

# THE MACHINIST

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# THE ACE LIST 2016

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## Just one word. Plastics.

**D**id you know that the legendary Henry Ford wanted to build a 'plastics car'? In fact, he even started the project with a team and had the finished prototype exhibited in 1941 at the Dearborn Days festival in Michigan. However, the World War II put a big halt on US automotive manufacturing at that time and the plastics car experiment couldn't progress further. By the time the War was over, people had forgotten about it.

Today, the Henry Ford Museum gives us three reasons why the man wanted to build a 'plastics car'. First, he wanted to integrate industry with agriculture (*Ford wanted to use bioplastics!*). Secondly, he believed that his plastics cars would be safer than normal metal cars. And thirdly, he wanted this new material (plastics) to replace the metals used in normal cars.

**THE ET POLYMERS 'GLOBAL CONFERENCE ON PLASTICS IN AUTOMOTIVE' WILL DISCUSS THE USE OF PLASTICS IN VEHICLES AND WILL SYNERGISE THE WORK OF SUPPLIERS WITH THE REQUIREMENTS OF AUTOMAKERS. DETAILS ON PG 55 OR LOG ON TO [HTTP://GCPA.THEMACHINIST.IN/](http://GCPA.THEMACHINIST.IN/)**

So, plastics have been considered the future of the automotive industry since long. The good news is that the future is already here! Today, automotive OEMs as well as their suppliers are increasingly acknowledging and accepting the value that plastics offer in terms of light-weighting, design flexibility, cost competitiveness, durability and fuel efficiency.

It is in this light that 'The Economic Times Polymers' magazine (*a sister publication of The Machinist*) has conceptualised and created India's first ever 'Global Conference on Plastics in Automotive' (GCPA). GCPA will discuss use of plastics across the different components of vehicles including interiors, exteriors and under-the-hood applications. Importantly, it will synergise the work of suppliers with the requirements of automakers. So make a note of this event in your diary and join us on September 22 at The Westin in Mumbai. Details on Pg 67 or log on to <http://gcpa.themachinist.in/>

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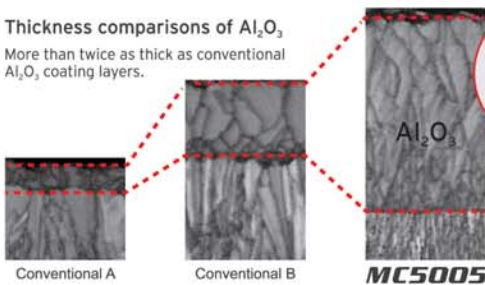


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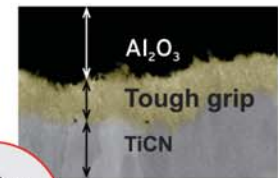
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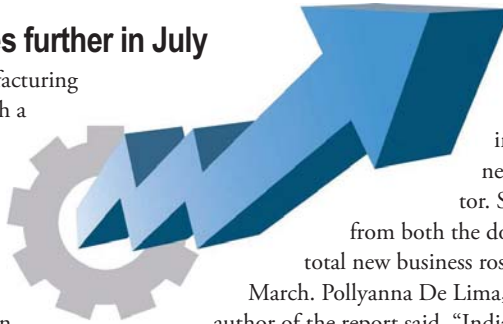
# NEWS

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## India's manufacturing improves further in July

**THE PERFORMANCE** of India's manufacturing economy continued to improve in July, with a stronger expansion in new business contributing to faster increases in output and buying levels. Although some firms added to their workforces, overall job creation was negligible. Meanwhile, input cost inflation softened and while output prices were raised at the quickest pace in three months, the rate of charge inflation was only slight. Posting a four-month high of 51.8 in July (June: 51.7), the seasonally adjusted Nikkei India Manufacturing



Purchasing Managers' Index (PMI) indicated a further improvement in overall business conditions across the sector. Supported by greater demand from both the domestic and external markets, total new business rose at the fastest pace since March. Pollyanna De Lima, Economist at Markit and author of the report said, "India's manufacturing economy is reviving at the beginning of the second half of 2016 after the slowdown seen in the April-June quarter, as growth of both production and new orders continues to strengthen in July."

## MSME Tool Room signs MoU with CRISP

**MSME TOOL ROOM** Indore has signed a Memorandum of Understanding with Center for Research & Industrial Staff Performance (CRISP) Bhopal. The objectives of the MOU is joint exploration of training business opportunities for acquiring national and international projects and assignments and to execute according to mutual strengths. Additionally, the MoU intends setting up of a CRISP extension centre at the MSME Tool Room Indore, and an MSME Tool Room extension centre at CRISP at Bhopal. Mukesh Sharma, CEO of CRISP and Pramod Joshi, General Manager of MSME Tool Room Indore exchanged the signed copies of the MOU. The prime objective of the MOU to jointly design, deliver and execute various kinds of technical skill development programs for students, job seekers, Industry personnel, prospective entrepreneurs, and any other relevant target group. The other objective is to jointly utilize and share resources like



Machinery, Software license and other training facilities of each other for conduct the trainings and for other needs with mutual consent.

## Mirage 2000 upgraded to FOC

**HAL** has now flown the first FOC upgraded Mirage-2000 aircraft on July 28, 2016 adhering to the scheduled date. "We have done it again on time. What it proves is HAL's capability of mid-life upgrade of platforms to overcome obsolescence issues, enhance the reliability and maintainability of these aircraft. The introduction of state of the art facility created for this project ensures the timely upgradation of the Mirage fleet," said T. Suvarna Raju, CMD, HAL. The Final Operational Configuration (FOC) design was implemented on an Initial Operational Configured (IOC) aircraft which was received at HAL only about eight months ago. "This significant milestone could be achieved by the dedicated efforts of the HAL's team of designers and engineers with active support from IAF, RCMA and DGAQA," added Raju.



## Tata Advanced Systems, Bell Helicopter to collaborate

**TATA ADVANCED SYSTEMS (TASL)** and Bell Helicopter, a Textron Inc company have signed an agreement to work together in support of India's aviation and defense modernisation initiatives with an emphasis on 'Make in India'. Under this agreement TASL and Bell Helicopter will join forces to develop both commercial and government (including military) rotary wing markets in India in the light utility and reconnaissance segments. The scope of this agreement is intended to include potential production and assembly capabilities, certain training and maintenance, repair and overhaul requirements, as well as research and development programs and technology sharing that will grow industrial capabilities and result in innovative 'Make in India' solutions.

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# NEWS

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## Mahindra to make parts for Airbus Helicopters

**AIRBUS HELICOPTERS** has awarded a contract to Mahindra Aerostructures to make airframe parts for the AS565 MBe Panther. These parts will be produced at the Mahindra facility in Bengaluru. They will be shipped directly to the Airbus Helicopter production line in Marignane, France where they will be integrated with the rest of the airframe assembly and will form a critical part of the Panthers sold worldwide. The contract positions Mahindra Aerostructures as the first Indian company to receive a direct manufacturing contract from Airbus Helicopters as a Tier 1 supplier. Mahindra Aerostructures will gradually emerge as the global single source supplier to Airbus Helicopters for these parts. This work package is the first amongst a series of work packages which would embed Mahindra Group firmly in the Airbus Helicopters' global supply chain and bind the two



companies in a long-term 'Make in India' partnership. "We are playing an active role in the development of a helicopter-focused Indian industrial eco-system, and are embedding Indian suppliers into our global supply chain," said Fabrice Cagnat, Director - Make in India, Airbus Helicopters.

## Economy to turnaround positively by December

**INDIA INC** expects better days ahead six months from now in terms of growth in sales, profitability in sync with an uptick in the big macro picture, though fresh investment by the private sector is still far off thanks to continuous under-utilisation of capacities, the latest round of ASSOCHAM Bizcon Survey has pointed out. As many as 65.5 per cent of the companies covered under the June series of the prestigious ASSOCHAM Bizcon said they expect the macroeconomic parameters to look up by December 2016. Along with it, an equal percentage of the firms across different sectors said the performance at the industry level would also pick up with a consequence that



there would be better sales realization and improvement in the profitability. "Net-net, the latest Bizcon Survey tells us how things would look up in the next six months," said D.S. Rawat, Secretary General, ASSOCHAM.

## LeEco acquires VIZIO for US\$2 Billion

**LeEco AND VIZIO**, Inc. have announced a definitive agreement under which LeEco would acquire VIZIO, Inc. for US\$2 billion.



The VIZIO hardware and software businesses will be owned and operated as a wholly owned subsidiary of LeEco, while the VIZIO data business, Inscape, will spin out and operate as a separate, privately owned company. LeEco provides breakthrough experiences through an open, integrated ecosystem enabled by its Internet and cloud platform. LeEco develops intelligent hardware that serves as the interface to connect individuals, interact with them and to enrich their lives through premium content and applications. "Acquiring VIZIO is an important step in our globalisation strategy and building our North American presence," said Yueting Jia, Founder, Chairman and CEO, LeEco.

## Railways to 'Green' its industrial units

**A MEMORANDUM** of Understanding (MoU) between Ministry of Railways and Confederation of Indian Industry (CII) to evaluate the Green Initiatives and rate the performance of Industrial Units of Indian Railways which are pursuing environmentally sustainable practices, was signed. Speaking on the occasion, Railways Minister Suresh Prabhu pointed out that notwithstanding the fact that Railways is an environment friendly transport, multi pronged green initiatives are being taken by Indian Railways. This includes

the share of renewables in energy consumed, better Water Management including Water Audit, Solid Waste Management including Waste to Energy plants etc. The association with CII will enable Railways to weigh their green initiatives against the global standards. The partnership with CII has come in the right time when Railways are in the change mode for a sustainable growth. The MOU has been signed for GBC-CII to extend technical co-operation for various Green initiatives in 3 Railway's Industrial establishments.



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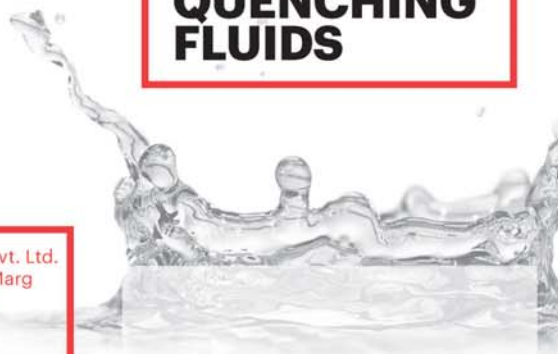


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• MARK YOUR DIARY •

A list of key events happening between September 2016 to June 2017, both nationally and internationally.

<p><b>IMTS 2016</b> September 12-17, 2016, Chicago (US) <a href="http://www.imts.com">www.imts.com</a></p>	<p><b>InnoTrans 2016</b> September 20-23, 2016, Berlin, (Germany) <a href="http://www.innotrans.de/en">www.innotrans.de/en</a></p>	<p><b>MINExpo International</b> September 26-28, 2016, Las Vegas (US) <a href="http://www.minexpo.com">www.minexpo.com</a></p>	<p><b>Pune Machine Tool Expo 2016</b> September 29-October 2, 2016 Auto Cluster Exhibition Center, Pune <a href="http://www.mtx.co.in">www.mtx.co.in</a></p>
<p><b>India International Textile Machinery Exhibition 2016</b> December 3-8, 2016, Mumbai <a href="http://itme2016.india-itme.com/">http://itme2016.india-itme.com/</a></p>	<p><b>BAUMA CONEXPO India 2016</b> December 12-15, 2016, New Delhi <a href="http://www.bcindia.com">www.bcindia.com</a></p>	<p><b>IMTEX 2017</b> January 26-February 1, 2017, Bangalore <a href="http://www.imtex.in">www.imtex.in</a></p>	<p><b>CONEXPO-CON/AGG</b> March 7-11, 2017 Las Vegas, NV (US) <a href="http://www.conexpoconagg.com">www.conexpoconagg.com</a></p>
<p><b>Automotive Engineering Show</b> March 21-23, 2017 New Delhi <a href="http://www.aes-show.com">www.aes-show.com</a></p>	<p><b>ACMA Automechanika New Delhi 2017</b> March 21-24, 2017 New Delhi <a href="http://acma-automechanika-newdelhi.in.messefrankfurt.com/newdelhi/en/exhibitors/welcome.html">http://acma-automechanika-newdelhi.in.messefrankfurt.com/newdelhi/en/exhibitors/welcome.html</a></p>	<p><b>ProMat 2017</b> April 3-6, 2017 Chicago, (US) <a href="http://www.promatshow.com">www.promatshow.com</a></p>	<p><b>INTEC 2017</b> June 1-5, 2017 Codissia Trade Fair Complex, Coimbatore <a href="http://www.intec.codissia.com">www.intec.codissia.com</a></p>





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### **BABUL SUPRIYO IS MOS FOR HEAVY INDUSTRY & PUBLIC ENTERPRISES**

Babul Supriyo recently took charge as Minister of State for Heavy Industry & Public Enterprises in New Delhi. He first called on the senior Minister Anant G. Geete and sought his guidance. Geete expressed the hope that Supriyo being a young, energetic and enthusiastic person will strengthen his hands in achieving the developmental targets envisioned by the Prime Minister. Speaking to the media persons after assuming office, Supriyo said that he will strive to live up to the 'performance doctrine' of Prime Minister Narendra Modi. The Minister observed that he expects new horizons and challenges in the M/o Heavy Industry & Public Enterprises in the direction of making India a manufacturing hub.



### **GEORG GRAF IS FREUDENBERG'S NEW REGIONAL REPRESENTATIVE IN INDIA**

The global technology group, Freudenberg, has appointed Georg Graf as their new Regional Representative in India, effective July 1, 2016. Graf has been with the Freudenberg Group for 24 years and has held many prominent roles in the company including Chief Financial Officer of the Freudenberg Chemical Specialities companies in India and Head of the Freudenberg Regional Corporate Center (FRCC), Bangalore – a position he will retain. Graf's focus in his new role will be to realize the company's vision of best serving its customers and society in developing leading-edge technologies, products, solutions and services that support global sustainability. Graf knows India very well. He has been living in Bangalore for eight years and heads the FRCC since 2013.

### **DEVAL PARIKH IS THE NEW CEO AND DIRECTOR OF BEETEL**

Brightstar Corp. has appointed Deval Parikh as the CEO and Director of Beetel Teletech Limited, a Brightstar Company, effective immediately. Parikh will lead all Beetel business lines to include the growth of handset and accessories services, sales and distribution presence, as well as the fixed line telephone, enterprise solutions and IT peripheral functions. "With 4G about to take off in India, the smartphone and accessories segments are about to see one of their most rapid growth phases, and we're now investing in the Beetel leadership team to help drive the business to its next level," said Jaymin B. Patel, Brightstar's President and CEO. "I am quite excited to join Brightstar India and help usher in the mobile data revolution by having a wide range of devices and telecom equipment for the Indian consumer and businesses," Deval Parikh said.



### **DALMIA BHARAT HIRES GLOBAL EXPERT FOR REFRACTORIES BIZ**

Dalmia Bharat Group has announced the appointment of Ingo Gruber as Executive Director, Manufacturing and Technology for its Refractories business. In this role, he will be responsible for four manufacturing plants in India, one in China and the India Technology Center. Ingo joins Dalmia Bharat after spending 25 years in international refractory markets and has rich expertise in domains of manufacturing, technology and process improvement. He also brings extensive experience in manufacturing and technology integration strategies during mergers and acquisitions. Prior to this, Ingo held various leadership roles at RHI and its group companies across Europe.

### **MERCEDES-BENZ INDIA APPOINTS MICHAEL JOPP AS HEAD OF SALES & MARKETING**

Mercedes-Benz India has appointed Michael Jopp as the Vice-President of Sales and Marketing beginning August 1, 2016. The new appointment comes into effect as Boris Fitz, Vice-President, Sales and Network Development, completes his successful tenure in India and will be taking over a larger role at Mercedes-Benz Turkey. Commenting on the new appointment, Roland Folger, Managing Director and CEO, Mercedes-Benz India said, "We are confident that with his rich experience in the domain of sales and marketing in Mercedes-Benz Cars, Michael will continue the strong growth momentum of the Three Pointed Star in this highly competitive and dynamic market."



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# G S T

## For 'Nation's Good and Service!

As a path-breaking reform, GST will surely encourage Make in India, boost exports and thus enhance employment while providing enhanced revenue to the nation.

By Niranjan Mudholkar

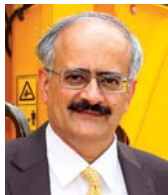
**A**ugust 3, 2016 is a truly historic day in India's tax reform journey. It was the day when the 'Goods and Services Tax' (GST) Bill was passed in the Rajya Sabha. This path-breaking reform will surely encourage 'Make in India', boost exports and thus enhance employment while providing enhanced revenue to the nation. It is also a great example of all states coming together for the 'National Good' and for Nation's Service.

In fact, PM Modi has called it 'the best example of cooperative federalism'. Modi thanked the leaders and members of all the parties on the occasion of passage of the GST Bill in the Rajya Sabha. "Our MPs must be congratulated for their path breaking decision to give India an indirect tax system for the 21st century. We continue to work with all parties and states to introduce a system that benefits all Indians and promotes a vibrant and unified national market."

With the economic system becoming more competitive and the supply chain becoming faster and more efficient,

"It will give a massive push to Make in India especially MSMEs. The ease and cost of doing business will receive a fillip and the width of the tax base will be enhanced."

Vipin Sondhi, MD and CEO, JCB India Limited



"We are sure that this will improve our efficiency, reduce unnecessary administrative efforts, and could also increase profitability."

Anand Sundaresan, VC & MD, Schwing Stetter India Ltd.



the manufacturing industry is likely to be one of the biggest beneficiaries of the GST. Considering the other technical formalities and the preparation of the industries and the states in terms of compatibility, we can expect the GST to be implemented latest by April 1, 2017. When that happens, it will surely bring down business transaction cost and is likely to boost the national GDP by at least 1.5 percent points.

### Benefits for business and industry

**Easy compliance:** A robust and comprehensive IT system would be the foundation of the GST regime in India. Therefore, all tax payer services such as registrations, returns, payments, etc. would be available to the taxpayers online, which would make compliance easy and transparent.

**Uniformity of tax rates and structures:** GST will ensure that indirect tax rates and structures are common across the country, thereby increasing certainty and ease of doing business. In other words, GST would make doing business in the country tax neutral, irrespective of the choice of place of doing business.

**Removal of cascading:** A system of seamless tax-credits throughout the value-chain, and across boundaries of States, would ensure that there is minimal cascading of taxes. This would reduce hidden costs of doing business. Improved competitiveness: Reduction in transaction costs of doing business would eventually lead to an improved competitiveness for the trade and industry.

**Gain to manufacturers and exporters:** The subsuming of major Central and State taxes in GST, complete and comprehensive set-off of input goods and services and phasing out of Central Sales Tax (CST) would reduce the cost of locally manufactured goods and services. This will increase the competitiveness of Indian goods and services in the international market and give boost to Indian exports. The uniformity in tax rates and procedures across the country will also go a long way in reducing the compliance cost.



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**"With Goods and Services Tax (GST) - a single tax head, India will now become 'one market' and the ease of doing business will improve immensely."**

**Samay Kohli, CEO & Co- Founder, GreyOrange**

As expected, the industry has whole-heartedly welcomed the move. Dr Naushad Forbes, President, CII, calls it 'India's most significant tax reform in decades'. "GST, when implemented, is expected to usher in a harmonised national market of goods and services and shall lead to a simplified, assessee-friendly tax administration system," he says. Vipin Sondhi, MD and CEO, JCB India Ltd., describes it as 'a landmark reform and a critical milestone towards Free Trade within India'. "It will also give a massive push to Make in India especially MSMEs. The ease and cost of doing business will receive a fillip and the width of the tax base will be enhanced," he says.

GST will actually be one indirect tax for the whole nation, which will make India one unified common market. It is a single tax on the supply of goods and services, right from the manufacturer to the consumer. Credits of input taxes paid at each stage will be available in the subsequent stage of value addition, which makes GST essentially a tax only on value addition at each stage. The final consumer will thus bear only the GST charged by the last dealer in the supply chain, with set-off benefits at all the previous stages. As Prakash Chhabria, Executive Chairman, Finolex Industries Limited, says, GST will simplify the tax structure, reduce compliance cost and improve efficiencies in supply chain. Anand Sundaresan, VC & MD, Schwing Stetter India Ltd. believes it will improve the industry's efficiency, reduce unnecessary administrative efforts, and could also increase profitability.

