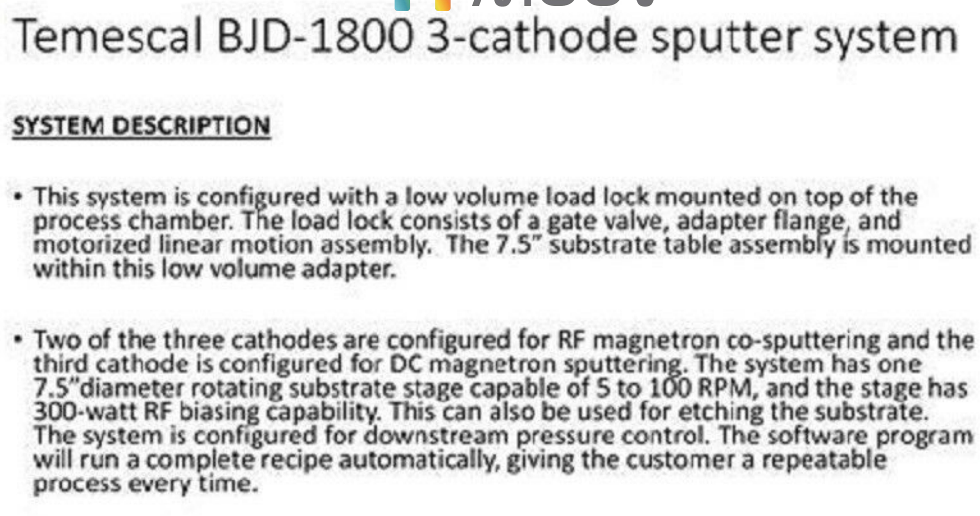

Temescal BJD-1800 3-cathode sputter system

SYSTEM DESCRIPTION

- This system is configured with a low volume load lock mounted on top of the process chamber. The load lock consists of a gate valve, adapter flange, and motorized linear motion assembly. The 7.5" substrate table assembly is mounted within this low volume adapter.

- Two of the three cathodes are configured for RF magnetron co-sputtering and the third cathode is configured for DC magnetron sputtering. The system has one 7.5"diameter rotating substrate stage capable of 5 to 100 RPM, and the stage has 300-watt RF biasing capability. This can also be used for etching the substrate. The system is configured for downstream pressure control. The software program will run a complete recipe automatically, giving the customer a repeatable process every time.

BJD-1800 detailed system description

- 18" Diameter stainless steel process chamber.
- Lower source tray swings out for maintenance.
- One (1) 7.5" diameter rotating substrate table. The table has 300-watt RF biasing capability and will rotate from 5 rpm to 100 rpm.
- The process chamber is fully shielded and the shielding is flame sprayed.
- The Process chamber is pumped with an Alcatel model 5900 Turbo molecular pump (880 l/s).
- One (1) servo motor controlled throttle valve.
- Three (3) Angstrom Sciences 2" diameter magnetron cathodes. Each cathode can be adjusted for angle and distance from substrate and has an independent shutter system.
- One Advanced Energy MDX – 1kW DC sputtering power supply.
- Two (2) Advanced Energy 600 Watt RF generators and automatic impedance matching networks for magnetron cathode sputtering.
- One (1) Advanced Energy 300 Watt RF generator and automatic impedance matching networks for biasing the substrate.
- Three (3) new MFC (mass flow control). Process gas plumbing is UHP stainless steel, VCR fittings throughout, electro-polished, orbitally welded, and fully leak tested.
- One (1) 1 torr full-scale capacitance manometer, with automatic isolation valve to prevent venting of manometer when venting the process chamber.
- Leybold Heraeus Model D-30 20.9 CFM mechanical pump or equivalent.
- Complete set of documentation.
- Demonstration, training, and maintenance CD with video and audio instructions.
- Software license and source code to allow customer complete access.
- System has a base pressure of better then 1 x10-7 torr.

The following new components are included as part of this system:

- New computer with a color touch screen monitor
- New Angstrom Sciences 2" diameter magnetron cathodes
- New vacuum gauges
- New gas flow controls
- New wiring
- New pneumatics
- New motor/motion systems
- New plumbing and flow sensors
- New safety system
- New seals and o-rings
- New stainless steel cleanroom frame for recessed mounting through a service chase wall.