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## UDYOG UTSAV 2025: FORGING THE FUTURE

The 3rd edition of the Festival of Manufacturing – Udyog Utsav 2025 – celebrated the visionaries, innovators, and changemakers driving growth, efficiency, and sustainable excellence.

### BRAND SPOTLIGHT

WIKUS INDIA CELEBRATES A DECADE OF REDEFINING THE BAND SAW INDUSTRY, BLENDING GERMAN PRECISION WITH INDIAN AMBITION UNDER MD **MUKUND P BHARADWAJ'S** VISIONARY LEADERSHIP

### FACILITY TOUR

AS PART OF ITS SKILLING INITIATIVE, ET NOW MACHINIST HOSTED TWO PLANT TOURS UNDER THE FESTIVAL OF MANUFACTURING, OFFERING HANDS-ON EXPOSURE TO INDIA'S DYNAMIC INDUSTRIAL LANDSCAPE.



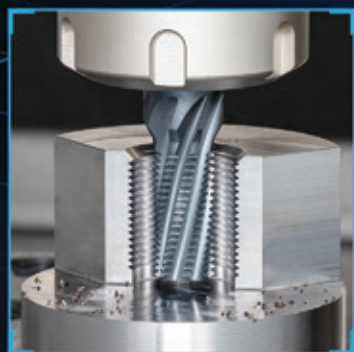
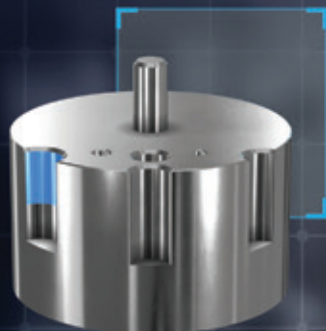
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## CELEBRATING THE SOUL OF INDIAN MANUFACTURING

**T**here are moments that remind us why we do what we do. Udyog Utsav 2025 was one such moment.

At the heart of Indian manufacturing lies more than just steel, circuits, and assembly lines. It's about perseverance. It's about visionaries who dare to dream big, engineers who solve silent challenges, and teams that toil endlessly to innovate, scale, and sustain. The third edition of the Festival of Manufacturing—organised by Worldwide Media and The Times Group—was not just a celebration. It was a powerful reaffirmation of India's journey toward becoming a global manufacturing force.

It was a day that brought together minds who build not only machines but also movements. A day that echoed with ideas, pride, and quiet strength. Conversations moved beyond spreadsheets and production targets—they reached into the space of purpose, legacy, and possibility. There was an unspoken understanding in the room—that manufacturing is not merely an industry, but a belief. A belief that India can design, engineer, and create solutions that the world can look up to.

The air was filled with gratitude—for the workers who shape raw material into precision, for the engineers who bridge vision with practicality, and for the leaders who keep their eyes set on the horizon while staying rooted in the ground realities. Manufacturing, after all, is not about glory. It's about showing up—every single day—with resolve and responsibility.

Even as discussions explored the future—from automation to sustainability—what truly stood out was the shared sense of pride in what's already been built. The quiet confidence that India's factories don't just run on power—they run on purpose.

And as stories of progress unfolded, there was something deeply human at the core of it all. A skilling workshop to spark young minds. A cultural performance that reminded us where we come from. An award that celebrated not just success, but spirit.

Because in the end, manufacturing is about people. People who dream in blueprints, speak in prototypes, and express through the hum of machines. Udyog Utsav 2025 was a tribute to them all.

Here's to those who make in India—and make India proud. Happy reading!



Amit Shanbaug  
Editor.

**ET NOW MACHINIST**  
Volume 20 Issue 4 April 2025



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Printed and published by Sunil Dad for and on behalf of owners Worldwide Media Pvt Ltd (CIN:U22120MH2003PTC142239), The Times of India Building, Dr DN Road, Mumbai 400001. Printed at Print Plus Pvt Ltd, 212, Swastik Chambers, ST Road, Chembur, Mumbai- 400 071.  
Editor: Amit Shanbaug. Published for April 2025.

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## Turkon Line Launches India Services in Strategic Tie-up with Abrao Group

**T**urkon Line, a leading name in Türkiye's maritime sector, has officially launched its India Service at Mumbai. Organised in collaboration with its Indian liner partner, Poseidon Shipping Agencies Pvt Ltd—a part of the respected Abrao Group—the event was attended by over 250 dignitaries. Among the guests were senior representatives from the logistics industry, port and customs officials, media professionals, and delegates from the Consulate General and Commercial Attaché office of the Republic of Türkiye in Mumbai.

The new India Service, operating under the Türkiye–Red Sea–India (TRI) route, marks an important step in Turkon Line's international expansion strategy. By establishing a direct and efficient maritime link between India and Türkiye, the service aims to offer Indian businesses greater access to global trade networks spanning America, Europe, the Mediterranean, and the Middle East.

Lenny Abrao, Managing Director of the Abrao Group, expressed pride in the partnership and the potential it holds. "This collaboration with Turkon Line is a moment of pride for the Abrao Group. It's more than just a service launch—it's an important and strategic addition to the maritime connectivity for India," he said. Highlighting their deep presence in India's shipping ecosystem, he added, "With our expertise and Turkon Line's global presence and commitment to quality, we see this venture opening up immense opportunities for both Indian exporters and importers."

Turkon Line's President of the Americas, Ramazan Bizel, took the audience through the company's journey in the global maritime landscape. "Our international journey started in 1997 when we launched the U.S. service line—becoming the first private Turkish company to offer direct sea freight services from Türkiye to the United States," he noted. "Today, with nearly three decades of experience in transatlantic trade, we are proud to bring the same standards of reliability and efficiency to the East, specifically to India."

He emphasised that this new India route is more than



**//** During COVID time, we realised that through digitalisation we could be accessible to our customers on a real time basis. Today, our efforts have resulted in an online platform that is better than most of the other platforms in the industry."

**- Lenny Abrao, Managing Director, Abrao Group.**

a shipping line—it's a logistics bridge designed to simplify supply chains and enhance trade flows between regions. "We are not just launching a new service; we're creating a faster, more efficient connection between America, Türkiye, and India," he said.

The TRI service began operations in February 2025 with four vessels and is expected to grow to five vessels by June. Offering the fastest transit time between Türkiye and India via the Suez Canal and Red Sea, the service includes key port calls at Nhava Sheva and Mundra, with inland rail links extending into northern India's commercial hubs.

Turkon Line's expansion into India also aligns with its broader sustainability

vision. The company plans to add two newly built, multi-fuel vessels by the end of 2025. Each vessel, with a 4,000 TEU capacity, is being constructed at Turkon's own Sedef Shipyard and will increase the fleet's total capacity by over 50%. These next-generation ships reflect the company's commitment to greener, more efficient operations.

The Mumbai launch represents more than just a new service line—it signals a strengthened maritime partnership between India and Türkiye and underlines Turkon Line's commitment to expanding eastward while supporting global trade in a responsible, future-forward manner.





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# CHAMPIONING INNOVATION & QUALITY

Blending German precision with Indian ambition, WIKUS India marks a decade of revolutionising the band saw industry. Under the leadership of **Managing Director Mukund P Bharadwaj**, the brand has championed innovation, quality, and customer-centric solutions to power industrial transformation. Bharadwaj reflects on the company's remarkable ten-year journey and shares his vision for the road ahead.

In the world of precision cutting and sawing technology, few names command the kind of trust and legacy that WIKUS does. Speaking with Mukund P. Bharadwaj, Managing Director at WIKUS India Pvt. Ltd., one gets a clear sense of how the brand has seamlessly blended German engineering excellence with Indian industrial aspirations to become a leading force in the country's band saw industry.

"WIKUS as a brand has been in India since the 1990s," Bharadwaj begins. "It was one of the first band saw manufacturers to enter the Indian market, and many customers here began their band sawing journey with WIKUS blades." But it wasn't just early entry that cemented WIKUS' place in the market. As India's economy began to blossom—and with the advent of the government's 'Make in India' campaign—the brand saw a perfect alignment with its own philosophy of being closer to customers and bringing the latest technology right to their doorstep. "That vision—of proximity, of partnership—was a key driver for establishing our 100 per cent subsidiary in India."

As WIKUS India celebrates a decade of operations, Bharadwaj, reflects on a journey that's been anything but ordinary. "It's been a very eventful ten years," he says. "Even though we were early entrants, the first-mover advantage was beginning to wear off by 2014. Competitors

were entering, and our distribution network wasn't where it needed to be." The first goal, then, was consolidation. The next: expansion. "We aimed to introduce the wider WIKUS portfolio to the Indian market—not just to sell, but to help customers upgrade their entire sawing process, to make it more productive and cost-efficient."

What sets WIKUS India apart, Bharadwaj emphasises, is its commitment to technical depth and customer-centric problem solving. "We've built a large and technically strong sales and service team that now spans the country. What we do

differently is this: we don't just sell what the customer asks for. We study their process, go into the details, understand what they truly need—and then we recommend what's best." This application engineering-driven approach, he believes, has built trust and long-term relationships, helping WIKUS earn a reputation not just for quality, but for value. "Our products are expensive, yes. But they're cost-effective. Once we prove the benefits, price becomes secondary for our customers."

Navigating the Indian market wasn't without doubts. "Back when we started, we were often told that Indians won't pay for high-end products, that only price sells here," Bharadwaj recalls. "But over the years, we've proven that as long as you can show value—real, measurable benefits—customers are open to paying for quality." That belief is now echoed by many customers themselves: "Price is secondary, tell me what my benefits are."

Being the first European band saw manufacturer to set up a wholly owned subsidiary in India gave WIKUS a unique edge—but also came with its share of challenges. "The brand was known, so that helped," Bharadwaj says. "And I came from a tooling background, so I understood the industrial landscape. The band saw segment itself was somewhat neglected, and that worked in our favour—it meant there was room to innovate."

Bharadwaj also eminently



Mukund P. Bharadwaj, Managing Director, WIKUS India Pvt. Ltd.



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pointed out that innovation remains at the heart of WIKUS' offering. "We bring a technological edge that few can match. Our product range is unmatched—bimetal blades, carbide-tipped blades, grit technology blades including tungsten carbide, diamond, and CBN, and even PVD-coated variants. These blades can cut everything from ferrous and non-ferrous metals to graphite, concrete, rubber, composites—and now even wood."

And it's not just about variety. Precision and quality are embedded in WIKUS' DNA. "The same manufacturing equipment is deployed globally to ensure consistency, and our technicians are regularly trained to meet the same high standards. Our assembly process here in India mirrors our global best practices, and every step is documented and quality checked."

Interestingly, WIKUS India has not relied on partnerships or collaborations. Its growth has been organic, built on the strength of its technology and service. "We've never needed external partnerships. Our model works because we are close to the market and listen to our customers," Bharadwaj says.

When asked about the role of innovation, Bharadwaj speaks passionately about staying ahead




of the curve and carving a niche as technology leaders. "We were the first to introduce carbide-tipped blades and coating technology to the Indian market. Innovation isn't a buzzword for us, it's embedded in how we think." A prime example is the launch of Maradur, a carbide-tipped blade developed specifically for India. "It's compatible with all kinds of machines and designed for all metal applications. It's a game-changer for customers wanting to upgrade to performance sawing without changing their existing setup."

Over the past few years, Bharadwaj has observed a clear shift in customer expectations. "Post-COVID, industries are struggling to find skilled manpower. To compensate, they are investing in quality machines and tools to reduce human dependency. That's where our high-quality blades come in. They make automation and process consistency possible."

Looking ahead, WIKUS India has no plans to slow down. "We are expanding our sales and distribution

network to match the industrial boom in Tier 2 and Tier 3 cities," he says. Pune remains the hub of operations, and thanks to robust logistics, customers across India are being served efficiently.

When asked about balancing local needs with the global vision of WIKUS Germany, Bharadwaj puts it simply: "We live by 'Think Global, Act Local'. The global footprint gives us insights into diverse customer needs, and that helps us innovate. But we know business is local, and our German management respects that. They give us the flexibility we need to adapt."

As India's manufacturing ecosystem evolves, WIKUS is poised to play a critical role in shaping its future. "Sawing is one of the first steps in the value chain," Bharadwaj notes. "If high-end equipment is being used downstream but the cutting process is outdated, the entire system suffers. We see a shift coming, where upgraded technology in sawing will no longer be optional—it will be necessary." 



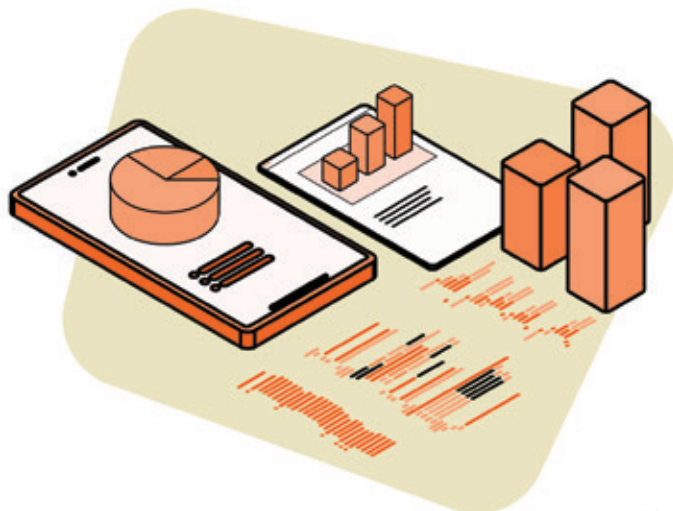


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## WALTER'S ADVANCED TOOL GEOMETRY POWERS NEXT- GEN ALUMINIUM MACHINING

With global aluminium demand set to soar, machining specialist Walter is meeting the challenge head-on. Its latest tools, featuring unique micro-geometries, enhance efficiency, cut heat, and boost productivity—setting new benchmarks in high-volume aluminium machining for transport and aerospace industries.



According to a study by the International Aluminium Institute (IAI), global aluminium demand is projected to grow by 40 per cent by 2030, rising from 86.2 million tonnes in 2020 to 119.5 million tonnes. A key sector driving this growth is transportation – spanning bicycles, cars, trucks, and even aircraft. Addressing this dynamic and expanding market, machining specialists such as Walter, based in Tübingen, Germany, have developed a dedicated range of high-performance tools.

### HIGH-PERFORMANCE MACHINING SYSTEMS FACE NEW CHALLENGES

Aluminium alloys are particularly favoured in applications where high component toughness must be balanced with low weight. This has led to a surge in lightweight construction, particularly within the mobility sector. However, this combination of material

properties also presents machining challenges. For example, the high ductility of wrought aluminium alloys can lead to build-up on the cutting edge, and long chips can compromise process reliability. In the aerospace sector, components are often milled from solid billets, with machining volumes reaching up to 95 per cent of the original blank. These parts are also frequently large and complex, making secure clamping more difficult.

To meet these demands, aluminium machining often employs large, cost-intensive machines or machining centres with highly powerful spindles. These are necessary to achieve the required metal removal rates economically. Today, spindle outputs above 80 kW are common, with the latest machine generations delivering around 130 kW.

However, power alone does not make a machining process efficient. The cutting tool plays a crucial role in transferring the machine's theoretical performance to the workpiece. Only

with a well-optimised tool and process setup can the full potential of a modern high-performance system be realised both economically and reliably.

Walter has supported customers in meeting these efficiency demands for years with a carefully developed range of tools for aluminium machining. In recent years, the company has significantly expanded its aluminium portfolio. The MD265 Supreme and MC268 Advance solid carbide milling cutters, launched in October 2022, are specifically designed for high-volume machining of ISO N materials such as aluminium alloys.