Samay Kohli, CEO & Co- Founder, GreyOrange, points out that the maximum impact of a GST rollout will be on the supply chain, as this will enable companies to finally optimise their supply chain networks based on scientific principals and logic, instead of disparate tax structures across the country which has been the case so far. Agrees Prakash Tulsiani, ED &

### Benefits for the consumer

**Single and transparent tax proportionate to the value of goods and services:** Due to multiple indirect taxes being levied by the Centre and State, with incomplete or no input tax credits available at progressive stages of value addition, the cost of most goods and services in the country today are laden with many hidden taxes. Under GST, there would be only one tax from the manufacturer to the consumer, leading to transparency of taxes paid to the final consumer.

**Relief in overall tax burden:** Because of efficiency gains and prevention of leakages, the overall tax burden on most commodities will come down, which will benefit consumers.

### Benefits for Central and State Governments

**Simple and easy to administer:** Multiple indirect taxes at the Central and State levels are being replaced by GST. Backed with a robust end-to-end IT system, GST would be simpler and easier to administer than all other indirect taxes of the Centre and State levied so far.

**Better controls on leakage:** GST will result in better tax compliance due to a robust IT infrastructure. Due to the seamless transfer of input tax credit from one stage to another in the chain of value addition, there is an in-built mechanism in the design of GST that would incentivize tax compliance by traders.

**Higher revenue efficiency:** GST is expected to decrease the cost of collection of tax revenues of the Government, and will therefore, lead to higher revenue efficiency.

**"It is one of the most significant reforms introduced in the history of the Indian fiscal evolution. It is definitely a progressive and pragmatic approach to taxation that will improve ease of doing business in the country."**




**Ajay Durrani, Country President and MD, Covestro India**

**"It will lower the inventories and working capital; reduce documentation, improve asset utilization, ensure higher turnaround time and efficiencies."**



**Prakash Tulsiani, ED & COO, Allcargo Logistics**

COO, Allcargo Logistics, who believes GST will revolutionise logistics with unified and simplified structure versus multiple taxes at various levels. "It will lower the inventories and working capital; reduce documentation, improve asset utilisation, ensure higher turnaround time and efficiencies. We expect the industry to move away from pure vanilla warehousing needs to contract logistics," he says.

While terming the GST as one of the most significant reforms introduced in the history of the Indian fiscal evolution, Ajay Durrani, Country President and MD, Covestro India, also points out that there is still no consensus on the final GST rate; which is key to determine the impact. "Even though the government has assured that the GST Bill will be implemented before the next FY, considering that there are still interrelated procedures that need to be completed successfully together with addressing open issues, the timeline looks quite ambitious. The challenge before Indian Inc. is how to get ready to implement GST, before April 1, 2017," he says. 



17<sup>th</sup> Edition

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2017

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# Smart Connection

Bosch India is implementing new age technology to make its facility 'smart'!

By Swati Deshpande

It was in year 2011 when the term 'Industry 4.0' was born. Its implementation was considered as a challenge and this concept coming to India was considered as all the more difficult due to technological gap. However, in just five years since the concept was launched, Bosch's Indian plants are successfully blending it with 'Make in India' initiative.

The plants initiated the process of implementation of Industry 4.0 in 2015. "Bosch India has implemented Industry 4.0 and has reaped substantial improvement in productivity and quality. By using state-of-the-art technology, we are able to understand processes better, react in real-time and respond much quicker to customer requirements," said Dr. Andreas Wolf, Executive Vice-President, Manufacturing and Quality, Bosch India. Industry 4.0 or, in other words, connected industry has enhanced and brought in a revolutionary change in the way work is done in a manufacturing set-up.

The company has been implementing these new age technologies taking the labour into consideration. The fusion of the real and virtual worlds of production has ensured that man, machine and material are interconnected.

"Bosch India has implemented Industry 4.0 and has reaped substantial improvement in productivity and quality. By using state-of-the-art technology, we are able to understand processes better, react in real-time and respond much quicker to customer requirements."

Machines will be conversing with machines, people will be able to talk to machines and vice versa. It has brought about a highly individualised and resource optimised mass production, taking manufacturing closer to consumers. "Everyone and everything will be connected! Data and knowhow will be shared in real time. Connectivity is not only valid for manufacturing, it will also make way into all other business processes. Internet of Things and Service will help us become a more agile company," further stated Dr. Wolf.

## What are the advantages?

Today, the company's associates on the shop floor receive data in real time which allows them to take timely decisions. "With the largest R&D presence outside of Germany, Bosch India is well prepared for the digital transformation," stated Dr. Wolf. The Group

in India is pooling in the resources of all its entities, such as Robert Bosch Engineering and Business Solutions, the Group's engineering and services company in India, Bosch Rexroth India Pvt. Ltd. and the special machinery business unit to deliver on the needs of connected industry.

Bosch's Chakan plant is a member of the International



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Industry 4.0 complements the vision of 'Make in India,' which aims to increase the domestic value addition and technological depth in manufacturing. India, in comparison with industrialised countries, has a competitive advantage and Industry 4.0 offers huge growth prospects. The approach will continue to be one of the key business enablers.

Production Network (IPN) for the Anti-lock Braking System (ABS) and the Electronic Stability Program (ESP). Each single machine for the ABS line is connected, not only with each other, but also with other ABS lines in the IPN. These lines are managed by a Manufacturing Execution Systems (MES). The MES has an Andon system, some benefits of this system includes quicker reaction to deviation in the manufacturing process, continuous improvement and finally, online benchmarking with the rest of the global manufacturing plants. Through this, Bosch's Chakan plant has achieved a quality level close to zero defects. It has also recorded very high customer satisfaction apart from seeing significant increase in productivity. In the near future, the plant will look to implement Industry 4.0 solutions for preventive maintenance, energy management and even for the training of shop floor associates along with the possibility of linking factory systems to business applications.

In fact the process has begun. Through in-house developed solutions, the plant can identify and analyse changes in the current and voltage. It is also easy to measure energy consumption not only at plant level but also at the machine level. One can easily determine which machine or production line or plant is consuming or wasting energy in which process and accordingly take a step to reduce energy consumption. As it is the 'connected industrial world', all Bosch's 11 plants producing ESPs and ABS are monitored on the same parameters and it works as a knowledge sharing platform.

### Way ahead

"Our target is to develop and implement these solutions in all of our different entities. Bosch India's strategy is three pronged-first, we want to learn and transfer know how from our European counterparts, second we will develop customised solutions for India. Finally, Bosch India aims to lead the Industry 4.0 development globally and compete with the best in class," he further commented.

Speaking on the steps to be taken in the future, Dr Wolf added, "Irrespective of whether we use Industry 4.0 for business/production processes or for connected solutions for our products and services, human efforts will never be replaced. Associates will continue to be the center of all Industry 4.0 activities.

Industry 4.0 is expected to create new jobs for the Indian




Dr. Andreas Wolf, executive vice-president, Manufacturing and Quality, Bosch India

"We will need more associates who can manage, control and improve processes. Industry 4.0 will call for improved understanding of processes, better usage of IT-technology and flexibility. The biggest opportunity for Bosch India is to build an Industry 4.0 capable resource pool."

industry, calling for the need of different Skillsets. "We will need more associates who can manage, control and improve processes. Industry 4.0 will call for improved understanding of processes, better usage of IT-technology and flexibility. The biggest opportunity for Bosch India is to build an Industry 4.0 capable resource pool," said Dr. Wolf.

Industry 4.0 complements the vision of 'Make in India,' which aims to increase the domestic value addition and technological depth in manufacturing. India, in comparison with industrialised countries, has a competitive advantage and Industry 4.0 offers huge growth prospects. The approach will continue to be one of the key business enablers.

The company has charted a perfect plan for implementation of smart technology. By this year end, the Indian counter part of Bosch plans to complete adaption of technology from the company's IPN. The vision of this whole plan is to compete with the best in class and be a benchmark in India for connected industry. 



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# Addressing one-piece demand!

Mercedes-Benz Trucks is using 3D printing to produce truck spare parts economically and with fast production even with small quantities.

**G**enuine spare parts for Mercedes-Benz trucks which are ordered and delivered even after many years; in the Mercedes-Benz Trucks after-sales service this has already been reality for a long time now. As the next step, Mercedes-Benz Trucks is using the latest 3D printing processes for plastic spare parts as the standard production method in the Customer Services & Parts sector. As of September already, 30 genuine spare parts can be ordered and supplied at the press of a button from the 3D printer, quickly, economically, in any quantity and always in consistent genuine manufacturer's quality ('one-piece demand').

With the use of 3D printing technology as an innovative state-of-the-art production process in after-sales, Mercedes-Benz is taking on the pioneering role and technological leadership among the global truck producers. "In keeping with our brand promise 'Trucks you can trust', we set the same benchmarks for reliability, functionality, durability and economy for spare parts from 3D production as for parts from conventional production," says Andreas Deuschle, Head of Marketing & Operations in the Customer Services & Parts Mercedes-Benz Trucks Division. "3D offers many more possibilities; this is why we shall be rapidly extending the production of 3D printed parts."

## Experience and high tech ensure highest 3D quality

Today at Daimler more than 1,00,000 printed prototype parts are manufactured for the individual company divisions every year. The available spare parts consist of high-quality plastic components. Covers, spacers, spring caps, air and cable ducts, clamps, mountings and control elements are just a few examples of economical spare part production in top quality made possible by using the 3D printing process.

The 'printed' spare parts are created with state-of-the-art 3D printers based on the Selective Laser Sintering (SLS) printing process. For the high quality standards of Mercedes-Benz Trucks the process parameters have been optimised and determined by the Daimler research and development divisions. Every 3D spare part can be ordered by the customer using the special spare part number under which it is recorded in the order code lists and the spare parts catalogues at Mercedes-Benz Trucks. Thus, even after several decades, rapid supply to the customer is ensured via the Mercedes-Benz Logistic Supply




Mercedes-Benz Trucks already successfully produces 30 spare parts with the latest 3D SLS printing processes.

Covers, spacers, spring caps, air and cable ducts, clamps, mountings and control elements are just a few examples of economical spare part production in top quality made possible by using the 3D printing process.

Chain through all the sales stages – all over the world.

## Advantages through secure supply

The environmentally friendly and resource-conserving 3D printing process is playing a pioneering role in the after-sales. The challenge in the spare parts business lies in securing supply even for model series which are no longer produced. This means that the range also includes spare parts for which there is only a low demand in small quantities every year. Producing them is thus increasingly uneconomical for suppliers – production facilities and tools often have to be retained and maintained for years. With the 3D printing process these challenges are a thing of the past. The printing itself can take place within a very short time following receipt of the design definition and order, considerably speeding up the production and supply of spare parts. As spare and retrofit parts can still easily be 'reprinted' even after a long time using the data stored and supplied without any complex stocking, no warehousing is required either. 

Source: Mercedes-Benz



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# Co-bots – New shopfloor buddies!

Ford shopfloor workers in Cologne, Germany, are using collaborative robots (also known as co-bots) to develop a new, closely integrated work approach on the assembly line.



New collaborative robots, also known as co-bots, are first being used to help workers fit shock absorbers to Fiesta cars, a task that requires pinpoint accuracy, strength, and a high level of dexterity. Employees work hand-in-hand with the robots to ensure a perfect fit every time. *Courtesy: Ford*

“Robots are helping make tasks easier, safer and quicker, complementing our employees with abilities that open up unlimited worlds of production and design for new Ford models.”

**Karl Anton**, Director, Vehicle Operations, Ford of Europe.

**M**ore than 100 years after the first cars rolled off Henry Ford’s pioneering assembly line, Ford Motor Company is breaking new ground in the way workers and robots are collaborating to manufacture vehicles.

New collaborative robots, also known as co-bots, are first being used to help workers fit shock absorbers to Fiesta cars, a task that requires pinpoint accuracy, strength, and a high level of dexterity. Employees work hand-in-hand with the robots to ensure a perfect fit every time.

The trial at Ford’s assembly plant in Cologne, Germany, is part of the company’s investigations into Industry 4.0, a term coined to describe a fourth industrial revolution, embracing automation, data exchange and manufacturing technologies. Ford sought feedback from more than 1,000 production line workers to identify tasks for which the new robots would best be suited.

“Robots are helping make tasks easier, safer and quicker, complementing our employees with abilities that open up unlimited worlds of production and design for new Ford models,” said Karl Anton, Director, Vehicle Operations, Ford of Europe.


Measuring a little more than three feet high, the new robots work hand-in-hand with the line workers at two work stations. Rather than manipulate a heavy shock absorber and

installation tool, workers can now use the robot to lift and automatically position the shock absorber into the wheel arch, before pushing a button to complete installation.

“Working overhead with heavy air-powered tools is a tough job that requires strength, stamina, and accuracy. The robot is a real help,” said Ngali Bongongo, a production worker at Ford’s Cologne plant.

Equipped with high-tech sensors, the co-bots stop immediately if they detect an arm or even a finger in their path, ensuring worker safety. Similar technology also is used in the pharmaceutical and electronics industries. Developed over two years, the robot program was carried out in close partnership with German robot manufacturer, KUKA Roboter GmbH.

Ford is now reviewing further use of collaborative robots that can be programmed to perform tasks ranging from shaking ‘hands’ to making a coffee.

“We are proud to show the capabilities of our new generation of sensitive robots that are supporting and collaborating with Ford workers by carrying out ergonomically difficult and technically challenging tasks,” said Klaus Link, key account manager, Ford, KUKA Roboter GmbH. “As part of our close partnership with Ford and based on the feedback from employees, we are looking forward to further challenges.” 

*Source: Ford*

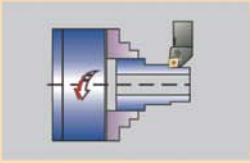
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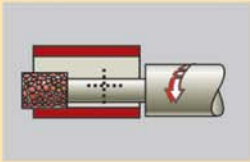


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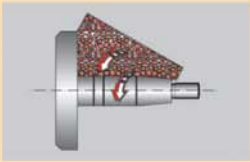


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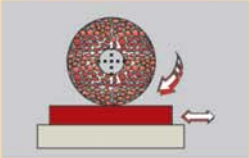


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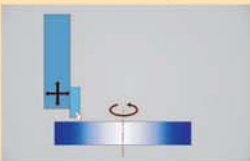


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# Promising growth!

The year 2015-16 has been encouraging for India's machine tool industry and if the momentum is sustained, in the next five years the machine tool industry is likely to reach Rs.20,000 crore, says V Anbu, Director General, IMTMA

By Niranjan Mudholkar



"The series of reforms initiated by the government to give a fillip to the economy and manufacturing, through initiatives such as Make in India and release of the Capital Goods Policy have ushered in positive sentiments."

**Q How's been the year 2015-16 for the Indian machine tools industry in terms of production, consumption as well as exports and imports compared to 2014-15?**

The year 2015-16 has been encouraging for India's machine tool industry. Production and consumption have shown promising growth. Production reached about Rs.4,750 crore in 2015-16 as against Rs.4,230 crore in 2014-15. Consumption reached about Rs.10,300 crore in 2015-16 as against about Rs.9200 crore in 2014-15.

**Q IMTMA had envisaged to grow the industry to Rs. 23,000 crore by 2020. How would you review this vision in the context of the 2015-16 numbers?**

The series of reforms initiated by the government to give a fillip to the economy and manufacturing, through initiatives such as Make in India and release of the Capital Goods Policy have ushered in positive sentiments. With these reforms, the industry will be able to improvise and add new categories in machine tool building. This will result in capacity enhancements and attract fresh investments. The momentum if sustained will rebuild confidence in the economy. In the next five years we expect that the machine tool industry is likely to reach Rs. 20,000 crore.

**Q How is the Indian machine tool industry changing with regards to technology upgradation? Do you see the dependence on imports getting reduced in the next 2-3 years?**

India's domestic market share has been increasing gradually. It is also heartening to see that exports from India have increased by around five percent as against 2014-15.

Various new initiatives by the government as well as the industry such as: (a) Creation of an Advanced Centre of Excellence for R&D and Technology Development with IIT, Madras to strengthen the design and technology capability of the machine tool sector; (b) Creation of a fund under Technology Acquisition Fund Programme to acquire and assimilate specific technologies for achieving global standards; (c) Establishment of a machine tool park for making cost-effective, hi-tech machine tools indigenously; (d) Announcement of Capital Goods Policy that will lead to development of new and more advanced products for better accuracy; and (e) 100 percent FDI in defence, civil aviation, pharmaceuticals, and many other sectors which will aid in bringing cutting edge technology and create room for foreign capital in capital intensive sectors, are expected to bring in further improvements. With this we believe that dependence on imports could reduce in future.

**Q Which industry sectors are fuelling the growth of the machine tools industry in India at present? Will this trend continue in the near future?**

Primary sectors fuelling the growth of machine tools industry are automobile and auto components, die & mould, defence, railways, power and gas, electronics, etc. The trend no doubt will continue but simultaneously we are seeing sparks being ignited in sectors such as medical engineering, construction equipment, aerospace, etc.



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**Q Many growing SME manufacturing companies are now considering to invest in the CNC technology. What are the driving factors for the same and how is the machine tool industry reaching out to these customers?**

Bringing out high quality and high precision technologies is the need of the hour. Machine tool user industry today demands these. Eliminating these weak links and enabling the supply chain with strong manufacturing technologies will strengthen the manufacturing industry. All these are possible when SMEs adopt more and more CNC in their manufacturing lines. To put these technologies in effective use we would need to create a great pool of skilled workforce. IMTMA is enabling all these through its various initiatives.

**Q How's the Pune Machine Tool Expo 2016 shaping? What kind of response are you expecting?**

The Pune Machine Tool Expo 2016 is shaping up very well. We have over 100 exhibitors displaying the best manufacturing solutions. You will get to see the latest technologies to suit various manufacturing industries such as automobiles, auto components, aerospace, defence, railways, general engineering and many more. The Pune Machine Tool Expo is expected to connect the global manufacturing industry to India's Western region, particularly the Tier II and Tier III cities of Western region.

**Q In the last ten years or so, the number of machine tool expos happening across the country (organised by different organisers) has gone up. Don't you think the industry has reached a saturation point in terms of the number of expos, and that the visitors have started getting a little confused or even bored? What's the way ahead?**

Although the number of machine tool expos has gone up, industry and customers recognise the brand by its quality and strength. This is evident through our exhibitions which are or-


"The Pune Machine Tool Expo 2016 is shaping up very well. We have over 100 exhibitors displaying the best manufacturing solutions. You will get to see the latest technologies to suit various manufacturing industries."

ganised in different parts of the country. India has a long way to go in terms of making available advanced technology for their manufacturing needs and exhibitions provide the best platforms for buyers to see the technology 'live' and decide accordingly.

**Q Today, the biggest item in the industry's wish list for the government has been the GST Bill and it has been cleared. What are the other expectations from the government?**

Rolling out the Goods and Services Tax bill (GST) was need of the hour. GST has the potential to integrate the whole of India economically, streamline the process of taxation on manufacture, sale and consumption of goods and services throughout India and ease the norms for doing business.

After sustained advocacy with the government, the machine tool industry was able to obtain reduction of customs duty from 7.5 percent to 2.5 percent on critical components which are not manufactured in India for CNC Turning centres and Machining centres. The industry wants this to be extended to all categories of machine tools for which IMTMA is working with the Tariff Commission, Govt. of India.

Further, we expect the government to help the industry in raising domestic consumption by floating tenders which can increase the share of buyers of Indian products. 

"Production reached about Rs.4,750 crore in 2015-16 as against Rs.4,230 crore in 2014-15. Consumption reached about Rs.10,300 crore in 2015-16 as against about Rs.9200 crore in 2014-15."



# Charting a career path

GMLP offers a platform for high-performing, ambitious and passionate manufacturing professionals, who enjoy working in a challenging but supportive environment.

**C**areer growth is not a mere chance but conscious and systematic effort. In order to reach at the desired destination, one has to continuously polish his/her skills and adapt new technologies. However, as one climbs the ladder, one of the most important skills that one has to enhance is leadership skill.

Realising this, Aditya Birla Group offers Global Manufacturing Leadership Program (GMLP) since 2011 for manufacturing professionals. It is a premium and exclusive leadership program, which accelerates the development of middle and senior level talent to become leaders. The program identifies the capabilities of the professionals and selects candidates who can take on challenging roles in production/operations, maintenance, planning, projects, electrical & instrumentation and power plant functions at the company's plants. The program aims at moulding manufacturing leaders of tomorrow through exposure to world-class technologies and processes, state-of-the-art research and development facilities and continuous learning and development opportunities.

In other words, it offers a platform for high-performing, ambitious and passionate manufacturing professionals, who enjoy working in a challenging but supportive environment.

## How it works?

The GMLP members are handpicked and groomed to join the league of leaders at the Aditya Birla Group. Selected candidates can enhance their leadership and functional skills, get exposure to key Group processes and are provided with opportunities to work in cross-functional areas besides their current area of expertise. They gain immense expertise working in the Group's key sectors such as metals, cement, pulp and fibre, chemicals, carbon black, mining, textiles, insulators and fertilizers in manufacturing locations across the world.


