

# THE MACHINIST

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## FABULOUS FIVE!

**W**hen someone like Dr. Pawan Goenka calls it 'the Oscars of Manufacturing', you know that 'The Machinist Super Shopfloor Awards' platform has acquired not just immense popularity but also a great deal of prestige. Come May 2019, and we will be all set to celebrate the Fifth Edition of this fabulous event.

In fact, I still recall that 'Super Shopfloor' was originally conceived as an editorial feature in December 2014 where The Machinist wanted to find out what goes into the making of some of India's best shopfloors. Well, we received an overwhelming response to that feature and that's when we decided to transform it from an editorial feature into a full-fledged awards platform! And right from the first edition itself, which was launched in May 2015, it became a National Event for the Indian manufacturing industry. The 'Machie' trophy made a super impact on its first entry, and since then has become the benchmark for excellence in the manufacturing industry.

### AND THE AWARDS NIGHT ITSELF IS SUCH A GRAND OCCASION THAT ALL MANUFACTURING PROFESSIONALS LOOK FORWARD TO ATTENDING IT.

And the awards night itself is such a grand occasion that all manufacturing professionals look forward to attending it. Each and every element of the function, from the red carpet and the magnificent stage to the glitz, the high spirits, the fun and the camaraderie, adds up to a magical celebration that gets better with each year. No wonder, Dr. Goenka couldn't help comparing it with one of the grandest shows on this planet! So, what are you waiting for? Send in your shopfloors' nominations (there are eleven categories!) and you as well as your team members could be a part of this year's Fabulous Fifth Edition!

Editor & Chief Community Officer

**THE MACHINIST**  
ULTIMATE GUIDE TO PROFITABLE MANUFACTURING  
Volume 14 Issue 3 March 2019



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## New joint venture to manufacture Kalashnikov Rifles in Amethi

**PRIME MINISTER NARENDRA MODI** visited Kauhara, Amethi in Uttar Pradesh and dedicated to the nation, the Joint Venture of Indo-Russian Rifles Pvt Ltd, for Kalashnikov Assault Rifle Production. He also laid the Foundation Stone and dedicated various development projects in Amethi.



In his special message on the occasion, which was read out by Defence Minister Nirmala Sitharaman, Russian President Vladimir Putin said that “the new joint venture will manufacture world famous Kalashnikov assault rifles of the newest 200 series and eventually will reach full localization of production. Thus, the Indian defence-industrial sector will have the opportunity to fulfill the needs of national security agencies in this category of small arms, resting upon advanced Russian technologies.”

Addressing the gathering, the Prime Minister thanked President Putin for this partnership. He said lakhs of rifles will be made from this facility in Amethi and will strengthen our security forces.

He also said that this development has been long delayed. He said that this delay in the production of modern rifles for our soldiers, actually amounts to an injustice to the jawans. He

recalled that despite projecting a requirement for bullet-proof jackets in 2009, no such jackets were procured till 2014. This requirement has now been fulfilled by the Union Government, he added. He said that earlier, such delays had also been happening in procurement of other important armaments. In this context, he also mentioned the Rafale fighter planes, and said these will start joining the Air Force within a few months, as a result of the efforts of the Union Government.

## DRDO successfully tests QR Surface-to-Air Missile

**DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION (DRDO)** successfully has test fired indigenously developed Quick Reach Surface-to-Air missiles (QRSAM) from ITR Chandipur, off the Odisha Coast yesterday (Feb 26). The two missiles were tested for different altitude and conditions. The test flights successfully demonstrated



the robust Control, Aerodynamics, Propulsion, Structural performance and high

manoeuvring capabilities thus proving the design configuration.

Radars, Electro Optical Systems, Telemetry and other stations have tracked the Missiles and monitored through the entire flights. All the mission objectives have been met.

RakshaMantri Nirmala Sitharaman congratulated DRDO on the successful test flights and said the indigenously developed state-of-the-art QRSAM will significantly boost the defence capabilities of our armed forces.

## HAL signs MoU with CPWD

**HAL** has signed an MoU with CPWD for the execution of the stage 2 works of infrastructure development works at its Green Field Helicopter factory in Tumakuru at the Aero India recently. The MoU was signed by GVS Bhaskar, Chief Executive Officer, Helicopter Complex and Rajesh Jain, Chief Project Manager (CPM), HAL project zone, CPWD in the presence of R Madhavan, CMD, HAL. The stage 2 works include development of infrastructure for structural assembly and equipping of helicopters at Tumakuru. The project will be executed in a phased manner. About Tumakuru Plant: The new Helicopter factory coming up in a 615 acres green field campus that would be fully self-sufficient for manufacturing full range of helicopters from 3 ton to 12 tons category and shall comprise of state of the art manufacturing, structural assembly, final assembly-line facilities, heli-runway, aerodrome, residential township for the staff, recreational facilities, a well-equipped training and development centre, etc.

## FAGMIL signs MoU with HP Government

**UNDER ITS DIVERSIFICATION PROGRAMME**, FCI Aravali Gypsum and Minerals India Limited (FAGMIL) has taken up a project to establish a white cement plant near village Nohra Dhar in Sirmour district, Himachal Pradesh, at a project cost of approximately Rs. 605 crores. It will be the 4th white cement plant in the country. The installed capacity of the plant would be 0.3 million tonnes per annum and it will generate the direct employment of approximately 150 persons. The plant is expected to be commenced by the year 2022. It will prove to be a milestone for the development of the Sirmour District. FAGMIL is a Government of India Undertaking, under the administrative control of Department of Fertilizers, Ministry of Chemicals and Fertilizers, Government of India. It is engaged in mining and marketing of mineral gypsum in Rajasthan.

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## Aerostructures Assemblies India wins Saab contract

**AEROSTRUCTURES ASSEMBLIES INDIA PVT. LTD. (AAI)**, a joint Venture between Aequs Aerospace and Saab AB (publ), has been awarded a contract from Saab Aerostructures to manufacture the structural assembly for the Over Wing Doors (OWD) on the Airbus A321neo program. The Over Wing Doors are a critical part of the aircraft used for emergency exits. There are 4 Over Wing Door on the A321Neo aircraft. The structural assembly is comprised of machined aluminum parts which will be assembled by the AAI team in Belagavi, Karnataka, India and delivered to the Saab Aerostructures Assembly Line in Linköping, Sweden.

AAI has evolved into a strong supply chain player for producing aero-structures assemblies in India. AAI has been delivering door plugs for Airbus'



A321neo Cabin Flex configuration since 2017 and produced wing panels and D-nose assemblies for the A380 program since 2014. Besides end products, its capabilities also include development of assembly tools, jigs, and fixtures. With this award, Saab and AAI further cement its strong partnership. Production deliveries will begin at the end of 2019 and ramp up in

subsequent years.

Lars Jensen, VP & MD, Saab Aerostructures added, "It is a great privilege to be able to place this work Package with AAI. It is a result of hard work and joint efforts and we are pleased to both support the growth of the company and Airbus' position in India with this award."

Aravind Melligeri, Chairman & CEO of Aequs Group, said, "Our journey with Airbus has come a long way and our enduring partnerships are strengthened by the recognition we have received over the years. This contract, in partnership with Saab, represents another critical element in our support of Airbus. It further establishes our competence in delivering aero structure assemblies to global clients while creating value in the supply chain."

## CMA and trade unions sign a new Wage Pact



**THE CEMENT MANUFACTURERS' ASSOCIATION (CMA)** and Federation of major Central Trade Unions have signed a major wage settlement before the Chief Labour Commissioner (Central) to benefit around 20,000 employees in the Indian cement industry by way of an increase in gross pay, enhanced dearness allowance and service weightage. The settlement is for a duration of four years from 01.04.2018 to 31.03.2022. The settlement provides for an increase of Rs. 5,000/- per month in the Gross Pay of cement employees (to be paid in two instalments of Rs. 2,500/- each

in April 2018 and April 2020). The settlement also provides for enhanced Dearness Allowance, Service Weightage benefits and other benefits. Arrears for 11 months will be paid in two installments.

In all, 21 cement companies, consisting major Cement companies of the Country, which covers 60% of Country's total cement capacity had authorised CMA to negotiate with the Trade Unions on behalf of them.

N Srinivasan, VC and MD, The India Cements Ltd and past President of CMA, who had previously provided leadership to the wage negotiations on behalf CMA in six earlier settlements, was again requested by CMA business leaders to lead the charge for this wage settlement. At the signing of the settlement, N Srinivasan said, "The national level, industry-wide settlement since 1992 is unique as it is collective bargaining in its truest sense."

## Govt. to set up new company under DoS

**THE UNION CABINET CHAIRED BY PM MODI** has given its approval to the Setting up of a new company under Department of Space (DoS), to commercially exploit the research and development work carried out by ISRO Centers and constituent units of DoS. Following areas provide opportunities:

Small satellite technology transfer to industry, wherein the new company shall take license from DoS/ISRO and sub-license to industries; Manufacture of small satellite launch vehicle (SLV) in collaboration with the Private Sector; Productionisation of Polar SLV through industry; Productionisation and marketing of Space-based products and services, including launch and applications; Transfer of Technology developed by ISRO Centers and constituent units of DoS; Marketing of some spin-off technologies and products, both in India and abroad; and Any other subject which GoI deems fit.