### INNOVATIVE MICRO- GEOMETRY BOOSTS PROCESS RELIABILITY

In developing these new milling cutters, Walter placed particular emphasis on optimising the micro-geometry of the cutting edges. Both feature a unique "V-shaped centre cutting edge with two clearance angles" – a Walter innovation currently





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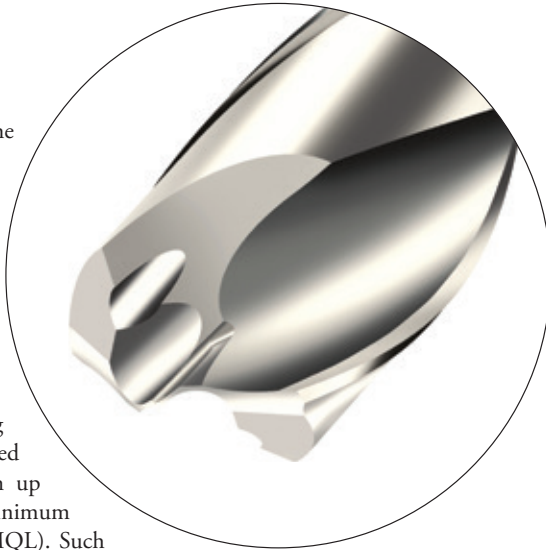


unmatched on the market. This geometry allows for angled plunge-cutting into the workpiece with low heat generation and excellent process reliability.

This is a key advantage, particularly at high machining rates, where localised temperatures can reach up to 480 °C under minimum quantity lubrication (MQL). Such temperatures risk altering the material's structure and electrical conductivity, potentially leading to rejection during quality control. Thanks to the new geometry, temperatures remain below 140 °C, preserving the integrity of the material.

Additionally, the cutting edges, Kordel or RAPAX profiles, and flutes are finely polished to minimise material adhesion. This optimised micro-geometry results in smoother cutting and significantly enhanced process reliability. It also allows for reduced cutting forces, thereby lowering spindle load and maximising energy efficiency.


The MC268 Advance, with its Kordel profile, is designed as a versatile roughing tool. Meanwhile, the MD265 Supreme, featuring the RAPAX profile, is tailored



for maximum metal removal rates. In 24/7 operations on Al7075 components, the MD265 Supreme achieves removal rates of up to 9.2 litres per minute. This is achieved with a 25 mm diameter cutter, operating at 33,000 rpm, with a 0.15 mm feed per tooth, and cutting depth and width both at 25 mm. The required spindle output is approximately 120 kW, fully utilising the capabilities of the latest machine tools.

### WALTER DC166 DRILL DELIVERS 30 PER CENT PRODUCTIVITY GAIN IN ALUMINIUM

Since April 2023, Walter's DC166 Supreme solid carbide drills have been available for manufacturers requiring high-speed drilling in aluminium alloys. These drills offer productivity improvements of up to 30 per cent. With enhanced central cooling, a thinner web, and polished flutes, significantly higher feed rates are possible. In some applications, this translates to a 50 per cent reduction in machining time. Additionally, the tool life is extended due to reduced built-up edge formation.

This standard drill, equipped with through-coolant capability, is optimised for use with minimum quantity lubrication (MQL) and emulsion cooling, making it ideal for high-volume aluminium machining. 





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# HONOURING EXCELLENCE: CELEBRATING THE BEST IN PLASTICS & POLYMERS

The 8th edition of the prestigious awards recognised industry leaders driving innovation, sustainability, and technological advancements in the plastics and polymers sector.

By Team ET Now Machinist

Mumbai witnessed an evening of celebration and recognition as the ET Now Polymers Best Plastics & Polymers Brands 2025 awards unfolded at the Yashwantrao Chavan Auditorium on March 21, 2025. Organised by Worldwide Media and The Times Group, the event brought together industry leaders, innovators, and visionaries to honour brands that have redefined the plastics and polymers sector with their cutting-edge solutions and unwavering commitment to progress.

Adding to the grandeur of the evening, the awards were presented by esteemed industry stalwarts, including Sudhanshu Mani, the visionary behind India's first semi-high-speed train, Vande Bharat Express, Kamal Bali, CEO of Volvo Group, and Naresh Raisinghani from BMGI. Their presence underscored the significance of the occasion, as they felicitated the winners and acknowledged their relentless pursuit of excellence.

This year's awardees represent the

best and brightest in the industry, each playing a vital role in shaping the future:

- **Apar Industries Limited** – A frontrunner in thermoplastic elastomers and polymer solutions, catering to the automotive, electrical, and consumer sectors with innovation at its core.
- **DPL Group of Companies** – Evolving from a pigment manufacturer to a diversified player in polymers, fillers, chemicals, and elastomers, serving both Indian and global markets.
- **Electronica Plastic Machines Limited (EPML)** – Founded in 1992, Electronica Plastic Machines delivers high-quality, scalable injection moulding solutions. With 12 offices across India, EPML combines advanced technology with a customer-first approach to offer adaptable, precise, and future-ready moulding systems.
- **HASCO India Pvt. Ltd.** – Revolutionising mould-making with its pioneering modular

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- **ITIB Machinery India Pvt. Ltd.** – Manufacturers of high performance Extrusion lines for single wall and double wall corrugated plastic pipes used for cable ducting, sewerage and many more applications.
- **JJ Plastalloy Pvt. Ltd.** – A key player in thermoplastic compounds and masterbatches, exporting to over 30 countries while continuing to strengthen its domestic presence.
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## RECOGNISING EXCELLENCE: ET NOW POLYMERS BEST BRANDS 2025



- **Mamata Machinery Limited** – Mamata is a global leader in flexible packaging solutions, offering high-performance bag-making, pouch-making, packaging machines and co-extrusion blown film lines. With 4,500+ installations in 75+ countries, the company drives innovation and sustainability in eco-friendly packaging.
- **Milacron India Pvt. Ltd.** – For over 60 years, Milacron has been a global industrial leader in the manufacturing and distribution of highly engineered and customised injection molding and extrusion

solutions, and aftermarket parts and service for the plastics processing market. The company's 1,900 associates worldwide collaborate to serve a diverse range of end-markets.

- **Robato-Helios Automation** – Transforming traditional injection molding with cutting-edge automation systems designed to enhance precision and efficiency.
- **Yudo Hot Runner India Private Limited** – A global leader in

hot runner systems and factory automation, continuously innovating in PET preform production and packaging solutions.

Beyond the awards, the event served as a testament to the industry's evolution—one that is embracing sustainability, efficiency, and forward-thinking technology. With each passing year, these awards set a benchmark for excellence, inspiring businesses to innovate, adapt, and contribute to a future where plastics and polymers play a more sustainable and efficient role in the world. 🌱



7th

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INDIA MANUFACTURING SHOW

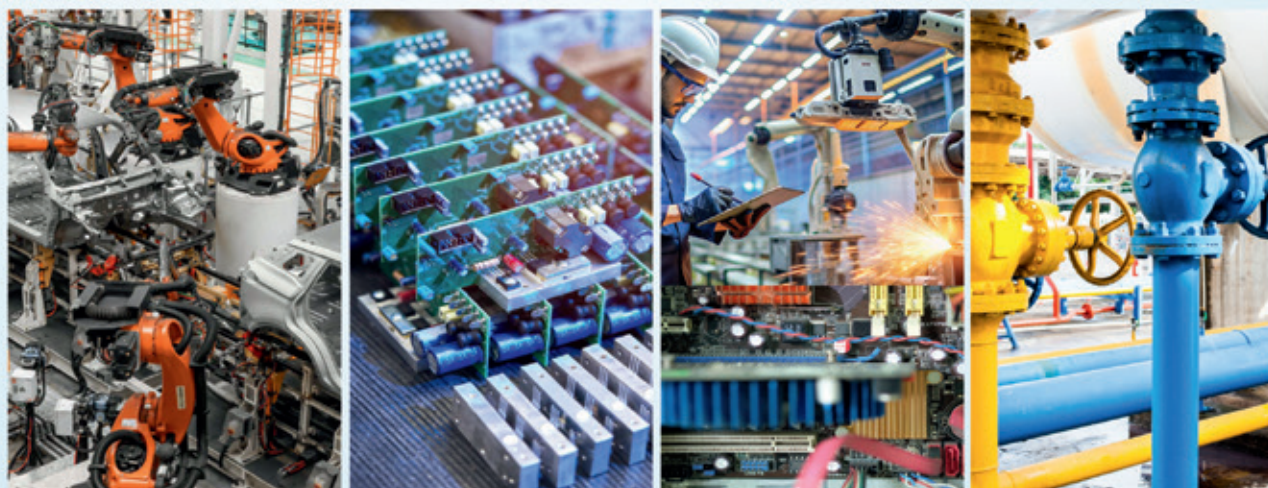
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EPOCH HIGH HARD RADIUS

# EHHRE-TH3 EHHRE-TH3 mini

## HIGH FEED RADIUS END MILL FOR HARDENED STEEL

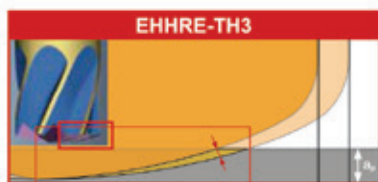
*Realizes high-feed cutting of high-hardness steels and greatly improves tool life.*

*EHHRE-TH3 mini: tool dia. 0.5mm to 0.8mm*

*EHHRE-TH3: tool dia. 1mm to 12mm*

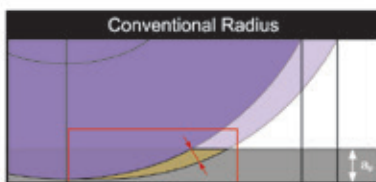
*The multi flute end mill enables high efficiency machining even in small precision molds*

### Features 01 Low cutting force radius edge geometry



Maximum chip thickness:  $T_{max}$

$f_z$



Maximum chip thickness:  $T_{max}$

$f_z$



Thinner  
removed chip



### Features 02 Peripheral clearance geometry to reduce vibration

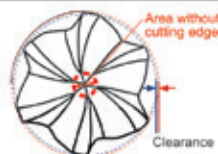
#### ○ Vibration-free peripheral clearance geometry



Sub cutting edge

Primary cutting edge

Clearance



Area without cutting edge

Clearance



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YOUR GLOBAL CRAFTSMAN STUDIO

## BE QUICK IN TURNING OPERATIONS

"There is a great satisfaction in building good tools for other people to use."  
(Freeman Dyson)

Many people regard the lathe as the forerunner of modern machine tools. Its introduction that made turning operations possible, marked the dawn of machining. Today, turning is still one of the most commonly used machining processes, and lathes remain a substantial part of the global machine tool inventory. This is why turning tools make up a considerable portion of the product range for leading cutting tool manufacturers.

It is not surprising that LOGIQUICK, ISCAR's latest campaign, brings new developments to the market with a significant focus on innovation in the field of turning tools. Some of the newly introduced products extend the existing families within ISCAR's turning line, while others offer unique solutions for advanced manufacturing. Such novelties not only reflect the trends of modern metal cutting but also aim to enhance the profitability of machining operations, particularly in turning.

Several key features characterise the development directions in turning tools, including the following:

- **Higher Efficiency and Precision:** This involves turning tools that can enhance productivity and precision, accelerate the overall machining process, and minimise waste.
- **Advanced Cutting Materials and Progressive Coating Methods:** Cutting-edge materials such as ceramics and cubic boron nitride (CBN) are becoming more common in turning tools. Due to excellent heat resistance and durability, these extra-hard materials offer superior cutting speed when compared

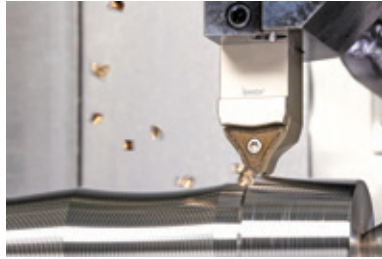


Figure 1



Figure 2

to traditional tungsten carbide. Concurrently, the need for rapid metal removal is driving interest in progressive coating technologies for cemented carbides. Innovative coatings can enhance cutting capabilities, extend tool life, and reduce wear.

- **Multi-Directional Turning Tools:** These high-quality, versatile tools not only increase productivity and machining efficiency by reducing the number of tool changes but also minimise tool inventory, decrease machine downtime, and maintain tighter tolerances.
- **Digitalisation** The Industry 4.0 approach underscores the importance of a turning tool's digital component as an integral part of smart manufacturing.
- **Sustainability:** Given the pressing nature of environmental issues, there is a growing demand for cutting tools, including turning tools, which have a smaller environmental impact. This means they should be less energy-intensive and generate less waste.

With the above in mind, we should examine the new products in ISCAR's turning tool line that are part of the LOGIQUICK campaign. Indeed, turning encompasses many external and internal machining applications, including longitudinal turning, facing,



Figure 3

profiling, chamfering, grooving, parting, and boring. Let's study ISCAR's most recent turning advancements and highlight their features.

### ADVANCED CUTTING MATERIAL TO BOOST TURNING EFFICIENCY

ISCAR has significantly broadened the range of available ceramic grades for ISO-standard turning inserts. The recent additions to the range have been designed to facilitate efficient machining of difficult-to-cut materials, particularly hard steel and cast iron (ISO H group of application). The newly introduced carbide grade, IC1017, was specifically developed for machining challenging nickel-based superalloys. This complementary grade features a high-hardness submicron substrate and a PVD coating to enable turning superalloys at higher speeds. For cutting non-ferrous materials such as aluminium,





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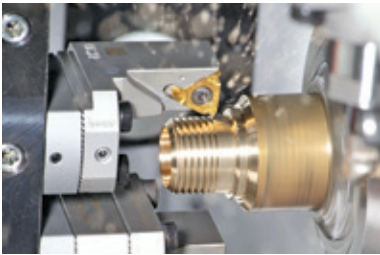


Figure 4

copper, platinum, bronze, brass, and others (ISO N group of application), the product range has been enhanced with new turning and grooving inserts featuring a nanocomposite diamond-like coating (DLC).

#### MULTI-DIRECTIONAL BENEFITS

QUICK-T-LOCK is an innovative tool family designed for productive multi-directional cutting. This includes front and back turning, profiling, and facing operations, all achievable with just one tool. The family uses a unique insert-clamping concept to provide exceptional stability during machining at extremely high feed rates. A notable feature is the advanced chipformer, specially designed for high-feed turning, especially in backworking machining (Fig. 1).

V-shape CUT-V-GRIP inserts offer a versatile solution for bi-directional external turning operations. The inserts, suitable for installation on modified existing holders, are capable of entering narrow machining areas where common V-type ISO inserts cannot be used (Fig. 2).

#### NOT BORING NEWS IN THE BORING LINE

When boring with a high overhang (usually more than five bore diameters), vibrations are a common issue. These vibrations can affect surface finish, reduce tool life, increase power consumption, and limit performance. While changing cutting conditions is a typical method to reduce vibrations, it may not always be the best solution, as it can result in longer machining time. However, a new anti-vibration holder



Figure 5

with an active vibration-damping mechanism offers an alternative approach to overcome this challenge, enabling a high level of productivity in various boring operations, from rough to finish.

ISCAR's PICCO is a tool system primarily designed for machining small-sized parts. This versatile system, which can be applied to a wide range of turning, boring, threading, and drilling operations, is highly popular in workshops that manufacture various miniature components. A typical PICCO tool consists of a holder and a solid carbide cutting insert secured within the holder. The system has now evolved with the introduction of PICCO-INDEX, a family of steel and carbide boring bars designed to be mounted on existing toolholders. The bars are specially engineered to carry small ISO-standard indexable inserts (Fig. 3). The new addition offers a viable cost-effective alternative, particularly for rough and semi-finish operations for compact part production.

