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ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

THE MACHINIST

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THE MACHINIST Super SHOPFLOOR 2017 Awards

THIRD EDITION OF THE AWARDS CEREMONY COMES TO CHENNAI

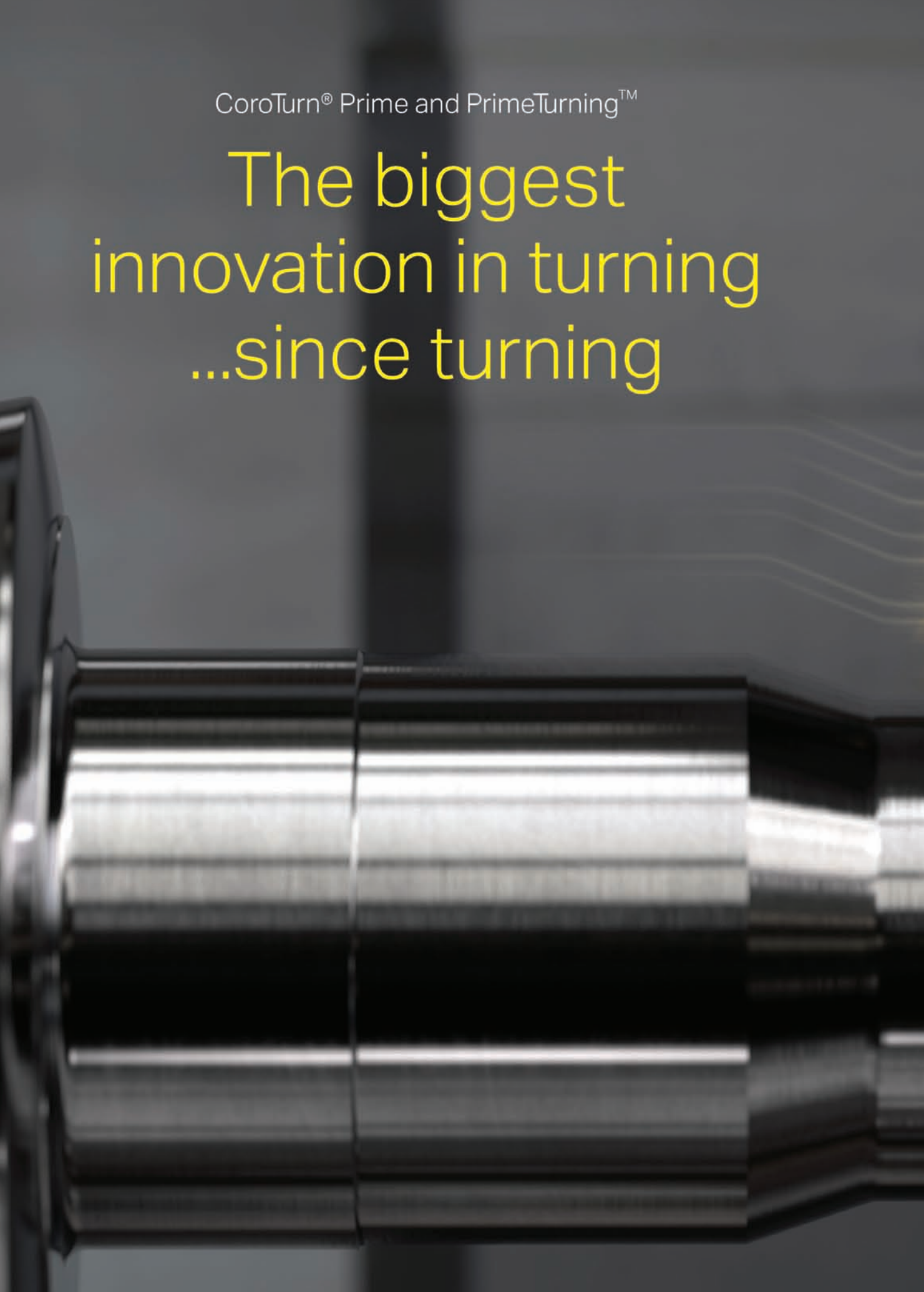
MORE ON PAGE NO. 59

Issue Highlights

- Skilling India
- Powering up
- Cutting Tools

North INDIA Special

Manufacturing majors speak about the region as a destination for establishing plants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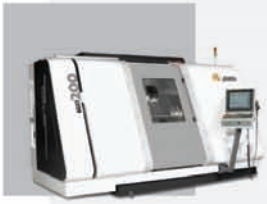

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Chennai Beckons!

We just concluded the Jury Meet for the 3rd edition of The Machinist Super Shopfloor Awards. Our esteemed jury members have once again done a superb job in evaluating the nominations and helping us arrive at the winners of this year's Machie trophies. Hats off to these industry leaders who spare their valuable time for this work purely out of love and dedication for this amazing industry.

Well, the jury has spoken and we have the names of the winning shopfloors with us. Join us on May 18 to know about these super shopfloors. You are all invited to witness the grand celebrations at a grand venue in Chennai. Of course, we have seriously limited seats! So if you are really keen to attend this fabulous function and want to cheer the winners while networking with the best of the industry in a truly spirited ambience then please get in touch with our team to book your seats.

IF YOU ARE REALLY KEEN TO ATTEND THIS FABULOUS FUNCTION AND WANT TO CHEER THE WINNERS WHILE NETWORKING WITH THE BEST OF THE INDUSTRY IN A TRULY SPIRITED AMBIENCE THEN PLEASE GET IN TOUCH WITH OUR TEAM TO BOOK YOUR SEATS.

Over the last two years, we have proved that we are the absolute pioneers in creating top class industry events. This year will be no different. In fact, with the 3rd edition of The Machinist Super Shopfloor Awards, we are going to raise the bar higher.

At the awards night, there are going to be a lot of wonderful surprises not only for the winning teams but also for all the delegates who will attend the show. And yes, the highlights of the ceremony will be featured on a leading business TV Channel – just like last year! But of course, the pleasure and joy of witnessing the celebrations live and in person cannot be matched with a TV feature!

So register your seat now. Visit *http://supershopfloorawards.themachinist.in/* for details.

Editor & Chief Community Officer

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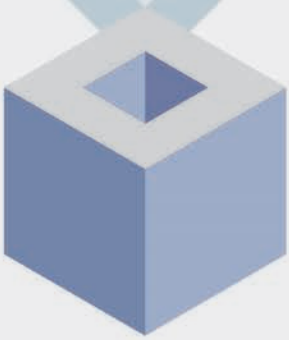

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BS-IV norms come into place across India from April 1, '17

MINISTRY OF ROAD TRANSPORT & Highways has issued notification No. GSR 643(E) dated 19.08.2015 vide which the mass emission standards for Bharat Stage IV shall come in to force all over the country in respect of four wheeled vehicles manufactured on or after the April 1, 2017.

Society of Indian Automobile Manufacturers (SIAM) has reported that EPCA during its meeting held on October 19, 2016 informed the SIAM Members that only BS-IV vehicles should be registered from 1st April 2017.

However, SIAM had clarified during the meeting that they will follow the Govt. of India notification and not manufacture any BS-III vehicles from April 1, 2017.

Also, it should be noted that the Ministry of Road Transport & Highways, vide its notification GSR 889E dated 16.09.2016, has mandated mass emission standard for BS-VI throughout the country with effect from April 1, 2020 to bring down emission.

SIAM has informed that the economic burden for moving to BS-VI emission norms for automobile manufacturers would be very significant as many new technologies would have to be developed and these technologies would have to be used in vehicles for meeting the requirement of BS-VI emission norms.

Trade Infrastructure for Export Scheme launched

COMMERCE AND INDUSTRY Minister Nirmala Sitharaman launched the Trade Infrastructure for Export Scheme (TIES). Speaking at the event she said the Scheme is focussed on addressing the needs of the exporters.

Sitharaman said the focus is not just to create infrastructure but to make sure it is professionally run and sustained. The Minister added that there will be an Empowered Committee to periodically review the progress of the approved projects in the Scheme and will take necessary steps to ensure achievement of the objectives of the Scheme.

She said the proposals of the implementing agencies for funding will be considered by an inter-ministerial Empowered Committee specially constituted for this Scheme to be chaired by the Commerce Secretary. While appraising the project the justification, including the intended benefit in terms of addressing the specific export bottlenecks, would be evaluated.

Commerce Secretary Rita Teaotia said the scheme would provide assistance for setting up and up-gradation of infrastructure projects with overwhelming export linkages like the Border Haats, Land customs stations, quality testing and certification labs, cold chains, trade promotion centres, dry ports, export warehousing and packaging, SEZs and ports/airports cargo terminuses.

She said last and first mile connectivity projects related to export logistics will also be considered.

NEXTracker to 'Make in India'

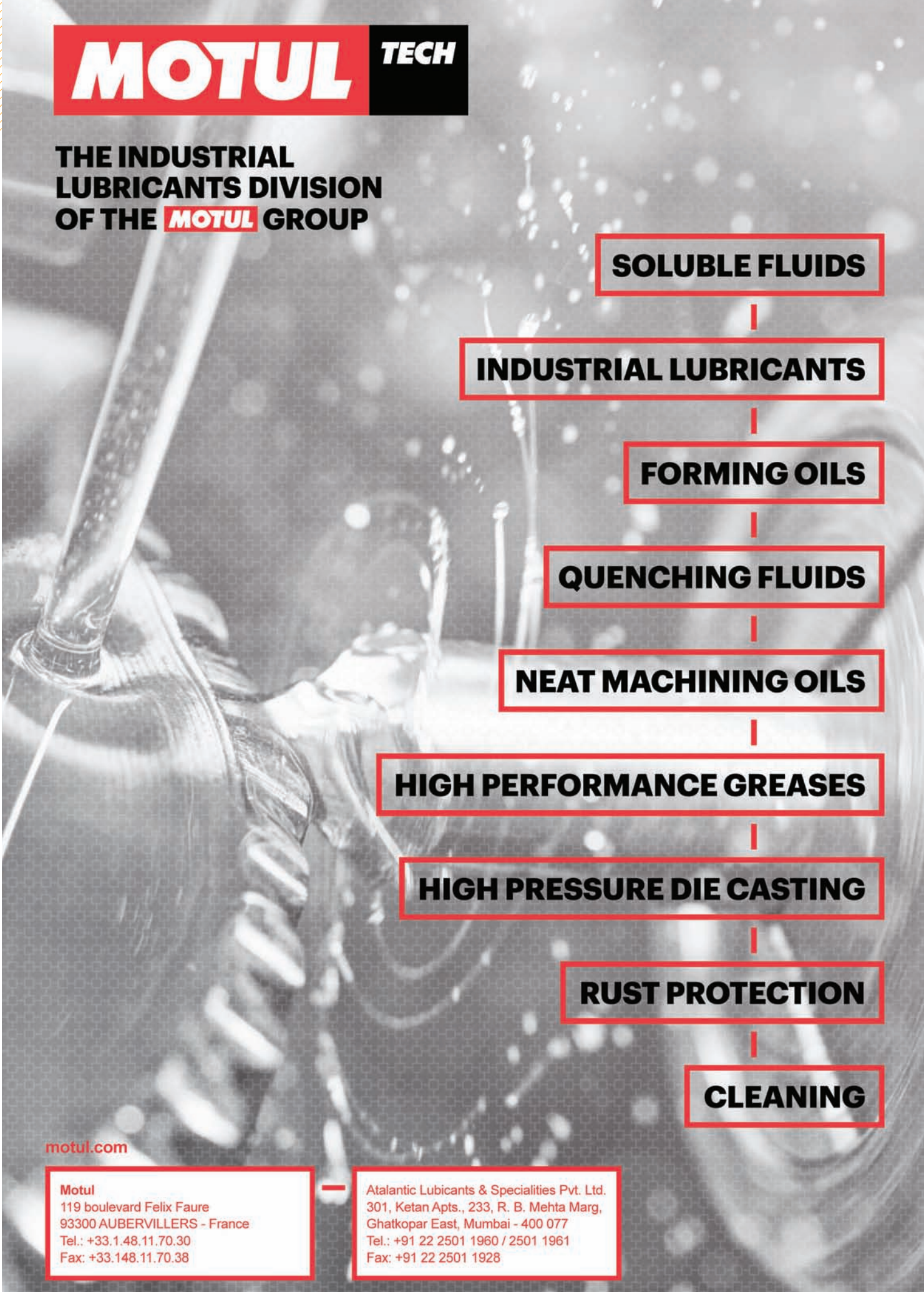
NEXTRACKER, a Flex company, has announced it will be manufacturing additional structural components of its solar tracking systems locally in India.

By augmenting its supply partners to include APL Apollo Tubes Limited along with four other local steel fabricators (already supplying foundation piers to NEXTracker and its customers in India), NEXTracker will be increasing its local steel content percentage to over 80 percent by volume and weight of its final product.

Localising steel pipe manufacturing will reduce shipment time as much as 50 percent reduces logistics costs, aligns closely with Prime Minister Narendra Modi's National Solar Mission and supports the Make in India program; a national campaign aimed to fuel high value manufacturing jobs, increase investment, and foster innovation.

Steel tubes and piers form the backbone of any solar tracking system, accounting for a sizable portion of the system's structural cost and weight. Accordingly, NEXTracker sought a local high quality steel supplier for its torque tubes to support a rapidly growing market that seeks to have 100 GW of grid-tied solar by 2022.

Most of these systems will be ground-mounted and heavily dependent on high quality steel structures. NEXTracker's demand has expanded rapidly in India with over 20 projects delivered or under fulfillment with six of India's largest developers and EPCs.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NEWS

Hyundai Motor India Ltd. opens Professional Development Center in Kolkata

HYUNDAI MOTOR INDIA LTD. recently inaugurated Hyundai Professional Development Center at Dr. Sudhir Chandra Sur Degree Engineering College, Kolkata. Speaking on the occasion, Y K Koo, MD & CEO - Hyundai Motor India Ltd. said, "We are very happy about this association with Polytechnic College as Hyundai is a Responsible Corporate Citizen and advocates creating constant resource pool of skilled 'Service Advisors' for Automobile Service Industry.

As a Caring manufacturer, it's our duty and responsibility to continue such initiatives to benefit the industry and society on the whole."

The new curriculum will expose Automobile trade students to modern automobile technologies thereby increasing the opportunities of employability and career prospects. The new syllabus and practical training at dealership will add yet another dimension to the existing syllabus supported by HMIL. The programme will benefit Polytechnic colleges in creating skillful professionals for the Indian Automotive Service Industry.

Auto sector production and sales goes up: SIAM data

THE SOCIETY OF Indian Automobile Association (SIAM) has informed the Government of India that the production and sales have grown in most of the vehicle segments in the last few years.

The production and sales for 2016-17 (Apr 2016 to Jan 2017) has grown by 6.05 percent and 8 percent respectively over the same period in the previous financial year. The Department of Heavy Industry has not undertaken any study on the impact of demonetisation on Auto Sector but the Government of India is working with the auto industry on many initiatives to give boost to the automotive industry.

Production and sales of Indian Auto Sector

Financial Year	Growth Rate	
	Production	Sales
2013-14	4.13%	3.54%
2014-15	8.64%	7.06%
2015-16	2.58%	3.78%
2016-17 (April 16-Jan 17)	6.05%	8.00%

Source: SIAM

Some of the initiatives are listed below:

(i) Automotive Industry is considered a sunrise sector of the economy and the Government's policy towards the industry has been to provide market access to all players globally, through investment route than the trade route.

(ii) Government has supported Industry through dedicated policy for the industry by launching Auto Policy 2002, Automotive Mission Plan 2006-16, Automotive Mission Plan 2016-26.

(iii) A new scheme Faster Adaption & Manufacturing of (Hybrid &) Electric Vehicles (FAME India) has been launched. This scheme provides benefit to electric & hybrid manufacturers to help increase penetration of environment friendly products in the country.

(iv) Automotive Industry has been identified as one of the champion sectors and the Government is working on interventions in specific areas such as incentive, access to credit, low cost power, infrastructure, R&D, technology linkages and care during trade negotiations for development of the Industry.

Government to establish National Railway University

MINISTRY OF RAILWAYS, Government of India, has decided to establish one Railway University at Vadodara in Gujarat. An initial project report had been prepared and thereafter, RITES Ltd has been engaged to get the blueprint prepared.

The University would benefit not only the Indian Railways but also the growing 'Railway' sector which includes Metro Railway, private manufacturers of railway equipments, Port Railways, Consultancy etc. The University will act as a Centre for conducting interdisciplinary research on Railway Engineering and Management.

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A list of key events happening between April 2017 to April 2018, both nationally and internationally.

AMTEX 2017 **April 12–15, 2017** Mumbai *www.amtex-expo.com*	Hannover Messe **April 24–28, 2017** Hannover, Germany *www.hannovermesse.de*	BLECH India **April 27–29, 2017** Mumbai *www.blechindia.com*	INTEC 2017 **June 01–05, 2017** Codissia Trade Fair Complex, Coimbatore *www.intec.codissia.com*
SPS Automation India **June 08–10, 2017** Mumbai *www.spsautomation-india.in*	AutomationExpo 2017 **August 09–12, 2017** Mumbai *www.automationindiaexpo.com*	Delhi Machine Tool Expo **August 10–13, 2017** New Delhi *www.mtx.co.in*	Tech India **September 08–10, 2017** Mumbai *http://www.techindiaexpo.com/*
EMO Hannover **September 18–23, 2017** Hannover, Germany *www.emo-hannover.de*	ArabiaMold Sharjah **December 11–14, 2017** Sharjah, UAE *http://www.arabiamold.com/*	ExCon **December 12–16, 2017** BIEC, Bengaluru *http://excon.in*	SIMTOS **April 03–07, 2018** Seoul, South Korea *http://www.simtos.org*

OUR INHOUSE UPCOMING EVENTS

THE MACHINIST Super SHOPFLOOR 2017 Awards — 18th May, 2017, Chennai

Global Conference on Plastics in Automotive — 14th September, 2017 - Pune

Global Manufacturing Summit (Excel • Enhance • Expand) — 16th November, 2017 - Indore

The Economic Times POLYMERS Awards 2018 (Excellence in Plastics) — 18th January, 2018, Mumbai

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BHEL's first 800 MW Supercritical plant starts commercial operation

Bharat Heavy Electricals Ltd (BHEL) has commenced commercial operation of its first 800 MW unit. The milestone was achieved for the first unit of the 2x800 MW Yeramarus thermal power station of Raichur Power Corporation Ltd (RPCL), in Raichur district of Karnataka.