GMLP Stars: Abhishek Sharma, GM, Excel Fibre Division – Projects, Grasim, Nagda; Ajay Thadathil, GM, Birla Copper, Dahej; Amit Chand, GM, Grasim Industries Ltd; An-

Our GMLP—Global Manufacturing Leadership Program, aimed at reinforcing our technical and manufacturing strength is paying a rich dividend. The Aditya Birla Group is being increasingly viewed as the most aspirational place for manufacturing professionals in India.

**Kumar Mangalam Birla**, Chairman, Aditya Birla Group

*(Source: Chairman's letter to shareholders, Hindalco – Annual Report 2014-15)*

jani K. Pandey, Dy GM, Birla White, Kharia; Anurag Tiwari, VP, Ultratech Cement Ltd; Ashish Garg, Sr VP, Birla Jingwei Fibre Company Ltd; Huzefa Hussain, VP, Ultratech Cement Ltd; M. Senthil, GM, Vikram Cement Works, Neemuch; Manish Nair, GM, Gujarat Cement Works; Pranjal Pathak, GM, PT Indo Bharat Rayon; R. Ramkumar, Asst. VP, Birla Cellulosic, Kharach; Rajesh Sankar, Unit Head, Hi Tech Carbon, Gummidipoondi; Ravi Gupta, VP– Linen Fabric & GBTL, Jayashree Textiles, Bhiwani; Senthil Nath, Asst. VP, Hindalco Industries Ltd, Renukoot; Shesh Gupta, VP, Birla Cellulosic, Kharach; Soumojit Dawn; GM, Hindalco Industries Ltd; Subrat Padhi, Dy GM, Hindalco Industries, Ltd., Renukoot; Varun Srivastava, GM, Rajmahal Coal Mining Ltd; Vijay Subramanian, Asst. VP, Aditya Birla Insulators, Halol; Vikas Mishra, Dy GM, Andhra Pradesh Cement Works, Tadipatri; Vivek Dubey, VP, Hindalco Industries Ltd and Vrajesh Parikh, VP, Grasim Chemicals.

Aditya Birla Group offers a choice of diverse roles across functions, business sectors and geographies, encouraging its people to take charge of their careers by leveraging these opportunities, tools and processes. According to Ratan Shah, Group Talent Mentor-Manufacturing Professionals, Aditya Birla Group, “We are not looking at people who will maintain status quo but we are looking at people who will challenge the status quo with new ideas. We intend to take people from diverse industries and groom them into leadership positions.” 

# The



Dharmesh Arora



Nishant Arya



Tarang Jain



SK Behera

# A

Leadership is playing a huge role in the Indian auto components industry's rise to the next level. Therefore, we at The Machinist thought it pertinent to understand the vision and aspirations of a set of top management representatives from this dynamic industry. While this list is far from comprehensive, it certainly reflects a very interesting and insightful cross section of this sector. We started the ACE List last year featuring some of the leading entrepreneurs from this industry. This year we have extended the scope of the list beyond entrepreneurs (people who started their own organisations) to include other top management guys. This is in recognition of the fact that while some of them may not have established the company, their role is equally entrepreneurial in growing it.

# ACE

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## Dharmesh Arora

President Automotive, President & CEO, Schaeffler India



“To maintain our competitive position in the long term, it is imperative to consolidate and align our efforts to the evolving market and customers. We have taken the first step towards achieving this goal by restructuring Indian operations to mirror our global structure.”

By Swati Deshpande

**D**harmesh Arora joined Schaeffler India in 2012 and is now heading all businesses of the group in the country including LuK India, INA Bearings India Pvt Ltd, FAG Bearings India Ltd and Scaeffler Afteramrket. Speaking about the company’s business, he said, “Our Indian operations contribute approximately 3 percent to the turnover of Schaeffler Group globally. As a part of the group’s strategy of ‘In the region,

for the region’ and strict adherence to global standards for quality excellence our production units primarily cater to the local and regional markets. In line with this strategy, currently, we are focussing on developing advanced manufacturing and engineering capabilities to meet the ever-changing demands of our customers in this dynamic market.”

Speaking about the company’s position in the market, Arora proudly said, “We occupy leading market positions in all the major segments we operate in. In our flagship product—rolling bearings—Schaeffler is among the leading producers in the Indian market with a total market share of 15.8 percent. Our share of rolling bearings market in the industrial segment is 20 percent and it is 13 percent in the automotive segment. Moreover, our LuK brand occupies the largest market share for clutches in the automotive segment in India.

In order to serve such a diverse market and maintain leading position in automotive components markets in the country what a company needs is a right approach towards customers’ changing needs. “To maintain our competitive position in the long term, it is imperative to consolidate and align our efforts to the evolving market and customers. We have taken the first step towards achieving this goal by restructuring Indian operations to mirror our global structure. All our operations have been reorganised under two business divisions—Industrial and Automotive. The change initiative will create a customer-centric, sector-specific organisation. Unlike our multiple interfaces today with INA, LuK and FAG brands, now we will present ‘one face’ to our customers in order to serve them better and more efficiently,” Arora believes.

### India as a Manufacturing hub

Elaborating on the positive market environment and manufacturing gaining attention, Aroara said, “I am convinced that if India succeeds in unlocking its human capital and vast manufacturing potential through the reforms, it will become one of the growth engines of the world. To achieve this, the country has a long way to go and immense work has to be done. Clearly, investment in infrastructure is critical. We are seeing positive sentiment in India, triggered by the reforms Prime Minister Modi is putting in place. However sustainable changes take time and it may take years. The Schaeffler Group has always taken a long-term view on India. On that basis, we want to take part in this important change process.”

With this, Arora sees a great see significant potential in India. He further added, “With our strategic concept ‘Mobility for tomorrow’ and the way we are set up in the country, we are well positioned to cease the upcoming opportunities. Already today, India plays a key role in the development of





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two wheelers and smaller horsepower tractors for global requirements.”

### Exports

Apart from the serving the Indian market Schaeffler India also caters to other markets in the world. “With advantages of cost-efficiency, engineering & design capability and skilled manpower, India is an important export base for certain niche products from the Schaeffler portfolio,” he said.

Currently exports contribute approximately 10 percent to the consolidated turnover of the three Schaeffler brands in India. “The main export markets include Germany, USA, UK, China, Hong Kong, UAE, Singapore, Korea, Brazil and South Africa,” he informed. Some of the products that are exported from India are cylindrical roller bearings, ball bearings (to South East Asia), wheel bearings (to Middle East), spherical roller bearings, clutch covers, clutch discs, tractor double clutches, clutch components, bearings and engine parts.

### Innovation

With the development of an Engineering Hub for motorcycles < 150 CC, Schaeffler is working on a concept bike with new products such as Wet Clutch, One Way Clutch and Low Friction Ball Bearings. “With ‘Mobility for Tomorrow’ as a theme, Schaeffler is arguably present in all segments of mobility. In India, we do enjoy a potent presence even in two wheeler business segment, strategically present with all two wheeler & three wheeler manufacturers both local as well as global OEM’s having operations in India,” Arora mentioned.

Looking at the future technologies, Arora predicts that while things like connected cars and autonomous driving will clearly emerge, the role of the conventional combustion engine will remain strong for quite some time. “From our point of view, alternative power train concepts like hybrid and electric cars will emerge. However, if we want to reduce CO2 emission in a sustainable manner, it is critical to further optimise the combustion engine in terms of fuel efficiency. The Schaeffler Group with its product brands LuK, INA and FAG are perfectly positioned to offer solutions for all powertrain concepts both in the automotive and industrial division.”

Apart from automotive, the company is also working in areas such as railways. Speaking about it, Arora stated, “Indian Railways transports over nine billion passengers and over one billion freight tons per year. The government has recently announced the development of dedicated freight corridors that require trains with a high axle load-carrying capacity and high reliability. Since the inception of FAG India over 50 years ago, Indian Railways has been an important customer. With a strong local footprint, FAG India is recognised as the most




reliable source for critical railway applications such as axlebox bearings as well as traction motor and gearbox bearings.”

With the local and global key players present in India, the new Government supports a strong development of Renewable Energies. Schaeffler India offers a full range of main shaft and gearbox bearings for wind power applications. Large size bearings with up to one meter outer diameter are produced locally at the Savli Plant.

### Expansion plans

The company plans to expand its Savli as well as Talegaon plants. The Talegaon plant caters to the automotive market while Savli plant serves needs of the railways and metro rails’ requirements. At Talegaon the company plans to build a Schaeffler India Advance Automotive Technology Lab, while an investment of Euro 12.5 million is planned at Hosur. “The new facility will enable us to offer high end ‘Fit to Market’ technology, locally assembled systems to the Indian Automotive Industry with a scope of lowering NVH level as well as improving drivability,” Arora revealed.

He also said, “Over the next 2-3 years, we are investing €80 million (Rs. 5840 million) in operations, innovation and localization to bring new solutions to our customers as we jointly address the unique challenges of the Indian market. This includes, €25 million (Rs. 1825 million) we are investing over the next two years in Pune to introduce the latest technologies in the area of engines, transmission & chassis.”

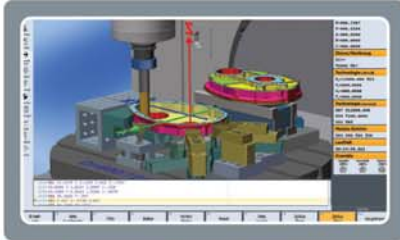
Moreover, the company believes that R&D is one of the important pillars in its success. “We plan to invest 10 percent of all new investment in R&D and in building advanced engineering competence by adding new facilities for product validation (simulation & testing), localisation of product design & machinery and labs for product testing,” Arora explained. 

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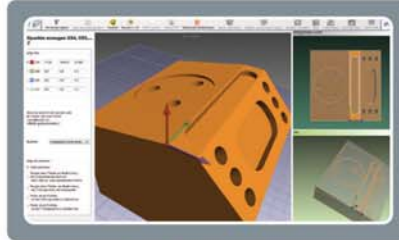
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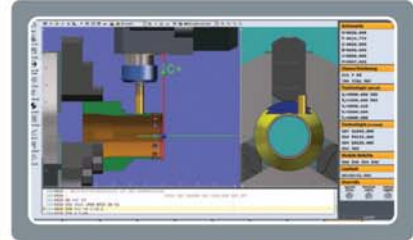
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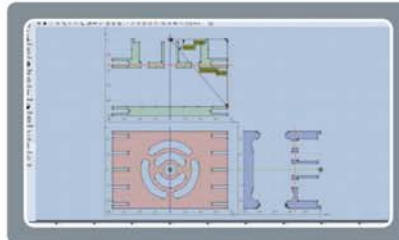
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## Nishant Arya

Executive Director, JBM Group

By Swati Deshpande

**J**BM Group is a key systems supplier of auto components to Indian and global automobile companies. There is at least one JBM component in each vehicle being sold in India today, be it passenger cars, three-wheelers, two wheelers, commercial vehicles or off-highway equipment. “JBM Group is a well-diversified global conglomerate providing end-to-end solutions to automobile manufacturers. We have a strong infrastructure of 35 manufacturing plants and four engineering & design centres across 18 locations globally. Our biggest asset is our people who have worked diligently to meet and in most cases surpassed the expectations of our clients. It is because of their commitment to providing the best solutions to our stakeholders that we have long-term relationship with companies like Maruti Suzuki, Ashok Leyland, Bajaj Auto Ltd, Fiat, Ford, General Motors Corporation, Honda, Hero, Renault, Nissan, TATA, Toyota, Volvo-Eicher, Volkswagen and others. The group has alliances with more than 20 renowned companies globally including Arcelor Mittal, Cornaglia, Dassault Systems, JFE Steel Corporation, Magnetto (CLN Group), Ogihara, Sumitomo and many more,” explained Nishant Arya, Executive Director, JBM Group.

Expanding horizons, the company has ventured into bus manufacturing. Perhaps, it is one of the first auto component manufacturers that have entered into a vehicle manufacturing. “As a part of the diversification strategy of the group, we ventured into the bus manufacturing space. This came in as a natural progression for us having in-house capabilities and strengths developed by virtue of our experience with the auto OEMs. Moreover, we have already been doing contract manufacturing for a few OEMs for over a decade now,” Arya added.

### The new era

Elaborating on the bus business, Arya added, “We have entered into the bus manufacturing business with an objective of providing a sustainable yet luxurious and safe option of public transport to people. Our products have received an overwhelming response from all quarters of the government, transport corporations, companies, etc. We are increasingly looking at being an end-to-end solution provider for public transportation in India.”

Currently, the company is in process of delivering the first batch of our CITYLIFE buses. Along with it, JBM Group has already taken next take in the segment by showcasing ECOLIFE—India’s first 100 percent electric bus during Auto



Expo 2016. “The electric bus has received an overwhelming response from government authorities, state transport corporations and general public,” Arya informed.

In addition, JBM Group has announced a joint venture with Europe’s leading bus manufacturer Solaris Bus & Coach S.A. to manufacture ECOLIFE indigenously in India. “Solaris is the leading transport solution provider in Europe. It has supplied more than 14,000 buses to 30 countries in that continent. They are the masters of sustainable transport technology and we are bringing this technology to India. We will manufacture ECOLIFE in collaboration with Solaris at our existing plants at Faridabad and Kosi.”

To enable this JBM already have investment plan in place. “We have created sufficient capacity at our plants to accommodate demand of up to 2,000 buses in a year. Also, we have



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planned an investment of Rs. 300 crore in next 4-5 years on developing a suitable ecosystem for movement of India's first 100 percent electric bus," revealed Arya.

Speaking about aspiration behind venturing specifically into bus manufacturers, Arya said, "Everyone wants to end the misery of public transportation. Government is experimenting with different transportation models and public is desperate for a sustainable solution. Lakhs of people travel by buses within cities. How would it be if we can provide a luxurious, safe and guilt-free option for their daily travel? Our buses are that option. But, it is not sufficient to manufacture a world-class product. We understand this and hence we are meeting all stakeholders to demonstrate our products and give reasonable answers to their questions. I must tell you all stakeholders are very forthcoming and positive."

### **Making it in India**

By making electric buses indigenously JBM Group is already contributing towards the 'Make in India' initiative. "We are perfectly aligned with this initiative of the government, more precisely from the perspective of our bus division. We are manufacturing the buses in India and are sourcing all key aggregates from local suppliers. Our key focus is towards developing indigenous sources for all key aggregates, systems & components catering to domestic & global requirements," mentioned Arya.

Moreover, the group is working on government's other initiatives as well. "In our journey so far, we have witnessed that there is an acute shortage of skilled manpower because of which people earn less income than they should. In order to do our bit toward managing this challenge, we have developed different programmes for skill development in collaboration

"We are manufacturing the buses in India and are sourcing all key aggregates from local suppliers. Our key focus is towards developing indigenous sources for all key aggregates, systems & components catering to domestic & global requirements"

with Ministry of Skill Development & Entrepreneurship, Government of Madhya Pradesh and few other state governments. We are training close to 2,000 students every year under these programmes," Arya stated.

Furthermore he feels that, people are one of the important assets for the company, technology and innovation being other two. "We draw our strengths from TIP (Technology, Innovation and People) and we believe TIP has answers to all our problems as a business and society. We are utilising TIP to solve problems of mobility and electricity. Our vision is to develop sustainable solutions in auto, mass transportation and renewable energy domains for making the future greener and promising," he shared.

### **Looking at the bright side**

With these initiatives of moving forward in the automotive industry, the future of the JBM Group looks bright. Additionally, government is also doing its bit in indirectly boosting the industry. "The government is implementing a 23 percent hike in salary for its employees from August 2016. If we believe NSSO data which showed households spend most of their consumer durable expenditure on buying vehicles, the highest share of the salary hike will go toward purchase of vehicles. And there is a precedent to this. After the government approved the recommendation of 6th Pay Commission in 2008 giving a 40 percent increase in salaries of central government employees, vehicle sales to government employees had zoomed. In addition to this, FY 2016-17 is going to be much better as the economy is reviving and credit scenario is improving. These factors will unleash a consumption spree in the economy. Looking at the signals, we at JBM Group are expecting a healthy increase in demand going forward," concluded Arya. 🇮🇳





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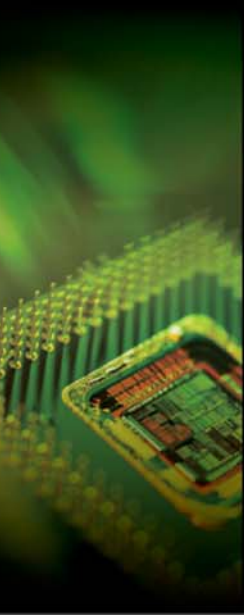


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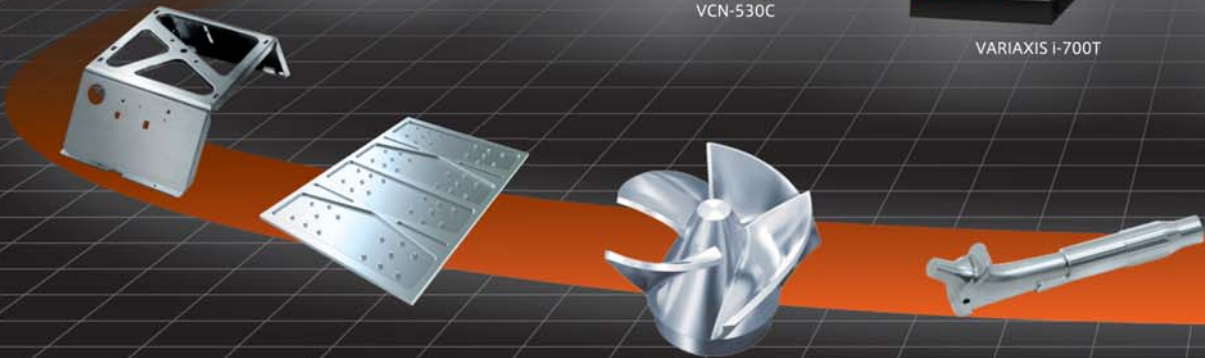
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## Tarang Jain

Managing Director, Varroc

By Niranjan Mudholkar

**Q The Varroc Group was cited as an emerging manufacturing giant from Maharashtra by Chief Minister Devendra Fadnavis. How do you view this recognition?**

Varroc had its humble beginnings in Maharashtra State in 1990 and it is indeed very encouraging to be cited by the honourable chief minister as an emerging manufacturing giant in a state which houses established global giants such as Tata. This is a very important milestone for our own “Make in India” journey that started 26 years back. Also, it is a humble reminder for us to set standards and lead the path for the many small and medium enterprises that could contribute to the development of the state.

**Q How was the last financial year for you compared? Do you see the market further improving?**

FY 2015-16 was a good year for us in terms of growth primarily due to the globalized nature of our business. Growth in the international business was in the healthy double digits, while the domestic business was impacted by the continued sluggishness in the two wheeler market. Our strategy of product and customer portfolio realignment has enabled us to derisk from the downturns as some of our high growth customers in India ensured that we fared better than the market.

We continue to maintain double digit growth targets in revenues and margins overall for this year as well.

**Q You have started implementation of Industry 4.0 solutions across all Varroc plants. How important is this?**

IT and Internet technologies are changing the way traditional manufacturers have been functioning all over the world. I am proud to share that Varroc is one of the pioneers in making this push into the realm of Industry 4.0 adoption and have partnered with Altizon Systems to implement the solutions across all our plants. Our IoT journey is a part of the digital transformation initiative in Varroc around smart manufacturing. We are trying to connect all parts of the production process i.e machines, systems, people and products via the internet. Through this small step, we hope to rapidly scale multiple Industrial IoT applications across our plants and be ready for a more competitive environment in the near future in terms of speed and efficiency.

**Q Last year, Varroc joined hands with Scorpion Automotive of the UK to produce vehicle security systems for the Indian market. What's the progress on that front?**

In 2015 we partnered with Scorpion Automotive to design,



**“Our strategy of product and customer portfolio realignment has enabled us to derisk from the downturns.”**

manufacture and supply security and tracking systems for the India market as we felt that the need for security systems was not appropriately addressed in this market for a long time. We are in various stages of discussions with multiple OEMs for understanding their requirements on these systems after having successfully demonstrated both the tracking and security systems on local bikes. Scorpion Automotive has a little pilot tracking system running on the aftermarket already to get feedback on customer requirements and preferences.