#### SWISS-TYPE IN FOCUS

CNC Swiss-type lathes play a crucial role in modern manufacturing due to their precision, efficiency, and ability to perform multiple operations simultaneously, such as drilling, milling, turning, and knurling. They are instrumental in the production of miniature components required in several industries, for example, watchmaking, medical devices, automation equipment, and electronics. Consequently, the development of more advanced cutting tools and toolholders dedicated to Swiss-Type lathes is a top priority for


most tool manufacturers, including ISCAR. The LOGIQUICK campaign has also highlighted Swiss-Type machining tools.

The new modular system, QUICKSWISS, provides a solution for most applications on the sub-spindle of Swiss-Type lathes. This system (Fig. 4), which features a height adjustment option, offers a wide variety of bases, holders, and heads for various turning operations.

For grooving, parting, and recessing, the QUICK-2-CUT family shows promise. The tools in this family carry high-precision, narrow, double-sided inserts which are tangentially mounted on the tool from the side. The insert clamping concept ensures high rigidity and excellent dimensional repeatability. The targeted coolant, directed to the cutting zone, improves tool life and contributes to a better surface finish (Fig. 5).

The LOGIQ-4-TURN family of turning tools with indexable double-sided inserts has been well-received in the market. In response to this positive feedback, the company has expanded the family range to include smaller-sized inserts, providing a cost-effective solution for Swiss-Type and compact lathes.

In ISCAR's electronic catalogue, two new filter search options specifically related to Swiss-Type lathes have been added. These options allow for the search of modular adaptations to find more efficient tools for main and back tool posts.

The LOGIQUICK campaign's turning package encompasses far more than the products currently under consideration. The company is gradually introducing new product families in quick succession and plans to allocate more time to analysing these new arrivals. Will they boost productivity and contribute to a rapid increase in customer profitability? ISCAR firmly believes the answer is a resounding "yes", with an added message to the manufacturer: "Be quick to follow up on new advantages in turning operations!" 



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### PROFILES:

- Involute
- Serration/Trapezoidal
- Straight Sided Spline

- TYPES:**
- Spline Ring Gauge for checking External Splines
  - Spline Plug Gauge for checking Internal Splines

### INVOLUTE SPLINE GAUGES

Specifications	Plug Gauges	Ring Gauges
Max. Major Dia.	180 mm	176 mm
Min. Major Dia.	10 mm	-
Min. Minor Dia.	-	20 mm
Module Range	0.5 to 5.0	0.5 to 5.0
Spline Length	60 mm	40 mm

### STRAIGHT SPLINE GAUGES

Specifications	Plug Gauges	Cross - Cut Ring
Max. Major Dia.	180 mm	176 mm
Min. Major Dia.	10 mm	-
Min. Minor Dia.	-	8 mm
Spline Length	60 mm	35 mm, Cross Cut Length

### SERRATION GAUGES

Specifications	Plug Gauges	Ring Gauges
Max. Major Dia.	180 mm	176 mm
Min. Major Dia.	10 mm	-
Min. Minor Dia.	-	20 mm
Spline Length	60 mm	40 mm



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**M**anufacturing is not just about machines and production lines—it's about people, ideas, and an unwavering commitment to progress. The 3rd edition of the Festival of Manufacturing, also known as Udyog Utsav, brought together industry pioneers to celebrate India's growing influence in global manufacturing. Organised by Worldwide Media and The Times Group at the Yashwantrao Chavan Centre in Mumbai, this event was a testament to the power of skill, scale, and sustainability in shaping the future of the industry.

This year's theme, "Empowering India's Manufacturing Ecosystem: Driving Skill, Scale, and Sustainability," was not just a talking point but a movement. Over the past year, The Times Group had gone beyond the boardroom to witness manufacturing in its truest form—from vibrant factory floors to groundbreaking innovations.

As the event commenced, a sense of pride and anticipation filled the room. The ceremonial lamp

# UDYOG UTSAV 2025: FORGING THE FUTURE

Celebrating Innovation, Sustainability, and Scale in Indian Manufacturing. As India's manufacturing ecosystem surges forward, the 3rd edition of the Festival of Manufacturing—Udyog Utsav 2025—celebrated the visionaries, innovators, and changemakers driving growth, efficiency, and sustainable excellence.

By Team ET Now Machinist

pride in being part of it, highlighting the extensive efforts, deliberations, and collaborations with industry leaders that have shaped its growth over the years.

## RECOGNISING EXCELLENCE: ET NOW POLYMERS BEST BRANDS 2025

As part of the event, ET Now Polymers presented the Best Plastics & Polymers Brands 2025, recognising industry leaders who have set new benchmarks in innovation and quality. The 8th edition of these awards, powered by Breakthrough Management Group International, celebrated companies that have redefined the industry. Sudhanshu Mani, Founder of Vande Bharat Express and Naresh Raisinghani CEO and Executive Director from BMGI honoured the best brands.

Among the honourees were:

- **Apar Industries Limited** – leading manufacturer offering innovative polymer solutions.
- **DPL Group of Companies**





– Evolving from pigments to a diverse portfolio of polymers, fillers, and elastomers.

- **Electronica Plastic Machines Limited** – Renowned for precision injection molding technology.
- **HASCO India Pvt. Ltd.** – A pioneer in modular mould components.
- **igus India Pvt. Ltd.** – Specialists in high-performance polymer solutions for industrial applications.
- **ITIB Machinery India Pvt. Ltd.** – Experts in extrusion blow molding technology.
- **JJ Plastalloy Pvt. Ltd.** – A global player in thermoplastic compounds.
- **Kuloday Techno Park Pvt. Ltd.** – Innovators in sustainable plastic solutions.
- **Mamata Machinery Limited** – Leaders in flexible packaging and plastics converting solutions.
- **Milacron India Pvt. Ltd.** – Providers of cutting-edge plastic processing technology.
- **Robato-Helios** Automation specialises in peripheral automation equipment for

injection moulding machines

- **Yudo Hot Runner India Pvt. Ltd.** – Experts in hot runner systems and automation solutions.

The awards were not about ranking but recognising brands that are shaping the future of the polymer and plastics industry.

The first panel of the day brought together industry pioneers who have not only built in India but are also making a mark on the global stage. Over the years, Indian manufacturers have evolved from being just production hubs to becoming key players in innovation and design, setting new benchmarks worldwide. The discussion explored what it takes to compete globally, the challenges of balancing scale with innovation, and how Indian businesses can create a lasting impact.

Sharing their insights were T.K. Ramesh, Managing Director, Ace Designers limited, Pramoud Rao, Founder of Zicom Electronics, Shailendra Shukla, MD Vehicle

Group, Eaton Industrial Systems Pvt. Ltd and Anant Singhania, CEO of JK Enterprises, with Amit Shanbaug, editor of ET Now Machinist moderating the conversation.

The second panel discussion of the event took a deep dive into the future of India's automotive industry—one that is rapidly evolving with electric mobility, smart manufacturing, and sustainable solutions. While the sector is brimming with opportunities, challenges like infrastructure gaps, shifting policies, and supply chain disruptions remain critical roadblocks.

Bringing together some of the most influential voices in the industry, the panel featured F.R. Singhvi, President, ASDC; Kamal Bali, CEO, Volvo Group; Prashanth Doreswamy, President & CEO, Continental India; Diego Graffi, MD & CEO, Piaggio; and Mahendra Waghule, Head of Projects and Development, Horizon Industrial Parks. Guiding the conversation was Prashant Joglekar, Principal Consultant, BMGI, who led an engaging discussion on how India can fast-track its journey to becoming a global leader in mobility.

The post-lunch session saw a mesmerising performance of the Koli dance, a lively and colourful folk tradition of Maharashtra's fishing community. With rhythmic steps and energetic movements, the dancers



Dignitaries lighting the lamp



T.K. Ramesh



beautifully captured the essence of the seafaring life. Their infectious enthusiasm and vibrant attire brought the stage to life, leaving the audience enthralled and completely immersed in the rich cultural heritage of the Koli community.

After the energetic cultural

performance, the audience was in for another treat—an insightful address by Sudhanshu Mani, the driving force behind the Vande Bharat Express. With a wealth of experience in Indian Railways, he has played an important role in shaping the future of rail innovation in India. His deep

insights and passion for indigenous manufacturing made for a truly engaging and inspiring session.

Following Sudhanshu Mani's special address, the evening turned to a moment of celebration—the felicitation of Champions of Manufacturing and Promising Plants. Presented by ET NOW Machinist, a publication of the Times Group, these honours recognised organisations and individuals who have demonstrated excellence in innovation, sustainability, and operational efficiency. Manoj Sundaram, Head of Business Development, Carl Zeiss India was called on the stage for felicitating the promising plants.

The ceremony began with the recognition of Promising Plants 2025, where Yudo Hot Runner India and Zavenir Daubert India were felicitated for their commitment to advancing manufacturing standards.

A special highlight of this year's event was ET NOW Machinist's skilling initiative, which included an exclusive facility tour for students at the College of Engineering Pune (COEP). This hands-on learning experience highlighted the industry's role in nurturing future talent. To honour those who made this initiative possible, DroneAcharya Aerial Innovations Limited and Omega Seiki Mobility were recognised for their exceptional contributions to student training. The College of Engineering Pune also received a special recognition for its role in fostering industry-academia collaboration.

## RECOGNISING THE CHAMPIONS OF MANUFACTURING

The awards then turned to celebrating



The mechanical engineering students of DJ Sanghvi College of Engineering, Vile Parle, showcased their impressive projects, demonstrating their creativity and innovation. The projects included a fully functioning race car, an advanced drone, and a bike — each designed and built by the students.

“Attending the Festival of Manufacturing 2025 was an enriching experience for our students, especially while exhibiting our SAE team vehicles. The showcased projects ranged from sustainable manufacturing solutions to AI-driven automation tools, reflecting creativity and technical prowess,” remarked Dr. K.N. Vijay Kumar, IQAC Director, SAE Chairman, DJ Sanghvi College of Engineering.

The students of Pillai HOC College of Engineering and Technology, Rasayani, also attended the event. It proved to be invaluable to them, as it offered the students the opportunity to get insights into the advanced manufacturing trends.

Commenting on the student's experience, Dr Jagdish W. Bakal, Principal, PHCET, said, “Attending the Festival of Manufacturing was an incredibly valuable experience. The event's panel discussions and networking opportunities deepened their understanding of advanced manufacturing practices, sustainability efforts, and career growth in the field.”



Dr Jagdish W Bakal, Principal, PHCET





Speakers of the CEO Panel



Speakers of the Automotive Panel

the Champions of Manufacturing—individuals who have gone beyond the shop floor to shape the industry's future.

### WOMEN CHANGEMAKERS IN MANUFACTURING

Ravi Bhintade and Amit Goel, Zonal Head, Ace Micromatic Group felicitated the Women Champions of Manufacturing.

The ceremony honoured trailblazing women who have significantly influenced manufacturing operations, gender diversity, and technological advancements. Aishwarya S (JBI Aerospace) was recognised for her contributions to operational excellence, while Ankita Khanwelkar (Eaton Industrial Systems) was celebrated for promoting

gender diversity by deploying women employees across all shifts.

From expanding business verticals to driving sustainability, women like Bhagyashree Viridi (Paras Defence & Space Technologies), Bhavika Chhablani (TrumpF India), Kanupriya Khandwal (JSW MG Motors), Nikita Srivastava (DroneAacharya Aerial Innovations), Nikita Sharma (Marposs), and Pooja Bansal (Piaggio Vehicles) have led transformative initiatives in their organisations. Priyanjali Srivastava (Omega Seiki), Ragini Pasumarthi (Tata Autocomp Systems), Shweta Bahirat (Eaton Industrial Systems) were some of the champions whose leadership has set new benchmarks in efficiency, inclusion, and workforce development.



Dr Sudhanshu Mani

Sneha Dandekar (Godrej Security Solutions) for improving supplier performance, reducing risks, and driving product development.

### MEN CHANGEMAKERS IN MANUFACTURING

Pritam Shah, Sales Manager, e-chain systems and Sandesh Solanki, Sales Manager-dry-tech bearings, igus (India) and G.Venu, Convenor – ACMEE,2025 felicitated the male changemakers in manufacturing.

Recognising leaders who have redefined processes and driven innovation, the ceremony honoured Amit Takte (DroneAacharya Aerial Innovations) for his contributions to the Indian aerospace and UAV industry. Basawraj Mandade (Eaton Industrial Systems) was lauded for improving operational efficiency, while Jagdish Gandhe (Piaggio India) was celebrated for expanding production



RECOGNITION OF PROMISING PLANTS 2025

## RECOGNISING THE CHAMPIONS OF MANUFACTURING



capacity over two decades.

Kamlesh Chhatrala (GK Industrial Components), Kiran Ghorpade (Eaton Industrial Systems), Mangesh Sarwade (Eaton Industrial Systems), Manoj Thakur (Omega Seiki), Mohsin Sulemani, (GK Industrial Components), Pratham Kale (Aethrone Aerospace) and Ranjit Dalwai of Aethrone Aerospace for their dedication and efforts for bringing more efficiency in the system.

Other honourees included Dr Janardhan Shetty (JBI Aerospace), Dr. Suresh Kapiti (Kapiti Overseas Private Limited) for pioneering sustainable battery metal recycling and Rahul Desale (Renishaw Metrology Systems Ltd.) for revolutionising process control solutions through digital innovation.

Rajesh Kumar (Agrasen Engineering), Rishi Joshi (Paras Defence & Space Technologies), Shivpratap Shetty (JSW MG Motors), Sudipta Marjit (Tata Autocomp Systems), Suhas (TrumpF) and Vijay Anant Pawar (Godrej Security Solutions) for their exceptional efforts within the organisation.

As the night unfolded, each awardee's contribution stood as a proof to the resilience, ingenuity, and dedication that continue to propel the manufacturing industry forward.

### HONOURING LEGENDS: LIFETIME ACHIEVEMENT AWARD FOR BABA KALYANI

Shri Babasaheb Kalyani, Chairman & Managing Director of Bharat Forge Limited, was honoured with the Lifetime Achievement Award for his transformative impact on India's manufacturing sector. A pioneer in innovation and self-reliance, Kalyani has not only shaped the auto component industry but also mentored generations, driving India's global manufacturing leadership. Though unable to attend in person, due to a last-minute emergency, a senior representative of Bharat Forge Limited accepted the award on his behalf, marking a proud moment for the entire sector.

With the felicitation done, it was time to shift gears to something

that keeps businesses running and economies thriving—supply chains and logistics.

The panel discussion on “Building a Resilient Supply Chain: India's Journey to Logistics Dominance” brought together industry leaders who are driving this transformation. Aditya Shah, Executive Director & CEO of V-Trans and V-Express, Jitendra Srivastava, CEO of Triton Logistics & Maritime Pvt Ltd, and Chaitaly Mehta, Director of EKF Global Logistics shared their experiences and perspectives on what it takes to build a future-ready supply chain. The conversation, expertly moderated by Kiran Kambhampati, Associate Principal Consultant at BMGI, touched on the evolving challenges, emerging opportunities, and the road ahead for India's logistics sector.

As the day progressed, the conversation shifted to a topic that truly defines the future of Indian manufacturing—not just producing more, but producing smarter, greener, and with a highly skilled workforce ready to take on the world.

