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ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

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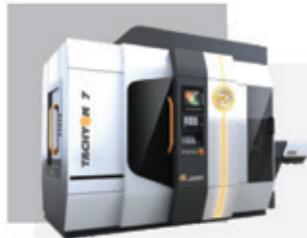
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# FM'S BUDGET: KEY TAKEWAYS FOR INDIAN MANUFACTURING

THE ULTIMATE GUIDE TO PROFITABLE MANUFACTURING  
**MACHINIST**  
Volume 19 Issue 2 February 2024



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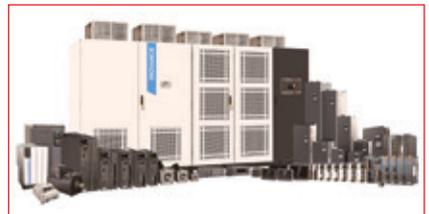


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## Elgi Equipments' Project Tiranga Unveils Revolutionary Flag-Flying Technology

**ELGI EQUIPMENTS**, one of the world's leading air compressor manufacturers, has successfully developed a technology solution capable of delivering air at adequate volume and pressure to sustain the flying of a flag during periods of low wind speed.

When a national flag flies, it evokes a lot of emotion. However, sometimes, when the wind is less, flags droop. 'Project Tiranga' at ELGi was initiated with an enterprise-wide innovation challenge that yielded promising concepts, each leveraging ELGi's expertise in compressed air technology.

The solution comprised a mechanical system that lifted the flag using blowers, a swivel mechanism to align the fan



modules with the wind's direction and speed, and a designed rope guide system that allowed the flag to be raised and lowered smoothly through the modules. Integrating the above concepts—lifting fans, the swivel mechanism, and the flag-raising and lowering systems—into

a custom-made flag mast measuring 110 feet enabled the flag to fly majestically despite periods of low wind speed. Today, the module stands ready to showcase the grandeur of any flag in the absence of natural wind at the ELGi Air Center Plant in Coimbatore, Tamil Nadu.

Dr. Jairam Varadaraj, Managing Director, Elgi Equipments Limited, commented, "Project Tiranga was no easy task, and there were several hindrances along the way. Nevertheless, in line with our culture of innovation and long-term thinking, we collaboratively drew on our knowledge and experience in compressed air systems to go above and beyond and contribute to a matter of national pride."

## Servotech bags order worth Rs 120 crore for fast EV chargers from BPCL

**SERVOTECH POWER SYSTEMS LTD.**, a leading EV charger manufacturer in India, has bagged a major order of 1,800 DC Fast EV chargers from Bharat Petroleum Corporation Limited (BPCL). The project, valued at Rs 120 crore, will involve Servotech manufacturing, supplying, installing, and strategically deploying these 1,800 EV chargers across the nation, particularly at BPCL petrol pumps in major cities, as part of the BPCL E-Drive Project.

The project encompasses two charger variants, 60 kW and 120 kW, and Servotech aims to complete this extensive project by the end of 2024, contributing to the nation's evolving EV ecosystem. This initiative aims to establish e-mobility touch-points, optimise transactions, improve availability, simplify discovery, and facilitate navigation for EV users.

Sarika Bhatia, Director, Servotech Power Systems Ltd., commented, "We take immense pride in accelerating India's e-mobility revolution in collaboration with BPCL. Our partnership focuses on establishing a dynamic EV charging network that makes EV charging accessible for EV owners nationwide."

Servotech Power Systems and BPCL previously worked together to transform the e-mobility landscape. The company also bagged an order to supply and install 2,649 AC EV chargers at different locations across the country for BPCL's e-drive project. Servotech has already completed 36 per cent of supply and installation, and the entire project will be completed by March 24.

## Jindal Aluminium unveils future-ready fabrication division

**JINDAL ALUMINIUM**, India's largest aluminium extrusion company, has launched a new Fabrication division. Powered by in-house developed tools, the new segment is another value-added offering after Jindal Aluminium's launch of an environment-friendly powder coating unit.

The foundation of the fabrication unit is based on machinery and equipment fuelled by an expert team of skilled employees with more than a decade of experience in cutting, punching and operating four-axis machines. It aims to tackle challenges associated with engineered aluminium fabrication.

Equipped with advanced technology, the company's Four Axis Machining Centre facilitates operations such as drilling, slot milling, angle drilling, tapping, pocket milling and grooving. Its automated

Sawing Machines, including the FOM Industries Mirage 600 and Panda 400, ensure precision, high speed, and maximum efficiency to carry out the desired degree of cutting operation. The single head cutting saw will provide a range of versatile cut lengths, and the punching machine, with an in-house design punching die tool, will provide services like slot punching, pocket punching and hole punching with an auto feeding system. From automatic straight cutting to slot punching and drilling, every mechanical operation is precisely calibrated to deliver excellence at every step of production.

Pragun Khaitan, Vice Chairman and Managing Director, Jindal Aluminium Limited, said, "Launching the Fabrication unit marks a significant step in our journey to offer value-added service to our customers, and we are confident that they will benefit immensely from its versatility and precision."

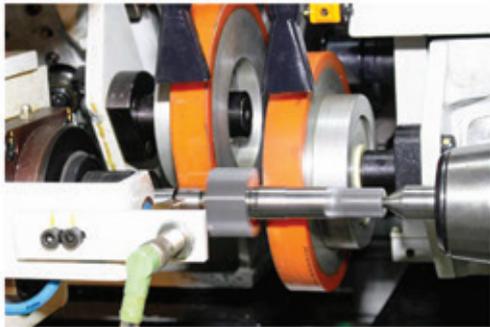
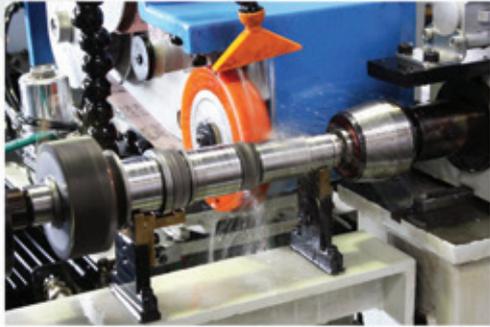


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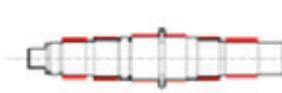
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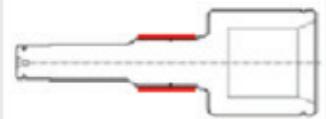
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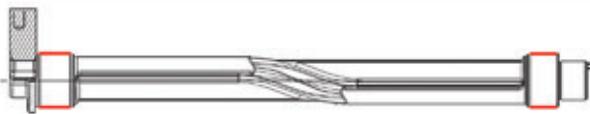
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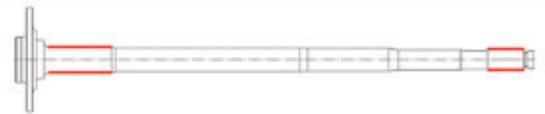
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## TRUMPF opens new production facility in Pune

**THE HIGH-TECHNOLOGY COMPANY TRUMPF** expands in India and opens a new production facility. The factory will be in Pune, in the state of Maharashtra, in the west of India.

“India is developing strongly and still has growth potential. Our proximity to this emerging market allows us to produce more efficiently and respond more quickly to the needs of our customers. Furthermore, the local presence gives us the opportunity to develop tailored solutions for the Indian market while leveraging global synergies. In the long term, we want to supply other markets from India and expand our supply chain,” says Till Kueppers, Chief Operating Officer, TRUMPF Machine Tools, Germany.

TRUMPF will invest more than four million euros in the new production facility. The production will start this year.

### Bending and cutting machines made in India

“India’s dynamic landscape and forward-looking market present a canvas

for our company’s future growth story. This investment is the first step of our long-term growth strategy. Our customers will benefit not only from high-quality products but also from increased customer proximity and adaptability,” says Pradeep Patil, Managing Director, TRUMPF India.

The factory will start with TruBend Series 1000 Basic Edition bending machines and will follow with TruLaser Cutting Series 1000 Basic Edition by 2025.

“We will leverage the talent available in India and utilise the ecosystem that has high experience in machine building to deliver TRUMPF quality in India. This will increase the confidence of the customers to invest in TRUMPF machines and encourage new entrepreneurs to start with TRUMPF machines. This unique value proposition would be



a great contribution to the sheet metal industry in India and our valued customers,” says Mohammed Hidayath, Director Sales, TRUMPF India.

TRUMPF is also expanding its support infrastructure by adding a showroom in Bengaluru, and it is planned to be operational within this year. This will strengthen and improve the value-added services for the customers. With a software research and development facility based in Chennai, TRUMPF is further able to offer comprehensive solutions to the customers.

## PPS Motors inaugurates 3S facility for Tata Hitachi

**PPS MOTORS**, a part of the larger dealer network, inaugurated a brand new 3S facility for Tata Hitachi. Through this 3S facility, PPS Motors will be catering to the customers of the construction and mining equipment range of Tata Hitachi. With the opening of this facility, PPS Motors further strengthens its support for consumers in the region.

By setting up five outlets, PPS will be catering to nine districts with a centralised headquarters in Salem. Strategically located on NH74 in Salem, the 3S facility is easily accessible by Chennai By-Pass. The outlets are in Erode, Karur, Namakkal, Krishnagiri and Hosur covering all key customer locations and catering to their needs for service and spares.

Rajiv Sanghvi, Managing Director, PPS Motors Private Limited, said, “We are excited to partner with Tata Hitachi and inaugurate this state-of-the-art 3S facility in Salem. The investments that we have made in infrastructure, manpower,



and reach are a testament to our endeavour to create deeper and wider coverage for our customers, maximise vehicle uptime, and increase profitability.”

“Tata Hitachi has remained the market leader in the excavator segment in this territory for several years now. Apart from augmenting our traction in this territory, this integrated facility will also enhance our proximity to our customers,” said BKR Prasad, General Manager, Marketing, Tata Hitachi.

Located at key industrial hubs across cities, the workshop offers easy accessibility to all customers, ensuring a convenient and hassle-free service experience.

The facility is spread across 21,000 sq. ft. with 3 service bays to ensure timely service and delivery to customers. The facility is equipped with advanced infrastructure and technology, enabling reliable repair services for a wide range of equipment.

PPS Motors has invested in the latest diagnostic tools and equipment to ensure accurate and precise repairs with the support of highly skilled and experienced technicians. The technicians are trained regularly to be updated with the latest industry trends to help them with quick diagnostics.

Some key machinery includes a field diagnostic vehicle facility, hydraulic press, CO2 welding, a hydraulic workshop and engine workshop equipped for full/partial overhauling and bucket hard facing, hydrogen pump overhauling and aggregating. These help cater to the growing demand for high quality repair services for mini excavators, backhoe loaders, wheel loaders and excavators.



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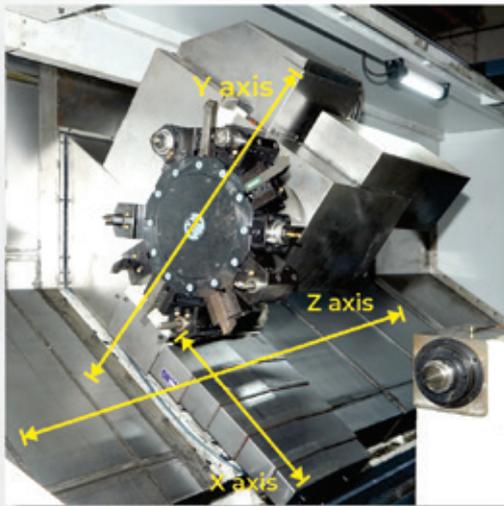


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By Dr. Ravindra Ojha, Professor of Operations at Great Lakes Institute of Management Gurgaon

## IS SINGLE-PIECE FLOW IN MANUFACTURING NOT OVERHYPED?

Which production system—batch flow (BF) or single-piece flow (SPF)—is better suited for your manufacturing shop? The article offers guidance on the best production system for your manufacturing facility and also weighs the benefits and drawbacks of batch flow (BF) and single-piece flow manufacturing (SPF).

In a manufacturing shop floor, there are a series of sequential value-adding operations carried out to deliver a finished product ready for customer consumption. This value flow process can be executed using a single-piece flow (SPF) (one-piece flows through a series of operations adjacent to each other) or a batch flow (BF) approach (flow of two or more pieces in a batch through the operations). Motorcycle assembly on an assembly line is an example of a single-piece flow, while washing and drying processes for a batch of 5-7 dirty clothes exemplify batch flow processing. Each flow approach has its pros and cons.

As a young disciple of lean manufacturing, I learned that SPF on shop floors is always beneficial. It facilitates material flow, space optimisation, and inventory control, thereby reducing operational costs.

It was shared that SPF is characterised by its speed, as waiting time per piece is negligible, thereby meeting customer needs faster and facilitating high equipment utilisation. It moves inventory faster, enhancing the stock turn ratio (STR) and reduces lead time, thereby improving responsiveness to customers. It also exposes quality issues quicker, only to be resolved, thereby mitigating customers' quality concerns. Lower labour costs and overheads are other important features of SPF. However, the characteristics of the BF are weak in each of these factors. The explanations were logical and convincing to me.

In real life, after studying many manufacturing setups, one finds that most manufacturing shop floors practice batch flow systems. The bakery kitchen, beer processing, washing and drying processes, garment production, soap manufacturing, sheet metal surface treatment method, heat treatment of components, R & D, and many more have a batch-dominant flow.

What made them not follow a single-piece



flow which had benefits? It is also worthwhile mentioning here that in the futuristic smart factories, driven by Industry-4.0-related technologies, quality, setup change duration, inventory tracking, material handling, volume scaling, Overall equipment effectiveness (OEE), and many other production issues will be low concern areas. This justifies the exploration of a detailed and deeper understanding.

### There are many positives in running batch flow production;

- Focus, care, and inspection by a specialist operator for each operation of the entire batch of parts ensures superior quality of the product. The specialist operator is always skilled and takes reasonable time, unlike in single-piece flow. BF also facilitates operational rhythm. Envisage a batch of gears on a large pallet being inspected by an operator.
- Traceability of operation and control of inventory is better in batch flow. Based on the customer demand forecast, the size of the batch can be defined.
- Movement of a batch from one operation to another is more cost-effective than ensuring a single piece flow, one after the other covering all operations. Flow-related investment in BF is likely to be lower.
- Batch flow facilitates more effective purchasing due to bulk ordering.

### Batch flow is apt and preferred in most manufacturing shops when:

- Subsequent or the next operation in the value chain is physically far-spaced,
- The shelf-life of the finished product is short.
- Reliability of the equipment(s) is a bottleneck.



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SCAN FOR PRODUCT CATALOGUE 2023

- Variety in the product family is high,
- Seasonality factor in demand exists
- Initial set-up cost for single piece flow is economically not viable,
- Transportation of a single piece is significantly higher than batch material handling,
- Subsequent operation is not in the vicinity/ next to the last operation (process limitation)

It is often said that SPF production is simple in operation, smooth in flow, and consistent in delivery. This is a perception. A deeper analysis indicates that the eight lean-related wastes (DOWNTIME- an acronym for eight wastes) in manufacturing, hamper the smooth flow. Process variations like rejections, rework, material shortage, not-right-first-time, machine breakdowns, absenteeism of skilled labour, supplier quality defects, and others prevent streamlined flows. BF production processes can also be simple, smooth, and consistent if the process variations are eliminated. It is the low variation that drives the positive perception of SPF,

which is feasible in BF too. This leads to the need for implementing the Six Sigma approach to reduce variation and smoothen the flow, be it SPF or BF.

One key area to focus on is always to have a manufacturing system that takes advantage of both the SPF and BF. This can happen in Cellular manufacturing systems. However, it demands quicker setup change time to improve the OEE, reduce lead time, and enhance STR, preventing large batch sizes.

In summary, single-piece flow has many benefits in product manufacturing. However, it is not a cure for all issues in manufacturing. Furthermore, its implementation makes little sense in most production situations in the current world driven by high product variety, varying market demand, short end-of-life of products, and production in technology-driven reliable machines. The key decision point lies in the economic viability of the production flow system. Therefore, think-analyse and embrace the right production system in your manufacturing shop. 

## BLUE ENERGY TRUCKS HAVE PREVENTED OVER 2,500 TONNES OF CO2 EMISSIONS

**B**lue Energy Motors, a pioneer in green truck manufacturing, is celebrating the International Day of Clean Energy on January 26, coinciding with India's Republic Day, by highlighting a significant milestone as its fleet

of trucks has successfully prevented over 2500 tonnes of CO2 emissions since its inception. This amounts to approximate 30 per cent reduction of emissions from the air, an accomplishment that symbolises a tangible contribution towards a cleaner environment, a reduced carbon footprint, and a sustainable future.