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SGR-60  
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SG-63  
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### Automats



A15/25

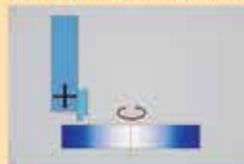


T036  
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A42/60

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CALENDAR

• MARK YOUR DIARY •

A list of key events happening between April 2019 to January 2020, both nationally and internationally.

<b>Hannover Messe</b> April 1–5, 2019 Hannover, Germany <a href="http://www.hannovermesse.de">www.hannovermesse.de</a>	<b>Bauma</b> April 8–14, 2019 Munich, Germany <a href="http://www.bauma.de">www.bauma.de</a>	<b>Die &amp; Mould India</b> April 22–25, 2019 Mumbai, India <a href="http://www.diemouldindia.org">www.diemouldindia.org</a>	<b>BLECH India 2019</b> April 25–27, 2019 Mumbai, India <a href="http://www.blechindia.com">www.blechindia.com</a>
<b>intec Coimbatore</b> June 6–10, 2019 Coimbatore, India <a href="http://www.intec.codissia.com">www.intec.codissia.com</a>	<b>Automotive Engineering Show India 2019 (Chennai)</b> July 4–6, 2019 Chennai, India <a href="http://www.automotive-engineering-show.in">www.automotive-engineering-show.in</a>	<b>AgriTech India 2019</b> August 30 – September 1, 2019 Bangalore, India <a href="http://www.agritechindia.com">www.agritechindia.com</a>	<b>EMO Hannover 2019</b> September 16–21, 2019 Hannover, Germany <a href="http://www.emo-hannover.de">www.emo-hannover.de</a>
<b>Tech India</b> September 20–22, 2019 Mumbai, India <a href="http://www.techindiaexpo.com">www.techindiaexpo.com</a>	<b>Automation Expo 2019</b> September 25–28, 2019 Mumbai, India <a href="http://www.automationindiaexpo.com">www.automationindiaexpo.com</a>	<b>Excon</b> December 10–14, 2019 Bengaluru, India <a href="http://www.excon.in">www.excon.in</a>	<b>IMTEX Forming 2020</b> January 23–28, 2020 Bengaluru, India <a href="http://imtex.in/imtex2020/">//imtex.in/imtex2020/</a>

OUR INHOUSE UPCOMING EVENTS

THE MACHINIST Super SHOPFLOOR Awards 2019

May 2019



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**SALIL GUPTA IS NEW BOEING INDIA PRESIDENT**

Boeing has announced the appointment of Salil Gupte as President of Boeing India, effective March 18. He will be based in New Delhi, serve as Boeing's senior executive in India, and report to Marc Allen, President of Boeing International.

Gupte, who was Vice President of Boeing Capital Corporation, a wholly-owned subsidiary of The Boeing Company, succeeds Prat Kumar, who was appointed Vice President and Program Manager of Boeing's F-15 fighter aircraft program in November 2018.

Gupte will advance the development and execution of Boeing's strategy in India, integrate business activities across Boeing Commercial Airplanes, Boeing Defense, Space and Security, and Boeing Global Services, lead Boeing's growth and productivity initiatives in India, and manage Boeing's partnerships with India's government and business stakeholders. He will lead a team of over 3000 employees and joint venture personnel located in New Delhi, Bengaluru, Hyderabad, Mumbai and Chennai. His leadership will extend to cover Boeing's large supply chain presence in India, its engineering and technology center in Bengaluru, and Boeing joint venture with Tata in Hyderabad.

At Boeing, Gupte has played a leading role in Boeing Capital Corporation, which manages a USD three billion portfolio of aircraft and other assets while supporting all Boeing businesses with innovative financing solutions, working closely with customers across the enterprise. He also has experience in Commercial and Defense supply chain, overseeing manufacturing, sourcing, and fulfilment activities for Boeing products.



**GM NAMES GERALD JOHNSON EXECUTIVE VICE PRESIDENT, GLOBAL MANUFACTURING**

General Motors Co has announced that Gerald Johnson will become executive vice president, Global Manufacturing. He succeeds Alicia Boler Davis, who is leaving the company to pursue other opportunities. The move is effective April 1.

Johnson is currently vice president, North American Manufacturing and Labor Relations. In his new role, Johnson will lead GM's global manufacturing operations, manufacturing engineering and labor relations organizations. He will be a member of the GM Senior Leadership Team and will report to GM Chairman and CEO Mary Barra.

"Gerald's passion for the business, strong leadership skills and extensive manufacturing and labor experience will help in our efforts to continue to transform the company, supporting both the core business and future of mobility," said Barra.

Prior to his position leading GM's North American Manufacturing, Johnson served as vice president of Operational Excellence, where he worked to develop and execute an enterprise-wide cultural transformation with a focus on process discipline, continuous improvement and waste elimination. Under his leadership, a team of Lean Six Sigma experts developed a training initiative and coached employees in projects that improved the company's operations efficiency.

**KAMALESH DAS APPOINTED DIRECTOR (ENGINEERING, R&D), BHEL**

On his appointment as Director on the Board of Bharat Heavy Electricals Limited (BHEL), Kamalash Das, 57, has assumed charge as Director (Engineering, R&D) of the Public Sector engineering and manufacturing enterprise.

Prior to this, as Executive Director, Das was heading various business verticals at BHEL's Industry Sector, which is responsible for carrying out the company's diversification and growth initiatives. Major verticals in his portfolio included Renewable Energy, Industrial Systems, Electrical and Transmission Products.

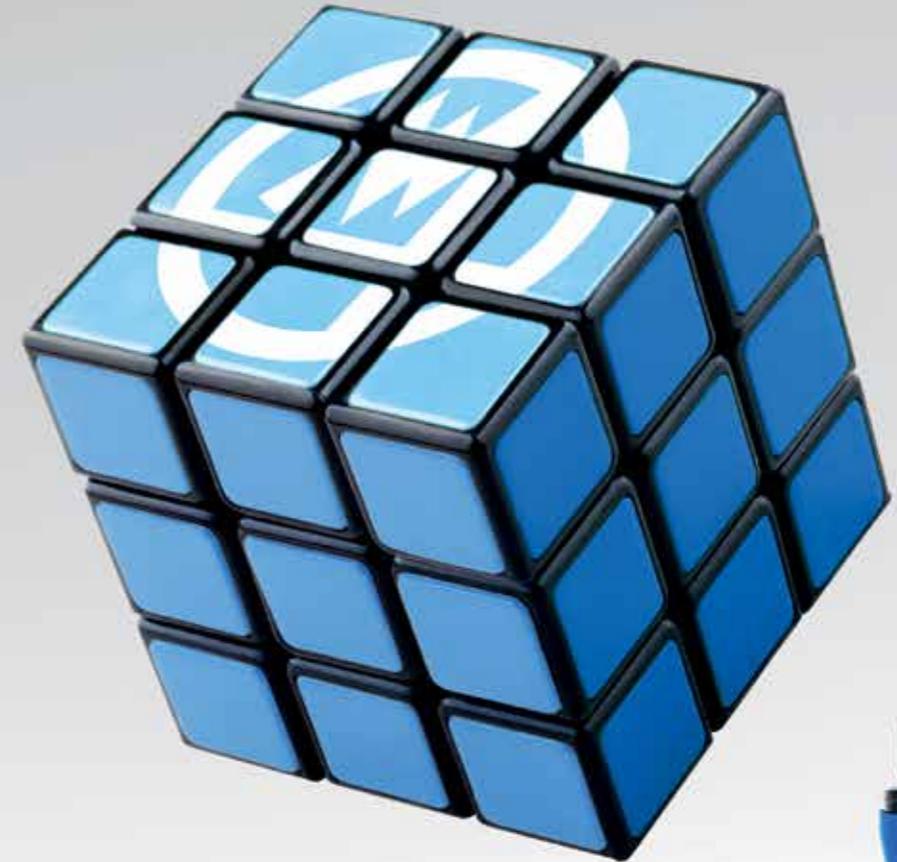
Earlier he was also the head of various manufacturing units of BHEL like Insulator Plant, Jagdishpur, Electro-Porcelains Division, Bengaluru, and Component Fabrication Plant, Rudrapur.

Das is an Engineering Graduate from Calcutta University and also has a Post-Graduate Diploma in Management. He joined BHEL as an Engineer Trainee at the company's Insulator Plant in 1982.



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**DHARMESH ARORA BECOMES APAC CEO OF SCHAEFFLER GROUP**

Dharmesh Arora, Chief Executive Officer of Schaeffler India Ltd., the only listed subsidiary within the Schaeffler Group, will take over the new role as Regional CEO Asia Pacific for Schaeffler Group starting October 1st, 2019. His successor will be announced in due course.

Managed out of Singapore, the region Asia Pacific is responsible for the business in Japan, Korea and South East Asia, where the Schaeffler Group is just building two new plants in Thailand and Vietnam.

As the Regional CEO Arora also becomes a member of the Executive Board of the Schaeffler Group. Klaus Rosenfeld, CEO of Schaeffler AG, said: "It is a great privilege to have Arora on our Executive Board. He has done an outstanding job in the last six years in India, comes with broad international experience, also in the region Asia Pacific, and great leadership skills. He will be a strong addition to the Schaeffler team at the top."

