

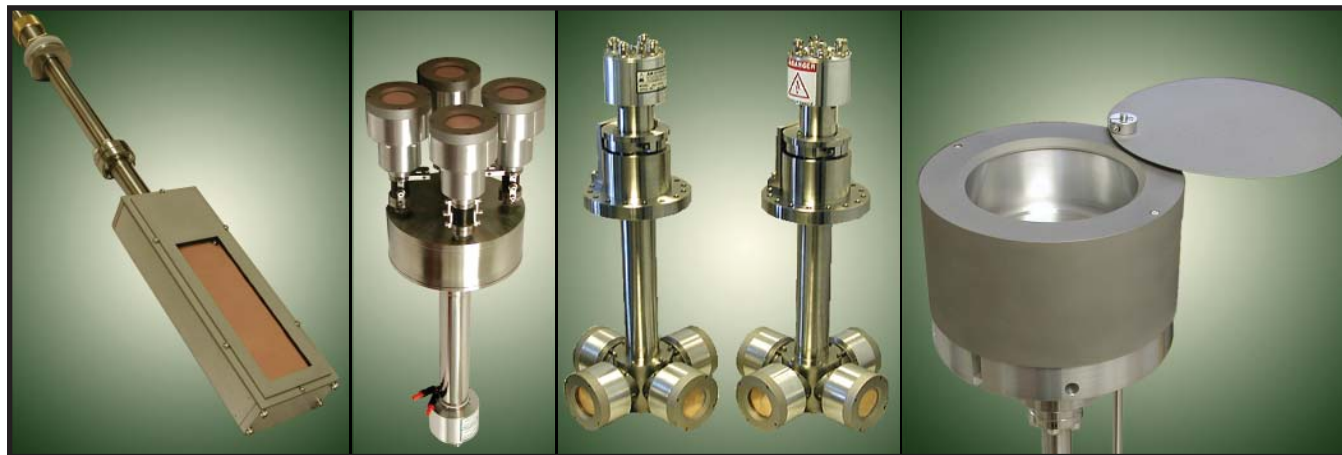


SPECIALTY SPUTTER SOURCES

WWW.AJAINT.COM/SOURCES_SPECIALTY.HTM

AJA INTERNATIONAL, INC.

GENERAL INFORMATION



AJA International, Inc. has developed well over 100 different types of magnetron sputtering sources since 1991 including many sources specifically designed for specialty applications. Unique rectangular, circular, turret and cylindrical versions are offered depending on the substrate geometries, chamber configurations, target material constraints and the desired film specification. See further details below or contact AJA about your requirement.

RADIAL TURRET SPUTTERING SOURCES



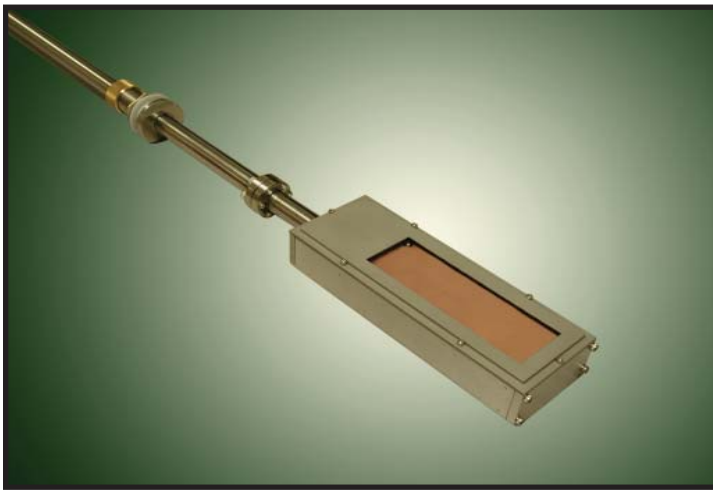
On numerous occasions AJA has supplied Radial Turret Sputtering Sources. This design locates multiple source heads, oriented radially, on the end of a rotatable support tube running through a hollow shaft, UHV, ferrofluid rotary vacuum feedthrough. The source heads are cooled and powered through the hollow support tube and the assembly is indexed with locking positioning to aim the desired source at the substrate. A single port can now be used to introduce multiple magnetrons into a deposition chamber. A very interesting configuration has two Radial Turrets mounted from opposite sides of a chamber and angled onto a rotating substrate with proper shielding. With (2) four head turrets, this geometry allows for 16 different material co-deposition combinations. AJA manufactures Radial Turret Sources with up to 12 heads.

