



International Forming Technology Exhibition

Concurrent Show



International Exhibition of Dies & Moulds, Forming Tools, Machine Accessories, Metrology and CAD / CAM



International Exhibition on Industry 4.0 & Additive Manufacturing



Published by



Indian Machine Tool Manufacturers' Association

16 - 21, JUNE, 2022 | BANGALORE, INDIA

DAY 1 • Thursday, June 16, 2022

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SHOWDAILY™

The official Show Daily of IMTEX FORMING 2022

Day 1 • Thursday, June 16, 2022



BOUNCING BACK

Towards a Higher Growth Path

IMTEX FORMING is back with renewed vigor to present innovative solutions from the metal forming field to the industry fraternity from June 16-21, 2022, at Bangalore International Exhibition Centre (BIEC).



Source: Magic Wand Media

In light of the industry's current period of stability and revived confidence, IMTMA is holding IMTEX FORMING 2022 – South East Asia's largest exhibition on metal forming technologies, bringing exhibitors and visitors under one roof to achieve high-quality business results. With consistent efforts over the years, the event has earned itself a reputation of being a perfect platform to showcase

innovations from the metal forming sector. It has been hailed as an ideal converging point for industry professionals, stakeholders, experts, and academicians from a wide spectrum of manufacturing and ancillary industries from all over the world to demonstrate their unique strengths, share their wealth of knowledge, learn from subject experts, and discover solutions to amp up their efficiency.

Sharing his take on the show, Ravi Raghavan, President, IMTMA, says, "IMTEX is an exhibition for technology enthusiasts. It is at IMTEX that the latest technologies prevalent across the globe are launched and displayed live. Two years of the pandemic was a testing time for the Machine Tool and Manufacturing industries. I am happy we are finally meeting face-to-face, physically shaking hands, witnessing technologies, and touching and feeling products again."

"The response to the show has been magnificent. We have 350 exhibitors from over 16 countries in an exhibition space of 33,000 sq mt. In this edition, we are witnessing some new technologies and products launched by companies, which is a testimony to the development of the Machine Tool industry in the last two years, which, I believe, will harness manufacturing industry growth," he adds.

Concurrent Shows

With IMTEX FORMING, concurrent shows – 'Tooltech 2022', focusing on Machine Tool Accessories, Forming Tools, Die & Moulds, Metrology, CAD/CAM, and so on;

and 'Digital Manufacturing', featuring the latest innovations in Additive Manufacturing and Industry 4.0, among other things – will be held.

Metal forming technologies such as presses, bending, welding, and joining; high-speed laser machines; robotics and automation in sheet metal working; additive manufacturing; metrology; and CAD/CAM, all of which are critical to manufacturing, will be demonstrated live, allowing visitors to make well-informed decisions. Visitors to the six-day exhibition would come from a variety of industries, including Auto, Auto Components, Aerospace, Defence, Railways, Power, Medical Equipment, White and Brown Goods, Oil & Gas Equipment, Ship Building, and many more.

Aside from live machine displays and a focus on digital manufacturing, there will be an 'i2 Academia Pavilion', an event for academia and industry to interact and explore possible tie-ups. The maiden 'AatmaNirbhar Bharat Pavilion' will showcase indigenous technological capabilities and solutions developed in India.

SD

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VANTAGE POINT

Leading the Way

Organized by Indian Machine Tool Manufacturers' Association (IMTMA), IMTEX FORMING 2022 is deemed to be Asia's largest exhibition on metal forming technologies. The show is taking place after a gap of more than two years. On this occasion when the expo's stakeholders are jubilant at the revival of such a significant event, Ravi Raghavan, President, IMTMA, shares his views on the show, and the association's measures in scaling up technology readiness of the Indian manufacturers...



Source: BFW

» I am happy we are finally meeting face-to-face, physically shaking hands, witnessing technologies, and touching and feeling products again. The response to the show has been magnificent.«

**Ravi Raghavan, President,
Indian Machine Tool Manufacturers' Association**

Expected Visitor and Exhibitor response

IMTEX is an exhibition for technology enthusiasts. It is at IMTEX that the latest technologies prevalent across the globe are launched and displayed live. Two years of the pandemic was a testing time for the Machine Tool and Manufacturing industries. We have 350 exhibitors from over 16 countries in an exhibition space of 33,000 sq mt. In this edition, we are witnessing some new technologies and products launched by companies, which is a testimony to the development of the Machine Tool industry in the last two years, which, I believe, will harness manufacturing industry growth. IMTEX FORMING 2022 has gene-

rated keen interest among industry professionals, and we expect a footfall of over 40,000 visitors in these six days.

Maturity of Digitalized Manufacturing in India

The manufacturing landscape of India changed to a large extent with the onset of the pandemic in 2020. The pandemic enabled fast-tracking automation and digitalization across all the spheres of manufacturing, be it shopfloor production, machine health monitoring, inventory to supply chain monitoring, installation to upgradation, and maintenance being carried out remotely. This results in building sensorized machines and sub-systems besi-

des data capture, leading to analytics for enhancing efficiency across the value chain and, more importantly, optimized resource utilization.