Commenting on the development, the Chairman of Schaeffler India Ltd., Avinash Gandhi said: "Mr. Dharmesh Arora has achieved a lot in the last six years, first as the head of Schaeffler group in India and then for past two years as the Managing Director of Schaeffler India Ltd. Under his leadership, the group has merged all its three entities in India and established itself onto a rapid growth path. With clearly defined strategies and a strong execution plan, the company is firmly set on achieving its objectives."



**VEDANTA APPOINTS AJAY KAPUR AS CEO-ALUMINIUM & POWER**

Vedanta Limited has announced the appointment of Ajay Kapur as the Chief Executive Officer of its Aluminium and Power business and member of Group's Executive Committee.

Ajay brings 31 years of rich and diverse experience across business verticals. He joins Vedanta from Ambuja Cements where he was the Managing Director & Chief Executive Officer for their India business. He puts a strong focus on sustainable development and under his leadership, Ambuja Cement was recognized for its sustainability initiatives and won several accolades from apex bodies.

Vedanta produces 2.3 million tonnes of aluminium per annum, generates 8 giga watts of power and operates 2 MTPA of alumina refinery.

"Ajay will provide leadership for unlocking the full potential of our Aluminium & Power business which is a USD 10 billion asset with a revenue of USD 6 billion. His enormous experience in the infrastructure sector will definitely work towards driving growth of India's

largest aluminium capacity. We look forward to Ajay's contributions in taking our Aluminium business to new heights and creating long term and sustainable value for our shareholders," said Anil Agarwal, Executive Chairman, Vedanta Resources Limited.

A distinguished alumni of the Wharton Business School, Ajay is an Economics graduate from St. Xavier's College, Mumbai and an MBA from KJ Somaiya Institute.

Ajay will drive key priorities for the Aluminium business which include strong focus on HSE, volume and cost, organization and talent management and improving efficiencies.

**HUSKY NAMES JOHN HAFFERTY CHIEF FINANCIAL OFFICER**

Husky Injection Molding Systems has appointed John Hafferty to the position of Chief Financial Officer. Hafferty will join Husky's senior leadership team and will lead the global finance organization.

"Mr. Hafferty brings a wealth of global financial experience to Husky and has a record of strong leadership," said John Galt, Husky's President and CEO. "I am pleased to have John join our team and look forward to working closely with him as a strategic business partner. His past experience will serve us well as we continue to grow the business."

"I am excited to be joining a company with such a strong team clearly dedicated to achieving results," said John Hafferty. "Husky is a growing company that is well-known for its global reputation and state-of-the-art technologies and solutions for customers. I look forward to having the opportunity to contribute to Husky's ongoing success."

Hafferty has more than 35 years of financial and business experience with global companies. Prior to joining Husky, Hafferty was CFO for ElectroRent, a global rental equipment company. He has also served as CFO for BlueLine Rental and has held numerous CFO positions with global transportation and logistics companies.

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## Present Perfect, Future Ready!

While integrating technology on its lines and in its products, the Company is also investing in training and upskilling its employees to make them ready for the next phase of growth, says **Biju Balendran**, MD & CEO, Renault Nissan Automotive India Private Limited.

By Niranjan Mudholkar

**Q You were the first employee to join Renault Nissan Automotive India Pvt Ltd. in 2008. And recently you have taken charge as the MD & CEO after being the Plant Director. How's been the journey for you personally?**

It is not very often that one gets an opportunity to be part of the launch team to build a plant of this size and scale. This journey has been special and exciting for me, and it continues to be so. From the day of ground breaking and laying down the foundation stone, I have been there and have grown with Renault Nissan Automotive India Pvt Ltd (RNAIPL). I have been a part of 18 car launches of three Brands in a span of nine Years. I have worked in various departments like Plant Engineering, Process engineering, Powertrain production, and also had an opportunity to work in Nissan South Africa and was heading the stamping and Chassis Plant there. The professional experience gathered over the last 11 years in RNAIPL has been unmatched.

After returning from South Africa, I was leading the team as the plant director before taking up my role as Managing Director & CEO of the company in December 2018. Today I am proud to lead a team of professionals at RNAIPL that has unique distinction of producing nine models of cars from

"At present, some high technology components are being imported. We are encouraging our local suppliers and extending all necessary support to supply even these parts from India."

three brands - Nissan, Datsun and Renault. We also have two Power Train Plants producing Engine for domestic cars and also 3C Parts to Global Plants. We not only make cars for the domestic market but also export cars and parts to 69 countries. RNAIPL is a true representation of the Alliance spirit and philosophy, and I'm excited to be part of this journey.

**Q Tell us something about RNAIPL's manufacturing strength in terms of capabilities and capacities. How is it utilized with regards to the different brands and models manufactured at the plant?**

RNAIPL was the first Alliance plant. It is a unique manufacturing unit in the automotive world where we make cars for three brands on the same lines by the high skilled Operators. It is a testimony of cooperation and collaboration between two leaders in automobiles. Both bring best of their technology and process expertise to create world class products and follow Alliance Production way. At RNAIPL, we have constantly engaged in quality and improving productivity. We combine their work cultures to create Alliance Production Way and invested in Nissan's way of Monozukuri (manufacturing). This again is one of its kind in the industry. It helps



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**“Earlier this year, we had announced to bring LEAF to India. At RNAIPL we are committed to meaningfully support the government’s vision for e-mobility in country.”**

us set high standards in efficiency and productivity. We follow the APW strategy of three Nevers - Never receive defects, Never make defects, Never pass defects - to deliver on process excellence, and build on relationship of trust with customers.

It is a matter of pride for us that we have launched 18 models since we rolled out our first car from RNAIPL plant in 2010. Of these 14 were completely new cars including Datsun – a brand that was revived from India – and three CKD models. On an average we have been launching a new car every nine months. The schedule has been very busy for us and I can assure you that with the line-up of new cars in the next few years RNAIPL will be always busy.

**What are your priorities in the new role?**

We will continue to focus on being a customer-centric and sustainable Alliance manufacturing company. Guided by relentless focus on creating value for customers, RNAIPL will constantly strive to implement the critical initiatives required to achieve our vision and deliver excellence for the global market. We will build high quality, affordable and safe cars for everyone.

The goal is for all our operations to be very best in class and to develop our people and enable employees to reach their full potential. We are working with organizations such as NSDC to upskill plant workforce to be future ready. This means we are getting ready for the technology changes happening in the sector. KICKS car launched in Jan 2019 is the first connected car for India from Alliance. Future cars will be connected / e-power / EV etc. We have put in place an extensive and rigorous training programme for employees on soft skills as well as modules

that will help them explore opportunities beyond their regular work. This will also help us give our employees exposure with other Alliance entities.

**What are some of the key ‘Green’ manufacturing initiatives implemented by Renault-Nissan Alliance Pvt. Ltd. at the Chennai plant?**

As a responsible automotive company, RNAIPL is focussed towards adopting green manufacturing initiatives to reduce its environmental impact. We are constantly evaluating and working towards minimizing our ecological foot print. The plant has taken green initiatives around water and energy management.

**Water Management:** RNAIPL has installed three rain-water harvesting ponds with 1.9 lakh KL rainwater storage. These can help RNAIPL meet its water requirements for up to 130 days. The plant also has an in-house wastewater treatment and an evaporator facility. These have helped us achieve Zero Liquid Discharge benchmarks. Regular water audits and awareness programs are held at the plant shop floor. These practices have significantly impacted RNAIPL’s operational water needs and inculcating self-sufficiency by reducing dependence on the Government water supply.

**Energy Management:** With a commitment to reduce carbon footprint across its operations, RNAIPL has undertaken active measures to institutionalize an effective energy management plan. This includes compliance with global best practices and facilitation of various energy saving projects. In 2016, RNAIPL started using wind energy as an alternative source for power. This year, RNAIPL intends to tap into bio-thermal sources too.

RNAIPL’s energy initiatives has brought down energy use per car by 42 percent in the last eight years. The Chennai plant ranks among the top four for optimal use of power among all Nissan plants in the world.

**What is the percentage of local content in your production right now? Do you see this number increasing? What are the challenges in the same (in increasing local content)?**



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have a healthy pipeline of launches this year. It will be a mix of new models as well as facelifts and changes in the existing line up of vehicles.

**Q Tell us about RNAIPL's strategy with regards to e-mobility?**

Both Renault and Nissan have been at the forefront of the electric vehicle (EV) revolution globally. Nissan LEAF has been the most successful electric vehicle in the world and Renault Zoe is the preferred EV in Europe. Earlier this year, we had announced to bring LEAF to India. At RNAIPL we are committed to meaningfully support the government's vision for e-mobility in country. We are working to acquire specific skills sets for our employees to stay ahead of the game

Localization of products depends on various factors and we are constantly finding ways to increase them. Our products such as Kwid and rediGO has 98 percent localization. Both these cars are developed on the CMF-A platform catering to the affordable segment. We started working with 180 suppliers when we began our operations and presently we are working with over 350 suppliers. At present, some high technology components are being imported. We are encouraging our local suppliers and extending all necessary support to supply even these parts from India. The proximity of other Alliance entities such as Renault Nissan Technology Business Center India in Chennai and Nissan India Digital in Thiruvananthapuram cuts down on development time and helps increase localization in any new product or any upgrade.

