



PRODUCTION SPUTTER SOURCES

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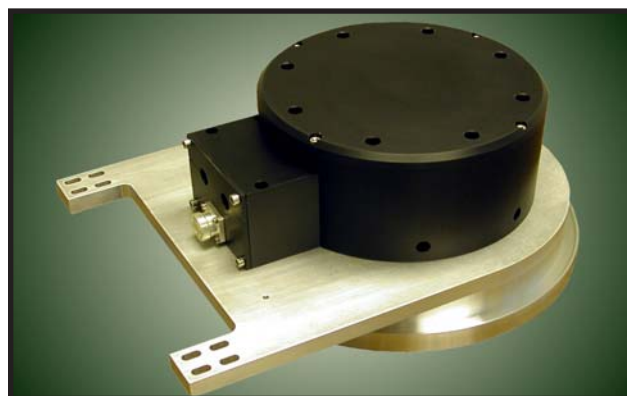
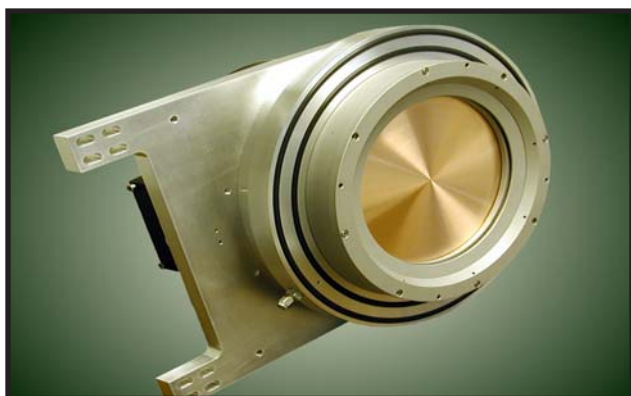
AJA INTERNATIONAL, INC.

GENERAL INFORMATION



AJA International, Inc. has developed a wide range of magnetron sputtering sources since 1991 including many larger models specifically designed for production applications. Rectangular, circular, cylindrical and rotating magnet versions are offered depending on the substrate geometries, production volumes, chamber configurations, target material constraints and the desired film specification. See further details below or contact AJA about your requirement.

NAUTILUS SERIES ROTATING TARGET



The AJA International NAUTILUS SERIES “rotating” magnetron sputtering sources have been designed to meet the most challenging application requirements in today’s thin film deposition markets. Development of these sources has been an extensive process involving several years of field testing and resulting in a sputtering source with some very unique features which can make both retrofit and new system design a much simpler process.

In most applications, our customers are trying to achieve optimum uniformity at maximum rate and target utilization. Our unique, rotating, modular magnet array and highly efficient target cooling design make this goal achievable. In a growing number of applications, for example disk coatings, it may be necessary to arrange the rotating magnet array to produce an inherently, non-uniform deposition to compensate for chamber shielding / geometry. This requirement is easily accomplished with the highly accessible, rare earth, modular magnet array.

Integration with a new system design is facilitated by an optimal hingeplate which permits the operator to “flip” the source for easy access target changes and cleaning. A fully self-contained gas introduction system helps offset the effects of asymmetrical vacuum pumping and simplifies cleaning since the gas ring is easily accessed during target changes. If gas is introduced through a small hole in the mating flange between the source’s double o-ring seal system, no external, flexible gas lines are required which can easily fatigue causing vacuum leaks.

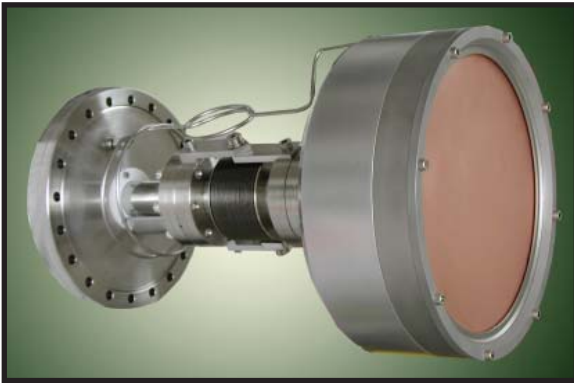
Aesthetically, the NAUTILUS SERIES “rotating” magnetron sputtering sources are sleek and compact. Since they feature a gear-less, direct-drive design with a minimum of moving parts, they are almost completely silent during operation. The evolution of this product has resulted in the most service friendly product of its kind on the market thereby providing our customers with maximized “up time” and frustration free maintenance.

