



1 Torr = 1 mm Hg

Combination Deposition Systems



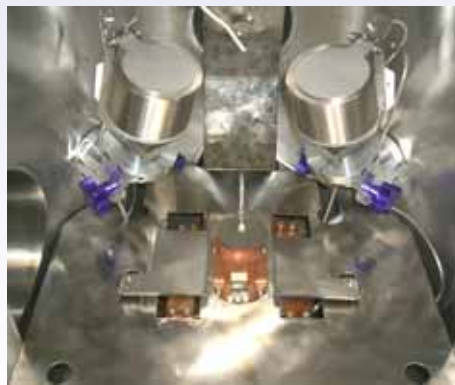
Combination electron beam evaporation, resistive thermal evaporation and magnetron sputtering system with cryopump based main vacuum system, load lock chamber with magnetic transfer rod and independent turbomolecular vacuum system, with an automatic matching network and substrate stage heating & rotation.

Great Savings! All systems capable of multiple deposition sources. Start with one source and add on later.

- Electron Beam • Ion Beam • Etching •
- Resistive Thermal • Magnetron Sputtering •



Full front door opening D shaped box chamber fitted with one 4 pocket e-beam source and one fixed 2" magnetron gun.

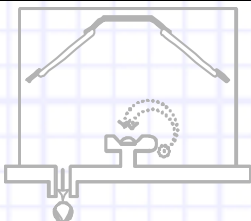


Chamber with 4 pocket e-beam source, 2 thermal resistance sources, and two adjustable angle mount 2" magnetron guns all fitted with pneumatic shutters.



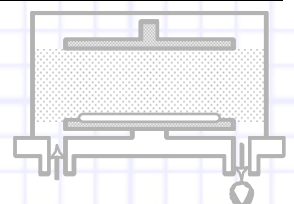
Chamber with an array of three 1" magnetron guns with pneumatic shutters, thickness sensor & rotating stage.

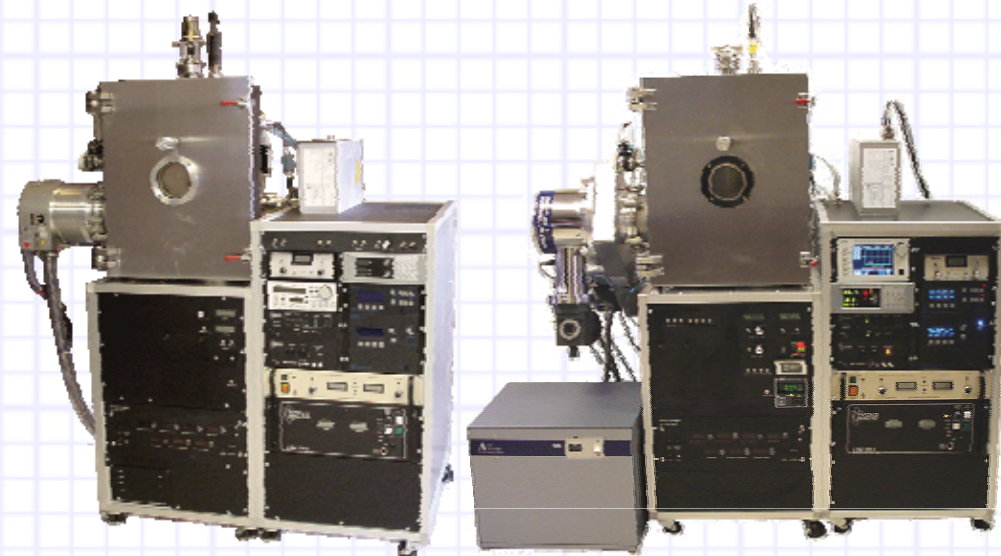
Each system has a custom designed process chamber capable of accommodating multiple sources and various types of sources. Our full front opening box chambers are our specialty. Unused ports are blocked off with flanges to allow future additions to your Torr system.



<http://www.torr.com> • (845) 565-4027 • (888) MAC-TORR

TORR INTERNATIONAL, INC.
Thin Film & Nanotechnology





Combination e-beam evaporation, resistive thermal evaporation and magnetron sputtering system with ion beam assist, substrate rotation, in situ mask changer and turbomolecular pump based vacuum system.

Combination e-beam evaporation, resistive thermal evaporation and magnetron sputtering system with substrate stage heating & rotation, automatic matching network and cryopump vacuum system.

Choose the type of sources and how many of each.



Three shuttered 2" magnetron guns and 2 thermal resistance sources.



Two 2" magnetron guns with quartz thickness sensors and a heated substrate stage with variable axis rotation.



4 pocket e-beam source & 2 thermal resistance sources [boat & coil].



E-beam, ion beam, thermal resistance and magnetron sputtering sources with shields & shutters, and rotating substrate stage with full axis radial tilt.

TORR COMBINATION SYSTEMS - AVAILABLE OPTIONS

PROCESS CHAMBER: Various sizes and configurations to meet your current & future needs

VACUUM SYSTEM: Cryopump or turbomolecular pumping systems from 300 - 3000 l/sec, dry or oil rotary roughing pump

VACUUM GAGE: High/Low or Full Range - cold cathode or hot cathode ionization gauge, Pirani, others

SUBSTRATE STAGE SIZE: Designs to accommodate any size substrate stage, fixed or adjustable height, top or bottom mount

SUBSTRATE TILT AND ROTATION: 0-20 RPM rotation, variable angle tilt, azimuthal & polar rotation, external or in-situ stepping motors

SUBSTRATE HEATING: Variable temperature quartz lamp heaters up to 800° Celsius with thermocouple & digital read out

STAGE COOLING: Direct water cooled or multi cooled stage assembly, Gravity fed, external, LN₂ Dewar available

FILM THICKNESS MONITOR: Quartz or optical thickness monitors with deposition rate controller

GAS DELIVERY SYSTEM: Up to 8 channels with mass flow controllers, non-corrosive and/or corrosive gas systems

VENTING SYSTEM: Independent Dry N₂ system for chamber venting, automatic and/or manual activation

SPUTTERING SOURCE: Fixed or adjustable mount magnetron guns, different sizes available

RESISTIVE THERMAL SOURCE: Resistive sources with interchangeable boats, filaments, coils, etc.

ELECTRON BEAM SOURCE: 3, 6 or 10 Kw at 10 Kv emitter, X-Y sweep controller, 2, 6, 16 cc or more crucible volume and liners

ION BEAM SOURCE: Choose the size and power, Ion beam can do etching or cleaning

MULTIPLE SOURCES: Choose how many of each type of source, plan for future additions

RF ETCH MODE: Electrically isolated stage assembly with external UHF connections

RF POWER SUPPLY: Choose a 300W or 600W or 1000W or more RF power supply 13.56MHz

MATCHING NETWORK: Manual or automatic matching network

DC POWER SUPPLY: 300W or 600W or more variable current and voltage

LOAD LOCK SUBSYSTEM: Additional chamber and valve assembly with magnetic transfer rod and independent vacuum system

IN SITU MASK CHANGE: Multiple position mask carousel for in-situ change

SHUTTERS AND SHIELDS: Protect sources and targets with shields and pneumatic shutters

PC CONTROLLED SYSTEM: All systems are completely PC compatible

SIZE & WEIGHT: Base footprint small as 24" x24" x60" high with external roughing pump, 500 lbs. and greater

EC CERTIFIED: EMI Certified by European Community

WARRANTY: One year for both parts and labor, extended warranties available for any term



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