**Q Tell us about RNAIPL's exports business at present. Which are your best-selling products when it comes to exports? And what is the domestic sales to exports ratio for RNAIPL?**

RNAIPL produces vehicles for both domestic as well as export markets. Exports are an important and integral part of our business strategy from India. The plant has the flexibility to make models from Renault and Nissan on the four common models we have. We adhere to the global manufacturing standards and have been exporting not only vehicles but also engines, gearboxes and 3C parts since start of production in 2010. We export cars to 69 countries currently. Nissan was awarded the exporter of the year in 2016. We also export nearly 4000 parts to 66 plants in 28 countries.

Presently, we are exporting Kwid, Micra, Sunny, KICKS and all Datsun models to other markets. In the last nine years we have exported nearly 8.5 lakh vehicles from RNAIPL.

**Q Tell us about some of the new products to be launch in the next six to twelve months from the Chennai plant? Though it will be difficult to share specific details, but we**

On an average we have been launching a new car every nine months. The schedule has been very busy for us and I can assure you that with the line-up of new cars in the next few years RNAIPL will be always busy.

as the industry evolves from mechanical to an electric and connected world.

**Q As a manufacturing industry veteran, how do you see emerging technologies like AI and machine learning impacting the overall plant operations in the coming times?**

Artificial Intelligence (AI) and machine learning tools are changing the modern workforce environment. Robotic Process Automation has enabled tasks to be done using algorithms. AI mechanics and robots are now being used in factories to manufacture full cars and not just complete one task on the lines. While we integrate technology on our lines and in our products, we are also investing in training and upskilling our employees to make them ready for the next phase of growth.

At RNAIPL, our focus is on making high-quality cars at right price points with the right combination of manual workforce and machines. At our Chennai plant, we have created the right balance between manual processes with automation. We believe machines should support humans and not replace them. Machines are preferred for specific functions, and jobs with a high degree of quality, precision, high-risk working conditions, as well as ergonomic requirements. This is in line with our business strategy and keeping in mind the return on investment in this capital- and labour-intensive sector. At RNAIPL, we use automation for difficult operations such as seat manipulators, wheel and tyre manipulators, etc. 



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# Electrifying Entrepreneur!

Kapila S Soni, Founder and Director, Croyance Automotive, explains her entrepreneurial foray and how electric mobility is giving wings to her ambition.

By Niranjan Mudholkar

**Q Tell us something about your background. What motivated you to become an entrepreneur in the automotive industry and that too in the electric vehicles space?**

Entrepreneurship or entering in any business doesn't require any special qualification. It just needs an aim and passion; a passion to dream and making that dream a reality. I was born and brought up in the Thane suburbs. My qualification is MA B.Ed and I actually come with experience in the teaching profession! This profession has only taught me how to communicate in business. When I met Sandeep, my better-half, I was very amazed to see his passion for electric vehicles and his dedicated studies as well as research for the same. But, he was a bit hesitant to move ahead in the direction of electric vehicles. So, I encouraged and boosted him for the electric vehicle venture. Finally, we both left our comfort zones and formed Croyance Automotive on December 11, 2015 in Gujarat.

**Q How are you funding this entrepreneurial initiative?**

Finance is backbone of every business. We started this company with our own initial funds, as well as with some finance from friends and relatives. Our team is also working on some

In the initial phase, we will launch our vehicle in metropolitan cities such as New Delhi, Chennai, Bengaluru, Jaipur, Mumbai and Nagpur. Also, parallelly we have received dealership enquires from various parts of country.

financial proposals like equity, angel investors and we are getting good response. Similarly, we have also approached a few banks for assistance.

**Q What made you focus on the commercial segment?**

When we started Croyance Automotive we found there is no EV in the light truck segment, so we thought why not EV in light truck and the result is Electro1.t, which is India's First Electric Light Truck'.

**Q How does it feel to be in your position given the excitement and buzz around the EV segment?**

It feels good and every day gives a push to me and my Team Croyance.

**Q Croyance is a rather odd name for an automotive company. What is the idea behind the same?**

Good question. Croyance is a French word which means belief. Let me tell you, initially when our CS suggested this name to me, I spent three sleepless nights as the name Croyance is quite different. I was wondering how people would accept it

"Our R&D team is working on the upgradation in the current vehicle with the aim to increase the running distance in a single charge. You can expect Croyance to launch its first commercial electric vehicle in the market by October 2019."

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“Croyance has its Registered office at Vapi in Gujarat and the factory is located near Surat. The plant’s annual capacity is 6000 Units. Initially, we will launch two models Electro1.t (Hard Top) Electro 2.t (Soft-Top).”

in the automobile industry. Finally, I decided to go ahead with it. Now, Croyance is our pride and identity. Croyance Automotive is not only accepted but is also appreciated at many places. As the name Croyance is unique, so is our work and our electric truck Electro 1.t. When you break up Electro 1.t, you will see that Ele stands for Electric, Cro for Croyance, and 1. T for 1 Ton loading capacity. So, Electro 1.t is the Electric Truck of Croyance Automotive with 1 Ton loading capacity! I must give special thanks to Bhavik H for suggesting the name Croyance!

**Q Tell us something about the manufacturing set up of Croyance in terms of its location, size, infrastructure and capacity? How many models will you produce initially?**

Croyance has its Registered office at Vapi in Gujarat and the factory is located near Surat. The plant’s annual capacity is 6000 Units. Initially, we will launch two model Electro1.t (Hard Top) Electro 2.t (Soft-Top).

**Q Tell us about your supply chain.**  
For few components we have tie-ups with multiple vendors in the country.

**Q Tell us about your focus on R&D.**  
Our R&D team is working on the upgradation in the current vehicle with the aim to increase the running distance in a single charge. You can expect Croyance to launch its first commercial electric vehicle in the market by October 2019.



**Q How will you be pricing the first products?**

The pricing of Electro 1.t and Electro 2.t will be done in the affordable price range with the aim to encourage electric mobility and to create electric awareness in India.

**Q In which will you launch your products?**

In the initial phase, we will launch our vehicle in metropolitan cities such as New Delhi, Chennai, Bengaluru, Jaipur, Mumbai and Nagpur. Also, parallelly we have received dealership enquires from various parts of country.

**Q How will you provide after sales support?**

After sales support will be provided by company through dealers’ network and we are working on it to give our best support to our customers in any every way.

**Q Are you also looking at launching more products?**

Yes. My team is working on the same and you can expect it soon after the successful launch of Electro1.t and Electro 2.t

**Q Are you looking at any kind of technical support from other OEMs or tech companies?**

All I can say is that we are getting good response from an OEM for technical support and we are working on same.

**Q What kind of policy support do you feel is further required from the government?**

Right now, the Government policy is very much favorable for electric vehicle in India. Our sincere thanks to Government for encouraging Electric Vehicle.

**Q Where do you see Croyance in the next five years?**

Croyance is growing at a steady pace. We believe in providing quality rather than quantity. In the next five years, you will see wide the electric product range of Croyance successfully running on Indian roads. We will also consider expanding our manufacturing footprint in the near future.

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## Indian agricultural tractor market to grow steadily

ResearchAndMarkets.com has launched a new report - "Indian Agricultural Tractor Market - 2019-2023 - Market Dynamics, Competitive Landscape, OEMs Strategies & Plans, Trends & Growth Opportunities, Market Outlook". According to this report, the Indian agricultural tractor market has been on an upswing with the market touching the peak of 6 lakh (600,000) tractor unit sales for FY2017-18 powered by significant tailwinds with a broad-based macroeconomic push, increased allocation by the central & state governments towards farm sector and strong focus on continued pursuit of structural agricultural reforms through roll-out of a number of schemes & support programs along with a major push for mechanization in the country to boost overall efficiency & productivity.



scope for efficient farming practices and mechanization based on custom-built solutions for the Indian market.

Tractor sales in India touched the peak of 600,000 units in FY2017-18 with a favourable overall environment with the industry still optimistic and anticipating the tractor sales to touch the 8 lakh units level for FY2018-19 and reach the golden figure of 1 million units by the early to middle of next decade with the industry sales projected to grow at an expected, steady rate of 6%-7% CAGR. This is given the fact

that India has around 6 lakh villages and the sales of 6 lakh tractors for FY2017-18 means a penetration rate of mere 1 tractor per village which is bound to go up significantly over the medium term.

Further, India is forecasted to be the fastest growing economy in the world in 2019 and 2020 leveraging lower international crude oil prices and a continued, strong domestic economic growth momentum, as per IMF in its World Outlook report published in January 2019, with the GDP growth pegged at around 7.5%. However, geopolitical tensions & macroeconomic uncertainty marked by the resurgence of multi-polarity and protectionism along with regional issues, like BREXIT and the rising trade tensions pose a significant threat to world GDP growth going forward.

