MANSHA VACUUM EQUIPMENTS

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VACUUM PUMPS • PUMPING SYSTEMS • COATING UNIT
• SPUTTERING SYSTEM • LASER DEPOSITION SYSTEM • CVD SYSTEMS
• OVENS • FURNACES • GLOVE BOX • CUSTOM BUILD EQUIPMENTS

VACUUM SCIENCE IS OUR BUSINESS

Mansha Vacuum is a leading provider of high quality, cost-effective vacuum system solutions, was established in the year 2009 in response to a growing need for high quality, cost-effective vacuum systems. Our products serve the scientific and technical community seeking precision experimental and measurement devices. MVE offer a wide range of design and integration support for specific areas. MVE Vacuum Systems can be used for both Laboratory and Industrial applications and are suitable for the most of the vacuum applications as per the customer needs.

HIGH VACUUM PUMPING SYSTEMS

Vacuum pumping systems, Diffusion pump/Turbo pump based with oil filled / oil free backing pumps are trolley mounted for easy maneuverability and are capable of achieving an ultimate vacuum in the range of 10^{-6} mbar or better. Liquid nitrogen trap are provided to minimize the back-streaming of oil vapors and also ensures clean and better ultimate vacuum. The systems are provided with Pirani gauge & Penning gauge.

- Compact construction & easy to operation
- Direct connection of vacuum chamber / systems
- All the components are easily accessible

THIN FILM COATING UNIT

Vacuum coating unit is designed for laboratory use for general purpose evaporation especially suitable for R & D. It is a user friendly unit for electronics, electrical and optical industry. Coating unit covers application in Microelectronic, Optics, Metallurgy, Electron Microscopy etc.

The choice of accessories covers the following:

- Resistance heating (Boat, coil, basket etc.)
- Electron beam evaporation
- Radiant heater of substrates etc
- Substrate rotation
- Flash evaporation facility
- Digital thickness monitor
- Specimen cooling facility
- Choice of different size of bell jar/box chamber

SPUTTERING SYSTEMS

Magnetron sputtering, DC/RF is an established process for the deposition of a wide range of R&D and industrial applications. Sputtering systems with multiple functional options is suitable for depositing multi-layer coatings of metals and alloy in Nitrogen, Argon and Oxygen environment.

Sputtering system consists of:

- Vacuum chamber
- Vacuum measuring system
- Power supply (RF/ Pulsed DC power supply)
- Multiple view ports
- Substrate heating with rotation
- Vacuum pumping system
- Magnetron cathode(2”/3”/4”)
- Substrate holder
- Mass flow controller
- Source shutter control/shielding
- Thickness monitor

PULSED LASER DEPOSITION SYSTEM

Pulsed Laser Deposition (PLD) Systems use a laser beam to vaporize a solid target material so as to produce a thin film having same chemical composition as the original target material. The PLD process enables the deposition of many materials over a wide range of background gas compositions and pressures. MVE offers PLD systems for substrates ranging in size from 50 mm up to 200 mm in diameter. The systems are completely computer controlled for ease of use.

- SS Chamber with CF ports
- Multi target carousel assembly with controller
- Lens Holder attached with XYZ movement
- Heater assembly with controller
- Gas flow assembly system
- GATE Valve
- High Vacuum Pumping System
- Optional: Laser & Turbo System

ARC MELTING FURNACE

Vacuum Arc Melting furnace is compact design suitable for research and development. This system is mainly applied to produce various metallic materials by use of arc melting in the reduced pressure of argon gas atmosphere. It is intended for following processes: Material densification and purification, Metallic and Non-Metallic buttons, Arch vacuum casting, Compound synthesis, Experimental alloys, Powder melting, Annealing & Thermal treatment.

CHEMICAL VAPOR DEPOSITION SYSTEM

Chemical Vapor Deposition (CVD) is a process whereby a solid material is deposited from a vapor by a chemical reaction occurring on or in the vicinity of a normally heated substrate surface. The solid material is obtained as a coating, a powder, or as single crystals. By varying the experimental conditions, like substrate material, substrate temperature, composition of their action gas mixture, total pressure gas flows, etc. - materials with different properties can be grown.