The demand for automation, customized in most cases, and robotics in every manufacturing sphere, irrespective of sectors, is increasing. Industries in India are adopting digital manufacturing in phases in a balanced way. Companies are deploying Industry 4.0 and automation and exploring the usage of 3D Printing as they are fully aware of the advantages of digital tools and their benefits. The younger workforce will learn, implement and thrive in digitalization, which is a means of attracting talent. India can reposition itself globally to promote digital services in manufacturing. IMTEX FORMING 2022 has Digital Manufacturing as a concurrent show. Sensors, robots, software, and cobots are all connected seamlessly and are being displayed at this exhibition.

MSMEs' Adoption of Automation

Off-shore competition, identifying and retaining trained manpower, high cost of labor, controlling production costs, and sticking to government regulations are key challenges facing the Manufacturing industry. MSMEs are often confronted with this in their daily quest to bring high-quality and high-precision products. Automation is one solution that could solve some of the primary challenges confronting MSMEs and enable them to play a lead role in the global supply chain.

Automation, although promising in many aspects, is being adopted in a selected, measured, and phased manner by MSMEs in India. It involves customization of specific activities for each MSME, resulting in a longer lead time for finding acceptance and implementation.

However, Industry 4.0 solution providers are offering this by way of specific building blocks like energy utilization monitoring, automated inspection, etc., and convincing MSMEs' RoI and other benefits. Standardization of interfaces and protocols for peer-to-peer and device communications has the potential to drive it faster in a cost-effective way. In the long run, going Digital is not an option, just like 'Going Green'. Industries in India are realizing this global change and are adopting automation in phases by developing local products, technologies, and solutions.

Gearing up for Next Level

IMTMA has carried out desktop research on the potential business opportunities in new and emerging sectors. It has created sector-specific task forces for understanding sectoral needs and offering sector-specific solutions. Extensive industry visits are being undertaken to obtain first-hand information on industry needs and network with industries and clusters. Machines are redesigned and built to meet the specific requirements of electronics manufacturers, toy manufacturers, woodworking industries, etc. IMTMA has supported the industry on technology development projects in collaboration with Advanced Manufacturing Technology Development Centre (AMTDC) at IIT-Madras for localizing imports and new product development. IMTMA also carries out data analytics on global and domestic production, consumption, and EXIM of machine tools and shares industry outlook with members, enabling industries to recast their strategy and planning. Investments by various sectors, specifically by PLI industries, are captured and shared with members to create business opportunities.

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Tube Forming



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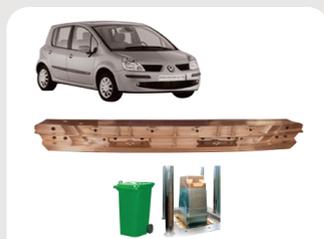


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DIGITAL MANUFACTURING

Marking Milestones

Forms and Gears celebrates 50 years of operations by launching the latest version of its award-winning Industry 4.0 Product, SmartFix 4.0, at IMTEX FORMING 2022...

Source: RV Forms & Gears LLP



RV Forms & Gears LLP
www.formsandgears.com
Hall 3A, Booth F113

ding front, Forms and Gears has been at the forefront of several landmark projects in India and abroad for over five decades now. At IMTEX FORMING 2022, the company is showcasing the latest version of SmartFix 4.0 – an award-winning Industry 4.0 solution for Fixtures, Work Holding, and Special Equipment. SmartFix 4.0 was awarded the prestigious Confederation of Indian Industry's (CII) Innovation Award lately.

Knowing More about SmartFix 4.0

Reji Varghese, Managing Director, Forms and Gears, says, "What started as an Industry 4.0 solution for Fixtures has now been expanded to enable intelligence on legacy machines, test rigs, automation, special equipment, etc. For one of the world's leading electro-

nic companies, we enabled even ordinary nut runners with intelligence which would give data on missed operations, screw alignment, torque, operator efficiency analytics, etc., and communicate this in real-time with the operator." "SmartFix 4.0 has grown over the past year both in depth and breadth. While we continued to contribute to deliver analytical insights to industry leaders, the cross-disciplinary effort of design, hardware, and software helped us conceive new use cases. The machines at our unit at Forms and Gears are now connected with SmartFix 4.0, allowing us to gain better insights into our production metrics as well. We hope that at this IMTEX, we will be able to expand the boundaries of SmartFix 4.0 to include applications in industry segments like aerospace,

EV and battery manufacturing, railways and defense, textile and agricultural equipment manufacturing, medical equipment, electronics, semiconductor equipment, and renewable energy," he adds. Forms and Gears has two state-of-the-art factories at Guindy, in the heart of Chennai, housing one of the best-equipped private tool room facilities in the country. Its second factory in Guindy was set up in 2021 with a battery of machining centers from Mazak, Fanuc, and DMG Mori along with CNC Turning Centers, Grinders, Temperature-controlled inspection facilities equipped with Zeiss CMMs, and a whole range of other inspection equipment. The company now employs 220 engineers in India, Thailand, Vietnam, and Brazil and exports fixtures to nine countries across the globe. **SD**

This year marks the 50th year of one of Asia's oldest and best-known fixture building company, Forms and Gears. A pioneer on the fixture build-

AATMANIRBHAR BHARAT- PAVILION

Multi-station Robotic Grinder and Polisher

Chennai Metco is launching its newly developed Multi-station Robotic Grinder and Polisher at IMTEX FORMING 2022.

