results. Cool, fine-grain sputtering is achieved with a very efficient low voltage DC magnetron head. The quick change target method allows a range of metals to be used.

Main Features

This model is a step above our 108 Manual and has an excellent specification:

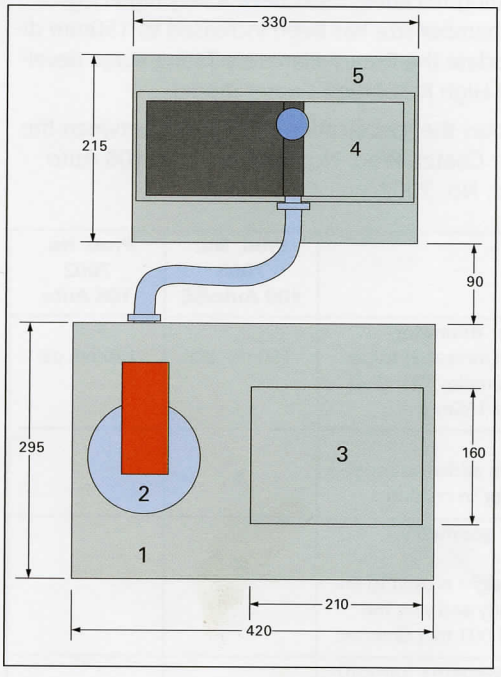
- The 108 Auto Sputter Coater offers the choice of fully automated or manual operation. The specifications also include automatic vent (with a choice of vent gas) and argon purge control.
- In automatic mode the coater can be controlled in two ways. The digital timer can be used to give repeatable coatings or the MTM-20 High Resolution Thickness Controller (optional) can be used to terminate the sputtering process at the desired thickness. Alternatively, the MTM-10 High Resolution Thickness Monitor (optional) may also be used for manual termination.
- The digital sputter current control is fully independent of the argon gas pressure in the sputtering chamber to achieve consistent sputtering rates and optimum specimen coverage.
- The efficient DC magnetron operates on a low voltage for "ultra-cool" sputtering to avoid effects on sample surface.
- Separate electronic valves for leak, purge and vent, coupled with a precise needle valve, ensures quick and easy operation.
- Quick target change allows for a range of materials used: Au, Au/Pd, Pt, Pt/Pd (Au fitted as standard).
- The 108 Auto Sputter Coater can be factory fitted or retrofitted at any time with our Prod. No. 93007, MTM-20 High Resolution Thickness Controller (optional).

Desktop Dual-Vacset

Dual-Vacset used to connect two coaters to one pump

The 108 Auto Sputter Coater can be combined with the 108C Auto Carbon Coater using one pumping system. This has the advantage of using 2 dedicated units for sputtering and carbon coating without any cross contamination.

The 108 Auto Sputter Coater with the MTM-20 High Resolution Thickness Controller (optional)



1. Control unit
2. Vacuum chamber
3. Thickness monitor
4. Rotary pump
5. Anti-vibration base

7008 108 Auto Sputter Coater, 115VAC* . . . . . .each

7008-220 108 Auto Sputter Coater, 220VAC* . . . . . .each

*The 108 Auto Sputter Coater includes: 91110 Gold Target, (57mm dia. x 0.1mm); 7021 Specimen Mount Stage for 12 pin mounts; and Operating Instructions.

108C Auto Carbon Coater

for scanning electron microscopy sample preparation and x-ray micro-analysis

108C Auto Carbon Coater

The 108C Auto Carbon Coater is one of the most advanced sample coaters available for coating non-conductive specimens prior to SEM X-ray analysis. The unique feedback controlled rod evaporation system gives multiple evaporations of around 20nm thickness without any need for rod shaping or adjustment. The high purity stepped carbon rods used in the 108C Auto deliver a superior coating quality usable at high magnifications. The 108C is a compact system, simple to operate and has very rapid pumping cycle time. The option of the MTM-10 High Resolution Thickness Monitor allows conducting carbon films to be tailored to the exact requirements of the sample.

The 108C Auto Carbon Coater uses a novel evaporation supply. Current and voltage are monitored by sensor wires in the head, and the evaporation source is controlled as part of a feedback loop. The supply gives the conventional rod feed source excellent stability and reproducibility. Power consumption is low, and the source shows exceptional re-starting characteristics. The evaporation source can be operated in "pulse" or "continuous" modes.

The 108C Auto Carbon Coater offers the choice of either manual or automatic operation.

In automatic mode, the evaporation source operates as a programmed voltage for a programmed time. The programmer is simply adjusted and displays voltage and time digitally.

In manual mode, the unique 108C Auto Carbon Coater supply can be operated in "pulse" or "continuous" with the output voltage set using the rotary control.

The 108C Auto Carbon Coater can be fitted with an optional MTM-10 High Resolution Thickness Monitor. Resolution is better than 0.1nm for carbon. Careful use of the monitor and evaporation controller gives better than 5% reproducibility of coating thickness in the useful 15nm to 25nm range.

For Carbon Rods and Carbon Rod Sharpener see page 665.

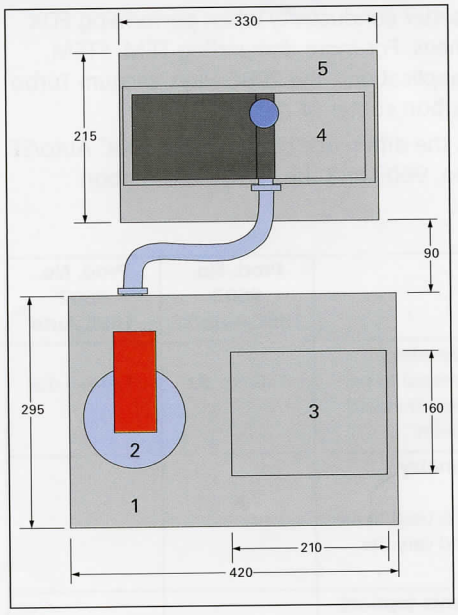
Desktop Dual-Vacset

Dual-Vacset used to connect two coaters to one pump

The 108C Auto Carbon Coater can be combined with the 108 Auto Sputter Coater using one pumping system. This has the advantage of using 2 dedicated units for sputtering and carbon coating without any cross contamination.

Chamber shown with hinged top in the up-position and detail of the "Bradley type" carbon rod assembly

108C Auto Carbon Coater shown with the MTM-10 High Resolution Thickness Monitor (optional - see Accessories, page 115)



1. Control unit
2. Vacuum chamber
3. Thickness monitor
4. Rotary pump
5. Anti-vibration base

9602 108C Auto Carbon Coater, 115VAC* . . . . .each
9602-220 108C Auto Carbon Coater, 220VAC* . . . . .each

* The 108C Auto Carbon Coater includes: Specimen table for 12 pin-mounts; carbon rods pkg/10; operation manual.

108C Auto/SE Carbon Coater

for scanning electron microscopy sample preparation and x-ray micro-analysis

108C Auto Carbon Coater

The 108C Auto/Carbon Coater Special Equipment version has now become available for the 108 Carbon Coater series. The 108C Auto/SE Carbon Coater has the same technical specifications regarding the carbon coating capabilities as the standard 108C Auto Carbon Coater. The special feature of the Auto/SE is the larger, 150mm diameter chamber which will accommodate the optional Rotary Tilting Stage or Rotary Planetary Tilting Stage. The advantage of using the Rotary Planetary Tilting Stage is that highly topographic specimens or larger specimens can be uniformly coated to give better conductivity when performing EDX analysis on such specimens. For more demanding TEM, STEM, EBSD and microprobe applications, the 208C High Vacuum Turbo Carbon Coater is the carbon coater of choice.

The table below shows the difference between the 108C Auto/SE Carbon Coater, Prod. No. 9603 and the 108C Auto Carbon Coater, Prod. No. 9602.

	Prod. No. 9603 108C Auto/SE	Prod. No. 9602 108C Auto
1. Increased chamber diameter Chamber size has been increased to permit coating of larger samples. Standard Chamber 150mm dia x 165mm	150mm dia	120mm dia
2. Variable chamber geometry (option) Adjustable chamber height is used to improve coating uniformity and vary the deposition rate	X	–
3. Sample stage movements (option) Separate rotary, planetary and tilting sample movements to optimize coating distribution and coverage	X	–

The 108C Auto/SE Carbon Coater can be fitted with an optional MTM-10 High Resolution Thickness Monitor. Resolution is better than 0.1nm for carbon. Careful use of the monitor and evaporation controller gives better than 5% reproducibility of coating thickness in the useful 15nm to 25nm range.

The 108C Auto/SE Carbon Coater with the MTM-10 High Resolution Thickness Monitor (optional - see Accessories, page 115)

The 108C Auto/SE Carbon Coater can be equipped with the optional RPT or RT stage to accommodate multiple or large samples.

Rotary-Planetary-Tilting Stage with adjustable tilt (optional)

Rotary-Tilting Stage (optional)

Pumping System

The modular desktop design combines carbon control unit, pumping system and thickness monitor into an area of only 42 x 60cm (16" x 24"). The desktop pumping system is fully integrated using a quick release, all-metal coupling system.

Desktop Dual-Vacset

Dual-Vacset used to connect two coaters to one pump

The 108C Auto/SE Carbon Coater can be combined with the 108 Auto Sputter Coater using one pumping system. This has the advantage of using 2 dedicated units for sputtering and carbon coating without any cross contamination.

9603 108C Auto/SE Carbon Coater, 115VAC* . .each
9603-220 108C Auto/SE Carbon Coater, 220VAC* . .each

* The 108C Auto/SE Carbon Coater includes: Specimen table for 12 pin-mounts; carbon rods pkg/10; operation manual.