In India, the logistics sector is the third-most CO2-emitting sector, with about 14 per cent share of emissions. Within logistics, heavy trucking contributes to 45 per cent of total CO2 emissions. To address this challenge, zero-emission trucks (LNG or battery-operated) have the potential to cut down at least 2.8-3.8 gigatonnes of CO2 emissions between present to 2050. Aligned with this idea, Blue Energy Motors' commitment to decarbonisation has created a significant impact, equivalent to the positive environmental impact of CO2 absorption by 1,00,000 trees in one year.

Anirudh Bhuwarka, CEO, Blue Energy Motors, said, "Surpassing 2500 tonnes of CO2 emission reduction by our LNG truck fleet is a milestone that underscores our commitment to decarbonising the industry and contributing to India's sustainability



targets. By leveraging alternate fuel technologies, we aim to set a transformative example for the industry by preventing the emission of over 1 million tonnes of CO2 in the next 5 years, extending our commitment beyond numbers to foster environmental responsibility."

The emission reduction statistics of LNG trucks highlight their environmental impact, with a notable 30 per cent decrease in CO2 emissions compared to their diesel counterparts. Additionally, these trucks contribute to a cleaner atmosphere by reducing noise pollution by up to 30 per cent, carbon monoxide by up to 70 per cent, sulphur oxide by up to 100 per cent, nitrogen oxide by up to 59 per cent, and particulate matter by up to 98 per cent. A single LNG truck, covering an average distance of 80,000 km in a year, can significantly cut down emissions, showcasing the tangible benefits of this green transportation solution.

Shifting to green trucks can cut down CO2 emissions, lessening the adverse impact of commercial vehicles on our environment. While in 2023 greenhouse gas emission rates emitted for every unit increase of gross domestic product (GDP) has dropped by 33 per cent in 14 years due to the use of renewable energy and reforestation, adopting green trucking will further help reduce these emissions from logistics and transportation industry.

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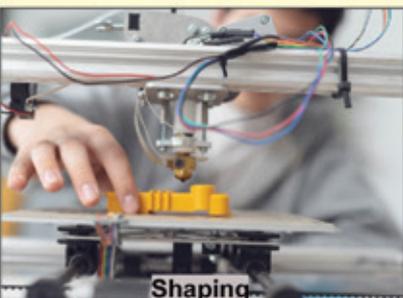
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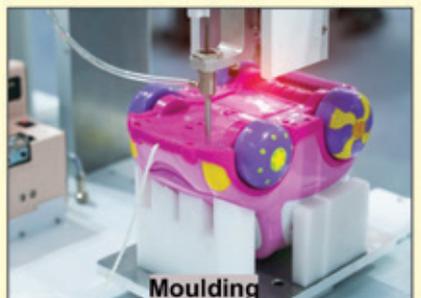
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## GOVT SUPPORT FOR R&D IS CRUCIAL TO OVERCOME TECHNOLOGY GAPS AND REDUCE THE IMPORT OF HI-TECH MACHINES

**Rajendra S. Rajamane** has been instrumental in amplifying the machine tool industry's export potential since he took charge as the President of IMTMA. In an interview with **Nisha Shukla**, he discusses his perspective on dealing with challenges, export-oriented tactics, skill-building initiatives, and the IMTMA's role in supporting policy advocacy, research, and innovation.

### What, according to you, are the key challenges the Indian machine tool industry is facing today?

The machine tool industry faces persistent challenges affecting its business success. Many SMEs and MSMEs struggle with limited funds for R&D and manufacturing high-quality products at competitive prices. Collateral-free debts such as the Startup India Seed Fund Scheme and the SIDBI Fund of Funds will help these industries and aspiring entrepreneurs gain access to low-cost capital and overcome cash flow issues.

India needs to lower its dependence on foreign suppliers for machine tool components and subsystems through a mix of policy initiatives that tap into the design and manufacturing capabilities

of companies. Government support for funding R&D initiatives is needed to overcome the technology gap in curbing the import of hi-tech machines.

//

IMTMA has set up an export core group to understand challenges faced by companies in their quest to find new avenues and enhance exports. Indian machine tool industry needs to ensure its continued presence in foreign locations.



Rajendra S. Rajamane, President of IMTMA

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 **STUDER**



IMTEX and IMTEX FORMING organised by IMTMA, provide a unique opportunity for the manufacturing industry to witness live technologies and solutions. Individual companies developing new products also get the opportunity to showcase their innovation and research at the exhibition.

Additionally, addressing the attractiveness of salaries is essential to attract top engineering talent to the machine tool and manufacturing sectors. Also, global machine tool manufacturers are establishing facilities in India, giving more competition to domestic manufacturers.

**How does IMTMA envision the Indian machine tool industry enhancing its export market potential and finding new avenues? What key factors need to be kept in mind?**

IMTMA has set up an export core group to understand challenges faced by companies in their quest to find new avenues and enhance exports. Indian machine tool industry needs to ensure its continued presence in foreign locations. IMTMA envisions creating Brand India centres in global locations to assist machine tool builders in operating cost-effectively in foreign locations. Also, to match global standards, we need to manufacture products that can match the ones produced by global competitors.

IMTMA is working on creating shared facilities, assisting the industry in R&D initiatives, and promoting globally competitive products for both domestic and international markets. Startups can play a role in creating innovative products.

**What role does IMTMA play in advocating for policies that support the growth of the machine tool industry in India?**

IMTMA works closely with all the major institutions in India, such as the Ministry of Heavy Industries, the Ministry of Commerce & Industry, the Department for Promotion of Industry and Internal Trade, other Government of India agencies, the Government of Karnataka, the Confederation of Indian Industry, and other industry associations on various matters concerning the machine tool industry. Several meetings have been held to discuss demand creation, anti-dumping aspects, tax and finance matters, digital enhancements, public procurement, and various other challenges facing the industry from time to time.

Further, IMTMA actively contributes suggestions for the Union Budget, incorporating its member companies' views. It also shares data on production,

consumption, and machine tool growth figures, which are compiled quarterly with the concerned ministries.

**How is IMTMA fostering innovation and research within the manufacturing sector?**

IMTEX and IMTEX FORMING, organised by IMTMA, provide a unique opportunity for the manufacturing industry to witness live technologies and solutions. Individual companies developing new products also get the opportunity to showcase their innovation and research at the exhibition.

IMTMA works with the Advanced Manufacturing Technology Development Centre (AMTDC), a centre of excellence on machine tools and production technology at IIT-Madras in Chennai, on developing next-generation products that align with the vision of an AatmaNirbhar Bharat. Technology development projects, including the development of indigenous industrial robots, are ongoing at AMTDC.

The association is also working closely with the Advanced Machine Tool Testing Facility (AMTTF) in Bengaluru to provide testing, problem-solving, and calibration services, as well as performance qualification of machines as per standards for machine tools and other engineering industries pan-India.

**What key steps is IMTMA undertaking to bridge the skill gap in the machine tool sector? Are there specific programs or partnerships aimed at nurturing talent and expertise within the industry?**

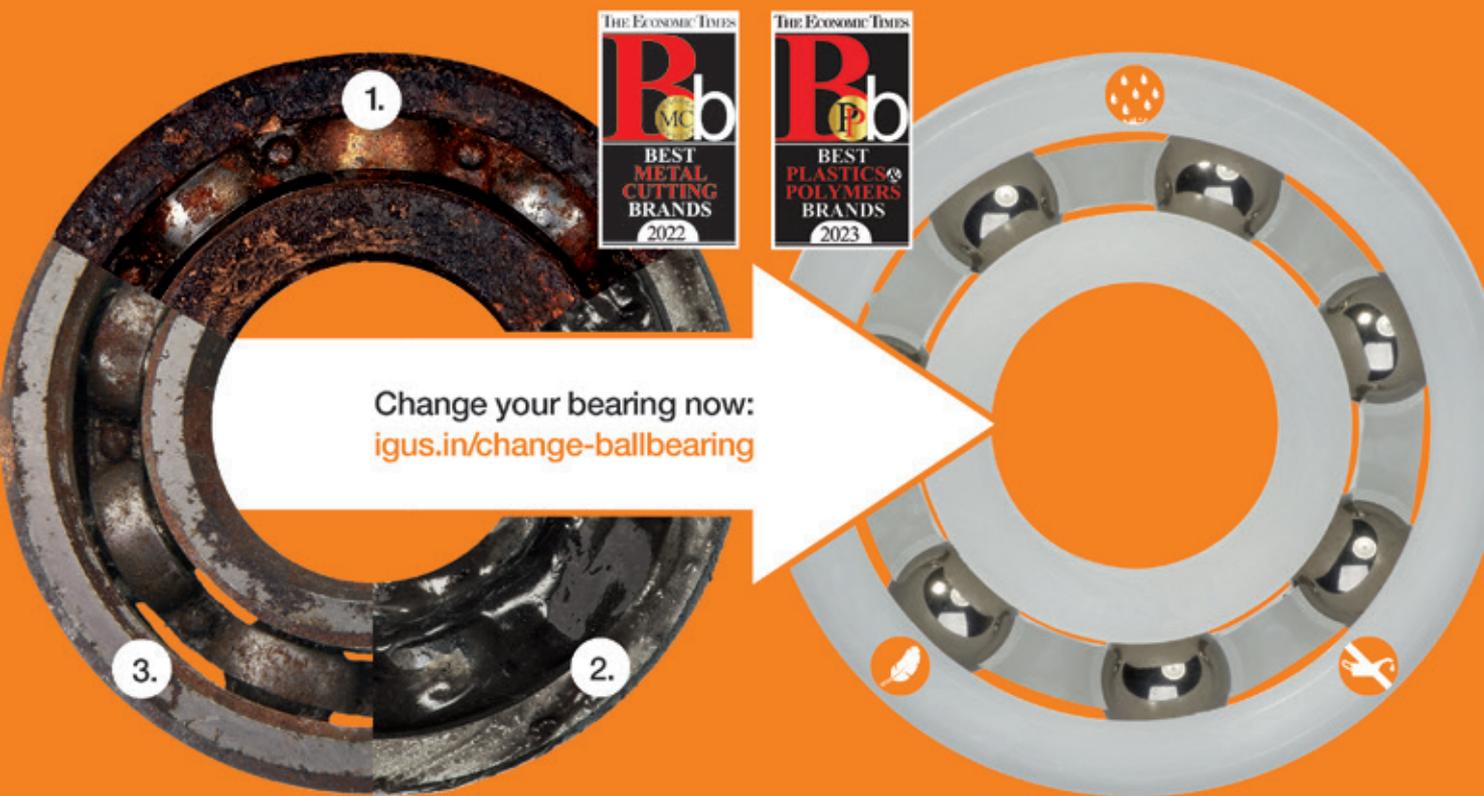
IMTMA has empaneled eminent faculty for imparting knowledge on courses related to machine tools and manufacturing. It offers a certified training program in metrology, and ASME training program on GD&T and other training certification courses.

The association is setting up a technology centre in Gurugram and offering hands-on training courses in Pune on data analytics, additive manufacturing, digital manufacturing, data analytics, robotics, artificial intelligence, Industry 4.0, etc. to meet the aspirations of the demographic reach of training programs.

IMTMA is working with premier institutions in Pune to offer one-year post-graduate diploma and two years of post-graduate courses, apart from the regular e-learning, offline, and online training courses. 

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- Small dia.** Lineup of small diameter sizes from  $\phi 8$  to  $\phi 32$ .  
▶ Can be used instead of solid end mills.
- Multi-function** JDMT-type inserts for shoulder cutting and EDMT-type inserts for low-depth, high-feed-rate machining can be used in the same holder.  
▶ Concentration of roughing tools  
By using a modular type holder, a carbide shank and special arbor suitable for the cutting depth and cutting shape can be selected.  
▶ Broad cutting range
- Easy cutting** Uses low-force free-cutting-shape insert.  
▶ Compatible with low-powered small-sized machines equivalent to BT-30.
- Environment** ▶ Economical insert with 2-corner specifications  
▶ Special environmentally-friendly, high-hardness, corrosion-resistant surface treatment employed on holder.



Features **01** 2 types of applications by changing inserts

- High-efficient tooling system to match cutting depth or work shape

- Steel Shank type
- Carbide Shank
- Modular Arbor

With center through-hole for excellent chip removal

**EDMT-type insert for machining efficiency**



Utilizes R2.0 cutting edge shape.

- ▶ No uncut remnants peculiar to high feed tools
- ▶ Low cutting resistance

Work material : S50C  
Tools : ASMM710R-2( $\phi 10$ -2NT)  
+ASC10-6.5-114-49  
Cutting Conditions : V=180m/min  
V=8, 115mm/min  
 $\phi_p \times \phi_w \times L = 25 \times 5 \times 25$   
Tool overhang 80mm



**JDMT-type insert for high-grade machined surfaces**



Utilizes Fine Wall (FW) shape.

- ▶ Decrease unevenness of machined surfaces
- ▶ Decrease burring

Work material : S50C  
Tools : ASM0712S12R-2( $\phi 12$ -3NT)  
+ASC10-6.5-114-49  
Cutting Conditions : V=200m/min  
V=800mm/min  
 $\phi_p \times \phi_w \times L = 5 \times 10.5 \times 25$   
Tool overhang 25mm







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YOUR GLOBAL CRAFTSMAN STUDIO

By Dipika Lalwani

## “WE PLAN TO SERVE TWO LAKH MSMEs BY 2025”

In this interview, Kinara Capital's Founder and CEO, **Hardika Shah**, shares the story of her company's origin and emphasises the role MSMEs play in the nation's future. She expresses commitment to doubling the outreach of their fintech services for MSMEs. Further, Shah also delves into the challenges faced by women entrepreneurs when and discusses her experiences as a female leader in a male-dominated sector.

### Could you share your journey in the fintech industry and the foundation of Kinara Capital? What was your aim when you started the company?

My aim in founding Kinara Capital was to drive financial inclusion of small business entrepreneurs in the micro-small-medium enterprise (MSME) sector in India, and I am proud to share that we have not once wavered from this mission. We have disbursed over 1,00,000 business loans to date, with manufacturing MSMEs constituting more than half of our portfolio today.

After many years of working internationally in management consulting, I observed on a visit to India that, despite India's economic liberalisation, small business entrepreneurs continued to grapple with access to formal credit. To see this years later, hit a nerve for me as I was exposed to entrepreneurship very early in life as my mother ran a few small businesses, and I had seen the struggle upfront.

While studying at Columbia Business School, I decided to focus on finding a solution and built risk-assessment methodologies that would address the common challenges that MSME entrepreneurs face: difficulty pledging property collateral, cumbersome processes, and a lack of personalised customer support. With a blended approach, Kinara set out to address



The use of AI and ML has made us confident in extending business loans without property collateral to MSMEs, who can easily purchase machinery, raw materials, or other business expansion goals.



**Hardika Shah, Founder and CEO, Kinara Capital's**

these unique challenges by combining tech-enabled processes with a feet-on-the-street presence. The use of AI and ML has made us confident in extending business loans without property collateral to MSMEs, who can easily purchase machinery, raw materials, or other business expansion goals.

I wanted to create a sustainable solution that would bridge the MSME credit gap and help small business entrepreneurs realise their untapped potential. Kinara Capital, I believe we have done just that.



Beyond their contribution to the exchequer, MSMEs play a pivotal role in the social and economic empowerment of society. MSMEs are one of the largest employment generators. Out of the 11.10 crore jobs that the MSME sector creates, over 32 per cent are by MSMEs in the manufacturing space. They are a key lever in driving the transition from an agrarian economy to an industrialised economy, which, in turn, is a critical factor in enabling India to reach its 30 trillion-dollar economy

**What role, according to you, do our MSMEs play in the growth of the manufacturing sector?**

India holds the second largest MSME network in the world, with 30–40 per cent of the country's manufacturing output stemming from MSMEs. MSMEs are undoubtedly a significant driving force in the growth of the manufacturing sector and of the country. Referred to as the backbone of our economy, the sector accounted for over 43 per cent of the exports in FY 2022.

Beyond their contribution to the exchequer, they play a pivotal role in the social and economic empowerment of society. MSMEs are one of the largest employment generators. Out of the 11.10 crore jobs that the MSME sector creates, over 32 per cent are by MSMEs in the manufacturing space. They are a key lever in driving the transition from an agrarian economy to an industrialised economy, which, in turn, is a critical factor in enabling India to reach its 30 trillion-dollar economy by the centenary of our independence.