The panel discussion on “Crafting India's Future: Advancing Innovation, Skill, and Sustainability in Manufacturing” brought together some of the brightest minds driving this transformation. Pushkar Gokhale (EVP & Business Head, Security Solutions, Godrej & Boyce), Bill Shukla (Managing Director, Milacron India), Neelam Pathak (CEO & Co-Founder, Rozgar Dhaba), Vikas Kapur



A representative collecting the Lifetime Achievement Award on behalf of Shri Babasaheb Kalyani





Speakers of the Logistics Panel



Speakers of the Innovation Panel



Speakers of the Defence Panel



Speakers of the SME Panel

(Chief Business Officer, Zavenir Daubert India Pvt Ltd), Sanjay Sangam (Head of Sales & Marketing, Renishaw), and Rengaraj Sankarappan (Head of Quality & HSE, Kirloskar Oil Engines Limited) shared their perspectives on what it takes to make Indian manufacturing truly future-ready.

With Vaibhav Dange, Former Advisor of NHAI, leading the discussion, the panel explored how innovation, skill development, and sustainability are not just buzzwords but the very foundation of the sector's growth. They spoke about the need to build resilience, invest in people, and adopt eco-friendly practices to ensure India remains a strong force in global manufacturing.

The panel on "Strategic Defence Manufacturing: A Vision for India" brought together industry leaders who are at the forefront of this transformation. Amit Mahajan (Director, Paras Defence & Space Technologies Ltd), Amit Takte (CTO, DroneAcharya Aerial Innovations Ltd), and Mahavir Kanwade (COO, Aethrone Aerospace Pvt. Ltd.) shared their insights on what it takes to build a world-class defence manufacturing ecosystem right here in India.

With Nisha Shukla, Senior Assistant Editor—ET NOW Machinist

& ET NOW Polymers, moderating the conversation, the panel explored India's progress, the challenges ahead, and the strategies needed to position the country as a global leader in this critical sector.

From cutting-edge drones to advanced defence technologies, the discussion highlighted how homegrown innovation is reshaping India's defence capabilities.

The last panel discussion on "Financing and Modernisation of SMEs" brought together industry leaders who have been deeply involved in empowering and transforming the SME space. Probir Roy (Senior Advisor, WASME & Co-Founder, PayMate), Smriti Ram (CEO, Sanmour), Rujuta Prakash Jagtap (Executive Director, SAJ Test Plant), Pankti Agarwal (Executive Director, Laser Technologies), and Pugal T (Sr.Consultant, Tally Solutions) shared their experiences and insights on navigating funding challenges, leveraging technology, and preparing SMEs for the future.

From securing investments to adopting automation and digital tools, the discussion highlighted real-world strategies that can help SMEs thrive.

### CLOSING ON A HIGH NOTE


The final session of the day was nothing

short of inspiring—a masterclass by Umesh Rathod, a name synonymous with mentorship and innovation in India's startup ecosystem. With over a decade of experience, he has mentored 4.5 lakh+ students, shaping future entrepreneurs.

His books, including "Startup Chanakya" and "The Fun of Being in a Startup," offer invaluable insights, while his latest, "Startup Theories, Examples & Activities," launched at IIT Bombay's E-Summit 2024, cements his thought leadership.

With deep insights, real-world examples, and a passion for entrepreneurship, Rathod's session was the perfect way to wrap up the day—leaving the audience with valuable lessons and a renewed drive to build, innovate, and grow.

As Udyog Utsav 2025 concluded, one thing was clear—India's manufacturing industry is not just growing; it is transforming. The festival reinforced that manufacturing is not merely about production—it is about innovation, resilience, and a shared vision for a sustainable future.

With industry stalwarts leading the way and a new generation of manufacturers stepping up, the future of Indian manufacturing looks stronger than ever. 



## INNOVATION THROUGH NECESSITY

At the Festival of Manufacturing, top industry leaders decode how Indian innovation, engineering excellence, and global ambition are shaping a new era of manufacturing for the world.

By Team ET Now Machinist

India's manufacturing sector has come a long way—from being a low-cost production hub to becoming a centre of engineering excellence. But the game is shifting. The global focus is now shifting beyond what is built to how it is designed.

A panel discussion was organised at the Festival of Manufacturing in Mumbai on the topic- 'Build In India, Design For The World' where eminent panellists like TK Ramesh, Managing Director, Ace Designers Limited, Shailendra Shukla, MD Vehicle Group, Eaton Industrial Systems Pvt. Ltd., Pramoud Rao, Founder, Zicom Electronics and Anant Singhania,

CEO, J K Enterprises participated. The panel was moderated by the Editor of ET Now B2B, Amit Shanbaug.

Starting the conversation, T K Ramesh, stated that India has indeed made significant progress in manufacturing, but when it comes to design-led innovation, we still have a long way to go.

"It's not just about technology or R&D—it's about necessity. Necessity is truly the mother of invention. One of the best examples is ISRO. Faced with global technology bans and limited resources, they achieved extraordinary feats through vision, leadership, and sheer determination," says T.K. Ramesh.

Drawing from his personal conversations with space research leaders, Ramesh believes that innovation thrives when there's hunger, purpose, and a real problem to solve.

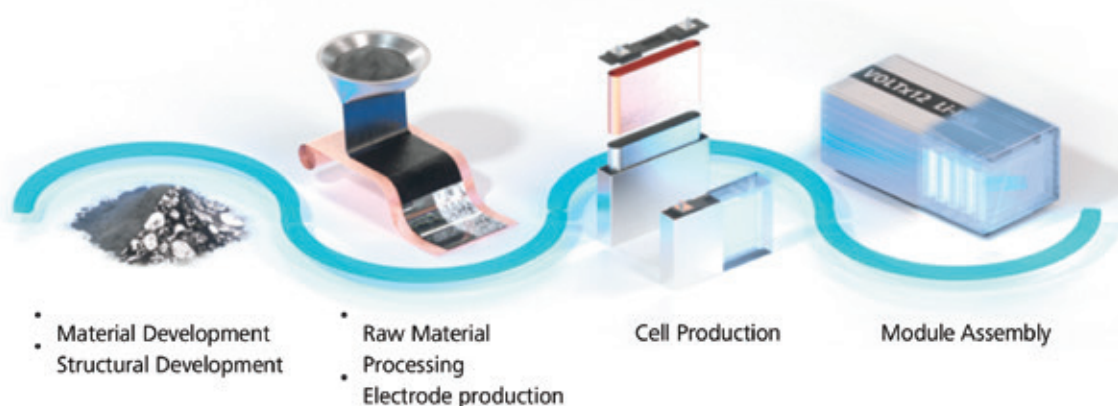
"Today's young generation isn't just looking for job security—they want to make a difference. To truly become a global design powerhouse, we need leadership that inspires this zeal, identifies big problems worth solving, and backs them with the right investments and intent." He informs.

### MANUFACTURING NEEDS A MINDSET MAKEOVER

Speaking candidly, Pramoud Rao,



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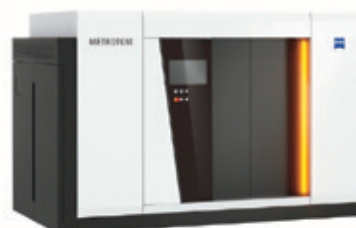
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- Safety vent mechanism



Founder of Zicom Electronics, pointed out that India's manufacturing sector continues to grapple with both perception and policy challenges. "Manufacturing isn't drawing the best talent," he noted, adding that remote factory locations and the lack of social infrastructure make the sector less attractive, especially when compared to IT.

He also highlighted a critical gap in R&D investments. "India spends just 0.64% of its GDP on R&D, while China is at 2.5% and the US is at 3.5%. That's a huge difference—not just in percentage terms but in absolute value," Rao explained.

Referring to a recent article on Xiaomi's fully automated 'dark factory' in China, he remarked, "They're producing one mobile every second with zero human intervention. No canteens, no holidays. It's mind-boggling." According to him, the real issue is mindset. "We simply don't invest enough in R&D—and that, in my opinion, is the core problem."

#### BRIDGING THE GAP BETWEEN ASPIRATION AND ACTION

Speaking with optimism, Shailendra Shukla, MD Vehicle Group, Eaton Industrial Systems, acknowledged that

India has come a long way in both manufacturing and design, but there's still ground to cover when compared to global giants like China and Germany. "We are distant from those countries in terms of scale and automation," he said, recalling a visit to a factory in China that manufactures the same product as an Indian facility—but with three times the capacity and less than a fiftieth of the manpower.

Still, he pointed to pockets of excellence in India. "A lot of design work for global products is already being done from India through GCCs. Our intelligent minds are solving global problems," he noted.

However, he cautioned that for India to truly compete, there needs to be a cultural shift. "We are often flexible when it comes to processes—but that mindset must change if we want to scale globally."


#### BUILDING BRANDS, NOT JUST PRODUCTS

While Indian companies have proven their mettle in manufacturing and global supply chains, evolving from OEM suppliers to globally recognised brands calls for a deeper push into innovation and scalability.

"We're doing some amazing

things already," said Anant Singhania, recalling his recent test drive of a Mahindra electric vehicle and the seamless biometric experience of Digi Yatra. "It's mind-blowing," he added, pointing out that Indian innovation is indeed at par with the best globally.

But to earn brand recognition, he stressed the need for scale. "When I visited China, two factories were each making 500 million pieces of a product. We're just not there yet," he noted. What's needed is consistent value creation through original innovation. "The moment you bring in great value—not just manufacturing someone else's design—the branding will follow," he said. With the right focus, he believes Indian brands can move from the back end to front-of-mind across the world.

As India aims to evolve from a global manufacturing hub to a design and innovation powerhouse, it must address challenges around mindset, investment in R&D, and scale. The journey demands not just engineering excellence but visionary leadership, cultural shifts, and bold intent. With the right push, Indian industry has the potential to not just build for the world—but to design, innovate, and lead it. 





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# DREAMS, INNOVATION, AND THE SPIRIT OF OWNERSHIP

**Sudhanshu Mani**, the visionary behind the Vande Bharat Express, spoke on dreams, innovation, and ownership in transforming Indian manufacturing. He also highlighted the challenge of turning ambition into reality—one he faced while leading the creation of India's first indigenously built semi-high-speed train.



Speaking at the Festival of Manufacturing in Mumbai, Sudhanshu Mani, the visionary behind the Vande Bharat Express, shared his thoughts on dreams, innovation, and the power of ownership in transforming India's manufacturing ecosystem. He set the tone with a quote from Shakespeare: "If to do were as easy as to know what were good to do, chapels had been churches and poor men's cottages, princes' palaces." This, he explained, encapsulates the challenge of turning ambition into reality—a challenge he himself encountered in the journey to create India's first indigenously built semi-high-speed train.

## THE DREAM OF A TRAIN THAT REPRESENTS INDIA

Mani spoke about his lifelong dream of seeing India design and manufacture a world-class train. "Despite having one of the largest railway networks in the world, we never really owned our train technology," he said. For years, India relied on foreign expertise to build locomotives and coaches, never truly creating something entirely its own.

This dream, he admitted, was not one that materialised overnight. "Dreams require patience," he noted. "It took 57 years for my moment to arrive." That moment came when the opportunity arose to lead the design and manufacturing of what would become the Vande Bharat Express—India's answer to high-speed rail, designed and built entirely within the country. "Like fine wine, some dreams need time to mature," Mani reflected.

## THE IMPORTANCE OF OWNERSHIP IN CREATION

Mani stressed the critical role of ownership in innovation. "We have been manufacturing locomotives for decades, yet the designs were never truly ours," he pointed out. "Technology isn't just about transferring knowledge; it's about making it your own."





Sudhanshu Mani getting felicitated by T.K. Ramesh, Managing Director, Ace Designers limited

It's about investing more than just effort—it's about pouring your pride into what you create."

Recalling an experience from 2009, he spoke about a collaboration between Indian engineers and General Motors, the global leader in diesel locomotives. "Back then, locomotives above 5,500 horsepower were being built only in China and the U.S. We had a chance to join that league—but under GM's leadership. We refused to be just followers. We took control and designed a powerful locomotive ourselves, importing only the engine," he shared. "That was a moment of true ownership."

### THE RESTLESSNESS THAT DRIVES PROGRESS

"Progress never comes from comfort," Mani remarked. "It requires a certain restlessness—an unwillingness to accept the status quo." He emphasised that great nations are not built by policies alone but by individuals who challenge limitations. "The world does not hand out progress; you have to claim it," he asserted.

Citing Shakespeare again, he added, "Strong reasons make strong actions." He called on India's youth

to move beyond dreams and act with conviction. "Dreaming is easy. Execution is where the real challenge lies."

### HUMAN RESOURCE: THE HEART OF INNOVATION

Despite rapid advancements in artificial intelligence and mechanisation, Mani believes that human resource remains the most valuable asset. "Machines don't innovate—people do," he stated. He shared an anecdote from his time as General Manager at the Integral Coach Factory (ICF) in Chennai. "I would walk the factory floor and simply ask workers, 'Any problem?' Most often, the answer was, 'No problem, sir.'"

He stressed that leadership is not about issuing orders from behind a desk but about engaging with people, listening to their concerns, and fostering an environment of motivation. "Real transformation isn't driven by policies alone but by making people feel valued and inspired," he said.

### SIMPLE SOLUTIONS TO COMPLEX PROBLEMS

According to Mani, complex challenges

often have surprisingly simple solutions. "We tend to overcomplicate things," he said. "But sometimes, small changes in morale, efficiency, and communication can lead to major improvements." The transformation at ICF, he explained, wasn't the result of grand reforms but a series of simple, meaningful interactions that improved worker engagement and productivity.

### A VISION FOR INDIA'S FUTURE

As India marches toward Viksit Bharat 2047 (Developed India 2047), Mani believes the country has the potential to be a global leader in manufacturing and innovation. But for this to happen, India must move beyond borrowed technology and embrace indigenous innovation with pride.


Quoting Sam Altman, he remarked, *"Don't try to compete with us; you have no hope. But it is your responsibility to make an attempt."*

Mani acknowledged the challenges ahead but remained optimistic. "True progress never comes easy," he said. "But if we're willing to own our creations, challenge our limits, and empower our people, there's nothing India cannot achieve."

### THE POWER OF DREAMS

In his closing thoughts, Mani reflected on the nature of dreams. "They are not bound by age or circumstance. Sometimes they lie dormant for years, waiting for the right moment," he said.

He left the audience with a message for India's youth: "Live your dreams, but don't forget what supports you—your family, your health, your friends, and your spirit. And when your moment arrives, seize it with both hands. And above all, when you create, make it truly your own."

With that, he reinforced his belief that Indian Railways, much like India itself, is on a journey—one filled with aspirations, challenges, and the relentless pursuit of excellence. "The tracks are laid, the destination is set," he concluded. "The only question is—who among us will rise to the challenge and drive India forward?" 



## ACCELERATING INDIA'S AUTOMOTIVE FUTURE: UNLOCKING OPPORTUNITIES, OVERCOMING ROADBLOCKS

India's automotive sector stands at the cusp of transformative growth, driven by sustainability, digitisation, skilled talent, and global trust. Industry leaders decode this inflection point, highlighting the forces, reforms, and collaborative momentum shaping India into a global mobility and manufacturing powerhouse.

As India accelerates its journey on the global mobility map, the automotive industry finds itself at a pivotal inflection point—charged with immense opportunity, yet fraught with intricate challenges. Navigating this dynamic landscape demands more than just innovation; it calls for deep collaboration, strategic foresight, and systemic transformation.