## Deere introduces redesigned N500C Air Drill with ProSeries

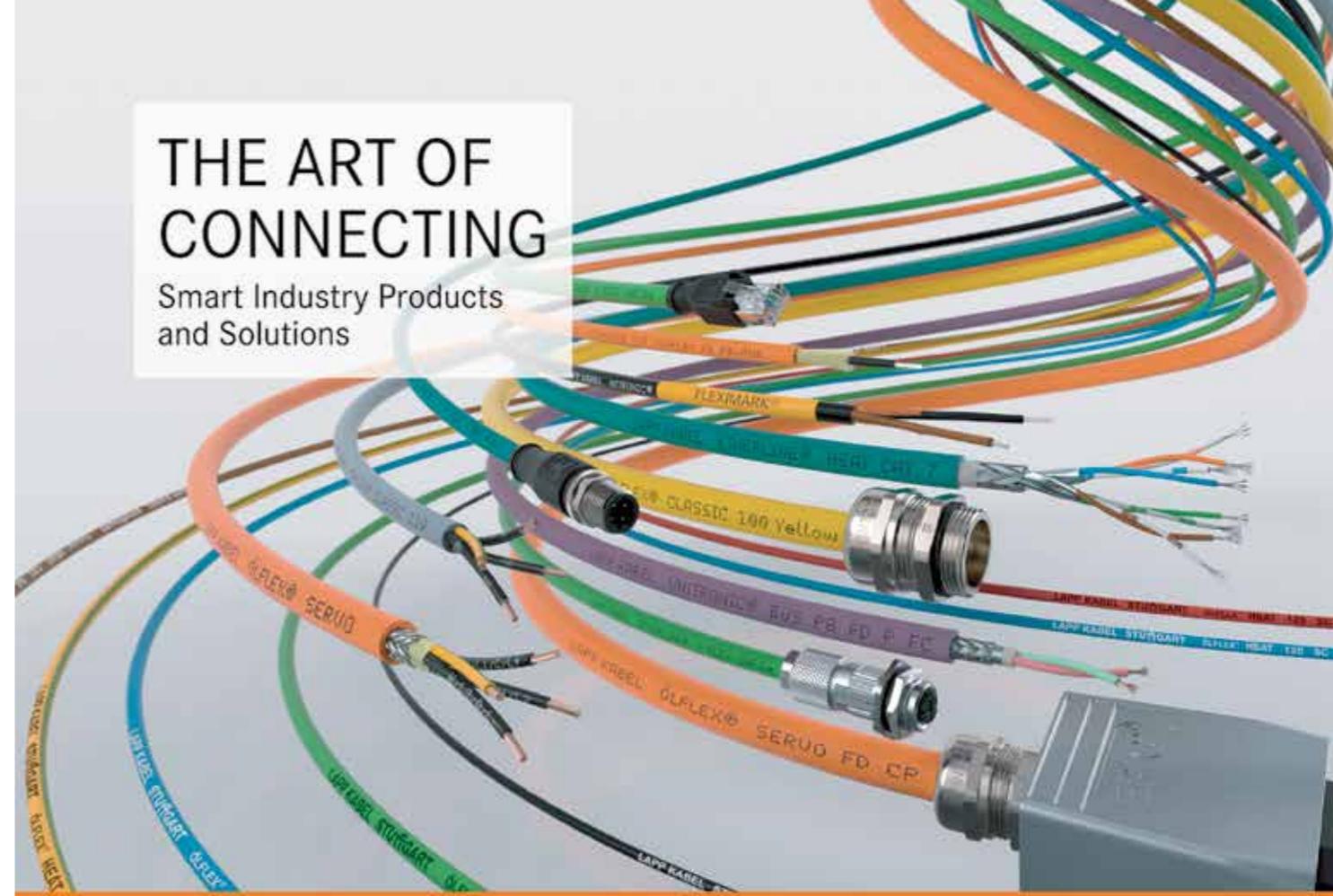
John Deere has introduced the redesigned N500C Series Air Drills for 2019. These new air drills integrate the latest in seeding technology, including new ProSeries™ Openers, to provide small-grains producers the most productive, accurate and smart seeding tools in the industry.

According to Ryan Hough, marketing manager for John Deere Seeding, the N500C delivers on the top requests of producers in improvements to small-grains seeding equipment. "Easier meter access, improved seeding accuracy and increased capacity with less compaction were the most common requests we heard from customers," Hough said. "The N500C Air Drill was designed to give operators much easier meter access, and the latest in integrated technology for improved seed placement accuracy, control and confidence, to help them do the best seeding job possible for cereals, canola, soybeans and other crops."



The first thing customers will notice on the N500C is the main frame and commodity tank have changed, with the blower mounted in the forward position and a raised platform, to give operators easier meter access to clear blockages

or clean out seed. Unlike chain-driven air seeders, the N500C features electric-drive volumetric meters that offer greater seed population control and four-section variable-rate seeding capabilities with SectionCommand™.



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# Manufacturing strengthens further

The latest figure of Indian manufacturing's PMI was consistent with a robust improvement in business conditions that was stronger than seen on average over the 14-year survey history.

**T**he health of the Indian manufacturing sector strengthened further in February, with a sharp and accelerated increase in sales boosting growth of output and employment. There was a solid rise in input buying and a modest accumulation in preproduction inventories, but stocks of finished goods decreased as firms utilised them to fulfil orders.



tion accelerated from January and was solid overall. Survey members indicated that stocks were utilised to fulfil order requirements.

Conversely, pre-production inventories increased in February for the twelfth month in a row. Data implied that this occurred due to ongoing growth of input buying. Quantities of purchases expanded solidly, and at a rate similar to January's 13-month high. Meanwhile, job creation was sustained, taking the current spell of growth to

Rates of both input cost and output charge inflation remained subdued by historical standards, despite picking up from January.

At 54.3 in February, up from 53.9 in January, the Nikkei India Manufacturing Purchasing Managers' Index® (PMI®) reached a 14-month high. The latest figure was consistent with a robust improvement in business conditions that was stronger than seen on average over the 14-year survey history.

11 months. Moreover, the upturn was the joint-quickest in over one year. Input costs increased, with firms citing higher prices for iron, steel, chemicals, plastic, tobacco and tools.

Despite quickening to a three-month high, the rate of inflation was much weaker than its long-run average. Companies suggested that relatively subdued cost pressures stemmed from lower fees for aluminium, copper, synthetic rubber, cotton and gas. Similarly, the rise in factory gate charges was weak in the context of historical data. Suppliers' delivery times where broadly unchanged in February, as signalled by the respective index posting close to the 50.0 no-change mark. Concurrently, manufacturers indicated that their own backlogs rose due to delayed payment from clients in the public and private sectors.

Commenting on the data, Pollyanna De Lima, Principal Economist at IHS Markit and author of the report, said: "The Indian manufacturing sector made further progress midway through the final quarter of FY18, building on the accelerated upturn noted in PMI at 14-month high as increases in sales, output and employment accelerate January. Sharper growth in production and sales were matched by the establishment of new jobs. The upturn in employment was one of the best seen for six-and-a-half years, as goods producers sought to expand output capacities to meet strengthening demand from both domestic and external sources.

"The survey results suggest that manufacturing will likely provide a stronger contribution to overall economic growth in the final quarter, provided that March's figures stay on this favourable path. For FY19, IHS Markit has revised higher its GDP growth forecast, from 7.0% to 7.1%, amid the announcement of fiscal stimulus for the new interim budget and the policy rate cut announced in February." 

Sources: Nikkei, IHS Markit.

**"The Indian manufacturing sector made further progress midway through the final quarter of FY18, building on the accelerated upturn noted in PMI at 14-month high as increases in sales, output and employment accelerate January."**

**Pollyanna De Lima**, Principal Economist at IHS Markit and author of the report

Amid reports of successful advertising efforts, supportive government policies and strengthening demand conditions, inflows of new work at Indian goods producers continued to expand during February. The increase was the sixteenth in as many months and the most pronounced since October 2016.

Growth of total order books was supported by gains from international sources, as seen by a marked and accelerated upturn in new export work. A number of panellists indicated the acceptance of bulk orders from clients in key export destinations. Manufacturing output rose at the quickest rate since December 2017, boosted by strong inflows of new business, technological progress, beneficial public policies and positive market conditions.

Despite the uptick in production volumes, holdings of finished goods declined again. Moreover, the pace of deple-

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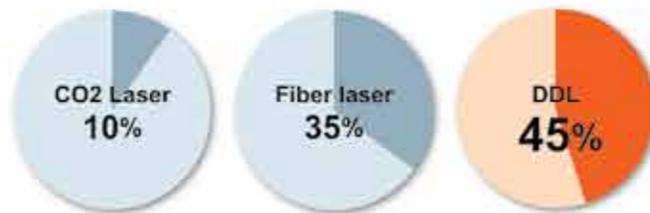


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## Beyond compliance and compromise

The focus has not been on human behaviour which is actually the root cause of almost all incidents and accidents harming both the people and the business!

By Dr Kaila Harbans Lal

Indian safety culture suffers between the choices of compliance and compromise. The journey of safety cultural mindset assessments and management has not been smooth; rather it has been painful for the safety officers as well as the companies. The reason? The focus has not been on human behaviour which is actually the root cause of almost all incidents and accidents harming both the people and the business!

Behaviour Based Safety (BBS) as an application of behavioural science has been widely accepted worldwide as an important tool of building a safety culture in industry, helping in achieving zero accident. BBS has been successfully implemented in prestigious Indian organisations such as GAIL, HPCL, IOCL, L&T, Vedanta, Tata Projects, Sterlite Power, Pidilite, Hindustan Construction, Afcons, Privi Organics, DCM, Galaxy and so on.

Although it has been late in doing so, our industry now realises that the organizational safety culture drives the at-risk behaviours which is the root cause of incidents. Now, the industrial leadership is also gradually understanding as how to it can transform the reactive culture into an interdependent safety culture with the BBS approach.