Significantly, the commercial operation of this unit also marks BHEL's foray as a developer into the field of power generation. Karnataka Power Corporation Ltd. (KPCL) and BHEL are the main equity partners of RPCL, the owner and operator of this power plant.

BHEL did complete design, engineering, manufacture, supply, erection and commissioning of this state-of-the-art supercritical project on turnkey basis. It has supplied all the critical equipment like boiler, turbine & generators, electricals, key packages of Balance of Plant, and has also carried out the associated civil works. The major equipment for the project has been manufactured by BHEL at its Haridwar, Trichy, Bhopal, Ranipet, Hyderabad, Jhansi, Thirumayam and Bengaluru plants, while the construction of the plant was undertaken by the company's Power Sector-Southern Region.

Ferrero India installs 1.5 MW capacity solar power plant at Baramati

Ferrero has installed 1.5 MW capacity solar power project at its manufacturing facility at Baramati. This is Maharashtra's one of the biggest roof top Solar Power installation. Ferrero is one of the few food companies in India to install solar power at their manufacturing unit in India.

Ferrero has invested 1.2 million Euros (approximately Rs. 8.8 crore) in this project. This project is built on an area of 22,000 square meters and covers 8.4 percent of the total factory load.

The new Solar Power plant will generate energy of 2250000 kWh per year (2250 MWh). The company will be able to cut its carbon dioxide emissions by 1.926 tonnes per year.

"This solar power project at the Ferrero plant at Baramati is our endeavour to providing a cleaner and greener environment to the community in Baramati", said a company spokesperson. "In this way Ferrero is reducing its carbon footprint and protecting the natural eco system. We are committed to this project and in making the lives of people better in the community we operate", he added.

ABB India modernises Sharavathi Hydropower Plant in Karnataka

ABB India has restored and modernised the critical 1,035 mw Sharavathi Hydropower Plant in Karnataka, which approximately accounts for 25 percent of the state utility Karnataka power corporation's power generation. The Sharavathi project with seamless integration of complete plant data is an example of ABB's future-ready technologies enabling the Industrial Internet of Things (IIoT) and aligns with the government's push for 24x7 reliable power for all with focus on smart power infrastructure and digitalisation. Bengaluru, which is home to ABB's headquarters in India, has over 1,550 engineers and technologists working across the entire power value chain solutions, helping power producers operate their plants in a more optimal and reliable way.

For this project, The India Smart Grid Foundation (ISGF) innovation award, one of India's most prestigious ones, recognised ABB India's efforts by awarding the "smart technology of the year 2016".

Siemens and Sumitomo Electric win order for HVDC link from PGCIL

A consortium of Siemens and Sumitomo Electric Industries Ltd. has been awarded an order from Power Grid Corporation of India, the central transmission utility of India, to supply a high-voltage direct current (HVDC) transmission system. The total size of the order won by the consortium is US $520 million, of which the share of Siemens Ltd is approximately Rs 1,682 crore. "The grid-augmentation project will go a long way in delivering reliable, uninterrupted power to the state of Kerala. This project further demonstrates Siemens' commitment to partner with the Government of India in its vision of delivering 24/7 power for all. The availability of reliable power transmission is key for India's sustainable progress. Most of the critical equipment for the project is being sourced from factories in India, renewing our commitment towards Make in India," said Sunil Mathur, Managing Director and Chief Executive Officer, Siemens Limited.

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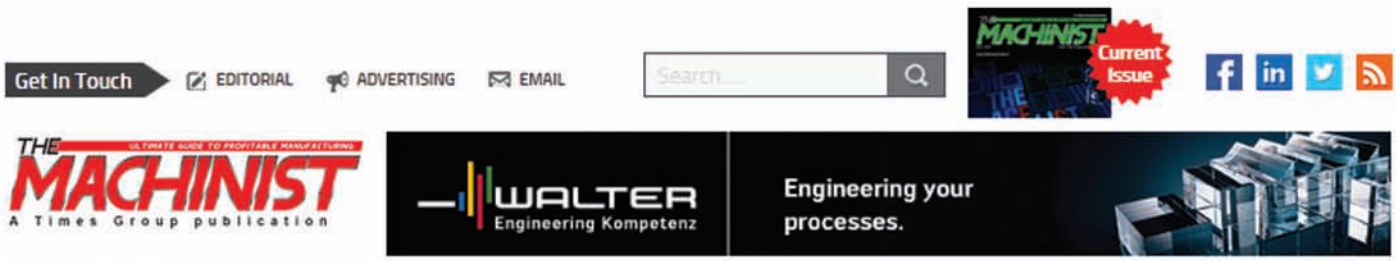

Hyundai launches 1.4L Petrol AT in Elite i20

Introduced in 2008, i20 brand has crossed cumulative sales of 1 million units

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Smart solutions for Smart Cities

Ensuring uninterrupted power supply is mission critical says **Sriram Ramakrishnan,** CEO & MD, Consul Neowatt Power Solutions Pvt Ltd.

By Swati Deshpande

As the country is on the cusp of a digital transformation and with so much emphasis on building Infrastructure & Smart Cities, ensuring uninterrupted power supply is mission critical. And this provides us the much needed opportunities. With strong designing and manufacturing capabilities, the company has already made inroads into various government projects focused on Smart Cities, Make-In-India and Metro Rail.

Q. Tell us about Consul Neowatt Power Solutions' large portfolio of products and solutions.

Consul Neowatt offers the widest range of power electronic products in India covering Servo Controlled Voltage Stabilizers, Single phase UPS, Large Three Phase UPS, Active Harmonic Filters, Industrial Inverters, Static Transfer Switch, Solar Inverters and Isolation / Ultra/K-rated transformers.

The company is a strong supporter of the Make in India program designing all products in India at its DSIR (Department of Scientific & Industrial Research, Ministry of Science and Technology) approved R&D centre and manufacturing at its modern manufacturing facilities in Chennai and Pune which are ISO 9001, 14001 and OHSAS 18001 certified.

Consul Neowatt offers range of products to meet the requirements of the machine tools segment for their power conditioning and power back up requirements.

Q. Currently Indian government is having immense stress on building infrastructure and smart cities. How do you plan to make best use of such strategies?

As the country is on the cusp of a digital transformation and with so much emphasis on building Infrastructure & Smart Cities, ensuring uninterrupted power supply is mission critical. And this provides us the much needed opportunities. With strong designing and manufacturing capabilities, the company has already made inroads into various government projects focused on Smart Cities, Make In India and Metro Rail.

A strong votary of the Digital Inclusion program, Consul Neowatt, (India's power electronics major), has supplied its Sunbird solar inverters to facilitate the government's mobile computer lab specially designed to impart computer literacy

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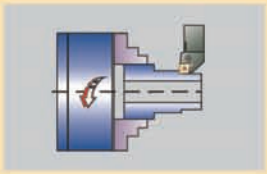
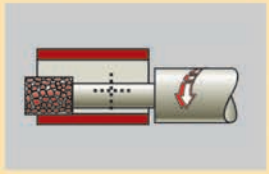


SC-8K
GANTRY LOADER

SC-14
BIG BORE LATHE

SC-25
CNC HEAVY DUTY LATHE

CNC Internal Grinding



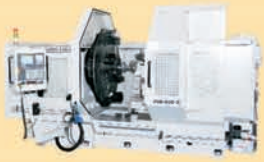
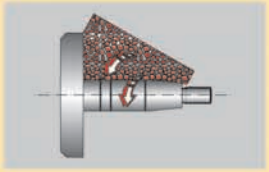


FIG-200 SPL CNC
BIG BORE GRINDER

FIGT-300 CNC
FOUR STATION TURRET

FIGE-150 CNC
ID / OD GRINDER

CNC Cylindrical Grinding

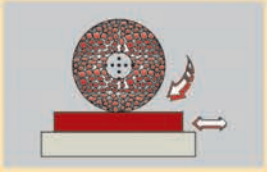


AWH-1500 CNC
LONG SHAFT GRINDER

AWH-2000 CNC
HEAVY DUTY GRINDER

SWH-400 CNC
AUTO LOADING

Surface Grinding



SG-106 CNC
CREEP FEED GRINDER

SGR-60
ROTARY GRINDER

SG-63
HYDRAULIC / PLC

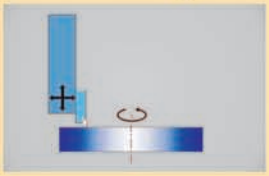
Automats

A15/25

TD36
AUTOLOADING

A42/60

Vertical Turning Lathe



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among the villagers. These mobile knowledge buses are well-appointed with 15-20 desktop computers connected to the internet and are fitted with rooftop solar PV modules and battery based solar inverters to be self-sufficient for uninterrupted electricity supply. These solar powered knowledge buses would be plying across rural areas to help villagers get a hands-on computer learning experience.

Consul Neowatt Power Solutions' focus in engineering and R&D is to develop products "In India for India". Can you please tell us about your R&D efforts?

Our vision is to become India's Premier provider of power backup and power conditioning products, services and solutions and that can be achieved only if we have a strong R&D set up that will keep us on track with a pipeline of new products and technology to keep us at the forefront of the technology curve. A strong R&D also helps in building stronger relations with customers to become the preferred power partner to address all power problems.

One of the key strengths of Consul Neowatt is our focus on R&D, as a company we have spent considerable resources in developing a strong R&D base as it gives us a strong edge in being able to translate our deep understanding of the challenging Indian power conditions into products and solutions that address the needs of our customers. Our R&D facility in Pune is approved by the Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India. The R&D team has delivered many milestones like:

- Seismically qualified UPS
- 600KVA IGBT Front End UPS system.
- 500Amp Active Harmonic power Conditioner
- 500Amp Intelligent Static Transfer Switch
- String Type Solar Inverter
- Transformer less Three Phase UPS Systems

A recent example is the design and approval of special seismically qualified UPS by Nuclear Power Corporation for BARC. Today, we are amongst few companies globally that have the capability to design and manufacture seismically qualified UPS.

Can you please tell us about one of the products/technologies that stands tall amongst other and has been well-appreciated by the customer?

The Falcon UPS range is one of the most comprehensive UPS ranges that offers options of IGBT rectifier or SCR rectified both with and without transformer in a range from 10 to 800kva. It has received critical acclaim from customers from different industries for its reliability and performance is challenging physical and power conditions.

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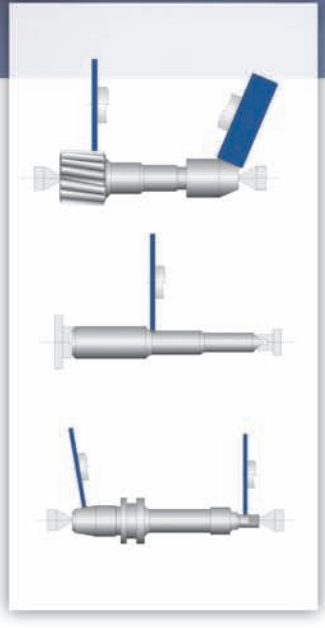
The Falcon range of UPS is designed for reliable operations in challenging power conditions. It stands out in its ability to work in non-air conditioned space, resulting in enormous savings. Typically the UPS systems that we find from MNCs are designed for the European and American conditions i.e. for working at ambient temperature in the range of 30° C. Our UPS is designed for working in the 45° C range that makes it suitable for Indian environment conditions.

Another important milestone would be the company's support to Bank Note Paper Mill India (BNPM) in rolling out new currency note. We have installed 10 Falcon 1000 Industrial UPS to ensure uninterrupted operations of the currency press.

Apart from the Indian market, the company also exports its products and solution. Can you please throw some light on the company's exports?

Consul Neowatt has been exporting products to countries that have challenging power conditions. Traditionally, we have been exporting products to countries in South Asia, South East Asia, Africa and Middle East. As of now, around 5 percent of sales can be attributed to exports with Sri Lanka, Dubai and Nigeria being some of the key markets.

Our Lean Selection speed reflects our own core values.
Speed, high performance, efficiency.



JUNKER Lean Selection speed

High-speed cylindrical grinding.

The Lean Selection speed grinds **shaft-type components** and **cutting tool blanks** at **impressive speeds**. One or two high-performance grinding spindles mounted at the swivel-action wheelhead (B axis) work using both the **plunge-cut and QUICKPOINT grinding** methods. This facility makes the grinding machine extremely flexible and capable of implementing **several grinding operations in a single clamping.**

The Lean Selection speed cylindrical grinding machine is ideally suited for the grinding of small and medium-sized series: It not only operates with outstanding cost efficiency, but also benefits from operating simplicity and fast retooling.

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DHARMESH ARORA APPOINTED AS NEW MD OF FAG BEARINGS INDIA

Dharmesh Arora has been appointed as the Managing Director of FAG Bearings India Ltd effective March 6, 2017. Arora is currently the President & CEO of the Schaeffler Group in India (parent company of FAG Bearings India Ltd), a position that he will continue to hold. He will also continue to be the Managing Director of INA Bearings India Pvt Ltd, another group company of Schaeffler in India.

Arora has replaced Rajendra Anandpara, who has decided to leave the Company for personal reasons. "Arora is a veteran in the automotive industry having worked with Maruti Suzuki, General Motors and with Schaeffler Group in various leadership positions across geographic regions of the world. We welcome him to this new position to steer the organisation to greater heights," said Avinash Gandhi, Chairman, FAG Bearings India Ltd. Arora has been with Schaeffler Group since 2012 leading the Group's activities in India.

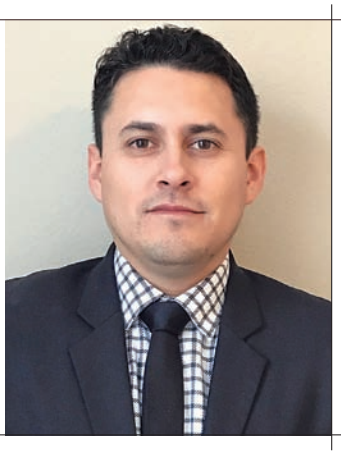
NEW PRESIDENT FOR DAIMLER TRUCKS NORTH AMERICA

Roger Nielsen (56) has been appointed President and Chief Executive Officer of Daimler Trucks North America (DTNA) and its affiliated companies Freightliner Trucks, Western Star Trucks, Thomas Built Buses, Freightliner Custom Chassis Corporation and Detroit Diesel Corporation effective as of April 1, 2017. He succeeds Martin Daum who became Member of the Board of Management of Daimler AG responsible for Daimler Trucks and Buses on March 1, 2017. "Roger Nielsen brings a rock solid product, manufacturing and sales background to this position paired with a razor-sharp focus on technology, quality and customer service. He has an excellent track record as an influential leader in the industry," stated Martin Daum. Roger Nielsen mentions, "I look forward to building on the outstanding success achieved by the DTNA team under Martin's leadership. Together, we will continue our dedication to delivering the best products and services to our North American customers."

JBM'S NISHANT ARYA IS CHAIRMAN, CII HARYANA CHAPTER

Nishant Arya, Executive Director of JBM Group, has been elected as the Chairman, Confederation of Indian Industry (CII) Haryana Chapter at the State Annual Session. Arya is the youngest to be appointed as Chairman in the history of CII top leadership team till date. The first meeting of the newly elected Haryana State Council of CII for the year 2017-18 deliberated towards 'Realising Make in India by Building Competitiveness'.

Arya had been the Vice Chairman for the Haryana State Chapter for the year 2016-17. The top of the line agenda that had been actioned in Haryana during last year under his stewardship included focus towards emerging and high growth sectors like aerospace and defence, competitiveness building, development of MSMEs, sustainability, social development, infrastructure development, etc. across various industry sectors in Haryana with special focus towards Make in Haryana.



NEW INDUSTRY SALES MANAGER FOR TE'S INDUSTRIAL BUSINESS

TE Connectivity (TE has announced the appointment of Ricardo Hernandez to the post of Industry Sales Manager, Americas, for Motor Connectivity in TE's Automation & Control business. Hernandez, who has already taken up his post, is based in Houston, Texas, USA and reports to Jason Moore, sales director, Automation & Control. Prior to joining TE, Hernandez was a sales engineer at Bosch Rexroth. He holds a technical degree in Mechatronics, Robotics, and Automation Engineering from Instituto Tecnológico y de Estudios Superiores de Monterrey in Mexico and did an intensive program in France at École Spéciale des Travaux Publics in electro-mechanical engineering. In announcing the appointment, Moore said, "Ricardo has an outstanding track record as an industrial automation professional. With his 10+ years of mechatronic systems design experience, we look forward to him being a knowledgeable partner for motor connectivity with our customers."