VACUUM OVEN

Vacuum Ovens are fabricated out of Stainless Steel, SS 304 grade with front door opening. The loading trays are removable to accommodate the components for drying. External/Internal heating type with tubular heaters with suitable insulation to attain uniform maximum temperature of 400 deg C inside the oven. Ovens are available in Cylindrical / Cubical model for degassing, annealing and drying of components under vacuum.

VACUUM FURNACE

Vacuum Furnace for small laboratory models to large vertical / horizontal furnaces and also equipment for other specialized applications also offers complete solutions, to meet the most stringent requirements for reliability, productivity and cost-efficiency.
Innovative design and development of vacuum heat treatment and brazing furnaces. Standard and customized furnaces for a wide range of batch and semi-continuous production with process support for different applications such as Brazing, Hardening & Tempering, Annealing, Stress relieving & sintering.

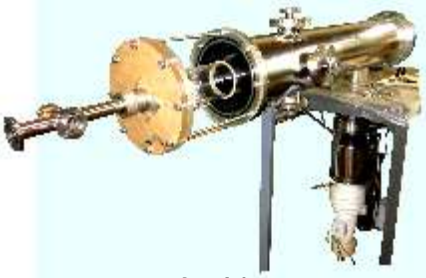
Features:

- Horizontal & Vertical design
- Electrical resistance furnace
- Gas quenching pressure from 3 to 10 bar
- Top, side and bottom loading
- Pressure: 10^{-3} to 10^{-7} m.bar
- Large hot zone for industrial applications
- Hot Zone material, Tungsten, Molybdenum, Graphite, etc
- Custom shaped hot zones
- Charge weight: 200 to 2000 kg
- Automated heating and cooling cycle
- Temp: from 600-2000 deg. C

GLOVE BOX

Glove box is a windowed, airtight enclosure that is capable to positive or negative internal pressure. This sealed casing is superbly designed to allow one to manipulate objects where a separate atmosphere is desired. Built into the sides of the glove box are gloves arranged in such a way that user can place their hands into the gloves and perform tasks inside the box without breaking containment.
The size and designs of glove boxes depends on use and applications characteristics and hence mostly they are custom built. One of the common characteristics is the depth of the glove box.

CUSTOM BUILD EQUIPMENTS



Special purpose high vacuum system

Vacuum clamping unit

E-Beam welding system

High vacuum chamber with pumping system

Roots Rotary pumping system

ROTARY VACUUM PUMP

MVE series double stage air cooled Direct Drive Rotary Vacuum Pumps are designed to address the requirements of all vacuum application in industries and laboratories.

- Capacity: 50, 250, 585, 1200 Lpm
- Ultimate Vacuum: $5x10^{-3}$ mbar
- Built-in Anti-suck back.

DIFFUSION PUMP

MVE Diffusion pumps are designed and manufactured to suit the needs of both industrial and laboratory applications. Offer high pumping speed, low ultimate pressure and low back streaming

- Size: 3, 4, 6, 10, 12, 16 - 20 inches
- Capacity: 150, 500, 1000, 3000, 12000 lps
- Ultimate vacuum: 10^{-6} mbar

PIRANI GAUGE

MVE Pirani Gauge controller displays vacuum measurement based on thermal conductivity of air or nitrogen.

Features :

- Version: Analog / Digital
- Range: 0.001 mbar to 1000 mbar
- Optional: Set point adjustable
- Offer: One / Two gauge head

PENNING GAUGE

MVE Penning Gauge is a simple and sturdy vacuum measuring device for the high vacuum range.

Features:

- Version: Analog / Digital
- Range: $1x10^{-3}$ to $1x10^{-6}$ mbar
- Optional: Set point adjustable
- Offer: One gauge head

In-Line valve: KF type

Right angle valve: KF/CF/ISO

Needle valve

Gate valve: KF/CF/ISO

Butterfly valve

VACUUM COMPONENTS, HARDWARE & CONSUMABLES

KF type

CF type

ISO type

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