**“The intensity and continuity with which a company carries out the BBS implementation action plan, makes all the difference for its success.”**

### Corporate Insights on BBS

According to S P Garg, Executive Director (HSE & TQM), GAIL (India) Limited, during 2013, the need for bringing in

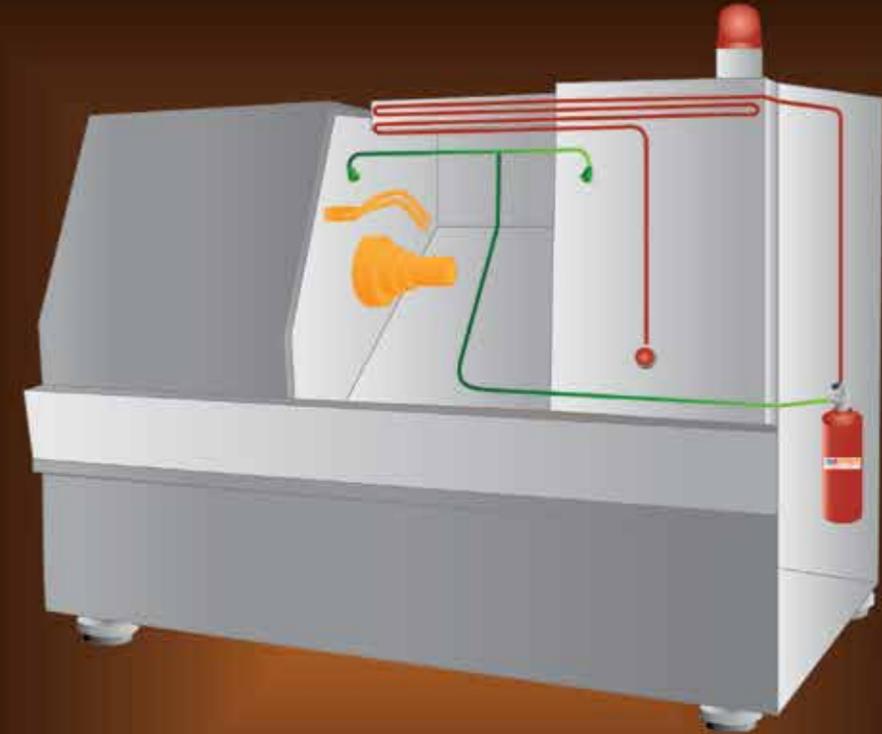
### The Journey of BBS in India

How it developed from organization to organization over the past 20 years is depicted in 10 points below:

- Participation in BBS programs changed from Contract staff to CEO, MD, business heads
- Change in focus from mere observation to spot-correction
- Focus from conditions to at-risk behaviour
- Change in Approach: from reactivity to interdependent safety culture
- Understanding that behavior impacts and hits the business
- Realizing that organizational Culture drives at-risk behaviors
- BBS Score board is necessary to understand trends of at-risk behaviors
- Understanding that more observers, more observations, more corrections at site
- Rewarding observers is must to sustain BBS system
- More industries have joined BBS, earlier only manufacturing and engineering companies were interested, now construction and chemical companies are coming forward.



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Behaviour Based Safety intervention was felt while discussing the development of good safety culture within the organization. After deliberation with directors and the CMD, it was decided to make conscious efforts to address the "At Risk Behaviour" of employees working at various sites of GAIL. During

Months	No of Observations	Safe	Risk	Total Corrected	Position after Final Improvement
Apr-18	1619	72	28	23	95
May-18	3723	83	17	12	95
Jun-18	3251	80	20	13	93
Jul-18	9675	75	25	14	89
Aug-18	10647	76	24	14	90
Sep-18	12943	76	24	16	93
Oct-18	15514	77	23	16	93
AVG	8196	77	23	15	93

(Figure 1: BBS statistics)

the base line data collection, it was understood that the Safe Behaviour observed at sites was on an average at 65 percent. After three years of journey of implementation of BBS across installations, it was seen that the percentage of Safe Behaviour at sites slowly increased to about 90!

According to Pavan Kumar Rao, Head – HSE, Sembcorp Energy India Limited, SEIL officially launched BBS on April 18, 2018 with a declaration from the MD and Country Head – Vipul Tuli with commitment from the Senior Management for BBS implementation. (ISO 45001: 2018 mandates that Human Competence and Behavioural Elements need to be considered in hazard identification and as internal issue for managing risks.)

Our BBS statistics in Figure-1 for the past seven months reveal that on an average, of the total observations, 77 percent had adherence to the safety compliance and while 23 percent did not show compliance in their behaviour. After spot-corrections, the final improvement in safe behaviours is 93 percent.

According to Vikas Gupta, DGM (SED) / SAIL, Bokaro Steel Plant, before launching of BBS, they were working on the theory of "Big Boss Safety". Afterwards, they are working on the model of "Big Brother Safety". "We are now getting the

"Sites and plant heads are more focused on job completions than observation-cum-spot-correction of at-risk behaviours. In BBS implementation, the focus is in the development and practice as a brotherhood organization."

**Further Challenges in sustaining BBS are:**

- Safety professionals are reactive, which works contrary to the safety objectives.
- Management concern for safety of low-income groups is low.
- Mindset shift from profits to a corporate value for saving life.
- BBS awareness to all in an organization till last person is absolutely necessary.

"Leaving BBS implementation merely in the hands of consultants is one reason for its failure. However, maintaining spot-correction culture for a long time and replacing reactive safety culture with BBS approach will lead to organisational success."

desired result to achieve 'Bokaro Bane Surakshit'. Till 2017, Bokaro Steel Plant never achieved a target of Zero Fatal Accident in a calendar year. But under the BBS team leadership, there was no fatal accident in 2018. We have made a record of zero fatal accident for continuous period of 16 months!"

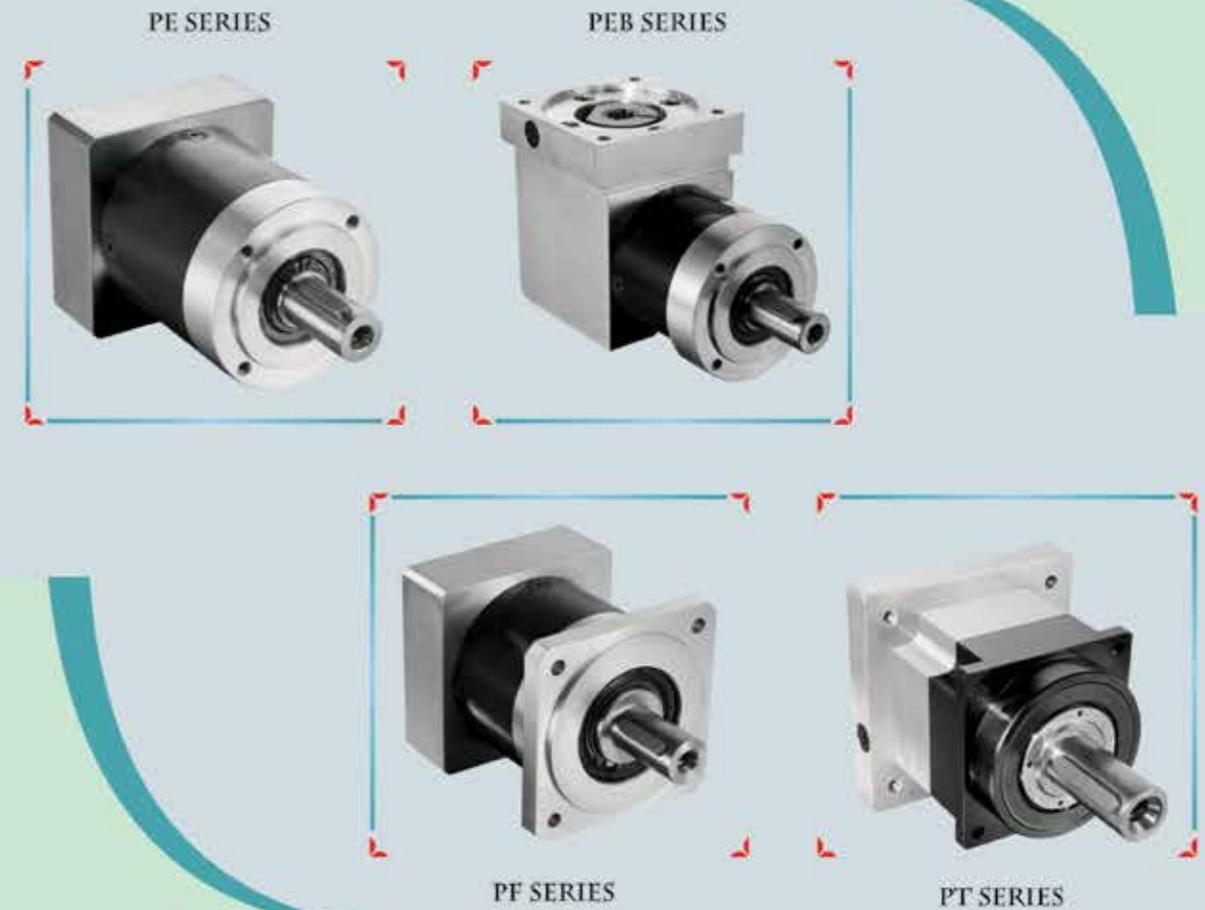
**Conclusion and implications**

It is found during our country's survey that sites and plant heads are more focused on job completions than observation-cum-spot-correction of at-risk behaviours. In BBS implementation, the focus is in the development and practice as a brotherhood organization. The intensity and continuity with which a company carries out the BBS implementation action plan, makes all the difference for its success. Also, leaving BBS implementation merely in the hands of consultants is one reason for its failure. However, maintaining spot-correction culture for a long time and replacing reactive safety culture with BBS approach will lead to organisational success. Many organizations thought that one-time training would serve the purpose of BBS implementation; this is a myth by itself. Also, making BBS a huge documentation has led to its failure. Each HOD must demonstrate engagement savviness in his / her behaviour and conduct mass communications of spot-corrections each week and ask employees to share their observations for spot-reward more frequently. Quarterly earnings of BBS implementation must reflect in safety statistics of the company i.e. decline in incidents, injuries and so on. Finally, BBS is all about turning a company into a caring system; in fact, it is about transforming an organization into caring people. That can be achieved properly by trained and passionate lead trainers.