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Inside the Sandvik Coromant Center in Sandviken

Shaping the **future!**

The Machinist was part of Sandvik Coromant's Global Press Preview Event in Sweden last month. Besides visiting the Company's amazing manufacturing facility at Gimo, it also caught up with **Klas Forsström*,** President, Sandvik Coromant at the Sandvik Coromant Center in Sandviken. *(*With effect from April 1, 2017, Klas Forsström has become the Global President for the Sandvik Machining Solutions business.)*

By Niranjan Mudholkar

Q You took charge as the Global President of Sandvik Coromant on September 1, 2011. How's been the journey since then and how satisfied are you with it personally?

It has been a great journey and I am very satisfied with it. Let me share a few things with you why I call it a great journey. I have a team that I have seen grow from really, really good to great. That is the number one reason.

What we have been able to deliver to the market as a team and company is much more innovation than we have done in the past. I have personally heard numerous testimonials saying that Sandvik Coromant has always been at the forefront (with regards to innovation) in the last two years. They say, at least to me, that we are stepping it up even more! That is something very great.

The third reason why I feel a lot of pride on behalf of my team is that we are much more integrated in between the different functions. We have the pleasure to serve the industry that we are part of. For instance, at our Gimo manufacturing facility in Sweden, we have the hard side (insert manufacturing) and the soft side (the toolholder side). So by utilising production not only to produce but also by utilising the production to learn about and develop our industry we have done a lot of progress.

So based on these three reasons I would say that we have done a lot of great stuff.

> "The press event offered preview into two revolutionary solutions from Sandvik Coromant: CoroPlus®, which helps manufacturing plants access Industry 4.0, and PrimeTurning™, industry's first 'all directional turning' solution offering improved machining flexibility, productivity and tool life."

Q How's been the business for Sandvik Coromant for the last one year globally speaking? Which markets and sectors have given you growth?

China has started to pick up again at the end of the last year and is moving very well. Europe has been very stable at the end of last year and US has also started to show signs of increased manufacturing capabilities. So in that perspective, last year was a good indication of what will come ahead.

If you look at both India and China, over the last couple of years, people have been questioning about how much are these markets driving the need for productivity. What I

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see and hear from these two markets is that there is a much higher need for productivity. Both markets are moving away from being low labour cost countries and are moving up in the value chain. The more you invest, the higher is the need for productivity. So in that respect, there is great development taking place in both India and China.

Q. I believe you visit India quite regularly – at least once every year...

When people ask me what is your favourite market, I can truly say that it is India. Visiting India regularly has always been my vision. And sometimes I visit India even twice a year. I am very interested in history and culture and I have always found India as an important market place. I am very optimistic about that market. Moreover, we have great people in our India team.

Q. About three months back, Sandvik Coromant became a Premium Partner of DMG MORI. How do you see it benefitting customers around the world?

We work with all major machine tool makers and I would love to sign a partnership with all the machine tool makers. In this case, DMG MORI came to us and said we would like to partner with us. It is more of a marketing partnership than a full blown collaboration at present. It generates benefits for our customers due to the obvious synergies.

Q. Besides supplying the right solutions at a competitive pricing, 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 in terms of providing them training support?

We are conducting training programmes locally at all of our locations – including Pune – both in our centers as well as on site. Also, we have more than 70 online programmes where our customers, our people and even students can educate themselves and stay updated with the latest relevant information. Plus, we support our customers with in-phone tools and apps. Ultimately, it is also the person from Sandvik Coromant in the 'Yellow Coat' standing next to the machine and supporting the customer. So it goes from the 'Yellow Coat' – which made us great in the past – all the way down to being online. We support our customers in a multitude way!

Q. Today, all progressive manufacturing companies are adopting Industry 4.0 and Digital Manufacturing solutions. What role is Sandvik Coromant playing in this context?

I believe that it is very difficult to predict how the future will be in that area. What I can guarantee is that with the new tools and with the new solutions, right from embedded sensors to data analytics, we will definitely team up both with customers and partners to shape the future. I think it will come step by step. But if a customer would like being guided into the future then they should start talking to us.

"With the new tools and with the new solutions, right from embedded sensors to data analytics, we will definitely team up both with customers and partners to shape the future. I think it will come step by step. But if a customer would like being guided into the future then they should start talking to us."

Focus on Sustainability

- When a machine has been inactive for 60 minutes it goes into 'eco mode', halting all unnecessary energy consumption
- Energy gathered from cooling towers, air compressors, process ventilation and other coolers at the insert plant is recycled and used to heat and cool the building
- Energy-saving measures such as the mounting of superheaters on chillers and desiccant ventilators have reduced Sandvik Coromant's total oil consumption by 46% from 2012 to 2016
- Water from an external pond is used to flush toilets at the tool plant instead of treated drinking water
- Sandvik Coromant recovers more than 80% of the solid carbide it sells by collecting used inserts from customers
- The company uses two recycling plants to recycle the inserts, both of which are ISO 14001- and OHSAS 18001-certified
- Production from recycled materials cuts the company's overall carbon dioxide emissions by 40%.

Facts reflect data from the Gimo manufacturing plant in Sweden.

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Q. With a big focus on innovation, Sandvik Coromant brings out 2,500 new products every year – averaging almost six products a day! Do you also look at developing products which are market specific or is it about standard offerings for all customers?

When it comes to global supply, it is same all over the world. We have twenty production facilities located around the globe in different markets. We have also engineering and design capacities in most of our market or supported by close-by markets. Then, if you talk about custom made tools, yes we do that very much so. In some cases we also have select assortments to address specific market needs. But generally, it is more customer-driven than country driven.

Inside Sandvik's Gimo plant where human beings and robots - blue coloured automated guided vehicles (AGVs) work together.

Q. Sustainability has emerged as a critical aspect driving all businesses today. You personally rank it quite high on your agenda with the initiative to recycle all the inserts that Sandvik Coromant sells. Tell us more about Sandvik Coromant's focus on environmental issues overall.

The vision we have is to recycle hundred percent of the sold weight. In some years we have been really close to realising that vision. Over the last couple of years, if I average out, we have been in the range of 80 percent. I think it serves a multitude of purposes. First of all, it is about sustainability. We want to take care of the environment and that is the driving force.

About Klas Forsström

After graduating from Uppsala University with an MSc, Mr Forsström accepted a position as management trainee within the Sandvik Group. He started within R&D and holds several patents related to metal cutting. In parallel to his work at Sandvik Coromant he also earned a MBA in International Business and Marketing.

In 2001 he was appointed Vice President Global Marketing and Sales Support at Sandvik Coromant, and progressed through the years to President Sandvik Coromant Canada, Vice President Sandvik Canada, President Dormer North America and President Precision Twist Drill. In 2009 he was appointed President AB Sandvik Hard Materials - a global division within the Sandvik Group - and in 2011 he was appointed to his role as President AB Sandvik Coromant. Forsström also serves as chairman or member in several Sandvik internal Boards and Management committees.

> "We are conducting training programmes locally at all of our locations – including Pune – both in our centers as well as on site. Besides that we have more than 70 programmes online where our customers, our people and even students can educate themselves and stay updated with the latest relevant information."

Secondly, it also gives us an opportunity to secure that we have the correct type of supply of the material. And then at the end, it also gives benefits to the customer because we are buying back. They know that it is right type of player which is buying back and it not any 'grey type' of player. Of course, recycling of inserts is just one example of addressing the sustainability issue. At our manufacturing facility in Gimo you will see another example, which is energy consumption*. At Gimo, over the last couple of years, we have been saving energy on a yearly basis energy that could heat up more than 150 Swedish villas! That is I think a tremendous step forward.

Q. I understand that with effect from April 1, 2017, you become the President for the Sandvik Machining Solutions business. What will it mean for Sandvik Coromant? And what message would you give to your customers in this context?

One thing which will be great for Sandvik Coromant is that it will have a new leader in the future! It is always great to change leadership because if a leader is staying in the same position too long then the country or the company will slow down.

Now, I will have a greater family to take care of. The first born child will still be Sandvik Coromant but I will love all the children! (Signs off with a warm smile).

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Skilling India

Find out what the industry thinks about the availability of the skilled labour and how far 'Skill India' can be a solution to it.

By Swati Deshpande

Be it any business in any sector, its people are the one who drive it. And hence they are the significant aspect of it. "The most important M of the five Ms (man, machine, method, material, and money) necessary in an organisation is undoubtedly 'The Man'. All other Ms can be acquired, but human power is something that cannot be procured, it must be nurtured and developed. Companies can get their competitive edge from employees who are energised and empowered, who are capable and appropriately skilled. The importance of skilled manpower in manufacturing, therefore, cannot be overemphasized," opines Sunjay Kapur, CEO, Sona Group.

Seconding the same Rahil Rangwala, Director, India, Family Economic Stability, Michael & Susan Dell Foundation says, "Skilled employees are the cornerstone of a successful business. They directly influence productivity and growth. Compared to an unskilled workforce, skilled labour makes a definite difference in the quality of the product and thereby, reliability in the business. Being equipped with the right skills translates to efficiently performing the job at hand.

In spite of having world's largest youth population in country, finding correct labour has become a key issue for the industry. Moreover, the demand for the 'correct' labour is increasing day by day. Speaking on the same, Hussain Shariyarr, Sr. Vice President – Operations, Godrej Appliances highlights, "There is no dearth of manpower in India. We have about three percent skilled workforce in the country and projections are to double these numbers by 2022, but have these projections considered the right skills. The manufacturing industry requires consistent influx of labour who are trained not only for the basics like fitting, wiring and welding but also have gone through advanced training and are able to work in tandem with programmable logic controllers, robots, pneumatics, hydraulics, etc. We also cannot overlook at the fact that the skillset requirement in itself is evolving dramatically. Customer preferences and buying behaviour is driving the change in the skillset required on the shopfloor, sales and service market of every industry. We will have to break this paradox, understand the skills of future to get ahead of the curve," says Hussain Shariyarr, Sr. Vice President – Operations, Godrej Appliances.

This is especially true when Indian manufacturing companies are going global and are now competing in the world arena. "In order to succeed it has to deliver the top quality product at the lowest cost. A highly productive cost efficient labour force is a minimum requirement. Today, our educa-

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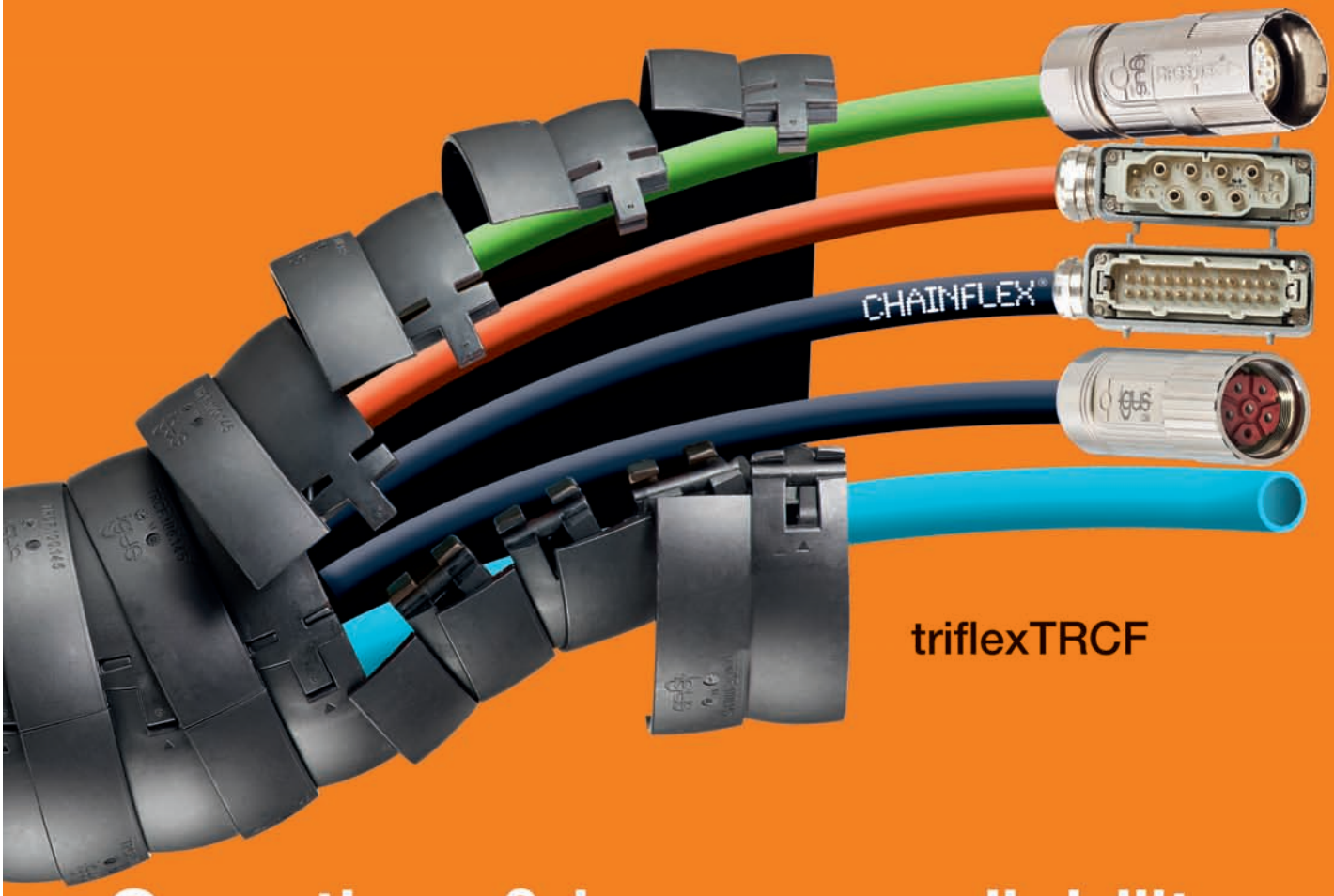

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tion system is not fully equipped to prepare the young workforce for employment. There exists a huge gap in what the system is generating and what the manufacturing industry needs. Our education system has to gear itself to support nation's economic agenda by creating job-ready and employable work force," highlights Abhishek Jain, Whole Time Director, PPAP Automotive Ltd.

Seconding the same Shariyarr mentions, "We are crippled with lack of infrastructure in our education system, both in terms of scale and quality. There are insufficient ITIs for meeting the skill needs, insufficient trainers and a mismatch of skills imparted in these institutes vis-a-vis the requirements. We need to benchmark our VET model with countries like Germany, China, Australia and take necessary reforms of our education system on priority."

"The most important M of the five Ms (man, machine, method, material, and money) necessary in an organisation is undoubtedly 'The Man'. All other Ms can be acquired, but human power is something that cannot be procured, it must be nurtured and developed. Companies can get their competitive edge from employees who are energized and empowered, who are capable and appropriately skilled."

Sunjay Kapur, CEO, Sona Group

Underlining the significance of skills development," Dr. OP Goel, Head of Bosch India Vocational Center, and Social Engagement shares, "Equipping the workforce with the skills required for the job is a strategic investment that every organisation must make on its employees. Skills development enhances both people's capacities to work and their opportunities at work, offering more scope for creativity and satisfaction at work. Skilling raises productivity, both of workers and of the organisation and in turn, contributes to boosting future innovation and development. Skilling employees opens them to a new world of understanding by not only providing or reinforcing knowledge, but also instilling a sense of confidence to perform better and in the right way. It eliminates assumptions as well as motivates employees when they are exposed to new ideas and methodologies."

Elaborating on the same, Anil Verma, Executive Director & President, Godrej & Boyce adds, "Productivity is a prerequisite for profitable growth. Having and developing a skilled workforce is critical to achieving higher and continuously improving levels of productivity. When an organisation has a workforce that has proven expertise in doing a job well, it must nurture them by giving them newer challenges, thus engaging not just their skills but also their ability to keep learning new skills, increasing their value to their jobs, teams and the organisation. A skilled workforce is also likely to be of help in mapping processes, identifying sources of data and ensuring collection of in-process data so that a fact-based foundation for process improvement is built."

Skilling India

Considering these factors, success of Make in India relies on the skilled workforce. Therefore, Skill India was a need of the hour. "The launch of the Skill India Program is an important milestone towards achieving the objective of skilling with speed, scale and common standards across the country. The

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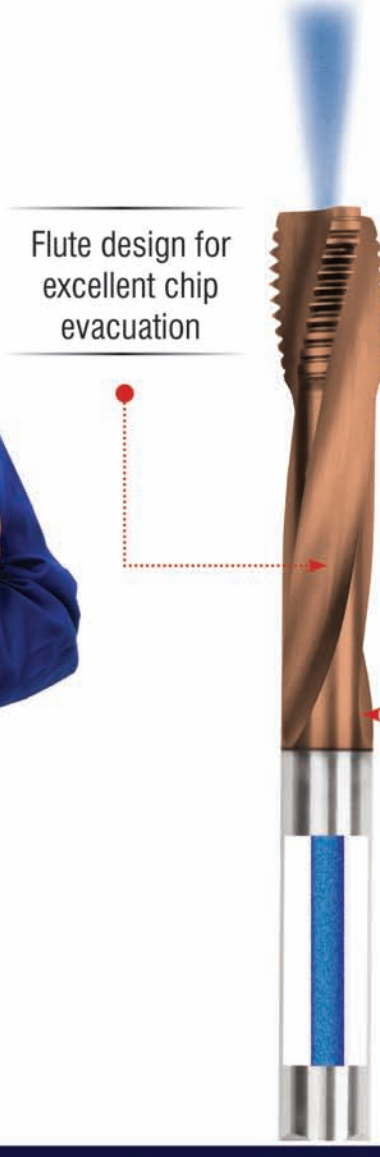

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"Productivity is a prerequisite for profitable growth. Having and developing a skilled workforce is critical to achieving higher and continuously improving levels of productivity.