At the panel discussion titled Accelerating India's Automotive Future: Unlocking Opportunities, Overcoming Roadblocks, leading industry voices came together to explore what lies ahead. The panel featured F R Singhvi, President, Automotive Skills Development Council (ASDC); Kamal Bali, President and Managing Director, Volvo Group India; Prashanth Doreeswamy, President and CEO, Continental India; Diego Graffi, Chairman and Managing Director, Piaggio Vehicles Pvt. Ltd.; and Mahendra Waghule, Head of Projects and Development, Horizon

Industrial Parks. The session was moderated by Prashant Joglekar, Principal Consultant at BMGI, who opened with a powerful insight: that every trend or product requirement ultimately stems from the customer. With that foundation, he turned to Kamal Bali with the opening question—what key trends and shifts does he foresee shaping the future of India's automotive industry?

In a reflective yet forward-looking note on the future of India's automotive industry, Kamal Bali, President and Managing Director of Volvo Group India, said he's never seen the country in the global spotlight quite like this in his 44-year career. "It's not just the impressive 7–8 per cent GDP growth catching attention, he noted, but a confluence of deeper changes—transformative reforms like GST, the Digital India stack, a push towards decarbonisation, a young, tech-savvy workforce, and a stable, decisive government," he added.

Bali outlined the key global

shifts reshaping the industry: growing automation in vehicles and manufacturing, the rise of hyper-connectivity turning vehicles into intelligent IoT devices, and the transition to greener fuels such as battery electric, hydrogen fuel cells, and H2 ICE. But transformation, he cautioned, won't come through competition alone. "It will only succeed when multiple actors—vehicle manufacturers, fuel providers, infrastructure developers—work together," he said, warning that the absence of even one player can derail progress.

Focusing on India, Bali acknowledged the changing regulatory landscape—stricter safety norms, lower emissions, and a drive for greater logistics efficiency. He pointed out that logistics costs in India remain high at 14–15 per cent, compared to the global benchmark of 8–9 per cent, and stressed the need to strengthen long-haul, mid-mile, and last-mile connectivity. Urban congestion, he added, is no longer limited to metros and is increasingly



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becoming a challenge for Tier 1 and Tier 2 cities as well.

Looking ahead, Bali remained optimistic. Demand for mobility, he said, will continue to grow—albeit in new, shared, and multi-modal forms. “India’s auto sector is expected to grow by 50 per cent between 2022 and 2030, with vehicle production rising from 5.1 million to 7.5 million units,” he said. “Freight movement in the commercial vehicle segment will also jump from 2.2 trillion to 9.6 trillion kilometre-tonnes.” But he added a word of caution: “It won’t be business as usual. Every company will need to define its own transformational pathway to thrive in this new era.”

Diego Graffi, Chairman and Managing Director, Piaggio Vehicles Pvt. Ltd., remarked that the changing consumer mindset—from focusing on mileage to prioritising safety—is indeed influencing the commercial vehicle manufacturing sector. Reflecting on his eight years in India, he said he had witnessed a remarkable transformation in the three-wheeler and small commercial vehicle space. What was once a diesel-dominated industry has now diversified into CNG, electric, flex fuels, ethanol, biogas, and biodiesel. He observed that the sector today is almost unrecognisable compared to what it was seven or eight years ago.

Graffi credited this rapid evolution to the combined efforts of OEMs, governments, and regulators, noting that such swift change is rare anywhere in the world. However, he pointed out that significant challenges remain, especially around charging infrastructure in regions like Uttar Pradesh and Bihar. While the technological hurdles have largely been overcome, he said the availability and stability of electric charging points still pose problems.

He acknowledged India’s global leadership in electric mobility but criticised the inconsistency in government policy, particularly frequent changes to battery homologation norms, which he felt made it difficult for the industry to keep pace. Though he welcomed the increased emphasis on safety and consumer rights, he called for greater policy stability to ease the transition.

Graffi also suggested extending the 5 per cent GST rate on EVs to imported components that are not yet manufactured locally, as India remains dependent on some foreign parts. However, he noted that Indian consumers have clearly shifted towards electric vehicles for daily use, but a fully sustainable transition will require collective action to address the remaining roadblocks.

When the moderator asked the speakers to identify two key forces that suggest India’s automotive future is not only within reach but may arrive sooner than expected, Kamal Bali, President and MD of Volvo Group India, said the country was poised at a rare and extraordinary moment of opportunity. Drawing from his multinational experience, he observed that global companies were now viewing India not merely as a market but as a manufacturing hub for the world—a shift that has accelerated significantly in the wake of the pandemic. He described this growing global confidence in India’s

production capabilities as a major driver of transformation.

Bali highlighted India’s shift from 90 per cent thermal to a 50-50 energy mix by 2030 as proof of its green mobility ambitions, sending strong global signals. He praised India’s 46 per cent share in Global Capability Centres for fuelling innovation and noted domestic champions like Mahindra and Tata are ready to scale. Calling the automotive future “inspiring,” he urged youth to see manufacturing as a vibrant, modern career path.

Mahendra Waghule agreed with Kamal Bali’s views, adding that government initiatives such as Make in India and the China Plus One strategy were driving significant investments. Speaking on behalf of his organisation, which is backed by Blackstone—one of the world’s largest private equity firms—he said that India was being increasingly visualised as a global manufacturing hub. He mentioned that massive investments are being planned to develop industrial parks and promote overall industrial growth, given the immense opportunity India presents.

Prashanth Doreswamy, President and CEO of Continental India, outlined how tech providers are helping reduce the auto industry’s reliance on imports, especially from China. He likened modern vehicles to smartphones, saying the future lies in software-defined cars with shared operating systems that cut development costs. Mahindra’s B9E is





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already showing this trend.

However, India still depends heavily on imported electronics and semiconductors. Despite government incentives, global firms remain cautious due to established supply chains in Southeast Asia and the U.S. Still, early steps by firms like Tata Electronics and Micron signal progress. In the meantime, the industry is relying on buffer stocks. "We've become supply chain monitoring experts," he said.

Doreswamy noted a rise in local PCB production, helped by anti-dumping duties and investment interest. He projected India's component exports could grow from \$20bn to \$100bn by 2030 and flagged ICE components as a major export opportunity as the world shifts to EVs.

He concluded by warning against blindly copying Western mobility models, urging a mix of shared and personal transport solutions tailored to India.

Moderator Joglekar asked F R Singhvi, President of ASDC, about how India is tackling skill development amid rapid tech shifts. Singhvi praised the event as a true "Festival of Manufacturing," celebrating progress rather than pausing business like other festivals. He credited past generations for India's demographic dividend and said the country's young, energetic workforce was drawing global attention.

"Unlike the West, manufacturing here is still aspirational," he said, adding that India must shift from leniency to a culture of quality and discipline. ASDC is driving this through targeted training.

He remained confident in India's talent, especially in R&D, and said engineers abroad would return if given the right opportunities. While R&D investment lags, Singhvi believes domestic consumption can create the necessary scale to drive innovation.

ASDC has trained over five lakh people this year—in EV tech, women drivers, and roadside mechanics. Many now earn more and even create jobs. To meet the need for 2.5 million skilled workers annually, ASDC is

supplying trained technicians abroad, with 3,000 set for the UK, Germany, and Austria. The first batch, fluent in German, is already under training.

Singhvi cited global recognition, like Boeing's use of Indian-made components, as validation of India's manufacturing strength. ASDC's programmes include technical, soft skills, and work ethics training. "We're just facilitators," he said, urging wider participation.

ASDC has partnered with 13 universities and introduced 145 industry-specific courses. Singhvi applauded the government's education policy, which lets students intern with firms, and called for seeing the auto sector as part of a wider mobility ecosystem. "Let's instil discipline and purpose in our youth," he concluded, "and build a future-ready workforce."

As the panel concluded, another panellist echoed the sentiment, saying companies often had everything—except skilled people, invoking a line once attributed to Henry Ford.

Before stepping down, Singhvi made one last point. "People fear new technologies will kill jobs. That's not true," he said. Drawing from his own firm—where 70 per cent of the business still lies in ICE vehicles—he explained that only the machines had changed, not the people. "We moved from manual drills to CNC machines. The jobs stayed—the skills evolved." His parting message was clear: "Technology doesn't eliminate jobs. It demands, we upskill our people. That's the future."

Towards the close of the session, the moderator posed a pointed question to the panellists: what single idea, in their view, held the most promise for shaping the future of India's automotive industry—an idea they were not only excited about but believed could be truly transformative.


Diego Graffi's response was immediate and clear—India must invest in itself, for the world. He believed India already possessed the right mix of advanced technology, skilled talent, and robust infrastructure. For him, the vision was straightforward: position

India as a global hub for automotive development.

Prashant Doreswamy offered two key insights. First, he stressed the need to improve ease of doing business, noting India still had a long way to go. Second, he called for raising the perception of "Made in India," saying quality and discipline mattered as much as investment. He pointed to a lack of attention to craftsmanship, even in basics like casting. With India projected to see a 4.5 per cent CAGR over the next decade—the world's highest—he recognised the country's potential but warned the window was limited. "The next 50 years may not be India's," he said. "We've got 15–20 years to get it right. Better be rich before you age."

Kamal Bali saw the future rooted in collaboration. For him, the path forward was paved with partnerships. No single company, he argued, could meet the scale and diversity of demand emerging from global markets. He pointed to alliances between former rivals like Daimler and Volvo, who were now jointly investing in software-defined vehicles and clean energy solutions. In his view, it was no longer about competition—it was about co-creation. Only by working together could Indian players take their place on the global stage.

Singhvi took a bold stance, urging India to embrace competition instead of protectionism. Citing Donald Trump's call for lower tariffs, he argued that opening markets would attract global players and push Indian firms to excel. "Competition challenges us to improve," he said, warning that protectionism breeds complacency.

In conclusion, while each panellist approached the question from a different angle—be it global ambition, internal reform, strategic collaboration, or open competition—their shared message was clear: the future of India's automotive sector will depend not just on innovation, but on the mindset with which the industry chooses to evolve. Whether through partnerships or pressure, India must act with purpose, and act now. 



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## Building a Resilient Supply Chain: India's Journey to Logistics Dominance



## BUILDING A RESILIENT SUPPLY CHAIN: INDIA'S JOURNEY TO LOGISTICS DOMINANCE

Once considered merely a backend function, logistics has now taken centre stage as a critical enabler of customer satisfaction, national infrastructure development, and climate responsibility. With India's logistics sector set to nearly double in value over the next five years, industry experts emphasise that its growth hinges not on incremental improvements but on a fundamental reimagining of the entire ecosystem.

**A**t a recent panel discussion on the future of logistics in India's manufacturing ecosystem, the spotlight was firmly on the need for logistics to evolve in step with industrial growth. The panellists including, Aditya Shah, Executive Director & CEO, V-Trans and V-Express, Jitendra Srivastava, CEO, Triton Logistics & Maritime Pvt Ltd and Chaitaly Mehta, Director, EKF Global Logistics explored how logistics, once seen as a backend operation, is now emerging as a decisive contributor to customer satisfaction, national infrastructure, and climate responsibility. With India's logistics sector poised to nearly double in value over the next five years, the conversation was less about incremental upgrades and more about reimagining the ecosystem from the ground up.

Moderated by Kiran Kambhampati, Associate Principal Consultant at BMGI, the session opened with a

powerful message: "Make in India cannot happen in isolation," said Kambhampati. "It's difficult to make in India if we don't move in India." With that, he introduced the idea of "Move in India" as a necessary complement to the national manufacturing mission, underscoring that India's logistics sector, poised to nearly double in size over the next five years, could play a decisive role in the country's GDP trajectory.

Aditya Shah, Executive Director & CEO of V-Trans and V-Express, reflected on the sector's transformation, noting that a decade ago, logistics wasn't even discussed in boardrooms. Now, it plays a central strategic role, especially in delivering to customers quickly and efficiently.

He attributed this shift to changing consumer expectations shaped by instant delivery models like Swiggy and Instamart. "Customers now want not just just-in-time, but before-time deliveries," he said, adding

that AI and machine learning were no longer buzzwords but tools actively used on the ground.

Shah also highlighted the government's infrastructure push—better roads, logistics parks, and multimodal systems—as a major enabler. While challenges such as disruption forecasting and workforce skilling persist, he believes public-private collaboration is driving steady progress towards global standards.

Jitendra Srivastava, CEO of Triton Logistics & Maritime, highlighted infrastructure as key to efficient logistics. "It's no longer just about movement — it's about agility and meeting customer needs," he said, welcoming the government's push for multimodal corridors and connectivity. "Every country moves at its own pace, but our intent is right."

He stressed that benefits extend beyond cost savings, focusing on reduced transit times and better demand forecasting, all contributing



to customer satisfaction. Citing Nagpur's rise as a logistics hub, he noted how digitisation, port linkages, and logistics parks are building India's resilience.

Public-private partnerships, Srivastava added, are vital. "With government support and private investment, we can create future-ready supply chains."

As the conversation turned towards technology and human experience, Chaitaly Mehta, Director at EKF Global Logistics, brought warmth and humour into the room. "Technology has dramatically transformed logistics — and the most glaring evidence of that was during COVID. We had to hit reset, and suddenly, digital tools weren't optional — they were survival," she said.

Mehta recalled how the pandemic nudged many — sometimes reluctantly — into tech adoption. "Looking back, it was necessary," she said with a smile. She credited the government's efforts in digitising customs procedures. "We're essentially paperless now. From Chennai to Chandigarh, you can file documents with a few clicks. Geography is no longer a barrier."

Trade associations, she noted, have been pivotal in bridging the gap between logistics businesses and systems like DG Systems and CBIC. "They are like our spokespersons," Mehta said. With a chuckle, she added, "And now the tech being developed — a lot of it is coming from Gen Zs or whatever we're calling the generation above them! The noisiest ones — they're running the show."

Mehta also spoke in detail about predictive analytics being used to detect operational issues before they occur. "Bots are analysing client communication patterns, flagging repetitive errors — it's like a digital sixth sense."

She said clients, especially larger enterprises, now expect ERP-level integration from their logistics partners. "It's all about real-time visibility. Everything must be connected and smart." Yet, she stressed

that despite tech's ubiquity, "The soul of the industry is people. Tech helps — but we run on people."

On infrastructure, Mehta praised Maharashtra's state logistics policy. "It's not just a document — it's a working blueprint. The Mumbai-Nagpur corridor is a classic example — cargo from the interiors is now moving efficiently to multimodal parks and then to ports."

She also drew attention to VadHAVAN — the proposed megaport set to rival JNPT. "It's more than infrastructure; it's about employment. Just two days ago, our association BCPA introduced logistics to over a thousand students — in one day. These are your future warehouse managers and port operators," Mehta added.

Turning back to Shah, Kambhampati asked about his organisation's sustainability strategy — particularly as one of India's legacy logistics groups. Shah didn't mince words. "Let's be honest — whether it's manufacturing or logistics, we're not clean industries. We pollute. So we must take responsibility."

He detailed how V-Trans is experimenting with electric vehicles — starting with two-wheelers and gradually piloting heavier variants. "We're still in trial mode, but committed to this path." Meanwhile, 250 CNG trucks have been deployed, and plans for wider EV adoption are underway.

"But sustainability isn't just about the fuel," Shah said firmly. "We have millions of square feet in warehousing — and we're putting that to use." He revealed that around 1,000 kW of their warehouse space is now solar-powered, with plans to triple that capacity within five years. "We also plant 10,000 fruit-bearing trees annually. It's a small but significant offset," he added.

He spoke about eliminating single-use plastics across branches, starting with their LEED-certified corporate office. "Even small things like bottled water add up. And we track everything — because what isn't measured can't be improved."