The author is Director-Forum of Behavioural Safety. References can be requested from the author, if required.



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# Bright future

Vaibhav Karkhanis, Founder, PDO International LLP, Mumbai speaks to The Machinist about solar energy's future in India

By Swati Deshpande

**Q Awareness on the use of renewable energy is increasing. What has been your experience?**

For solar energy the sun's rays act as the raw material. This is not only free, but abundant. Moreover, India has been blessed with maximum sunlight throughout the year. As technology is becoming more efficient and affordable, more people are embracing solar.

Global warming and high pollution levels have created a lot of awareness among people regarding the need for the shift to green energy. As technology has become more and more affordable, the usage has gone up manifold. Encouragement and growth driven policies by the Central Government will now be required to break new barriers. In the very near future, the renewable energy segment will essentially become the backbone of India's energy needs.

**Q Solar installations are known to be expensive. Can you please elaborate on the initial costs of the project?**

Solar project costs have been coming down drastically over the last few years. New models that include finance options have increased viability for the consumer. We at PDO, have now started offering collateral free loans for as much as 80% of the total project cost in line with our customer's requirements.

**Q The Indian government also emphasises on renewable energy. Can you please tell us about how is it helping the industry adapt renewable energy?**

Renewable energy is the future. Today, it is cheaper than the traditional thermal energy that is the backbone of India. The next development in this space has to be in energy storage field. Government owned Indian Space Research Organisation (ISRO) has developed new technologies in storage batter-



The next development in this space has to be in the energy storage field. Government owned ISRO has developed new technologies in storage batteries and is now transferring the technology to Indian companies for manufacturing.

ies and is now transferring the technology to Indian companies for manufacturing. Such initiatives from the government will help Indian companies build indigenous products for the international market.

**Q Tell us about some of your prestigious projects.**

The year 2018 has been good for our company. PDO provides services like EPC, I&C besides government liaison service in the solar segment. PDO along with its sister companies has been able to provide such services for more than 250 MWs of solar projects in 2018 alone. However, the projects that touch human lives are the ones that satisfy me immensely.

We have installed a solar water pump for a farmer in Washim District of Maharashtra. Recently, he gave us a positive feedback saying the solar water pump has changed his life beyond his dreams. Earlier, he was unsure about the electricity supply due to which his crops suffered. However, now with the help of the solar water pump, he is able to use the pump throughout the day all year round. With this, his family life has changed phenomenally and so has his income. 🇮🇳



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INTERVIEW



## Unwrapping potential

Neeraj Bisaria, MD & CEO of Premium Transmission believes that sustainable growth is one of the primary contributing factors in long-term business operations as the company gears up to its first Product Development Centre in Kolkata.

By Niranjan Mudholkar

### Q How would you describe your personal journey with Premium Transmission?

My journey with Premium has been quite stimulating. I always look forward to my contribution in shaping the future of our company. I am extremely grateful that I have been able to influence the lives of the people associated with our company. My job endows me the drive to explore new ideas and pace up developments within the organization, which help in the overall growth of both the company and the employees.

### Q What is Premium Transmission's position in India in terms of market share?

With a rich history and experience of 58 years in the industry, Premium enjoys the leadership position in the segment. In terms of industrial gearboxes, we have 20 percent of the total market share and for the geared motors, the market share is nine percent. We are also the largest indigenous manufacturer

In terms of industrial gearboxes, we have 20 percent of the total market share and for the geared motors, the market share is nine percent. We are also the largest indigenous manufacturer of fluid couplings in India.

of fluid couplings in India.

### Q How strong is the Company's manufacturing prowess in terms of its capacities and capabilities?

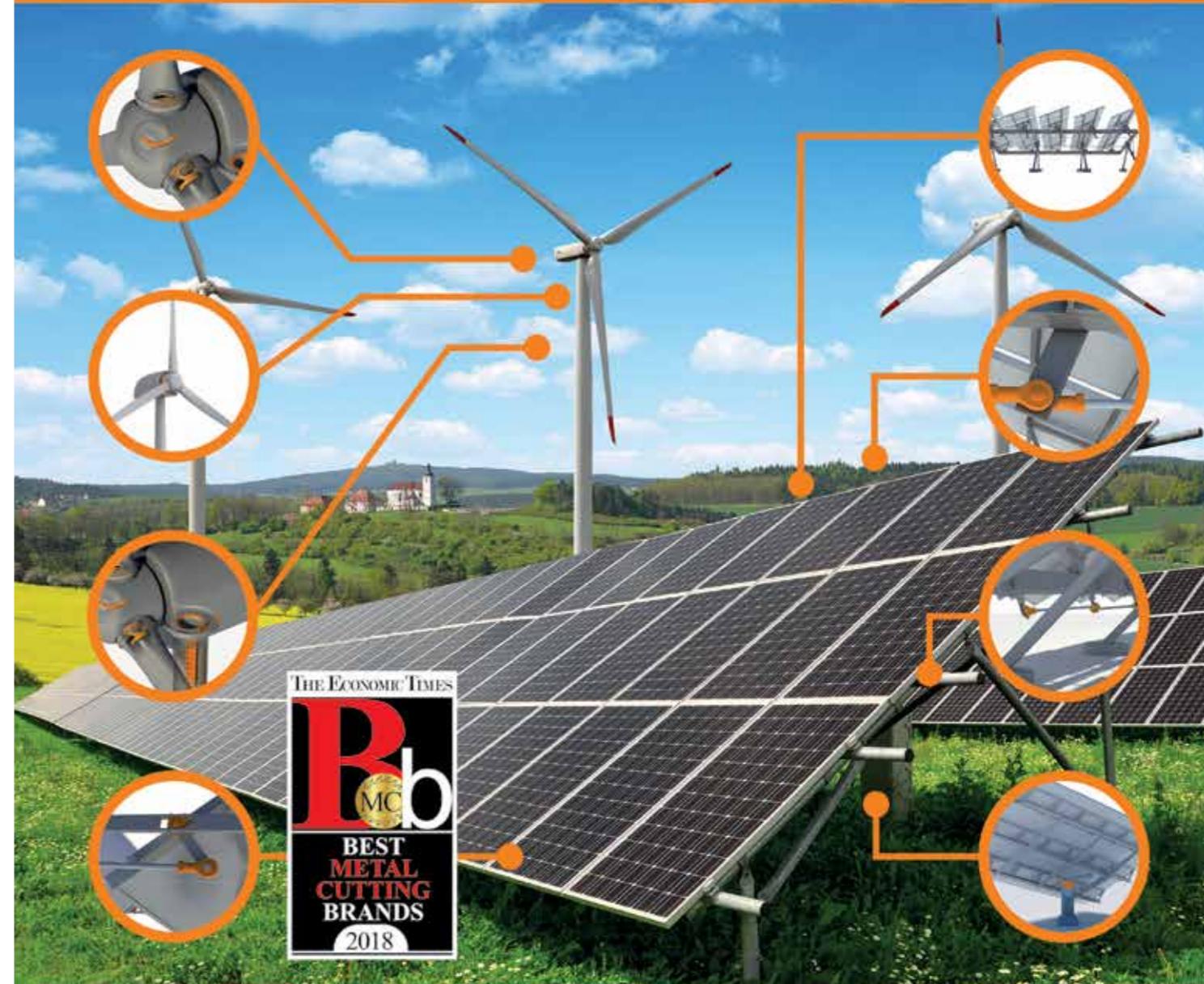
We believe that sustainable growth is one of the primary contributing factors in long-term business operations. This aim strives us to provide innovative solutions, which are at par with the technological advances of the industry. To meet up with the evolving industry pace, Premium Transmission has geared up to provide an end-to-end solution, characterized by precision and innovation. With robust R&D, design and engineering expertise, state-of-the-art manufacturing units in Pune, Falta (West Bengal), and Aurangabad (Maharashtra) and one overseas manufacturing unit in Germany, the company strives to grow exponentially in the international market and transform itself into a truly global player.

In addition to this, we are further planning to add capacities in existing plants in Pune, Falta and Aurangabad. Moreo-

"We are opting for three-fold expansions in our export segment by entering into business collaboration with key partners, who are technology leaders in their respective areas. Moreover, we are aiming to introduce new products in the existing market, which will boost our trades in the export segment."