Source: Chennai Metco Pvt Ltd



Chennai Metco Pvt Ltd
www.chennaietco.com
Hall 3A, Booth F102

This polisher is a compact automatic unit that combines a grinding and polishing station, an automatic dosing system, an ultrasonic cleaning station, and an integrated tank.

It has an intuitive and user-friendly system with an easy-to-operate PLC touch screen. The program

control helps to record every process and give repeatable results at all times.

The crucial phase of the sample preparation process is polishing. The aim is to achieve a reflective flat surface and eliminate scratches and defects.

Chennai Metco offers a variety of polishing machines based on

customer requirements, including manual, automatic, single disc, double disc, individual pressure, and central pressure. The company also provides necessary consumables to achieve fine polishing using diamond discs, abrasive papers, polishing cloths, diamond suspensions, diamond pastes, aerosols, and lubricants. **SD**

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ENSIS AJ Series



Hall No - 4
Booth No - B107



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TUBE POLISHING MACHINES

For a Smooth Finish

The Valgro Hyzer Hybrid – 06 Series machine is ideal for square and rectangle tube shapes.

Valgro Hyzer Hybrid – 06 model is a combination of an abrasive belt and an abrasive wheel with two heads, one with the abrasive belt to grind the surface and the other with the abrasive brush to polish the surface. With this combination, one can achieve different types of finishes such as matt, satin, hairline, and high-gloss mirror polish. It is highly recommended for mass and continuous production of

square tubes and busbar in stainless steel, mild steel, copper, brass, aluminum, and other metals for grinding and finishing. This Hybrid model is suitable for working thicknesses ranging from 3 mm to 75 mm, working heights ranging from 3 mm to 75 mm, and widths ranging from 3 mm to 150 mm. Furthermore, the company customizes it to meet the needs of the industry, including the option of a dust collector, which arrests the spread of dust in the atmosphere.

Additional Features

The Twin Head Abrasive Belt Conveyorized Surface Polishing System employs a set of required operations. It requires low upkeep and delivers high productivity. The Oscillating Belt Head Spindle is for uniform surface finish and increased belt life. Fast Finishing is due to a Multi-headed Grinding Sequence. The double set of front and rear pinch rollers is to avoid workpiece edge chamfering. Wet and dry models are available. **SD**



Source: Valgro India Ltd

Valgro India Ltd
www.valgro.co.in
Hall 2A, Booth C102

DIE LIFTERS

ROLLBLOC DIE LIFTERS

Press tables can be equipped with ROLLBLOC die lifters, available in Ball and Roller versions, and Spring and Hydraulic types.

The conventional procedure for changing press tools often becomes tedious and potentially dangerous when handling dies weighing more than 500 kg.

The ROLLBLOC die lifters are used for easy handling and precision positioning of dies weighing tonnes. Press tables can be equipped with ROLLBLOC die lifters, available in Ball and Roller versions and Spring and Hydraulic types.

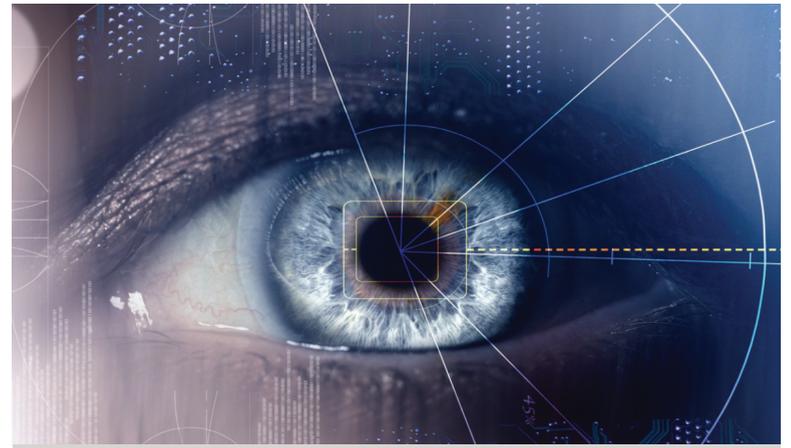
Load distribution over several balls/rollers and their mounting arrangement allows for smooth movement, making it possible to quickly move the die with little effort. The exact manual positioning of the die, therefore, poses absolutely no problems and is reflected in increased productivity.

