



Laser Automation



Prompt service is our motto

Laser Automation Pvt. Ltd. was founded in year 2009, since then we have been delivering high standard laser based Industrial solutions.

Our company mainly works in Industrial material processing by multi kW laser for various laser applications using SPM and marking machines by contact and non-contact method.

Key SPM projects executed in the field of laser are :

- Dual station Laser tube/ profile cutting machine
- Robot with 7 axis linear track based Laser cladding& Hardening
- Laser welding machine with automation (Robot / CNC) for ultra thin metal sheets with complex profile
- Highly customized laser marking machine with automation and traceability solutions
- Contact type **Dot peen marking machines** with required automation also provided

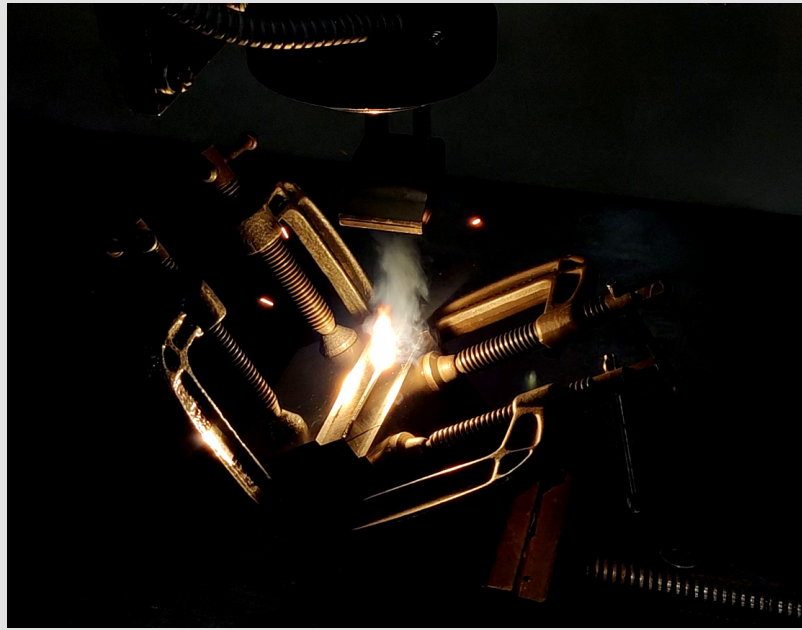
Laser Processes

Laser Welding

- I. Heat conduction welding
 - Laser beam with bigger spot size and reduced energy density focused on material
 - Ideal for wide joints with high welding seam quality
 - Requires minimum post welding process
- II. Deep Penetration Welding:
 - Laser Beam with smaller spot size and increased energy density
 - Smaller but deep welding seam

Advantages of Laser Welding

- Low thermal load, low distortion
- Smooth, regular pore free welding
- High process stability at high weld speeds
- Reduced costs for investment & operation
- Ideal for serial production

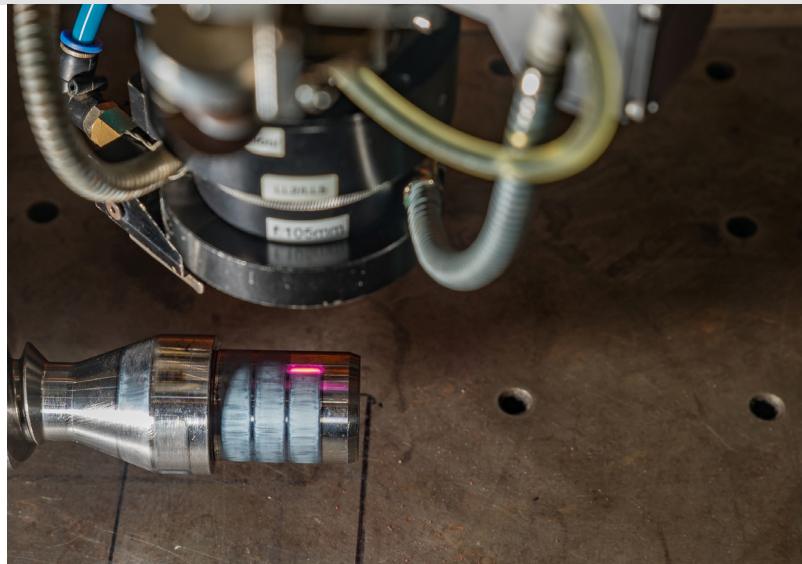


Laser Hardening

- Laser beam moves with predetermined speed on Ferrous material (carbon content $> 0.2\%$)
- With help of closed loop feedback, required temperature is maintained constant throughout
- Material heated above austenitizing temperature and rapidly cooled as beam moves away
- It gives self quenching effect