**Kinara recently disbursed Rs 1,100 crore to boost MSME growth in Karnataka; what further disbursements can we expect? And do you aim to widen your focus to other states as well?**

Karnataka is where Kinara Capital was founded, and we are still headquartered in Bangalore. However, we serve MSMEs in 100+ cities across Karnataka, Tamil Nadu, Andhra Pradesh, Telangana, Gujarat, and Maharashtra. In FY23, we nearly doubled in size, and we are planning on reaching Rs 6,000 crores in AUM and serving 2,00,000 MSMEs by 2025.

Our primary focus will be to broaden our reach in our current regions, where we see a lot of growth, especially in Tier 2 and Tier 3 cities in India. In addition, we are looking at expanding our reach via co-lending and other strategic partnerships that could take us into new territories, especially in the manufacturing sector. In addition, we also plan on supporting women entrepreneurs with our HerVikas discounted business loans program.

**What are the factors triggering challenges for MSMEs today? And how are you working to address them?**

MSMEs face a host of challenges, and the most significant of them is access to formal credit. In fact, out of the 63 million MSMEs in India, only 15 per cent have ever availed credit from formal sources. The overall credit gap in the MSME sector is over 500 billion dollars. The main reasons for the poor penetration of formal business credit are the traditional approach to assessing creditworthiness, wherein property collateral is a mandatory requirement to avail a loan. The majority of MSMEs work out of rented locations and have limited or no property collateral at their disposal to pledge for a loan, keeping them away from the realm of formal finance.

At Kinara Capital, we transformed this approach and mainstreamed the concept of collateral-free business loans. We did so with a specialised risk-assessment methodology that could assess creditworthiness based on a multitude of variables and not based on collateral. Leveraging AI and ML, we have removed human bias from the loan decision-making process. Our tech-enabled processes coupled with doorstep customer service allow us to complete all parts of the verification process, and we can take an applicant from loan inquiry to loan decisioning within 24-hours. The speed at which we can deliver is a game changer for MSMEs.

**What unique financial products or strategies do you provide to address the specific needs of MSMEs in the manufacturing sector?**

When we started out, our focus was on serving manufacturing MSMEs exclusively before expanding into the trading and services sectors. We certainly understand their unique challenges and have tailored our financial products to meet their requirements.

Apart from providing business loans without property collateral and doing so with a fast and friendly service, our customers appreciate that we offer them a lot of flexibility. For example, our Machinery Purchase business loan can be used to purchase new or



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used machinery, and we leave this decision up to the business owner. Further, our Working Capital business loans can be used towards machinery repairs, hiring seasonal help, or the purchase of raw materials.

There are a lot of ways that MSMEs can get a step ahead of the competition with a business loan from Kinara Capital.

**How do you see the role of technology evolving in the financial services industry, and what role does technology play in Kinara Capital's operations?**

Technology is integral to both our external and internal operations, right from loan origination, assessment, disbursement, and managing EMI payments. Financial technology is changing several aspects and, no doubt, making access to services much faster. Embedded finance is evolving now, and this will open up more opportunities for different types of companies to partner together to offer credit at the point of interaction with the customer.

**What steps are you taking to make your services more people-friendly and easy to use by those who are not well-versed in technologies?**

One of the key differentiators that sets Kinara Capital apart is our deep understanding of the sector. Most of our customers are in the early stages of their digital journey, so we provide them with omnichannel customer service. Our myKinara App is multilingual, and the eligibility checking process requires no uploads, addressing one of the biggest pain points for those new to technology and likely only having access to a mobile phone instead of a computer. To make the process further easier, we have over 1,000 field officers who can guide the MSMEs in their preferred local language throughout their loan journey, making the process convenient for them.

**As the number of women entrepreneurs in India increases, what hurdles do you think our women are facing with financing, and how are you addressing them?**

Irrespective of the type of business, access to formal capital is a major stumbling block for all women

entrepreneurs in India. According to a report by Tracxn, women-funded start-ups accounted for only 18 per cent of all funded companies in India. The scenario gets much worse when it comes to the MSME sector. The credit gap faced by women-owned MSMEs is estimated to be over Rs 1.4 lakh crore. Systemic biases, coupled with a lack of collateral, make it nearly impossible for MSME women entrepreneurs to get formal credit.

At Kinara Capital, we have pledged Rs 700 crore in disbursement only for women entrepreneurs via our HerVikas programme, which provides discounted business loans. Further, through our omnichannel customer support, we provide doorstep customer service, and with our myKinara App, we enable women entrepreneurs to start the process at their convenience. Additionally, we offer free business development workshops with our Grow with Kinara initiative, where we deliver information in vernacular languages.

**As the CEO of a company dedicated to aiding MSMEs, what is your vision for the MSMEs, and how do you aim to see them develop in the coming years?**

Around the world, MSMEs from all countries contribute to 50 per cent of the global GDP; my vision for India's MSMEs is to do the same for the world's fastest-growing major economy. As India propels forward to becoming the 3rd largest economy in the world, MSMEs must be supported so they can thrive as engines of economic growth and job creation.

**As a woman leader in a primarily male-dominated sector, what message would you like to give to other women aspiring to be leaders of tomorrow?**

You have to be the change. If you are choosing to become an entrepreneur or a leader in another capacity, then you must usher in a new era of inclusivity. That starts by not placating the dominant gender around you and instead by building a culture of inclusivity. The world around you is mostly male-dominated; however, much has changed in the last couple of decades, and you must lead because you need to be a part of the change for the next few decades to come. 

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**UDAY NARANG**  
Founder and Chairman,  
Omega Seiki Mobility and  
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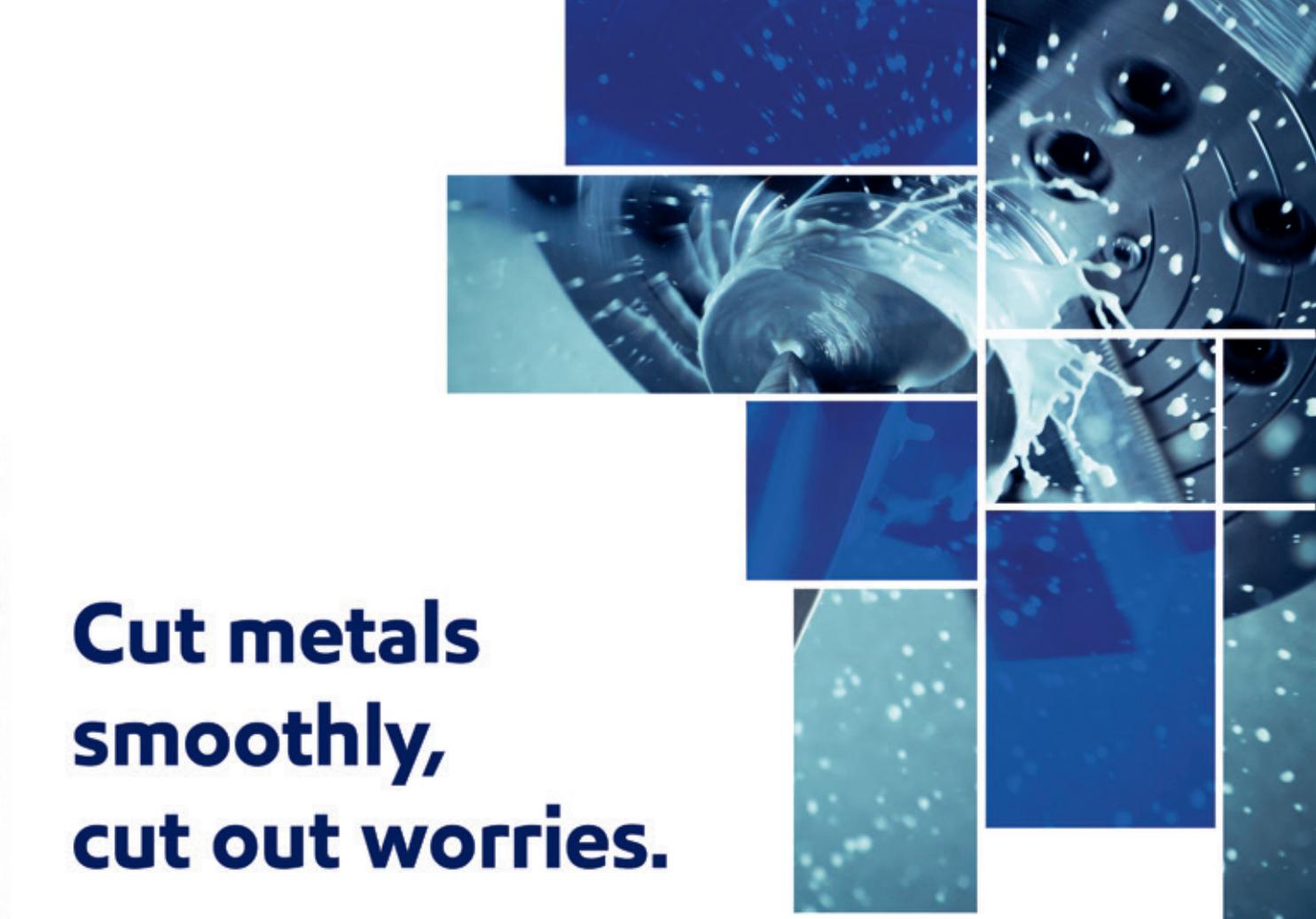


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## BY FY2026-27, WE AIM TO CAPTURE 35 PER CENT OF INTERNATIONAL MARKET SHARE

**Uday Narang, Chairman, Anglian Omega Group & Omega Seiki Mobility,** discusses his ambitious expansion plan, targeting 35 percent of the global market share by FY 2026–27. The company also aims to expand into electric trucks, prioritise leasing, diversify two-wheelers, introduce cargo e-three-wheelers, and venture into drone services.

**From being an investment banker to joining your family-business and now being the Founder of Omega Seiki Mobility (OSM), how do you look back at your journey? What compelled you to start on your own?**

Reflecting on my professional journey, transitioning from the realm of investment banking to a pivotal role in our family business, and ultimately founding Omega Seiki Mobility (OSM), has been a transformative and enriching experience. The decision to embark on my entrepreneurial journey with OSM was driven by a confluence of factors. Firstly, the dynamic landscape of the electric mobility sector presented a compelling opportunity to contribute meaningfully to the burgeoning sustainable transportation ecosystem. Recognising the potential for innovation and disruption in this space, I felt a strong sense of duty to leverage my skills and expertise to make a positive impact.

Additionally, the intrinsic motivation to build something of lasting value, coupled with the desire to chart an independent course and create a legacy, served as the impetus for venturing into entrepreneurship. The vision for OSM goes beyond mere business; it is rooted in a commitment to advancing clean and efficient mobility solutions, aligning with broader global efforts toward environmental sustainability.

In a testament to our dedication and market acceptance, I am delighted to share that OSM has achieved a significant milestone by successfully selling 10,000 vehicles. This achievement not only underscores the market demand for our innovative

electric mobility solutions but also highlights our commitment to delivering reliable and sustainable transportation options. In hindsight, the journey has been characterised by challenges, learnings, and moments of triumph. Each phase has contributed to my growth, reinforcing the belief in the transformative power of innovation and dedication. I am immensely proud of what we have achieved at OSM, and I remain steadfast in my commitment to driving excellence and sustainability in the evolving landscape of electric mobility.

**You envision OSM becoming the Tesla of the East for cargo vehicles, and simultaneously, you are striving to become a globally top player in the commercial electric vehicle segment by 2025. How are you working towards fulfilling this ambition and vision?**

At Omega Seiki Mobility (OSM), we are tirelessly working towards transforming our vision into reality – to become the “Tesla of the East” for cargo vehicles and a prominent global player in the commercial electric vehicle segment by the year 2025. Our strategic approach involves an unwavering commitment to innovation, an expansive range of offerings, and the incorporation of cutting-edge technologies across our entire portfolio.

In our relentless pursuit of innovation, we've set ourselves apart by ensuring that each of our electric vehicles is equipped with fixed batteries, providing stability and reliability in performance. The integration of 5-minute fast-charging capabilities and swap battery



RAGE+

OSM

OSM  
OMEGA SMOKE MACHINERY

technology further amplifies the practicality and efficiency of our electric vehicles.

Our diverse product portfolio covers a wide spectrum of electric three-wheelers, catering to various market segments, including commercial, passenger, cold chain, longest range, and garbage tipping. The upcoming launch of our electric trucks, tailored for affordability in business-to-business (B2B) markets, reflects our commitment to providing sustainable solutions for cargo transportation. Additionally, our focus on leasing options for business-to-consumer (B2C) markets aligns with our strategic goal of making electric vehicles more accessible to a broader audience.

This year, we're expanding our two-wheeler product portfolio to include passenger options, ensuring a more comprehensive range that caters to the diverse needs of our consumers. One of our flagship additions is the cargo electric three-wheeler, designed with an impressive payload capacity of 1,500 kgs, addressing transportation needs typically handled by conventional trucks.

In a forward-looking move, OSM is set to launch drone services with versatile applications across sectors such as logistics and agriculture. This initiative underscores our commitment to exploring innovative technologies beyond traditional electric vehicles, providing holistic solutions for various industries.

A significant milestone in our journey towards sustainability is the recent launch of India's first green

hydrogen-powered three-wheeler. With an impressive range of 500 kms on a single tank, this vehicle exemplifies our dedication to pushing the boundaries of green technology and establishing a leadership position in the rapidly evolving landscape of sustainable mobility.

#### **What kind of demand you are witnessing for EV vehicles, specifically from metros and non-metros?**

The electric vehicle (EV) market in India is experiencing significant demand, with distinct trends observed between metros and non-metros. In metros, 2023 indicates that 62 per cent of EV intenders are concentrated in the top 10 cities, showcasing the role of these urban centres as early adopters. The presence of over 50 per cent of India's public charging stations in the top 8 metro cities contributes to the accessibility for urban EV owners. Government incentives, such as the FAME-II scheme offering subsidies up to Rs 1.5 lakh for EVs, further enhance the attractiveness of electric vehicles in metros, especially with soaring petrol prices exceeding Rs100/litre in major cities.

On the other hand, non-metros are witnessing a growing interest in EVs. 73 per cent of non-metro respondents are aware of EVs, signalling increasing awareness in these regions. The entry of budget-friendly EV models like Rage+ and Stream City has made electric vehicles more affordable contributing to the surge in demand from non-metros. Additionally,



the availability of ample parking space in non-metros addresses home charging concerns, providing a significant advantage for EV ownership.

Government initiatives, such as the PPP model for charging infrastructure, are focused on bridging the charging infrastructure gap in non-metros, thereby fuelling future demand. Despite initial EV adoption being dominated by metro sales, reports suggest a notable shift, with non-metro EV sales growing 226 per cent YoY in FY23 compared to 187 per cent in metros. This indicates a faster adoption rate in non-metro areas. In Q3 2023, the EV sales share in non-metros crossed 20 per cent, showcasing the increasing contribution of these regions to the overall EV market.

However, key challenges persist. While metros enjoy an advantage in charging infrastructure, non-metros require substantial expansion to sustain the growing demand. Range anxiety, particularly due to the limitations of some EVs, might dissuade non-metro buyers with longer travel distances. To address these challenges, a broader education and awareness campaign about EVs and their benefits are crucial for fostering greater adoption in non-metro areas and ensuring the sustained growth of the EV market across the country.

### **What is your strategy for expanding the market for electric vehicles, both domestically and internationally?**

Our strategic approach to expanding the market for electric vehicles (EVs) encompasses both domestic and international fronts. Domestically, our focus is on penetrating Tier 2, 3, and 4 cities, ensuring a presence in each of the 750 districts across the country. To achieve this, we are planning to establish retail stores and service stations strategically, catering to the unique needs of diverse urban and rural landscapes.

An integral part of our domestic expansion strategy is the development of charging infrastructure. Recognising the critical role of charging networks in the widespread adoption of EVs, we are actively collaborating with partners nationwide to facilitate the establishment of an extensive and accessible charging infrastructure. This emphasis on charging infrastructure is particularly crucial for addressing the specific needs of small towns, rural locations, and various tier cities.

Internationally, we are actively engaged in developing products and alliances to enter key markets in Europe, Africa, the Middle East, ASEAN, and Latin America. Our global strategy involves identifying market segments with significant potential for EV adoption and establishing alliances that facilitate market entry and growth.

In terms of market segments, our expansion plans cover a wide range of electric vehicles, including

2-wheelers, 3-wheelers, and 4-wheelers. While we have been prominent in the commercial segment, our focus is now extending to passenger three-wheelers, two-wheelers, and electric trucks. This diversification aims to address the varied transportation needs of different customer segments.