The die lifters are manufactured for the standard slot size of 18/22/28/36 mm with DIN 650 standards. They can be used for special applications and with higher temperatures up to 280° Celsius. **SD**



Source: Güthle Pressenspannen GmbH

Güthle Pressenspannen GmbH
www.guethle-swt.de
Hall 3A, Booth E103



TECHNOLOGY @ work



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Concurrent shows



19 - 25 January 2023, Bengaluru, India

Organiser



Indian Machine Tool Manufacturers' Association

Venue



www.imtex.in



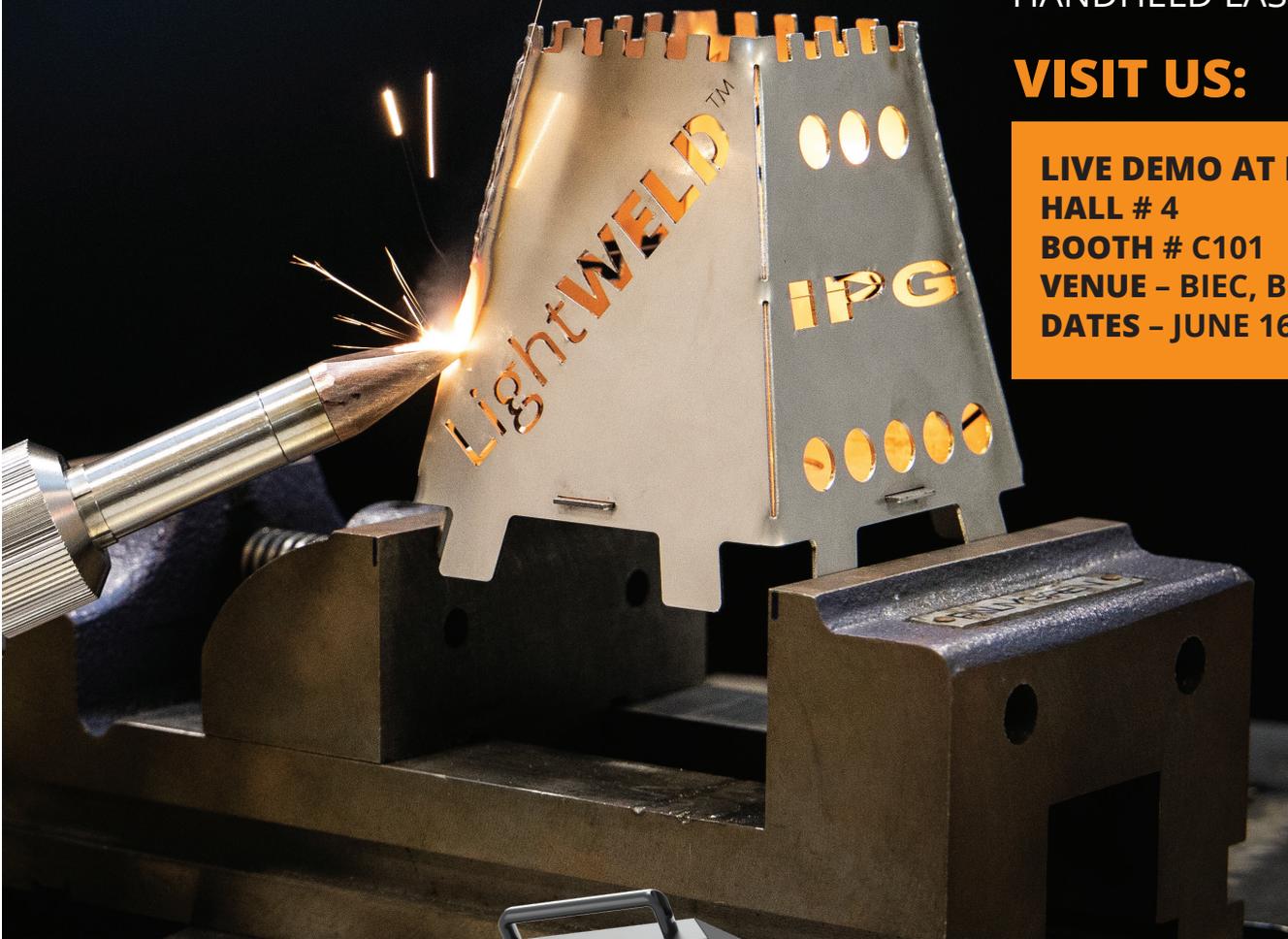
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The ALM is flexible and easy to operate.

Source: Laser Technologies Pvt Ltd



Laser Technologies Pvt Ltd
www.lasertechnologies.co.in
Hall 4, Booth A130

The mobile laser welding system can be brought to the workpiece or the workpiece to the laser. In many cases, it is not necessary to dismantle the mold. The ALM ensures mobility within the company or at the customer's facilities. The laser is ready for use within just minutes. The laser arm can be quickly positioned and fixed in the desired working

position via electrohydraulic brakes. One may weld manually with the joystick, semi-automati-

cally, or via an external operating unit with a pulse function.

The laser device has a powerful and application-optimized SPC with new functions, and the user coordinate control is programmable within a range of 50 × 50 mm. A laser head that can be rotated left and right, the optional turn and tilt objective, and focusing lenses with various focal distances ensure that the laser beam can reach (almost) any point of the workpiece without requiring arduous movements. The microscope can also be rotated, thus facilitating economical working.