Advantages of Laser Hardening:

- Local surface hardening exactly where required
- Low distortion, no rework
- High process efficiency
- Short wavelength enables superior absorption
- Ideal for production processes



Laser Cladding

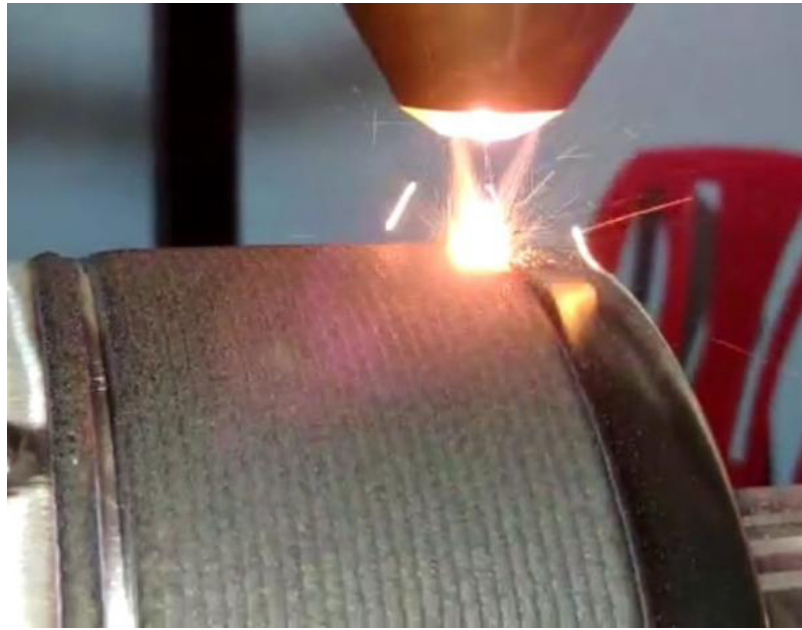
Laser Cladding is deposition of material on surface of other material by using Laser technology.

Applications:

- Improve surface properties, wear & corrosion resistance of base material
- Repair damaged and worn out parts
- Fabricate metal matrix composites

Advantages of Laser Cladding:

- Coating with low heat input
- Robust, easily automated process
- Almost all commercial metal powder possible

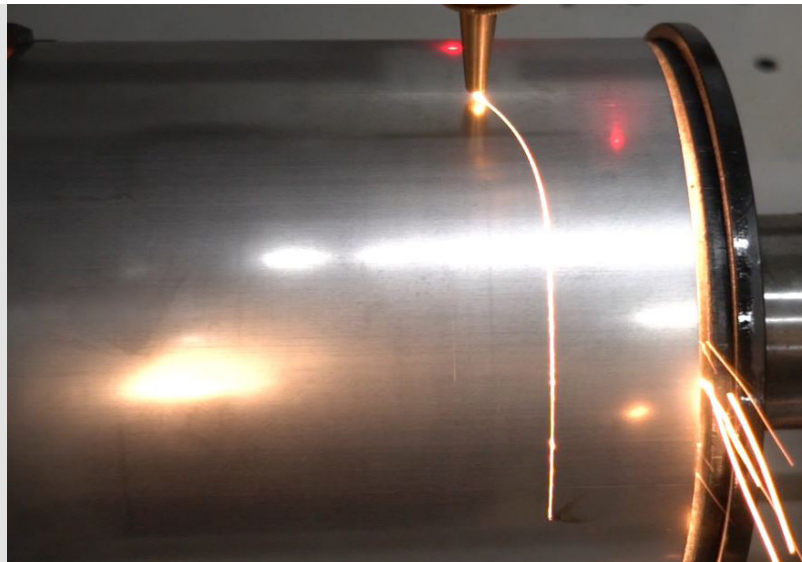


Laser Cutting

- Laser beam used to vaporise material resulting in cutting edge
- Laser optics and CNC/Robot used to direct generated Laser beam towards to work piece