In the international arena, our key markets include Africa, ASEAN countries (such as Vietnam, Philippines, Indonesia), and Latin America. These regions present significant opportunities for the adoption of electric mobility, and our strategic approach involves tailoring our offerings to suit the specific requirements of each market.

Simultaneously, our foray into both Business-to-Business (B2B) and Business-to-Consumer (B2C) segments is a deliberate move to ensure comprehensive market coverage. In the B2B space, we are exploring opportunities to provide electric vehicles for commercial purposes, such as cargo and logistics. Meanwhile, our focus on the B2C segment involves creating a strong retail presence and service network to cater to individual customers in various markets.

Our vision extends beyond the domestic landscape, and we anticipate that by the year 2026 and FY27, a substantial 35 per cent of our market share will be international. To achieve this, we have actively forged strategic alliances in key regions such as Bangladesh, Vietnam, Europe, the Middle East, and Africa. Embracing a “think global, act local” philosophy, we are dedicated to tailoring our products and strategies to meet the specific demands of diverse international markets.

Our commitment to global expansion is underscored by our relentless efforts to build alliances worldwide. Recognising the importance of understanding local dynamics, we are collaborating with major global players to gain insights into market nuances and adapt our products accordingly. This approach ensures that our electric vehicles align seamlessly with the preferences and requirements of each market, fostering greater acceptance and success.

At the heart of our international strategy is a proactive stance toward innovation. Renowned for our leadership in adopting new technologies, we strive to stay at the forefront of the industry. By working closely with global partners, we not only gain valuable insights into emerging trends but also incorporate cutting-edge advancements into our product offerings. This collaborative and forward-thinking approach positions us as a trailblazer in the global electric mobility arena.

In essence, our international expansion strategy revolves around strategic alliances, market understanding, and a commitment to technological leadership. As we continue to build a strong global presence, our goal is to be at the forefront of shaping the

future of sustainable and eco-friendly transportation on a global scale.

**We have heard that OSM is aiming to touch Rs 500 crore revenue by the end of this fiscal. How is your company endeavouring to achieve this revenue goal? Also, what is your revenue target for the next financial year?**

This financial year, our focus and dedication are poised to propel Omega Seiki Mobility (OSM) across the Rs 275 crore revenue mark. Looking ahead to the next fiscal year (FY24-25), we are charting a course to achieve an even more ambitious target—crossing Rs 500 crore in revenue. Our strategic efforts are particularly pronounced in the passenger segment, where we are witnessing significant developments.

Notably, both our passenger three-wheelers and trucks have secured ARAI approvals in every state across the country. This accomplishment signifies a critical milestone as we prepare to introduce our products to a broader market. With all necessary approvals in place, we are set to unveil a comprehensive range of variants across our product lineup. A significant advancement in our offerings is the introduction of a 15-minute fast charging product. This innovation holds the potential to revolutionise mobility, not only for passengers but also for our trucks. The rapid charging capability is a game-changer that aligns with our commitment to advancing the electric mobility landscape.

In summary, our revenue target of Rs 500 crore for the next financial year reflects our confidence in the market, the strength of our product portfolio, and the transformative impact of innovations such as 15-minute fast charging. As we continue to push boundaries and redefine the electric mobility sector, OSM is poised for substantial growth and contribution to the sustainable transportation revolution in India.

**In FY2023, OSM sold about 5,100 electric three-wheelers in FY2023 and intends to sell about 25,000**

**units, including 13,000 electric passenger 3Ws and 12,000 electric cargo 3Ws in FY24. How are you gearing up to meet these aspiring sales targets?**

Omega Seiki Mobility (OSM) has set sales targets for FY2024, aiming to sell approximately 25,000 electric three-wheelers, including 13,000 electric passenger three-wheelers and 12,000 electric cargo three-wheelers. To meet these aspirations, we are strategically aligning our efforts across various facets of our business.

In terms of product and market strategy, OSM plans to expand its product portfolio by developing new electric models that cater to diverse customer needs, such as different ranges, payload capacities, and passenger configurations, along with the introduction of new technologies like hydrogen-powered three-wheelers. Additionally, we aim to forge partnerships with established companies in the logistics, e-commerce, or passenger transportation sectors to secure bulk orders and expand our market reach.

In the production and supply chain domain, OSM is gearing up by investing in scaling up its production capacity at existing facilities and establishing new manufacturing plants, including a plant to produce electric trucks and a plant in Tamil Nadu for our hydrogen-powered three-wheelers, to meet the expected surge in demand.

OSM's sales and distribution network will undergo expansion with the appointment of new dealers in strategic locations, particularly in Tier 2 and Tier 3 cities where there is a growing demand for electric mobility solutions. We will also invest in digital sales channels, developing robust online platforms and leveraging



e-commerce channels to reach a wider customer base. Additionally, OSM is providing attractive financing options by partnering with financial institutions to offer competitive loan schemes and easy financing options for potential buyers.

Customer service and support will be a focal point for OSM, involving the establishment of a widespread service network, like our COCO (Company Owned Company Operated) Service Centre, with trained technicians to ensure prompt after-sales service and effective resolution of customer concerns.

Addressing additional considerations, OSM will collaborate with stakeholders to improve charging infrastructure, particularly in non-metropolitan areas, to alleviate range anxiety concerns.

**What amount of investment have you made towards EV manufacturing, R&D, hardware, and software development. Are there further plans to increase it?**

Our commitment to electric vehicle (EV) manufacturing, research and development (R&D), as well as hardware and software development, is underscored by a substantial investment of approximately \$50 million. This investment reflects our dedication to advancing technology, enhancing product offerings, and contributing to the evolution of the electric mobility sector in India.

Looking ahead, we have ambitious plans to further accelerate our growth trajectory. In the next two years, we are gearing up to make a significant additional investment, intending to reach a total investment of \$100 million. This expanded financial commitment is strategically aligned with our vision for innovation, sustainability, and leadership in the rapidly evolving landscape of EV manufacturing.

Our continuous investment in EV technologies, R&D, and infrastructure is a testament to our confidence in the potential of electric mobility and our commitment to being at the forefront of transformative developments in the industry. As we expand our investment portfolio, we aim to play a pivotal role in shaping the future of sustainable transportation in India and beyond.

**Elaborate in detail about OSM's strategies for localised EV manufacturing and value chain networks, specifically in terms of parts and component network?**

Omega Seiki Mobility is deeply committed to localised electric vehicle manufacturing and has strategically positioned itself as a backwards integrated company. The emphasis on "Make in India" reflects our dedication to contributing to the domestic manufacturing ecosystem and ensuring competitive pricing in the price-conscious Indian market.

One crucial aspect of OSM's localised manufacturing strategy involves battery cell manufacturing. To achieve this, OSM has established ties with a USA-based company, C4V, to facilitate battery cell manufacturing in India. This strategic partnership enables OSM to secure a local source for critical components, reducing dependency on imports and contributing to the growth of the Indian battery manufacturing industry.

Additionally, OSM has forged a partnership with the Korean Tech giant, Jae Sung Tech Pvt Ltd, for the manufacturing of Powertrains in India. The Powertrain is a critical component of electric vehicles, encompassing the motor, transmission, and other key elements that drive the vehicle's propulsion. By localising the production of Powertrains, OSM ensures greater control over the supply chain and enhances the efficiency of its manufacturing processes.

Furthermore, OSM's commitment to localisation extends to various other components and parts of our electric vehicles. The hardware and motors used in OSM's products are proudly labelled as "Made in India." These components are sourced from different companies under the Anglian Omega Group, reinforcing OSM's integration into the Indian manufacturing ecosystem.

By localising the manufacturing of crucial components such as battery cells and Powertrains, and by sourcing various parts and components from within India, OSM not only ensures cost-effectiveness but also contributes to the development of a robust and self-reliant electric vehicle value chain network in the country. This localised approach aligns with the larger national agenda of fostering indigenous manufacturing capabilities and reducing dependence on imports, thereby fortifying OSM's position as a key player in the Indian electric mobility sector.

**How do you plan to address the issue of limited charging infrastructure in India? Do you have partnerships with charging station providers, and how are you facilitating ease of charging for your customers?**

Addressing the limited charging infrastructure in India is a core focus for Omega Seiki Mobility (OSM), and we are actively contributing to its expansion. One notable initiative is the installation of our first EV charger at the campus of Indira Gandhi Delhi Technical Universities for Women in New Delhi through OSM e-link. This step exemplifies our commitment to nurturing the growth of EV infrastructure in the capital and serves as a model for similar installations in educational institutions.

In our collaborations, especially with partners involved in battery technology and related areas, we

place a strong emphasis on infrastructure development. Our contracts explicitly stipulate the necessity for partners to actively participate in building the required charging infrastructure. Encouragingly, our partners have demonstrated impressive progress, rapidly increasing the number of charging stations from 150 to approximately 300 in a short period.

To further contribute to the development of charging infrastructure, OSM is actively engaged in partnerships with charging station providers. These collaborations are instrumental in expanding the network of charging stations across various locations. Our strategic focus extends beyond metropolitan areas, with a primary emphasis on Tier 2, 3, and 4 cities. Recognising the vital role these cities play in the overall accessibility and success of electric mobility, we are dedicated to making sustainable transportation options readily available to diverse urban landscapes in India.

Facilitating ease of charging for our customers is a key consideration in our approach. By actively participating in the development and expansion of the charging infrastructure, we aim to provide convenient and accessible charging options for EV users. This holistic strategy aligns with our vision to contribute to the creation of a robust and supportive ecosystem for electric mobility in India.

**The supply chain for EVs in India is still developing, which can make it difficult for manufacturers to source the components they need to build EVs. How are you tackling this issue?**

To address the challenges posed by the developing supply chain for electric vehicles in India, Omega Seiki Mobility has implemented a comprehensive strategy centered around localised manufacturing and strategic partnerships. Recognising the nascent state of the EV supply chain in the country, OSM has strategically positioned itself as a backwards integrated company, emphasising the “Make in India” initiative.

A critical aspect of OSM’s approach involves battery cell manufacturing. OSM has established a strategic partnership with C4V, a USA-based company, to facilitate battery cell manufacturing in India. This collaboration allows OSM to secure a local source for crucial components, particularly batteries, mitigating reliance on imports and contributing to the development of the Indian battery manufacturing industry. By localising this essential component, OSM enhances its control over the supply chain and reduces vulnerability to global market fluctuations.

In addition to battery cells, OSM has partnered with Jae Sung Tech Pvt Ltd, a Korean Tech giant, for the in-house manufacturing of Powertrains in India. The Powertrain, encompassing the motor, transmission, and other key elements, is a vital component in the

propulsion system of electric vehicles. By localising the production of Powertrains, OSM not only ensures a secure supply chain but also enhances the overall efficiency of its manufacturing processes.

OSM’s commitment to localisation extends across various components and parts used in its electric vehicles. The hardware and motors employed in OSM’s products proudly carry the label “Made in India.” These components are sourced from different companies within the Anglian Omega Group, further solidifying OSM’s integration into the Indian manufacturing ecosystem.

By actively engaging in localised manufacturing and establishing strategic partnerships for critical components, OSM navigates the challenges posed by the evolving supply chain for EVs in India. This approach not only ensures a more secure and resilient supply chain but also aligns with OSM’s commitment to contributing to the growth and self-reliance of the Indian electric vehicle industry.

**There is limited pool of skilled workers in India with expertise in areas such as EV manufacturing, battery technology, power electronics, and software development. How can this gap be filled?**

The scarcity of skilled workers in key areas such as electric vehicle (EV) manufacturing, battery technology, power electronics, and software development presents a notable challenge for the growth of India’s EV sector. To counter this, a multifaceted approach is essential.

Government initiatives should include the allocation of dedicated funds for EV-specific skill development programs under the National Skill Development Mission (NSDM) and strengthening the role of the Skill Development Council for Electric Vehicles (SDEEV). Encouraging apprenticeship programs linked to the industry and promoting collaboration between academia and the EV sector through apprenticeships are critical steps.

In parallel, industry-driven efforts are crucial, including upskilling and reskilling programs for the existing automotive workforce, partnerships with academic institutions, and incentives like scholarships to attract talent. Individuals can contribute by utilising online learning platforms, engaging in self-directed learning, and participating in industry networking events.

A collaborative approach, involving effective public-private partnerships, a focus on quality and standardisation in training programs, and continuous evaluation with feedback mechanisms, is imperative. By embracing these initiatives, India can cultivate a skilled workforce equipped to propel the EV industry forward, contributing to sustainable growth and innovation in the sector. 

## AMADA INDIA'S ENVIRONMENTAL AND TECHNICAL INNOVATION IN METALWORKING MACHINERY

In an insightful discussion with **Niraj Seth, President, Amada India**, he spoke at length about Amada India's role in the global operations of Amada Corporation. He explores the company's sustainability initiatives and shares how Amada supports operators in India through education and upskilling initiatives.

### Can you provide an overview of Amada India and its role within the global operations of Amada Corporation?

Amada India, established in 2000, is a 100 per cent subsidiary of Amada Corporation, a Japanese company. Amada Corporation is a global leader in manufacturing sheet metal fabrication machines and various other metalworking machinery. Amada India focuses on direct sales and service, emphasising after-sales service support.

### How does Amada prioritise after-sales service, and what initiatives have been taken to support customers in India?

Amada believes in direct sales and service to customers, and we are one of the first companies to start direct sales and service after-sales service for sheet metal machinery in India. With a strong service support reputation, the company prioritises resolving customer issues promptly. Amada established a technical centre and vocational centre in Bangalore in 2014 to support the market. This centre serves as an educational hub, providing training to operators and programmers while also demonstrating the latest technologies through live machine demonstrations.

### Amada actively measures and captures CO2 emission data for each product, showcasing a commitment to environmental sustainability. Could you share insights into Amada's approach to environmental sustainability, especially in terms of reducing carbon footprints?

Amada has become the first company in Japan's machine tool industry to participate in the 'RE100' global environmental initiative. The company has transitioned



Niraj Seth, President, Amada India

all its power supplies across bases in Japan to rely entirely on renewable energy, marking a significant commitment to sustainability. Our newly introduced eco-friendly products firmly endorse these commitments.

- Machines equipped with the new NC equipment 'AMNC 4ie' that includes a display of the CO2 emissions.
- New fibre laser cutting machines with CO2 emissions reduced by 65 per cent (compared to

representative products in 2013)

- New press brakes with electric servos that realise an oil-free drive shaft.

### How does Amada approach the upskilling and reskilling of operators in India, especially those accustomed to conventional machinery?

Amada places a strong emphasis on education and training for operators, ensuring they can adapt to new technologies seamlessly. The CNC controllers on Amada machines are designed to be user-friendly, allowing even less skilled or educated operators to operate the machines smoothly. The company actively engages in upskilling initiatives to keep operators abreast of technological advancements.

### Could you share insights into the customer base in India, including the average number of machines sold annually across product lines?

Amada typically sells approximately 250 to 300 machines per year in India, primarily focusing on three main segments: punching, bending, and laser machines. The customer base spans various industries involved in sheet metal fabrication, with over 4,500 machines currently operational in India. 

## BODOR SHOWCASES CUTTING-EDGE LASER MACHINES AT IMTEX

BODOR, a manufacturer of fibre laser sheet metal cutting machines, recently participated in the IMTEX FORMING 2024 exhibition, where they showcased their product range. In a conversation with **Murali J**, the Sales Manager at BODOR, he highlighted their focus on high-power laser machines, specifically those in the 30-kilowatt range and their expansion plans.

### How does BODOR use platforms like IMTEX for business growth?

IMTEX serves as a crucial advertising medium for BODOR. The exhibition provides a platform to showcase machines, invite customers, demonstrate products, and engage technically with potential clients. What makes IMTEX the most preferred exhibition is that it brings together machine manufacturers worldwide to display their products, allowing Indian customers to explore and purchase machines as per their specific requirements.

### Tell us about the new products that you have inaugurated at IMTEX 2024. How will these products benefit the Indian market?

We have displayed five laser machines, including three sheet metal cutting machines, one pipe cutting machine, and one laser welding machine. The highlight is a 30-kilowatt machine with a bed size of 6,500mm



Murali J, Sales Manager, BODOR

x 2,500mm, demonstrating the capability to cut higher-thickness plates of up to 80mm (mild steel), 110mm (stainless steel), 45mm (aluminum), and 35mm (brass).