Yet, Shah acknowledged the limitations. "EV trucks right now cap at 2.5 tonnes. Our fleet runs heavier — around 7 to 10 tonnes. Until that evolves, we'll focus on solar, offsetting emissions, and plastic reduction."

Multimodal logistics, he felt, was the big opportunity waiting to mature. "Running long-distance freight entirely on trucks isn't ideal. But multimodal models still require regulatory clarity and private access. We're watching the space closely," added Shah.


Adding to Shah's point of view, Mehta got candid about her own sustainability guilt. "So much paper, so many flights. I always pay for carbon credits when I fly — it hurts the wallet, but it's worth it."

She described how her company uses recycled paper, even converting shredded documents into notepads. "This year, every client gift was made of recycled material. It's a start. The future isn't just smart — it's sustainable."

As the session neared its end, the panellists offered parting thoughts. Aditya Shah was energised: "Logistics is an exciting business. It takes perseverance, but the next 10 years will be golden."

Jitendra Srivastava concluded with a succinct yet compelling call to action: the need to "embrace digital transformation." It was a message both clear and resonant, encapsulating the essence of the conversation and pointing towards the evolving future of Indian logistics.

Mehta stressed her firm belief that logistics is the backbone of all operations. Comparing it to a wheel's cogs or the human spine, she noted its importance is often overlooked—until something goes wrong.

She described logistics as ever-present and essential, quietly supporting every sector. In her view, logistics professionals are first responders, crucial to the functioning of society. Like a spider's web—delicate yet vital—she affirmed that logistics is both indispensable and enduring. 



# RESHAPING INDIA'S MANUFACTURING FUTURE

As India's manufacturing sector continues to evolve, the need for innovation, skill enhancement, and sustainability has never been more pressing.

By Team ET Now Machinist

India's manufacturing sector stands at a crossroads, where the focus is shifting towards innovation, skill development, and sustainability. As the world embraces more sustainable practices, India has a unique opportunity to lead, blending advanced technology with homegrown talent. By honing these areas, India can shape a future of manufacturing that is both globally competitive and mindful of its resources and people.

A panel discussion based on the topic – 'Crafting India's Future: Advancing Innovation, Skill and

Sustainability in Manufacturing' was organised at the Festival of Manufacturing in Mumbai. Eminent panellists like Pushkar Gokhale, EVP & Business Head of the Security Solutions business, Godrej & Boyce, Bill Shukla, Managing Director, Milacron India, Nilam Pathak, CEO & Co Founder, Rozgar Dhaba, Vikas Kapur, Chief Business Officer, Zavenir Daubert India Pvt Ltd, Sanjay Sangam, Head of Sales & Marketing, Renishaw and Rengaraj Sankarappan, Head- Quality & HSE, Kirloskar Oil Engines Limited participated in it. The panel was

moderated by Vaibhav Dange, Former Advisor, NHAI.

## EMBRACING INNOVATION IN MANUFACTURING

Bill Shukla, Managing Director of Milacron India, spoke about the transformative journey of India's manufacturing sector over the last few decades. Reflecting on his experiences, he expressed optimism about India's manufacturing prospects for the next 20 years. "I feel this is India's golden age for manufacturing," he said. He emphasised that innovation in manufacturing goes beyond just



creating new products.

"Innovation doesn't always have to mean breakthrough products. It can be in processes—how we deliver service, transport goods, or even the way we market," Bill shared.

He also highlighted the evolution of machinery and technology, noting how industries continuously improve to stay in line with global standards.

"Every few years, we see new advancements—like switching from induction motors to servo motors, or from traditional controllers to touchscreens," he explained. Bill also stressed the importance of integrating ESG (Environmental, Social, and Governance) factors into operations, revealing how his company developed a tool to track and ensure compliance across 36 critical areas.

### EMPOWERING INNOVATION

As one of India's leading engine makers, Rengaraj Sankarappan offered a grounded perspective on how innovation is unfolding on the manufacturing floor and beyond. "Innovation today is not just about designing a new engine," he said. "It's about ensuring even a technician with limited training can fix it efficiently."

By using vision recognition systems on the assembly line and AI-powered mobile apps for on-ground repairs, the company is enabling workers—regardless of experience level—to identify faults, receive step-by-step guidance, and reduce turnaround time. "Whether it's anomaly detection in assembly or AI-guided fault code diagnosis, these tools are helping our teams work smarter, not harder," he explained.

He also highlighted a shift in mindset, where sustainability and skilling go hand in hand with innovation. "We are not just building machines; we're creating ecosystems where people feel empowered, skilled, and proud of the work they do."

### INNOVATION ROOTED IN EVERYDAY EXPERIENCE

Innovation isn't always about cutting-

edge breakthroughs—it often stems from simple observations and honest feedback. As Sanjay Sangam shared, true innovation can emerge from any part of the business, be it sales, delivery, or service.

"Sometimes it's the customer who shows you the way forward," he said, reflecting on how listening closely to people's needs led to rethinking an entire product line. A product built for global markets didn't quite fit local conditions, and it took open conversations and small, thoughtful changes to make it work.

"We were told we had a Mercedes, but what was needed was a Maruti 800," he noted with a smile. It was this grounded, practical approach that sparked real impact—proving that innovation, more often than not, is a response to real-world problems.

### SUSTAINABILITY EXTENDS ACROSS THE CHAIN

Sustainability today is more than a corporate goal—it's a mindset that must begin with leadership and flow through every layer of an organisation.

As Pushkar Gokhale shared, "Unless the top leadership is committed to driving sustainability, it's hard to embed it deep within the organisation."

Beyond internal efforts, the company is aligning its entire supply chain with global sustainability standards, especially in light of frameworks like CBAM (Carbon Border Adjustment Mechanism), which will soon require stringent tracking of emissions and energy efficiency for global exports.

"It's not just about us—it's about the ecosystem we operate in," he noted, adding that collaboration, awareness, and collective responsibility are the only ways forward for truly sustainable innovation.

While sustainability is often reduced to environmental conversations, it's crucial to remember that the social pillar—particularly workforce development—is equally vital.

As Neelam Pandey Pathak pointed out, "We often speak of sustainability in terms of carbon footprints, but let's not forget the people—the workforce that powers industries." Highlighting the massive demand-supply mismatch in blue-collar jobs, Pathak explained that nearly ten million roles are available across sectors, but only 2.5 million are being filled.


"It's not unemployment, it's unpreparedness," she said, adding that 35% of the workforce needs urgent reskilling. "Re-skill, up-skill, and stay relevant—because the work is there, but the readiness needs to catch up," was the grounded and urgent call to action.

### REIMAGINING SUSTAINABILITY

Sustainability isn't only about reducing emissions—it's about rethinking the way we work, the skills we need, and the spaces we operate in.

"We used to have 30 people on the shop floor; today, we have three and produce three times more," said Vikas Kapur, Chief Business Officer, Zavenir Daubert India Pvt Ltd, highlighting that the shift isn't about job loss but about the evolution of roles and the growing need for new skill sets.

Innovation, he noted, must extend beyond products to processes, delivery models, and workplace environments. "We've transformed workspaces to be clean, solar-powered, and tech-enabled—places where the next generation wants to work. When you create a culture that values both progress and purpose, sustainability becomes a natural outcome." He said.

India's manufacturing future depends on a blend of innovation, skill development, and sustainability at every level. By embracing new technologies, empowering the workforce with the right skills, and prioritising sustainable practices, India can carve out a path to global leadership in manufacturing—while creating lasting economic and environmental impact. 

## Strategic Defence Manufacturing: A Vision for India



## STRATEGIC DEFENCE MANUFACTURING: A VISION FOR INDIA

India's defence sector is undergoing a significant transformation. Industry leaders are examining how innovation, local manufacturing, and collaboration are defining India's journey towards self-reliance and global prominence in defence.

As global dynamics continue to evolve—for India and the world at large—the need for a robust strategic defence framework has never been more vital. A panel of distinguished figures from the aerospace and defence sectors, including—Amit Mahajan, Director at Paras Defence & Space Technologies Ltd; Amit Takte, CTO at DroneAacharya Aerial Innovations Ltd; and Mahavir Kanwade, COO at Aethrone Aerospace Pvt. Ltd—gathered to explore this imperative. The discussion, titled Strategic Defence Manufacturing: A Vision for India, was moderated by Nisha Shukla, Senior Assistant Editor at ET Now Machinist and ET Now Polymers.

Shukla opened the session by asking how far India has progressed in aerospace and defence manufacturing—particularly in achieving self-reliance and technological advancement. “We speak so often of ‘Make in India’, but where do we actually stand?” she questioned.

Responding to the question, Mahajan expressed both optimism and realism. “I must say I’m very pleasantly surprised to see defence manufacturing being given space in this forum. It’s a sign of where technology is headed—defence will be at the forefront of innovation,” he began.

He acknowledged that while there is still significant ground to cover, the pace of progress has exceeded expectations. “In terms of self-reliance, we still have a lot to achieve. That said, we’re moving much faster than anticipated—in innovation, in developing advanced systems, and in asserting ourselves on the global stage,” Mahajan noted.

He pointed out that India is already becoming self-reliant in critical technologies such as radars and missile systems, which were once heavily dependent on imports. However, he stressed that continued progress would hinge on deepening innovation and investing heavily in skill development, particularly in defence and aerospace engineering. “Much has been said

about skill development, but when it comes to defence, we need to do much more. That’s where the next leap will come from,” he added.

Mahavir Kanwade, Chief Operating Officer of Aethrone Aerospace Pvt. Ltd., expressed his appreciation for being part of the discussion and highlighted India’s growth in traditional warfare systems like artillery and the increasing role of private players.

However, he flagged a significant gap in specialised technologies, particularly in aerospace materials and engine components. While there had been progress, he stressed the need for greater innovation and a skilled workforce, echoing broader concerns about talent shortages in defence and aerospace.

Kanwade described drone technology as a current buzzword, noting the rise of over a thousand drone manufacturers in India and their growing role beyond defence—in sectors like e-commerce and logistics. Citing the Ukraine conflict, he pointed



to a shift from traditional warfare to mission-critical systems such as drones and platform-agnostic technologies.

His company, he said, focused on integrated systems spanning land, sea, and air, rather than isolated defence products—a systems-based approach vital for modern warfare. While India had made strides in traditional systems and exports, Kanwade emphasised the need to build critical aerospace capabilities to meet future challenges.

Amit Takte, CTO at Drone Acharya Aerial Innovations Ltd, addressed the growing role of drones in defence with clarity and conviction. He said drones had become vital to modern warfare worldwide, with India embracing the technology at an impressive pace. While challenges remained, defence-grade drone manufacturing was now a key priority.

Takte outlined their current use—from reconnaissance and kamikaze drones to logistics support in remote areas—and highlighted the rising importance of anti-drone systems. He stressed that drones were now essential not only in defence but in civilian applications too.

Looking ahead, he identified AI as a game-changer, especially in enabling drone swarming—multiple drones flying in coordinated, automated missions. He also spoke of advancements in drones that can operate in areas with limited communication, such as border zones.

Finally, he mentioned the potential of long-endurance, solar-powered drones capable of flying for over eight hours. Takte was confident that such innovations would significantly boost the capabilities of India's armed forces.

When asked by Shukla on how Indian companies and global players could collaborate to ensure safe and secure technology transfer while safeguarding national interests, Amit Mahajan offered a thoughtful response.

He emphasised that “Indian firms must bring both value and readiness to the table—value in terms of quality, processes, and cost-effectiveness, and readiness through skilled

talent, infrastructure, and proactive investment.” These, he said, were key to meaningful global partnerships and faster development.

However, Mahajan challenged the prevailing mindset, arguing that India must stop depending on foreign players for innovation. He believed the country should see itself as capable of creating world-first technologies, rather than just catching up.

Citing examples from Paras Defence, he said the company was developing products never attempted before in the Asia-Pacific, including by countries like Japan and South Korea. This, he felt, proved that Indian companies could lead in innovation.

Mahajan concluded by saying that innovation need not remain the West's domain and that India should not just look for global partners—but strive to become one.

He also highlighted a major milestone, sharing that his company is the only one in the Asia-Pacific to have developed a submarine periscope—surpassing even nations like Japan. If one wanted a periscope made in India, he stated, Paras was the sole option.

Mahajan also touched on anti-drone systems, inspired by earlier remarks from Amit Takte. Paras, he said, had created an integrated drone detection and jamming system that he claimed was unmatched globally. Its standout feature was a single antenna covering a wide frequency range of 400 MHz to 6 GHz.

Mahajan noted that the system had caught the attention of Western companies—not as a buyer of their tech, but as a partner recognising India as the innovator. “This is the mindset every Indian company should adopt,” he urged. “Let's lead in technology and have the world follow,” he added.

Building on the discussion, Amit Takte offered a drone industry perspective in light of Mahajan's call for technological self-reliance. He agreed that indigenous development must be central but acknowledged India's current dependence on global tie-ups to keep pace with rapid international

progress, especially in defence.

Takte noted that technology transfers were happening, allowing Indian firms to adapt drone tech for national needs. However, he warned that over-reliance on such partnerships could hinder India's strategic autonomy.

He urged a shift towards in-house innovation, led by Indian bodies like DRDO and academic institutions. “Foreign collaboration has its place,” he said, “but it should support—not substitute—our own innovation.”

While India had made solid strides, Takte stressed that major R&D investment was still needed to close critical gaps and establish India as a serious player in drone warfare.

When asked about the state of R&D in India's aerospace and defence sectors, Amit Mahajan was first to respond. He noted that research remained largely centralised in government institutions, with DRDO at the helm. While he praised DRDO's efforts, he acknowledged progress was slower than ideal.

Mahajan pointed out that India had a wealth of defence and aerospace knowledge but needed to move faster. Encouragingly, he said, DRDO had begun outsourcing innovation to private industry, a shift he called both necessary and overdue.

He expressed hope that this would gather momentum, with private players speeding up development, creating jobs, and driving innovation. Though challenges remained, he believed India was finally moving in the right direction towards a more agile and decentralised R&D ecosystem.

Echoing Mahajan's views, Mahavir Kanwade shared his perspective, stressing that while India often seeks solutions abroad, it must begin by addressing its own challenges. At Aethrone, he said, this approach was already in play—tackling problems raised by defence bodies like the Indian Air Force and building solutions in-house. He cited the IAF's 2022 doctrine on adaptability and reach as a guiding reference for their work.

Kanwade noted that India's

IT strength was an underused asset, especially given the role of communication, intelligence, and information in modern warfare. He saw great scope for closer ties between the IT and defence sectors, which currently operate in silos despite strong capabilities.

On manufacturing, he acknowledged India's limited experience in critical areas like engine components. While indigenous development was vital, he advocated selective collaboration with friendly nations to fill knowledge gaps—so long as it supported rather than replaced local innovation.

As an example, he mentioned India's success in developing artillery systems suited to its own conditions—unlike imported systems not designed for local terrains. This, he said, reinforced the need for homegrown solutions tailored to Indian realities.

Kanwade identified two focus areas: critical components and electronics. He pointed to the rapid advances in automotive semiconductors and urged similar momentum in defence. AI and machine learning, he added, could transform decision-making in the military.

On policy, he appreciated the push for localisation but called for stronger R&D incentives. He suggested DRDO partner more actively with startups by providing access to infrastructure and expertise.

On supply chains, he cited delays in the Tejas Mark 1 programme—particularly the unavailability of the F404 engine—as a clear case for building domestic capabilities. While drones drew attention, he stressed the need to also prioritise fighter aircraft and reduce import dependence, especially in defence aviation.