For Carbon Rods and Carbon Rod Sharpener see page 665.

108 Series Sputter Coaters and Carbon Coaters Specifications





Specifications	108 Manual	108 Auto	108 Auto SE	108C Auto	108C Auto SE
Type	Sputter Coater	Sputter Coater	Sputter Coater	Carbon Coater	Carbon Coater
Product No. for 115V	6002	7002	7008	9602	9603
Product No. for 220V	6006	7006	7008-220	9602-220	9603-220
Chamber Size	Ø120 x 120mm	Ø120 x 120mm	Ø150 x 165mm	Ø120 x 120mm	Ø150 x 165mm
Sample Table	Ø63mm, holds 12 pin stubs	Ø63mm, holds 12 pin stubs	Ø63mm, holds 12 pin stubs	Ø63mm, holds 12 pin stubs	Ø63mm, holds 12 pin stubs
Sample Height Adj.	60mm	60mm	60mm	60mm	60mm
RT / RPT Stage	n.a.	n.a.	optional	n.a.	optional
Sputter Head	Ultra-cool, low voltage planar magnetron Wrap around dark space shield			n.a.	
Sputter Supply	Efficient DC Magnetron			n.a.	
Sputter Current	Analog 0-40mA	Digital 10, 20, 30, & 40mA		n.a.	
Target Size	57mm disc type			n.a.	
Target Shutter	no	no	yes	no	no
Digital Timer	5-300 sec.	5-300 sec. timer / max 900 sec. with MTM-20 Thickness Monitor		1-30 sec.	1-30 sec.
Control	Manual digital timer constant current control	Auto / manual functions; automatic cycle function with manual override and pause; microprocessor based constant current control		Automatic cycle; manual / pulse; micro-processor based; feedback loop	
Needle valve	High precision, 10 turn wedge type			n.a.	
Sputter Gas	Argon	Argon	Argon	n.a.	
Evaporation Source	n.a.			Bradley type carbon rod source	
Carbon Rods	n.a.			2 step, Ø6.15mm	
Evaporation Current	n.a.			0-185A	0-185A
Evaporation Voltage	n.a.			0.1-6V	0.1-6V
Safety Interlock	yes	yes	yes	yes	yes
Metering	Vacuum: Atm - 0.01mbar; Sputter current 0-50mA			Vacuum: Atm - 0.01mbar / Evap. current 0-200A	
Pump Down to 0.1mbar	<30 sec.	<30 sec.	<50 sec.	<30 sec.	<50 sec.
Process Gas	Argon, 0.4 bar (5-6 psi)			none	
Gas Inlet	Ø6mm			n.a.	
Vent Inlet	Top plate	Ø6mm		Ø6mm	
Voltage	100-120V or 200-240VAC, 50/60 Hz (specify on order)				
Power	300VA including a typical rotary pump			1000VA including a typical rotary pump	
Footprint	420 x 600mm (WxD) / 17" x 24" including pump				
Recommended Pumping Capacity	Between 2.5 - 10m³/hr or 0.7 - 2.8 ltr/sec or 2.8 - 6 SCFM				
Optional thickness measurement	MTM-10 Thickness Monitor only	MTM-20 Thickness Controller or MTM-10 Thickness Monitor		MTM-10 Thickness Monitor only	

208HR High Resolution Sputter Coater *for FESEM Applications*

208HR with R-P-T, Rotary-Planetary-Tilting Stage and Thickness Controller

The 208HR High Resolution Sputter Coater from Cressington offers real solutions to the problems encountered when coating difficult samples for FESEM imaging. FESEM applications need extremely thin, grain-free, uniform coatings to eliminate charging and to improve contrast on low density materials. In order to minimize the effects of grain size the 208HR offers a full range of coating materials and gives unprecedented control over thickness and deposition conditions. The 208HR Turbo Pumped High Vacuum System offers a wide range of operating pressures, allows precise control of the uniformity and conformity of the coating, minimizing charging effects. The HIGH / LOW chamber configuration allows easy adjustment of the distance from target to sample. The MTM-20 High Resolution Thickness Controller has a resolution of better than 0.1nm. This enables precise and reproducible thin coatings, especially in the desirable range of 0.5 - 3nm thickness for FESEM applications.

Coating Materials for FESEM Applications are:

- Pt/Pd: General-purpose coating material for non-conducting specimens
- Cr: Excellent for semi-conductor materials
- Ir: Excellent, virtually grain-free coating material

Main features

- **Wide choice of Coating Materials.** Magnetron head design and effective gas handling allow a wide choice of target materials.
- **Precision Thickness Control.** Thickness optimized for FESEM operating voltage using the MTM-20 High Resolution Thickness Controller.
- **Multi-Angle Stage Movements.** Separate rotary, planetary and tilting stage movements ensure uniform coating with excellent conformity, even on highly topographic samples.
- **Multiple Sample Holders.** Four sample holders are provided to accommodate sample sizes as large as 32mm diameter of up to 6 stubs per holder.
- **Variable Chamber Geometry.** Chamber geometry is used to adjust deposition rates from 1.0nm/sec to 0.002nm/sec to optimize structure.
- **Wide Range of Operating Pressures.** Independent power and pressure adjustment allows operation at argon gas pressure range of 0.2 - 0.005 mbar.
- **Compact, Modern, Benchtop Design.** Space and energy saving design eliminates need for floor space, water or specialized electrical connections.
- **Ease of Operation.** System operation and setup is very similar to standard sputter coating and does not require additional cleaning compared to ion beam coaters.

208HR High Configuration

R-P-T stage with 4 sample holders.

Configurations and Short Specifications

- 208HR coating system with 150mm diameter chamber, 165 - 250mm variable height.
- Magnetron sputter head, shutter, Cr and Pt/Pd target standard. Optional targets available are: Ag, Al, Au, Au/Pd, Cr, Cu, Ir, Ni, Pd, Pt, Pt/Pd, Ta. (See list, page 114)
- Sputter supply with full microprocessor control and digital independent current control.
- Pumping system with turbo drag / rotary pump combination, producing a fast pumpdown desktop system with all metal coupling and anti-vibration table for rotary pump.
- Optional dry scroll pump available for cleanroom applications.
- Integrated turbo molecular drag pump ensures fast pump down combined with high positive pumping speed during sputtering process.
- RPT sample stage with variable speed and 4 selectable sample holders
- MTM-20 High Resolution Thickness Controller, microprocessor controller with 0.1nm resolution

8000 208HR High Resolution Sputter Coater for FESEM, 115VAC . . . . . .each

8000-220 208HR High Resolution Sputter Coater for FESEM, 220VAC . . . . . .each

The High Resolution Sputter Coater 208HR includes: Pumping System, Thickness Controller MTM-20, Rotary-Planetary-Tilting Sample Stage with 4 holders, one Cr and one Pt/Pd Target.

8004 208HR High Resolution Sputter Coater for FESEM, Dry Pumping System, 115VAC. . . .each

8004-220 208HR High Resolution Sputter Coater for FESEM, Dry Pumping System, 220VAC . . . .each

Note: Targets and Accessories are on pages: 114 - 115

■ 208C High Vacuum Turbo Carbon Coater

for TEM, Microprobe, FESEM and EBSD

208C High Vacuum Turbo Carbon Coater, standard configuration, shown with optional Thickness Monitor MTM-10

208C High Vacuum Turbo Carbon Coater shown with optional Rotary-Planetary-Tilting Stage, Thickness Monitor MTM-10, Metal Evaporation Accessory and Auxiliary Power Supply

The 208C High Vacuum Turbo Carbon Coater from Cressington offers high quality carbon coating techniques for TEM, STEM, SEM, EDS/WDS, EBSD and microprobe applications. The compact, turbo pumped system requires only a standard power outlet and occupies minimal bench top space. The practical chamber size of 150mm diameter allows for rapid pump down and coating cycle times of around 10 minutes. The use of ultra purity carbon rods in a high vacuum chamber gives the high quality coating needed for critical TEM, EBSD, high resolution SEM and microprobe work. The modular design permits rapid change between a variety of applications with optimized conditions. Optional accessories for the 208C are:

- Metal evaporation module for shadowing techniques can be mounted adjacent to the carbon source
- Dedicated EM aperture cleaning head
- Glow discharge head for cleaning TEM grids
- Auxiliary Power Unit to drive Metal Evaporation, Aperture Cleaning and Glow Discharge accessories
- Rotary-Tilting stage for TEM shadowing techniques or coating large samples like microscope slides for carbon support films
- Rotary-Planetary-Tilting stage for multiple sample coating for SEM, EDS/WDS and EBSD application and/or enhanced uniformity
- MTM-10 thickness monitor unit for precise and reproducible coating thickness

Main Features of the 208C

- Voltage controlled rod source gives multiple evaporation capability
- Feedback loop enables precise and consistent coating thickness
- Choice of operation methods for optimized operation
- Automatic evaporation control gives ease of use in busy environments
- Low cost, high resolution thickness monitor ensures reproducible results
- 80 l/sec turbo pump on a 150mm diameter chamber gives rapid pumpdown
- Optional Dry Scroll Pump available
- Reduces operating cost in several ways:
  1. No need for water cooling
  2. No need for warm up or cool down
  3. No need for LN_2 (dry nitrogen gas optional)
  4. Short cycle time
  5. Space saving, compact bench top design

Carbon Evaporation Supply

The 208C uses a unique fully integrated electronic feedback-controlled power design for the rod-fed Bradley type carbon evaporation source. Current and voltage are monitored by sensor wires in the evaporation head, where the evaporation source is part of the feedback loop. This feature gives the conventional rod-fed carbon source unusual stability and reproducibility. The carbon source uses two-step ultra pure carbon rods. The evaporation source can be operated in manual "pulse" or manual "continuous" modes. The pulsed mode, when used in conjunction with the optional MTM-10 high resolution thickness monitor, gives absolute control over the desired thickness of the carbon coating. The automatic mode lets the user set the voltage and time, which together with the two-step rods gives consistent coating combined with ease of operation.

continued on next page

208C Specimen Chamber

The modular design of this practically sized chamber accepts a range of attachments which can be readily implemented. The telescopic pillar gives a simple, rapid adjustment from long to short working distances to change the evaporation rate. The unique standard HIGH-VAC / LOW-VAC pressure adjustment system utilizes a precision needle valve. HIGH-VAC is used for highest quality carbon films such as for TEM applications. LOW-VAC is used for Glow Discharge cleaning of TEM grids or for carbon coating of highly topographic SEM specimens. For SEM, EDS/WDS and microprobe analysis applications, the Rotary-Planetary-Tilting stage with variable speed, adjustable tilt and 4 specimen holders ensures uniform coating on multiple samples. The Rotary-Tilting stage is specifically designed for TEM applications and holds a 25x75mm (1" x 3") glass slide. Both stages are mounted on a mounting collar and can be readily implemented in the chamber.