### Could you elaborate on how sustainable and environmentally friendly BODOR's laser-cutting machines are?

Our machines are environmentally friendly. Compared to traditional

methods like plasma cutting and gas-cutting machines, particularly fibre lasers, generate less smoke. Our machines ensure less environmental impact by using dust collectors to arrest smoke and dust particles.

### What can we expect in terms of future product innovations and technological advancements?

We have already launched a 60-kilowatt machine, which is operational in China and a few other locations. In the future, the possibility of launching 40-kilowatt or 60-kilowatt machines in the upcoming IMTEX exhibition is very high. We are also looking at developing and launching a 5-axis Laser soon.

### What are BODOR's expansion plans for India, considering the increasing number of companies entering the Indian market?

We constantly study the market and adapt our product offerings based on Indian customer's requirements. The company strives to improve its products year after year. While there are no specific plans for expansion, we as a company prefer to focus on enhancing its product range in response to market demands. 



What makes IMTEX the most preferred exhibition is that it brings together machine manufacturers worldwide to display their products, allowing Indian customers to explore and purchase machines as per their specific requirements.

## 70 PER CENT OF GRIND MASTER'S REVENUE FROM EXPORTS; COMMITS TO 'MAKE FOR THE WORLD'

**Sameer Kelkar**, CEO and R&D Head, Grind Master, discusses the key products his company unveiled at IMTEX 2024. Kelkar also provides insights into Grind Master's, revenue distribution, 'Make in India' initiatives, and commitment to net-zero by 2030.

**What specific products has your company showcased at the current IMTEX 2024, and which industry applications do they target?**

At this IMTEX, we showcased three products designed for deburring. They are: laser-cut, fine-punched, and blank parts. These parts are used in various industries, including the automotive industry for clutch and brake components, as well as engine components like piston rings.

**Could you elaborate on the importance of deburring and its relevance in specific applications like the automotive industry?**

Deburring is a crucial operation as it removes unwanted material, known as burrs, left during processes like laser cutting or fine blanking. Burrs can pose safety risks, such as cutting fingers, or, in critical applications like clutch and brake components and piston rings, lead to automotive failure. Thus, deburring is essential for mission-critical components.

**Can you share some insights about your contributions to the EV sector and your experiences in China and Europe?**

We have supplied machinery for EVs to the Chinese and European markets since 2015. In China, our machines have been used by companies like GEELY and FAW for manufacturing EV gearbox shafts.

In Germany, our machines have been applied to produce steering systems for EVs, including for leading European automotive companies and Tesla.

EV is now the buzzword in India, and we leverage our experience gained in other markets to provide



**Sameer Kelkar, CEO and R&D Head, Grind Master**

proven technology to Indian companies.

**How has your company embraced the "Make in India" concept, and what are your thoughts on India's current manufacturing trends?**

We developed microfinishing and superfinishing solutions in 1996, when most solutions were imported. Today, around 70 per cent of our company's revenue comes from exports, showcasing

our commitment to 'Make for the World.' We aim to be a world-leading company in our niche technologies.

**With regards to R&D, what are some examples of the innovations your team has worked on to maintain cutting-edge technology?**

Our R&D team, comprising 22 individuals out of a total of 250 employees, is actively involved in innovations. For instance, we developed a patented process for superfinishing ball screws, improving their performance and lifespan. Additionally, we collaborate with institutions like IIT Madras for projects, and we've secured patents related to machine learning applications in finishing technology.

**Your commitment to being net-zero by 2030 is commendable. Could you share the strategies you're implementing to achieve this goal?**

Our net-zero mission involves three key areas. Firstly, we plan to plant one million trees by 2030 in and around Aurangabad. Secondly, we focus on circularity by remanufacturing machines, extending their lives, and reducing steel usage. Lastly, we aim for a green supply chain, collaborating with suppliers who share our net-zero mission. 

## WE ARE OPEN TO ACQUISITIONS IN INDIA: LVD GROUP

The LVD Group's Marketing Director, **Matthew Fowles**, provides insights into the company's standing as a major participant in the global sheet metal working technology market. He also discusses various aspects, including automation, software integration, sustainability, and the company's recent developments and acquisition plans.

### Kindly provide an overview of LVD and its core offerings in the sheet metal working technology sector.

LVD stands as a comprehensive supplier of sheet metal working technology, encompassing laser cutting, punching, bending, and software integration. The company positions itself as a one-stop shop to meet diverse sheet metal working needs.

### How does LVD respond to the growing demand for automation in sheet metal working processes?

LVD is committed to achieving end-to-end automation in sheet metal working. As manufacturing dynamics evolve with smaller batch sizes and shorter lead times, our core focus is facilitating efficient processes through cutting-edge machines and advanced software solutions, such as the Cabman software.

### Could you discuss the role of software in LVD's operations, especially concerning sustainability?

Software is critical in optimising manufacturing processes, impacting up to 90 per cent of overall efficiency. LVD recognises the significance of software in reducing resource consumption, aligning with sustainability goals beyond conventional measures.

### LVD has a global presence. Can you elaborate on the company's manufacturing plants and recent expansions?

LVD operates globally, with manufacturing sites in Europe (Belgium, Slovakia, and Italy), the United States, China, and India. The recent addition of Multifold, a Mumbai-based company specialising in panel bending machines, reflects LVD's commitment to growth and diversification.



### Does LVD plan to acquire more companies or technologies in the future?

LVD remains open to acquisition, emphasising the importance of adding value to both the group and the customer base. Past examples include integrating an Italian automation company and tube laser cutting manufacturers into the product portfolio.

### What industries does LVD cater to, particularly in India?

LVD serves a diverse range of industries globally, including construction, renewables, energy, defence, aerospace, consumer goods, electronics, and more. In India, the company's footprint spans across various sectors, reflecting the versatility of its products.

### Regarding sustainability, what steps has LVD taken both globally and in India?

LVD maintains a progressive stance on sustainability, focusing on adding value to manufacturing processes and customers. While exact steps towards net-zero goals may vary, the company remains dynamically positioned to align with sustainability objectives. 

## INDIA IS A CRUCIAL MARKET FOR MARPOSS

**Joachim Krueger Marposs**, Head, Sales Support Forming and Stamping, Marposs India, talks about his company's presence in the Indian market. He reveals how Marposs is contributing to efficiency, sustainability goals, and client savings, with insights into its approach to industries like aerospace.

### Can you provide an overview of Marposs and its role in quality measurement?

Marposs is a global company specialising in quality measurement. It has acquired over 20 technology companies in Europe, focusing on the Brankamp product line, which specialises in monitoring code-forming and stamping applications. Our organisation provides both physical machines and software. The company offers sensors, monitoring units, and software that collects process data and integrates with SAP software.

### How important is the Indian market for Marposs, and what steps has the company taken to cater to it?

India is a crucial market for Marposs. The company has restructured to focus more on the forming area, covering stamping and forming technology. We recognise the increasing interest in this technology in India and intend to fully cater to this evolving market. The company has six offices in India with over 115 employees primarily involved in sales, service, and application support.

### How does Marposs contribute to sustainability and environmental goals?

Marposs's monitoring units, mounted directly on machines, count good and bad parts, providing data that helps clients understand their production processes better. The software interfaces contribute to closing the gap between ERP software and production, enhancing efficiency, and reducing environmental impact.

### Can you share the percentage of savings clients typically experience with Marposs's machines or software?

The savings vary based on specific issues faced by clients. For instance, a customer with a slug issue incurred a cost of over 1.5 million dollars, emphasising



the potential financial impact. Generally, the return on investment is estimated to be around one year.

### Does Marposs have plans for a 'Make in India' programme to strengthen its presence in the country?

Marposs has internally restructured to build dedicated teams for specific sectors in India. The company plans to conduct roadshows, introducing well-known European companies and their products to Indian customers. While there is no specific 'Make in India' programme, Marposs aims to establish stronger connections with Indian customers.

### Is Marposs focusing on the aerospace industry this year, and how does it approach quality measurement in this sector?

Though we are not specifically focused on the aerospace or automotive industry per se, customers from these sectors often prioritise quality measurement due to higher quality standards. Marposs's products meet the stringent requirements of the aerospace and automotive industries, even though its primary focus is not on these sectors. 

## WE AIM TO INCREASE LOCALISATION SALES TO 40 PER CENT IN THE NEXT THREE YEARS: MEIBAN

In an exclusive interview, **Rishi Kapoor**, Associate Vice President and Country Head Sheet Metal, Meiban Engineering, talks about his company's journey, expansion plans, and unique position in the metal forming industry.

### Can you provide an overview of Meiban Engineering and its role in the metal-forming industry?

Meiban Engineering, a 19-year-old company in India, specialises in metal forming within the machine tool division. With a team of 45 people, the company has grown significantly and focuses on both metal-cutting and metal-forming products.



**Rishi Kapoor, Associate Vice President and Country Head Sheet Metal, Meiban Engineering**

### Could you shed light on Meiban Engineering's approach to localising its machines for the Indian market?

While Meiban Engineering currently doesn't have a manufacturing plant in India, it actively pursues localisation through local turnkey projects. The company aims to increase the localisation sales percentage from 5–10 per cent to 30–40 per cent in the next three years, aligning with the growing demands of the Indian market.

### What kind of products and concepts is Meiban Engineering showcasing at the exhibition?

The company targets 30 per cent annual growth over the next three years, aligning with the expectations of Meiban Engineering's parent company and reflecting the flourishing Indian manufacturing industry. We



These machines, utilising oil-free servo technology, offer energy savings of approximately 30–35 per cent compared to traditional hydraulic machines.

place a strong emphasis on sustainability through our product offerings.

The machines showcased at the exhibition, including high-end turret punch presses with process integration, a simple automation system with punch presses, and a servo press brake, are designed with environmental considerations. These machines, utilising oil-free servo technology, offer energy savings of approximately 30–35 per cent compared to traditional hydraulic machines, contributing

to a more sustainable manufacturing process.

### Considering the evolving market dynamics, how does Meiban Engineering differentiate itself from competitors in terms of technology?

Meiban Engineering distinguishes itself through its unique focus on providing turnkey solutions. The company specialises in delivering not just standard machines but fully tailored turnkey solutions tailored to meet specific customer needs. This commitment to process integration and automation sets Meiban Engineering apart, especially in high-volume and medium-volume industries.

### With a significant presence in the automotive sector, are there plans to diversify into other industries in the near future?

While the automotive industry currently constitutes around 80 per cent of Meiban Engineering's business, the company is expanding into non-automotive sectors, including commercial aerospace, hydraulics, pneumatics, and more. This diversification aims to balance the portfolio and tap into emerging opportunities beyond the automotive domain. 

## REDEFINING TUBE FORMING WITH PRECISION TOOLS AND SUSTAINABLE SOLUTIONS

OMNI-X is a leading player in the tube forming industry specialising in manufacturing dies and consumable dies for tube bending. In an interview, OMNI-X's President, **Scott Mitchell**, talks about their key offerings, USP, experience participating in IMTEX, and future endeavours.

### What products does OMNI-X manufacture in India?

OMNI-X manufactures tooling for the tube forming industry, specialising in dies and consumable dies for tube bending applications. Our main market is tube bending tooling, providing solutions that allow fabricators to manufacture tubes with critical dimensions, tight radii, and thin walls.

Our organisation serves various industries, with the automotive sector being the largest customer. Other significant industries include aerospace, shipbuilding, and the climate control industry.

### What unique features does OMNI-X bring to the market, and how does it differentiate itself from others?

OMNI-X positions itself as a global supplier, facilitating smooth transitions for OEMs moving manufacturing operations across regions. Rather than just tools,



Rather than just tools, OMNI-X offers solutions ensuring that customers precisely get what they need. We further differentiate ourselves with our in-house R&D team and design engineers. OMNI-X invests heavily in new technology to meet the demands of quality, time, and pricing from Indian customers.



Scott Mitchell, President, OMNI-X

OMNI-X offers solutions ensuring that customers precisely get what they need. We further differentiate ourselves with our in-house R&D team and design engineers. The company also has service engineers and sales representatives across Asia. OMNI-X invests heavily in new technology to meet the demands of quality, time, and pricing from Indian customers.

### How does OMNI-X contribute to environmental sustainability?

OMNI-X's tools are instrumental in manufacturing components for heat pumps and climate control systems, contributing to energy efficiency and resource reduction in these products. Though we cannot provide a direct percentage, the emphasis on energy efficiency in climate control, particularly with heat pumps, represents a significant contribution to environmental sustainability.

### How has the response been to OMNI-X's participation in IMTEX? Kindly enlighten us on the new products unveiled during IMTEX 2024.

The response has been positive for us, with serious inquiries and expressions of interest. OMNI-X has showcased reconditioning technology for tools, receiving good feedback and genuine interest from clients.

### Are there any specific plans or focus areas for OMNI-X's future?

OMNI-X aims to continue its global presence, serving various industries. The company focuses on delivering tools quickly to meet the increasing demands of Indian customers in terms of quality and time. 

## “WE ARE A MAKE IN INDIA PRODUCT”

**Dr. K. Laxmikant**, Director, Sinar Sheet Metal Solutions, dives into the story of the establishment of his company within the Ace Micromatic Group. He highlights the company's commitment to the 'Make in India' initiative and its contributions to sustainability through energy-efficient practices.

### Can you explain the reason behind starting Sinar Sheet Metal Solutions?

Sinar Sheet Metal Solutions is a part of the Bengaluru-based Ace Micromatic Group. Sinar was established to fill the gap in the group's offerings for the sheet metal industry. The decision was driven by the observation that a significant portion, around 80 per cent, of machinery capital goods in the sheet metal sector in India were imported.



**Dr. K. Laxmikant, Director, Sinar Sheet Metal Solutions**

### competitors, especially those from China?

Sinar focuses on technology, software, and customisation rather than engaging in price-centric competition. As a part of the Ace Micromatic Group, it is our company's approach to offer solutions that go beyond cost considerations, providing technology, software, and customisation features that may not be readily available with standard Chinese controllers.

### What were the initial focus areas for Sinar, and how did the company evolve?

Sinar initially focused on laser cutting and press brakes. After extensive research and development efforts, we developed the first machine in the year 2020. It was an uphill struggle, especially post-COVID. Over time, Sinar diversified into laser welding automation, MIG welding automation, and press brake automation.

### Has Sinar's presence impacted the dependence on imports in the sheet metal industry?

There has been a noticeable decrease in dependence on imports since we commenced production and sales. We

take pride in stating that we are a make-in-India product. Though the challenges are many when it comes to imports, especially from China, we are making headway.

### How does Sinar differentiate itself from its

### How does Sinar contribute to the 'Make in India' initiative, and what challenges are faced?

Sinar asserts its commitment to the 'Make in India' initiative, highlighting that nearly everything in the machine is designed and made in India. However, certain critical components like laser sources and laser heads are imported due to the absence of Indian manufacturers for these items. The company is contemplating developing its laser heads to be 100 per cent Atmanirbhar.

### In the context of sustainability, ESG, and net zero, how does Sinar help?

Sinar contributes to energy efficiency by using fibre lasers which have a wall plug efficiency of at least 30 per cent. We work with a German laser manufacturer that promises 45 per cent wall plug efficiency. Additionally, we employ inverter technology in chillers to save power.

### How does Sinar approach energy efficiency in its machinery?

Our machines utilise fibre lasers, which are inherently more energy-efficient than CO2 lasers. The wall plug efficiency for fibre lasers is 30 per cent, and the company offers various laser sources based on customer needs, with the potential for even higher efficiency options. 



## WE PLAN TO ESTABLISH A MANUFACTURING FACILITY IN PUNE: TRUMPF

TRUMPF is making significant strides in India. **Mareike Sautter**, Head, Country Management, Asia, TRUMPF, gives an overview about the company's presence in India, and the range of products it offers. She sheds light into growth plans, including the company's upcoming manufacturing facility in Pune.

### Can you provide an overview of TRUMPF's presence in India and the products it offers in the country?

TRUMPF (India) Pvt. Ltd. is a wholly owned subsidiary of TRUMPF SE + Co. KG. It was established in 2006 in India and has its head office and showroom in Pune. With its closer-to-customer approach, it has expanded its footprint by establishing regional offices, training centres, and spare parts warehouses in Mumbai, Bengaluru, and Delhi. TRUMPF India offers its assistance to customers throughout the business cycle, starting with providing consulting on technology upgrades, followed by solution implementation, and ending with after-sales service support. It has a team of more than 135 customer-centric employees serving India, Sri Lanka, Bangladesh, and Nepal markets.

### What are the key market segments that TRUMPF is targeting in India, and how does the company plan to meet the diverse needs of its customers?