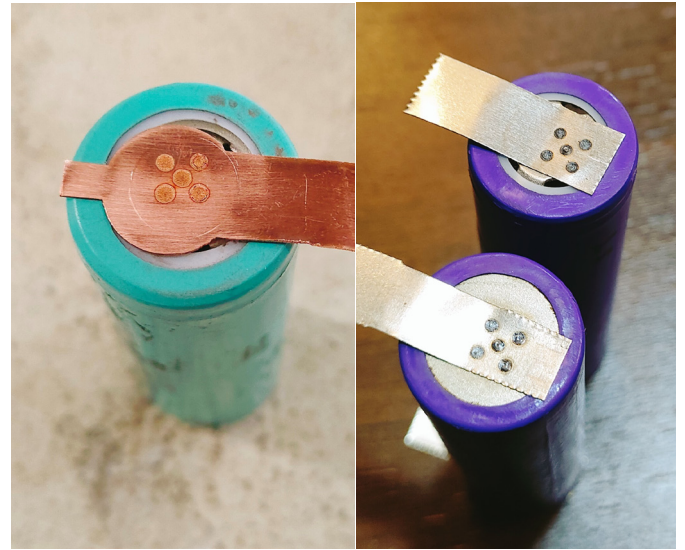
Advantages:

- Reduced contamination of workpiece since no physical contact with the workpiece
- High precision since no wear and tear
- Low heat affected zone, so, low warping rate
- Consumes lesser energy than other forms of cutting