Rotary-Planetary-Tilting Stage with adjustable tilt (optional)

Rotary-Tilting Stage (optional)

The modular design of the 208C permits easy addition of optional coating accessories often used in EM labs such as metal evaporation, glow discharge and aperture cleaning devices. The accessories are all driven from the sophisticated 208 Auxiliary Power Unit. The accessories are connected to the APU by means of a "smart" cable. The APU detects the device and enables the controls accordingly for ease of operation. The APU contains a digital timer and digital HT/LT controls for the accessories. The 208C and all accessories have integrated vacuum safety switches so that the unit can only be used under vacuum.

208 Auxiliary Power Unit (APU) Prod. No. 9640

Glow Discharge Unit Prod. No. 9625

Metal Evaporation Top Plate Prod. No. 9650

9620 208C High Vacuum Turbo Carbon Coater, 115VAC . . . . . .each

9620-220 208C High Vacuum Turbo Carbon Coater, 220VAC . . . . . .each

9624 208C High Vacuum Turbo Carbon Coater, Dry Pumping System, 115VAC . . . . . .each

9624-220 208C High Vacuum Turbo Carbon Coater, Dry Pumping System, 220VAC . . . . . .each

Options and Accessories for 208C

9640 Auxiliary Power Supply for Accessories, 115VAC . . . . . .each

9640-220 Auxiliary Power Supply for Accessories, 220VAC . . . . . .each

9650 Metal Evaporation Accessory (requires 9640 or 9640-220) . . . . . .each
9650 includes: Mounting flange, vacuum safety switch, manual shutter and filaments.

9625 Glow Discharge Accessory, (requires 9640 or 9640-220) . . . . . .each
9625 includes: Accessory top-plate with HT feedthrough, vacuum safety switch, cathode and sample table.

9626 Aperture Cleaning Accessory (requires 9640 or 9640-220) . . . . . .each
9626 includes: Accessory top-plate with LT feedthrough, vacuum safety switch, boat holder with clamps.

9524 Rotary-Planetary-Tilting (R-P-T) Stage (variable speed 9V battery powered) . . . .each

9660 Rotary-Tilting (R-T) Stage (variable speed 9V battery powered) . . . .each
Note: The above are battery driven unless Prod 9631 or 9631-220 is used.

9631 R-P-T or R-T 9VDC Converter Kit, 115VAC . . . . . .each

9631-220 R-P-T or R-T 9VDC Converter Kit, 220VAC . . . . . .each

Vacuum System for 108 Coaters

The #7010 Vacuum System for the 108 series coaters consists of a desktop compatible direct drive, compact 2-stage rotary pump on an anti-vibration tray, all metal connection kit and exhaust filter. This high performance pumping system gives a fast pump-down (30 sec to 1 x 10^{-1} mbar) for shorter cycle times and better coating results. The same pump is also used on the 208HR and 208C high vacuum coaters as part of the complete system.

Rotary Pump Specifications:

Configuration . . . . . High speed, direct drive, 2-stage
Pumping Speed . . . . . 2.9m^3/hr (2.5m^3/hr)@ 60Hz (50Hz)
Ultimate vacuum . . . . . 6 x 10^{-3} mbar
Rated Power . . . . . 180 W @ 60Hz, 150 W @ 50 Hz
Flange connection . . . . NW/KF 16 (Intake and Exhaust)
Operating fluid filling . . 0.4 ltr
Fluid type . . . . . Pfeiffer P3
Voltage . . . . . 100-120V or 220-240V (specify on order)

Dual-Vacset

The Dual-Vacset Kit allows the connection of two Cressington 108 series Coaters to one vacuum pump. The most common configuration is a 108 Auto Sputter Coater and a 108C Auto Carbon Coater connected to one pump. This setup has several advantages:

- Two fully separate coating systems, each with optimized controls
- High throughput, efficient setup
- No cross-contamination between sputter (metal) and carbon coater
- Cost effective (uses one pump)

The Dual-Vacset Kit comprises a manual 3-way change-over ball valve and two NW-16 stainless flexible hoses with 2 each NW-16 centering rings (with o-rings) and NW-16 clamps.

Dual-Vacset on Vacuum Pump

7010 Desktop Rotary Pump, High Speed, 115V, 60Hz . . . . . .each

7010-220 Desktop Rotary Pump, High Speed, 220V, 50/60Hz . . . . . .each

7030 Dual-Vacset (connect two Cressington Coaters to one rotary pump) Kit . . . . . .each

7035 Dual-Vacset with pump . . . . . .each

891-38 PFEIFFER P3 Oil for #7010 or #7010-220 Rotary Pump, 1 liter . . . . . .each

9609 Exhaust Filter, for #7010 or 7010-220 Rotary Pump . . . . . .each

MTM-10 High Resolution Film Thickness Monitor and MTM-20 High Resolution Film Thickness Controller

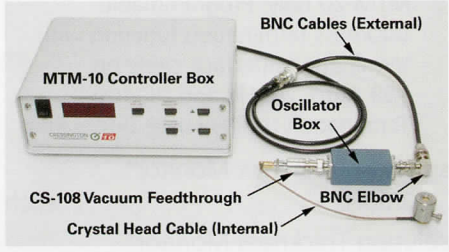
The High Resolution Thickness Monitor and Thickness Controller are based on the principle that the oscillating frequency of a quartz crystal is changed by the mass of a deposited film on its upper face. Electronically measuring this effect allows for a determination of the thickness of a deposited film. Once the density of the evaporated material is entered into the system, the thickness is measured to a resolution of 0.5nm on a four digit LED display having a range of 0-999.9 nanometers. The crystal and holder are mounted in the vacuum chamber and connected to the FTM Power Supply via the supplied vacuum feedthrough.

MTM-10 High Resolution Thickness Monitor

the economical way to assure thickness control

MTM-10 High Resolution Film Thickness Monitor

The MTM-10 High Resolution Thickness Monitor will fit any of the Cressington sputter and carbon coating systems as well as other thin film vacuum coating systems which allow for a vacuum feedthrough of 10mm diameter on a plate thickness of 9mm.



System Consists of:

- MTM-10 Controller Box
- BNC Cables / BNC Elbow
- Oscillator Box
- CS-108 Vacuum Feedthrough with BNC/SMB Connector and Integrated O-ring Seal
- Crystal Head Cable 7" / 108mm
- Crystal Monitor Head with M4 bracket screw size ø18 x 21mm height. Crystal area 6mm
- MTM-10 High Resolution Thickness Monitor

continued next page

Accurate manual control of film thicknesses during deposition is difficult if not impossible. A white tile with a drop of oil is sometimes used for rough estimates of coating thicknesses of carbon but cannot be used when repetitious, reproducible coatings are required. Using instrumental settings is also not an accurate method because vacuum level (for sputtering) and time (for evaporation) are very critical parameters. The High Resolution Thickness Monitor offers repeatability of coating thicknesses, removes guesswork and is convenient. The use of a tooling factor for different metals (densities) allows for exact measurement of the thin films. The MTM-10 High Resolution Thickness Monitor works with many types of vacuum thin film coating equipment.

MTM-20 High Resolution Thickness Controller

MTM-20 High Resolution Film Thickness Controller

The MTM-20 High Resolution Thickness Controller is specifically designed for the Cressington sputter coater systems and is fully compatible with the 108 Auto, 108 Auto/SE, 208HR sputter coater systems and with the DC-100 sputter supply for the 308R thin film coating system.