Anil Verma, Executive Director & President, Godrej & Boyce

program has somewhat helped in bridging the gap of skilled labour, which the country was struggling to fill from a long time. As a manufacturing company, we understand the need for skilled labour in shopfloors and its importance for business. The Skill India program not only provides industry with skilled labour but gives job opportunities to thousands of rural and urban youth in the country. The biggest asset of our country is the quantum and youth of our potential workforce. Training them in a specific industry and occupation will improve our ability to become competitive manufacturers and will help support the 'Make in India' initiative," continues Verma.

Elaborating on the same, Sabarinath Nair, Founder & CEO, Skillver says, "Skill India is one of India's most important programs, because it is critical to the success of another flagship program – Make in India. On one hand we have a shortage of skilled workers, and on the other, there is an abundance of unskilled workers, leading at times to poor quality output and high attrition. Skill India has the potential to bridge this gap, by ensuring the availability of a skilled workforce with a trusted skill-score, such as a GRE score for all hand-skills. Additionally, by demonstrating the growth that an industry can achieve by employing a skilled workforce, an ecosystem of rewarding better skills with better pay will emerge, making it aspirational to acquire better skills."

"It is an ambitious project and a necessity for our country which faces a challenge of huge labour surplus by 2022. The government is also taking various initiatives under the scheme like skill loan or skill development in rural India to name a few. We believe that the framework adopted to achieve this humungous task is quite adequate and it can give great results if it is executed in the same vigour as envisaged by our honourable prime minister. However, we cannot burden the complete onus on to the government schemes only. It is time, where the corporates take a proactive approach in training the youth. Corporates need to play a strategic role, amalgamate with academia to adopt and nurture education setups. We at Godrej too believe in the philosophy and have taken an aim to skill 1 million youths ourselves by 2020," says Shariyarr.

Adding to it Dr. Goel mentions, "The Government of India's 'Skill Development' program is the right approach. It focuses on the essential elements to take manufacturing in India to a few notches above. The manufacturing industry will be highly benefitted to meet the international standards with better quality outputs and meeting deadlines."

Elaborating on various schemes launched by the government of India in this regard, Abhishek Jain, Whole Time Director, PPAP Automotive Ltd, "Skill India Program, Pradhan Mantri Kausha VikasYojana (PMKVY) 2016 – 2020, initiated by Prime Minister is a very constructive step in the direction of skilling the young India. This Scheme is being implemented through Public-Private and Public-Public partnerships. National Skill Development Corporation (NSDC) is the implementing agency for this Scheme. It is proposed to also involve the State Governments through a project based approach under PMKVY. This collaboration should ideally lead to inclusive growth especially for those at the bottom of the pyramid (approximately 800 million citizens). Under this program, 290 Training Partners have already come together with 4,526 Training Centres and many more are coming up, to provide good skilled workforce."

"Skill India Program is designed to address the gaps in skills that I mentioned before, both in terms of quantity and quality. Various sectorial councils – such as the Automotive Skill Development Council, ASDC – have done tremendous work in standardising the skills required for each job and the criteria for assessing levels of those skills. The National Occupational Standards created for this purpose have been the re-

In order to succeed, it has to deliver the top quality product at the lowest cost. A highly productive cost efficient labour force is a minimum requirement. Today, our education system is not fully equipped to prepare the young workforce for employment. There exists a huge gap in what the system is generating and what the manufacturing industry needs."

Abhishek Jain, Whole Time Director, PPAP Automotive Ltd

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"Equipping the workforce with the skills required for the job is a strategic investment that every organisation must make on its employees. Skills development enhances both people's capacities to work and their opportunities at work, offering more scope for creativity and satisfaction at work."

Dr. OP Goel, Head of Bosch India Vocational Center, and Social Engagement

sult of a collaborative work by all the concerned stakeholders, and hence are very valuable assets in meeting the skill-gap challenge. Unfortunately, many manufacturers are not aware of this work, and do not value the certificates issued by these councils. People who have cleared council's examinations are not considered on par with others who have passed NCVT approved programs, such as ITI's. If this gap is closed through a widespread communication, sectorial councils in alliance with able skill imparting partners and qualified assessing bodies can play a wonderful role in creating and then matchmaking the right talent with the industry," points out Kapur.

This initiative does not only emphasise on skilling but also creates opportunities. "The main goal of Skill India Program is to create opportunities, space and scope for the development of the talents of the Indian youth. No doubt Skill India program seems to be a good initiative – providing skills to people, especially because India is one of the few countries all across the world whose working age population will be very high, few years down the line, going by its ever-increasing growth of population, as per the World Bank. It Plays role of matchmaker between right talent and the manufacturing industry due salient features," points out Pravin Jadhav – Manufacturing Head, Ariston Thermo India Pvt Ltd.

In the era, where the technology is transforming with great speed, it is important for the workforce to know about the latest technology. Speaking about it, Nair adds "Technology is getting updated to provide a better quality output at a faster rate. The older systems of training have become obsolete, and with initiatives like Skill India, there is scope to add short-term, industry-relevant skill training modules to provide exposure to the latest methods used in the industry. Not only this, technology has been adopted in training methods too – like the inclusion of simulator-based training to provide a better understanding of quality and its relation to application skills. Technology providers like Skillveri have aided industries in achieving quick ramp-up by upskilling their workforce in skills like welding and painting."

Conclusion

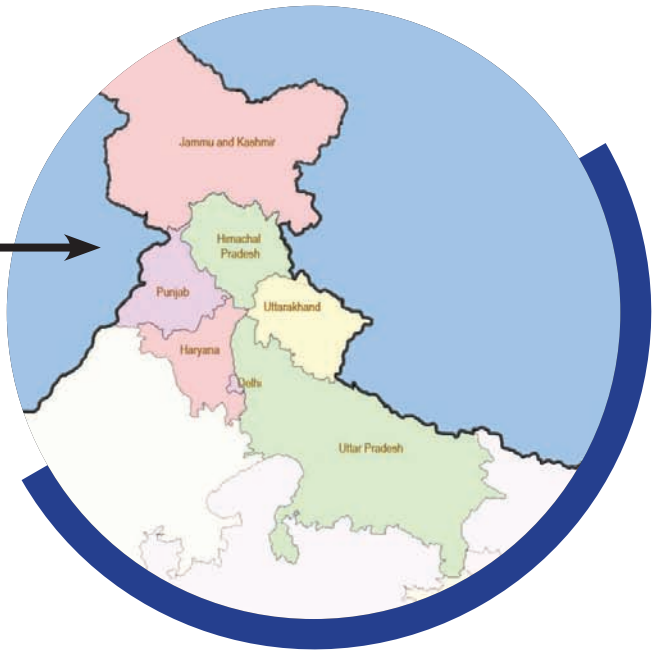
"Manufacturing Industry has seen tremendous transformations over past three decades. We have moved from the batch processing to continuous processing, large stocks to lean manufacturing, percent rejects to PPM to zero defect manufacturing. On every step, industry needed different skill sets. As a result, the skill gap continued to be widened. This was largely countered by big manufacturers like automotive OEM's and Tier-I companies by having their own, internal training and development set-ups. Going forward, manufacturing will completely change when company's embrace – what is popularly called-Industry 4.0. So, changes in how we manufacture have been happening in the past, and they will continue to take place – perhaps much bigger changes at much faster rates – in the future. To be ahead of the curve, one needs to keep pace with these changes not only through acquiring new technologies, and new manufacturing practices, but also by having a manpower which is always capable to handle the new methods," says Kapur. As a result, re-skilling becomes an essential part of training programs. "In our organisation, re-skilling is done for employees at all levels whenever a new process or product is introduced. Expert guides run them through the latest technological trends to make them suitable for the changed environment," continues Dr. Goel. Godrej also follows the similar method. "We review the skill set and identify the gap areas periodically for all the workmen in the organization. We have various training programs, conducted by internal as well as external faculty, aimed at updating the skillset of our workforce. We also give them multiple opportunities through executive courses from reputed institutes to upgrade their educational qualifications," Shariyarr concludes.

"Skill India is one of India's most important programs, because it is critical to the success of another flagship program – Make in India. On one hand we have a shortage of skilled workers, and on the other, there is an abundance of unskilled workers, leading at times to poor quality output and high attrition."

Sabarinath Nair, Founder & CEO, Skillver

North India Special

Number of states 7



States in the North:
Uttar Pradesh, Haryana, Uttarakhand, Punjab, Himachal Pradesh, Jammu & Kashmir, Delhi

Languages: **Hindi, English**
Other languages: **Punjabi**

Time: **GMT +5:30**

Currency: **Indian Rupee**

Some facts

- Most of these states are rich in natural resources. With ***Ganges*** in **Uttarakhand** and **Uttar Pradesh** and other rivers in the region make plentiful water available for the industry.
- **Uttrakhand** is rich in mineral deposits like limestone, marble, rock phosphate, dolomite, magnesite, copper, gypsum, etc. With levels of literacy higher than the national average, the State has abundant availability of quality human resources. Within a short span of its existence, Uttarakhand has emerged as a significant destination for investments in manufacturing industry, tourism and infrastructure.
- **Delhi** is one of the fastest growing states of the country. At current prices, the Gross State Domestic Product (GSDP) of Delhi was US$ 85.4 billion in 2015-16. Between 2004-05 and 2015-16, the GSDP of the state grew at a compound annual growth rate (CAGR) of 12.9 per cent. The state government expects to register growth of 11 per cent to 11.5 per cent by the end of 2017. At current prices, the Net State Domestic Product (NSDP) of Delhi was US$ 78.38 billion in 2015-16.
- **Haryana** is one of India's largest automobile hubs and accounts for two thirds of passenger cars, 50 per cent of tractors and 60 per cent of motorcycles manufactured in the country.
- **Punjab** has been ranked first in India in terms of infrastructure facilities offered. Punjab's road, rail and air transport network, connectivity, construction of bridges and infrastructure facilities are rated among the best. As of June 2016, Punjab had a total installed power generation capacity of 12,936 megawatt (MW).
- At current prices, the gross state domestic product (GSDP) of **Jammu & Kashmir** was US$ 17.73 billion in 2015-16 and has expanded at a compound annual growth rate (CAGR) of 10.2 per cent from 2004-05 to 2015-16

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An **e-revolutionary!**

The revolution of electric vehicles has already started in India and we see a tremendous growth for electric vehicles in India, says **Ayush Lohia**, CEO, Lohia Auto Industries Limited.

By Niranjan Mudholkar

Q. Lohia Auto Industries was established in the year 2008. How's been the journey so far and are you satisfied in terms of achieving the goals that you set for the organisation at the beginning?

Lohia Auto Industries was established in the year 2008 with an objective to provide clean, efficient, reliable and affordable inner-city & rural transportation. Within a short span of 5-8 years Lohia capture the eclectic vehicle market and become the first Indian company to set up its own integrated ebike manufacturing facility. The journey started with two models of electric bikes and today includes over 10 products in its portfolio ranging from ebikes, erickshaw and three wheelers. The brand is gearing up to create its presence in the 3-wheeler and high-end motorcycle segments.

Q. After setting up strong footprints in electric vehicle segment, Lohia has also ventured into commercial vehicles segment. Tell us about this foray.

Subsequent to the foray into the electric vehicle segment, Lohia has ventured into commercial vehicles segment. It has rolled out two models of diesel three wheelers under the brand, Humsafar. Humsafar is again available in both, passenger and cargo segment. The three wheelers are also being manufactured at its existing Kashipur facility where we have added another two lines. The combined manufacturing capacity of this plant is one lakh vehicles annually.

Q. You have also entered into a joint venture with US based UM Motorcycle. Tell us about this collaboration.

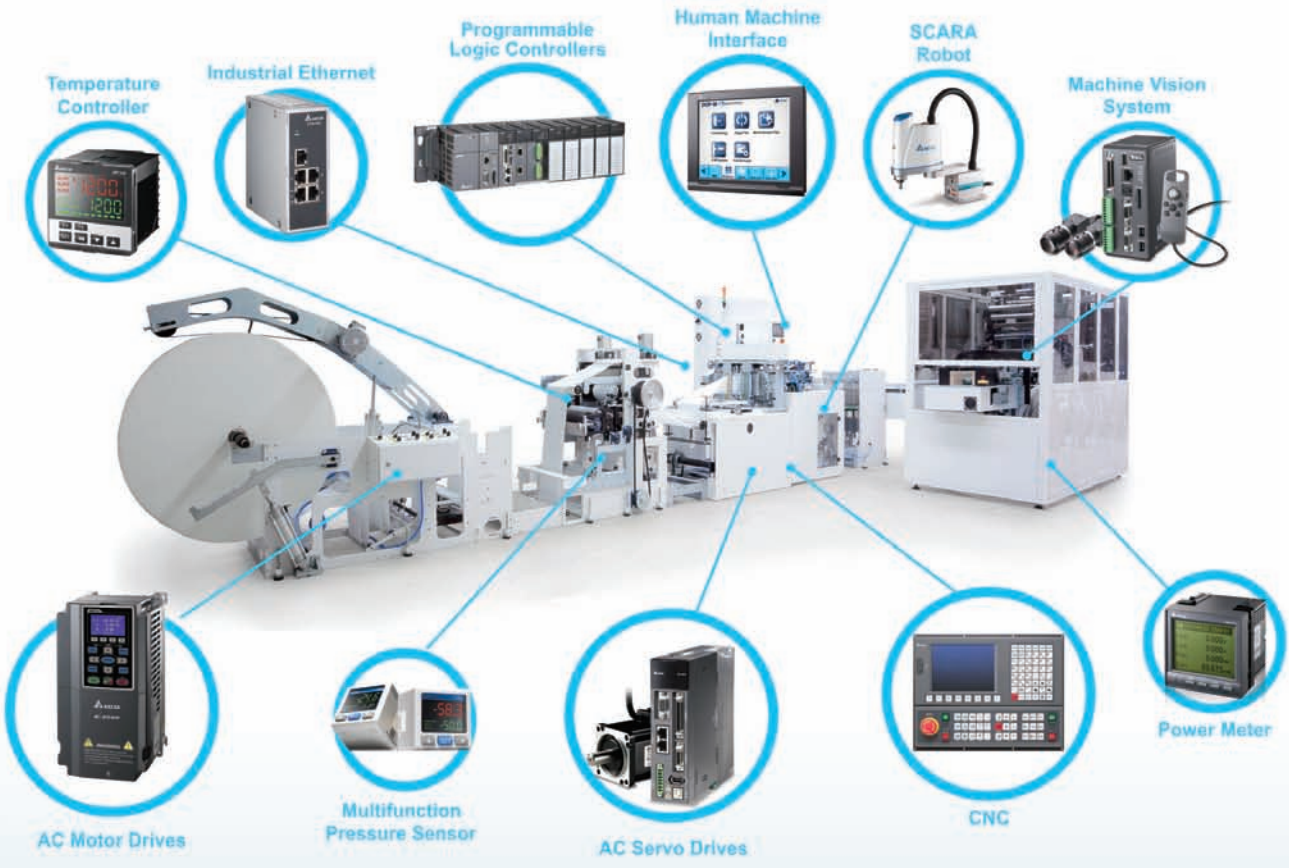
Being an emerging player in electric two and three wheeler segments, the next journey for Lohia is to be in the motorcycle segment. For the same it has entered into a joint venture with US based UM Motorcycle to manufacture high end cruiser bikes in India.

Q. Tell us about your complete product portfolio. Do you intend to diversify further in the near future?

Lohia products portfolio is divided in to three categories that are electric two wheelers, e-rickshaw and commercial vehicles.

Electric two wheelers or ebikes is the segment where Lohia continues with its leadership position. Currently, it has two models of electric bikes, Oma Star and Genius. Keeping in mind the burgeoning demand for e-rickshaws, Lohia has launched two series of e-Rickshaw that are Humrahi and Narain.

Each series is having two products for passengers and loaders. Lohia's next in pipeline product is the high speed electric scooter and a fully battery operated three wheeler. The R&D



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team of Lohia is working in this direction to design these products from commercial viability.

Q. Tell us about your manufacturing facilities.

Lohia is one of the very first players to have its own state of the aft manufacturing facility in Kashipur (Uttarakhand). The Lohia plant at Kashipur, Uttarakhand uses futuristically designed state-of-the-art equipment, managed by one of the most modern Cloud-ERP technology, with a capacity to roll out 1,00,000 vehicles annually.

Q. How has been the overall market for you in terms of business in the last one year? Is the growth in line with your set targets?

So far we have received a very positive response from our customers. Today's population is well aware about the menace of pollution and is gradually opting for electric vehicles. We are hopeful that in the coming years the demand for our products will witness a tremendous boost.

Q. Tell us something about your investments and revenues?

As mentioned earlier, the combined manufacturing capacity of our Kashipur plant is one lakh vehicle annually. Lohia has undertaken an investment of Rs50 crore in creating this facility and it intends to invest Rs10 crore in the next two years. By 2020, Lohia intend to cross Rs.500 crore market revenue.

Q. Your manufacturing facility is located in Kashipur, Uttarakhand. What have been the strategic advantages of having a facility in this region? How does this region compare with the rest of the country when it comes to supporting the manufacturing activities?

It has a high level of vertical integration and a large share of local suppliers. The facility being operated in a green-industrial-belt supports our philosophy that embodies our goal of creating environment friendly products and solutions. Also tax exemptions, skilled/ unskilled manpower availability, low operating cost etc. are the key advantages of keeping manufacturing facility at Kashipur.

"Lohia's next in pipeline product is the high speed electric scooter and a fully battery operated three wheeler. The R&D team of Lohia is working in this direction to design these products from commercial viability."