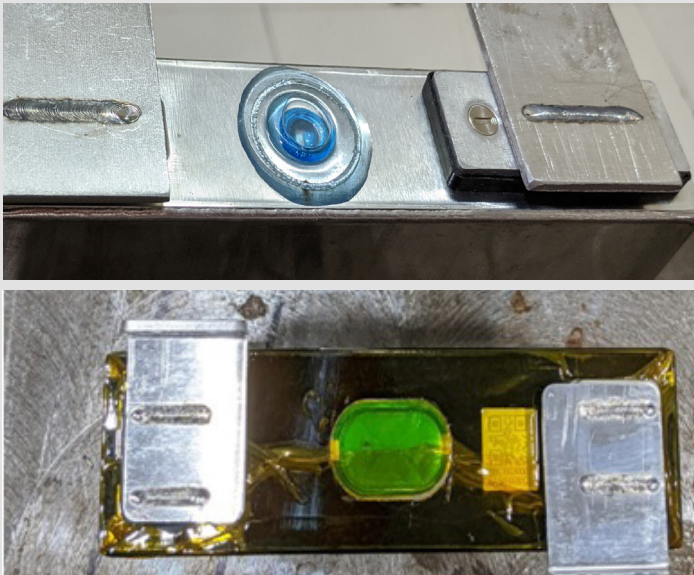


Laser Welding of Battery Tabs

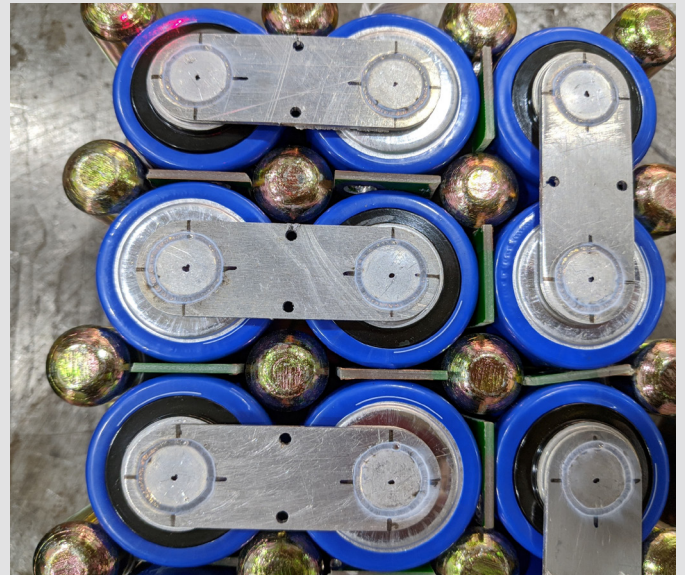
1. Clean and green technology inline with aims of E-mobility capable of welding thousands of welds required in battery pack with precision and speed
2. All types of cell such as Cylindrical Cells, Prismatic cells and Pouch cells can be laser welded
3. Welding of similar and dissimilar metal tab/busbar combinations such as Cu-Steel, Al-Steel, Al-Cu, Cu-Al and various Ni and Tin coated contacts
4. Laser welded dissimilar metal contacts have very low electrical resistance and high electrical conductivity thus improving battery performance
5. Laser welding is a non contact welding process and provides customized welding patterns giving adequate pull and peel strength along with excellent weld seam quality and depth control
6. Depending on application requirement we offer both High Power CW , Low Power Pulsed Lasers with robot and scanner based welding solutions for battery manufacturing



Laser welded dissimilar metal Joints for Cylindrical Cell Batteries



Prismatic cell high thickness busbar to tab laser welding



Laser welding of capacitor bank Al-busbar to cell terminal

SPM

Single station Laser Cutting machine is specially developed for cutting profiles on cylindrical tubes. Application dependent customised Solution



SPM

Double station Laser Cutting machine is specially designed for giving parting cut on cylindrical tubes. By programming, profiles of any desired shapes and sizes can be cut.



LASER CLADDING MACHINE

Laser Cladding solution with Robotic Automation, specially designed according to client demand

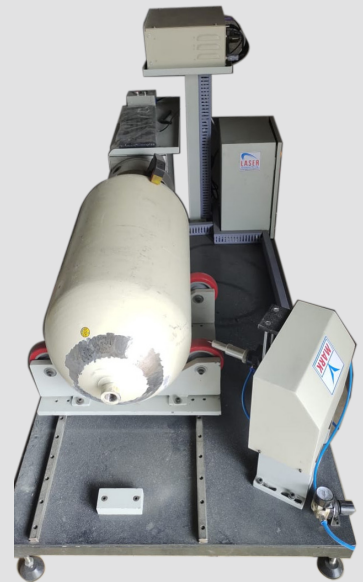


DOT PEEN MARKING MACHINE

We are leading manufacturer of a comprehensive range of Dot Peen marking machine 100% indigenously developed to meet customer requirements.

Features:

- 100% indigenous
- virtually maintenance free
- user friendly software
- heavy duty performance
- pneumatically operated
- low cost of ownership and spares
- easy integration with PLC, SCADA, SAP, etc.



LASER MARKING MACHINE

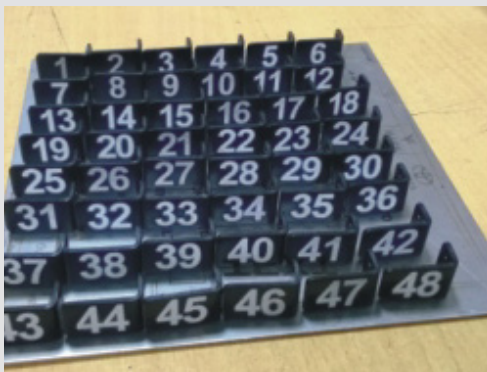
We are proud to present an excellent European and Chinese Laser Technology at very affordable price

Features:

- Most advance fiber laser technology
- the unique compact design of the machine
- highest life cycle in the segment-1,00,000+ hours
- virtually maintenance free
- low cost of ownership
- user friendly
- high speed and air cooled
- various directional scan head mounting possible
- easy integraion with PLC, SCADA, SAP, etc.



LASER MARKING SAMPLES



OUR CUSTOMERS

Automobiles - OEM



Power Generation



Enriching Lives



Oil and Gas



Automation



Multi Gauging Manufacturers



Others



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