MTM-10 High Resolution Thickness Monitor and MTM-20 High Resolution Thickness Controller Specifications

General Specifications . .Microprocessor based, 4-digit display, push-button zero, 6MHz crystal with lifetime check, 5 times per second update rate
Thickness Range: . . . . . .0.0 - 999.9nm (pos/neg)
Resolution: . . . . . .0.1nm for carbon
Density Range: . . . . . .0.50 - 30.00g/cm^3
Tooling Factor Range: . .0.25 - 8.0
Processor Function: . . . .Four sets of values can be stored in memory under Density and four under Tooling for both the MTM-10 and MTM20
MTM-20 Controller: . . .MTM-20 only: Programmable thickness termination function with termination interface cable on 108 Auto, 208HR and DC-100 Termination facility range 0-999.9nm

93004 High Resolution Thickness Monitor* 110VAC, 50/60Hz . . . . . .each
93004-220 High Resolution Thickness Monitor* 220VAC, 50/60Hz . . . . . .each
93006 MTM-20 High Resolution Thickness Controller* 115VAC, 50/60Hz . . . . . .each
93006-220 MTM-20 High Resolution Thickness Controller* 220VAC, 50/60Hz . . . . . .each
93005 MTM-10 High Resolution Thickness Monitor, for RPT* 110VAC, 50/60Hz . . . .each
93005-220 MTM-10 High Resolution Thickness Monitor, for RPT* 220VAC, 50/60Hz . . . .each
93007 MTM-20 High Resolution Thickness Controller, for RPT* 115VAC, 50/60Hz . .each
93007-220 MTM-20 High Resolution Thickness Controller, for RPT* 220VAC, 50/60Hz . .each
93004-30 Oscillator for MTM-10/20 . . . . . .each
93004-31 Extension BNC Cable for MTM-10/20, 3 ft. (.9m) length . . . . . .each
93004-32 RF10 Vacuum Feedthrough for MTM-10/20 . . . . . .each
93004-35 Crystal Holder for MTM-10/20 . . . . . .each
93004-36 Crystal Holder Cable for MTM-10/20, 6 in. (15cm) length (for 108) . . . . . .each
93004-37 Crystal Holder Cable for MTM-10/20, 12 in. (30cm) length (for 108 SE, 208, 308) . . . . . .each
93008 Replacement Crystals for MTM-10/20 . . . . . .pkg/3
93009 Replacement Crystals for MTM-10/20 . . . . . .pkg/10
93004-10 Film Thickness Hardware Kit w/o MTM-10 . . . . . .each
93004-12 Film Thickness Hardware Kit for RPT Stage w/o MTM-10 . . . . . .each

*The MTM-10 High Resolution Thickness Monitor and MTM-20 High Resolution Thickness Controller include: Vacuum Feedthrough; Crystal Holder, Test Crystal; Instructions.

*RPT: Rotary-Planetary-Tilting Stage

Rotary-Planetary-Tilting and Rotary-Tilting Stages: 108 Auto/SE and 208 Series Coaters

Rotary-Planetary-Tilting Stage with adjustable tilt (optional)

Rotary-Tilting Stage (optional)

There are two types of rotary stages for the Cressington 108/SE and 208 series of coaters available.

1. Rotary-Planetary-Tilting (R-P-T) stage; this stage offers multi-angle movements of multiple samples for sputter coating and carbon coating evaporation. The R-P-T stage can be configured with 4 specific holders for most types of SEM mounts, large specimen mounts and cross sections; see the listing. The R-P-T enables better uniformity and adjacent coating on topographic samples than with a static stage. It also enables coating of a larger number of samples. The R-P-T fits all larger chamber configurations found on the 208 and the 108/SE series of Cressington coaters. With the special large sample adapters 8011 and 8011A, the R-P-T stage can be used as a rotary stage. (see next page)
2. Rotary-Tilting (R-T) stage; this stage is mostly used for larger samples on the 208C and 108C Auto/SE carbon coaters. It is also useful for shadowing techniques on the 208C high vacuum turbo carbon coater. The R-T stage is configured to accommodate standard 1" x 3" glass slides commonly used for making carbon support films.

Both the R-P-T and R-T stages are built into a 150mm diameter mounting collar to enable rapid configuration modifications. Also included are glass and metal spacers for chamber height adjustment, variable rotation speed control, and external tilt adjustment with locking lever. (Note: Tilt adjustment is 0-90° w/o thickness monitor sensor, but limited to 0-60° when the thickness monitor sensor is fitted.)

9524 Rotary-Planetary-Tilting (R-P-T) Stage (variable speed 9V battery powered) . . .each

9660 Rotary-Tilting (R-T) Stage (variable speed 9V battery powered) . . .each

Note: The above are battery driven unless Prod 9631 or 9631-220 is used

9631 R-P-T or R-T 9VDC Converter Kit, 115VAC . . . . . .each

9631-220 R-P-T or R-T 9VDC Converter Kit, 220VAC . . . . . .each

Sample Holders for Rotary-Planetary-Tilting Stages for use with the Cressington 308R-EM, 108 Auto/SE, 208HR, 208C

for 6 x 12.5mm dia. pin mounts

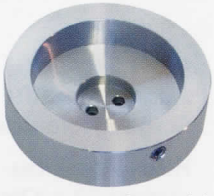
8012 Sample Holder for 6 x 12.5mm dia. pin mounts . . . . . .each

for 4 x 10mm dia. stubs

8014 Sample Holder for 4 x 10mm dia. stubs . . . . . .each

for 4 x 15mm dia. stubs

8015 Sample Holder for 4 x 15mm dia. stubs . . . . . .each



for 1 x 25mm dia. stub or metallographic mount

8016 Sample Holder for 1 x 25mm dia. stub or metallographic mount . . . . . .each

for 1 x 32mm dia. stub or metallographic mount

8017 Sample Holder for 1 x 32mm dia. stub or metallographic mount . . . . . .each

for 4 x 12.5mm dia. stubs

8018 Sample Holder for 4 x 12.5mm dia. stubs . . . . .each

continued on next page

Top

Bottom

Sample Holder for 3 x M4 + 3 x 12.5mm dia. pin mounts

8021 Sample Holder for 3 x M4 + 3 x 12.5mm dia. pin mounts . . . . . .each

8017A Adapter for 32mm mount to 25mm mount . .each

Large Sample Adapter for RPT Stage (208 style only)

For temporary conversion into Rotary-Tilting stage, 4" (101.6mm) OD. Fits on central hub over the 4 sample holders.

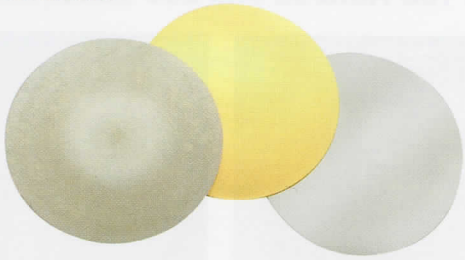
8011 Large Sample Adapter for RPT Stage, 4" (101.6mm) . . . . . .each

Cross Section Adapter for RPT Stage (geological)

Holds three cross sections 22 x 47mm (.87 x 1.85")

8011A Cross Section Adapter for RPT Stage, 4" (101.6mm) . . . . . .each

Sputter Targets for 108 and 208 Series Sputter Coaters



91122 Aluminum Target, 99.999% Al (57mm x 0.2mm) (208HR only) . . . . . .each

8074 Chromium Target, 99.99% Cr (57mm x 3.2mm) (208HR only) . . . . . .each

91117 Copper Target, 99.99% Cu (57mm x .076mm) . . . . . .each

8077 Copper Target, 99.99% Cu (57mm x 0.3mm) . . . . . .each

91110 Gold Target, 99.99% Au (57mm x 0.1mm) . . . . . .each

8071 Gold Target, 99.99% Au (57mm x 0.2mm) . .each

91112 Gold/Palladium Target, 99.99% Au:Pd, 60:40 ratio (57mm x 0.1mm) . . . . . .each

91111 Gold/Palladium Target, 99.99% Au:Pd, 60:40 ratio (57mm x 0.2mm) . . . . . .each

91120 Iridium Target, 99.95% Ir (57mm x 0.3mm) (208HR only) . . . . . .each

91124 Iron Target, 99.5% Fe (57mm x 0.12mm) . . .each

91116 Nickel Target, 99.98% Ni (57mm x 0.1mm) . .each

8079 Niobium Target, 99.9% Nb (57mm x 0.2mm) (208HR only) . . . . . .each

91119 Palladium Target, 99.9% Pd (57mm x 0.1mm) . . . . . .each

91114 Platinum Target, 99.95% Pt (57mm x 0.1mm) . . . . . .each

8076 Platinum/Palladium Target, 99.99% Pt:Pd, 80:20 ratio (57mm x 0.1mm) . . . . . .each

91115 Platinum/Palladium Target, 99.99% Pt:Pd, 80:20 ratio (57mm x 0.2mm) . . . . . .each

91118 Silver Target, 99.99% Ag (57mm x 0.1mm) . .each

8075 Tantalum Target, 99.95% Ta (57mm x 0.3mm) (208HR only) . . . . . .each

91123 Titanium Target, 99.6% Ti (57mm x 0.2mm) (208HR only) . . . . . .each

8078 Tungsten Target, 99.95% W (57mm x 0.25mm) (208HR only) . . . . . .each

Spares and Consumables for 108 Series Coaters

9607 O-Ring, 120mm, for Glass Cylinder for 108 series coaters pkg/2

9608 Glass Cylinder (120mm H x 120mm D) for 108 series coaters pkg/2

93010 Pointed Carbon Rods, Double Neck Tip 6.2mm (¼"), length 1.5", 60Hz pkg/10

93003 Pointed Carbon Rods, Double Neck Tip 6.2mm (¼"), length 1.5", 50Hz pkg/10

93015 Carbon Rods, Grade 1, ¼" x 12" (6.5 x 305mm), 60Hz pkg/10

93016 Carbon Rods, Grade 1, ¼" x 12" (6.5 x 305mm), 50Hz pkg/10

57-10 Two Step Carbon Rod Sharpener, for ¼" rods (Cressington 108C & 208C) . . . . .each