AXIAL TURRET SPUTTERING SOURCES



AJA also offers Axial Turret Sputtering Sources. This design locates multiple source heads, oriented axially, on the end of a rotatable support tube running through a hollow shaft, UHV, ferrofluid rotary vacuum feedthrough. The source heads are cooled and powered through the hollow support tube and the assembly is indexed with locking positioning to aim the desired source at the substrate. A single port can now be used to introduce multiple magnetrons into a deposition chamber. Another interesting configuration has each source head fitted with tilt gimbals allowing further geometrical adjustment of the sputter direction. AJA manufactures Axial Turret Sources with up to 12 heads.

END MOUNTED ST1580 - FOR COATING INSIDE TUBES



Periodically customers want to coat the inside of cylindrical tubes. This can be difficult since most magnetron sputter sources are either too large or not designed to operate within the tubular substrate itself. AJA has developed very low profile, rectangular magnetrons utilizing 5" and 8" long targets which have their cooling and power delivered from the end of the source via long support tubes. By inserting the source heads into the end of a rotating, tubular substrate and moving either the source or the substrate in a linear direction, a uniform film can be applied in tubes as small as 4" diameter. AJA has also supplied numerous larger, end mounted rectangular sources for other special applications.

CTM SERIES SPUTTERING SOURCES



In 1994 AJA was awarded a joint patent with the U.S. Air Force for the CTM (Conical Target Magnetron) designed to provide efficient off axis deposition of HiTC superconductors. Since this time variations on the target geometry, cooling efficiency and source size have been explored and delivered. Most current applications are based around minimizing damage due to high energy ions or neutrals. One particularly interesting application is the deposition of conductive oxides such as ITO for displays. These sources all feature integral process gas distribution and are available in both HV and UHV versions.

RF / DC POWER SUPPLIES



	POWER	MODEL
RF AUTOMATCHING: Networks feature one vacuum and one air capacitor for optimum reliability. Air cooling is standard on smaller units.	300 watt	A300RF / A300MU
	600 watt	A600RF / A300MU
	1000 watt	A1000RF / A1000
LOW POWER RF: Integrated PS / manual match box makes this package ideal for small sources	100 watt	A100 RF/ A100MM
	300 watt	A300RF / A300MM
PULSED DC: These modules / power supplies modulate the DC output to prevent arcing, increase rate or ionize the sputtered material.	20 kHz	ASPL-20
	Variable	ASPL-V
	HIPIMS	Sinex 2.0, 4.0, 8.0
DC POWER SUPPLIES: Supplies feature efficient switching technology, power / current / voltage regulation, arc suppression, remote connector and interlocks.	500 watt	A500 DC
	1000 watt	A1000 DC
	1500 watt	A1500 DC
DCXS SERIES: Supplies are fully programmable with process storage and power ramping to reduce thermal stress on the targets.	750 watt	DCXS-750-3 / DCXS-750-5
	1500 watt	DCXS-1500-3 / DCXS-1500-5



SPUTTERING TARGETS & EVAPORATION MATERIALS



AJA International, Inc. offers a variety of sputtering targets to satisfy virtually any requirement. Targets available in a wide range of materials, sizes and purities. If you don't see the material options you are looking for please don't hesitate to call or email your requirements as custom projects are our specialty.

FABRICATION OPTIONS

- MACHINED
- HOT PRESSED
- VACUUM MELT
- STANDARD & CUSTOM BACKING PLATES
- PURITIES FROM 99.0% - 99.999%
- METALIC & EPOXY BONDING
- HIGH TEMP ELASTOMER BONDING

TYPES OF MATERIALS AVAILABLE

- OXIDES
- BORIDES
- NITRIDES
- SELENIDES
- FLOURIDES
- SILICIDES
- SULFIDES
- CARBIDES
- ALLOYS
- PURE METALS
- NON-METALS

PARTIAL LIST OF AVAILABLE MATERIALS & MATERIALS SOLD

Ag	99.99	In(2)O(3)	99.99	Si(3)N(4)	99.9 ex binder
Al	99.999	Ir	99.95	SiO	99.9
Al(2)O(3)	99.99	ITO	99.99	SiO(2)	99.995
Au	99.99	Mg	99.95	Sn	99.995
C	99.999	MgO	99.95 ex Ca	SnO(2)	99.9
Co	99.95	Ni	99.99	Ta	99.99
Co(2)Fe	99.9	Ni/Fe	99.95	Ti	99.999
Cr	99.95	Pd	99.95	TiO(2)	99.5
Cu	99.995	Pt	99.95	V	99.7
Fe	99.95	Re	99.95	W	99.95
Ge	99.999	Ru	99.95	ZnO	99.995
In	99.995	Si	99.999	ZnO/SnO(2)	99.99