Q. How happy are you with the evolution of the e-vehicles market in India?

The revolution of electric vehicles has already started in India and we see a tremendous growth for electric vehicles in India. Side by side we see good demand for electric rickshaw, it is able to prove itself as the only viable option for the last mile connectivity. We see a tremendous opportunity as it poised to replace pedal rickshaw and can be a solution for people transportation in the last mile connectivity. For the last mile connectivity from bus stand, railway station or Metro station, the electric three-wheeler and the e-rickshaw can be a very cost effective and no-pollution solution for transportation. This will help boost better connectivity.

Q. What are the initiatives that the government and the industry can take up further to encourage the growth of this industry?

Central and state governments are encouraging Electric Vehicles and recognising that in future India doesn't need to depend on fossil fuel imports and it can leap frog to Electric Vehicles. We see a strong growth on the back of central government support in electric vehicle segment. By 2020 central government plans to spend Rs14000 crore and that will provide a big boost to the industry.

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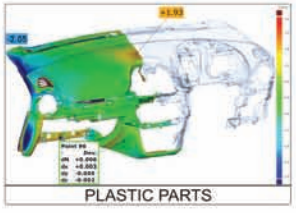
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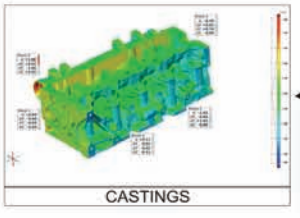
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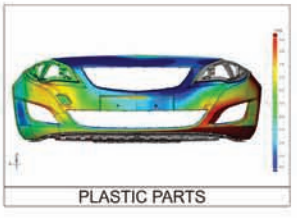
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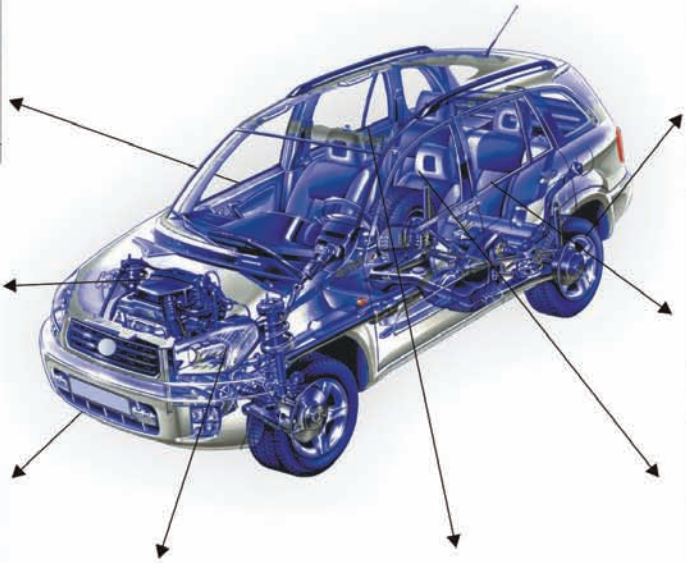

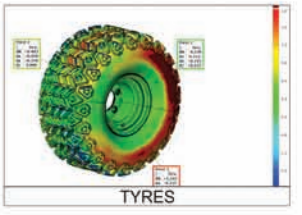
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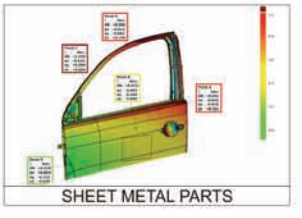
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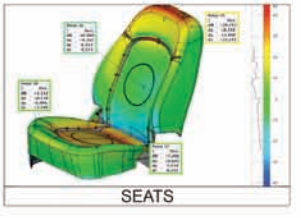
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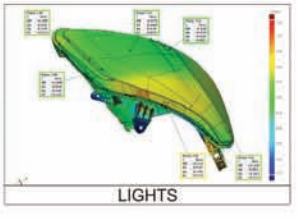
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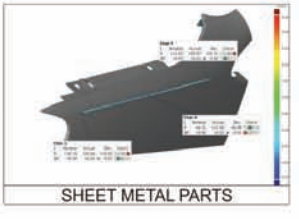
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Riding **high!**

The growth of safety equipment will be tremendous in India in the coming years because government is also laying great emphasis on this industry, says **Rajeev Kapur,** MD, Steelbird Group

By Niranjan Mudholkar

Q. You have personally steered the brand Steelbird from a small time helmet manufacturer to a whopping Rs.1500 crore Group with diversified business interests. How's been the journey so far and are you satisfied in terms of achieving the goals that you set for the organisation at the beginning?

The journey has been quite a roller-coaster for me. I started out very early by joining business and used to handle all the plants by myself at the age of 18. Work is my passion and I always believe in following my heart. I believe that if you become satisfied with what you have done then you become complacent. I have everything that one can aspire for and I am thankful to God for it. But as far as work is concerned there is a long way to go. Yes I am happy with what we have achieved till now but certainly not content with it. We are looking at a lot of support from the government because a helmet is a life saving device and I personally have given so many presentations to make helmet mandatory in all the states. The government spends so much on saving lives of the people but has not made the helmet mandatory which has the ability to save so many lives by itself. Secondly helmet manufacturing should be included in the list of products that have to be of ISI standards. A lot of lives are lost because of cheap and spurious helmets which are non-ISI manufactured and are sold because of which it cannot protect the head from fatal injuries.

> "One major advantage of having our manufacturing facilities in North India is the easy access to the labour. Secondly we have been in this region for almost 50 years and this region has served us pretty well."

Q. Tell us about the genesis of Steelbird Entertainment and Steelbird Motorsports.

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The idea behind starting Steelbird Entertainment was to do something new. So, we thought of making an album for myself as I have interest in singing since my school days. Steelbird Entertainment was started as a brand enhancing tool. We also do Steelbird Awards for our dealers each year. Now we have signed many artists under Steelbird Entertainment Banner and the idea is to promote new talent in the area of music and giving them a platform to launch themselves. Similarly, Steelbird Motorsports aims at bringing all the aspects of motorsports, food, entertainment and music together to make motorsports a family affair so that the family as a whole can come together and have fun under one roof.

You are now also looking at the Riding Gears segment to manufacture and retail high street riding gears, i.e. bikers suits, globes, jackets etc for overseas as well as domestic consumption. Tell us about this foray.

Most of the companies today are launching high end bikes and people are becoming riding enthusiasts. For all the riding lovers we have launched riding gear under the brand Ignyte. The Ignyte range of riding gear has been designed in Italy and adheres by international standards. It is designed for comfortable riding in all weather conditions. We are pioneers in the helmet industry and going to target the complete segment of biking accessories in the upcoming years.

"Helmet manufacturing should be included in the list of products that have to be of ISI standards. A lot of lives are lost because of cheap and spurious helmets which are non-ISI manufactured and are sold because of which it cannot protect the head from fatal injuries."

Tell us about your manufacturing capabilities and capacities.

With the growing demand of helmets all around, we have setup three plants for helmets. We were having two helmet plants in Baddi (Himachal Pradesh) and recently we have started one more plant for helmets also in Baddi. We have three plants with installed capacity of all three plants is respectively 22,000 units, 55,00,00 units and 66,000,00 units.

"We were having two helmet plants in Baddi (Himachal Pradesh) and recently we have started one more plant for helmets also in Baddi. We have three plants with installed capacity of all three plants is respectively 22,000 units, 55,00,00 units and 66,000,00 units."

How has been the overall market for you in terms of business in the last one year? Is the growth in line with your set targets?

So far we have achieved a growth rate of 50 percent in last one year and are moving towards achieving a similar growth rate in the coming year. The growth of safety equipment will be tremendous in India in the coming years because government is also laying great emphasis on this Industry. We are experimenting with several raw materials to take safety to new levels through helmets.

What is Steelbird Group's current annual turnover and where do you intend to take in the next two to three years?

We are expecting that our annual revenue will be Rs 500 crore by 2018 and Rs 1000 crore by 2022.

Your manufacturing facilities are primarily located in North India. What have been the strategic advantages of having a facility in this region? How does this region compare with the rest of the country when it comes to supporting the manufacturing activities?

One major advantage of having our manufacturing facilities in North India is the easy access to the labour. Secondly we have been in this region for almost 50 years and this region has served us pretty well. Helmet is an extremely high investment product. It requires intense labour. Access to labour in other parts of the country is difficult in comparison to Baddi.

Panasonic lays the foundation stone for its first refrigerator plant

Panasonic India recently laid the foundation stone of its First Refrigerator Plant in Jhajjar, Haryana. Manohar Lal Khattar, Hon'ble Chief Minister of Haryana, Om Prakash Dhankar Agriculture Minister, Haryana and Devender Singh, Principal Secretary Industries, Haryana, Sudhir Rajpal, MD-HSIIDC, were present at the occasion along with Manish Sharma, President & CEO, Panasonic India and South Asia, Hisao Yamane- Managing Director Appliances Company (APIN) and Saurabh Rawat- Divisional Head APIN, with other senior Panasonic representatives. The refrigerator plant will manufacture Top and Bottom-mounted refrigerators comprising of unique features such as energy-saving, long-lasting freshness and design, to address the local demands.

With an annual production capacity of approximately 500,000 units the new plant will be spread across 10,000 sq. meters and will manufacture refrigerators comprising of unique features such as energy-saving, long-lasting freshness and design. The company plans to invest Rs 115 crores and shall create a comprehensive eco system for manufacturing appliances in the Indian market. The operations will begin from January 2017 and sales for the will commence from April 2018 in India.

EVENT

'Power' packed!

The 4th edition of Power Focus Summit organised by ET Edge, an Economic Times initiative, was a great success.

The Economic Times brought the 4th edition of Power Focus Summit in India which was held on March 17, 2017 at Hotel Grand, New Delhi. The summit was an iconic platform where stakeholders from the Government & Private sectors gathered to deliberate on key challenges to ensure a better, effective and smooth running of the Power & Energy sector. In the coming decade or so, due to rapid urbanisation and further economic development, huge pockets of population will be shifted from rural to urban sectors. This will accelerate the energy need of the country and vast industrialisation will propel the policy makers to take measures to ensure 'power for all'.

Deepak Lamba, President, Times Strategic Solutions Ltd and CEO, WWM commented, "Today we have brought together the top decision makers of the Government and corporates who will shape the future of the power industry in India. This is a platform where we can collaboratively build a vision of an India where technology combined with knowledge can help in effective use of various sources of energy. The Times of India is proud to bring the 4th edition of the Power Focus Summit where we hope to address the issue of 'power to all'."

The Government and the private players need to work together towards a better and energy abundant future. The event saw an impressive line of speakers who threw light on these issues.

"Our priorities are three aspects of power - Coal, Solar & UDAY."

Piyush Goyal, Minister of State with Independent Charge for Power, Coal, New and Renewable Energy and Mines

"This is a platform where we can collaboratively build a vision of an India where technology combined with knowledge can help in effective use of various sources of energy."

Deepak Lamba, President,
Times Strategic Solutions Ltd & CEO, WWM.

Piyush Goyal, Minister of State with Independent Charge for Power, Coal, New and Renewable Energy and Mines in the Government of India said, "Our priorities are three aspects of power - Coal, Solar & UDAY. With respect to coal reserves, India is in a great situation where one can safely plan that India will have sufficient coal reaching a level of a lakh of crore or one lakh 20 thousand crore, which it had reached three years ago. In addition the government continues to have a strong focus on solar power as we plan to ramp the capacity by 20,000 MW but 2022." Apart from this, he also spoke about how Gujarat has set an example of good governance. He highlighted how the government took action against power theft in the state and brought about transformation in policies, taking some harsh steps against theft of Power which led to Gujarat becoming a 24 hours lit state for the past 15 years. He highlighted how UDAY will promote good governance in India.

Other key speakers included Varsha Joshi, Principal Secretary, Power, Govt of Delhi, P K Pujari, Secretary Power, Ministry of Power, Govt of India, Gurudeep Singh, CMD, NTPC, J P Chalasani, Group CEO, Suzlon among others.

Commenting on the renewable energy segment, Joy Saxena, Executive Director, Vikram Solar during a panel discussion said, "The new initiatives by the Government will eventually develop the power and energy sector of India. We are focusing on the roof top project as we have implemented a lot of policy mechanism on these projects. India in the global scenario of power and energy has seen decent growth, though our volumes are small we still have cost competitive products and growing markets." The summit was a congregation of barons of the power and energy sector, state secretaries who spoke about initiatives, policies and regulations driving the Indian utility sector, opportunities within the power manufacturing sector, emerging trends on the industry and how renewable energy will continue to play a role in the development of power in the country.

Airbus breaks ground for training facility in New Delhi

Airbus is setting up a Greenfield training facility at Aerocity, New Delhi, to support India's growing need for Airbus aircraft pilots and maintenance engineers. The ground-breaking for the Airbus India Training Centre was performed by P. Ashok Gajapathi Raju, Union Minister of Civil Aviation and Tom Enders, CEO, Airbus in the presence of Jayant Sinha, Minister of State for Civil Aviation.

India is the fastest growing domestic aviation market in the world and is expected to continue to grow at an annualised 9.3 percent over the next 20 years, outpacing the world average of 4.6 percent. The number of trips per capita in India is expected to quadruple by 2035 due to a combination of economic and demographic factors.

To cater to this huge demand, Airbus forecasts a requirement for at least 1,600 new passenger and freighter aircraft by 2035. The consequent increase in Indian in-service aircraft fleet will lead to an accompanying need for over 24,000 new pilots and maintenance engineers.

"India's rapidly growing passenger aircraft fleet must be matched by adequate availability of skilled pilots and maintenance engineers. Airbus' pilot and maintenance engineering training center is the type of facility which will help augment the talent pool of such personnel and thus be a force multiplier for the Indian aviation sector, said P. Ashok Gajapathi Raju, Union Minister of Civil Aviation.

"We have only scratched the surface when it comes to the growth of civil aviation in India. This training centre will be the first such facility fully owned by us in Asia. It is a symbol of our enduring partnership with this country," said Tom Enders, CEO, Airbus.

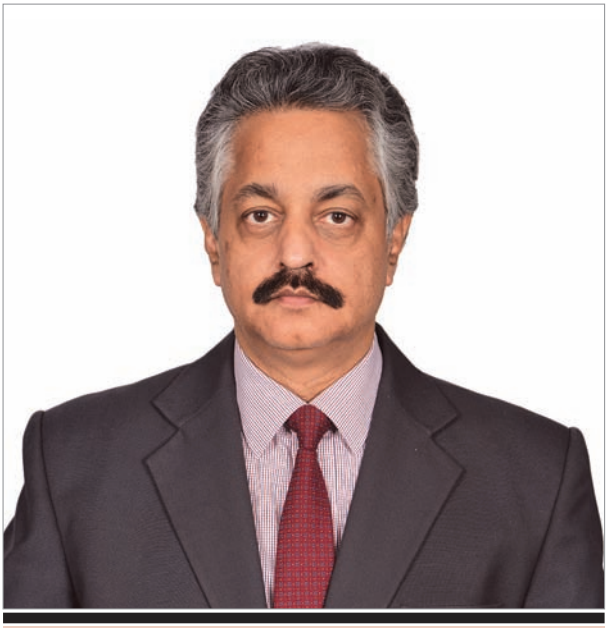
Availability of water makes the destination ideal

Harihar P, Senior Vice President – Manufacturing and Project Planning, Ashok Leyland Ltd says Pantnagar, Uttarakhand has been a great location for establishing and running.

By Swati Deshpande

Tell us about manufacturing plant specifically located in the North India?

Our plant in Pantnagar, Uttarakhand, is one of the most integrated manufacturing facilities in the Indian commercial vehicle (CV) industry with an annual capacity of 60,000 Medium and Heavy Duty vehicles. The manufacturing facilities are best in class, designed on principles of lean manufacturing, in-built flexibility in hardware systems and processes to cater to both variety and volume changes in a dynamic and volatile CV market.



In the state of Uttarakhand, the availability of power is abundant and relatively cheaper than other states. Ground water is available at almost sub surface levels which is a big advantage in manufacturing. The state has been able to attract a large number of industries including auto majors, their ancillaries, FMCG manufacturers and software companies, enabling them to set up facilities to boost the local economy.

The Automotive industry accounts for 45 percent of the country's manufacturing GDP and 7.1 percent of the country's GDP. India is at present the sixth largest automobile manufacturer in the world and has a vision to move to the third place by 2026, the key growth drivers being favourable government policies, tax incentives, automotive mission plans and so on

How has been North India as a manufacturing destination in terms of availability of resources such as electricity, water, infrastructure, etc.

In the state of Uttarakhand, the availability of power is abundant and relatively cheaper than other states. Ground water is available at almost sub surface levels which is a big advantage in manufacturing. The state has been able to attract a large number of industries including auto majors, their ancillaries, FMCG manufacturers and software companies, enabling them to set up facilities to boost the local economy.

Ashok Leyland has made large investments in Uttarakhand with best in class manufacturing facilities based on Total Quality Management (TQM) processes. Our investments have already matured in a short time span of 5-6 years since inception. The unit was also recognised globally when it was conferred the 2016 Deming Prize for the successful implementation of TQM in November 2016. With this felicitation, Ashok Leyland's Pantnagar plant has become the first CV manufacturer outside of Japan to win the prestigious Deming Prize.

In addition to growing our facility, we have also been sensitive in maintaining an ecological balance. We have not only created a 'Zero Water Discharge Plant' but have additionally conducted an 'Afforestation Drive' through which we have grown 60,000 trees in the area.

Skilled labour has been a constraint in the Indian manufacturing scenario. On this backdrop, how is North India as a manufacturing destination?