57-12 Replacement Blades for Two Step Carbon Rod Sharpener, for 1/4" rods pkg/2

9612 Carbon Rod Slider Springs for Bradley Carbon Source pkg/5

9613 Carbon Rod Slider, replacement or spare . . . .each

9614 Copper Braids for Bradley Carbon Source . . .pkg/5

9615 Ceramic Insulators for Bradley Carbon Source pkg/8

9616 PTFE Insulator Kit for Bradley Carbon Source . . . . . .each

9617 Replacement Bradley Carbon Source for 108C and 208C . . . . . .each

93008 Replacement Crystals for MTM-10/20 . . . .pkg/3

93009 Replacement Crystals for MTM-10/20 . . . .pkg/10

9609 Oil Mist Filter for 7010 pump . . . . . .each

891-38 Pfeiffer P3 Oil for #7010 Pump, 1 ltr . . . . . .each

92061 Exhaust Filter for #92080, VRL 100-3.4 . . . .each

891-35 Ultragrade 19 rotary pump oil for #92080 . . .each

For 108/SE Series Only

8006 Glass Cylinder (150mm D x 150mm H) light deposition, for 208HR, 208C, 108 Auto/SE and 108C Auto/SE . . . . . .each

8009 Glass Cylinder (150mm D x 65mm H) heavy deposition, (standard) for for 208HR, 208C, 108 Auto/SE and 108C Auto/SE . . . .each

8025 O-Ring, 150mm, for Glass Cylinder for 208C, 208HR, 108 Auto/SE and 108C Auto/SE . . .pkg/2

8091-1 Metal Spacer Ring, for 208HR, 208C, 108 Auto/SE and 108C Auto/SE . . . . . .each

Spares and Consumables for 208 Series Coaters

8025 O-Ring, 150mm, for Glass Cylinder for 208C, 208HR, 108 Auto/SE and 108C Auto/SE pkg/2

8006 Glass Cylinder (150mm D x 150mm H) light deposition, for 208HR, 208C, 108 Auto/SE and 108C Auto/SE . . . . . .each

8009 Glass Cylinder (150mm D x 65mm H) heavy deposition, (standard) for 208HR, 208C, 108 Auto/SE and 108C Auto/SE . . . . . .each

8091-1 Metal Spacer Ring, for 208HR, 208C, 108 Auto/SE, and 108C Auto/SE . . . . . .each

93010 Pointed Carbon Rods, Double Neck Tip 6.2mm (¼"), length 1.5", 60Hz pkg/10

93003 Pointed Carbon Rods, Double Neck Tip 6.2mm (¼"), length 1.5", 50Hz pkg/10

93015 Carbon Rods, Grade 1, ¼" x 12" (6.5 x 305mm), 60Hz pkg/10

93016 Carbon Rods, Grade 1, ¼" x 12" (6.5 x 305mm), 50Hz pkg/10

57-10 Two Step Carbon Rod Sharpener, for ¼" rods (Cressington 108C & 208C) . . . . .each

57-12 Replacement Blades for Two Step Carbon Rod Sharpener, for ¼" rods pkg/2

9612 Carbon Rod Slider Springs for Bradley Carbon Source pkg/5

9613 Carbon Rod Slider, replacement or spare . . . .each

9614 Copper Braids for Bradley Carbon Source . . .pkg/5

9615 Ceramic Insulators for Bradley Carbon Source pkg/8

9616 PTFE Insulator Kit for Bradley Carbon Source . . . . . .each

9617 Replacement Bradley Carbon Source for 108C and 208C . . . . . .each

93008 Replacement Crystals for MTM-10/20 . . . .pkg/3

93009 Replacement Crystals for MTM-10/20 . . . .pkg/10

84-16 3-wire Tungsten Filaments, 40A pkg/10

76 3-wire Tungsten Basket, 35A pkg/10

9609 Oil Mist Filter for 7010 pump . . . . . .each

891-38 Pfeiffer P3 Oil for #7010 Pump, 1 ltr . . . . . .each

Cressington 308R Desktop Advanced Coating Systems

The Cressington 308R is the world's most advanced 12" compact desktop coating system for nanotechnology applications:

- High performance compact microprocessor controlled pumping station
- Vacuum system optimized for both sputtering and evaporation techniques
- Clean, all stainless steel design
- Pumping system requires no water cooling
- Thermal evaporation for carbon and metals
- DC magnetron sputtering for metals and alloys
- Powerful glow discharge plasma/ion cleaning
- E-Beam evaporation sources for carbon and low angle rotary shadowing
- High resolution film thickness measurement system
- Rotary/Tilt and Rotary/Planetary/Tilt stages with variable speed
- Feedthrough collar with standard KF40 flanges for easy port access
- Lightweight stainless steel chamber with 2 large windows
- High capacity cryo-pump

The versatility of the 308R system enables unique flexibility with multiple configurations to suit a variety of applications. Standard configurations available are:

308UHR Ultra High Resolution Coating System for FESEM and TEM

The Cressington 308UHR ultra high resolution coating system is the most advanced coating system available for ultra high resolution SEM/TEM work. The system is specifically designed for the needs of ultra high resolution FESEM and/or TEM imaging. The 308UHR utilizes a specially configured DC magnetron sputter head for amorphous ultra-thin chromium coating for FESEM samples. The high baseline vacuum in the 10^{-7} mbar range combined with the unique gas handling capabilities of the Cressington 308R vacuum pumping station assures a clean environment for sputtering. Sputtering is done with argon gas in a medium vacuum range in order to achieve excellent ultra high resolution coating results.

The 308UHR also features an electron beam carbon evaporation facility for ultra high quality carbon coatings needed for ultrastructural TEM imaging and EBSD applications. This makes the Cressington 308UHR a truly unique system, combining an ultra high resolution sputter coater with E-Beam evaporation capabilities.

The 308UHR system enables advanced coating techniques such as:

- Grain-free ultra-thin conformal amorphous chromium coating for FESEM
- Ultra-thin E-Beam evaporated carbon support films for TEM
- Precision E-Beam rotary metal shadowing for molecular biology
- Glow discharge pre-coating cleaning of FESEM samples
- Ultra-structural freeze drying with UHR sputter coating for FESEM
- Accurate ultra-thin E-beam coating for FESEM and EBSD

The 308UHR system configuration includes:

- Accurate ultra-thin E-beam coating for FESEM and EBSD
- 308R pumping station with 9xKF40 feedthrough collar and light weight stainless steel chamber
- Cryo pump in top of vacuum chamber
- DC100 sputter supply and sputter source for amorphous chromium
- EB Evaporation system with EB500 E-Beam power supply and carbon E-Beam source
- Swing-in shutter assembly
- Static shutter
- Rotary-tilt stage with 105mm dia. multi specimen holder
- MTM-10 thickness monitor system

The system can be further upgraded with glow discharge plasma/ion cleaning capabilities (connects to the second port on the DC100 power supply), second E-Beam source / power supply and rotary-planetary-tilting stage.

95000-10 308UHR Ultra High Resolution Coating System for FESEM and TEM, 115VAC, 60Hz . . . . . .each

95000-10-220 308UHR Ultra High Resolution Coating System for FESEM and TEM, 220VAC, 50/60Hz . . . . . .each

308R-EM Evaporation and Sputter Coating System for EM

The Cressington 308R-EM coating system offers all the flexibility of a large 12" bell jar system on a compact fast pumping desktop system without the need for water-cooling. The system is optimized for all high resolution quality coating tasks in today's EM lab such as:

- Carbon coating for TEM support films
- Metal shadowing
- Carbon coating for EPMA and/or EBSD
- Glow Discharge cleaning of TEM grids
  Glow Discharge cleaning of FESEM samples
- Sputtering non-conductive specimens for FESEM or SEM

The Cressington 308R-EM coating system configuration includes:

- 308R pumping station with 9xKF40 feedthrough collar and light weight stainless steel chamber
- LT750 Evaporation supply and carbon and metal evaporation sources
- DC100 sputter supply with one sputter source assembly and Glow Discharge Unit
- Glow discharge cleaning assembly
- Shutter assembly
- Static specimen table
- MTM-10 thickness monitor system

The Cressington 308R-EM has been designed with the "no compromise on quality" philosophy, to deliver a versatile quality coating system for today's demanding EM applications.

The system can easily be upgraded with a rotary-tilting stage for low angle rotary shadowing or rotary-planetary-tilting stage for topographic samples. For ultra high resolution coatings the 308UHR system is the best solution.

95000-20 308R-EM - Evaporation and Sputter Coating System for EM, 115VAC, 60Hz . . .each

95000-20-220 308R-EM - Evaporation and Sputter Coating System for EM, 220VAC, 50/60Hz . . . . . .each

308R Dual Source Sputter Coater

The Cressington 308R - DC Magnetron Sputtering System is a highly sophisticated compact sputter coater for research and laboratory type applications. The system utilizes compact sputter sources with 38mm diameter targets. The sputter sources are mounted on a mounting ring with a flexible power cable in the vacuum chamber (they can be positioned anywhere in the vacuum chamber).

Benefits of the unique design of the Cressington sputter sources are:

- Moveable sputter sources
- Sputter heads can be positioned virtually anywhere in the vacuum chamber
- Works with a wide range of process gas (argon) pressure
- Wide range of sputter rates
- Up to four sputter sources can be mounted in the 12" metal chamber
- Efficient use of target materials
- Relatively low target costs

In the standard configuration with two sputter heads and a dual source (serial) power supply, the 308R Sputter Coater is ideally suited for applications where dual layers are needed or where an adhesion material needs to be deposited, example: Cr/Au. The high vacuum mode of the pumping system is capable of giving an excellent baseline vacuum to enable clean sputtering.