TRUMPF aims to cater to various industry segments in India, including automotive, infrastructure, agriculture, construction, elevators, electronics, solar, etc., which include OEMs as well as their suppliers. The company emphasises a customer-centric approach, providing solutions tailored to specific industry needs. TRUMPF focuses on building partnerships with



**Mareike Sautter**, Head, Country Management, Asia, TRUMPF

customers and supporting them through the entire sheet metal processing journey.

### Why has TRUMPF chosen to participate in exhibitions like IMTEX, and what products is the company showcasing at such events?

IMTEX provides a platform for TRUMPF to connect with customers, showcase its capabilities, and establish itself as a reliable partner in their business. The company exhibits a

range of products, including 2D and 3D laser cutting machines, punching machines, bending machines, welding machines, and interactive solutions on tube laser cutting, e-mobility, additive manufacturing, etc., along with digital connectivity solutions in manufacturing through consulting, platform products, and software solutions. The goal is to demonstrate TRUMPF's capabilities and strengthen its position in the Indian market.

### Could you share insights into TRUMPF's growth plans and expansions in India, including any plans for new offices or manufacturing plants?

We have identified India's significant growth potential and, consequently, plan to establish a manufacturing facility in Pune. The decision stems from the observed and forecasted growth in business with increased market share over the past six consecutive years, which is driven by development in the Indian economy and industry. The Pune plant is expected to start production in Q4 of CY 2024, initially focusing on sheet metal bending machines and later expanding to include 2D laser cutting machines as a step-by-step expansion approach. 



The Pune plant is expected to start production in Q4 of CY 2024.

By Anil Kumar, Managing Director, Inovance Technology India

## OUR GLOBAL COLLABORATIONS HAVE BROUGHT WORLD-CLASS TECHNOLOGIES TO INDIA

The article explores Inovance Technology's efforts to pioneer Industry 4.0 solutions and global collaborations. It shows a Amrit Kaal 2047 vision where Indian eco-friendly technologies redefine global standards.

As India commemorates a remarkable milestone with the celebration of 10 years of Make in India, we at Inovance Technology take immense pride in contributing to the nation's journey towards self-reliance and technological prowess. Over the past decade, Inovance has played a pivotal role in fostering innovation, driving economic growth, and empowering the manufacturing sector through our cutting-edge technologies.

When the Make in India initiative was launched in 2014, it aimed to transform India into a global manufacturing hub by promoting indigenous production and attracting foreign investment. Inovance Technology, with its unwavering commitment to innovation and quality, has been at the forefront of this transformative journey, aligning its strategies with the vision of a self-sufficient and technologically advanced India.

Inovance's journey in India began with a clear mission: to empower industries with state-of-the-art automation solutions that enhance productivity, efficiency, and sustainability. From our inception, we recognised the immense potential of the Indian market and the government's visionary initiatives to boost manufacturing. This foresight laid the foundation for a decade of collaboration, growth, and success.

One of our key contributions to the Make in India initiative has been our focus on research and development (R&D). Inovance has consistently invested in cutting-edge technologies, creating a culture of innovation within our organisation. Our dedicated R&D centres across the country have been instrumental in developing tailor-made solutions for diverse industries, ranging from elevators and textiles to cranes and plastics.

Over the past decade, Inovance Technology has played a pivotal role in shaping the automation landscape



in India. From humble beginnings, we have grown into a market leader, delivering cutting-edge solutions that not only meet international standards but also contribute significantly to the development of the Indian manufacturing ecosystem.

Inovance Technology takes pride in being a key enabler of Industry 4.0 in India. Our smart manufacturing solutions, incorporating the latest technological advancements in

artificial intelligence and the Internet of Things (IoT), have empowered Indian industries to soar into the future. The implementation of these technologies has not only enhanced efficiency and precision but has also positioned India as a global leader in smart manufacturing practices. Our solutions also contribute to the creation of an agile, connected, and sustainable industrial ecosystem.

Inovance Technology's success story goes beyond national borders. Our global collaborations have allowed us to bring world-class technologies to our doorstep. Through strategic partnerships and knowledge exchange initiatives, we have contributed to the skills development of our workforce, creating a talent pool that is not only adept at handling domestic challenges but is also poised to compete on the global stage. Our commitment to sustainability and eco-friendly practices further underscores our responsibility towards the communities we operate in.

Inovance Technology extends its heartfelt congratulations to the nation on the 10th anniversary of Make in India. As we reflect on the past and embrace the future, let us continue working together towards a self-reliant, technologically advanced, and globally competitive India.

This article encapsulates our vision for the future—Amrit Kaal 2047—a time when India will mark its centenary of independence. Inovance Technology, as a torchbearer of innovation in the automation sector,

envisions a future where our contributions transcend boundaries and redefine the global landscape.

As we celebrate the achievements of the past decade, Inovance Technology eagerly looks forward to Amrit Kaal 2047 with a sense of purpose and anticipation. Inovance Technology's vision for Amrit Kaal 2047 is deeply rooted in the ideals of self-reliance, technological prowess, and sustainable growth. We align ourselves closely with the nation's aspirations to become a global manufacturing powerhouse.

Looking forward, Inovance Technology envisions a decade marked by groundbreaking innovations that will not only address the evolving needs of the Indian market but also position us as a global leader in automation technology. Our focus on research and development will intensify, with the goal of creating solutions that push the boundaries of what is currently possible.

As we stride towards Amrit Kaal 2047, environmental sustainability will be at the core of our operations. Inovance Technology is committed to developing and implementing technologies that reduce carbon footprints, promote energy efficiency, and



contribute to a cleaner, greener future. Our aim is to set new benchmarks for eco-friendly practices within the automation industry, fostering a culture of responsible manufacturing.

Over the coming decade, Inovance Technology will play a pivotal role in India's journey towards becoming a leader in Industry 4.0. Our goals include the widespread adoption of digital technologies and smart manufacturing processes, alongside the integration of artificial intelligence and robotics, to enhance efficiency and productivity across industries.

Our vision extends beyond borders, and we foresee strategic collaborations with global partners to bring the best technologies to India. Inovance Technology also aims to be a catalyst for international partnerships that drive technological advancements and create a mutually beneficial ecosystem. 

## TVS MOTOR COMPANY REPORTS HIGHEST REVENUE, EBITDA AND PAT IN Q3

**T**VS Motor Company's operating revenue grew by 26 per cent at Rs 8,245 crore for the quarter ended December 2023 as against Rs 6,545 crore reported in the quarter ended December 2022.

The company's operating EBITDA grew by 40 per cent at Rs 924 crore for the third quarter of 2023-24 as against EBITDA of Rs 659 crores in third quarter of 2022-23. The company's operating EBITDA margin for the quarter is highest at 11.2 per cent as

against Operating EBITDA margin of 10.1 per cent reported in the third quarter of 2022-23. The company's Profit Before Tax (PBT) grew by 63 per cent at Rs 775 crore for the third quarter of 2023-24 as against a PBT of Rs 475 crore in third quarter of 2022-23. PBT for the quarter includes Rs 73 crore of other income relating to gains realised from investments. The company's profit after tax (PAT) grew by 68 per cent at Rs 593 crore for the third quarter of 2023-24 as against a PAT of Rs 353 crore in third quarter of 2022-23.

The company reported total two-wheeler sales of 10.63 lakh units in the current quarter, compared to 8.36 lakh units in the quarter ended December 2022. Two-wheeler exports registered 2.16 lakh units as against 2.07 lakh units in December 2022. Total three-wheelers registered sales of 0.38 lakh units in the quarter ended December 2023, as against 0.43 lakh units in the quarter ended December 2022. Electric vehicles registered sales of 0.48 lakh units in the quarter ended December 2023, as against 0.29 lakh units during the quarter ended December 2022.



# D/code 2023

A Times Group Initiative

M U M B A I

An initiative by Home & Design TRENDS magazine, D/code is India's first curated luxury living show presented by the Times Group. Redefining the way we experience the luxe life, D/code brings together the best of design under one roof to create a platform that celebrates and recognises creative thought. In its sixth edition, D/code showcased over 50 luxury design brands, specially curated events and power talk sessions. Here, we give you a glimpse of the exclusively crafted experiential spaces and the design brands that showcased their exquisite offerings at D/code 2023, which was held at Dome, SVP Stadium, Mumbai.



1. C Bhogilal Westend
2. AlumiL
3. AK international - Distributors for Focal Naim India
4. The Stone Casa
5. Veneto
6. Unilights
7. World of Stones
8. Venzo Wood
9. Veaves
10. Arte
11. Art De Rug
12. Studio Works
13. Elementto





1. Andblack Design Studio 2. Aura Art 3. Baaya Design 4. The Blue Knot 5. Decor Story and Windmill Fans 6. Fantini 7. Formica 8. Fima Carlo Frattini 9. Studio Smitamoksh 10. Zipscreen 11. Chesterfield Furniture 12. BAB Leather 13. Bharat Floorings and Tiles 14. Conifur 15. Esvee Atelier

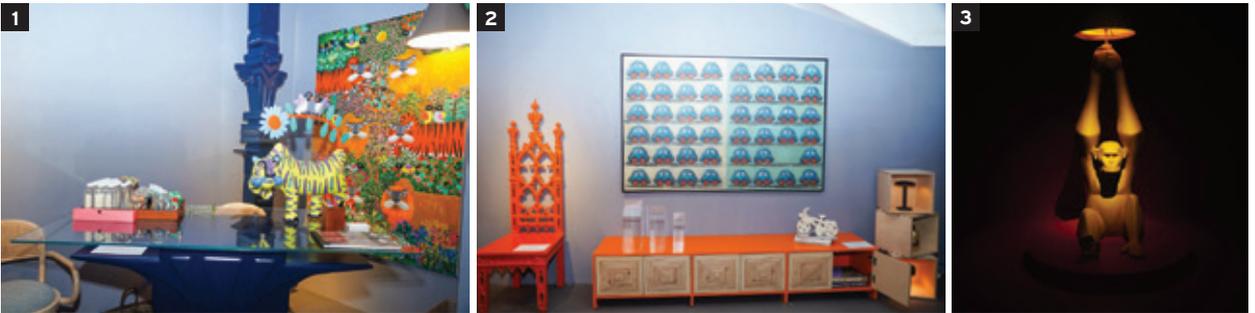
# EVENT



1. HSC Designs 2. Hiline 3. Innovation 4. Klay Store 5. Morbiwalas 6. Radha Patel 7. Sthetix In Stone 8. Smartsters 9. Shruti Jhaveri Art 10. RITZLANE 11. NBT Curtains 12. Kuche7 13. Jaipur Rugs 14. KEPH Design Studio 15. KYNKYNY Art Gallery 16. Purple Patch Studio 17. Porta Finestra Design

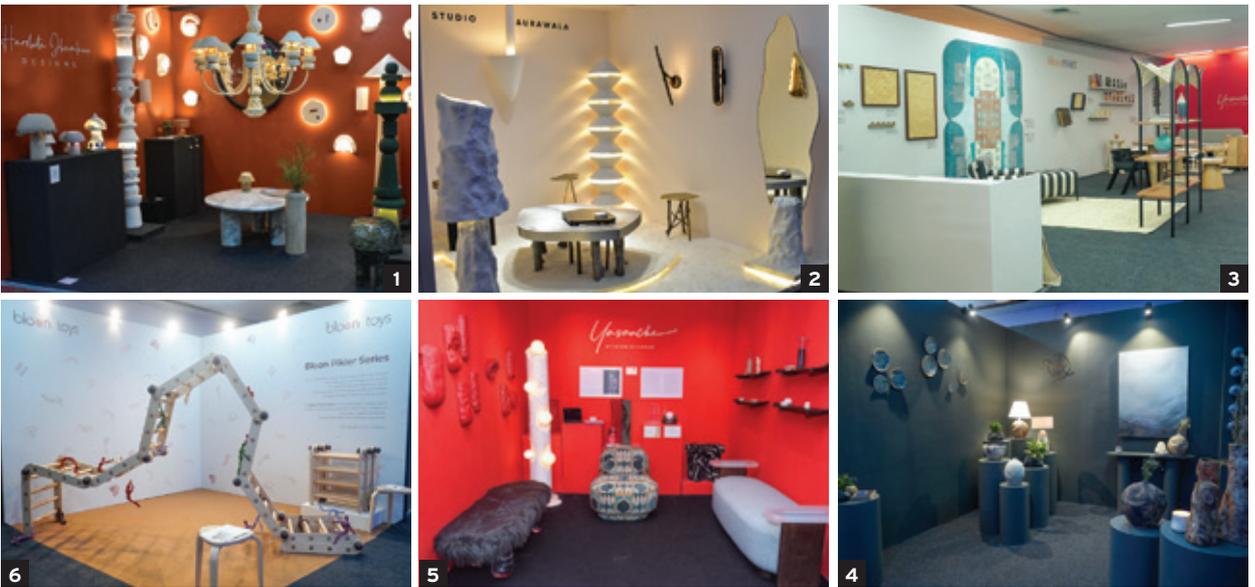


# The Escape Rooms



**1 & 2** - Escape Room by designers Hameeda and Aamir Sharma, in collaboration with Onedot6 **3 & 4** - Escape Room crafted by Chandni Mathur and Nikhil Kapur of Toi Haus **5 & 6** - Escape Room by Sravanya Rao Pittie of Soka Design Studio

# The Designers' Corridor



Curated by Managing Editor Avril Noel D'souza, The Designers' Corridor unveiled fresh design talent, new collection debuts and exquisite decor offerings.  
**1.** Harshita Jhamtani Designs **2.** Studio Aurawala **3.** MuseMART **4.** A Clay Story **5.** Yasanche **6.** Bloon Toys



By Gyanendra Sharma, Director, Plastic Omnium

## EXPANDING HORIZONS IN INDIA: PLASTIC OMNIUM'S STRATEGIC VISION INSPIRED BY 'MAKE IN INDIA'

From supplying high-quality, eco-friendly automotive components for local needs to enhancing its global engineering and manufacturing competitiveness, Plastic Omnium outlines its contribution to India's thriving automotive sector and rapidly growing stature as a manufacturing powerhouse.

**W**ith a long-standing legacy spanning seven decades, Plastic Omnium has positioned itself as a global leader in sustainable mobility solutions. Opting for India as its expansion ground, the company aims to establish top-notch plants and an engineering hub to meet local and global demands. This strategic move leverages India's thriving automotive sector and its growing reputation as a manufacturing powerhouse.

In alignment with our broader vision, this initiative taps into India's engineering talent, increasing demand, and advancing supply chain capabilities. It seamlessly supports the Make in India campaign, driving foreign investment and positioning India as a preferred manufacturing hub. Supplying high-quality, eco-friendly automotive components for local needs and enhancing our global engineering and manufacturing

competitiveness are our core goals.

With Plastic Omnium's roots deeply embedded in innovation, we envision the Indian automotive market as a hub for technological advancement and sustainable practices.

As the Indian market evolves, we foresee an emphasis on advanced hydrogen storage and smart, lightweight materials, aligning with India's journey towards a greener, more sustainable automotive landscape. In this transformative era, Plastic Omnium positions itself to adapt and shape the changing landscape of the Indian automotive industry, contributing to progress and prosperity through our commitment to excellence and innovation.

As a result of increasing demand and consistent performance with both current and potential customers, we are delighted to announce the establishment of a



new plant, the second one in Maharashtra. This expansion aims at highlighting our manufacturing capabilities, innovative processes, and solutions for future generations.

Recently, Plastic Omnium has announced the creation of OP'nSoft, a new activity dedicated to software development for its products and services. OP'nSoft focuses on mobility solutions that are more electric, connected, autonomous and shared. OP'nSoft will enable Plastic Omnium to offer its customers a unique range of integrated solutions and services, such as merging radar data processing software with lighting technologies. The India team will play a critical role in this development from our Bangalore engineering centre.

#### **ALIGNING WITH INDIA'S MOBILITY VISION THROUGH INNOVATION AND SUSTAINABILITY**

Plastic Omnium aligns strategically with India's economic and political vision for mobility, embodying the collaborative spirit of the 'Make in India' initiative launched globally in September 2014. Riding on reformative policies, India has achieved unprecedented economic growth with a focus on sustainability. As the nation moves towards its ambitious goal of net zero emissions by 2070, it rapidly transitions to clean energy, enhancing manufacturing capabilities and promoting energy efficiency.

As a responsible industry leader, Plastic Omnium proactively contributes to this shift through renewable energy adoption, spearheading hydrogen fuel innovations, and using recycled materials. These actions align with the nation's clean energy strategies and underscore our commitment to a greener, more resilient future in line with India's global commitments.