Skilled labour has been a constraint in the Indian manufacturing scenario due to various reasons. However, Ashok Leyland as a responsible corporate has worked towards resolving this issue by launching a unique initiative called 'The BLESSING Scheme'. The Pantnagar plant pioneered this unique scheme in partnership with Nettur Technical Training Foundation (NTTF), which provides opportunity for youth from remote areas to become employable, thus supporting the Skill India mandate of the Government of India.

The scheme commenced in the year 2010 and since then 490 students have graduated from this centre, 12 percent of the lot being girls. The plant offers over 100 young people the opportunity (each year) to work at the facility post their successful completion of the 12th standard. The course is spread over four years and is divided into semesters where the students are out in the field gathering practical experience for five days and theoretical experience for one day in a week. We have also invested in advanced training infrastructure and training facilities at par with many engineering colleges to provide students with practical training of high standard.

Our plant also houses a girls hostel inside the campus to encourage more women workers on the shop floor. Currently, 1000 more students are undergoing this training. This scheme is the first of its kind in the auto industry and has helped in creating many skilled and employable resources not only for our organisations but others in the industry as well.

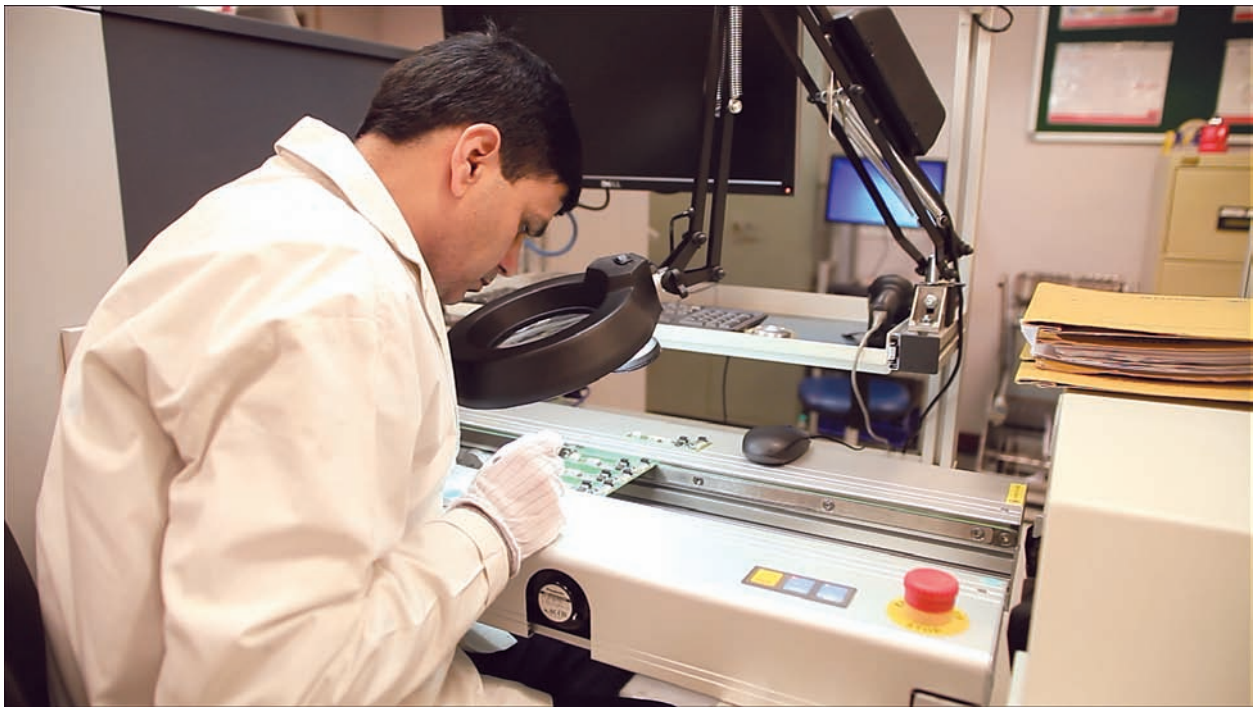
Ease of doing business is a major initiative of the Government taken to transform manufacturing in the country. In this context, how far do you see manufacturing friendly environment in the region?

The Automotive industry accounts for 45 percent of the country's manufacturing GDP and 7.1 percent of the country's GDP. India is at present the sixth largest automobile manufacturer in the world and has a vision to move to the third place by 2026, the key growth drivers being favourable government policies, tax incentives, automotive mission plans and so on. This growth is supported by the emergence of major automotive ancillary clusters in the NCR region which are also centrally located as feeder points. The States are offering additional incentives for industrial projects like rebate in cost of land acquisition, stamp duty exemption on sale or lease of land, power tariff incentives, concessional rate of interest on loans and more. These initiatives are making a difference and are acting as a catalyst in creating a manufacturing friendly environment in the region.

The northern region has a significant market share in the automotive space in general and commercial vehicle segment in particular, making it a preferable region for manufacturers to set up base. However, while basic resources like electricity, land and water are easily available, connectivity to the remote and interior areas by road or railways and unavailability of air and sea port in the vicinity still remain a challenge. Labour is largely available but is semi-skilled.

As compared to other regions in the country, how does North India stand out as a manufacturing hub?

The northern region has a significant market share in the automotive space in general and commercial vehicle segment in particular, making it a preferable region for manufacturers to set up base. However, while basic resources like electricity, land and water are easily available, connectivity to the remote and interior areas by road or railways and unavailability of air and sea port in the vicinity still remain a challenge. Labour is largely available but is semi-skilled. To help the industry in this context, our training centre and other vocational training institutes are constantly working towards providing skill to the youth. Additionally, government has also been initiating favourable policies which in turn are fostering industrial development make it a preferred investment destination.



Innovating for India!

The Indian market has evolved quite rapidly in the last decade, and the push to develop more than 100 smart cities is expected to accelerate this technologically-driven evolution even further, says **Rajiv Bhalla,** MD at Barco Electronic Systems.

By Niranjan Mudholkar

Q Tell us about Barco's journey in India. How has the market evolved in the last few years?

Established in 1996 in New Delhi with an initial team size of 50 people, Barco India has consolidated its position as the domain leader in the networked visualisation space in the intervening two decades. We have won multiple awards and industry recognitions, both in India and on a global stage, which attest to our excellence in manufacturing, quality, and export of electronic/IT products. We currently have over 500 team members across various business functions such as R&D, software development, manufacturing, sales, marketing, and customer services.

In addition to our Noida headquarters, we have corporate offices in Mumbai and Bangalore, as well as customer support centres operating out of Kolkata and Ahmedabad. The Indian market has evolved quite rapidly in the last decade, and the push to develop more than 100 smart cities is expected to accelerate this technologically-driven evolution even further. More investments will be made into infrastructural development aimed at modernising Indian cities and making them more citizen-friendly. Domains such as healthcare and entertainment, in particular, are expected to witness increased demand for more and better quality services which will facilitate a higher standard-of-living for Indian citizens. The focus on smart cities will also lead to a massive demand for effective control room solutions.

> "Given that North India is the hub of manufacturing operations in the country, having our manufacturing facility located here has several strategic advantages such as improved sourcing of resources/talent and more robust distribution and sales channels."

Q Tell us about Barco's product line and the sectors that you are catering to.

As a global leader in the networked visualisation and distribution solutions sector, Barco is an enabler of a smarter tomorrow. We have a diverse portfolio of highly-customised net-

worked visualisation solutions for entertainment, enterprise, and healthcare markets, and provide smart solutions such as video walls and controllers that aid in the creation of Safe Cities. From traffic management, security, and telecom to utilities and process control systems, Barco provides the necessary building blocks for highly reliable control room visualisation systems. We facilitate an integrated approach to patient care in hospitals through an interconnected network of display systems which boosts clinical performance in every department and facilitates better patient care. Barco also offers state-of-the-art visualisation solutions for entertainment venues and attractions to deliver more engaging and immersive entertainment experiences, which aids them in attracting for more visitors and diversifying their revenue streams.

How has been the overall market for you in terms of business in the last one year?

2016 was a good year for us at Barco India. We registered double-digit growth, thanks to the market demand for our state-of-the-art networked visualisation solutions. We are looking to build on this success by introducing more innovative offerings in the future. Control room solutions for smart cities and safe cities are a big part of our long-term vision. With our diverse product portfolio and effective networked visualisation solutions, we aim to be the go-to enabler of an interconnected smart infrastructure which facilitates an intersection of utilities, processes, administration, and the end-user. The entertainment industry is also a key focus area for us.

Tell us about your manufacturing facilities.

Noida is one of Barco's key manufacturing sites: every single DLP Projector engine in the world for Barco's large videowall activity is built in Noida. In addition, we assemble printed circuit boards and we develop software for the Entertainment & Enterprise divisions.

Barco India's manufacturing plant is certified for ISO 9001, ISO 14001 & AS 9100 for PCBA process. Products manufactured here are compliant with international norms like UL, Cebec, CE, CCC, etc. The state-of-the-art factory also houses a demo centre and a customer support centre, and has been manufacturing hi-tech products for both national as well as global markets in compliance with all the international safety and quality norms. Our production capacity has grown manifold over the years. We have PCBA lines and projector assembly lines in our factory. Our projector assembly has an installed manufacturing capacity of 1000 projectors per month. It is slightly more difficult to measure the production capacity for our PCBA lines, as we manufacture different kinds of boards. We are manufacturing 65-70 types of modules every month, and the overall capacity is between 2000-2500 boards per month. We are also manufacturing lamp power supply module for digital cinema.

How are you scaling up your R&D activities?

"Barco is synonymous with 'Innovation for India', be it in terms of products, business models, or partnerships. I wish to establish the India unit as the leader when it comes to defining emerging market success for global Barco operations."

India is home to Barco's largest software lab, and we have plans to expand it in line with our growing contribution to product development. We are defining the architecture and standardizing software development aligned with Barco divisions and measurability at every stage. Our goal is to scale up not just in numbers but also the quality of our output. We also have a hardware R&D unit in Noida for product innovation.

What have been the strategic advantages of having a facility in North India?

Given that North India is the hub of manufacturing operations in the country, having our manufacturing facility located here has several strategic advantages such as improved sourcing of resources/talent and more robust distribution and sales channels. Operating within the National Capital Region also gives us a competitive edge when it comes to empanelment with government initiatives as well as meeting the varied requirements of private sector players from the region.

What is your personal vision for the organisation?

Barco is synonymous with 'Innovation for India', be it in terms of products, business models, or partnerships. I wish to establish the India unit as the leader when it comes to defining emerging market success for global Barco operations. In the next two years, we aim to become and be perceived as the partner of choice for networked visualization display for multiple applications, from control rooms in smart cities to projectors in the digital cinema industry and collaboration tools in the enterprise sector. We will also be strengthening our partnerships with industry players and the government whilst developing the ecosystem, in addition to fostering greater customer intimacy.

An eventful decade!

While upcoming projects are looking for high-tech ultramodern technological solutions, existing customers who are facing sluggish demands are looking for low cost solutions, says **Prashant Sardeshmukh,** Director, MMC Hardmetal India

By Niranjan Mudholkar

"The fiscal year 2016-17 brought us a good blend of challenges and opportunities. It was also eventful for us because we celebrated 10 years of successful business operations in India and commissioned our own manufacturing plant at Aurangabad."

Q. Last year, MMC Hardmetal India completed 10 years of successful operations in India. Congratulations to you and the team on reaching this milestone. How would you describe the journey so far?

In 1999, MMC Metal Singapore Pte Ltd entered Indian market with state-of-the-art cutting tools from Mitsubishi, Japan. India was a branch office of Singapore Operations till early 2006. Our Business Partners used to import tools from Singapore Office and Indian Branch was responsible for technical support to end customers. MMC Hardmetal India Pvt Ltd was established as a Subsidiary of Mitsubishi Materials Corporation, Japan in August 2016 with its Head Office and Stock Centre at Bangalore. We completed 10 years of operations of Indian Subsidiary last fiscal and our journey so far in India is fascinating.

To add further glory to completion of a decade in India, we also inaugurated our first manufacturing plant in India last fiscal. With the philosophy of being closer to our customers, we have set up Regional offices at Gurgaon, Pune, Chennai and Ahmedabad. Currently, we have a fleet of satisfied employees strategically located across the country who are willing to leave no stone unturned to achieve customer satisfaction.

Q. MMC Hardmetal has joined the 'Make in India' band wagon by starting a manufacturing plant in India. Please tell us about the same in terms of location, investments and capacity. What tools are you going to manufacture at this plant?

MMC Hardmetal India Pvt Ltd, popularly known as MMCI joined the 'Make in India' campaign by honorable Prime Minister Narendra Modi in December 2016. Since the announcement of 'Make in India' campaign by Government of India, we started working towards it and inaugurated our first manufacturing facility at MIDC, Waluj in the city of Aurangabad. This plant will be instrumental in manufacturing of all kind of standard and special steel products like tool holders, milling cutters, boring bars, holding systems and many similar variants. We would like to offer competitive solutions to our esteemed customers not only in terms of price but overall quality and lead time as well.

"Our manufacturing facility at MIDC, Waluj in the city of Aurangabad will be instrumental in manufacturing of all kind of standard and special steel products like tool holders, milling cutters, boring bars, holding systems and many similar variants. We would like to offer competitive solutions to our esteemed customers not only in terms of price but overall quality and lead time as well."

We have big expansion plans this fiscal for our manufacturing plant which includes construction of a new building, addition of new 5 and 7 axis machining centers, new inspection facilities etc. This will definitely give us an added edge over our competitors while offering Total Solutions.

Q. MMC Hardmetal has also undergone an exercise to redefine its brand identity in the recent times. How has this influenced your business approach? How has the customer fraternity responded to this change?

MMC Hardmetal India Pvt Ltd's new manufacturing plant at Waluj, Aurangabad

Since its inception, MMCI has been meticulously working in establishing Brand Mitsubishi in India. After various meetings with key customers and a survey by external agency, we realised necessity of having a brand identity of MMCI for our own manufacturing facility which was already on our agenda.

Together with brand identity, we have also launched 'MMCI Way' which became very popular with our esteemed customers. MMCI Way says – 'We are your reliable partner for better productivity and superior business performance'. In simple words, we will work only for better performance of our customers and enjoy assured growth with them.

We uphold five essential values in our business practice viz. Reliability, Proficiency, Care, Transparency and Innovation. Customer fraternity now knows that MMCI is an extended arm of MMC, Japan in India which continues to follow the basic principle of "For People, Society and the Earth"

Q. While it is far from being a booming industry, Indian manufacturing is surely turning around positively. What has been your experience and how do you see the market behaving in the next 12 months? Which sectors will be doing better compared to others?

Currently Indian manufacturing industry is going through a tough phase, while upcoming projects are looking for high-tech ultramodern technological solutions, existing customers who are facing sluggish demands are looking for low cost solutions. Hence, solution providers like us needs to have total solutions in their basket. The budget provisions this year hopefully will give boost to overall manufacturing sector as the government is keen to give impetus to infrastructure sector which will set entire economy rolling. We hope to see good positive impact on our business as well. We also hope, reforms through GST will contribute to overall business growth. In the New Year we are better poised to have good opportunities in competitive market because we have also rolled in our own indigenous product range and are better placed to offer wide variety of product basket.

> "We have big expansion plans this fiscal for our manufacturing plant which includes construction of a new building, addition of new 5 axis and 7 axis machining centers, new inspection facilities etc."

We expect overall growth in manufacturing sector over next 12 months and expect sizable contribution from automotive, aerospace and medical engineering industries. The only Guru Mantra in current scenario is not to lose any opportunity and convert every opportunity into business.

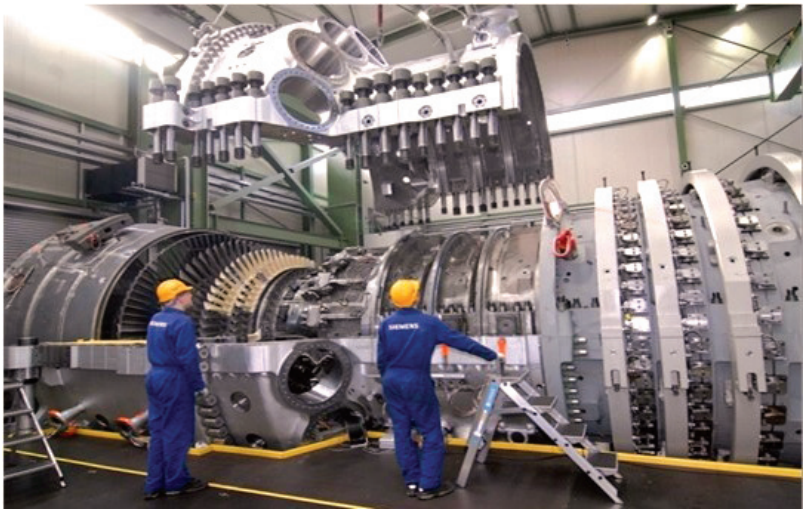
Q. How's been the business for the company in the last one year. How would you compare your performance vis-à-vis the overall cutting tools market in India?

The fiscal year 2016-17 brought us a good blend of challenges and opportunities. It was also eventful for us because we celebrated 10 years of successful business operations in India and commissioned our own manufacturing plant at Aurangabad. Obviously we had moments to cheer about. Yet the year became all the more challenging for everyone because of Government's unprecedented move of demonetisation, which brought sudden lull in the market. Nevertheless, economy kept crawling and it would surely become strong in the days to come. We are proud to be associated with Indian manufacturing industry and we have registered a sizable growth year on year in India. Even though the growth of the cutting tool industry has slowed down a little in the past few years globally, we at MMCI had a pleasant journey accomplishing a double digit growth last year. We intend to continue it for next couple of years. On long term basis, we see good growth opportunities for the cutting tools business in India. We also expect India to contribute a lot to MMC's global growth.