Standard configuration of the 308R Sputtering System includes:

- 308R pumping station with 9xKF40 feedthrough collar and lightweight stainless steel chamber
- DC100 sputter supply and two sputter source assemblies
- Shutter assembly
- Rotary-Planetary-Tilting stage with 4 ea 43mm diameter specimen holders
- MTM-20 thickness controller system

The system can be easily upgraded with additional sputter heads or with thermal evaporation capabilities. If co-sputtering of materials is needed, each sputter head needs its own power supply. The Cressington 308R pumping station can be easily optimized for sputtering or evaporation with a simple touch of a button.

95000-30 308R Dual Source Sputtering System, 115VAC, 60Hz . . . . . .each

95000-30-220 308R Dual Source Sputtering System, 220VAC, 50/60Hz . . . . . .each

308R Dual Source Thermal Evaporator

The Cressington 308R - Thermal Evaporation System is a high vacuum thin film vacuum evaporator with a clean stainless steel vacuum chamber construction. It is ideally suited for research, laboratory, electron microscopy or even small production applications. The system uses compact metal evaporation sources which accommodate filaments, baskets or boats and can be configured for either upwards or downwards evaporation. The LT 750 power supply is a dual source power supply with two KF40 feedthroughs with integrated vacuum safety interlock switches. The LT750 power supply has a source selection switch and is rated for 185A@4V and 90A@8V.

Standard configuration of the 308R Thermal Evaporation System includes:

- 308R pumping station with 9xKF40 feedthrough collar and light weight stainless steel chamber
- LT750 Evaporation supply and two metal evaporation sources
- Shutter assembly
- Rotary-tilting stage with 105mm diameter multi specimen holder
- MTM-10 thickness monitor system

The system can be easily upgraded with more evaporation sources or with sputtering capabilities. When co-evaporation is needed, each source needs its own dedicated power supply.

95000-40 308R Dual Source Thermal Evaporation System, 115VAC, 60Hz . . . . . .each

95000-40-220 308R - Dual Source Thermal Evaporation System, 220VAC, 50/60Hz . . . . . .each

308R Multi Coater for Evaporation and Sputtering System

versatile desktop coating system

The Cressington 308R Multi Coater system combines a thermal evaporator and sputter coater in one single compact desktop system. It includes a 12" stainless light-weight vacuum chamber enabling optimized deposition for a wide range of materials. The advanced 308R vacuum pumping system switches between high vacuum evaporation conditions and sputtering conditions with a single touch of a button. The microprocessor controlled vacuum pumping station sets the vacuum conditions for the required application. The system does not use throttle valves and is therefore capable of maintaining high pumping speeds at all times offering maximum flexibility in a single system.

Thin film coating techniques offered in the multi coater system are both DC magnetron sputtering and thermal evaporation with filaments, baskets or boats. The sputter source can be freely positioned in the vacuum chamber to optimize coating capabilities. For thermal evaporation two metal evaporation sources are provided.

The 308R Flexible Multi Coater System configuration includes:

- 308R pumping station with 9xKF40 feedthrough collar and light weight stainless steel chamber
- LT750 Evaporation supply and two metal evaporation sources
- DC100 sputter supply and one sputter source assembly
- Shutter assembly
- Rotary-tilting stage with 105mm diameter multi specimen holder
- MTM-10 thickness monitor system

The 308R multi coater can be easily upgraded with an additional sputter source or glow discharge cleaning head at the second output of the DC100 sputter power supply. For co-sputtering of material each sputter source needs its own individual DC 100 power supply.

95000-50 308R Multi Coater for Evaporation and Sputtering System, 115VAC, 60Hz . . . . . .each

95000-50-220 308R Multi Coater for Evaporation and Sputtering Syst., 220VAC, 50/60Hz . . . . .each

■ 308R Thin Film High Power Evaporation System

The Cressington 308R High Power Thin Film Evaporation system has been developed for high power evaporation processes with larger boats, baffle boats or crucibles in a compact desktop system with a light weight 12" stainless steel vacuum chamber. The LT1500 power supply is a dual source power supply with two KF40 feedthroughs having integrated vacuum safety interlock switches. The LT1500 power supply has a source selection switch and is rated for 375A@4V and 185A@8V.

The evaporation sources can accommodate 4" size boats, filaments and baskets and are water-cooled to allow for prolonged high power evaporation needed to drive baffle boats or for thicker depositions. The feedthroughs for the water cooled sources are built into a standard KF40 vacuum feedthrough.

The system is configured for upwards evaporation with the sources mounted on the source mounting ring in the feedthrough collar. The substrate holder is mounted in the top of the stainless steel light weight metal chamber.

The 308R High Power Evaporation System configuration includes:

- 308R pumping station with 9xKF40 feedthrough collar and light weight stainless steel chamber
- LT1500 High Power Evaporation supply with two water-cooled 4" evaporation sources
- Shutter assembly
- Rotary-tilting stage with 105mm diameter multi specimen holder
- MTM-10 thickness monitor system

The 308R High Power Evaporation system can be upgraded with additional evaporation sources and shutters up to four 4" evaporation sources and two manual shutters in the 12" vacuum chamber.

95000-60 308R Thin Film High Power Evaporation System, 115VAC, 60Hz . . . . . .each

95000-60-220 308R Thin Film High Power Evaporation System, 220VAC, 50/60Hz . . . . . .each

Further Information on the 308R Individual Components

■ Advanced 308R Pumping System and Vacuum Chamber

The 308R system is a unique versatile compact desktop vacuum coating system. It is packed with new features and the latest vacuum technology to ensure fast and clean pumping coupled to smooth operation. The advanced wide range turbo pump can be optimized for either evaporation (E-Beam or thermal) or for sputtering / glow discharge with a single touch of a button. This truly revolutionary desktop pumping system is fully gauged, features electronic valves and is microprocessor controlled for automatic pump down and venting sequences. Precision gas leak for sputter gas and separate dry venting line are standard.

All functions are readily accessible via manual operation for increased flexibility. A well maintained system routinely pumps down into the 10^{-7} mbar range using the high speed mode of the turbo pump. The 308R is now equipped with a light weight stainless steel chamber featuring two windows (75 and 100mm) and 2 KF40 flanges. The standard 9-port KF40 feedthrough collar has an internal mounting ring for the deposition sources.

All connections for the thermal evaporation sources, sputtering heads, E-Beam sources, glow discharge cleaning head, thickness monitor, shutters and rotary/tilt stages are on the 9-port feedthrough collar. All power supplies are compact standalone units, positioned aside the pumping station, enabling the user optimum and easy configuration at any time.

The Cressington 308R Vacuum Chamber is manufactured using annealed stainless steel for improved vacuum performance. The light weight construction makes it easy to remove the chamber to access the deposition sources or the substrate.

Advantages of the Cressington 308 Vacuum Pumping System:

- Vacuum chamber and pumping manifold from annealed stainless steel gives near UHV clean vacuum performance
- Light weight stainless steel chamber with separate dome for improved accessibility and safety
- Fully indexed collar, chamber and dome for easy assembly
- Compact system for both sputter and evaporation operation

LT750 Low Power Thermal Evaporation for EM Applications

The LT750 has been specifically designed for carbon and metal evaporation as used in electron microscopy applications. The carbon source works with stepped carbon rods and the metal source can accommodate filaments, baskets and boats. The LT750 has a dual source output with dual KF40 feedthroughs on the cables with safety switches on each feedthrough. It has a choice of 4 and 8 volts output with 185A and 90A respectively.

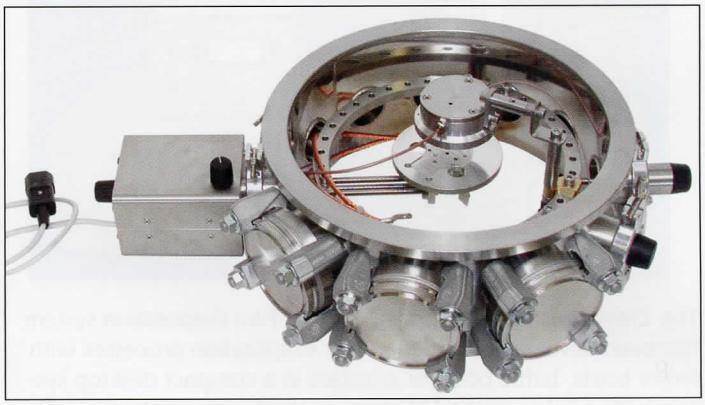
LT1500 High Power Evaporation for Thin Film Analysis Applications

The LT1500 high power supply has been specifically designed for thin-film applications. It also has a dual source output with two KF40 feedthroughs and safety switches on each feedthrough. The voltage selection is either 4 or 8 volts with 375A and 190A respectively. The LT1500 with the larger water-cooled evaporation sources uses 75 or 100mm long boats, baskets and mini-crucibles. It has enough power to drive baffle boats. The water cooling feedthroughs are mounted on a standard KF40 flange.

DC100 DC Magnetron Power Supply, Sputter Sources and Glow Discharge Cleaning

The DC100 DC magnetron power supply has a dual output on a single KF40 feedthrough with a vacuum interlock integrated in the feedthrough. Up to two compact sputter sources or a combination of sputter head and glow discharge can be connected to one DC100 power supply. Sputter sources have a separate feedthrough, do not require water cooling and can be positioned anywhere in the chamber.