Recently, Plastic Omnium introduced the thermoplastic tailgate for the XUV700 in India, showcasing sustainable solutions with a positive response from end-users. The engineering team provided lightweight solutions, achieving a 5-star NCAP rating.

The application of plastics in automotive bodywork significantly contributes to cutting carbon emissions by improving aerodynamics, reducing vehicle weight, and enhancing fuel efficiency.

Plastic Omnium's solutions offer up to 25 per cent weight savings compared to steel, which is crucial for innovation in the auto sector, where form and function cannot be compromised. Lightweight aerodynamic bodies play a vital role in reducing carbon emissions, especially in the era of electrification and the pursuit of



maximum range. Plastic Omnium designs innovative solutions, optimising existing designs and replacing metal components with plastics, achieving up to a 30 per cent system weight reduction.

#### **MASTERING THE BALANCING ACT: QUALITY, SAFETY AND COST EFFECTIVENESS**

In the dynamic Indian market, where both cost competitiveness and unwavering quality and safety standards are paramount, we skilfully address the needs of our customers. We fine-tune our offerings to provide cost-effective solutions while upholding Plastic Omnium's global reputation for safety and premium quality.

This delicate balance reflects our steadfast customer-centric approach, ensuring each product embodies our legacy of delivering high-end solutions to global OEMs. Upholding stringent engineering and manufacturing standards, we have tailored advanced products to India's economic and regulatory landscape, meeting the intricate demands of our discerning clientele.

Notably, our local products have played a key role in our customers attaining top safety certifications, showcasing our contribution to elevating automotive safety standards in the region and ensuring aesthetically pleasing yet secure vehicles on Indian roads. Our products, essential for pedestrian safety, combine lightweight design with impactful styling to meet modern customer expectations.

#### **HARNESSING INDIA'S GREEN REVOLUTION THROUGH INTERNATIONAL PARTNERSHIP**

With the Indian government actively promoting eco-friendly transportation through initiatives such as the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme and reduced Goods and Services Tax (GST) on electric vehicles, there is a promising environment for innovation. Plastic Omnium is strategically well-positioned to seize opportunities, aligning with India's infrastructure improvements and the national agenda for a greener



automotive industry.

The enduring strategic partnership between India and France, established in 1947 and reinforced in 1998, provides a strong international framework. This Franco-Indian alliance promotes collaboration and growth, upholding a rules-based order in the Indo-Pacific region. Leveraging this robust bilateral relationship, we aim to contribute to the development goals of both nations within this partnership of equals—a commitment maintained since our inception in India.

#### **A UNIQUE BLEND OF GLOBAL EXPERTISE AND LOCAL INSIGHT**

In the competitive Indian market, we distinguish ourselves through integrated solutions that combine innovative technology, unparalleled expertise, and a profound understanding of the local automotive landscape. From sophisticated exterior parts with integrated lighting to advanced hydrogen fuel systems, our offerings prioritise sustainability, efficiency, and aesthetic appeal.

Plastic Omnium stands out with a commitment to innovation, meeting current demands, and anticipating future trends. With a global footprint and extensive experience with leading OEMs, Plastic Omnium ensures unmatched technical prowess and quality assurance in the Indian market. Our global perspective, combined with localised manufacturing and design, enables us to offer unique solutions tailored to the specific needs of the Indian automotive sector.

#### **EMPOWERING A SUSTAINABLE FUTURE**

In India, our corporate social responsibility policy embodies sustainable practices, safety priorities, and an

inclusive work culture. Aligned with Plastic Omnium's 'Act for All™' programme, it focuses on Care for People, Responsible Entrepreneurship, and Sustainable Business.

Safety is paramount, exemplified by 2,700 safe days with a goal of 3,000 in 2024, reflecting our unwavering commitment to employee well-being and environmental stewardship.

Energy-wise, our Bhamboli rooftop solar plant strives for exemplarity, as it contributes 25 per cent of the plant's energy and represents a significant step towards carbon neutrality, covering 70 per cent of emission targets.

In addition to our safety and environmental initiatives, we are dedicated to employee engagement and cultivating a positive and inclusive work environment. Our Indian facilities proudly hold the 'Great Places to Work®' certification, validating our commitment to fostering a supportive workplace culture. PO India's "Youth Empowerment Programme" is a notable accomplishment, integrating nearly 100 young graduates in the past two years with a strong focus on promoting gender diversity. Achieving a remarkable 20 per cent female representation in all our locations is not only a success for us, but also a guiding example for corporate India, highlighting our dedication to overcoming barriers and advocating for equality.

Our Corporate Social Responsibility (CSR) policy goes beyond being a mere set of guidelines; it signifies a heartfelt commitment to shaping a better world and a brighter future, addressing aspects from environmental responsibility to employee well-being. It embodies our company's purpose: "Driving a new generation of mobility." 

By Dipika Lalwani

## DURABLE PLASTICS SERVE MULTIPLE SECTORS AND MILACRON HAS SOLUTIONS FOR EACH OF THESE

Discover the shift in the role of plastics as explained by **Bill Shukla, Managing Director, Milacron India**. Learn how the company is adjusting to evolving demands in this dynamic industry while preparing itself for the future.



**Bill Shukla, Managing Director, Milacron India**

### Could you walk us through the journey of Milacron and tell us about how you have seen the company evolve?

Milacron's journey is inspirational and peppered with several innovations. Our story began in 1995 on rented premises, and just a short three years later, its leaders invested in a facility in Vatva, Ahmedabad. Over the years, we've established ourselves as a preferred plastics processing provider for companies across various industries. As of 2023, our India-based facility successfully sold over 25,000 machines.

Currently, we have a manufacturing capacity of several hundred injection moulding machines and a dedicated workforce of over 750 associates. In my 18 months as the Managing Director, I've witnessed

outstanding growth in the plastics industry and have subsequently focused on enhancing our production capabilities while increasing customer engagement.

We are also looking at digital transformation through M-Powered, our IIoT (Industrial Internet of Things) solution. M-Powered offers clients sophisticated tools, including predictive analytics, alert reporting, remote technical support, and production recipe management. These tools also are designed to reduce unscheduled downtime.

My goal is to ensure Milacron adapts and evolves to meet industry demands. We prioritise timely and robust service delivery to advance our production, expand our outreach, and embrace advanced digital solutions.

### How do you perceive the current demand for plastic processing solutions in the Indian market?

Currently, the demand for injection moulding machines in India stands at around 10,000 machines annually, with a market valuation exceeding Rs 3,000 crore. This demand is expected to continue to increase as the Indian economy grows around 6-7 per cent annually for the next five years. Durable plastics are pervasive in our daily lives. From white goods, electronics, automobiles, and CPVC pipes and fittings to packaging containers and medical parts, there is a micro-sample of applications. With urbanisation, digitisation and economic growth continuing, plastics segment is anticipated to grow at GDP + 1.3 to 1.5 per cent.

The introduction of production-linked incentive (PLI) schemes in critical end-user sectors is also contributing to domestic growth. These schemes have elicited strong responses from manufacturers, fostering domestic value additions in automotive, mobile, ACs and LEDs, and IT hardware, thereby escalating the need for plastic processing solutions. Moreover, substantial investments by major industry players and supportive policy initiatives fuel this surge in demand.

Taking the automotive sector as an example, it anticipates a significant 19 per cent increase in



## We are increasing our localised manufacturing, which will stimulate the growth of indigenous production capabilities.

demand for injection moulding machines over the next five years. This surge is not only attributed to the approval of the PLI scheme but is also influenced by the movement toward lightweighting, driven by the shift to electronic vehicles.

### **Metals are increasingly being replaced by plastics, and a concern for plastics and their harm to the environment remains. Amidst this push and pull factor, how do you see demand for injection moulding machines changing?**

We need to create a distinction between single-use plastics (SUP) and durable plastics. SUP and littering are both issues; they need to be tackled by segregation at source and public health policies. On the other hand, durable plastics, which have a typical life span of 10–20 years and are mostly recycled, have played a key role in economic and infrastructure growth.

I would challenge anyone to spend five minutes of their day without touching a part that is injection moulded—applications in agriculture, greenhouses, auto parts, injectables and disposables in medicine, thin wall packaging for preserving food, appliances, PVC/CPVC pipes and fittings, white goods, furniture, pens, buckets, toothbrushes. The list is endless.

Plastics' versatility extends across sectors. They drive innovation in lightweighting techniques that helps in reducing CO2 emissions within the automotive industry. Likewise, affordable packaging not only helps in reducing food wastages and contamination but also contributes to the preservation of food freshness. In addition, during critical events like the vaccination drive, plastics played a vital role in healthcare equipment, highlighting their significance.

Hence, despite the debates over environmental concerns, plastics are an indispensable part of our industries and lives. As a result, the demand for injection moulding machines will remain driven by diverse industrial needs and technological advancements. For our readers, it is crucial to recognise that India holds the distinction of being the world's largest plastic recycler.

### **What steps is Milacron taking in India to support the 'Make in India' initiative?**

We have several initiatives in place to lend our

contribution to the Make in India and Make for the World. For one, we are increasing our localised manufacturing, which will stimulate the growth of indigenous production capabilities. Additionally, we look forward to enhancing our manufacturing skills and quality processes, enabling Milacron India to increase global exports. Skill development is another area of focus. We continue to invest in Learning and Development (L&D), not just for our employees, but also regularly conduct Level 1 and Level 2 courses for the operations and maintenance teams of our customers. We also have the largest service team in India, enabling us to provide a same-day response to 90 per cent of our calls.

### **What are the key innovations in plastic processing in the automotive segment that the company is seeing now, and what further innovations do you see upcoming in the industry?**

From my perspective, it's interesting to witness how plastics are revolutionising vehicle construction. Plastic components, weighing up to 100 kilogrammes, now make up approximately 10-15 per cent of a vehicle's total weight. It appears that traditional sheet metal and steel in exterior parts like doors, fenders, and bumpers are being replaced by lightweight plastic counterparts.

The use of various plastics—such as polypropylene, polyurethane, polyamides, and PVC—extends across both interior and exterior elements, opening new design possibilities and enhancing overall quality. Notably, the industry is currently leaning toward the use of recyclable plastics and implementing structured recycling processes.

Looking ahead, future advancements in the industry will be focused on technologies like foaming, sandwich moulding, gas-assist moulding, advanced heat-cooling systems, and over-moulding. These innovations aim to achieve objectives like lightweighting, design flexibility, energy savings, improved aesthetics, and enhanced durability.

### **What strategies do you have in place for further growth, and what is the target that you see the company achieving by 2030?**

Our goal is to ensure sustained growth for the company, and to achieve this, we have a well-defined plan of action. We place a strong emphasis on research and development (R&D), as well as digitalisation, to drive the development of advanced technologies. Additionally, we are pursuing collaborations and partnerships with industry leaders and exploring new markets to expand our product portfolio.

Through these initiatives, our vision for 2030 revolves around the triple A's: augmenting our manufacturing capacity, advancing our global presence, and achieving a substantial increase in revenue. 

By Sridhar Dharmarajan, Executive Vice President & Managing Director, Hexagon

## RISE OF SMARTER FACTORIES IN INDIA: OEMs FOCUS ON INNOVATIVE PARADIGM SHIFT

OEMs in India are pushing for automation and a transition to smart factories to meet the rising demand for global standard goods across different sectors. The article delves into the key challenges that OEMs face while embracing digital transformation and explores technologies that are critical for their success.

The manufacturing industry in India is on the precipice of transformation—a shift to Industry 5.0, where humans and machines work together to boost efficiency and productivity. The key focus area at the heart of this shift is the pursuit of quality, where the dual combination of artificial intelligence (AI) and machine learning (ML) technologies plays a pivotal role. According to the PwC India Survey, Indian companies are showing an upward trend towards adopting analytics and AI, with a current implementation rate of 54 per cent.

One of the key sectors to face the most impact in manufacturing is original equipment manufacturers (OEMs). Tasked with delivering components to other industries, the rising demand for global standard goods across different sectors means that OEMs must meet the rising demand. To do so, OEMs have turned to technology to build smarter factories. But this transition brings to the forefront three big bottlenecks: legacy infrastructure, rising input concerns in data integration, and skill gaps.

### Let's take a closer look at what these challenges are:

#### *Treading new horizons through a holistic approach*

Integration of new technologies with existing processes and legacy systems offers a complex challenge, especially with compatibility. Any form of tech integration with a process-heavy system like manufacturing throws up tons of data. Gathering data from different sources and leveraging it to provide an integrated perspective is extremely challenging. Another major challenge is the skilled workforce shortage to work with the new technologies.

To overcome these challenges, OEMs must leverage the latest integrated technology solutions



to build smarter factories that are future-ready and can cater to global market demands. These solutions will help reduce errors and turnaround time while allowing them to meet the growing demand without compromising quality—a resilient supply chain that can function even during uncertain times.

The foundation of digital transformation to build smarter factories rests on three pillars: robotics,

AI, ML, and cloud-native systems. In manufacturing (seemingly more than other sectors), the growing need for data management is most evident in the development of digital twins.

A Capgemini report from last year highlighted that 60 per cent of major sector organisations believe that digital twins boost operational efficiency and sustainability, improving resource use, emissions, transport networks, and employee safety. Each of these functions are critical in helping OEMs enhance efficiency, reduce errors, and boost production while minimising costs.

### Let's explore some of the technologies that are crucial for OEMs:

#### • *Robotics for process automation*

By leveraging robots to perform repetitive tasks, OEMs can create a collaborative environment to ensure that human abilities are enhanced. This will bring in the necessary automation to ensure that errors are kept to a minimum while quality is maintained, as robots can repeat the process numerous times without tiring out. These robots will not replace humans but rather work together with them; hence, they are called cobots. The focus of Industry 5.0 is on building a collaborative ecosystem for humans and robots to work together.

Another advantage offered by this approach is improved workforce safety as dangerous tasks are accomplished by robots.

- **AI and ML for process optimisation**

Integrating any form of technology to create smart factories means large amounts of data being generated. This data is a gold mine of information, and this is where AI and ML come in. AI can be used for ML solutions where neural networks can analyse data faster, better, and more accurately for decision-making. One of the biggest advantages of this is predictive maintenance, which helps optimise the manufacturing process. This can be as simple as predicting machine failure, which will allow OEMs to get ahead of this bottleneck and thereby reduce downtime. Some of the other benefits of AI and ML in manufacturing include demand forecasting, reduced waste of raw materials, and improved supply chain efficiency.

- **Cloud-native systems for agility and scalability**

Cloud-native systems are key to integrating everything in the manufacturing process. Designed to run on the cloud, these systems can be integrated with existing systems without redesigning current applications. It can be deployed faster with lower

downtime and can be accessed from across the globe within a company for real-time updates. This allows OEMs to scale their production up or down as per demand and add more sections as the business expands without compromising on data security. As they are built for speed and scale, cloud-native systems are a key aspect for OEMs looking to expand while reducing costs and without any impact on the quality of the goods being produced.

- **Dawn of a New Era of Smarter Factories**

Quality and cost minimisation are two key phrases that drive digital transformation in the manufacturing sector. Before getting started on the journey of transitioning to smarter factories, OEMs must conduct research and collaborate with partners who understand current challenges, scalability, cost-effectiveness, and the potential for integrating innovation and compatibility with current systems. This will help in eliminating any redundancies while integrating the system.

OEMs in India are pushing for automation and a transition to smart factories. It is both timely and crucial, as it helps align India's manufacturing industry with its global counterparts and be future-ready while being environmentally sustainable. 

## TATA ELXSI DELIVERS GROWTH IN Q3 FY'24

Tata Elxsi, amongst the world's leading providers of design led technology services, announced its third quarter results for the period ending 31st December 2023.

The company reported Rs 914.2 crore of operating revenue, a growth of 3.7 per cent QoQ.

### Highlights of the Quarter Ended December 31, 2023:

- Revenues from operations at Rs. 914.2 crore, + 3.7 per cent QoQ, + 11.8 per cent YoY
- Operating revenue growth +3.0 per cent QoQ and +9.4 per cent YoY on constant currency basis
- Operating Margin at 29.5 per cent; Net Margin (PBT) at 28.9 per cent
- Profit Before Tax (PBT) at Rs. 274.1 Cr, +14.2 per cent YoY
- Profit After Tax (PAT) at Rs. 206.4 Cr, +3.2 per cent QoQ, +6.0 per cent YoY
- Earning Per Share (EPS) at Rs. 33.15, +3.2 per cent QoQ, +6.0 per cent YoY

### Business Highlights:

- Transportation growth at 2.7 per cent QoQ, 15.6 per cent YoY, aided by deal wins and ramp-up of Software Defined Vehicle (SDV) engagements.