How **additive manufacturing** will **change the world?**

3D printing is quickly becoming a catalyst for companies to come up with new ideas and innovations that were impossible – until now. Here is more on how this emerging technology is touching upon varied industries.

By Andreas Saar



Additive manufacturing has the potential to completely upend entire product design, analysis, manufacturing and distribution processes. It also has the potential to transform people's lives. This is a disruptive technology that could have an exponential impact on a lot of parts of businesses, and its potential impact is what worries CEOs and business managers every day. But instead of fearing the technology, they should embrace it.

Industries explore additive manufacturing benefits

Printing on demand is a major factor that's driving companies to use additive manufacturing, particularly for the spare part industry. If you need a replacement part fast so it can replace a defective part, but you don't want to store expensive spare parts, this manufacturing process can do that. You can print whatever, wherever and whenever you need.

Siemens Mobility has a Spare Part Services program that prints spare parts for trains all around the world. This program takes each organisation's unique requirements into consideration and can provide spare parts over a system's entire lifecycle.

If a drill head breaks on an offshore oil drilling platform, 3D printing would give the company the option to recoat the broken drill head and minimise or even prevent disruptions to their production schedule.

The U.S. Navy has already installed a compact 3D printer on a ship and has printed out sample parts. And according to defense contractor Qinetiq, navies around the world could use 3D printing to print autonomous vehicles at sea in the next 15 years.

The additive manufacturing revolution has already started. It will further force companies to consider how they can use this disruptive technology to innovate products, radically change designs, alter production, and optimise their business processes. Additive manufacturing will be, and already is, a catalyst to inject new ideas and designs into new product development. It will inspire designers young and old to come up with innovations that haven't been possible before. And it will allow companies to simplify production processes and in-source production for better quality control and inventory reduction.

The additive manufacturing revolution has already started. It will further force companies to consider how they can use this disruptive technology to innovate products, radically change designs, alter production, and optimise their business processes.

Let's look at GE's 3D printed fuel nozzle, the first FAA-approved product of its kind. GE simplified a complex production process by reducing part complexity from 20 components to one. It printed the entire nozzle and improved performance at the same time, leading to a superior product that can be produced faster and more cheaply.

A small, dedicated team designed and printed this part.

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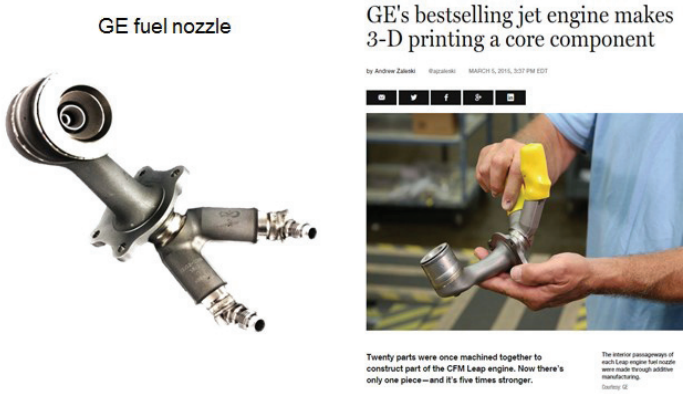
The additive manufacturing market is experiencing exponential growth. Gartner estimates that worldwide 3D printer shipments will reach more than 490,000 in 2016. New materials, plastic and metal, are being developed by independent providers as well as larger companies. And there's a lot of money being spent to research additive manufacturing. In 2013, the National Institute of Standards and Technology awarded $7.4 million in grants for additive manufacturing research.



All images courtesy: Siemens PLM

The team accomplished its goal to make this part. Imagine the thousands of designers using NX who are starting to think about how to innovate their design with additive manufacturing. A revolution has started.

What about the casting industry? Additive manufacturing can help increase the motor's cooling surface and reduce total weight by printing the engine block. Today, a small series is already cost efficient. Falling hardware prices for printers combined with higher printing speed will push the curve up.

Siemens Power and Gas offers a good example of product innovation with its new burner head. It has fine channels to allow cooling fluid to push through and reduce the temperature in the burner head. This significantly increases the burner's life span and reduces maintenance costs for large gas turbines.

In the end, what counts for companies is making better products, faster, and cheaper, accelerating innovation and staying ahead of competition.

Why companies are paying attention to additive manufacturing?

There are three main reasons why we see companies looking into additive manufacturing.

The first is the statistics. The additive manufacturing market is experiencing exponential growth. New players like HP, Trumpf, DMG-Mori and Autodesk are entering the market. Gartner estimates that worldwide 3D printer shipments will reach more than 490,000 in 2016. New materials, plastic and metal, are being developed by independent providers as well as larger companies. And there's a lot of money being spent to research additive manufacturing. In 2013, the National Institute of Standards and Technology awarded $7.4 million in grants for additive manufacturing research.

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Andreas Saar

The second is that there are always people exploring alternative ways to produce a part. They want parts that are cheaper and better, and they want to print those parts at times and locations most convenient to them. Production and distribution cost reduction are enormously important for a company's future. Additive manufacturing offers new distribution method possibilities that could allow companies to reach their customers faster while reducing inventory.

The third is that people are visionaries. They believe that with this disruptive technology they can create products they have only dreamed of in the past. I met some of these people working at SpaceX, VG, NASA and Siemens. They strongly believe that additive technology will change the manufacturing industry. They believe this technology will help them to radically innovate products to a new level like never before.

The author is the Vice President of Manufacturing Engineering Software at Siemens PLM Software

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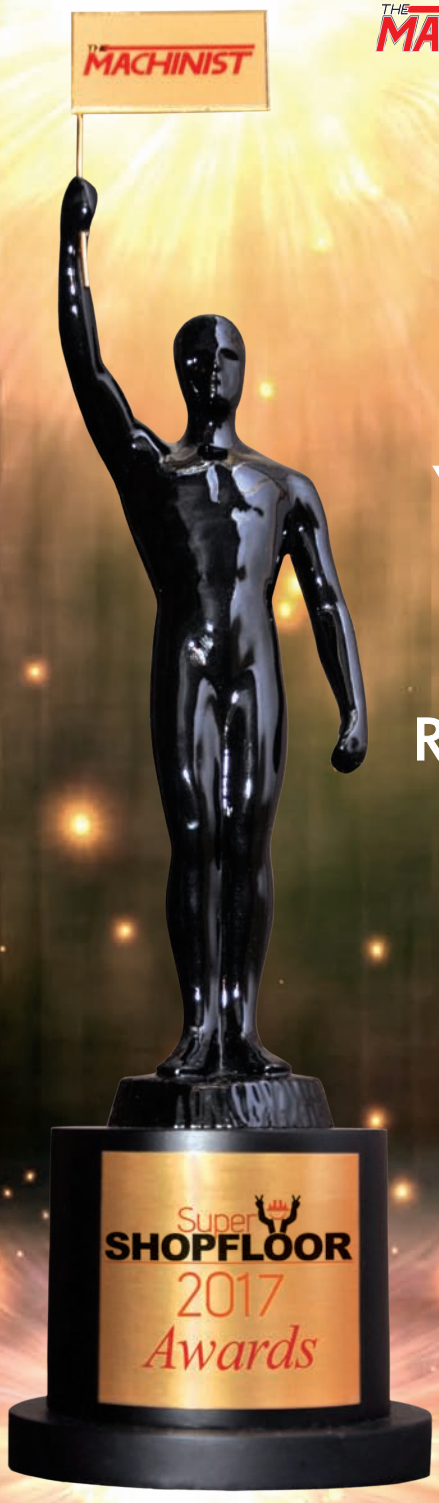

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The jury has spoken and given its verdict.

As many as nine industry stalwarts had been the part of jury panel of The Machinist Super Shopfloor Awards 2017. These esteemed jury members gathered at Hyatt Regency, Pune on April 5, 2017 to evaluate the nominations which had earlier flooded our office!

Here are the glimpses of the jury meet. The smiling faces and expressions of the juries will give you an idea about their involvement in the process. In order to ensure that the Machie goes to none but the most deserving shopfloor, each jury member scrutinised and assessed the nomination with utmost dedication and passion. After the evaluation, each one had sense of satisfaction for working towards rewarding best in the industry. To know the verdict, be there at the only Red Carpet ceremony for manufacturing at Feathers, Chennai.

See you on May 18, 2017!

Esteemed Jury Panel with Niranjan Mudholkar, Editor, The Machinist. (Another jury member Suresh KV from ZF in India is not seen in this pic)

The Machinist stands for the Best practices of Man with Machine to deliver values which sets them apart, deliver competitive excellence and bring innovation. The Machinist Super Shopfloor 2017 stands for manufacturing excellence and growing prowess of India in the global map as the new emerging World class Manufacturing hub. Such events go a long way to establish Brand India.

Dr. Dhananjay Kumar, MD (Electric Vehicle), Thor Power Corporation

Esteemed Jury Panel

Suresh KV
Country Head, ZF in India

Chandra Nataraja
Managing Director
Knorr-Bremse Technology Center India Pvt Ltd

Hemant Watve
MD and CEO, Wilo Mather and Platt Pumps Pvt. Ltd

Bireswar Mitra
Executive Director
Sharda Motor Industries Ltd.

Dr. Dhananjay Kumar
Managing Director (EV)
Thor Power Corporation

Shrikant S. Bairagi
Chief Executive Officer
Prothom Industries India Pvt. Ltd.

Rajeev Mittal
Chief Information Officer
Endurance Technologies Ltd.

Sham Arjunwadkar
Chairman, IIF National Centre for Technical Services, Senior National Council Member of IIF

Avinash Sankhe
Director - Global Shared Services Center, Bureau Veritas

It was a good experience to be a part of the jury panel for The Machinist Super Shopfloor Awards 2017. This is a great initiative by The Machinist as it recognises excellence in the manufacturing industry. I definitely feel that such an initiative helps achieve Make in India's objectives.

Suresh KV, Country Head, ZF in India

"The Machinist Super Shopfloor Awards is the ultimate celebration of manufacturing excellence. Come and join us to recognise the real heroes who are actively leading the Make in India campaign."

Shrikant S. Bairagi, CEO, Prothom Industries India Pvt. Ltd.

The experience of the past three years has been really wonderful not only as a Jury Member but also as a professional. It is a learning process for me. This platform is encouraging for the industry. Going forward, this platform should be expanded to international level. Also, nominations from other industries can be invited.

Chandra Nataraja, Managing Director, Knorr-Bremse Technology Center India Pvt Ltd

I have been a jury member for the last edition as well. This year, the participants have been more meticulous in sending their entries systematically. Platform like this is a need of the hour. I think The Machinist team is doing a great job by organising such a platform.

Sham Arjunwadkar, Chairman, IIF National Centre for Technical Services, Senior National Council Member of IIF

The experience of this Jury meet is fantastic and it's a learning experience as I got to know about various approaches and perspectives that the industry follows. Additionally, a platform like this encourages the industry to follow best practices.

Rajeev Mittal, Chief Information Officer, Endurance Technologies Ltd.

Connect and Optimise - **Digital Connectivity and Industry 4.0**

However you choose to define the digital manufacturing transformation of Industry 4.0, one thing is certain – robust, reliable and integrated communications are absolutely fundamental to any successful 'smart factory' implementation.

For manufacturers, the ability to allow the key elements of the production process to communicate with each other will be one of the keys to unlocking the significant competitive advantage and growth potential promised by this 'fourth industrial revolution'. This evolution to ICT (information and communications technology) means that connectivity is becoming an increasingly important issue. For this reason, the control and data sharing solutions that characterise the next generation of digital machining will be based on connectivity and its close cousin – interoperability.

The ultimate aim is for machines, software solutions and cutting tools to be interconnected in such a way that they can collect and communicate data from and between every different step of the value chain. If this can be achieved then so called 'dark data' – data that would previously have been either unavailable or, at best, difficult to obtain can now be analysed.

Digital connectivity

Certainly it is no overstatement to say that digital connectivity solutions will help companies to improve every aspect of the end-to-end production process – from design and production planning through machining to post process analysis and intelligence. Enhanced connectivity and interoperability will open up new opportunities to improve productivity, profitability and security through better planning and decision making, more optimised processes, lower levels of waste, increases in efficiency and the rapid identification and resolution of pro-

duction issues.

The ultimate aim is for machines, software solutions and cutting tools to be interconnected in such a way that they can collect and communicate data from and between every different step of the value chain. If this can be achieved then so called 'dark data' – data that would previously have been either unavailable or, at best, difficult to obtain can now be analysed. And in line with the old adage that 'if you can't measure it, you can't improve it,' this will allow companies to identify how their production processes can be made less wasteful and more efficient.

In the future it is likely to be possible for tool operators to remotely adjust, control and monitor machining performance quite literally at the cutting edge. By making it much easier to configure and modify key parameters from the machine control or even by using browser interfaces, smartphones and tablets the time it takes to set up a process for a new machining job would be significantly reduced. And once up and running, the same remote configuration capability could be used to further improve the process until the optimum setup is achieved. Ultimately, combining digital solutions with data collected from other areas of the machine opens up the potential to build systems that can 'selfoptimise' with little or no programming or operator intervention.

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Open Systems

The growth of open systems built around standard APIs (application programming interfaces) and protocols can go a long way to removing barriers to effective connectivity and simplifying the collection and subsequent analysis of key data.

The MTConnect open, royalty free manufacturing communications protocol, for example, is already helping to deliver interoperability between machines, controls, sensors, other production hardware and software from a variety of suppliers. MTConnect makes it possible for monitoring systems to collect data in a consistent format from a variety of machines irrespective of machine builder. In the future, tools that offer 'plugandplay' integration into existing software environments through open APIs that support two way connectivity could further improve accurate data quality.

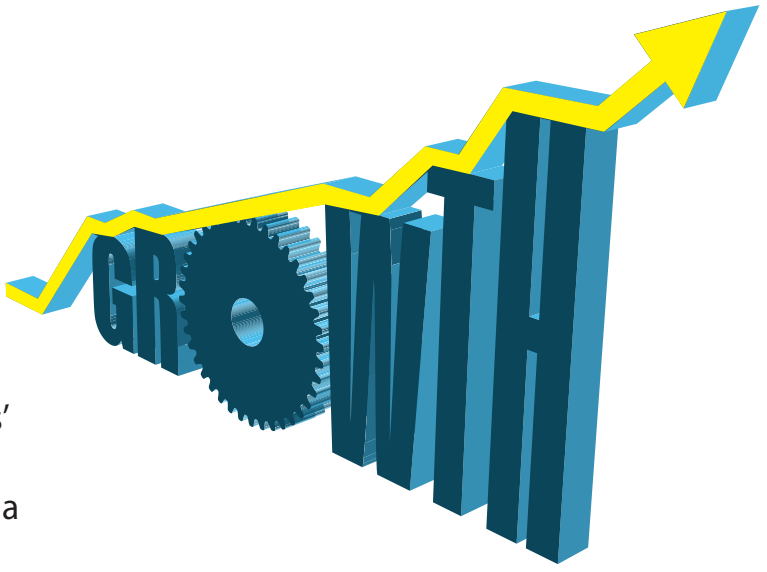
Finally, it is worth noting that the ability to collect significantly higher volumes of data than ever before creates the need to present that data in a highly usable manner. This is why the online dashboard is becoming increasingly important. By providing an easy to use and easy to understand interface, managers can gain a better understanding and insight into what is happening in the workshop and operators can remotely monitor machining processes, control specific tools and secure optimum tool performance.

Source: Sandvik Coromant

Part of global industrial engineering group Sandvik, Sandvik Coromant is at the forefront of manufacturing tools, machining solutions and knowledge that drive industry standards and innovations demanded by the metalworking industry now and into the next industrial era. Educational support, extensive R&D investment and strong customer partnerships ensure the development of machining technologies that change, lead and drive the future of manufacturing. Sandvik Coromant owns over 3100 patents worldwide, employs over 8,500 staff, and is represented in 150 countries.

Contact Person: Nikki Stokes

On the **rise!**



Rising to a five-month high of 52.5 in March, from 50.7 in February, the seasonally adjusted Nikkei India Manufacturing Purchasing Managers' Index (PMI) indicated that operating conditions in the sector improved to a greater extent.

The health of India's manufacturing sector improved for the third straight month in March, and to the greatest extent since October 2016. Incoming new orders expanded at a stronger pace, thereby leading to quicker increases in production and input purchasing. Moreover, firms hired additional employees to cope with greater workloads.

Although both input costs and output charges rose further, inflation rates softened from those seen in February. Rising to a five-month high of 52.5 in March, from 50.7 in February, the seasonally adjusted Nikkei India Manufacturing Purchasing Managers' Index (PMI) – a composite indicator designed to provide a single-figure snapshot of the performance of the manufacturing economy – indicated that operating conditions in the sector improved to a greater extent. As for the January-to-March quarter, the PMI average (51.2) was the lowest seen since Q1 FY 2016/17 (51.0).

The level of new orders received by manufacturers rose solidly in March and at the quickest pace in five months. Likewise, production expanded at the strongest rate since last October as firms sought to fulfil new and existing projects. The increase in total new work was supported by higher new export orders, which grew at a solid and accelerated pace. New work and output increased across the three monitored sub-sectors, with the upturn led by intermediate goods producers in both cases.

Indian manufacturers purchased greater quantities of inputs for use in the production process during March, with the latest upturn in buying levels the strongest in the current three-month sequence of expansion.

This resulted in an overall increase in stocks of purchases. Having fallen in each of the previous three months, pre-production inventories rose modestly in March. Conversely, holdings of finished items dipped sharply due to production volumes failing to match requirements for existing projects.