Kanwade concluded by emphasising the need to develop both hardware and software. Defence, he noted, is a long-gestation sector, and projects like the MCAR jet—targeted for 2035—must be taken up now to secure India's place on the global stage.

Amit Mahajan then weighed in,

acknowledging that India was, in many respects, far from achieving parity with countries like Russia, China, or the United States when it came to technological capabilities. However, he pointed out that India's strength lay in its diplomatic leverage. He remarked that India's peace and security were largely safeguarded by the strong bilateral relations it maintained with a wide range of nations—a position, he claimed, even the United States might envy. He argued that these strategic relationships had bought India the time and space it needed to grow into a defence superpower. While the country was not yet there technologically, he believed India was on the right path.

Amit Takte then added to the discussion by speaking specifically about drone technology. He referred to the target set by the Honourable Prime Minister—to make India a global hub for drone technology by 2030. He asserted that to meet this ambitious goal, manufacturing would play a critical role. It was not sufficient to focus only on innovative applications or software development, he said; self-reliance would also require India to design and manufacture the hardware components of drone systems indigenously.

Wrapping up the conversation, Mahavir reiterated the importance of synchronising efforts on both hardware and software fronts. He emphasised the need to control the entire value chain—from the sourcing of raw materials and minerals to final product assembly. Only by doing so, he argued, could India establish a robust, reliable, and globally competitive supply chain for the defence sector.


When Shukla asked about his vision for India's defence manufacturing by 2030, Amit Mahajan said innovation would be the key driver. He stressed the need for stronger investment in R&D and a shift in mindset, noting that Indian companies often worked in silos rather than collaborating on integrated solutions—though this, he added, was slowly changing.

On skills, Mahajan highlighted semiconductors and material sciences as critical areas. Regardless of other progress, he said, these would remain the biggest hurdles. India must master both to unlock its full defence potential.

Amit Takte also underlined the importance of involving educational institutions, engineering colleges, and R&D organisations in the process. He believed their participation would be crucial in developing self-reliant designs and fostering a culture of innovation-led product development within the country. Takte expressed confidence that with the available talent pool and strong government backing, India would be well on its way to achieving the ambitious targets it had set for itself in the defence sector.

Offering a more application-specific view, Mahavir Kanwade shared a vision grounded in innovation and practicality. Looking to 2030, he noted that while drones had become central to modern warfare, his team was already thinking beyond deployment—focusing on what happens when things go wrong. What if a drone failed mid-mission or during combat?

He revealed that his organisation was developing search and rescue technologies, particularly for naval use. After successful trials with the Indian Navy, they had systems ready to rescue personnel who'd fallen overboard. His team was also working on rescue solutions for drones, an area he said had received little attention despite drones becoming vital defence assets.

Mahavir described parachute-based ejection systems and other drone recovery tools aimed at avoiding collateral damage during mission failures. He said his goal was to lead in parachute and para-rescue technologies, especially for drones. Beyond defence, they were tailoring these systems for other platforms and sectors. For him, the future lay in building a full ecosystem of rescue and recovery systems to safeguard both human lives and critical defence tech. 





## FUELLING THE FUTURE

As India eyes a \$5 trillion economy, SMEs—backed by digital innovation and diverse financing models—are emerging as the backbone of inclusive economic growth.

By Team ET Now Machinist

**W**ith nearly 90% of global businesses falling under the SME category, their contribution ranges from 40% of GDP in developing nations to 60% in developed ones. In India, while SMEs form the majority with 40 million enterprises, their GDP share remains at 30%, pointing to a massive untapped potential.

The next leap—from 30% to 50%—will rely on improved access to finance and the adoption of digital tools. With government support and an evolving fintech landscape, new-age solutions are bridging gaps in credit access and operational agility.

A panel discussion titled "

Financing and Modernisation of SMEs' was organised at the Festival of Manufacturing in Mumbai, which brought together seasoned entrepreneurs and fintech experts to share their perspectives on how SMEs can power India's transformation.

The panel comprised of experts like Probir Roy, Senior Advisor, WASME and Co-Founder PayMate, Smriti Ram, CEO, Sanmour, Rujuta Prakash Jagtap, Executive Director, SAJ Test Plant, Pankti Agarwal, Executive Director, Laser Technologies, and Pugal T the founder of Potential Solutions. It was moderated by Alok Kumbhat, Director of Data and Strategy at Dun & Bradstreet India.

"MSMEs are often spoken of as the

backbone of India's economy — and for good reason. They power a large part of our exports, create millions of jobs, and are vital to India's economic fabric. Yet, despite years of discussion, their biggest pain point — access to credit — remains largely unresolved," said Probir Roy.

He pointed out that while several schemes have been launched in recent years to improve financial inclusion, most small businesses still struggle to secure loans through formal channels. "A massive portion of credit still comes from informal sources — friends, family, local lenders — because traditional institutions just aren't structured for the small-ticket, high-frequency credit MSMEs need."

Roy believes the real shift is happening at the intersection of fintech and NBFCs. “Digital lending platforms are finally starting to crack the last-mile delivery puzzle — and that’s where real hope lies.”

Rutuja Jagtap, who represents the MSME sector highlighted the persistent challenge around delayed payments. “Cash flow is a lifeline for any MSME. The government’s 45-day payment term was a welcome move — but sadly, it remains largely on paper,” she said. According to her, MSMEs are often left with little choice but to accept customer-imposed payment terms, especially while bidding for tenders. “It’s a case of take it or leave it — if you don’t agree to their terms, you’re out of the race before you’ve even begun.”

She stressed that implementation is key, not just intent. “If enforced properly, the 45-day rule could dramatically improve liquidity for MSMEs,” she said. Jagtap also called for sector-specific payment terms — especially for capital equipment businesses, where staggered payments are the norm. “We need terms that align with the nature of the business — capital goods can’t follow a one-size-fits-all model.”

Speaking at the panel, Smriti Ram highlighted a growing concern for small and medium enterprises (SMEs)—cybersecurity. She pointed out that digitisation, while

transformative, has opened up a new front of vulnerabilities, especially for smaller businesses. “It’s a myth that only large companies get targeted. In fact, MSMEs are often the weakest links in the value chain, making them easy targets,” she said.

Drawing from her experience in the pharma R&D space, she stressed how a single cyber-attack could lead to massive financial losses, data breaches, and irreparable reputational damage. Ram emphasised that most MSMEs underestimate the threat, assuming their size keeps them under the radar. “But hackers are always ten steps ahead,” she warned.

She called for structured cybersecurity training, stronger internal policies, and even proposed a cyber-insurance mechanism for MSMEs. “Just like health or life insurance, data protection needs a safety net too,” she added.

Speaking on the challenges MSMEs face in accessing capital, Pugal T emphasised that the real hurdle is not always the lack of funding options—but a mindset issue and lack of awareness. “The biggest problem with many SMEs is their mindset. They don’t explore what’s available because they simply don’t know,” he pointed out.

He shared the concept of the four Ps of business *ikigai*—Potential, Profitability, Passion, and Purpose—as

a foundation for MSMEs to align their goals and growth strategies.

Highlighting the range of financial avenues available today, Pugal explained that MSMEs no longer need to rely solely on traditional banks. “Revenue-based financing, peer-to-peer lending, crowdfunding, invoice discounting, even smart contract-based loans through SIDBI—there are solutions tailored to different business needs,” he said.

Lastly, Pankti Agarwal, a first-generation entrepreneur, shared her journey of resilience and reinvention in the MSME space. From trading laser machines to shifting into manufacturing during COVID, she’s weathered multiple storms—from funding gaps to anti-dumping hurdles.

“Every 2-3 years, MSMEs face a fresh set of challenges. It feels like running on a treadmill—sometimes uphill, sometimes downhill,” she said.

“We need government support to bring in global tech and incentivise R&D. That’s the only way we can truly make in India,” she added.

As India moves towards its \$5 trillion dream, the journey of MSMEs—filled with grit, innovation, and everyday hustle—can’t be ignored. With the right support, smarter finance, and real skilling, these homegrown heroes have the power to shape a more inclusive and resilient economic future for all. 🌱





# EMPOWERING MANUFACTURING THROUGH INNOVATION AND COLLABORATION

**Umesh Rathod**, TEDx speaker and startup mentor, shared insights at the Festival of Manufacturing in Mumbai on the role of innovation and collaboration in driving India's manufacturing sector forward.



Over the years, the Indian government has introduced several initiatives to strengthen the manufacturing sector, including the Production Linked Incentive (PLI), National Infrastructure Pipeline (NIP), Supply Chain Resilience Initiative (SCRI), and PM Gati Shakti Scheme. These initiatives aim to increase the sector's contribution to GDP and position India as a global manufacturing hub.

Among these, the PLI scheme stands out as a transformative measure, offering strong financial support to entrepreneurs. "This is a game-changer for Indian manufacturing. Entrepreneurs can take risks knowing they have strong backing from the government," said Umesh Rathod. The model is being replicated across multiple industries, including semiconductor manufacturing. Additionally, initiatives under Startup India provide funding support to new ventures, promoting a robust ecosystem for innovation and entrepreneurship.

## INFRASTRUCTURE AND REGIONAL DEVELOPMENT

The government's focus on infrastructure development has led to the expansion of industrial parks, special economic zones, and warehousing facilities. Maharashtra, for instance, is among the leading states in terms of industrial and warehousing land availability. Various regions across India have been earmarked for industrial and logistics hubs, further strengthening the country's manufacturing framework.

However, despite these advancements, there is room for further improvement. "India is in a race against time to capitalise on its young workforce. If we don't act now, we will lose our demographic advantage," Rathod emphasised. As India envisions a developed future under the Viksit Bharat 2047 initiative, it is essential to accelerate efforts now to leverage its demographic dividend, as the country currently has one of the youngest workforces globally.



Umesh Rathod (L) getting felicitated by Amit Shanbaug, Editor, ET Now Machinist

### INNOVATION AND INTELLECTUAL PROPERTY: THE KEY TO COMPETITIVENESS

India has made notable progress in global innovation rankings, particularly among middle-income economies. However, there is a pressing need to improve its intellectual property (IP) portfolio. A significant portion of global patents still originates from a few select countries, with India needing to boost its patent filings and commercialisation efforts.

"We need to change the way we view patents. Many innovations happening in our universities never see the light of day because they aren't patented or commercialised," Rathod

pointed out. A key challenge lies in the academic approach to innovation—while numerous projects are developed within universities, many lack the right patent protections. Encouraging collaboration between industry and academia can bridge this gap, enabling companies to acquire and commercialise patents with strong business potential. Moreover, investing in industry-driven Ph.D. programmes, as seen in developed nations, can significantly enhance India's research output.

### LEVERAGING TRADITIONAL KNOWLEDGE FOR GLOBAL RECOGNITION

India's rich cultural heritage offers

immense untapped potential in innovation. The example of global luxury brands using designs inspired by Indian traditions highlights the need to protect and commercialise indigenous knowledge. "Our ancient knowledge systems are being utilised by global brands, but we fail to recognise their value ourselves. This needs to change," Rathod stated.

Several foreign institutions study grassroots innovations in India. "They come here, learn from us, and commercialise it back home. We need to do this ourselves—protect, innovate, and scale," he added. To strengthen its position in global innovation, India must capitalise on its unique strengths, create intellectual property, and add value to the global market.

### FUTURE GROWTH AND EMERGING SECTORS

India is positioned to further solidify its standing as a global manufacturing hub. The country's industrial output is expanding across sectors such as textiles, electric vehicles, aerospace, and pharmaceuticals. Additionally, emerging industries like maritime business and aircraft maintenance, repair, and overhaul (MRO) present significant opportunities for investment and innovation.

"This is our moment. The world is looking at India as the next big manufacturing hub. We need to embrace innovation, invest in talent, and build a strong ecosystem for sustainable growth," Rathod said.

The key to sustained progress lies in fostering industry-academia collaboration, driving innovation, and strengthening the intellectual property framework. As global attention turns to India, the question remains: Are we ready to bet on ourselves?

With initiatives like Make in India and Atmanirbhar Bharat, the future of Indian manufacturing looks promising. To achieve self-reliance, progress, and global leadership, the nation must unite to manufacture success and shape the future of a stronger, more innovative India. 🇮🇳





**Dr Sandeep S. Anasane, Head of the Department of Manufacturing Engineering & Industrial Management, COEP**



**Nikita Srivastava, Director – HR & Culture, DroneAcharya Aerial Innovations**

## ET NOW MACHINIST'S FACILITY TOUR IGNITES PASSION FOR FUTURE MANUFACTURING LEADERS

As part of its skilling initiative under the flagship event, **The Festival of Manufacturing**, ET NOW Machinist hosted two plant tours. These tours aimed to empower the next generation of manufacturers by providing hands-on exposure to India's vibrant industrial landscape.

By Nisha Shukla

**I**n a bid to connect the dots between academic learning and real-world industrial application, ET NOW Machinist—a Times Group magazine—hosted an immersive facility tour as part of its skilling initiative for over 200 students from the College of Engineering, Pune (COEP), under the banner of its flagship event, the Festival of Manufacturing 2025. Now in its third edition, the Festival of Manufacturing, through its skilling initiative, hosted two plant tours aimed at empowering the next generation of manufacturers by offering hands-on exposure to India's dynamic industrial landscape.

This industry-first initiative was thoughtfully designed to provide second- and third-year B.Tech students in Manufacturing Science and Engineering with practical insights into modern manufacturing ecosystems.

The dual-facility tour was conducted simultaneously at DroneAcharya Aerial Innovations, a cutting-edge deep tech and data science company, and Omega Seiki Mobility, a leading Indian electric vehicle (EV)

manufacturer with a state-of-the-art three-wheeler production plant in Pune.

### PLANT TOUR AT DRONEACHARYA AERIAL INNOVATIONS

At DroneAcharya, students were welcomed with an in-depth corporate presentation that laid the foundation for their plant visit. They explored the in-house R&D centre, pilot training stations, and a live drone display area featuring models like Agriveer and FPV drones. The session emphasised the role of drones in sectors ranging

from agriculture and law enforcement to defence and oil & gas.

Nikita Srivastava, Director – HR & Culture at DroneAcharya Aerial Innovations, highlighted the importance of such initiatives, “This is a great opportunity for both students



and the industry. While colleges build the theoretical foundation, real-world application provides clarity



and direction. It helps students choose the right career path and gives us, as industry leaders, a chance to identify future talents.”

Students echoed this sentiment, expressing newfound enthusiasm and a deeper understanding of drone technologies and their wide-ranging industrial applications. One student remarked: “I loved learning about drone simulations and their use in rescue operations. It was eye-opening to see how theory translates into something so impactful in the real world.”

When asked how the tour would influence their career path, another student shared, “I’ve been studying manufacturing for the past three years, but this industrial visit gave me a whole new perspective. Seeing drones being used in real-world applications that rely on high-end technology really sparked my interest. It helped me understand how advanced and dynamic the manufacturing sector is today, and it motivated me to seriously consider it as a long-term career path.”

### ON THE GROUND WITH EVs: OMEGA SEIKI MOBILITY

At Omega Seiki Mobility, students were taken through a structured and comprehensive walkthrough of the company’s EV manufacturing process. The session began with an introduction to plant operations, followed by a guided tour through key departments including the Receiving Quality Check area, Inventory Management, and the main shop floor.

From learning about terms like FIFO, Kaizen, and Poka-Yoke, to observing production lines and sub-assembly stations, students witnessed the practical application of lean



**Uday Narang, Founder, Omega Seiki Mobility**

manufacturing concepts they study in the classroom. The tour concluded with insights into the company’s complete process flow—from material inward to final PDI check and road testing.