Benefits of the ALM

It is an open laser system that offers the flexibility to work

without restrictions in the operational space. It provides safe working with the system fulfilling performance level d. The device allows quick use, thanks to short setup times (positioning, fixing brakes, welding). Due to the versatile adjustment options of the laser head, it is extremely flexible. It has a compact design with a precision joystick. The narrow laser head also reaches deep into the workpiece. There is no need for an additional cooling system.

ALPHA LASER is the world's first manufacturer of laser systems with TÜV certification for functional safety with safety level Performance Level d according to European standard DIN EN ISO 13849.

SD

MARKING TECHNOLOGIES

First of its Kind

MarknStamp introduces MNSB, the world's first Wi-Fi-based cordless handheld marking machine, that has overcome many challenges of current hand engraving machines.

The current range of hand engraving machines has a broad operational scope with many challenges. These machines are subject to rough use in extreme environments. Existing portable machines with mounted keyboards and touch screens are susceptible to

damage. They achieve better usability, but with high maintenance. The application areas where portable machines demand long operational hours require them to have a powerful battery. Besides, if metal components are at an isolated location, the machine should be lightweight. Such

contradictory challenges limit the usage and hamper the efficiency of hand engraving machines.

MarknStamp's team has won over these challenges with the MNSB-53, which weighs only 2.5 kg and has a power-packed battery of 5 amp/hr. The users can achieve more than three hours of continuous marking and around eight hours of normal marking. The frequency of changing the battery is once within shifts, which results in the least downtime. Its compact carrier makes it easy to carry it anywhere.

The best part of the MNSB-53 hand engraving machine is that it has seamless connectivity with a Wi-Fi-enabled device. Users can connect their mobile to the machine and create a design with its advanced mobile app. They can transfer the design using Wi-Fi and begin work in no time. Its unique app locking feature provides the highest security.

The hand engraving machine launcher app ensures the usage of the mobile device as a dedicated terminal. Once the user transfers the design, device connectivity is not required, which saves power as well. The application has been designed with all the features of a PC-based marking application. Users can create Datamatrix codes, Shift codes, Dates codes, as well as customized codes effortlessly. Industries from fabrication and manufacturing, with open warehouses to remote locations like Oil & Natural Gas platforms, have appreciated the MNSB-53 hand engraving machine as the most efficient solution in all aspects. It can also do the marking on very small components. Zero maintenance and a broad scope of usage have made it popular globally with no requirement of electrical and compressor supply.

SD

Source: Stamp 'It Robotai & Solutions Pvt Ltd



Stamp 'It Robotai & Solutions Pvt Ltd
www.marknstamp.com
Hall 2A, Booth C117

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FIBER LASER TUBE CUTTING MACHINES

On the Cutting Edge

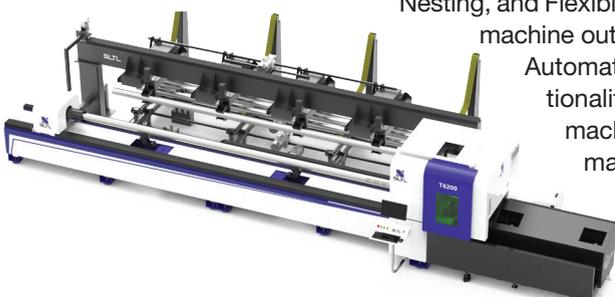
SLTL has introduced the T6000 range of Fiber Laser Tube Cutting Machines, keeping in mind the specific needs of the metal cutting industry.

The world's first manufacturer of Fiber Laser Cutting Systems has introduced T6000, a range of Fiber Laser Tube Cutting Machines, considering the specific needs of the metal cutting industry.

Unique integration of the hardware and the software allows SLTL's Laser Tube Cutting machines to operate

on varied tube shapes, angles, channels, beams, and even some different profiles. With the system's functional power supply capabilities. It could work smoothly on materials such as SS, MS, Al, Cu, Br, Gi, etc. SLTL has now introduced a new way to process laser cutting on tubes with its Tube Cutting Series: T6150 / T6200 / T6300. The Laser Tube Cutting series is turning out to be the laser system that provides exceptional cutting quality and better productivity. The machines boast features such as Auto Tube Assembly Cutting, Advanced Software, Smart Array Nesting, and Flexible Auto-Scraping to enhance the machine output.

Automation adds to the machine's functionality. The robust laser tube cutting machine can be equipped with automation like an autoloader for safe and automatic loading and unloading of all tubes, even special profiles. And one can also add a bevel cutting head to cut up to 45° bevel angles with 4, 5, and 6 axis movements. **SD**



Sahajanand Laser Technology Ltd (SLTL Group)
www.sltil.com
Hall 4, Booth B108

Source: Sahajanand Laser Technology Ltd (SLTL Group)

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FIBRE LASERS

Valster-AJ Series from AMADA

The latest Valster-AJ series from AMADA provides continuous high-quality and stable processing of thin and thick materials without a cutting lens change or manual setup.

In recent years, higher-power fibre lasers have become more popular for sheet metal processing, providing faster cutting speeds and quicker piercing times, and in turn, lower cost-per-part. The latest Valster-AJ series from AMADA provides continuous high-quality and stable processing of thin and thick materials without a cutting lens change or manual setup.