> "Out of the three broad areas of manufacturing, intermediate goods was March's shining star, as growth of new work, production and input buying in this category surpassed those seen at consumer and capital goods firms."
>
> **Pollyanna De Lima,**
> Economist at IHS Markit and author of the report

Business confidence among manufacturers improved in March, with almost one-fifth of panellists expecting output levels at their units to be higher in 12 months' time. Forecasts of a pick-up in demand and the launch of new product lines were the main factors underpinning optimism.

Reversing the decline noted in February, manufacturing jobs rose in March as some firms took on extra staff in line with efforts to expand capacity. Largely reflecting higher commodity prices, average input costs increased again. That said, the rate of inflation slowed to the weakest in four months and was below the long-run survey average.

Similarly, the rate of charge inflation moderated during March as 96% of manufacturers reportedly kept selling prices unchanged in tandem with attempts to stimulate demand.

Commenting on the Indian Manufacturing PMI survey data, Pollyanna De Lima, Economist at IHS Markit and author of the report, said: "PMI data for March reveals positive developments in the Indian manufacturing sector. Rates of expansion in factory orders and production accelerated again, encouraging some companies to scale up their input buying and take on additional workers."

"The favourable demand environment was supported by relatively muted inflationary pressures. Given that input costs rose at a softer pace, a whopping 96 percent of goods producers kept their selling prices unchanged over the month. Looking ahead, production volumes are likely to rise further as businesses will seek to replenish their stocks. Indeed, we saw a marked drop in inventories of finished items, alongside a stronger degree of confidence towards the year-ahead outlook for output. "Out of the three broad areas of manufacturing, intermediate goods was March's shining star, as growth of new work, production and input buying in this category surpassed those seen at consumer and capital goods firms."

Sources: Nikkei, IHS Markit

The art of piecing together – VERO E Compact

With an objective of providing a value-centric product to the growing Indian manufacturing sector, lately SCHUNK Intec India Pvt Ltd introduced its latest Quick change Pallet System that promises return on investment (ROI) in less than three months.

Today's market dynamics demand shorter product life cycles making it imperative for the manufacturing companies to invest in flexible systems and have the bandwidth to cope up with changing machining requirements. Identifying this need of the hour SCHUNK; one of the pioneers in gripping systems and clamping technology since last 70 years came out with its new offering - "VERO-E compact GSE". Tailored especially for the Indian machine tool sector, it is a modular quick-change pallet system, which is suited for extremely fast resetting of workpieces, clamping devices and other equipment on 3, 4 and 5-axis machining centres.

Aligned to needs

Elaborating in this context, Managing Director, SCHUNK Intec India emphasised that the new VERO-E compact Zero point clamping technology is not a catalogue product and is mainly made to suit the requirements of the Indian machine tool builders. He added, "We are closely working with Indian machine tool manufacturers and intend to serve them better through quick changeovers on the machines they currently use. With this we plan to expand our presence in India."

Quick change pallet systems have enormous capacity. "Now we have a system that is not only perfectly aligned but also feature and approximately two and a half times clamping force of machine belt."

Optimizstion is the key

Moreover, by reducing the retooling times up to 90 percent, the system facilitates in providing optimal utilization of the machine capacity. Setting up the workpieces outside the machine in parallel to the processing time minimises downtimes enormously contributing to cost savings. The set-up time ensures higher machine running times and better production from batch size 1. From the cost saving point of view, the VERO-E-compact GSE system is useful for producing small batch quantities and comprehensive range of workpieces. Its Turbo integration feature helps to pull-down force thereby increasing 300 percent for optimal utilization of the machine's performance.

Reliability matters

Creating a master trend, this system is known for setting great production variability. In recent scenario, when most of the machines and technology come with a less shelf life, these solutions guarantee a larger life span and process reliability. To add on, the system is moulded with a base body and all functional components like clamping pins and slides that are made of hardened stainless steel, blending forth modules that are completely maintenance-free and hermetically sealed against dirt, chips, and coolant.

All pneumatic modules can be operated with a system pressure of 6 bars, without adhering on additional pressure intensifiers. The machines allow positioning via short taper, allowing easy connecting interface with a repeat accuracy of 0.005 mm. Its rigid clamping operation helps to avoid vibration and is equipped with a self-retained locking system. For safety and security reasons, the system operates on one consistent clamping pin size for all VERO-E compact GSE-modules and hence avoids danger, confusion or incorrect operation.

> "We are closely working with Indian machine tool manufacturers and intend to serve them better through quick changeovers on the machines they currently use. With this we plan to expand our presence in India."
>
> **Satish Sadasivan,**
> Managing Director,
> SCHUNK Intec India

Serving one and all

Widely acknowledged by myriad industry sectors for its specialty in offering room even to the smallest machine tables, the company's stationary clamping systems ensure the micron-precise link between the machine table and the workpiece. Whether pneumatic, hydraulic, manual or magnetic, SCHUNK is well-equipped to provide tailored fitting solutions to customers from wide-ranging industry sectors.

The working of "VERO E compact" was deftly displayed on DMG MORI's state-of-the-art technology "DMU 65 monoBLOCK,"

to its customers. The monoBLOCK series has a machine concept for every sector and every component produced is an impressive masterpiece. According to Satish Sadasivan – Managing Director, SCHUNK Intec India Pvt Ltd, DMG MORI offers very high-end machines and SCHUNK takes pride in working together to bring out a revolution in the machine industry with its products.

Customer-centric

"All our products are synonymous with good quality and speak for its performance. We are proud to build a support mechanism with a backup plan, in the case of any technical issues or break down, within the warranty period. Fit and forget is the mantra behind any SCHUNK products," shared Satish Sadasivan - Managing Director of SCHUNK Intec India. Validating this point, General Manager – Metal Products Power Transfer Technology, Mersen India Pvt Ltd, B N Chandrashekharaiah, mentioned, "We provide Earth Return Current Units (ERCU) to Bangalore Metro. While working on such a prestigious project, downtime is the last thing we can think of. In such scenario, SCHUNK's gripping system does wonders. Additionally, SCHUNK provides good after sales service."

Alternately, Titan Industries Ltd began the use of SCHUNK's product eight years ago. Since then the company has installed SCHUNK's systems on most of its machines. "These products give excellent ROI. Within six months we can see the benefits. In other words, it is a worth investment," noted Senior Engineer, Titan Industries Ltd, Venkat Subramanian.

> By reducing the retooling times up to 90 percent, the system facilitates in providing optimal utilization of the machine capacity. Setting up the workpieces outside the machine in parallel to the processing time minimises downtimes enormously contributing to cost savings. The set-up time ensures higher machine running times and better production from batch size 1.

Director, Abhiyant Technologies Pvt Ltd, Nagaraja BC also finds SCHUNK's products impressive. He further added, "We strongly recommend SCHUNK products to our customers, with batch production requirements." Agreeing to the same, Senior Manager, Production, Ace Multi Axes Systems Ltd said, "SCHUNK's technology as well as service is very good. We have been using their products since almost a decade. We have already provided our requirements and placed order for the latest Vero- E compact Cut from the company."

For more info, contact:
Schunk Intec India Pvt Ltd
info@in.schunk.com; www.in.schunk.com

EVENT

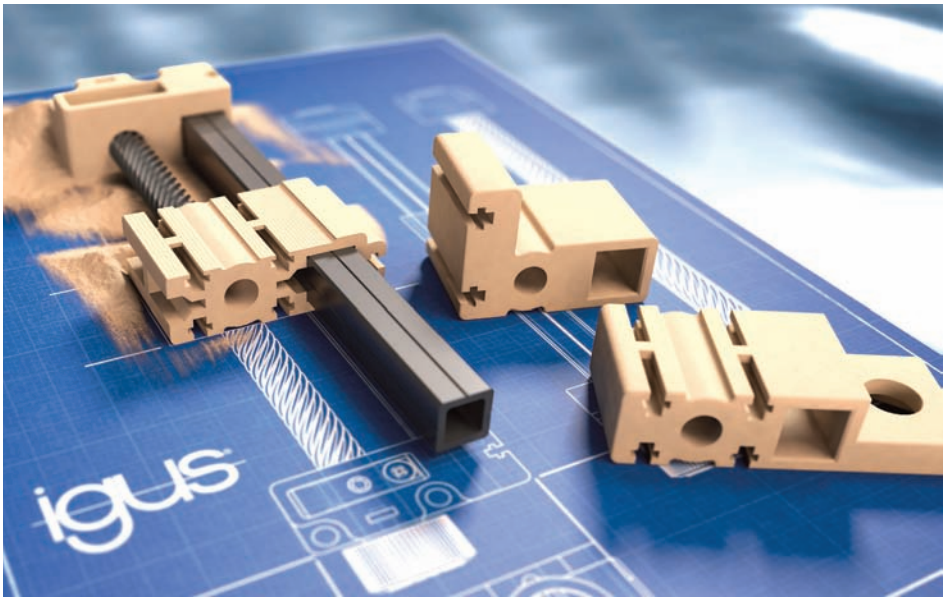
Future trends in the automotive industry

ET Edge recently organised an event in New Delhi focussing on the automotive industry. The Economic Times' maiden edition of the event was co powered by Total India, one of the fastest growing lubricant companies.

Disruptive trends that will transform the auto industry are on the rise and electric vehicles are one such trend which could be the future of the automotive industry. "The re-shaping of the automotive industry to electric has been happening for good. This is exactly where all of the new age electric start-ups step in. Our attempt is to re-define mobility and transport solutions and do that with a non-harmful, powerful, sustainable and futuristic approach. From power production to technologies that will power our cars, this community intend to create a very sustainable eco-system," said Sarthak Paul, CEO, MMM. Today, the entire value chain has evolved and uses technology in some form or the other. Technology and innovation are playing key roles from product design to production planning, engineering, execution and services. Akshai Varde, Founder & MD, Vardenchi added "Without communication a designer cannot express his concept and ideas to the world. So his skill in representing the design conventionally or digitally plays pivotal role in his success. Sharpening these skills should be like a daily sport or recreational activity." He further emphasised that "A key quality that makes a designer successful is tapping the pulse of the market he is designing for. And this takes continuous research and learning not only of the specific market but global trends that enable you to have the most relevant approach to the project."

Lubrication-free linear axes

Linear components made of Tribo-SLS material allow special shapes to be produced in just 48 hours



The motion plastics specialist igus takes a completely new approach to drive technology: the SLTI3 lead screw unit offers customers the highest degree of variability in the design of their individual linear axis. Made possible by 3D printed carriage and shaft end supports. This means that lubricant-free and maintenance-free lead screw units can be implemented cost-effectively and very quickly according to customer requirements.

Lubrication-free and maintenance-free linear axes from igus are already the core components of many moving applications, both in the automotive and in the packaging machine. Among them is the low-profile drylin SLT series, which has a drive system with ball-bearing, laterally arranged lead screws with trapezoidal or high helix thread and is suitable for both motor and manual operation. The drylin SLTI3 lead screw unit now supplements this type series with a very flexible system. For this purpose the number of components has been significantly reduced so that the lead screw unit can be assembled in seconds. Customer-specific stroke lengths are also possible, as is the use of trapezoidal or high helix threads according to requirements. Entirely new degrees of freedom in design are promised by the first complete linear carriage from the 3D printer as well as printed shaft end supports, which are manufactured in the laser sintering process.

Self-lubricated and low wear

The 3D print is ideally suited to realise individual wishes down to the smallest detail. The customer not only receives his custom-made lead screw unit in a very short time, but can also implement own ideas for profiles, stroke lengths or fastening options. The iglidur I3 material is used in the drylin SLTI3 lead screw unit, the SLS material from igus for selective laser sintering, with which the most complex shapes can be precisely manufactured. The process also endows the components with high strength, which require no more support structures with subsequent reworking. Extensive tests conducted on the large 2,750-square-metre floor area of the igus test laboratory with counterparts made from different materials have shown that iglidur I3 is at least three times more abrasion resistant compared to conventional SLS materials, both in the pivoting, rotating and linear motion. The igus 3D printing service enables an efficient production of single pieces or small batches.

Among them is the low-profile drylin SLT series, which has a drive system with ball-bearing, laterally arranged lead screws with trapezoidal or high helix thread and is suitable for both motor and manual operation. The drylin SLTI3 lead screw unit now supplements this type series with a very flexible system.

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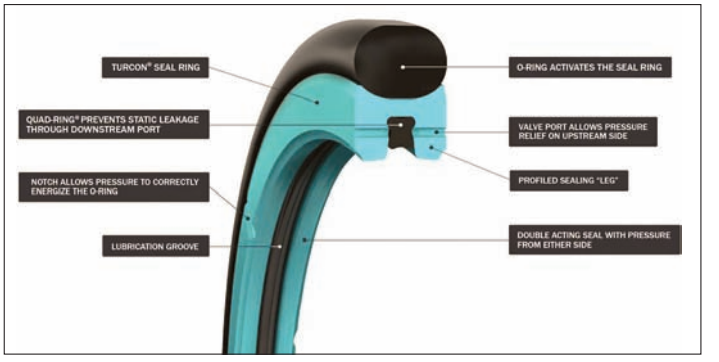
For more info, contact:
igus (India) Pvt Ltd
vinayak@igus.in; www.igus.in

Double-acting rotary seal

It allows equipment to run faster at high pressure for longer time

Trelleborg Sealing Solutions has launched an innovative seal, Turcon Roto Glyd Ring V, which is primarily intended for double-acting pressure within severe working conditions that require extended rotary service. The seal is specifically engineered for machinery where a high pressure to velocity value is required to allow equipment to run at the highest possible speeds in high pressures for an extended service life.



Turcon Roto Glyd Ring V is a premium double-acting rotary seal with outstanding performance and reliability. Reduced contact surfaces under all operating conditions significantly improve friction and wear characteristics without compromising sealing performance. Designed for continuous service at high and low PV values, the seal also gives improved performance in oscillating conditions or where there are frequent changes in pressure and/or velocity.

Henrik Vollmond, Product Manager, says: "Customers are demanding increased performance from rotary seals that challenge the PV values of current seals. We therefore needed to develop a rotary seal that can run at higher speeds combined with higher pressures. This resulted in the development of the unique Turcon® Roto Glyd Ring® V, which not only achieves these requirements but also, by virtue of lower heat generation, offers a significantly extended seal life. For the equipment operator that means lower overall costs due to reduced maintenance requirements and energy consumption."

> Customers are demanding increased performance from rotary seals that challenge the PV values of current seals. We therefore needed to develop a rotary seal that can run at higher speeds combined with higher pressures.
>
> **Henrik Vollmond,** Product Manager

The seal is specifically engineered for machinery where a high pressure to velocity value is required to allow equipment to run at the highest possible speeds in high pressures for an extended service life.

Test results show that Turcon Roto Glyd Ring V runs with low frictional torque at all pressures from 0.5 MPa and above with low sensitivity to pressure increases from 0.5 to 20 MPa. It achieved a PV twice as high as other bidirectional seals and demonstrated 50% lower friction. Furthermore, wear of the seal and O-Ring was so low that it could not be measured.

Like other O-Ring activated Slipper Seals, the initial squeeze of the O-Ring ensures sufficient contact pressure between seal and mating surface to provide tightness at low pressure. With increasing system pressure, the O-Ring and the seal body direct have a contact force on the sealing surface to ensure sealing efficiency at all pressures.

Turcon Roto Glyd Ring V has a built in valve function. Valve ports are made from both sides of the Turcon ring profile to the space in the center, which is the lubricating groove. An elastomer ring is installed in the lubricating groove to prevent static leakage through the ports.

When Turcon Roto Glyd Ring V is pressurized from one or the other side, the elastomer ring opens the port on the pressure side and equalizes the pressure beneath the elastomer ring – pressure balancing the seal by more than half. Shifting pressurization through the ports also renews the fluid in the space between the "legs", improving lubrication under the seal.

Turcon Roto Glyd Ring V is ideal for equipment for which a long service life is required in demanding service conditions. Typical examples are machining centers, hydraulic swivels, lead-troughs, rotary connections with swivel movements, excavators, forestry machinery, hydraulic rotators, robots, manipulators, indexing tables, pivoting motors, hydraulic motors, blow molding machines, top drives and core cutting equipment.

With maximum recommended operating temperatures of +100 °C/ +212 °F (up to +150°C/ +302°F at lower PV-values), Turcon Roto Glyd Ring V is designed to fit into standard Roto Glyd Ring grooves. It is available in four cross section series; for shafts in diameters from 35 to 500 millimeters/ 1.377 to 19.685 inches and for bores from 22 to 500 millimeters / 0.866 to 19.685 inches.

When specifying Turcon Roto Glyd Ring V, users should note the following. Pressure should be limited to a maximum of 30 MPa. Velocity needs to be limited to 2.0 meters per second. The Roto Glyd Ring V has been successfully tested up to a combined PV of 10 MPa.m/s.

schunk.com/tendo-e-compact

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TENDO E compact

*Verified in a study by the wbk Institute of Production Technology at the Karlsruhe Institute of Technology (KIT).

Jens Lehmann, German goalkeeper legend, SCHUNK brand ambassador since 2012 for safe, precise gripping and holding.
schunk.com/Lehmann

TENDO Original
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DIN-standard in 29 interfaces

TENDO *Aviation*
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Panasonic recommends
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Panasonic

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CF-31-13.1" (33.27 cm)


CF-54-14" (35.56 cm)


CF-20-10.1" (25.65 cm)


FZ-G1-10.1" (25.65 cm)


FZ-M1-7" (17.78 cm)


FZ-B2-7" (17.78 cm)


FZ-X1-5" (12.7 cm)


FZ-N1-4.7" (11.9 cm)

*Terms & conditions apply

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