The DC100 Power Supply is adjustable from 5-80 Watts. Operation is either manual, preset current or thickness controlled (needs the high resolution MTM-20 thickness controller). The sputter sources for the 308 use compact 38mm diameter targets. This allows for mounting up to 4 sputter heads in the vacuum chamber to accommodate either sputtering of multiple layers or co-sputtering of materials. Sputter sources can be conditioned or shielded by using shutter assemblies. The advanced vacuum system and precise leak valve setting gives excellent control over the argon sputter gas pressure resulting in a wide range of sputter rates.



The efficient glow discharge head used together with air as process gas gives excellent plasma/ion cleaning of substrates, TEM grids. With the glow discharge hydro carbons or biological material can also be etched.

DC Magnetron Head Assembly on Swinging Arm (Prod. No. 9520-20) is shown above mounted on a standard KF40 feedthrough.

EB500 Electron Beam Evaporation and EB Sources

The EB500 power supply is a high performance single output E-beam power supply capable of driving the Cressington electron beam sources for carbon and platinum/carbon.

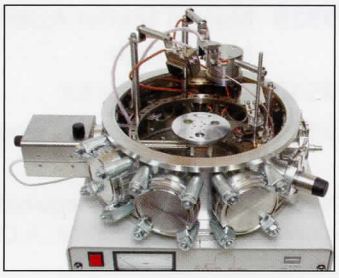
The EH53 carbon source is a directional rod-fed E-beam source designed to produce ultra-high resolution and ultra-thin carbon films for ultrastructural TEM applications. It can also be used for FESEM sample coating and demanding EBSD applications.

The EH52 Pt/C E-beam source is also a directional rod-fed electron beam evaporation source specifically designed for low angle rotary shadowing work for high resolution TEM applications.

Both E-Beam carbon sources are also used in the highly acclaimed Cressington Freeze Fracture and Freeze Etching systems and are renowned for delivering consistent ultra high resolution coatings in EM applications.

Substrate Stages

Feedthrough Collar with Rotary-Planetary-Tilting Stage



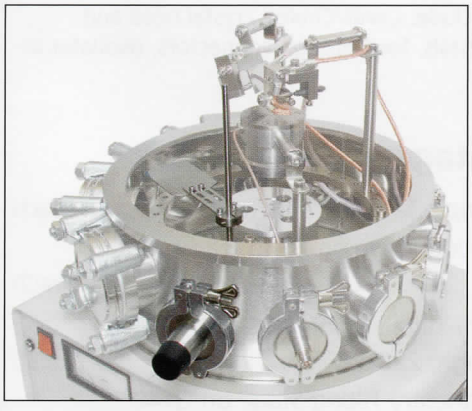
Feedthrough Collar with Rotary-Tilting Stage

There is a choice of substrate stages:

- A simple static table mounted in the center of the source mounting ring
- A rotary-tilting (RT) stage with variable speed, having a choice of 4" or 8" stages
- An advanced rotating-planetary-tilting (RPT) stage with 4 sample holders

Both the RT and RPT stage use one KF40 flange for mounting. Standard configuration is for downward deposition, but upwards evaporation is available by mounting the RT or RPT stage in the top of the lightweight stainless steel vacuum chamber.

Shutters



The manual shutters can be used either for shielding the specimen or a source. Mounted on a standard KF40 feedthrough they can be positioned and moved through a control knob. The shutter blade can be easily repositioned on the shutter holder for optimum shielding and to adjust for different configurations. For specific applications a sputter source can be shielded with a stationary shutter mounted on the mounting ring.

Precise MTM Film Thickness Measurement Systems

MTM-10 Thickness Monitor for use with the 308R-EM Vacuum Coating System

Each 308R is supplied with a precise high resolution MTM-10 thickness measurement system utilizing a 6Mhz quartz crystal. Using a thickness monitor is the only reliable method for controlling the coating thickness and to achieve consistent coating thickness. The MTM-10 can store four density and tooling factors and has a resolution of 0.1nm for a density of 2 g/cm^3 (carbon). Optionally available is the MTM-20 thickness controller, which has an integrated termination facility for the DC100 sputter power supply. When using evaporation processes the MTM-20 is used as a thickness monitor system.

Components for the 308R Systems

Advanced 308R Pumping Station

9500R 308R Pumping Station, 115VAC, 60Hz . . .each

9500R-220 308R Pumping Station, 220VAC, 50/60Hz . . . . . .each

308R Compact Desktop Pumping Station includes:
Desktop Pumping Station 308R; automatic or manual control; 13" diameter stainless steel baseplate; precision gas leak; power cord; wide range turbo molecular drag pump; O-ring and accessories; rotary pump 6.0m^3/hour on anti-vibration stand and accessories.

Vacuum Chamber and Feedthrough Collar

9510 12" Feedthrough Collar, 100mm, 9xQF40 ports, includes QF40 Blanking Plate, O-rings and Clamps . . . . . .each

9508 12 x 8" Light Weight Stainless Steel Vacuum Chamber, includes 3xQF40 ports, 75 and 100mm windows . . . . . .each

9507 12" Domed Stainless Steel Top Plate with window . . . . . .each

9506 12" Domed Stainless Steel Top Plate with 2000 L/sec Cryo-pump with Isolation Valve . . . . . .each

9507-10 Domed Top Plate with port . . . . . .each

9507-20 Blanking Plate . . . . . .each

9507-30 Blanking Plate with 100mm window . . . . . .each

9507-40 Cryo Pump with Isolation Valve . . . . . .each

Carbon and Metal Evaporation

9514 LT750, Dual Output Evaporation Supply, max. 175A/4V with two QF40 feedthroughs and pressure switch control, 115VAC . . . . . .each

9514-220 LT750, Dual Output Evaporation Supply, max. 175A/4V with two QF40 feedthroughs and pressure switch control, 220VAC . . . . . .each

9515 308 Bradley Carbon Evaporation Assembly . . .each

9516 Metal Evaporation Assembly . . . . . .each

Thin Film Resistive Evaporation

9535 LT1500, Dual Output Evaporation Supply, max. 375A/4V with two QF40 feedthroughs and pressure switch control, 115VAC . . . . . .each

9535-220 LT1500, Dual Output Evaporation Supply, max. 375A/4V with two QF40 feedthroughs and pressure switch control, 220VAC . . . . . .each

9536 Resistive Evaporation Source 75mm, water cooled . . . . . .each

9537 Resistive Evaporation Source 100mm, water cooled . . . . . .each

9538 Water Cooling for Single Evaporation Source . .each

9539 Water Cooling for Dual Evaporation Source . . .each

9532 Source Mounting Ring with 36 holes for 9510 . . . . . .each

E-Beam Evaporation for EM Applications

9540 EB500 E-Beam Single Source Power Supply with QF40 feedthrough and pressure switch control, 115V . . . . . .each

9540-220 EB500 E-Beam Single Source Power Supply with QF40 feedthrough and pressure switch control, 220V . . . . . .each

9542 EH52 E-Beam Pt/C Shadowing Assembly, 2mm Pt/C rods . . . . . .each

9543 EH53 E-Beam Carbon Evaporation Outfit, 3mm carbon rods . . . . . .each

Sputter Deposition

9518 DC100 Dual Output Sputter Supply with single QF40 dual feedthrough and pressure switch control, 115V . . . . . .each

9518-220 DC100 Dual Output Sputter Supply with single QF40 dual feedthrough and pressure switch control, 220V . . . . . .each

9520 DC Magnetron Sputter Head Assembly, 38mm disc target size . . . . . .each

9518-20 DC Magnetron Head Assembly on Swinging Arm, 38mm disc target size (swinging control on QF40 feedthrough) . . . . .each

9519 Glow Discharge Assembly for TEM grid cleaning . . . . . .each

9519-20 Glow Discharge Assembly on Swinging Arm (swinging control on QF-40 feedthrough) . . . . . .each

9529 Manual Shutter Assembly on QF40 feedthrough . . . . . .each

9530 Static Shutter Kit . . . . . .each

9532 Source Mounting Ring with 36 holes for 9510 . . . . . .each

Note: The DC100 is the required power supply for sputtering or glow discharge application. A DC100 can be used for two accessories.

Thickness Monitor Systems

9523 Thickness Monitor System MTM-10 for evaporation or sputtering, incl. QF40 feedthrough, 115VAC . . . . . .each

9523-220 Thickness Monitor System MTM-10 for evaporation or sputtering, including QF40 feedthrough, 220VAC . . . . . .each

9526 Thickness Controller System MTM-20 for sputtering only, including QF40 feedthrough, 110VAC . . . . . .each

9526-220 Thickness Controller System MTM-20 for sputtering only, including QF40 feedthrough, 220VAC . . . . . .each

Thickness Monitors include: Cords/Cables, crystal head and mounting bracket, crystals, feedthrough connectors, oscillator assembly, complete.