**Q ‘Make in India’ seem to have given a boost to the Indian manufacturing industry. How do you view it?**

I believe that the ‘Make in India’ initiative by the Government is a necessary move to prop up India’s image and in-



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vite diverse participants for transforming India into the next global manufacturing hub. Key initiatives like opening up of the defence and aerospace sectors as part of this initiative is a welcome signal for investors to participate in the growth and development of our nation. While the emphasis has been on import substitution and boosting exports, I feel India has a very large internal economy that requires attention. Businesses can compete in the Indian market only if they meet global productivity standards which in turn require manufacturing technologies that cannot be managed by less skilled labour. This will force companies to look differently at their current operating models that are designed to run with high manual contract labour.

**Q Your crankshaft business has not delivered as per expectations. What are you doing to rectify the situation?**

Our crankshaft business has not ramped up as per plan as the commercial vehicle industry had gone into a slump when we invested in this business. However, it is showing signs of revival and we see better utilization of our capacities this year. Already the better than average monsoons has improved offtake of tractors and we should see a trickle effect on commercial vehicles very soon. We had focused on a lean manufacturing process to stay competitive last year and the wait seems to be coming to an end.

**Q After lighting, polymers is the second largest business vertical for the Group. What are your plans to further grow it?**

The polymer business is unique in the sense that we have to be located close to the customer. We have added 5 state-of-the-art manufacturing facilities including paint shops in the past 5 years to support our customers all over India. This year we have commissioned our plant in Gujarat for supplying to the leading scooter maker in India and are currently in the process of commissioning another plant in Chakan. We have ventured into mirrors for commercial vehicle and are in advanced development stages for launching these to a global HCV maker. Discussions are also in progress for complete instrument pan-

els for passenger cars, which is our next target product for this market.


**Q What is your mantra for taking Indian auto components sector to the next level?**

Indian auto components sector has done very well due to the high growth rates enjoyed by the market in the past two decades. Of late the slowdown, I believe, is caused by the economy not generating enough employment. The manufacturing sector's continued reliance on antiquated manufacturing using low cost contract labour has not helped improve purchasing power. This can be changed by investing in technologies to improve productivity and value added products that address market needs better and also contributing to wage growth. R&D investments also help companies stay competitive by differentiating their products in the market.

"The year 2020 in India has its own challenges of emission and safety technologies to be created in capacities of a scale never seen in any market ever; and herein lies our opportunity."

**Q How would describe your growth strategy for 2020?**

Globally we continue to invest in cutting edge exterior lighting technologies to support the needs of our customers in the passenger car segment to differentiate while expanding our horizons in newer geographies like Brazil and intensifying our footprints in China. We are the most diversified supplier of auto parts in the two wheeler market and not all of them are sold to all of our key customers. Therefore, in the domestic market we are accelerating our cross sell to our customers and this offers a tremendous potential to almost triple our size by 2020.

With the coming safety and emissions regulations in mind, we also have an eye on preparing our product portfolio to offer alternatives to all of our key customers in the two wheeler segment. Our success will be determined to a large extent by how we succeed in skilling up our workforce to improve productivity in the domestic market and developing products that help differentiate our customers in their local markets. 2020 in India has its own challenges of emission and safety technologies to be created in capacities of a scale never seen in any market ever; and herein lies our opportunity. 



VISIT



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A collage of industrial machinery parts, including gears, shafts, and tool heads, arranged in a geometric pattern of overlapping triangles. The background is a mix of metallic greys and blues.

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## SK Behera

Vice Chairman & Managing Director, RSB Group

By Niranjan Mudholkar

### Q How was the last financial year for you?

With economy showing positive signs of recovery the auto sector is looking brighter. In FY2015-16 the auto component industry grew by 8.8 percent. We too have done fairly well despite challenges.

### Q Do you see the market improving?

I surely see great momentum due to path breaking initiatives such as Make in India, GST rollout, increased spend on infrastructure and restarting of mining sector. The auto component sector is riding on the back of automakers and with robust demand scenario in the coming period places the component sector in an increasingly comfortable situation. It has also brought challenges in shape of increasingly stringent QA, newer technology and focus on cost optimisation. Organisation geared to handle this are going to be the winners. Our prime OEMs such as TATA, Ashok Leyland, Maruti are continuously upgrading their product portfolio. Other leading MNCs such as Daimler, Toyota, Ford, Honda, Volkswagen, Mercedes Benz, too are widening their Indian footprint and these present great growth opportunity as well as challenges for the Indian Components sectors.

### Q Which segments are driving growth for you?

Our greater focus is on commercial vehicle and construction equipment sector, and these will be our prime growth drivers. Within these sectors heavy & medium CV will dominate while hydraulic excavator will aid our CE growth. Nevertheless, we are very strongly placed within all segments and the growth being witnessed by these will power our own growth.

### Q How many manufacturing units do you have?

We have 13 manufacturing plants spread across seven locations in India, namely Jamshedpur, Pune, Dharwad, Chennai Pantnagar, Cuttack and Lucknow. Overseas we have one each in Homer (US) and Silao (Mexico).

### Q 'Make in India' seems to have given a boost to the Indian manufacturing industry. How do you view it?

Make in India campaign is accompanied by tax reforms and proposal that have resulted in a situation where it is increasingly getting easier to do business in India. The biggest beneficiaries will be MSME which are essential to the success of Make in India. Favourable sops to start-up ventures has given big boost to more players entering into the auto component field, besides starting of green field ventures by existing auto-




"Hard Work combined with highest level of personal integrity, ethics and clarity of vision is the main mantra any new entrepreneur should have."

comp manufacturers in the areas hitherto untapped. 'Make in India' will be led by the auto sector as it accounts for over ~30 percent of the entire manufacturing sector in India. Thus it is not surprising that existing Indian automakers and large MNC are deepening their commitment to India.

### Q In 2013, RSB was conferred the Deming Prize. You had said then that the company will vie for The Deming Grand Prize. How's been RSB's quest for quality progress since then?

We have a well laid road map for Deming Grand Prize by 2018. In this journey our TQM team is being assisted by Japanese experts at planned intervals. Our team has complete clarity on our mission and I too am personally involved at every stage.

### Q What would be your message to the new entrepreneurs?

Hard work combined with highest level of personal integrity, ethics and clarity of vision is the main mantra any new entrepreneur should have. Your work should be unique and done innovatively. And most of all always find roles that will aid nation building. 



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## Claude d'Gama Rose

Managing Director, Continental Automotive Components India



By Niranjan Mudholkar

**Continental began operating in India in 2008. How's been the journey so far?**

Continental recognises the potential of the Indian automotive market as well as India's emergence as a hub for high quality engineering talent. Since our establishment in 2008, we have made significant investment in the country. See our milestones listed in the box to get a fair view of our journey so far.

**How many plants do you operate in India? Where are they located?**

Continental has nine plants in India—of these five are automotive and four are rubber plants. We have two automotive plants in Manesar, a ContiTech plant in Sonapat, Haryana and tire plants in Modipuram and Partapur. In the East, Continental's 100 percent subsidiary Phoenix Conveyor Belts India has operations in Kalyani, near Kolkata. In the West, we have two Powertrain plants in Pune, Maharashtra and we have an electronics plant as well as our R&D center in Bangalore, Karnataka. Recently we opened an office in Chennai to support our customers better.

**What are your plant doing to build quality management within the manufacturing system?**

Understanding our customer expectations is vital towards strengthening our quality management system. Globally, our focus is on doing the right things right the first time every time, so we can avoid additional costs for the company. What we have to avoid is delivering products which do not comply with the requirement or are faulty. In this case, we talk about non quality or failure. Customers don't pay for this and further it leads to additional cost of replacement, warranty, compensation and additional internal resources for handling the complaints.

Next we define a robust product design based on DFSS (Design For Six Sigma) or DFM (Design For Manufacturability), followed by implementing capable and robust production processes based on the lean principles. Then we have to choose the right suppliers who understand, accept and follow our philosophy. And not to forget, we need to empower our people accordingly so that we have the right person for the right job. Combined with a Continuous Improvement Culture, we can create the best possible cost structure without sacrificing Quality and in fact, attain Quality almost for free due to avoidance of non Quality.

**Being one of the world's top five automotive parts suppliers, Continental is a very global organisation. But it also lays emphasis on the 'local' aspect. How is Continental India integrating 'local' in its operations?**

We firmly believe in a local for local approach, placing priority on local design, development and procurement in order to optimise costs. Continental's Quality First approach complements our local for local strategy, tailoring solutions in-sync with market demand and customer requirement. That said, there is a growing demand from both domestic and international OEMs for components intended for export.

We are committed to meeting the stringent requirements of our customers and offer them products that meet international quality standards. With our current footprint and programs, we are in a good position to support global and

local OEMs, for their domestic as well as export requirements.

**Continental set up a highly advanced engineering centre called Tech Centre India (TCI) in Bangalore in 2009. How have you leveraged on this?**

Last year, Continental's Technical Center moved to a new location in Bangalore in order to expand its facilities in line with its growing workforce. TCI is one of Continental's three Systems

"We firmly believe in a local for local approach, placing priority on local design, development and procurement in order to optimise costs."





## Continental Milestones

### 2009

- Phoenix Conveyor Belt India became a 100 percent subsidiary of Continental.
- Inaugurated its Technical Centre in Bangalore to cater to R&D needs of domestic and international customers.

### 2011

- Continental made a series of investments and corporate announcements in 2011 including the acquisition of Modi Tyres.
- Bought 100 percent of the shares of the JV with Rico Auto, the new entity was named Continental Automotive Brake Systems.
- Announced the entry of Benecke-Kaliko (a part of the ContiTech division) into the Indian market.

### 2014

- Hydraulic Brake Systems (HBS) team moved into a new 7000 square meter production facility in Gurgaon in 2014.
- Made significant investment towards establishing manufacturing capacity for radial passenger car and truck tire production in India.

### 2015

- Acquired 100 percent ownership of the joint venture with Emitec leading to the formation of the Fuel and Exhaust Management business unit globally. We welcomed around 200 employees from the Emitec plant in Pune, into our fold.
- Also acquired 100 percent ownership of Synerject, its joint venture which specializes in Powertrain EMS solutions for two-three wheeler and non-automotive applications. Synerject has a strong Powertrain portfolio for the Indian two-three wheeler market.
- Tech Center India (TCI) moved into a new facility at Gold Hill Supreme, Electronic City Phase II, which houses eight state of the art labs and over 1800 qualified engineers.
- Announced a new assembly line for ABS and ESC for passenger cars and later ABS for two wheelers, which will be located in the existing Continental Automotive Brake Systems plant in Gurgaon, Haryana. The local production start of the Electronic Control Unit (ECU) is planned for the year 2018 in Bangalore.

and Technology (S&T) hubs worldwide, the other two such centers being Romania and Mexico. TCI provides high quality, cost effective, engineering solutions for Chassis & Safety, Interior and Powertrain. In 2009, Continental India started its own development center with software development. TCI is active in all phases of product development from requirement engineering to vehicle build up and testing in specific areas encompassing software, electronics and mechanics. Today, the contribution of TCI in supporting the Asian customers is increasing with the additional competencies acquired.


### Tell us about your R&D efforts.

The engineers at TCI work on technologies ranging in specificity and complexity - from one channel ABS solutions for two wheelers to highly sophisticated technologies for domains such as ADAS. The organization is poised to be a key contributor in the development of innovative technologies that react quickly and reliably in difficult traffic situations and reduce accidents and fatalities. Adding value with its understanding of the local market and customers, TCI is also emerging as a Center of Competence for two-wheeler markets and for customized products for the BRIC countries.

### What industry trends are you looking at in near future?

The Government has recognized safety as an important area of focus, given the growing number of fatalities in road accidents. ABS became mandatory for new commercial vehicles since 2014. The Government's recent draft notification mandates all new two wheeler models (125 cc and above) manufactured from April 2017 and all existing two wheeler models manufactured on or after April 2018 be fitted with anti-lock braking systems.

Emissions are another important focus area. In September this year, the Government of India and SIAM provided an overview of the Automotive Mission Plan 2016-26, which envisages the adoption of BS V emission norms by 2019 and BS VI for passenger cars, the implementation of 'end of life' policy for old vehicles and projects \$80 billion in capex investments in the auto industry. Globally, Continental has been supporting OEMs in meeting stringent emission standards, such as Euro 6. Specifically in India, Continental is ready with the required technologies in meeting upcoming legislation in view of Government of India's announcement on skipping BS V (Euro 5) and advancing BS VI (Euro 6) norms to 2020.

Automotive electronics is an emerging area for the Indian automotive industry. The major areas that increased electronics will impact include safety, communication and powertrain. As the electronic content in vehicles increase, a number of new and advanced features can be introduced, which could prove to be the game changer for the Indian auto sector. For example the electronic horizon (eHorizon) from Continental with which connected vehicles can adjust to traffic situations or react to hazards that are outside the driver's field of vision or the range of the vehicle sensors. 



## Dr. Madhu Ranjan

MD, ElringKlinger Automotive Components India Pvt. Ltd.

By Niranjan Mudholkar

### **Q** Briefly tell us about ElringKlinger Automotive Components' journey so far

ElringKlinger Automotive Components India Pvt. Ltd. is a 100 percent subsidiary of ElringKlinger AG. It was set up in 2008 at MIDC Ranjangaon on the Pune-Ahmednagar highway to manufacture automotive components, principally for Automobile companies in India. Since its inception, ElringKlinger India has grown rapidly and its customers' list includes most of the major automobile companies in India. With rapid growth in volume of sales and addition of new businesses in its portfolio, ElringKlinger India doubled its plant size undergoing a major expansion drive in 2015. Several new state-of-the-art facilities have been added in recent times to not only meet the market demands with respect to quality and quantity, but to create a niche position for itself in the global automotive industry.



**"We continuously strive for localisation of the raw materials and machinery. Identifying and developing vendors is one of the key functions of our company."**

### **Q** What has been the biggest challenge in the Indian market and how are you overcoming the same?

Let me put it this way: the challenges in the Indian market are multi-dimensional. The prevailing perception about India in general and India-based manufacturers in particular is of cheap labour, therefore, cheaper product price and low on skill and expertise, therefore lower trust levels. One cannot deny that these are correct perception to a large extent. The skilled work-force is in short supply, as rightly pointed out by our Prime Minister when he embarked on the mission of "Skill India". The quality and number of trainers and training institutions needs to rise. In order to address this con-

**"In the current year, the market is much more vibrant with growth rate in automotive sector expected to be 6-7 percent. This certainly will positively help our company's performance as well."**

cern, we hire at entry level, provide training for at least one year, and put them under the mentorship of senior employees.

Attitude and aptitude of workmen is also responsible to some extent, because in India the blue-collar desires to change into white-collar at the earliest opportunity, in other words we are happy to be supervisors and managers rather than developing skills and expertise. Retention or attrition has always been a big challenge. We identify the good performers and reward them on occasions such as 'Family-day' in the presence of all employees and their family members.

India largely depend on imports of technology, hence maintenance and spares availability is always a great challenge. We continuously strive for localisation of the raw materials and machinery. Identifying and developing vendors is one of the key functions of our company.

### **Q** How important is the Indian operations in ElringKlinger's overall global business footprint?

ElringKlinger has its manufacturing presence in 35 locations across the world with the objective of meeting the local requirements most economically and deliver in time. The India operation was set up in 2008 with the same philosophy. ElringKlinger believes India has a great potential to grow, similar to that of China, and therefore, attaches great importance to the India operation.

While the automotive market was sluggish during 2014 and 2015, ElringKlinger embarked upon expansion of its Plant doubling its capacity, and set-up world class manufacturing facilities, fully geared-up to more than meet the volume and quality requirements of the automotive industry.

### **Q** What products do you offer in the Indian market? Will you be adding any new products to the Indian portfolio in the near future?

ElringKlinger offers precision parts, such as sealing systems



(Cylinder Head Gaskets, Specialty Gaskets, Metal Elastomers), Rubber Gaskets, Housing Modules such as Cam Covers for light weighting, Shielding Technology such as heat shields, etc. to the Indian market as well as for export. In near future we intend to add hi-tech products, such as Engineered Plastics, Exhaust Abatement technology, and e-mobility.

**Q How was the last financial year for you compared to the previous one? Do you see the market further improving in this financial year?**

Our performance in 2015 was short of our expectations, and it was nearly at the same level as that of the previous year owing to the sluggish automotive market. In the current year, the market is much more vibrant with growth rate in automotive sector expected to be 6-7 percent. This certainly will positively help our company's performance as well.

**Q Tell us about your manufacturing capabilities and capacities in India**

Any and all locations within ElringKlinger Global manufacture world class products, be it in Germany, USA, Japan, China or India. All units adopt the same standard and yardstick. Any part produced in India is comparable in quality with that produced elsewhere in the

"Bulk of our production goes to domestic market, but about 15 percent of our production is exported to various countries, such as UK, Brazil, Thailand, South Africa, Czech Republic and Slovakia, etc.."

"ElringKlinger strives for customer-delight. Develop/Achieve Knowledge, skill and expertise in the area of manufacturing and quality to reduce dependence on Business Units. I visualise ElringKlinger India to achieve a standard of "Center of Excellence" someday soon."


group, such as in Germany. Our customer base includes Indian players (Maruti, Tata, etc) as well as Global players (Ford, GM, VW, Fiat, Honda, etc), and all of them seek products of global standard, which we manufacture and supply successfully. So far as capacity is concerned, we review every year the next five years' sales projection and build/enhance capacity accordingly. In a nut shell, we have no capacity constraint.

"While the automotive market was sluggish during 2014 and 2015, ElringKlinger embarked upon expansion of its Plant doubling its capacity, and set-up world class manufacturing facilities, fully geared-up to more than meet the volume and quality requirements of the automotive industry."

**Q Are you catering only to the domestic market or are you also exporting from India?**

Bulk of our production goes to domestic market, but about 15 percent of our production is exported to various countries, such as UK, Brazil, Thailand, South Africa, Czech Republic and Slovakia, etc.

**Q As the head of the organization, what is your vision for ElringKlinger Automotive Components India?**

ElringKlinger strives for customer-delight. Develop/Achieve Knowledge, skill and expertise in the area of manufacturing and quality to reduce dependence on Business Units. I visualise ElringKlinger India to achieve a standard of 'Center of Excellence' someday soon. 

## Sundararaman G

President, Pricol Limited

By Niranjan Mudholkar

**Q How was the last financial year for you compared to the previous one? Do you see the market further improving in this financial year? What is the target for the ongoing financial year?**

We have seen positive results in FY 2015-16 with the last quarter boosting these numbers, conforming to our expectations. Standalone income from operation for FY 2015-16 grew by 18.6 percent Y-o-Y stood at Rs.1,126.51 crore as against Rs.949.66 crore in the same period last year. Income from operations also grew by 26.64 percent in FY 2015-16 from Rs.1,447.86 crore as against Rs.1,143.32 crore in FY 2014-15. This year, we are expecting a growth of 20 percent over last year on a standalone basis.

**Q Which customer segments are driving the growth for you?**

In the last financial year, two and three wheeler segment constituted around 57 percent of our revenue, followed by commercial vehicles with 21 percent share of revenues. Rest of the revenues was distributed between Off-road, tractors and personal passenger vehicles.

We are seeing growth in revenue to be distributed across two wheelers, commercial vehicles, tractors and off-road vehicles segments.

**Q Currently, how many manufacturing units do you have and where are these located?**

In India, Pricol's manufacturing presence is close to the demand market with six manufacturing plants across Coimbatore, Gurgaon, Pune and Pantnagar. Internationally, we have a manufacturing plant each in Sao Paulo, Brazil and Jakarta, Indonesia.

**Q In January 2016, you had announced the plans to establish Green-field projects and making overseas acquisitions for which you had set aside Rs.500 crore. What's the progress on that front?**


"Telematics has seen an increased interest and importance globally. With the increasing demand for vehicle health monitoring and asset tracking of vehicles, we intend to increase our offering in Telematics, with solutions customised for every fleet's effective management."



"We are continuously looking and evaluating opportunities which will conform to our business needs."

Our green field project in Pune, which will be a state-of-art facility, is expected to be operational by September 2016. We are continuously looking and evaluating opportunities which will conform to our business needs. We will progress in this front as and when the required business indicators look encouraging.

**Q You have also added a new vertical to your product offerings with Telematics. How's that business shaping up?**

Pricol is currently offering Telematics solutions in the tractor and off-road vehicle segments. Telematics has seen an increased interest and importance globally. With the increasing demand for vehicle health monitoring and asset tracking of vehicles, we intend to increase our offering in Telematics, with solutions customised for every fleet's effective management. 





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# JCB India showcases its new material handling solution

The new entrants are Telehandlers, Skid Steer Loaders and Super Loaders

**J**CB India Ltd recently showcased its world-class range of material handling product solutions in an event at New Delhi. Its three class leading machines namely Telehandlers, Skid Steer Loaders and Super Loaders are revolutionising the Material Handling industry in India.