The new Valster-AJ comes with: State-of-the-art beam control technology; Laser integration system to aid in stable processing; and New AMNC 3i plus controller to improve machine controllability. Valster-AJ is equipped with AMADA's latest beam control technology – Mode Converter which changes

the beam mode to accommodate whatever material and thickness is being processed. The result – high processability and excellent stability from thin to thick materials using a single lens setup.

Laser Integration System

A key highlight of the new Valster-AJ is the addition of the all-new Laser Integration System (LIS). The LIS includes two important features: • i-optics sensor – which can diagnose and monitor the protection glass condition; and • i-process Monitoring – a state-of-the-art cutting and pierce monitoring system equipped with a spectrometer to analyze cutting and piercing process and detect when the cutting quality deteriorates.

The Valster-AJ series is also equipped with the latest gen AMNC 3i Plus controller which can further enhance the machine controllability and reduce process time by optimizing the head movement. Together with new features such as process cost visualization and joint amount editing function and an 8-station automatic nozzle changer, Valster-AJ series ensures that the machine setup is reduced to a minimum.

Valster-AJ series is available in bed sizes of 3 m x 1.5 m, 6 m x 2.5 m, and also 9 m x 2.5 m. Available with 3, 6, and 10kW fibre laser engines, the quality and processing speeds for medium to thick materials, as well as very high-speed piercing, make the Valster-AJ the perfect machine to increase profitability. **SD**



AMADA India Pvt Ltd
www.amadaindia.co.in
Hall 4, Booth B107

LC Valster 3015 AJ G

Source: AMADA India Pvt Ltd

SPECIALITY ALLOY ENGINEERING

Proffering End-To-End Solutions

Check out AMPCO METAL's new launch for the Metal Forming industry.



AMPCO METAL
www.ampcometal.com
Hall 3A, Booth A104

Source: AMPCO METAL

AMPCO METAL is known for supplying specialty copper alloys raw material and finish parts for consumables items in tube bending die set like mandrels and wiper dies. Thanks to the patented MICRO-CAST® technology, all AMPCO® alloys offer a more continuously homogenous microstructure. The microstructure metal forming tools such as deep drawing dies, a drawing punch, forming rolls,

welding rolls, mandrels, wiper dies and more made of AMPCO® alloys are a real game-changer for the Metal Forming industry.

Capitalizing on this, AMPCO METAL is now giving value-added services to customers by proffering end-to-end solutions for rotary draw tube bending die set. The solutions include designing, manufacturing, and proving out the bend die tool set as per customers' needs like tube bending feasibility study, design of

the tool set, manufacturing, installation and proving out, application support, and supply of consumables. AMPCO METAL can supply a complete bend die tool set for various tube shapes like rectangular, square, oval, other profiles, etc. The tool set includes: Bend die and inserts, Clamp die and inserts, Pressure die, Collet, Wiper die / wiper insert and holder, Ball mandrels, and Spares e.g., mandrel links, mandrel balls, etc. **SD**

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HANDHELD LASER WELDERS

IPG's LightWELD 1500 XC

IPG PHOTONICS has recently launched the LightWELD 1500 XC, an advanced handheld laser welder with new capabilities for pre-and post-weld cleaning functions.

LightWELD 1500 XC is an extended version of the existing LightWELD 1500 system used specifically for welding applications. It enables fabricators to immediately realize time and cost-saving benefits as compared

with traditional pre- and post-weld cleaning methods.

LightWELD XC handheld laser welding and cleaning system expands the welding capabilities of LightWELD with cleaning modes to remove oils, rust, and coatings quickly and easily before welding and remove debris and discoloration after welding. It has an exceptional visual appearance without the time and expense of abrasives or chemicals.

For welding, LightWELD XC enables dramatically faster welding and provides higher-quality, consistent results across a wider range of materials and thicknesses than MIG or TIG with minimal distortion, undercut, or burn-through.

LightWELD 1500 XC Handheld Laser Welding and Cleaning System uses the power of your laser for pre and post-weld cleaning. It increases weld strength and quality and creates a great-looking weld with no chemicals or abrasives. It removes oxides, rusts, oils, and greases; improves consistency and weld repeatability; cleans away soot and weld-related debris; polishes away heat-affected discoloration; and it has very low heat input, hence, no heat distortion effects.

Benefits

It comes with pre-defined laser processing parameters for high-quality, consistent welds. Novice welders can be trained in welding

in a matter of hours, reducing training and production costs. The system has simple controls for the selection of 74 stored modes that saves user-defined process parameters. Customized welding parameters for laser power, wobble width, and frequency are saved to user modes and recalled as needed. Customized cleaning parameters are for laser power, pulse frequency, duty cycle, and scan width. Simple mode selection allows rapid switching between different operating modes and material thickness combinations. Novice welders can use stored parameters to achieve the same high-quality, consistent welds as seasoned operators. **SD**

Source: IPG Photonics India Pvt Ltd



IPG Photonics India Pvt Ltd
www.ipgphotonics.com
Hall 4, Booth C101

OPTICAL MEASURING MACHINES

Capturing Things Easily

ZEISS O-DETECT can be used in the Electronics, Casting, Industrial Job Shops, Stamping, Medical, and Automotive fields.