Commenting on the initiative, Uday Narang, Founder, Omega Seiki Mobility, said, “The Festival of Manufacturing is more than an event—it’s a movement to ignite passion for building India through manufacturing. At Omega Seiki Mobility, we’ve always believed that real transformation happens when young minds step out of the classroom and into the factory. By opening our doors to engineering students, we’re giving them a chance to experience the heartbeat of innovation—where machines, ideas, and people come together. This hands-on exposure inspires them to dream bigger, build smarter, and become the future leaders of India’s industrial revolution.”

A second-year manufacturing student shared, “We saw first-hand how electric vehicles are built and tested. Concepts like ECU, quality checks, and even IoT applications came to life for us. It really motivated me to pursue a career in advanced

manufacturing.”

Another student added, “We finally saw the real meaning of the terms we’ve read about. The experience gave me clarity on what skills I need to develop for a future on the shop floor.”


### THE EDUCATORS’ PERSPECTIVE

Dr Sandeep S. Anasane, Head of the Department of Manufacturing Engineering & Industrial Management at COEP, emphasised the critical need for such exposure, “We are grateful to ET NOW Machinist and the Times Group for organising this tour for our students. Initiatives like these are instrumental in bridging the gap between theory and practical experience. They not only enrich students’ understanding but also align perfectly with the national vision of Make in India, Make for the World.”

### CONCLUSION: FROM ASPIRATION TO ACTION

As India stands at the cusp of a manufacturing renaissance, initiatives like facility tours are more than educational—they are transformative. By exposing students to the heartbeat of modern industry, these tours ignite curiosity, foster career clarity, and forge a stronger connection between academic learning and industrial innovation.

With sectors like electric mobility and drone technology booming, these early encounters can shape the engineers, entrepreneurs, and innovators of tomorrow. As one student rightly said, “We came with questions and left with purpose.”

And with that, the future of Indian manufacturing looks not just skilled—but inspired. 



## IGUS EQUIPS THE 2,000TH STS CRANE WITH E-CHAINS

Seaports are under pressure worldwide: to remain competitive, terminals must handle larger ships in shorter periods. Consequently, more and more operators are adopting modern components such as igus's robust energy chains, which are compatible with Industry 4.0. The motion plastics specialist has now equipped its 2,000th ship-to-shore (STS) crane with e-chains, making increasing numbers of terminals future-ready.

According to a recent report by the United Nations Conference on Trade and Development (UNCTAD), over 80 per cent of cross-border trade in goods is now transported by sea. The sector is forecast to grow by an average of 2.4 per cent per year until 2029. This growth is placing pressure on many ports to modernise infrastructure and process larger volumes more rapidly. Technical constraints persist, however—not just due to major structures such as harbour basins, but also due to thousands of smaller components often overlooked. One such example is the traditional festoon system: looped cables that supply the trolley with energy and data.

"To keep up with the increasing speeds and extended travel distances of STS cranes serving ever-larger ships, manufacturers would need to begin motorising the festoons. However, this is complex and prone to faults. There is always the risk of the trolley and festoons falling out of synchronisation, leading to excessive tensile loads, cable damage, and system failures—particularly over long distances," explains Jens Göbel, Industry Manager for Cranes & Material Handling at igus.

"That's why more and more port operators are replacing festoons with energy chain systems." As a result, igus has now equipped its 2,000th STS crane with e-chains.

### Tech Up, Cost Down: Switching Systems Offers Many Advantages

This development marks a significant step in the global modernisation of seaports. igus's e-chains offer several advantages over traditional festoons. The igus rol e-chains are made from high-performance plastic, specifically engineered for the industry to ensure long service life and reliable operation under all weather conditions. These systems can operate at speeds of up to 10 m/s without requiring complex motorisation.

Thanks to integrated rollers and a low co-efficient of friction, payloads and acceleration can be increased while maintaining the same push/pull force. Compared with gliding systems, drive energy can be reduced by around 57 per cent—a major benefit amid rising energy costs. The internal separation of the chain is also easily modified, allowing new cables to be inserted with minimal effort—an important advantage in today's fast-paced technological environment.

Popular models such as the heavy-duty roller energy chain P4HD.56.R offer a running performance of over



200,000 km—translating to a service life of up to 15 years. A special clevis-and-tongue design ensures maximum stability under high additional loads, while a pin-and-bore connection made from tribologically optimised plastic helps reduce wear.

Furthermore, all rol e-chains can be fitted with i.Sense sensors for real-time monitoring and predictive maintenance. This reduces maintenance frequency, extends the crane's operational life, and improves overall efficiency. Customers also benefit from a unique four-year guarantee, offering added peace of mind.

### Expanding Market Presence

igus's energy chains have gained popularity in Asian ports, known for early adoption of new technologies. Since the development of its first roller energy chains more than 25 years ago—and their initial installation at Shanghai Zhenhua Heavy Industries (ZPMC) in 2000—igus has achieved a market share of around 60% in the new crane segment.

Ports and terminal operators worldwide, including APMT, DP World, and AGL, have followed suit. In 2017, igus celebrated the installation of its 1,000th energy chain in an automated port at APM Terminals Rotterdam. With its 2,000th installation now completed, igus has reached another milestone, reinforcing the critical role of innovation in port logistics.

The company also offers other award-winning solutions such as the igus Mobile Shore Power Outlet (iMSPO)—a flexible shore power connection system that can be moved along the berth depending on a ship's location, including at the Port of Hamburg. Simultaneously, igus has developed maintenance-free high-load bearings that are increasingly used in port cranes. These fibre-reinforced plain bearings not only reduce maintenance costs but also eliminate the risks associated with improper lubrication.

Jens Göbel concludes: "We are confident these technological advances will enable even stronger collaboration with STS crane manufacturers and terminal operators as we continue designing ports that support efficient and sustainable maritime transport for the future."

## CHEM ARROW UNVEILS ECO-FRIENDLY EVAPORATIVE FIN STAMPING LUBRICANT



**C**hem Arrow Corporation, a subsidiary of the Motul Group, has launched an innovative and environmentally friendly evaporative fin stamping lubricant: ArrowStamp 50043-FRM-1. Designed to enhance manufacturing efficiency while ensuring minimal residue, this lubricant is an ideal solution for industries requiring superior fin stamping performance.

In today's world of fin stamping, maintaining surface cleanliness and minimising lubricant residue is crucial for ensuring the optimal performance and longevity of coils. ArrowStamp 50043-FRM-1 addresses these challenges by offering exceptional drawability, extending tool life, and evaporating cleanly, leaving minimal residue on the fin surface. Furthermore, as a non-VOC (volatile organic compound) product, it supports sustainable manufacturing practices by reducing harmful emissions.

### Key Benefits of ArrowStamp 50043-FRM-1:

- **Superior Lubricity & Tool Life:** Enhances efficiency in

fin stamping applications.

- **Evaporative Formula:** Reduces residue on fin surfaces, ensuring cleaner coils.
- **Environmentally Friendly:** Contains no ozone-depleting substances, making it a responsible choice for sustainable production.
- **Non-VOC Composition:** Helps manufacturers meet environmental regulations and workplace safety standards.
- **Exceptional Wettability:** Ensures uniform application, particularly beneficial for evaporator coils.
- **Operator-Friendly:** Safe to handle and easy to use in industrial settings.
- **Ready-to-Use Formula:** Requires no mixing, streamlining the production process.
- **Water-Free Composition:** Eliminates the risk of corrosion and unwanted interactions with other manufacturing processes.

## CORE INTEGRA LAUNCHES FUTURE-TECH ENABLED COMPLIANCE TRACKER FOR MANUFACTURING & AUTOMOTIVE SECTORS

**C**ore Integra, India's leading Labour Law Compliance and RegTech company, has launched an advanced Compliance Tracker for the manufacturing and automotive sectors within its flagship platform, Ctrl F. Designed to enhance regulatory adherence, streamline compliance management, and mitigate risks, the solution improves operational efficiency by up to 30 per cent through automation and real-time regulatory tracking.

With over 1,500 labour laws and regulatory notifications issued across India annually, organisations in the manufacturing and automotive sectors face mounting compliance challenges. Core Integra's future-tech enabled Compliance Tracker simplifies this process by offering real-time regulatory updates, intelligent risk assessment, and automated reporting — ensuring seamless compliance with evolving legal frameworks while reducing manual effort.

“As regulatory landscapes continue to evolve, businesses require smarter solutions to stay ahead. By integrating AI-powered tracking within Ctrl F, we empower companies with proactive compliance management, reducing the risk of

non-compliance and penalties while significantly enhancing efficiency,” said Sandesh Chitnis, CEO of Core Integra.

The Compliance Tracker enables real-time monitoring of regulatory changes across labour laws, taxation, and environmental policies, ensuring businesses remain effortlessly updated. With proactive risk assessment, the system identifies potential non-compliance issues and generates instant alerts along with recommended corrective actions. Customisable dashboards offer role-based insights tailored to legal, HR, and operations teams, enhancing decision-making and accountability. Additionally, the tracker seamlessly integrates with enterprise systems, allowing smooth implementation without disrupting existing workflows.

The compliance automation market is projected to grow at a CAGR of 12–15 per cent over the next five years, with increasing adoption across industries. Core Integra's latest innovation aligns with this trend, helping businesses navigate regulatory complexities more efficiently while optimising resource allocation and minimising compliance-related disruptions.



## TIMKEN INAUGURATES EXPANDED BEARING MANUFACTURING PLANT IN BHARUCH

STATE-OF-THE-ART FACILITY TO PRODUCE HIGH-DEMAND TIMKEN® SPHERICAL AND CYLINDRICAL ROLLER BEARINGS



**T**imken India Limited, a leader in engineered bearings and industrial motion products, has marked a significant milestone with the inauguration of its expanded manufacturing facility in Bharuch, Gujarat. Andreas Roellgen, Executive Vice President and President of Engineered Bearings, and Sanjay Koul, President – India and South-East Asia and Chairman – Timken India Ltd., joined other senior officials, key customers, and suppliers to commemorate the event.

“This is an exciting time for Timken,” said Roellgen. “As we continue to accelerate profitable growth in attractive

markets with innovative products, the expansion of our world-class manufacturing facility in Bharuch will enhance the value and service we deliver to customers both in the region and globally.”

Situated adjacent to Timken’s existing site, the expanded plant addresses the growing demand for the company’s spherical roller bearings (SRBs), cylindrical roller bearings (CRBs), and related products.

“This marks an important milestone in the company’s ongoing growth journey in India,” said Koul. “We are now able to manufacture

Timken CRBs and SRBs locally, which brings us closer to our customers and enhances our speed to market.”

Sustainability has been at the heart of the plant’s design. The facility incorporates rooftop solar panels, a zero liquid discharge system, rainwater harvesting, energy-efficient HVAC and lighting, electric material handling equipment, and over 900 trees planted on-site. Spanning 55,465 square metres, the plant is equipped with state-of-the-art, fully automated, and digitally connected grinding machines, as well as advanced superfinishing equipment—ensuring precision and efficiency throughout the production process.

## LAPP UNVEILS ÖLFLEX® HEAT 700 SC

**I**n some industries, extreme heat of several hundred degrees can occur. Even under these extreme conditions, a safe and reliable power supply is required and, accordingly, cables and wires that can withstand the extreme temperatures. With the new ÖLFLEX® HEAT 700 SC, LAPP is launching a cable on the market that can withstand temperatures of up to 700° Celsius.

Where “normal” temperatures prevail, “normal” cables, for example with a PVC sheath, are also sufficient. They are generally designed for maximum temperatures of around 70 to 90° Celsius and are therefore suitable for use in industrial plants or factories with more normal temperatures. However, wherever temperatures permanently exceed the 100° Celsius mark, heat-resistant cables are required. LAPP, the global market leader for connection solutions and branded products in the field of cable and connection technology, has an entire portfolio of heat-resistant cables. The company is bringing the new ÖLFLEX® HEAT 700 SC to Hannover Messe 2025 (Hall 11, Stand C15) for the first time. It can withstand a permanent temperature load of up to 700° Celsius.



### Sophisticated design for optimum protection

The cable owes its heat resistance to its structure and perfectly harmonised materials. While the strands of its predecessor were made of pure nickel, LAPP uses nickel-plated copper conductors for the new single-core cable. The insulation of the cable consists of a multiple glass fibre covering and a glass fibre braid. "We have optimised the structure over the last few years," explains Product Manager Felix Graner. "The interplay of both factors, i.e. the strands and the insulation, makes the temperature peak shift possible." Compared to a pure nickel conductor, the fine-stranded, nickel-plated copper conductor also achieves better

electrical conductivity, higher dielectric strength and allows smaller conductor cross-sections to be selected than with its predecessor. The halogen-free and flame-retardant material composition reduces the risk of fire propagation in the event of a fire.

Single-core cables are used wherever energy and temperatures are particularly high and fixed installation and wiring is required. For example, in foundries, heating modules or electric cookers as well as in smelting works and steelworks, but also in the chemical industry or in machine and equipment construction. The new product is designed for a voltage of 300/500 volts.

## ZEISS INAUGURATES INDIA'S SIXTH STATE-OF-THE-ART QUALITY EXCELLENCE CENTRE IN AHMEDABAD, GUJARAT

**Z**EISS, a leading provider of measurement solutions, has inaugurated its first Quality Excellence Centre (QEC) in Gujarat, marking the sixth such centre in India. This strategic expansion underscores ZEISS's commitment to India's rapidly growing manufacturing sector by delivering cutting-edge quality assurance solutions and technical expertise closer to key industrial hubs.

Gujarat, renowned for its robust industrial ecosystem, has emerged as a major hub for the manufacturing, automotive, electric vehicle, medical, and engineering industries. With the rise of the 'Make in India' initiative and growing demand for high-precision manufacturing, the new ZEISS Quality Excellence Centre will serve as a vital enabler for businesses striving to meet world-class quality standards.

Aveen Padmaprabha, Head - Industrial Quality Solutions at ZEISS India Pvt. Ltd., said, "The inauguration of the ZEISS Quality Excellence Centre in Ahmedabad aligns with India's vision of becoming a global manufacturing powerhouse. This will be our sixth QEC, and by establishing a dedicated centre in this region, we aim to support industries with advanced metrology solutions, application engineering expertise, and hands-on customer training — ensuring that manufacturers can enhance their quality control processes and drive greater efficiency."

"Every measurement and analysis conducted here will have a far-reaching impact across industries such as Automotive, Medical, Electronics, and Electric Vehicles (EV). We aim to pursue excellence at every level for our customers — from the smallest detail to their most ambitious goal," Padmaprabha further added.

The newly inaugurated centre is equipped with ZEISS's latest coordinate measuring machines (CMMs), optical 3D scanners, and surface measurement systems. It will



offer a comprehensive suite of services including product demonstrations, training sessions, application support, and expert consultation to help manufacturers optimise their inspection workflows and maintain the highest quality standards.

The Quality Excellence Centre is part of ZEISS Industrial Quality Solutions' broader strategy to expand its services across India, ensuring customers have easier access to state-of-the-art metrology technology and expertise. This latest addition follows the successful establishment of similar centres in other key industrial locations, reinforcing ZEISS's position as a trusted partner in industrial quality assurance.

With this move, ZEISS India's Industrial Quality Solutions division continues to empower manufacturers in Gujarat and across India with precision measurement solutions that drive innovation, reliability, and efficiency in mass production.

Technology and Services available at the new Quality Excellence Centre include: Dimensional measurement and inspection; Surface and form measurement; Material analysis; Reverse engineering and Training and support.



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