Speaking on the occasion, Vipin Sondhi, Managing Director and Chief Executive Officer, JCB India Ltd, said, “We are delighted to showcase our wide range of ‘Made in India’ material handling products solutions for the Indian market. The industry is now progressing towards more safe and reliable practices and through these revolutionary products we foresee a great opportunity to replicate the global best practices in the material handling industry.”

Telehandlers are extensively used for material handling applications such as loading, unloading, placing and lifting material at various heights and reaches. Through the use of various attachments, this versatile machine offers the perfection of 4 machines in 1.

JCB has been pioneering the concept of Telehandlers globally since 1977 and has remained the world’s leading choice in this segment ever since. These machines are extensively used for material handling applications such as loading, unloading, placing and lifting material at various heights and reaches. Through the use of various attachments, this versatile machine offers the perfection of 4 machines in 1.

In line with global standards this machine greatly enhances on-site safety. In India, JCB



“The industry is now progressing towards more safe and reliable practices and through these revolutionary products we foresee a great opportunity to replicate the global best practices in the material handling industry.”


**Vipin Sondhi**, Managing Director and Chief Executive Officer, JCB India Ltd

offers three variants of Telehandlers – a 7m lift height machine known as the 530-70, an 11m lift height machine known as 530-110, and a 17m lift height machine which is the 540-170.

“Over the years, we have been witnessing a growing need for technologically advanced and intelligent product solutions in this industry. With the three product solutions, JCB is leading this paradigm shift in India. This world class range is a perfect combination of safety, productivity and versatility.” He further added.

JCB Skid Steers are one of the world’s safest Skid Steers as they come with a unique side door entry. This compact and versatile machine is available in two variants in India—the 135 and the 155. These systems are ideal to operate in urban infrastructure applications or for narrow areas, where space is a restriction.

The Super Loader on the other hand is a perfect blend of value, versatility and performance. It is designed as a dedicated loader for loading applications at higher heights. At present, JCB offer two variants in the Indian market, a 3.1m dump height machine and a machine with a 4.0m dump height.

This range is accompanied with a wide option of attachments such as Power Grab, Drum Handler, Vibratory Roller, Industrial Grapppler, General Purpose Shovel, Heavy Duty Fork, Crane Hook - Fork Mounted, Grain Bucket and Man Platform. 



# On the right track!

**Tushar Mehendale, Managing Director, ElectroMech Material Handling Systems India Pvt Ltd, hopes that with the current momentum going on, companies will surely give green signals for their big projects and expansion plans.**

By Niranjan Mudholkar

**Q The market seems to be bouncing back in the last few quarters or so. What's been the experience for India's largest industrial crane manufacturer?**

We see an interesting boost in the overall sentiment of the industry, especially post 'Make in India' campaign run by government. During last two quarters, many small and mid-sized projects has been initiated and we are witnessing increasing demand for cranes in various industry segments like infrastructure, steel, power, general manufacturing and warehousing. The policy and economic reforms implemented by the government are pushing overall economy on the right track. However, such big policy reforms surely need some minimum time to roll back the big projects on track. It has been observed that corporates are still playing safe on releasing plans for heavy and big projects. We hope that with the current momentum going on, companies will surely give green signals for their big projects and expansion plans. Overall we are optimistic with the industry going forward.

**Q What is the size of the industrial cranes market in India and what is ElectroMech's share in that pie?**

Industrial cranes segment is highly fragmented. According to our estimates, the industrial cranes market in India is approximately to the tune of Rs.1800 crore to Rs.2000 crore per annum. This market size has slightly shrunk in the past couple of years due to the slowdown in the Indian economy. Approximately 30 per cent of the cranes are required by government-owned companies and the remaining 70 percent comprises the requirement from private sector. Region wise distribution in terms of quantities shows that Western India contributes 50-55 percent of the total requirement, while Southern India follows with 20-25 percent, Northern India with 15-20 percent,

"Some of our key export markets are Middle East, Africa and South East Asia. We also look forward to enter Europe market for customised cranes used for critical applications. Till today, ElectroMech has supplied cranes in over 40 countries."

and Eastern India with 5-10 percent. Roughly 40 percent of the total crane industry in India is dominated by the top 10 manufacturers in the organised sector. The remaining market shares comprises of more than 300 small crane companies. ElectroMech has close to 10 percent of market share.

**Q Which are the key industry segments that you are focusing on at present?**

Among the several other industries, we are focusing on automotive, auto-ancillary, power, infrastructure and general manufacturing industry segments at present.

**Q How's been the last financial year (2015-16) for ElectroMech vis-a-vis the previous year (2014-15) in terms of overall turnover and profits?**

FY 2014-15 was one of the best year for us in terms of revenue, we had secured some very big orders during this period. In addition to this the Tower Crane sales was also very motivating. However, the revenue in FY 15-16 has been little on the lower side as compared to the preceding year. On the other side, we have been successful to retain the better profit margins.

**Q How would you analyze the organisation's growth in the context of the above data? What targets have you set for the ongoing FY (2016-17)?**

It is indeed difficult to analyses organisational growth based on the data of consecutive two financial years' performance. The reason is, most of the cranes are required by new projects and the number of new projects varies every year due to several economical, policy or industry related factors. So naturally the demand for cranes also varies. Over the past decade, Electromech has grown from strength to strength. With a





ing are the real assets of any organisation and rest everything is the operating cost. We feel that every handling challenge of our customer is unique in its way and need specialised crane solutions. Especially for large infrastructure projects, many times the handling requirements are different and a standard product just can't fit in. We have supplied several customised cranes for infrastructure projects, be it gantry cranes or tunnel mucking systems or triple girder cranes to name a few. Apart from this, we have recently developed Stacker crane. Stacker crane is a perfect solution for warehousing and storage

strength of 70 people in 2001 and a top line of Rs.3.25 crore, today ElectroMech employs over 600 people and is the largest manufacturer of industrial cranes in India by volume. We have set target to achieve 20 percent growth in FY 2016-17.

**Q Your joint venture with Zoomlion is almost four years old now. Are you satisfied with the progress on that front?**

Yes, we are very much satisfied with our association with Zoomlion. Today we have one of the highest numbers of Tower crane installations in India. In this short period of time, we have been successful to supply cranes to many of the leading customers like Al Fara group, K Raheja Corp, L&T, NCC, Supertech, Rohan Builders and more. Easy and quick installation and dismantling is one of the key strength of our range of Tower cranes, which ensures to save precious project completion time. Recently we helped our client Rohan Builders to dismantle and then assemble Tower crane in just record four days' time at their project site at Pune. Generally, it takes approximately 14 days to perform similar job.

**Q How's Cranedge shaping up?**

Cranedge is a strategic initiative of ElectroMech. Cranedge focuses on efficient customer service and is the only company in India dedicated for crane service. Cranedge services have been well acknowledged by our customers. Cranedge uses advanced CRM system to track and monitor the entire process, right from receiving customer complaint to sending final reports to customers. We have a response time of 15 hours to reach at site after we receive the complaint and 67 percent of the complaints are closed within 48 hours i.e. 308 complaints out of 459 were closed within 48 hours during last year. Cranedge services are now also available to customers in Middle East now.

**Q Congratulations to you and your entire team on winning 'The Machinist Super Shopfloor Award 2016' for innovation amongst Indian SMEs. Obviously, R&D and innovation are a big focus for ElectroMech. Tell us about it.**

In today's dynamic market scenario, Innovation and Market-

**"Roughly 40 per cent of the total crane industry in India is dominated by the top 10 manufacturers in the organised sector. The remaining market shares comprises of more than 300 small crane companies. ElectroMech has close to 10 percent of market share."**

department of any manufacturing industry. It is powered by electricity, unlike Forklifts and so its eco-friendly product. It is able to stack pallets at maximum possible height. Apart from several other industries, this product is best suitable for food, pharmaceutical, warehousing and critical industries where fumes of forklifts create a problem.

**Q Recently, ElectroMech has started using VR (Virtual Reality) to take its customers on a virtual tour of its facility and help them in their buying decisions. Tell us about this initiative. What motivated you to experiment with this idea and how are you benefitting from it?**

Innovation is one of the key strength of ElectroMech. We want to be innovative in every possible area of our operations and not limit it only to products we supply. Most of our existing customers are familiar with our manufacturing facility and capability. But in many case of new customers, they want to see the manufacturing facility to ensure quality and timely delivery of cranes for their critical project deadlines. This plays a vital role in buying decision as well. Especially our overseas customers face difficulty as they have to fly down all the way to India and spend valuable time as well resources. To help our customers to save their valuable time and resources, we decided to leverage the technology called as Virtual Reality to showcase our facility to customers. This is like we are taking our facility to the customer's cabin. We have used this technology during various exhibitions we participated overseas and customers were just delighted to experience virtual tour of our facility.

We see tremendous benefit from this technology and hope that many other manufacturers will also adopt this.



**Q How are your manufacturing capabilities growing? What is your annual capacity currently?**

ElectroMech has significantly expanded its manufacturing facility over the period of time. Currently, our state-of-the-art manufacturing facility is capable to manufacture 1500 crane annually and is one of the biggest crane manufacturing facility in India. Our manufacturing facility is equipped with several advanced machines and equipment along with load testing facility.

**Q You were also planning to have more manufacturing plants – one in India and one overseas. When is that likely to happen?**

We would surely love to have our own manufacturing facilities overseas, however looking at fluctuating market conditions globally, we are reworking on the supply chain strategy. Currently we are working with several authorised dealers and representative of ElectroMech in Middle East and African countries. Some of these partners do have their own fabrication and

assembly set up. We are exporting the main hoist and critical components from India and manufacturing the heavy girders locally at the facilities of local dealers. Manufacturing is very capital intensive business and we want to bifurcate the risk of heavy investment in fluctuating market conditions by working with local dealers. As the business growth at certain volumes, provided with stable market conditions, we will again focus on setting up our own manufacturing facility overseas.

**Q What is your domestic sales to exports ratio at present and which are your key exports markets?**

We have witnessed approximately 20 percent of our revenue coming from export market in the last two years. Our focus in the long term is to expand our international presence and reduce the dependency on domestic market. Some of our key export markets are Middle East, Africa and South East Asia. We also look forward to enter Europe market for customised cranes used for critical applications. Till today, ElectroMech has supplied cranes in over 40 countries. 





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# Cluster development for business excellence

Clusters have the philosophy of 'getting together, learning together, achieving together.'

By Hussain Shariyarr, Senior Vice-President (Operations), Godrej Appliances

Over the last few years, Frankfurt International Airport has been expanding to meet passenger demand estimated to grow from 61mn currently to 70mn by 2021. To meet this growth Europe's third busiest airport is looking beyond mere physical transformation. It is gradually evolving into an 'airport city'—a sophisticated knowledge-sharing and high-tech business cluster. The German airport is using the cluster approach to attract more business travellers and conference delegates, position itself as a leading knowledge hub in the logistics and transportation industry, and transform the metropolitan area into a mega hub for business and economic growth.

The 'cluster concept' is a worldwide phenomenon. Companies in continents such as Asia, South America, Europe and North America are introducing cluster development programmes (CDP) to catapult their businesses into centers of excellence with shared values of trust and integrity.

India is no exception to this unique idea. In 1998, the government launched a programme for small and medium enterprises (SMEs) to boost interconnectivity and knowledge-sharing among companies. The schemes usually relate to technology, quality up gradation, marketing support, and entrepreneurial and managerial development. Till date, the government has organised more than a thousand interventions in

Apart from knowledge-sharing, the other values that drive these clusters are transparency, learning, speed, adaptability, sustenance and zero tolerance. The success of cluster programmes depends on to what extent participants fulfil these and other values.

various clusters across 29 states. So far, 677 programmes have been completed. As many as 178 of these were for new build and up-gradation of infrastructure facilities.

## Manufacturing cluster development

While there are many aspects to it, cluster development primarily refers to the sharing of knowledge and best practices and improved networking among enterprises across one or more sectors. It plays an important role in increasing the competitiveness of businesses, especially SMEs —through fresh insights and strategies resulting in better productivity and profits. Apart from knowledge-sharing, the other values that drive these clusters are transparency, learning, speed, adaptability, sustenance and zero tolerance. The success of cluster programmes depends on to what extent participants fulfil these and other values.

Clusters started in India within the auto Industry. Generally the SMEs participated in it. These cluster programs helped building a robust supply chain for the industry. The methodology was to learn and share from each other under



The Shirwal factory became a role model within Godrej factories through hybrid cluster.





a mentor. It was a low cost approach compared to full time consultants working for large OEMs.

### Structured approach

A next step to this is an organised approach which is driven by a structured, tailor-made roadmap, a methodology for implementation and a comprehensive review mechanism. Key inputs, training, and guidance are provided by a mentor, supported by counsellors.

Participating companies are required to form a cluster organisation with clearly defined roles and responsibilities. The organisation should ensure the involvement of people at all levels. There must be designated authorities like cluster CEO, coordinator, deputy coordinator and cluster officers, to take decisions and implement those decisions quickly. The cluster CEO is generally empowered to implement the outcomes. It would be in the interest of an organisation if the CEO is a role model who can inspire the team to work towards a common goal. The cluster roadmap is not predefined and it cannot be applied randomly. It is created by the mentor in consultation with the Cluster CEOs, after assessing each company in its current state. While the roadmap is common to all companies participating in a particular cluster, care is taken to ensure that each of them benefits to the maximum. The cluster roadmap is valid for a specific period of time, usually two years. However, the duration can depend on the number of modules in a particular cluster.

### Objectives of a Cluster

The underlying philosophy of a cluster is 'Getting together, learning together, achieving together'. With this philosophy as a foundation, a cluster program aims to achieve the following:

- Make factories visual and safe
- Bring total employee involvement
- Bring quality focus
- Install material flow and reduce inventory
- Greening the supply chain - zero waste, reduce carbon footprint,
- Profit improvement
- Building capabilities within employees
- Building a culture of continuous improvement, continuous learning and sustaining all improvements


### Case study : Godrej Cluster Journey

Godrej Appliances was among the first few companies in India

to join the hybrid cluster formed by CII in May 2010, where for the first time OEMs from different industries participated. A hybrid cluster has the potential for breakthroughs in the operation, production and distribution cycle. For example, the company benchmarks processes of companies from different industries, both manufacturing and non-manufacturing. In cross-industry benchmarking, a company engaged in, say, white goods, can adopt processes from a company dealing in heavy equipment and thrive in a new business environment.

There was a lot of deliberation within the senior management about joining the cluster. The initial thought was that even if Godrej does not gain much in terms of lean, they could still build ties with the other companies from across the industry and share and learn from each other. Once the journey began, there was no looking back. The Shirwal factory gained a lot from this journey. It underwent a transformation in terms of the 5S levels, total employee involvement and inventory levels. Lean concepts custom made for Indian culture helped understand, implement and sustain it very easily. Besides the operational gains on the shop floor, the factory could add additional lines of refrigerators and air conditioners without adding new plant infrastructure. Manufacturing costs came down year on year. The factory became the first in India to get the Green Co Platinum award for its green initiatives.

The Shirwal factory became a role model within Godrej factories. Its success led to a formation of another hybrid cluster within the Godrej Group. Four factories from different businesses - electric motors division, furniture division, storage solutions and appliances formed a cluster, which ran successfully for two years. The appliance division went further and took this concept to their suppliers. It formed clusters for its suppliers and mentored them. It treated their supplier's shopfloors as extensions of their own shopfloor. All the good practices adopted during the first and second cluster were deployed at the suppliers' end. This has not only helped suppliers achieve operational excellence but also helped them gain new businesses from different sectors.

This is how the cluster movement spread across Godrej, imbibing the underlying philosophy of getting together, learning together and achieving together and living the company's value 'to serve' and take everyone along. Strengthening the supply chain at each level through the cluster journey- especially when it is done across sectors, is sure to make a huge difference to the manufacturing sector in India as well as the 'Make in India' vision. 



# Global competition will determine the future trends

L. Krishnan, MD, TaeguTec India P Ltd says today customers require competitive solutions.

**How has been the market for you in the last one year?**

We are seeing green shoots in 2016; slow but small growth is returning to the manufacturing sector led by the automotive industry. This year we expect to register single digit positive growth after two years of flat sales performance. However several sectors are yet to pick up to their full potential.

**What is your speciality as a cutting tools supplier?**

TaeguTec focuses on tool materials like tungsten carbide, cermets, ceramics, CBN and PCDD. Tungsten Carbide-based tools constitute a dominant part of our business in line with the market, while our presence in other cutting tool materials is not as significant. We are able to offer our customers a large bouquet of standard products and tailor-mades to suit their application needs.

**Which customer sectors give you more business?**

Automotive and auto component makers form a considerable portion of the overall metalworking industry in India. We hope to see a good amount of growth and contribution from defence and aerospace sectors in the coming years.

**What will be the key trends in the metal cutting industry in the new dynamic scenario?**

Global competition will determine the future trends in manufacturing. While India has significant manufacturing activity in several sectors, the scale of activity is much lower as compared to China, Germany and Japan. With rising cost of labour and shortage of skilled labour around the world, automation is set to get a shot in the arm. Under these conditions, processes and tools have to be reliable, consistent and flexible.

**Cutting tools players are required to help customers optimise their tool usage with the aim of increasing their productivity and reducing their costs. What are you doing on this front?**

Today, cutting tool business is no longer just a business involving sale of tools. Customers require competitive solutions; that help to optimise process and reduce cost per



*"We monitor key trends in the manufacturing industry. We need to be prepared for our customer industries in terms of material, machining process, environmental and legal requirements."*

L. Krishnan, Managing Director, TaeguTec India P Ltd.

component. We have developed an integrated approach towards customer service under the umbrella brand of 'TaeguTecconomics'. We are building capacity to partner with customers and to help them reduce their cost per component consistently. Today, the manufacturing industry demands solutions that address specific requirements in terms of design, machining environment, the material used and the final product.


**How do you constantly innovate your offerings?**

We monitor key trends in the manufacturing industry. We need to be prepared for our customer industries in terms of material, machining process, environmental and legal requirements. Our product development initiatives and new product launches are well-dovetailed to meet these ever changing demands. We introduce over 1000 new lines of products every year and thus, remain ahead of the ever-changing customer needs.

**Many customers are now focusing on environmental and safety concerns. How are you helping them?**

We keep abreast of regulation requirements and safety concerns of customers relating to use of cutting fluids. We have a comprehensive range of offerings to meet the demands of dry cutting and MQL (Minimum Quantity Lubricant) environment/machines.

**Tells us about your newly launched products**

We launch over 1000 new lines every year spanning across tools for turning, milling, hole-making, holding systems and others. Our turning family offers a rather large bouquet of offerings including products like Turn Rush and Rhino Rush. In milling, 2PKT, 3PKT, Chase2Hepta are quite popular, while Quad Rush is most sought after in grooving. Tools like Top Drill, Drill Rush, Twin Rush, Spade Rush are breakthrough products to address hole-making applications. 

THE ULTIMATE GUIDE TO PROFITABLE MANUFACTURING  
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# COMING SOON

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# Enhancing general-purpose machine shops' performance

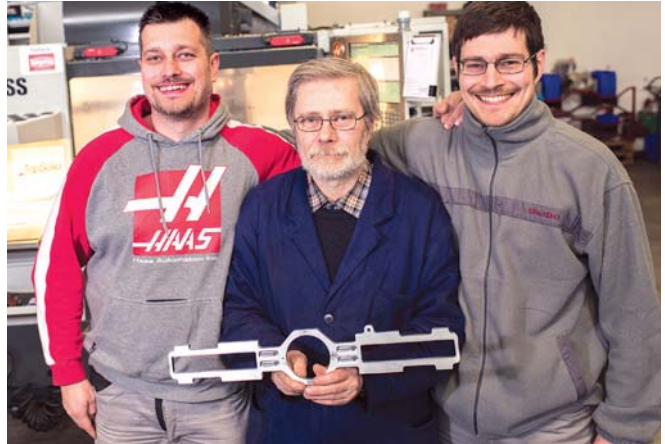
There are numerous small shops across the world, which deal with no particular industry or technology. Haas machines help such shops to carry out their jobs efficiently.

**T**here is always a need for general-purpose machine shops. These are companies, often family-owned, that make a specialisation out of being generalists. Usually they do not have their own product lines; they do not even have a preferred industry sector or a technology that sets them apart from other shops. What they do have, however, is their reputation. G-Tech CNC, based near Reggio Emilia, Italy is one of them.

"We are here for what the market needs, when it needs it," says Davide Gherpelli, company's spokesperson. "We can supply prototype parts in small quantities, or we can provide parts in high volume—large batches of series production. No particular sector; we think of ourselves as a 360 degree company."