- Healthcare growth at 4.6 per cent QoQ, 13 per cent YoY, driven by new product engineering and regulatory services.
- Media and Communications grew 0.6 per cent QoQ and 3.4 per cent YoY, performing creditably in a unfavourable environment for the entire media, telecom and technology industry.
- Industrial Design revenue grew strongly at 12.3 per cent QoQ, leading with Design Digital.
- System Integration services grew 14.7 per cent QoQ aided by some key deal wins and managed services.

Manoj Raghavan, CEO and Managing Director, Tata Elxsi, commenting on the company's performance in the third quarter of FY24, said, "We are happy to report a healthy performance in the third quarter with a top-line growth of 3.7 per cent QoQ and 11.8 per cent YoY in a challenging and weak quarter for the industry. I am delighted with the recognition of our Design Digital capabilities with the German Design Award 2024 for excellence in design with the Gen 3 HMI. This award for the next generation automotive HMI design that we won along with Tata Motors, truly showcases the power of design when aligned seamlessly with technology."

By Annanya Agarwal, Co-Founder and CEO, Runaya

## REDEFINING MANUFACTURING FOR A ZERO-WASTE FUTURE

The article spotlights robust waste management practices and circular economy strategies that every manufacturer should embrace for a sustainable future.

*The past is often repeated by people.  
I have no interest. It's the evolution I  
favour - Unknown.*

**T**raditionally, the manufacturing sector has always imbibed the 'take, make, and dispose' model. In 2018, 80,000 tonnes of dross, a byproduct of aluminium, were reported to have been released into the land, subsequently impacting the ozone layer and contributing to the country's carbon footprint (source: Niti Ayog, 2018). The negative impact was massive, and I don't believe we could afford repeats, lest they come with disastrous consequences.

At a time when India stands in the top leagues among the world's steelmakers and aluminium producers, with technology further propelling the sector, and the fourth industrial revolution or Industry 4.0 providing impetus, the need of the hour is increasing responsibility towards and urgency for robust waste management practices. Goes without saying, to ensure a sustainable future—one that is not fraught with environmental threats and systemic inefficiencies—embracing circular economy principles



is paramount today. If there was ever a time for manufacturing companies to collaborate and take responsible, conscientious action, it is today.

**Here are a few key strategies that stakeholders need to invest in to make this happen:**

**Closed-loop systems:** This involves a strategic shift from a linear and unsustainable system of extraction, production, consumption, and

disposal, to one where products, materials, and resources are designed, produced, used, and recycled within a closed cycle. This minimises waste generation and reduces the need for extracting new raw materials. The cycle also benefits any business as it leads to substantial long-term savings, reduced dependencies on external suppliers, and increased goodwill for the brand in the market.

**Consumer education and engagement:** In the circular economy, while imperative, cannot be achieved without the support and active participation of the end customer. Therefore, it is necessary to foster an environment that empowers them to make informed decisions, actively contribute to the reduction in waste generation by



consuming and disposing responsibly and educate themselves on recycling and best practices of sustainability.

**Regulatory support:** The Government of India is committed towards a sustainable circular economy, and to that effect, has been actively formulating policies and incentivising projects. The government has formed committees to develop extensive action plans to accelerate the transition from linear to circular.

**Insight-led innovation and optimisation with AI:** Without any doubt, innovation is key for companies to realise their sustainability goals. However, this needs to be achieved with insights and data.

Innovation for the sake of innovation will not pave the way for a sustainable tomorrow. Low-carbon processes, energy-efficient technology, and sustainable materials by investing in intensive research and development can reduce the pace of or even reverse the impact of climate change. With Industry 4.0, artificial intelligence (AI) and data present a unique opportunity for the manufacturing sector to reduce dependence on raw materials, allocate resources using real-time monitoring, and predictive analytics, resulting in significant energy and cost savings, thereby maximising resource efficiency at all steps to ensure sustainable manufacturing. According to a World Economic Forum (WEF) analysis, the manufacturing sector can potentially reduce global greenhouse gas emissions by up to 4.5 gigatons of CO<sub>2</sub> equivalent by 2030, with artificial intelligence (AI) and data analytics in the



manufacturing sector.

**Reverse logistics and take-back programs:** Establishing effective reverse logistics and take-back programs is crucial in a circular economy. Manufacturers are responsible for retrieving and recycling their products at the end of their life cycle, ensuring proper disposal and recovery of valuable materials. In essence, reverse logistics contributes to effectively and sustainably closing the loop.

The future is green, with a goal of zero-waste. Today, India stands tall on the global stage as one of the world's leading manufacturing hubs. Collaborative, ecosystem thinking is critical to redefining manufacturing for a zero-waste future. I believe, with greener technologies, energy efficiency practices, and advocating waste management in every corner of the country, we can safeguard the future for generations to come. 

## ALTAIR ANNOUNCES OPENING OF INNOVATION EXPERIENCE CENTRE IN PUNE

Altair, a global leader in computational science and artificial intelligence (AI), will introduce its newly established Innovation Experience Centre and showcase its state-of-the-art AI-driven technology at the Symposium on International Automotive Technology (SIAT) on January 23–25 in Pune.

“The centre, located in the Altair office in Pune, will provide prospects and customers with a hands-on



experience of Altair's technology solutions, from simulation and design to high-performance computing, data analytics, and AI,” said, Vishwanath Rao, Managing Director, India and GCC, Altair. “It will also allow visitors to have direct interaction with in-house experts, so they can gain a comprehensive understanding of Altair's solutions and how the convergence of such technologies impacts product development.”

As a bronze sponsor of SIAT, Altair will feature its comprehensive digital twin offering, the market's most complete end-to-end digital twin solution for both physics-based and data-based twins.

The Altair Innovation Experience Centre features applications related to digital twin, lightweighting, and seamless connectivity to virtual reality and will demonstrate these technologies' practical application in design innovation.

## igus LAUNCHES FIRST UL-LISTED MOTOR CABLE FOR CABLE TRAY AND E-CHAIN

With the new chainflex cable CF33.UL, igus has developed the world's first motor cable for energy chains and cable trays with UL approval and a four-year functional guarantee in the energy chain. This allows the cable to be laid from the energy chain to the cable tray without a plug connection in between. The CF33.UL also adds a shielded PVC motor cable to the chainflex range.

What makes them special is their UL listing ("Flexible Motor Supply Cable according to UL 2277"). Usually, UL-listed cables are only intended for fixed installation or occasional movement. UL approval for continuously moving energy chain cables has not existed up to now.

"With the new motor cable, we are offering our customers a cable type that is suitable for both chains and cable trays. A plug connection is no longer necessary," explains Rainer Rössel, Vice President and



Head, Chainflex Cables Business Unit, igus. Users also avoid duplicated stock of cables for the chain and fixed installation.

igus puts its cables through their paces in its own 3,800-square-metre laboratory. Thanks to this series of tests and

30 years of experience in the field of moving cables, igus has recently extended the guarantee on the new motor cable to four years or ten million double strokes. igus also uses the data from the laboratory for its online tools, such as the chainflex service life calculator.

Here, customers can determine the cables' durability in their applications online. That way, chainflex cables allow customers to further improve the sustainability of their applications. The reason is that a cable that is replaced too soon or breaks entails a correspondingly high CO2 impact due to producing and transporting a substitute.

## INOVANCE TECHNOLOGY TO SHOWCASE ITS PRODUCTS AT PLASTFOCUS

Inovance Technology India is set to showcase its innovative products at Plastfocus, taking place at Yashobhoomi (IICC) in Dwarka, New Delhi. As a prominent participant in this international trade fair, Inovance will be offering attendees a firsthand look at a diverse range of technologies and solutions within the plastics industry.

Products on display will include the Servo Hydraulic solutions such as ES510 series and IS580 series, PIMM controllers such as EP700E, ES810 series and MVSY1 all-in-one servo; iAction and iVenture Series of IMM Control

systems and solutions which comprise all controller solutions for machine needs. The Electro Servo Hydraulic Solutions which are Inovance's new launch of series ES680 and MEG20 will be showcased.

Anil Kumar, Managing Director, Inovance Technology India, says, "Our proficient technical team eagerly anticipates

welcoming you to our stand at the PlastFocus Expo. With a comprehensive understanding of the industrial automation challenges encountered by plastic machinery OEMs, we stand ready to provide assistance and solutions. Feel free to drop by and meet us at Stand M16, Hall no.: 2; we look forward to connecting with you."

## HERE'S WHAT ZEISS HAD IN STORE FOR IMTEX FORMING 2024

ZEISS, a leading provider of measurement solutions, has participated in IMTEX Forming 2024 (Bengaluru). The Industrial Quality Solutions (IQS) division of Carl Zeiss India (Bangalore) Pvt. Ltd. is showcasing latest technologies poised to transform the manufacturing landscape in India.

Globally recognised for its top-tier quality assurance and measurement systems, ZEISS IQS is breaking barriers by directly offering its metrology solutions to a broader market. The initiative marks a significant milestone in enhancing accessibility for manufacturers across India, aligning with the 'Make in India' narrative.

"Our continued participation at IMTEX 2024 marks a significant stride towards fostering self-reliance in manufacturing, in line with the ideals of Atmanirbhar

Bharat. Our decision to offer our cutting-edge devices directly to the masses underscores our commitment to bolstering local industries and enabling them to achieve unparalleled standards of precision and quality. We aim to further catalyse a manufacturing revolution, empowering Indian enterprises to not just meet but exceed global benchmarks, thereby contributing substantially to the vision of a Make-in-India initiative," said Aveen Padmaprabha, Head

Industrial Quality Solutions (IQS), Carl Zeiss India (Bangalore) Pvt. Ltd.

IMTEX 2024 attendees can witness the following technologies amongst others at the ZEISS exhibit ground: **ZEISS ScanBox Series 5:** ZEISS ScanBox Series 5 provides full-field 3D measurement coordinates that can be compared against the CAD model and used for reporting. Deviations in terms of Geometric Dimensioning

and Tolerancing as well as trimming and hole positions are visualised in the GOM Inspect Pro software. Programming and controlling the measuring sequences is done via the Virtual Measuring Room (VMR). ZEISS ScanBox Series 5 is automated, modular and customer driven.

**ZEISS ABIS III:** The newly developed ZEISS ABIS III sensor combines high-speed inspection with a reliable detection of all relevant surface defects such as dents,

bulges, sink marks, ripples, neckings, cracks and now also scratches and pressure marks. The system inspects both moving and stationary parts reproducibly and is highly precise during live production and within the cycle time.  
**ZEISS DuraMax:** ZEISS

DuraMax is a Coordinate Measuring Machine (CMM) suitable for the harsh and high temperature shopfloor metrology needs. The latest model comes as a manufacturing capability successor to the ZEISS CONTURA CMM Model.

## JOHNSON CONTROLS INTRODUCES MADE IN INDIA SECURITY CAMERAS

Johnson Controls, the global leader for smart, healthy, and sustainable buildings, has launched Illustra Standard Gen3, a range of cutting-edge security cameras designed and primarily manufactured in India. The company aims to fully manufacture its security products in India in the coming years, in alignment with the government's Make in India initiative.

Rajeev Samanta, GM Sales South Asia, Security Products, Johnson Controls India, said, "These cameras, manufactured in India with over 75 per cent local components, not only highlight our dedication to self-sufficiency but also reinforce our position as a key player in the global manufacturing landscape. The launch of the Illustra Standard Gen3 cameras is a step towards augmenting our role in enhancing security and catalysing India's journey towards becoming a technological powerhouse."

Recent years have seen growth in security and safety through widespread adoption of surveillance systems. The valuation of the Indian CCTV market size is estimated at 3.98 billion dollars in 2024 and projected

to grow at a CAGR of 20.60 per cent, taking the market valuation to 10.17 billion in 2029. According to market research, India's Home Security shipments saw a 48 per cent YoY rise in Q1 of 2023.

Additionally, given the reliance on global markets for surveillance products, there is an increased emphasis on domestic production of these security solutions. This includes applications in government enterprises and smart city projects, which are required to utilise domestically developed solutions and products.

The launch of the Illustra Standard Gen3 line is a significant step towards

strengthening the domestic manufacturing ecosystem to meet this uptick in demand. Backed by robust security measures that ensure protection against potential vulnerabilities and unauthorised access, the cameras are developed by the Johnson Controls India's local engineering teams, in close collaboration with the global teams. Designed to meet security needs across industries, the new line encompasses access control, video surveillance, cloud solutions, and intrusion detection. These cater to a wide array of sectors, including defence, government, private enterprises, airports, and transportation projects.

## PANASONIC CONNECT ANNOUNCES KAIROS SOFTWARE VERSION 1.6

Panasonic Connect Co. Ltd. has announced the release of a new optional AT-KC20M1 SDI I/O Board and software version 1.6 for the KAIROS IT/IP Platform. Adding the SDI I/O Board increases the number of SDI inputs/outputs to a maximum of 48 connectors.

The software update enables features such as user rights management, stream recording, and enhanced colour correction. In addition, a new optional software, Kairos Core Manager AT-SFCM10, will be available in the fourth quarter of FY2023.

In addition to IP sources, KAIROS can now input and output many images via SDI without the need for an external converter, allowing more flexible video production according to the customer's application and operating environment.

Updating the software to version 1.6, enables a



colour correction function. The new user management function protects configuration settings and prevents production errors by setting the range of access for specific KAIROS users. Other features include a built-in clip player that supports recording, saving, and playback of SRT/RTP/RTMP input/output and RTSP input.

The optional Kairos Core Manager AT-SFCM10 software, scheduled for release in the fourth quarter of FY2023, will support backup of production files, synchronisation of clips and other media, and data relocate between multiple Kairos Core units. The software will be free of charge for use with two or fewer Kairos Core units.

If a Kairos Core fails, it may be easily replaced with another Kairos Core as a backup. In addition to network redundancy, which is already supported, Kairos Core backup can also be ensured, making video production with KAIROS even more secure.

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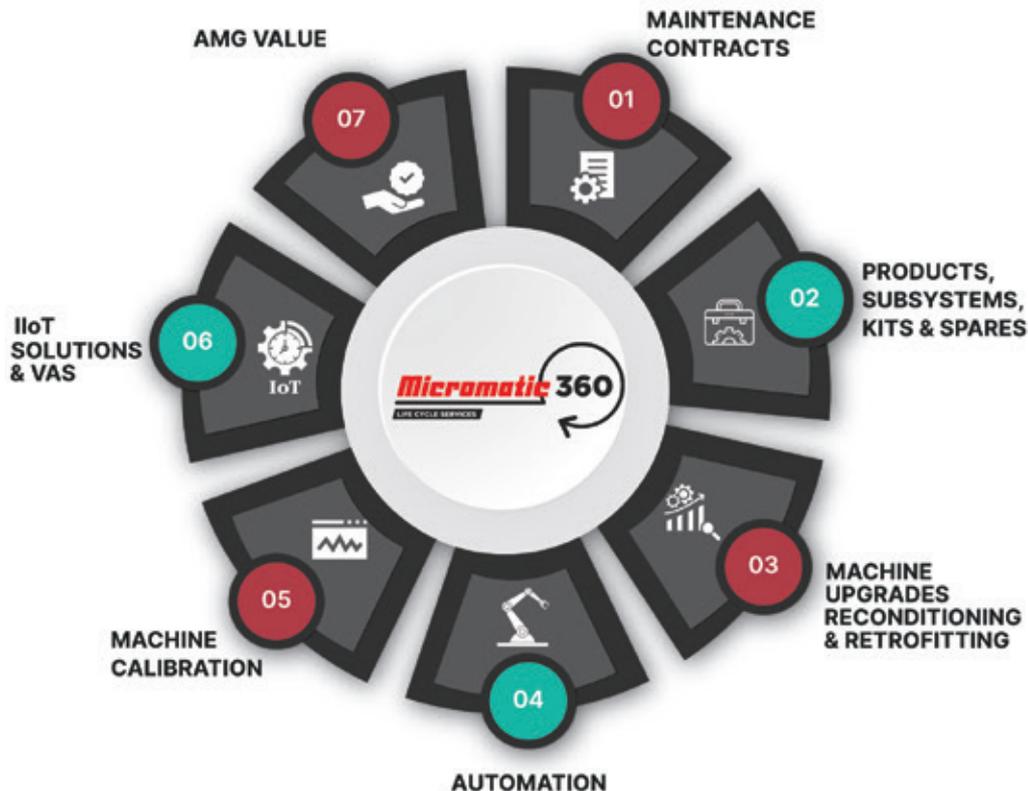
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