STXL SERIES MAGNETRON SPUTTERING SOURCES



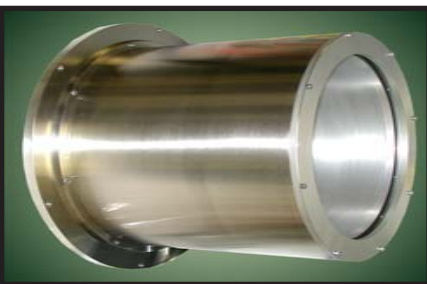
The STXL Series Magnetron Sputtering Sources are rectangular cathodes with targets ranging in size from 3" x 12" to 6" x 40". These sources feature AJA's unique modular magnet array allowing the magnetrons to be configured for balanced, unbalanced, magnetic material, closed field, high utilization and high uniformity applications. These units can be operated with high power DC, Pulsed DC, HIPIMS, AC, and RF and feature direct water cooled backing plates for optimized cooling efficiency. Both internal and external mount models are available. Source magnets are isolated from the cooling water to ensure long, consistent operational life. Integral gas injection is offered to optimize deposition uniformity. Special versions named STXL-EO for extended operation applications such as 50,000. layer, 100 hour processes have been developed and have proven to be extremely successful in situations where an aborted run would be disastrous.

STX SERIES MAGNETRON SPUTTERING SOURCES



The STX Series Magnetron Sputtering Sources are circular cathodes with targets ranging in size from 5" to 12" diameter. These sources feature AJA's unique modular magnet array allowing the magnetrons to be configured for balanced, unbalanced, magnetic material, closed field, high utilization and high uniformity applications. These units can be operated with high power DC, Pulsed DC, HIPIMS, AC, and RF and feature direct water cooled backing plates for optimized cooling efficiency. Both internal and external mount models are available. Source magnets are isolated from the cooling water to ensure long, consistent operational life. Even tilt gimbals are offered with these sources for long throw, con-focal deposition at pressures as low as 0.2 mTorr.

CTX SERIES MAGNETRON SPUTTERING SOURCES



In production applications where the substrate needs to be coated from all sides simultaneously, the CTX Series of cylindrical targets accomplishes the task in one easy step. With the sputtered flux arriving from the inner surface of the cylindrical target this special source keeps the entire substrate surface "in the plasma" throughout the deposition for highly uniform film properties. Sources are custom built to the application with sizes ranging from 6" to 24" ID. Targets can be machined from solid, rolled and bonded or plasma sprayed depending on the material. These magnetrons can also be used for large area off-axis deposition or low damage films such as ITO and feature integral process gas distribution.

TRIANGULAR SPUTTERING SOURCES



In cylindrical chamber configurations where substrates are fixed to the periphery of a rotating table or "spider" the ideal sputter source shape is triangular to optimize uniformity while minimizing the rate loss due to uniformity shielding. AJA International, Inc. has developed the unique TR5313 Concentric Triangular Magnetron Sputtering Source. These sources can be run with RF or any form of DC Integral isolation chimneys, gas distribution systems and QCM ports are "designed in" for maximum uniformity and process control.

RF/DC POWER SUPPLIES

AJA International, Inc offers a wide variety of power supplies that are compatible with our production sputtering sources. AJA international inc. can help you determine what type of power supply best suits your needs based on the type of source you choose, your target size and application. Available options include: DC / Pulsed DC, HIPIMS, RF and AC.



ADVANCED ENERGY PINNACLE PLUS 5K

SPUTTERING TARGETS AND EVAPORATION MATERIALS



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

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