From the 1970s until 2011, Davide's father, Giorgio Gherpelli, ran G-Tech. In fact, the company began with Davide's grandfather. Davide joined the company in 2004 while his brother Mirko, 'mago' (the magician), for his skill with the Haas CNC, joined a decade later. Now, there are five employees at G-Tech who run a very busy machine shop. "We invested in our first Haas CNC machine in 2007," remembers Davide. "An SL-10 turning centre. We then bought a Super MiniMill, an ST-10Y turning centre with live tooling, a VF-2SS high-speed mill, and a VF-1, which is our general-purpose machine. In fact, we have a Haas machine tool for almost all our machining needs. We have a very good selection!"

Davide claims that his early experience with Haas helped make up his mind about the capabilities of the machines, and their suitability for a growing job shop. Projects vary as much in type and industry sector as they do in volume of parts required. The company's Haas VF-2SS, equipped with an HRT210 is always busy, claims Davide. "We use this machine a lot for more complex parts – typically, prototypes. We use




"As our assignments become more complex, and we attract more big-name customers, we already know we will need more Haas machines; the UMC750, for example."

**Davide Gherpelli**, company's spokesperson

TopSolid CAD/CAM and programme off-line, whereas, with the ST-10, we usually programme at the machine. We're currently using the ST to make bearing housings for the Airbus A350 and Ti rear wheel hubs for the Politecnico di Torino hyper-mileage car. The VF-1 is being used to machine parts for a drone used to measure contours of the land in 3D."

Around the workshop are various other projects that the company isn't at liberty to discuss openly. One component in particular looks like the inner part of a steering wheel for a high-performance sports car. "I can't tell you anything about that," smiles Davide. "Secrecy is important for some of our customers." Good reputations are hard to come by but very easy to lose. "We've built our reputation on delivering good parts on time," says Davide, "but also for being trustworthy and discreet, at the same time."

"The auto sector is very sensitive, especially in this part of Italy. There are some big names nearby." He further said, "As our assignments become more complex, and we attract more big-name customers, we already know we will need more Haas machines; the UMC750, for example." For more than 50 years, five axis machining was simply too expensive for small to medium sized job shops like G-Tech CNC. Not anymore. "The UMC750 is an affordable 3+2 machine tool," concludes Davide. "Like the Haas machines we already own, if we buy one it will allow us to expand and build our business for years to come." And with its reputation preceding it, perhaps this family will stay in business for many more generations, as is the Italian way. 

Source: HAAS



# Working closely with the customer

Customers are inclining towards low-cost automation says **P. G. Jadeja**, Chairman & Managing Director, Jyoti CNC Automation Ltd and President, Indian Machine Tool Manufacturers' Association (IMTMA).

By Swati Deshpande

**Q How has been the market for your company in the last one year?**

After sluggish market conditions, the market started witnessing improvement since end of last year. However, the real turnaround time is being seen from March 2016. The machine tool companies are now registering 15–25 percent growth as compared to last year. Jyoti CNC Automation is registering similar growth numbers.

**Q Which are the industry sectors give you more business?**

This growth is coming mainly from the automotive sector. This is one of the booming industries that is growing by 20–22 percent. Some of the other industries that are contributing to growth of our business are aerospace and defence. Additionally, thanks improved market conditions in the global market, our exports are also growing since last few months.

**Q What new trends do you foresee in the industry?**

We are observing gradual change in the consumer's behavior. Now, customers are more open to adapt automation though most of them ask for low-cost solution. With this, they want to reduce dependency on the labour and achieve higher consistency and quality.

**Q What competitive advantage do your products offer?**

Reading the consumer behaviour of adaption of automation, we offer machines that give cost-competitiveness. We emphasize on incorporating latest technology. Multi-tasking machines are our specialty. We offer machines that do multiple jobs and hence save customers' cost of buying new machine.

**Q Tell us about your latest products and innovations?**

As I mentioned before, multi-tasking machines are our forte. We offer consumers flexibility of doing turning and milling jobs on a single machine. Also, our 5-axis machines are our focus area. The other latest innovations from us are few CNC machines that integrate robots.

**Q Being energy efficient is one of the key trends today. What benefits your products are offering to the customers in this regard?**

We are working in this area for quite some time now. One of the best examples of this is the software that we have developed in-house. This software allows our customers to save




"This growth is coming mainly from the automotive sector. This is one of the booming industries that is growing by 20–22 percent. Some of the other industries that are contributing to growth of our business are aerospace and defense."

power when operators are not around. For an instance, it will help the company to switch off lights in the area where operators are not present.

**Q Being partner in customers' success has become mantra in the manufacturing industry. What is your company's approach towards it?**

We work closely with our customers and have a team of 42 engineers to serve our customer in a best way. We manufacture each machine understanding the requirement of our customer, their processes and work. Meaning, no two machines that we provide will be the same.

**Q What are your expansion plans in the near future?**

We are now focusing on the Indian market and plan to penetrate more and more in this market. Also, we are focusing on increasing our exports. We have already heavily invested in plant. Today, our plant capacity utilisation is 55–60 percent. We may think on further investment in 2018. 



# Reinventing Invention

Stratasys multi-colour, multi-material J750, 3D printer creates photorealistic prototypes for Synergy, a product development company



**S**ynergy, a product development company in Israel, lives and breathes design innovation. Clients rely on Synergy to transform bright ideas into viable, manufacturable and marketable products. Industrial designers and engineers often work around the clock to perfect the grip on a medical device or the appearance of a phone charger.

“The first time the entrepreneur sees his idea and feels it in his hands, is a crucial moment. We need to give him the most realistic prototype possible,” said Michael Librus, CEO, Synergy. “Dream designs can be rendered onscreen quickly, but functional prototypes can take weeks of investment in labour and outsourcing – especially when products have complex designs and diverse materials. Design ideas are embraced, refined or abandoned based on the look and feel of a prototype. That’s why we decided to bring the Stratasys J750 in-house, enabling us to have product-matching prototypes in just a few hours.”

So when Synergy redesigned a keypad for an emergency-response system, used in the after-market automotive industry, the Stratasys J750 played a key role. The project meant producing multiple designs for the panel, which mounts above the rear-view mirror, to test which would best fit the car’s interior and pass ergonomic and mechanical testing. Each iteration included soft-touch buttons, backlighting, graphics, housing and internal connections to the electronic panel.

## Eliminating multiple post-processing steps

Before the Stratasys J750, Prototyping Manager Omer Gassner would have tapped several vendors to create a single keypad panel prototype: CNC machining and water printing for the body, casting for the light pipes, sanding for smoothness and then silicone engraving and additional printing for the buttons. It would have taken 10-14 days to create, at a cost of \$700 per unit.

With the Stratasys J750, it took just a few hours and only cost \$200 per unit. Tamar Fleisher, Art Director, Synergy said clients appreciate the realism and responsiveness that the J750 technology adds to product development. “Now our customers can make instant decisions about the ergonomics of a product – about the touch and feel – as well as test how it

Product-matching 3D printed prototype keypad for an automotive emergency response system produced on the Stratasys J750 3D Printer.

“The Stratasys J750 3D Printer was launched earlier in India, and is best suited for customers from the automotive, consumer product, medical, research institutes, service bureau or machinery sectors.”




Rajiv Bajaj, Managing Director, India, Stratasys India Pvt. Ltd.

fits into its environment,” He added. “The ability to simulate light transfer on the panel meant my client could decide about every detail of the design. And if a design change was needed, I could go to my computer, make the design change and print it in a matter of hours.”

For Librus, photorealistic product-matching prototypes empower him to better fulfil the dreams of innovation that bring customers to Synergy. “I am just glad that we have the Stratasys J750 3D Printer in-house,” Librus said. “We wouldn’t do it any other way.”

At Synergy, this machine reduced average prototyping lead time by 90 percent while cost was decreased by 70 percent

The Stratasys J750 3D Printer was launched earlier in India, and is best suited for customers from the automotive, consumer product, medical, research institutes, service bureau or machinery sectors.

“The Stratasys J750 3D Printer was launched earlier in India, and is best suited for customers from the automotive, consumer product, medical, research institutes, service bureau or machinery sectors. This solution is especially useful for design companies and manufacturers who look for quick turnaround time prototyping solution that produces true-to-life, multi-colour and multi-material parts for their own product design purposes or for their clients,” said Rajiv Bajaj, Managing Director, India, Stratasys India Pvt. Ltd. 





## Merc opens 'Advanced Auto Body Repair Training Centre'

successful career in the highly competitive automotive service sector. The selected candidates will get an opportunity to hone their technical skill sets with the help of the latest equipment including a Mercedes-Benz car provided by the company. Mercedes-Benz India has spent a total of Rs.26.5 million on the project. Roland Folger, MD and CEO, Mercedes-Benz India said, "The unique aspect of this collaboration will be the continuous engagement of Mercedes-Benz India colleagues in the planning of the syllabus on modern automotive technology, supply of Mercedes-Benz cars for training purposes, training of lecturers and also supply of advanced technical tools and equipment for the students."

**M**ercedes-Benz India has inaugurated the unique 'Advanced Auto Body Repair Training Centre' in association with Don Bosco ITI, Chinchwad. The Training Centre is aimed at equipping ambitious youngsters with advanced technical skill-sets enabling them to pursue a

## Hero launches first in-house product

**H**ero MotoCorp Ltd. has launched the new Splendor iSmart 110 – the first motorcycle to be developed completely in-house, with Hero's own technology. Built on a completely new chassis and frame, the bike is powered by the new 110cc 'Torque on Demand' engine that also features Hero's patented i3S technology. It is entering the market within six months of being showcased at the 2016 Auto Expo. "Coupled with our green manufacturing facilities, such products will enable us to achieve our sustainability goals. With our ever-increasing global footprint, we are engaged in developing products that will bring to life engineering excellence that is made-in-India, for India and the world," said Pawan Munjal, Chairman, MD & CEO, Hero MotoCorp Ltd.



## Continental opens test center in Yancheng, China, with CATARC

**C**ontinental has announced that its test center Yancheng has officially opened. In cooperation with China Automotive Technology & Research Center (CATARC), the test center Yancheng will mainly support the testing and validation of Continental safety products and systems, such as electronic and hydraulic brake systems, advanced driver assistance systems (ADAS) and tyres.

The test center Yancheng, occupying 2,500 sq m in phase one, including offices and testing workshops, is Continental's newest testing facility in China after the winter test center in Heihe. It will provide Continental with a more solid foundation for technical support and product development in China, strengthening Continental's leading position as an international automotive and systems supplier in the market.



## Carlos Ghosn announces new Renault SUVs for Brazil

**R**enault Global CEO Carlos Ghosn has announced that Renault Brazil will extend its lineup of SUVs with the Kwid, Captur and New Koleos joining the bestselling Renault Duster. "With three of our SUV models to be produced in Brazil, our confidence in this market is further confirmed," Ghosn said. He also announced that the Renault Captur will be produced in São José dos Pinhais on the same

line that currently assembles the Renault Duster, Sandero, Logan, Duster Oroch and Sandero Stepway. The launch of the Renault Captur in the popular, fast-growing C-SUV segment will contribute to Renault's growth in Brazil. The Renault Kwid will make its debut in 2017 together with the top-of-the-range New Koleos that will be imported. The Renault Captur will be available during the first half of 2017.





# A step change!

Apogee Industries has been growing organically for ten years at the rate of 15-25 percent per year and is now ready for a step change in productivity after it has taken delivery of a DMG MORI NTX 1000 2nd Generation mill-turn centre.



William Chappel and Paul Kellett (DMG MORI) at MACH

**F**rom its factory based Pewsey, Wiltshire Apogee Industries supplies complex parts to the oil & gas, aerospace, motorsport and defence industries. William Chappel, Director at Apogee Industries says, “We produce components for companies around the world, working in partnership with them to develop a lean and efficiently manufactured product. In every case we need to achieve high quality and accuracy, whether it is a single one off prototype or a production run of thousands.”

Apogee Industries currently utilises 4-axis machining centres and driven tooled turning centres together with a high level of engineering input. Apogee has built a reputation for making complex, intricate and high tolerance parts in exotic materials to an exceptionally high standard. However, the current methodology requires numerous set ups and many bespoke fixtures which take a considerable amount of time and skill. William Chappel adds, “Many of the parts require between four and nine setups along with the associated jigs and fixtures for each operation. The result is an unacceptably low level of overall spindle run time offering very little optimisation and hence resulting in limited output. We anticipate that

“We produce components for companies around the world, working in partnership with them to develop a lean and efficiently manufactured product. In every case we need to achieve high quality and accuracy, whether it is a single one off prototype or a production run of thousands.”

**William Chappel, Director at Apogee Industries**

the increase in productivity by the implementation the NTX 1000 2nd Generation will allow an additional up time of 70 percent.”

The acquisition of a laser cutting machine at its second factory helped Apogee to realise that automation and advanced production methods could help the growth of the company and enable it to fulfil the customer’s requirements while keeping all aspects of production in house. In one instance, a part that would normally be machined from solid billet was laser profiled first before being machined to its final specification. This not only reduced material wastage but dramatically reduced the production time of each part leading to a cost sav-







“As a company we should always strive to invest in the latest equipment to increase efficiency, productivity and overall value for the customer, this predominantly leads to an advanced and automated manufacturing space.”

ing and lead time improvement. Applying this experience to machining helped the company to understand the improvements it would gain from investing in the NTX 1000 2nd Generation.

William Chappel says, “The NTX 1000 2nd Generation replaces four ageing machines and is expected to dramatically increase spindle run time. This is where we gain critical revenue to invest in new equipment. The NTX1000 2nd Generation is scheduled to run our monthly batch requirements through the evenings while the small quantities of complex jobs can be watched and manned during the daytime. In addition to the extra machining time, savings will be made on maintenance, associated running costs and duplication of tooling packages.”



The NTX 1000 2nd Generation has 65mm (an option) through bar capacity and can throw a 430mm diameter by 800mm long billet. It is also equipped with a B-axis head rated at 20,000rpm (an option), and a 10 station lower turret with a built in motor giving 10,000rpm. Due to the machines unique capabilities Apogee is able to bring a number of process in house, that it would normally subcontract, from gear cutting, broaching keyways and splines to deep hole drilling and a limited amount of gun drilling thanks to the 7.0 MPa coolant pressure. The automation comes from the addition of a bar feed and in machine travelling work piece unloader, this will allow Apogee to run the machine lights out and unattended, without an operator having to handle components mid production, gaining an extra 60 percent of production per week.

To ensure quality, repeatability and reliability the machine is fitted with linear scales, a Renishaw probe and tool breakage detection. This allows Apogee to probe in cycle, validate the parts, and update tool offsets automatically before removal from the machining cycle. The advanced systems can also switch to sister tooling if needed, and ensure parts are rejected if there is a tool failure.

William Chappel elaborates, “British manufacturing is




“The NTX1000 2nd Generation is scheduled to run our monthly batch requirements through the evenings while the small quantities of complex jobs can be watched and manned during the daytime.”

**William Chappel**

based upon high technology. As a company we should always strive to invest in the latest equipment to increase efficiency, productivity and overall value for the customer, this predominantly leads to an advanced and automated manufacturing space. The NTX 1000 2nd Generation is the start of this transformation for Apogee.”

Fitted with CELOS, the NTX 1000 2nd Generation will integrate well with Apogee’s existing job management system. The company will also have the CELOS PC version enabling its engineers to access drawings, images of the setup and notes and to schedule jobs from the office. William Chappel says, “CELOS will be very important to us as we work in a dynamic environment where we have to respond very quickly to our customers’ needs and requests. It will enable us to rapidly re-tool and setup for repeat jobs. Previously we had to take immense care on the multiple setups, produce spare parts for each operation and endure an overly high scrap rate but, with the NTX 1000 2nd Generation, the requirements for jigs and fixtures will be effectively removed and we will be given the ability to manufacture the precise amount of components required.”

“The machine already has a full production schedule on arrival due to on-going projects. Naturally, reliability and service will be of paramount importance and DMG MORI’s transparency in service and repair times as well as the obvious build quality and precision characteristics of the machine is very reassuring.” 

Source: DMG MORI UK





# Smooth partnership

A global leader in the lubricants segment has joined hands with India's largest machine tool conglomerate as the official lubricant partner for its machine tools to enable manufacturing customer achieve higher productivity and sustainability goals

**E**xxonMobil Lubricants Pvt Ltd has become the official lubricant partner of Micromatic Machine Tools Pvt Ltd, the marketing and service company of the Rs.1,200 crore Ace Micromatic Group that is India's largest machine tool conglomerate. Through this collaboration, ExxonMobil aims to offer Micromatic customers its high quality products addressing application needs supported by the Solcare program for coolant management. In addition, the joint partnership will create greater awareness of using the right oil, at the right time and at right place through training programs, customer education seminars and knowledge enhancement sessions with Mobil and Micromatic engineers. All of these will contribute to the success and strengthening of the long-term relationship.

Glen Sharkowicz, Industrial Lubricants Marketing Manager, Asia Pacific, ExxonMobil Fuels & Lubricants, said, "ExxonMobil works closely with equipment builders (EBs) to analyze machinery and equipment trends, as well as identify effective solutions that improve equipment efficiency and performance. Our collaboration with EBs has led to the development of advanced high performance lubricant solutions that our customers can rely on. Our partnership with Micromatic, one of the leading machine tool developers, will help us push the boundaries of lubrication formulation and performance"

TK Ramesh, CEO, Micromatic Machine Tools Pvt. Ltd, said, "With over two decades of experience and supplying more than 25,000 machines in India and abroad, we understand the demands of manufacturing industries. ExxonMobil's team has used its application expertise and enabled partners like us improve product performance and efficiency of our machines. Micromatic welcomes this partnership with ExxonMobil in light of the growing global demand for Indian-made equipment and we look to leverage our collective knowledge and expertise to bring improved performance and productiv-




**"Our partnership with Micromatic will help us push the boundaries of lubrication formulation and performance."**

**Glen Sharkowicz, Industrial Lubricants Marketing Manager, Asia Pacific, ExxonMobil Fuels & Lubricants**

ity to our customers. We also look forward to Mobil's expertise in selection of appropriate fluids which is in line with our commitment to promote Green environment."

"In India, the machining industry is the backbone of growth for industrial manufacturing. India is progressing towards becoming a technology focused manufacturing hub as part of the government's 'Make in India' initiative. Mobil Industrial Lubricants is proud to partner Micromatic to better understand the needs of Indian component and equipment manufacturers, provide them with customized solutions that will help them achieve a winning advantage," said Shankar Karnik, General Manager, Industrial, ExxonMobil Lubricants Pvt. Ltd

"As part of our partnership, we have developed a program, which includes a quick reference guide for customers on lubricant management and ensures all Micromatic customers across India have access to the right lubricants at the right time, resulting in customer delight and assurance. This allows both Mobil and Micromatic to bring their combined capabilities to achieve new heights of equipment productivity and efficiency," added Imtiaz Ahmed, Asia Pacific Mobil SHC Brand Manager, ExxonMobil Lubricants Pvt. Ltd. 

**"We look to leverage our collective knowledge and expertise to bring improved performance and productivity to our customers."**

**TK Ramesh, CEO, Micromatic Machine Tools Pvt. Ltd.**



# Connecting shopfloor to the top floor

T K Ramesh, Chief Executive Officer, Micromatic Machine Tools Pvt. Ltd. says customers are now favouring smart solutions.

By Swati Deshpande

**Q How has been the market for your company in the last one year? Which are the industry (customer) sectors that give you more business? Are you looking at new sectors? Why?**

Starting from last three months of 2015, the business is doing well. This year we have registered 20 percent growth by volume and 17 percent growth by value in the business. Automotive is the major growth driver for us. If it is to be divided further, commercial vehicles, passenger car, small cars and two-wheeler are contributing towards the growth.

**Q Over last two years, what changes have you observed in customers' demands?**

Customers have become demanding on the parameters such as quality, performance, speed of delivery and pricing. However, a significant change that I have noticed over the period of times is that earlier owner or top management made the decision of purchases. However, now supervisor or operators' opinion plays an important role in the decision making. Factors such as ease of use and operator's convenience are given a top priority.

**Q What new trends do you foresee being set up in the machine tool industry?**

As per my observation, automation is one of the trending topics in the manufacturing industry. However, automation is not limited to hardware. In fact customers are more favoring smart solutions, which is why we have developed TPM Trak software. It connects the shopfloor to the top floor. It makes old or new machines intelligent and can communicate with the operators. For example, it will suggest when coolant or lubricants needed to be replaced.

**Q Tell us about your latest products and innovations?**

We have lately launched range of new machines that include grinding machines and twin spindle machines. Moreover, we have also introduced Elite series of turning centers.

