

SpinTron® Series: High Vacuum Magnetron Sputtering Guns

Description

The SpinTron® is a circular magnetron sputtering gun that can have a 1, 2, 3, 4 or 6-inch diameter. It can accommodate a wide range of sputtering targets, metallic or insulating, magnetic or non-magnetic. The internal magnetic configuration utilizing a circular rare-earth NdFeB permanent magnet enables excellent film uniformity and target utilization. The SpinTron® is easy to install, operate, and maintain. The quality construction ensures long-term operation. The shock-absorbing packaging design allows secure shipping and storage.

Features

Quality construction: The SpinTron® series of sputtering guns are designed and manufactured with a focus on details. We use high quality materials of stainless steel and ceramics. The design and selection of components and materials are based on the principles of physics and engineering.

Enhancement from magnetic assembly: We have used electromagnetic finite element calculations in the design of the permanent magnetic assembly to achieve high field strength and uniform field profile. We use NdFeB rare-earth permanent magnets in every SpinTron® product, and offer a top-of-the-line magnetron sputtering tool. The magnet is coated with multiple layers of protective materials against cooling-water induced corrosion to maximize durability.

Strong coupling with external power: The SpinTron® is equipped with a standard electrical RF connector, which matches physically and electronically with a wide range of DC and RF sputtering power supplies. The low impedance sputtering heads interface easily with external power supply.

Easy installation and adjustment: The SpinTron® can be installed very easily with a standard fitting without the use of special tools. Its position in the vacuum chamber can be adjusted conveniently.

Easy target change: Change of target is as easy as "123" by first placing the target on the top surface of a gun, then putting on the target cover, and finally, adding on the anode shield. There is no need to adjust the gun to fit targets with different height.

Versatile sizes: The SpinTron® Series consists of 1, 2, 3, 4 and 6-inch diameter sputtering heads. Other diameters can be custom made with similar performance as the standard offerings.

Applications

The SpinTron magnetron guns can be used to fabricate a wide range of films. Some of the applications are listed below.

- Film coating
- Semiconductor devices
- Spintronic devices
- Magnetic recording media
- Superconducting films
- Quantum computing devices
- MEMS
- Biosensors
- Nanotechnology
- Superlattices
- Granular films
- Shape memory alloys
- Combinatorial thin film deposition
- Thin film based lasers

Easy maintenance: The SpinTron® is easy to maintain and designed to have a long life time.

Customer centered services: We guarantee our products against defective parts and poor workmanship and strive to minimize down-time for the products. The SpinTron® series is covered by a one-year limited warranty.

Technical Specifications

2-inch

Sputtering Target

Diameter: 2.0" (50.8mm)
Thickness: to 1/4" for non-magnetic target; to 1/16" for magnetic target
Utilization: up to 30%
Magnet: NdFeB Rare Earth Magnet

Power

DC (Max.): 1000 W
RF (Max.): 500 W
Sputtering Current (Max.): 3 Amp
Sputtering Voltage : 100-1000 V
Sputtering Pressure: .5-100 mTorr

Cooling Water

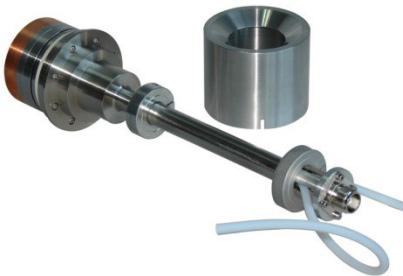
Flow Rate: .8 GPM
Water Inlet Temperature: <20 C
Water tubing: 0.25" O.D.

Mounting

Feedthrough: 3/4" O.D.tube
Electrical Connector: Standard HN type (DC and RF)

Dimension and Weight

Anode Shield Diameter: 3.5"
Total Length: 14"
Weight: 5 lbs



3-inch

Sputtering Target

Diameter: 3.0" (76.2mm)
Thickness: to 1/4" for non-magnetic target; to 1/16" for magnetic target
Utilization: up to 30%
Magnet: NdFeB Rare Earth Magnet

Power

DC (Max.): 1200 W
RF (Max.): 800 W
Sputtering Current (Max.): 3 Amp
Sputtering Voltage : 100-1000 V
Sputtering Pressure: .5-100 mTorr

Cooling Water

Flow Rate: 1 GPM
Water Inlet Temperature: <20 C
Water tubing: 0.25" O.D.

Mounting

Feedthrough: 1" O.D.tube
Electrical Connector: Standard HN type (DC and RF)

Dimension and Weight

Anode Shield Diameter: 4.75"
Total Length: 15"
Weight: 12 lbs