Carl Zeiss India (Bangalore) Pvt Ltd
www.zeiss.co.in
Hall 3A, Booth D102

ZEISS O-DETECT is an optical measuring machine that offers intuitive operation, high-quality imaging, and flexible lighting for precise measurements in an instant. The technology is suitable for a wide variety of components but excels with those that are best left untouched.

Fields of applications include parts comprising 3D workpiece (one side), small parts, turned parts, and flat parts, and in industries including Electronics, Casting, Industri-

al Job Shops, Stamping, Medical, and Automotive.

Key Characteristics

The machine comes with a large field of view at high resolutions and increased efficiency in capturing more details. Its calibration is in compliance with ISO 10360-7 and promises consistent and reliable measurement results.

ZEISS O-DETECT is equipped with an intuitive and user-friendly ZEISS CALYPSO software. Beginners can

use ZEISS CALYPSO express, which is easy to learn and program. The integrated 5 MP overview color camera locates the part quicker to start measurements. Controlled by the software, there is less need to use the joystick.

Options are available in classic multi-segment blue and a white toplight for general part top lighting. There is also a homogeneous domelight option for lighting shiny workpieces. Darkfield optimized lighting for challenging edges is also to come soon. **SD**



MURATEC SOLUTIONS FOR SHEET METAL PUNCHING

Muratec, world's first manufacturer of servo driven ram turret punch press introduces leading innovation in sheet metal industry. Muratec's latest Automation Solutions are flexible, easy to use and economical, offering various modes of operation. Tower configuration for Lights out production also available.

MOTORUM

MOTORUM series punch presses are available in various models to meet diversified needs of sheet metal industry. These machines are worldwide popular for its design features, rigidity, high speed productivity, environment friendly design features of minimum power consumption, low noise and high profitability to customers. MURATEC the leading name in automation is fully prepared to offer sheet metal automation solutions to meet the growing production demands in India.

M2048 TS with SL 1250

Compact, Economical and Highly Flexible Automation Solution.



BB6020

Muratec Ball Screw Press Brake BB6020 is driven by AC servo motor & ball screw mechanism



INDUSTRY-ACADEMIA COLLABORATION

Stronger Together

Industry-academia partnerships are instrumental in advancing research and creating a skilled workforce. The i2 (Industry-Institution) Pavilion at IMTEX FORMING 2022 is one such endeavor toward beefing up these bonds, so each understands the other's needs for the industry's growth and development.

Source: Magic Wand Media



Strong collaboration between the manufacturing sector and academia is crucial for reaping huge dividends for the sector's growth. The industry can gain a work-ready and skilled talent pool with practical training and the academia can benefit by having opportunities to work on relevant technologies and issues through these partnerships.

To facilitate the forging of these ties to happen in a structured way, IMTMA offers a platform to Indian academic institutions at its prestigious IMTEX, Indian Machine Tool Exhibitions, every year. At the current IMTEX FORMING 2022 & Tooltech 2022, the association, through its i2 Pavilion initiative, is providing an opportunity to the

Indian academic/R&D institutions to showcase their R&D capabilities in the metalworking field. Each institution participating in the show displays four posters and demonstrates a product.

Attractions at the IMTEX i2 Pavilion include a tour of the exhibition, opportunities to participate in sponsored activities and award-winning competitions, and networking with leading industry players and officials from the IMTMA Technology Centre. Furthermore, the best displays will be awarded cash prizes.

A quick look at the topics shared by the participating institutions that are showcasing their innovations, R&D capabilities, and the development of unique solutions to problems.

Acharya Institute of Technology | **Bangalore**

Development of stair-climbing robot parts using Forming process with the help of 3D printing technology.

Cambridge Institute of Technology | **Bangalore**

3D Finite element analysis of strain inhomogeneity in equal channel angular pressing, melting of aluminum with magnetic levitation, grain refinement of Al₂O Beryl MMCs by ECAP.

Dayananda Sagar University | **Bangalore**

Experimental investigation of composite sandwich panels through additive manufacturing techniques.

IIT Bombay | **Mumbai**

Metal forming is a viable option for light weighting using lesser material input. Costs can be saved by savings on energy used in manufacturing. Enhancement in material properties during forming further enhances the cost-saving potential of the metal forming route. The exhibits will showcase the various possibilities explored in the Metal Forming Lab in the Mechanical Engineering Department at IIT Bombay.

NMAM Institute of Technology | **Udupi**

- i) Design and development of 4-Axis Cartesian robot for welding application.
- ii) Design and development of band saw MIG and TIG welding machines.
- iii) Design and development of CNC Plasma cutting machine with Torch height controller.

PSG College of Technology

Coimbatore

Dieless digital friction stir incremental forming process based on layer manufacture and Micro forming technologies - Micro deep drawing.