**Q Today, the customer service is not limited to products. Being partner in customers' success has become mantra in the manufacturing industry. How is your company's approach towards it?**

The mantra behind Ace Micromatic's growth is 'hand holding



**"We emphasize on educating customers and offer training on our machines. We believe that the machine will offer optimum performance when it is well-operated and well-maintained."**

**T K Ramesh, Chief Executive Officer,  
Micromatic Machine Tools Pvt. Ltd.**

with customers'. Understanding the lack of skilled workforce, we have developed certificate courses for skill development. The duration of the course is 6–8 months. During this period we train people on our machines and offer them placement with our customers. At times, clients nominate personnel from their organisation. Such training takes place in seven locations in the country.

Additionally, we also emphasize on educating customers and offer training on our machines. We believe that the machine will offer optimum performance when it is well-operated and well-maintained.

**Q What are your expansion plans in the near future?**

Currently, we have capacity of producing 5,000 machines per year and we plan to double the production by 2020. We are already working on this. Moreover, we also want to increase our exports through forging new partnerships and joining hands with dealers. Right now, our export is 11 percent of our business and we are aiming at increasing it to 20 percent in next five years. 



## ISCAR PCBN

### Know more about ISCAR's wide range of PCBN grades for hard part turning

In the scale of hardness PCBN (Polycrystalline cubic boron nitride) follows synthetic diamond, making it an ideal material for the production of highly efficient cutting tools. In addition to its inherent durability, PCBN has excellent thermal shock and chemical resistance. Although most importantly for users, PCBN can be used at very high cutting speeds.

ISCAR offers a wide range of PCBN grades for HPT (Hard Part Turning). When we speak of HPT, we are referring to turning of difficult materials such as hardened steels (45 up to 68HRC), super alloys, sintered metals and gray cast iron.

Throughout global industry, ISCAR PCBN inserts are the first choice for HPT at high cutting speeds and are available in two main forms:

1. Brazed PCBN - Carbide as a base with brazed CBN tips or top layer for finishing operations.
2. Solid PCBN - for more aggressive machining conditions.

[fig. 1-5]

In addition, ISCAR presents a new generation of PCBN inserts with the inclusion of efficient chipbreakers that provide improved chip control. When using the standard PCBN flat top inserts (without chipformers - [fig.6]), long unbroken and uncontrolled chips are often produced. These chips may harm the workpiece surface and interrupt the machining process.

The new ISCAR PCBN inserts, with HF & HM chipbreakers, provide excellent chip control at various depths of cut. ISCAR's PCBN inserts with chipbreakers solve the problem of long and curled chips.

[fig. 7-9]

#### Why ISCAR PCBN inserts are the best solution for HPT?

Boron Nitride is characterised by a very high hardness level of 4500HV, close to a synthetic diamond; PCBN also has high thermal conductivity with good chemical stability at high temperatures. These advantageous qualities allow machining of hardened materials at high cutting parameters. In addition, PCBN's excellent wear resistance ensures significantly extended tool life, it enables demanding dimensional tolerances to be held and excellent surface finish standards to be maintained.

All ISCAR PCBN inserts feature very high precision standards as they are fully ground.

One of the most important advantages of the use of PCBN inserts is that they are able to replace the slow and expensive grinding operations of hardened parts. Turning with PCBN inserts dramatically reduces the cost per part when compared to the grinding operation.

ISCAR's global sales figures prove that customers are changing their finishing processes from grinding to turning with PCBN inserts. This trend to replace grinding with turning is now common across global automotive industries and has significantly changed manufacturers' technological processes. PCBN inserts for finish

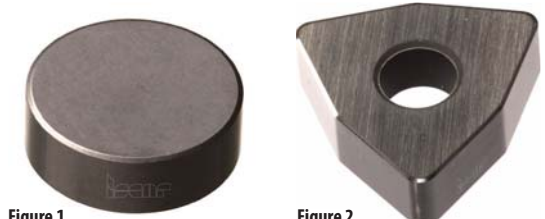


Figure 1

Figure 2



Figure 3

Figure 4



Figure 5

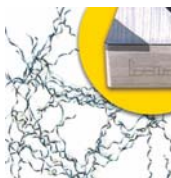


Figure 6

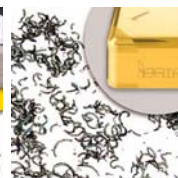


Figure 7



Figure 8

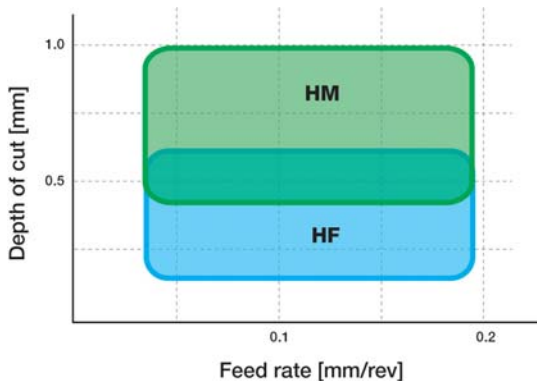


Figure 9





turning of hardened parts shortens production time and as a result increases both productivity and profitability.

**ISCAR PCBN GRADES**

ISCAR provides a wide range of PCBN grades. Each grade has been specifically developed for high performance at wide spectrums of applications from continuous cut to heavy interrupted cutting conditions. [fig.10]

**Specifications of PCBN Grades for Hardened Steels**

**IB50:**

Uncoated grade that contains 50 percent CBN composed of fine grain size in a special binder. Used for finishing operations of hardened steels at medium to high cutting speeds in continuous conditions. Features excellent wear resistance with very high surface finish results.

**IB10H:**

Uncoated grade that contains 53.5 percent CBN composed of super fine grain size in a special binder. Used for finishing operations of hardened steels at medium to high cutting speeds in continuous up to light interrupted cutting conditions. Features very good wear resistance with excellent surface finish results.

**IB20H:**

Uncoated grade that contains 65 percent CBN composed of fine and medium grain sizes in a special binder. It is used as a general purpose grade for finishing operations of hardened steels at medium cutting speeds in continuous up to medium interrupted cutting conditions. Also, it features good balance between wear resistance and impact resistance.

**IB55:**

Uncoated grade that contains 60 percent CBN composed of fine grain size in a special binder. It is used for finishing operations of hardened steels at medium cutting speeds in continuous up to medium interrupted cutting conditions. It features very good toughness properties at medium feeds and depths of cut.

**IB10HC:**

Coated PVD grade that contains 53.5 percent CBN composed of super fine grain size in a special binder. Used for finishing operations of hardened steels at high cutting speeds in continuous up to light interrupted cutting conditions and features excellent wear resistance with high crater resistance and provides a high standard of surface finish results.

**IB25HC:**

Coated PVD grade that contains 75 percent CBN composed of coarse grain size in a special binder. Used for finishing op-

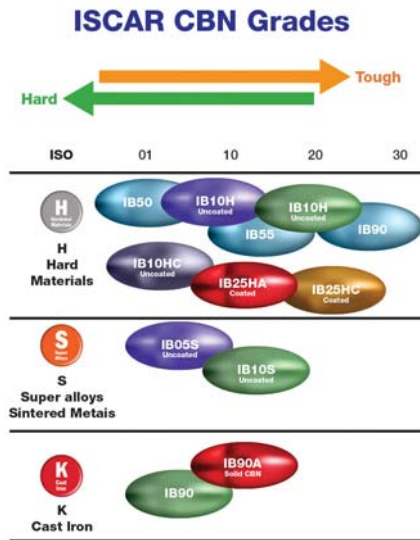


Figure 10

erations of hardened steels at high cutting speeds in medium to heavy interrupted cutting conditions. Features very good toughness properties and impact resistance.

**IB25HA:**

Coated PVD grade that contains 65 percent CBN composed of fine and medium grain sizes in a special binder. Used as a general purpose grade for finishing operations of hardened steels. To be used at continuous up to medium interrupted cutting conditions with medium cutting speeds. Features good balance between wear resistance and impact resistance. Moreover, it is available with HF & HM chipbreakers.

**Specifications of PCBN Grades for**

**Cast Iron and Hardened Steels**

**IB90:**

Uncoated grade that contains 90% CBN composed of medium grain size in a special binder. Used for finishing operations of cast iron at high cutting speeds, and also for medium speeds on hardened steels with heavy interrupted cutting conditions. Features very high toughness and impact resistance.

**IB90A:**

Solid uncoated grade that contains 90 percent CBN composed of coarse grain size in a special binder. Used for medium to roughing operations of cast iron at high speeds. Excellent for hardened steel machining with interrupted conditions. Features toughness and excellent impact resistance.

**Specifications of PCBN grades for super alloys and sintered metals**

**IB05S:**

Uncoated grade that contains 95 percent CBN composed of super fine grain size in a special binder. Used for finishing operations with continuous conditions on sintered metals at high cutting speeds. Features high hardness and ensures very good surface finish.

**IB10S:**

Uncoated grade that contains 95 percent CBN composed of fine grain size in a special binder. Used for finishing operations on sintered metals at high cutting speeds and also for valve seats and Titanium alloys at continuous up to light interrupted cutting conditions. Features high hardness and good wear resistance.

**Edge preparation options**

PCBN cutting edge preparation is highly important in HPT. The main idea is to strengthen the insert by grinding a narrow



negative land on the cutting edge (T-land) and an additional operation of light rounding process (honing) as a complementary.

**ISCAR PCBN edge preparation options for Hardened Steels**

1. T-land (chamfer) of 10–15° and honing applied on the chamfer strengthens the cutting edge and ensures that the insert will resist HPT at continuous machining conditions.
2. T-land of 15–25° and honing applied on the chamfer strengthens the cutting edge and ensures that the insert will resist HPT at continuous and light interrupted machining conditions. This is the first choice when considering PCBN inserts for general use.
3. T-land of 25–35° and honing applied on the chamfer ensures a very strong cutting edge and enables the insert to machine at medium to high interrupted conditions at unstable machining conditions.
4. Honed edge without T-land (on request)  
Honing applied to PCBN inserts will help strengthen the cutting edges and protect them from chipping or early frac-

tures. It's also a good option when surface finish specifications are extremely high and tight tolerances are required. PCBN inserts with honing are mainly used for continuous machining conditions. It is recommended to ensure feed rates are greater than the hone size to allow efficient cutting action.

**ISCAR PCBN edge preparation options for Cast Iron**

T-land of 15–25° without honing applied on the chamfer is the preferred edge preparation for cast iron, ensuring a strong yet sharp cutting edge, which is ideal for machining these types of materials.

**ISCAR PCBN edge preparation options for super alloys and sintered metals**

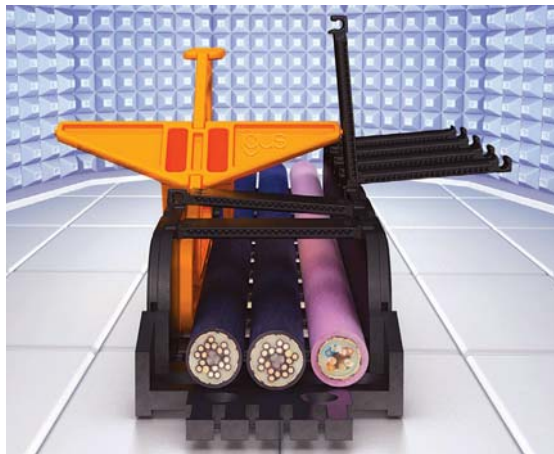
The preferred edge preparation is T-land (chamfer 15–25° with honing of 0.01-0.02). T-land of 15–25° and honing applied on the chamfer is the preferred option when considering machining sintered metals and super alloys. The combination of both processes on the cutting edge will guarantee an optimal cutting edge for these unique materials and inserts, withstanding much better under fragmented conditions.

## A new generation of its two-piece energy chain

### New machine building standard for energy chains

igus presented E2.1, a new generation of its two-piece energy chain. Based on continuous development and new customer requirements, the original series has been significantly improved. Compared to the previous version, the E2.1 offers revolutionary innovations to significantly improve the service life of customer applications.

For over 15 years igus has had the E2/000 energy chain series in its product range, which combines a versatile and lightweight assembly with strength and has become the standard chain in machinery construction for wood and metal processing worldwide. The E2.1 is a new energy chain in the range that consists of two pieces: a chain link and a crossbar. This can be opened on the outer radius on both sides with a screwdriver or the new chain opener which is supplied for free with every initial order, and opened out or even completely removed subsequently. The crossbars can easily be closed again by hand. By means of a screwdriver, this new generation allows the crossbars to be opened from the side of the chain link, which is advantageous in pre-assembled chains and areas with restricted access. Another constructive advancement on the



E2.1 is the 'brake' on the stop dog of the chain links. This ensures a very quiet chain travel with lower vibration and noise. Compared to the previous generation the E2.1 is quieter by around 50 percent.

**Design for maximum service life**

The new E2.1 series has a cable-friendly interior, which adds more space for the same outer dimensions when compared to the E2/000. "For example, this can be an advantage

in machine tools, because often very little space is available here," explains Harald Nehring, Authorised Officer for e-chain Systems, igus. In keeping with the design of the interior of the chain igus provides separators with rounded edges for a long service life of hoses and cables. For a precise mounting of the separators an integrated grid system is provided on the crossbars. The new E2.1 has an interior height of 38 millimetres and an inner width of 65 millimetres.

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## Pocket milling in titanium is an extremely tough challenge

Walter AG offers bespoke concepts for the aerospace industry

The demand for titanium materials in the aerospace industry is rising. Experts are predicting an average increase of 20 percent over the next five years. This will have consequences for the manufacturing plants, since processing titanium usually requires long machine running times. Walter AG supports its aerospace customers with new tools and extensive knowledge of components. The aim is to manufacture titanium components cost-effectively and in a time-saving manner.

The aircraft industry readily uses titanium, for highly stressed structural components in particular: Door frames, landing gear mounts and wing attachments – all these components typically have a high machining content, it is not unusual for the volume of swarf produced to exceed that of the finished component. This is primarily due to the fact that a large number of pockets are cut from solid forgings. Deep and shallow pockets, 5-axis pockets, triangular pockets – often with very thin walls or bottom faces; these pose a huge challenge for milling which, logically, is the machining technology for these structural components. Indexable inserts and solid carbide milling cutters help to maintain the balance here. The main focus is on process reliability since these structural components are extremely expensive. At the same time, cost pressure from the market demands high machining and productivity performance.

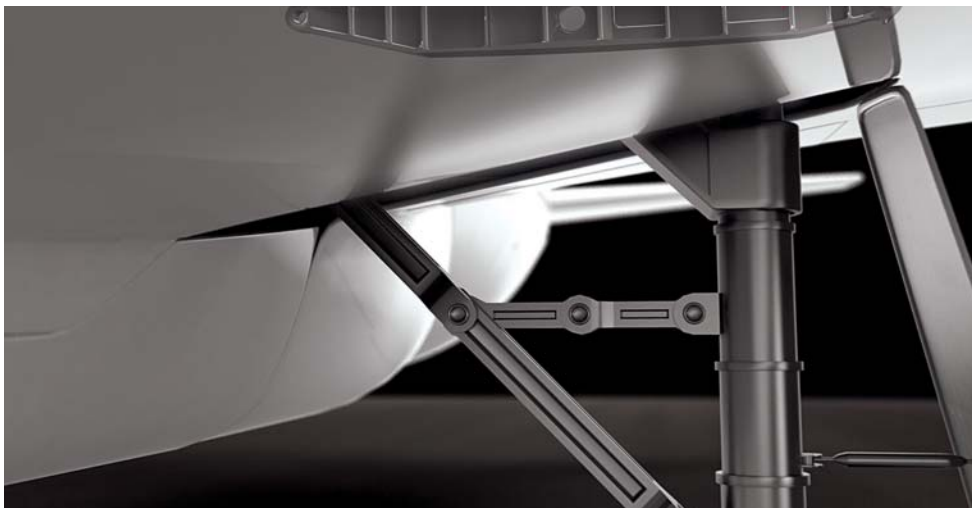
Typical when titanium machining, the material's low thermal conductivity and its tendency to vibrate require a very rigid machine concept as well as optimum cutting edge preparation. Dirk Masur, Component Manager Aerospace at Walter AG in Tübingen, Germany, together with his colleagues, works with titanium components and their special properties on a daily basis: "We focus on complete solutions," he explains. "This means that we coordinate all aspects, such



**Dirk Masur, Aerospace Component Manager at Walter AG: "We focus on complete solutions."** Image: Walter AG

as the tool design, CAM program and machining strategy, with the application in accordance with best practice considerations." The result is modern tool concepts which, in turn, are matched to the tasks in question, such as roughing, semi-finishing or finishing.

Last but not least, according to Masur, the development of productive and reliable strategies at Walter is based on knowledge of components which has been built up over a number of decades: "Being part of a global network is something we consider to be extremely important. Our expertise is based



**The landing gear mounts in modern aircraft are typical titanium structural components with large numbers of pockets.** Image: Walter AG





The M4002 is a high-feed milling cutter suitable for facing, interpolation and part plunging. The lead angle on the universal inserts is 15°. Equipped with the WSM45X cutting tool material, this tool is the ideal solution for pocket machining on components made of titanium. Image: Walter AG



The Walter Prototyp Ti40 is the titanium specialist among solid carbide end milling cutters. Its differential tooth pitch and the special design of the edge counter vibration. The tool is also suitable for intelligent strategies such as high dynamic cutting. Image: Walter AG

on intensive partnerships with focus customers, universities and machine tool manufacturers. Together, we are continually developing the machining operations for key components. This is how we ensure that we are always using the very latest technology.”

In the end, the machining specialists from Tübingen provide their customers with bespoke processes which enable maximum machining volumes. The key here is to match the processes with the available machine type capacity, for example, to gain maximum output even from machines with a lower performance. “The machining operations are simulated

and verified before the handover,” Masur stresses, “this means that the user does not have any unpleasant surprises in terms of cost-effectiveness or process reliability.”

### Representative test in titanium

Since there are virtually never any real test components readily available in the world of aerospace, nor any large structural parts, the experts at Walter AG demonstrated the performance of their current tool generations on a generic component. This is made of the commercially available material Ti6Al4V (3.7164). The experts at Walter designed the component with a range of typical pocket shapes which are the same as or similar to those which can be found on real components. This means that the machining results can be transferred one to one.

The plan includes a task for a quartet of tools: The M3255 tangential porcupine milling cutter, the M4002 high-feed face milling cutter (roughing operations), the Ti40 solid carbide end milling cutter and the modular ConeFit variant with Ti50 changeable head (semi-finishing and finishing operations). This is a combination which is possible in reality, for example when machining landing gear mounts. The coatings, as well as the macro geometry and micro geometry of the two solid carbide tools are designed specifically for titanium machining. The M3255 and M4002 milling cutters were given indexable inserts made from the new Walter WSM45X cutting tool material. The extremely tough CVD coating is ideally suited to ISO S and ISO M applications.

The following overviews show example machining rates and tool life, which could be implemented when machining pockets on a generic component:

1. M3255 tangential porcupine milling cutter / D = 50, z = 5 / WSM45X:

### Lightweight and high-strength – properties characteristic of titanium materials

Titanium materials are classified under the group of materials which are difficult to machine (ISO S). They have a low thermal conductivity, which means that the thermal load on tool cutting edges is very high. A low modulus of elasticity also encourages vibration during machining operations.

Ti6Al4V is the most frequently used type of titanium material in the aerospace industry. However, Ti-5-5-5-3 and Ti-10-2-3 are also increasingly being used, e.g. for landing gear components. Both materials have a higher thermal stability than Ti6Al4V and can only be machined with reduced cutting speeds.

Ti6Al4V thermal conductivity: 7.56 W/mK (steel Ck45: 51.9 W/mK)

Ti6Al4V elasticity modulus: = 110 kN/mm<sup>2</sup> (steel Ck45: 210 kN/mm<sup>2</sup>)

Ti6Al4V density = 4.4 g/cm<sup>3</sup> (steel = 7.85 g/cm<sup>3</sup>)

Tensile strength of Rm Ti6Al4V = 900 N/mm<sup>2</sup>



Using a generic component made from Ti6Al4V, the aerospace experts at Walter AG demonstrated typical processes for structural components. Image: Walter AG

## But what about aluminium?

The current trend is towards aluminium-lithium wrought alloys. Al-Li alloys are lighter than other Al alloys and have a higher modulus of elasticity – welcome properties for the aircraft industry. Walter AG has recently



The new M2131 ramping milling cutter from Walter AG specialises in HSC machining of aluminium materials. Image: Walter AG

introduced a new milling cutter – an aluminium specialist through and through – which is tailored precisely to the requirements profile of the aircraft industry: The M2131 ramping milling cutter with 90° indexable inserts. Its speciality is ramping and pocket milling. Walter manufactures the milling bodies with the highest possible concentricity, the indexable inserts having protection against centrifugal force. The milling cutter is also pre-balanced. Measures which guarantee that high process reliability are achieved in HSC machining.

