

## SpinTron Series: High Vacuum Magnetron Sputtering Guns

### Description

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

### Features

**Quality construction:** The SpinTron series of sputtering guns was 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 material 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 are easily interfaceable with an 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 anode, 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, and 4-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. We are so confident about the SpinTron that we will provide a loaner for a SpinTron under repair, so that the disruption to your business is minimized.

## 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

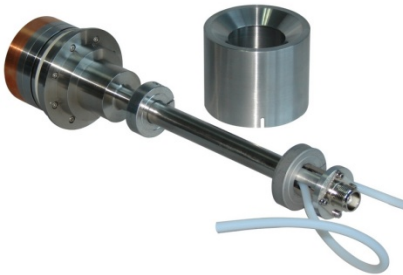
**Flow Rate:** .8 GPM  
**Water Inlet Temperature:** <20 C  
**Water tubing:** 0.25" O.D.

#### 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