Substrate Stages and Adapters

9532-10 Static Sample Table (adapts to #9532) . . . . .each

9630-3 Rotary-Tilting Stage on QF40 feedthrough, 115VAC . . . . . .each

9630-3-220 Rotary-Tilting Stage on QF40 feedthrough, 220VAC . . . . . .each

9630-5 Rotary-Planetary-Tilting Stage on QF40 feedthrough, 115VAC . . . . . .each

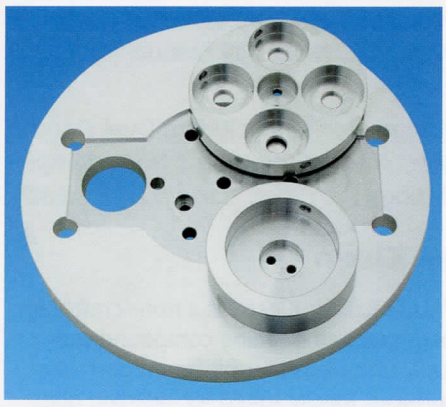
9630-5-220 Rotary-Planetary-Tilting Stage on QF40 feedthrough, 220VAC . . . . . .each

Note: Feedthrough Collar with Rotary-Planetary-Tilting Stage shown above on page 121

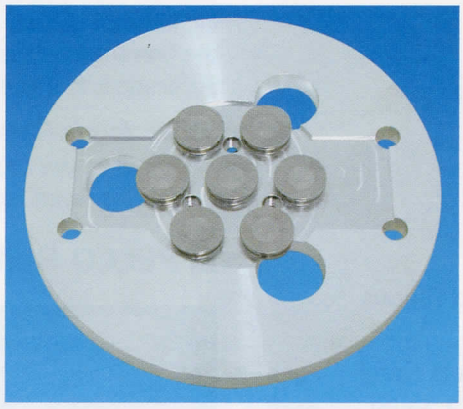
9632-5 105mm Rotary Table for 3x1" slide, 7 pin stub mounts or 3 sample holders . . . . . .each

Note: #9632-5 is shown on next page

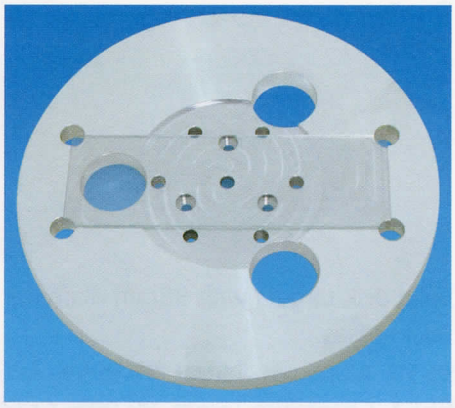
Multifunctional Sample Holder for 308 Coater R-T Stage



Prod. No. 9632-5, Rotary Table with Multi Stub Holder in place.



Prod. No. 9632-5, Rotary Table with 7 pin stubs.



Prod. No. 9632-5, Rotary Table with 3 x 1" slide in place.

Mounting Hardware for Sources Inside Vacuum Chamber of 308R Systems

9532 Source Mounting Ring with 36 holes . . . . .each
9532-10 Static Sample Table . . . . . .each
9532-20 Mounting Pillar 25mm, Stainless Steel . . . . .each
9532-21 Mounting Pillar 50mm, Stainless Steel . . . . .each
9532-22 Mounting Pillar 75mm, Stainless Steel . . . . .each
9532-23 Mounting Pillar 100mm, Stainless Steel . . . .each
9532-24 Mounting Pillar 125mm, Stainless Steel . . . .each
9532-25 Mounting Pillar 150mm, Stainless Steel . . . .each
9532-26 Mounting Pillar 200mm, Stainless Steel . . . .each
9532-27 Spacer 6.5mm, Stainless Steel pkg/5
9532-30 Mounting Link, 52mm ctrs, Stainless Steel .each
9532-31 Mounting Bracket, 90 deg, Stainless Steel . .each
9532-32 Mounting Link 20mm ctrs, Stainless Steel . .each
9532-33 EB Source Mounting Arm, Stainless Steel . .each
9532-40 M6 Nut, easy clean pattern, Stainless Steel pkg/5
9532-41 M6 Nut, mounting ring, locking, Stainless Steel pkg/5
9532-42 M6x12 Skt Cap Screw, Stainless Steel . . .pkg/10
9532-43 M6x16 Skt Cap Screw, Stainless Steel . . .pkg/10
9532-44 M6x20 Skt Cap Screw, Stainless Steel . . .pkg/10
9532-45 M6x25 Skt Cap Screw, Stainless Steel . . .pkg/10
9532-46 M6 Washer, Stainless Steel pkg/25

Consumables and Accessories for 308R Systems

93009 Replacement Crystals for MTM-10/20 . . .pkg/10
93010 Pointed Carbon Rods, Stepped Neck Tip, 6.2mm (¼"), length 1.5", 60Hz pkg/10
93003 Pointed Carbon Rods, Stepped Neck Tip 6.2mm (¼"), length 1.5", 50Hz pkg/10
57-10 Two Step Carbon Rod Sharpener for ¼" rods (Cressington 108C & 208C) . . . . . .each
957-12 Replacement Blades for Two Step Carbon Rod Sharpener for ¼" rods pkg/2
9612 Carbon Rod Slider Springs for Bradley Carbon Source pkg/5
9613 Carbon Rod Slider, replacement or spare . . .each
9614 Copper Braids for Bradley Carbon Source .pkg/5
9615 Ceramic Insulators for Bradley Carbon Source pkg/8
9617 Replacement Bradley Carbon Source for 108C and 208C . . . . . .each
84-16 Tungsten Filament, 6 Coils pkg/10
76 Tungsten Wire Basket, 3-strand pkg/10
9542-10 EH52 E-Beam Shadowing Source, uses 2mm rods . . . . . .each
9543-10 EH52 E-Beam Shadowing Source, uses 3mm rods . . . . . .each
9542-12 HT Cable 29cm for E-Beam Source . . . . . .each
9542-14 HT Cable 38cm for E-Beam Source . . . . . .each
9542-16 E-Beam Emitter Filaments for both EH52 and EH53 . . . . . .pkg/10
9542-18 Pt/C Rods, 2mm for EH52 E-Beam Source pkg/10
9543-18 Carbon Rods, 3mm for EH53 E-Beam Source pkg/10
9609 Oil Mist Filter for 7010 pump . . . . . .each
891-38 Pfeiffer P3 Oil for #7010 Pump, 1 ltr . . . . .each

Sputter Targets for the 308R Sputter Systems

Solid disk targets with 38mm diameter and various thicknesses.

9559 Aluminum Target, 99.999% Al (38 x 0.1mm) . . .each
9551 Chromium Target, 99.99% Cr (38 x 3.2mm) . . .each
9570 Cobalt Target, 99.99% Co (38 x 0.1mm) . . . . .each
9558 Copper Target, 99.99% Cu (38 x 0.1mm) . . . . .each
9552 Gold Target, 99.99% Au (38 x 0.2mm) . . . . . .each
9562 Gold Target, 99.99% Au (38 x 0.4mm) . . . . . .each
9550 Gold/Palladium Target, 99.99% Au:Pd 60:40 ratio, (38 x 0.2mm) . . . . . .each
9564 Gold/Palladium Target, 99.99% Au:Pd 60:40 ratio, (38 x 0.4mm) . . . . . .each
9571 Iridium Target, 99.99% Ir, (38 x 0.3mm) . . . . . .each
9569 Iron Target, 99.95% Fe, (38 x 0.5mm) . . . . . .each
9567 Lead Target, 99.99% Pb, (38 x 0.2mm) . . . . . .each
9565 Molybdenum Target, 99.98% Mo (38 x 3.2mm) . . . . . .each
9560 Nickel Target, 99.98% Ni, (38 x 0.5mm) . . . . . .each
9572 Palladium Target, 99.99% Pd, (38 x 0.2mm) . . .each
9553 Platinum Target, 99.95% Pt, (38 x 0.2mm) . . . .each
9566 Platinum Target, 99.95% Pt, (38 x 0.4mm) . . . .each
9554 Platinum/Palladium Target, 99.99% Pt:Pd 80:20 ratio, (38 x 0.2mm) . . . . . .each
9568 Platinum/Palladium Target, 99.99% Pt:Pd 80:20 ratio, (38 x 0.4mm) . . . . . .each
9557 Silver Target, 99.95% Ag, (38 x 1.0mm) . . . . . .each
9555 Tantalum Target, 99.95% Ta, (38 x 1.0mm) . . .each
9563 Tin Target, 99.95% Sn, (38 x 0.5mm) . . . . . .each
9561 Titanium Target, 99.998% Ti, (38 x 0.5mm) . . .each
9556 Tungsten Target, 99.95% W, (38 x 3.2mm) . . .each

Argon Pressure Regulator Kit

Argon dual stage pressure regulator kit for sputtering applications. The high quality pressure regulator has a stainless steel diaphragm, a chrome-plated brass body and a 6mm tube fitting. Tank gauge shows the gas volume remaining in the supply tank (between 0-4,000 psi) and the working pressure gauge indicates line pressure (between 0-30 psi). Fits standard argon gas cylinder (580G). The kit contains 3m (10') by 6mm thick polyethylene tubing including 2 hose clamps to fit both the pressure regulator and the Cressington series coaters. Note: Working Pressure for sputter applications is 5-6 psi.

7032 Argon Pressure Regulator Kit, including Dual stage Pressure regulator, 3m gas hose and 2 hose clamps for 6mm tube fittings . . . . . .each

PELCO Bell Jar Kleen™

PELCO Bell Jar Kleen™ is a non-scratching polishing and cleaning compound specially formulated for glass and porcelain surfaces. Ideally suited for cleaning glass bell jars used on vacuum evaporators, vacuum chambers from sputter and carbon coaters and glass windows in large coating systems. Can be used on vacuum chambers made from Corning, Schott or Pyrex® glass. Also suitable to clean metal surfaces like stainless steel, aluminum and copper parts, but will scratch surfaces on soft metals. Main ingredient of this environmentally friendly product is calcium carbonate. Does not contain phosphorus, chlorines or dyes. Use water and textile wipes or cloths for a fast cleaning action. Wipe away residue with clean moist wipes. Recommended final cleaning of vacuum parts is with an alcohol/acetone solution. Sold in 14 oz. container (395gram). M

896 PELCO Bell Jar Kleen™, 14 oz. . . . . .each

M = MSDS on web page