The highlight of the new tool is, however, the WNN15 grade indexable inserts. This refers to an entirely new PVD variant, manufactured using the 'HiPIMS method'. 'HiPIMS' stands for "High Power Impulse Magnetron Sputtering". The special feature of this physical coating process is that it produces an extremely resilient and smooth PVD coating. The benefit of this new variant is the huge reduction in friction – and thus less formation of built-up edges. It also provides extremely high resistance to flank face wear as well as extremely high cutting edge stability. "Field tests have confirmed the technological advantages of the new indexable inserts in comparison to standard types," explains Wolfgang Vötsch, Product Manager for Milling at Walter AG in Tübingen. "Our application engineers have achieved increases in tool life of up to 200 percent with ease. In one case, we even succeeded in reaching an increase of almost 400 percent!"

Roughing – Pocket: 274 x 120 x 74 mm:  
vc = 40 m/min, fz = 0.15 mm, ap = 37.0 mm (2 steps), ae = 30.0 mm (concentric tool path)

The result: Machining volume: 212 cm<sup>3</sup>/min, tool life: 70 mins (t/pocket: 14 mins)

2. Ti50 ConeFit Prototyp / D = 25, z = 5 / solid carbide changeable head:

Semi-finishing and finishing – Pocket: 274 x 120 x 74 mm:

vc = 90 m/min, fz = 0.1 mm, ap = 16.0-22.0 mm (variable), ae = 3.7 mm (semi-finishing), 0.3 mm (finishing)

The result: Machining volume: 33 cm<sup>3</sup>/min, tool life: 60 mins (t/pocket: 14 mins)

3. M4002 high-feed face milling cutter / D = 50, z = 5 / WSM45X:

Roughing – Pocket: 254 x 127 x 42 mm:

vc = 60 m/min, fz = 0.7 mm, ap = 1.5 mm, ae = 50 mm

The result: Machining volume: 93 cm<sup>3</sup>/min, tool life: 40 mins (t/pocket: 10 mins)

### Milling with a difference: High dynamic cutting

A very good example of an intelligent machining strategy is "high dynamic cutting" (HDC). This improves both cost-efficiency and process reliability. With high dynamic cutting, the machining conditions remain constant – along, therefore, with the forces applied to the tool cutting edges and the process temperature. The corresponding functions are provided by modern CAM software. Advantages: Better performance and greater process reliability. The constant engagement condition generates lower vibration – and thus results in a higher tool life at a lower tool wear rate. The Walter Prototyp Ti40 solid carbide milling cutter is perfectly suited to this machining strategy.

4. Ti40 Prototyp / D = 20, z = 5 / solid carbide end milling cutter for titanium materials:

High dynamic cutting, triangular pocket: 200 x 92 x 48 mm: vc = 115 m/min, fz = 0.134 mm, ap = 47.5 mm, ae = 2 mm

The result: Machining volume 139 cm<sup>3</sup>/min (t/pocket: 9 mins).

Source: Walter Tools India



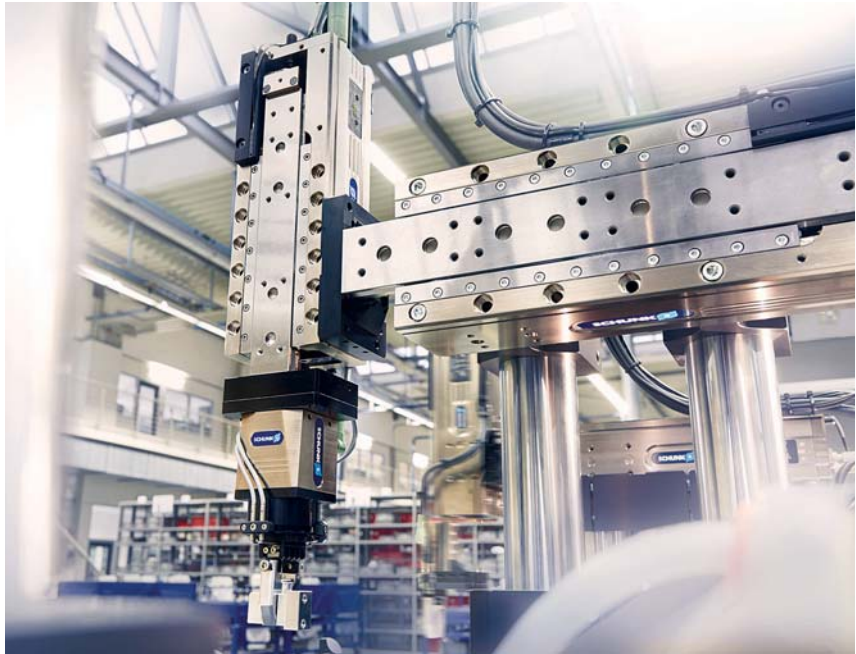
## Simple & clever: ultra-compact linear module

Insiders are speaking of a revolution, pragmatics of an intriguing simplification. Whatever your take on it, you can't deny that the linear modules in the SCHUNK ELP series define a new era of mechatronization in high-performance assembly. For the first time ever, SCHUNK, the competence leader for clamping technology and gripping systems has managed to develop an ultra-compact linear module with a low-maintenance 24V linear motor drive where commissioning it is as easy as making yourself a cup of coffee. Within SCHUNK's mechatronic modular system, the series top off the segment of easy-to-use mechatronic alternatives. Entire pick & place and feeding tasks can now be solved just as easily electrically as it has been with pneumatic modules.

The drive, controller, and unique auto-teach technologies are completely integrated into the compact module. To commission it, all you have to do is connect the axis using standard plugs (M8/M12), and set the end position mechanically using an Allen key. The speed of retraction and extension can be regulated according to the add-on weight by means of two rotating switches. You therefore do not need to possess mechatronic know-how or space in your control cabinet to use the linear module. An integrated LED display in the axis indicates the status of the teaching process. Between two and five strokes are normally all it takes before automatic programming is complete. The process is then constantly monitored and flexibly adapted to any changes.

### Straightforward commissioning – no wear parts

As is the case with conventional pneumatic axes, the electric SCHUNK ELP is actuated via binary signals, making it no problem to replace a pneumatic mini-slide with one. Since



**Due to the auto-teach function of the compact SCHUNK ELP linear modules, you do not have to know anything about mechatronics to commission them. The drive and controller are completely integrated into the axes.**

**“The speed of retraction and extension can be regulated according to the add-on weight by means of two rotating switches.”**

the compact units manage without hydraulic shock absorbers, commissioning and maintenance work is virtually eliminated. What's more, you do not need to worry about potential damage to your system or long downtimes due to defective shock absorbers. The electric axes also score points due to their long lifetime, lower operating costs compared to pneumatic modules and a high level of process stability. The linear axes will be available from the third quarter of 2016 in three sizes (25, 50, 100) each with three stroke variants. They have a repeat accuracy of 0.01 mm and a maximum nominal stroke of 200 mm. Due to the standardized hole pattern, they can be combined directly with numerous modules from the world's largest system range for modular high-performance assembly from SCHUNK.



**Simplified linear technology: SCHUNK ELP linear modules convince due to minimum commissioning and maintenance work, high energy efficiency, and low life cycle costs. With their auto-teach function, they break new ground when it comes to electric linear modules.**

*For more info, contact: Satish Sadasivan, Schunk Intec India Pvt. Ltd., Email: [info@in.schunk.com](mailto:info@in.schunk.com); Web: [www.in.schunk.com](http://www.in.schunk.com)*





## Tools for cost-effective machining

KOMET GROUP presents its technological prowess at AMB 2016.



Machining tools are becoming increasingly efficient. This is what the KOMET GROUP is demonstrating at AMB 2016, where the precision tools manufacturer is presenting numerous innovations under the trade fair slogan “TOTAL PRODUCTIVITY SOLUTIONS”. Highlights include the growing range of milling tools that can also be used in generative manufacturing processes, as well as a completely new indexable insert reaming tool and unique expansions of the KOMET KUB Pentron drill. Other attractions include the numerous innovations in mechatronic tools and ultra-hard cutting tool materials as well as the KOMET ToolScope assistance system, which bridges the gap from machining to Industry 4.0.

Alongside the KOMET solid carbide milling cutters for all requirements in the diameter range of 3.0–25.0 mm, the KOMET indexable insert milling cutters have primarily been subject to further improvements.

The cutter holders in the redesigned KOMET PCD milling cutters are manufactured using the generative process of laser melting, which means that these new tools can offer feed rates up to 50 percent higher than before. 3D printing enables

**3D printing enables up to twice as many cutting edges to be created—regardless of diameter. KOMET is also utilising the structural flexibility provided by the additive manufacturing process to create a perfect design for the course of the coolant channels inside these milling cutters.**

**Highlights include the growing range of milling tools that can also be used in generative manufacturing processes, as well as a completely new indexable insert reaming tool and unique expansions of the KOMET KUB Pentron drill.**

up to twice as many cutting edges to be created—regardless of diameter. KOMET is also utilising the structural flexibility provided by the additive manufacturing process to create a perfect design for the course of the coolant channels inside these milling cutters. Curved channel routes now reduce pressure loss in the coolant and are positioned precisely in such a way that every cutting edge is supplied with coolant from a separate channel.

Aside from the new production process, KOMET is also expanding its milling range with new designs, such as the KOMET hi.aeQ 45° face-milling cutter, which has a feed rate of up to 40 percent higher than a shoulder milling cutter. Moreover, the company is also launching new PCD milling and thread milling tools to standard versions that can be particularly productive when used in applications involving lightweight construction materials.

### Dimensionally accurate – even for large drilling depths

For years, the KOMET KUB Pentron solid drill has stood for precise drilling under extreme conditions. This tool was previously only available in the 4xD and 5xD length/diameter ratios, but the Besigheim tool specialists have now also developed 2xD and 3xD versions so that the high-performance



indexable insert drill can be used in an even more versatile manner. The CS (Custom Solution) variant has drawn particular attention with its diameter/length ratio of 6xD. As a result, the KOMET KUB Pentron® CS, which has been optimised for Key Account and industry segment requirements, does without guide elements and is extremely competitive compared to its guided counterparts on the basis of its performance data.

**Indexable insert reaming: Simplified index exchange**

Indexable insert technology has revolutionised reaming with multiple cutting edge reamers and has set new standards in terms of cost efficiency and functionality. The company has developed new high-precision indexable insert reaming tools that are even easier to operate. In previous tools, each insert was assigned a specific insert seat identified by the letters A, B, C, etc., but this positioning has now become redundant. Users can fit the indexable inserts into the new KOMET indexable insert reaming tool in any order – making errors virtually impossible and reducing the logistical effort required.

**Increase in performance with diamond cutting materials**

As already mentioned with milling, the KOMET GROUP is focussing on developing tools with ultra-hard cutting materials. One example of this is the expansion of the range of ISO indexable inserts with diamond cutting edges to a total

**Indexable insert technology has revolutionised reaming with multiple cutting edge reamers and has set new standards in terms of cost efficiency and functionality.**



**In order to enable encoding to take place directly on the slider, the encoder also takes disturbance variables of mechanical elements into account, such as the drive element tolerances, the temperature range and wear.**

of more than 900 items. In addition to KOMET PCD products, CVD thick film diamond-tipped inserts can now also be supplied. All variants are manufactured using the latest production technology, such as laser machining and high-vacuum soldering, which results in high-quality cutting edges and variable geometries as well as improved cutting results and longer tool life.

**Facing head with direct position measuring system**

Mechatronic tools such as precision adjustment heads, facing heads and the KomTronic U-axis systems, available in several variants, are one of the specialities of the KOMET GROUP. A patented direct encoder has been available as an optional extra for U-axes and the purely mechanical KomDrive facing heads for two years. In order to enable encoding to take place directly on the slider, the encoder also takes disturbance variables of mechanical elements into account, such as the drive element tolerances, the temperature range and wear. The control system can respond to the measurement data immediately, providing accuracy to +/- 3 µm and thereby enabling outstanding machining quality to be achieved.

**Tool and process expertise from a single source**

KOMET BRINKHAUS GmbH has been part of the KOMET GROUP for more than three years. As a result of the interaction between tool experts and process monitoring specialists, it has been possible to further develop the ToolScope process monitoring system into an integrated assistance system in terms of Industry 4.0. It monitors the internal signals from the machine, detects events such as tool changes or machine stoppage and is able to calculate parameters and deduce trends. At AMB 2016, KOMET is demonstrating how easy ToolScope is to use: Customers can select the solutions they require from the broad range of applications – from tool monitoring to an automatic tool change log through to adaptive feed control – and license them individually. Operation of the system has also become more flexible: Users can now view and operate their custom assistance system on mobile terminals such as tablets and smartphones.

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## State-of-the-art thread forming from Evoline Rolling Heads

Rolled threads guarantee maximum strength and resilience in the most demanding situations. Here is what LMT Tools offers in the segment

LMT Fette has been developing rolling systems for chip-less thread forming for over 60 years now. By utilising numerous individual innovations and its wealth of experience with industrial applications, it has now created a completely new generation of rolling head: The EVoline sets the highest standards for efficiency, process reliability, precision and flexibility in thread rolling.

Whether it is fittings for pipe systems, connections for car bodies, jack screws for houses and bridge buildings or sucker rods for the oil and gas industry, threads are used in practically every sector. Their job always remains the same, which is firmly holding together what belongs together.

However, there are great differences in the production and quality of threads.

Thread rolling has established itself as an efficient alternative and replacement to thread cutting for three main reasons:

- extremely short production times with the highest thread stability
- constant dimensional accuracy
- excellent surface quality

In addition, a thread rolling head can be used in a flexible way in almost all machining centers. As a result of its modular layout and a completely new tool design, the EVoline rolling head sets new performance standards for the chip-less production of external threads. This is LMT Fette's solution to the increased demands being made on thread rolling as a result of rising production volumes, new materials and integrated processing on tool machines. It is crucial here that tools offer process reliability, precision, flexibility and ease of operation.

### Fine adjustment to accuracy of a hundredth of a millimeter

The exceptional features of the new rolling head include its simple but extremely accurate fine adjustment of thread diameter and the system's ease of assembly.

Adjustment of the rolling diameter is carried out using a spindle. The system is accurate to one hundredth of a millimeter and offers exceptionally high repeat accuracy of the effective diameter. The new rolling head guarantees the repeat-



The exceptional features of the new rolling head include its simple but extremely accurate fine adjustment of thread diameter and the system's ease of assembly.

ability of the thread diameter with the same setting within a range of +/- 0.01 millimeters. LMT Fette has applied for a patent for its new adjustment system.

### Process reliability and simple operation through modular design

The modular design ensures simple assembly. In addition to the thread rollers themselves, the rolling head consists of the roll cage assembly with transmission, coupling with central alignment and fine adjustment as well as flexible coupling joint for a large number of standard shanks, locking mechanism/locking pin and shank. The locking pin can be turned through 360 degrees and therefore optimally adjusted to the mounting situation in the respective machine. The joint between coupling and shank guarantees precise concentricity with secure torque transmission. It can be modified to users' specifications: for example, a coolant-operated locking device can be very easily integrated as an accessory.

### Special chip protection

Special chip protection is another feature that increases process reliability even further. The rolling head has a stable chip protection lid that secures the machine against chips and contamination from upstream processes – even when the cou-







pling is open. The tool design itself – for example, the nickel-plated surface of the rolling head – also contributes to this protection.

Some highlights of all models of the EVOLine Rolling Heads

- fast, simple and precise thread production
- short production times, high quality and thread stability
- simple and precise fine adjustment of thread diameter
- permanent protection against chips and contamination
- easy assembly and high standard of safety due to modular design
- trouble-free adjustment to customer-specific applications

**What's New and Updated: 2016**

The closing process can be realised with the new closing device (CCD) for EVOLine. Adapted between rolling head and shank and connected with the coolant supply, closing of the rolling head can be transferred from process time to the non-productive time of the machine. Closing by coolant (or even compressed air) can be integrated in the machine program by a simple function.

The setting of the rolling diameter has adjustments of 0.01mm, which allow for precise control and consistent repeatability of the pitch diameter, giving you the assurance of a secure and reliable process.

The modular design provides longevity of use with the

**The modular design provides longevity of use with the ability to replace the thread rolls, rollers, rolling system housing, central fine adjustment, closing clip device and shanks, making it adaptable to any station or other machines in house. All common shank sizes are available.**

ability to replace the thread rolls, rollers, rolling system housing, central fine adjustment, closing clip device and shanks, making it adaptable to any station or other machines in house. All common shank sizes are available.

The interface between the clutch and shank guarantees precise concentricity between the with safe torque transmission. Customised modifications are possible, for example a coolant driven closing device adding to the speed and automation of the entire process.

Huge progress towards increased process safety and reliability is incorporated by a new chip guard in the EVOLine heads. Chips and other particles from preliminary processes cannot enter the rolling head anymore, even with the opened clutch.

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Web: [www.lmt-tools.com/evoline-thread-rolling-now-faster/](http://www.lmt-tools.com/evoline-thread-rolling-now-faster/)*

## New parting-off system takes direct approach to coolant delivery

### New Seco 150.10-JETI system from Seco Tools streamlines the heat removal process in high-speed parting-off applications

Designed with increased productivity, tool life and part quality in mind, the new Seco 150.10-JETI system streamlines the heat removal process in high-speed parting-off applications. The parting-off system comprises high speed steel blades, Jetstream Tooling technology and tool blocks with coolant inlets. Together, these elements give high-pressure coolant a straight path to the cutting edge and provide an optimised means for effectively penetrating the friction zone between the cutting edge and workpiece. Thereby, manufacturers benefit from fast heat removal, proper chip evacuation and superior part surface finishes.

Additionally, the 150.10-JETI system is able to move freely in tight workspaces and operate closer to the spindle thanks to its compact assembly free of external piping and connections. The elimination of these external components also saves users on spare part costs and reduces their tooling inventory.

Available in 15, 20 and 25mm sizes, high speed steel blades ensure high insert stability. The blades accommodate insert widths from 2–6mm and are compatible with a variety of tool blocks on the market. The square-shank blocks available through Seco come in metric and imperial sizes, with



heights and widths that range from 10x10 to 32x32.

*For more details, contact Seco Tools India (P) Ltd  
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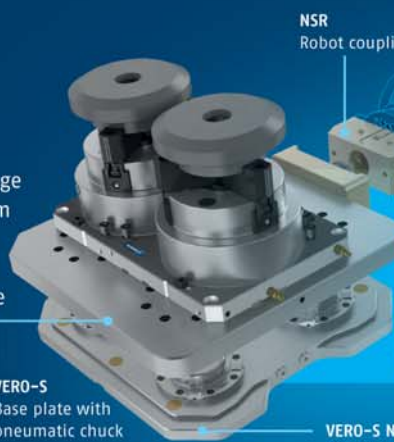
Years

Superior Clamping and Gripping



# Roboter-guided Machine loading

100% flexibility with the VERO-S quick-change pallet system and the largest modular system with more than 500 variations of workpiece clamping. For automated machine loading and unloading, and set-up in parallel to the processing time.



VERO-S Base plate with pneumatic chuck

NSR Robot coupling

High tech from a family-owned company

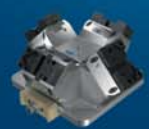
90% set-up time reduction

due to set-up during processing time, and automated loading with VERO-S quick-change pallet system

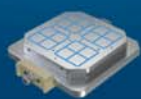


*J. Lehmann*

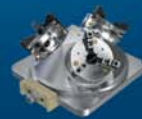
Jens Lehmann, German goalkeeper legend, SCHUNK brand ambassador since 2012 for precise gripping and safe holding. [www.gb.schunk.com/Lehmann](http://www.gb.schunk.com/Lehmann)



Clamping pallet with **TR** clamping force blocks



Clamping pallet with **MAGNOS** magnetic clamping technology



Clamping pallet with **ROTA** chuck



Clamping pallet with **VERO-S** double angle tombstone



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1507S

## SIMATIC Safety Integrated – Integrated Added Value

SIMATIC Controllers

Siemens offers the right controller for all automation requirements through scalability and consistency of its functions. The SIMATIC Controller portfolio includes Basic, Advanced, Distributed and Software Controllers:

- The SIMATIC S7-1200 Basic Controller for small to medium-sized applications
- The SIMATIC S7-1500 Advanced Controller for medium-sized to complex applications
- The SIMATIC ET 200SP Distributed Controller for distributed applications
- The SIMATIC S7-1500 Software Controller for PC-based applications

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