PSG College of Technology

(Robotics and Automation Engineering)

Coimbatore

i) PC-based Articulated Robot - The developed six-axis articulated robot is used for vision-based path generation for welding of components. ii) Erobot Trainer Kit - It is a biped-type robotic kit that helps in learning Arduino programming for Logical, mathematical operations, and robot functions. iii) Trainer Robotic Kit 3 DoF - Robotic kit controlled by joystick/potentiometer used to learn kinematics & dynamics of robot manipulators and assembly. iv) Trainer Robotic Kit 5 DoF - Miniature articulated robot controlled by ROS environment used to learn kinematics and dynamics of robot manipulators and assembly. v) Trainer Mobile Robot Kit - Bluetooth Controlled mobile robot kit with obstacle avoidance and line following features.

Atria Institute of Technology

Bangalore

Plasma Cladding of Copper on Cylindrical SS 316L Surface.

CMR Institute of Technology

Bangalore

Development of Functional Bone Substitute using 3D Printable Biocompatible Polymer Composite and Cytotoxicity evaluation.

Dr Vishwanath Karad MIT World Peace University

Pune

Micro Forming for Aerospace Applications: Micro forming refers to the manufacture of small components in the range up to 4 mm formed from the flat file of thickness range of 100 microns. The forming limit curves are plotted as benchmarking for designing any aerospace component to be manufactured from specific material and thickness.

Government Tool Room and Training Centre

Bangalore

Display of GTTC Training Centre's Long Term & Short Term Training Programmes and Display of Training Centres & CoEs (Centre of Excellences) Infrastructure & Components.

IIT Madras

Chennai

Machine tools and production technology, indigenization of technology which adds value to the CG sectors. Launch of KITE 'Technology Innovation Platform'.

Jawaharlal Nehru Engineering College

Aurangabad

Jawaharlal Nehru Engineering College, Aurangabad has closely worked with Deutsche esellschaft fur Internationale Zussammernarbeit (GIZ) & Marathwada Association of Small Scale Industries & Agriculture (MASSIA) for developing solutions to 20+ live problems of industries under MSME Innovation program. We are highly interested to showcase these project works along with research work on Additive manufacturing at IMTEX 2022.

Kalpataru Institute of Technology

Tiptur

In the present studies on microstructure, mechanical and tribological properties of aluminum MMCs reinforced with silicon carbide (SiCp) and graphite (Gr) particles were carried out. The specimens were fabricated by stir-cast method. Heat treatment was carried out for the cast specimen. The prepared specimens (as-cast and aged) were examined using an optical microscope to know the particle distribution in the matrix. Hardness, tensile, and wear tests were carried out for as-cast and aged specimens. From the results, it was observed that the composite showed higher hardness and faster aging kinetics as compared to the base alloy. From the results, it is revealed that the quantity of wear rate was less for aged specimens when compared to the as-cast specimens.

New Horizon College of Engineering

Bangalore

Design and Fabrication of IoT-based cooling monitoring system and Application of Machine Learning in Mechanical Engineering.

Siddaganga Institute of Technology

Tumakuru

Innovation in manufacturing related to 3D Printing, Optimization of Manufacturing parameters in EDM, Characterization of Materials, and their importance with reference to application and properties. Innovative Solar Drier designed for high performance.

Vemana College of Engineering

Bangalore

Split Hopkinson Pressure Bar (SHPB) and Ballistic Impact Gas Gun Facility.

KLS Gogte College

Belagavi

Joining of 3D printed parts by FSW technique to overcome the bed size limitation of an FDM 3D printer applied to UAV wings.

Vishwakarma Institute of Information Technology

Pune

i) Machinability study of Forming Dia tool using Different PVD coated material, ii) Optimization of roller burnishing process on alloy steel using RSM, iii) Automation of Hydropneumatics Press, iv) Development of Mobile and web applications for Gauge R & R for the manufacturing industry, v) Augmenting reality and virtual reality (AR/VR) for the Assembly line.

Shri Vishnu Engineering College for Women

Andhra Pradesh

The scope of tailor welded blanks in automobile engineering provides an opportunity for researchers to work on the deep drawing of the sheet metal made out of AA6061 and AA2017. Design alternatives by adopting the right profile, optimum process parameters, and punch/die assembly enhance the formability. Improved mechanical properties of the tailor welded blanks and microstructure were examined after a deep drawing of the tailor welded blanks.







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Extend the flexibility and productivity of Salvagnini panel benders



Rapid industrial developments of recent years continue to set tough challenges. Because industry has changed: the large batches typical of series production have changed to small-medium sized batches, or have been completely replaced by just-in-time production. A high item turnover rate, shortened lead times, and a constant lack of highly qualified personnel, have moved the focus to automation and robotization, which allow production to be extended beyond traditional manned work shifts and ensure operatives are engaged only in activities with high added value.

“We wanted a smart solution which was much simpler than those already on the market: simpler to program, simpler to use, and able – if possible - to exponentially improve the flexibility and productivity of our panel benders. And we also wanted a solution suited to our compact panel benders, not just the automatic ones. With P-Robot, we are sure we have achieved our goal.” explains Nicola Artuso, Salvagnini Product Manager for bending technologies. The P-Robot can be incorporated with all the panel bender models – P1, P2, P4 & PX.