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ver, we are poised to meet consumers' demand by introducing newer products equipped with potential technologies.

**Q Premium Transmission will be soon launching its first Product Development Centre in Kolkata. How important is this development?**

Increased consumer demand and technological advances have accelerated newer prospects for us. The development centre of Premium Transmission, being the first in the Eastern region, unwraps immense potential. Kolkata is the gateway to several prospective SAARC and South-East Asian countries and this is one of the primary reasons for choosing Kolkata for Eastern region's first product development centre.

This innovation-led development unit, which aims to research and design new products for mechanical power transmission market, is poised to propel growth. Catering services to core sectors like Steel, Power, Oil & Gas, Sugar, Cement, Construction etc., the company strives to introduce energy-efficient products for addressing the present issue of energy-scarcity. This will not only accelerate the industrial growth in West Bengal but also be instrumental in the infrastructural growth of India.

**Q Tell us about the company's focus on exports.**

We are opting for three-fold expansions in our export segment through entering into business collaboration with key partners, who are technology leaders in their respective areas. Moreover, we are aiming to introduce new products in the existing market, which will boost our trades in the export

The turnover last year was Rs. 423 crore and this year we are targeting the same to be Rs. 465 crore. We envision a turnover of Rs. 1000 crore by 2025 through both organic and inorganic growth.



"In South East Asia market, we already have a very strong presence in mining, paper, palm and sugar industries. We are continuously upgrading our product range and growth partner networks for these sectors. We believe this will help us to grow exponentially."

segment along with maintaining a strong presence in custom gearboxes.

**Q Can you share the Company's future plans to venture into newer markets?**

In South East Asia market, we already have a very strong presence in mining, paper, palm and sugar industries. We are continuously upgrading our product range and growth partner networks for these sectors. We believe this will help us to grow exponentially in South-East Asian market (Malaysia, Indonesia, Thailand, and Singapore).

**Q What was your turnover in last FY?**

The turnover last year was Rs. 423 crore and this year we are targeting the same to be Rs. 465 crore.

**Q What is your vision for the organisation? Where do you see it five years down the line?**

Premium Transmission is the only manufacturer of gears in India with the in-house R&D facilities that have received approval from the Government of India. This provides us with the liberty to deliver solutions to diversified industries.

- Our vision is to become an organization, where
- Customer delight is paramount
- Technology and innovation are the levers for growth
- Product quality and EHS are the foundation
- Employees are prime movers
- Sustainable and profitable growth is a way of life

In terms of numbers, we envision a turnover of Rs. 1000 crore by 2025 through both organic and inorganic growth.

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\*Sending nomination does not guarantee an award or invitation to the Awards Night.

# Digital transformation: a new business model

As alternative method that creates a win-win situation for the manufacturer as well as consumer.

By Vikash Choudhary & Pratik Patki

Since the advent of Industry 4.0, we are seeing digital transformation across all industries. Discrete manufacturing companies are becoming more customer-centric. Business models are evolving and new revenue streams are being identified. Manufacturing companies are learning from other sectors such as e-commerce, IT, telecom, etc. Technology is playing a key role in adapting to the changing trends. In the customer-driven world today, customers are getting used to models where they pay for a product or service for a specific period based on usage instead of owning it in perpetuity.

This trend is soon becoming the way customers want to engage with business and use equipment.

The discrete manufacturing sector faces several challenges specific to its needs that could be mitigated by switching to a pay-per-use subscription model. The pay-per-use model benefits both the manufacturer and their customers, resulting in more efficient utilization, better upkeep, higher profits and reduced capital expenses.

## Discrete manufacturing challenges

The first challenge for manufacturers is the need to cater to cyclical demands. Sales of most discrete manufacturing equipment are heavily dependent on economic growth of consumer industries such as construction, mining and industrial. Historically, these industries have demonstrated cyclical growths with a downturn of two-to-three years in the intermediate years. Due to the nature of these types of equipment, they can incur huge inventory carrying and maintenance costs.

The second challenge is that the assets are typically highly



“With leasing, the customer has the option to return equipment once they no longer need it. In such a case, the manufacturer can reuse that equipment and would likely need to produce fewer units of equipment each year to account for the return.”

Vikash Choudhary, Lead Consultant, Manufacturing, Infosys



capital-intensive. Customers must spend thousands of dollars to install equipment at a particular location and then contend with the challenge of maximizing utilization to make their investment worth the price. Also, equipment such as harvesting machines and other farming tools are not used consistently throughout the year. Yet, with a sales model, customers must purchase equipment despite only needing it for a few months at a time.

The third challenge is that most equipment is installed at remote locations, which adds to the difficulty of its proper maintenance. Equipment on a farm near a service center will be much easier to maintain than equipment on an oil rig with no available skilled maintenance laborers.

Lastly, most equipment is highly customized to each customer's purposes. Again, generic labor skillsets will not be sufficient to meet maintenance needs.

## Customer benefits of a pay-per-use subscription

Given the option of purchasing equipment or leasing it, the latter offers customers several benefits:

Capital expenditures (CAPEX becomes OPEX) – shift to operating expenditures. Customers experience relief from large capital expenditure outlays and dealing with their depreciating value. All funds previously spent on large purchases shift to operating expenditures.

A predictive maintenance model in equipment as a service

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(EaaS) reduces downtime by eliminating failures. Vendor flexibility and easy tech upgrades expand options. If equipment doesn't meet organizational goals or fails to deliver at its service level agreement (SLA), it can be returned, or technology can be upgraded. High or optimum capacity utilization results in peak efficiency.

The manufacturer takes care of the operational equipment effectiveness (OEE) of the customer's assets. A pay-per-use model fundamentally promotes more risk-taking as organizations can invest in new technologies and not worry about getting tied to a piece of equipment for decades. With fully covered maintenance and service included as part of the service level agreements, operational burden reduces, especially around procurement, installation, testing, validation, and maintenance of the capital equipment.

**Manufacturer benefits of a pay-per-use subscription**

Fortunately for manufacturers, there are many benefits on their end of the pay-per-use agreement as well:

- Manufacturers gain the predictable cash flow of planned new revenue streams.
- The predictive maintenance model in EaaS curbs additional costs associated with failures and breakdowns.
- Offering advanced services increases the manufacturer's service profit margin.
- Even after sales, manufacturers can foster good connections with customers.
- Data gathering from customer sites allows EaaS providers
- To improve their designs and make machinery more robust, resulting in better performance.

With so many benefits, the demand from customers for pay-per-use as a service and the pressure on manufacturers to make the switch continues to grow.

**Inhibitors in shifting to the pay-per-use model**

Organizations that already recognize the benefits of switching to a pay-per-use model may have difficulties shifting for several reasons. Legacy systems and processes are often a sig-



**"The discrete manufacturing sector faces several challenges specific to its needs that could be mitigated by switching to a pay-per-use subscription model. The pay-per-use model benefits both the manufacturer and their customers, resulting in more efficient utilization, better upkeep, higher profits and reduced capital expenses."**

**Pratik Patki**, Lead Consultant, Manufacturing, Infosys

nificant obstacle for well-established organizations that aren't agile enough to adopt an entirely different business model. These manufacturers require customized processes, techniques and digital technologies to utilize the pay-per-use model effectively.

Another inhibitor to pay-per-use adoption is the need for predictive maintenance. When a customer leases equipment, the responsibility for upkeep falls on the manufacturer. They must be prepared for agile deployment of repair persons in order to avoid negative consequences, such as paying a penalty to the end customer.

Lastly, organizations must account for reusability of equipment — a factor that didn't come into play with a sales model. With leasing, the customer has the option to return equipment once they no longer need it. In such a case, the manufacturer can reuse that equipment and would likely need to produce fewer units of equipment each year to account for the return.

These considerations and new processes represent a hurdle to many organizations, but with the guidance of a third party, they can make the transition. 

*Vikash Choudhary is the Lead Consultant, Manufacturing, Infosys and Pratik Patki is Lead Consultant, Manufacturing, Infosys*

**FARM UPDATE**

**ICAR Technology enhancing agricultural production and productivity**

Union Minister of Agriculture and Farmers' Welfare Radha Mohan Singh has said that Indian Council of Agricultural Research (ICAR) has achieved many notable successes during last 10 decades despite the challenges. This has helped the country in increasing production and productivity through new research and development of new production technologies and varieties. He said that keeping in mind the Prime Minister's vision of "doubling farmers' income by 2022", ICAR has taken several steps in this direction. During 2010-2014, 448 varieties were released for cultivation whereas in the last four and a half years, a total of 1014 advanced varieties have been developed for cultivation. Singh added that prob-

lems related to climate change have been adequately addressed and 45 Integrated Farming System (IFS) models have been developed including all the 15 agro-climatic regions to benefit small and marginal farmers. The ICAR has supplemented the Government's "Soil Health Card" initiative and has developed a mini Lab "Mridaparikshak" for soil testing. To promote organic farming and to bring it in the mainstream, 42 organic farming models have been developed. He informed that ICAR institutes and State Agricultural Universities have developed several Mobile Apps for the benefit of farmers some of the Apps like 'PulsExpert' for pulses and 'PusaKrishi' Mobile App are important.



## Panasonic Realizes Its First Zero-CO2 Factories



**P**anasonic Corporation announced today that it has realized its first zero CO2 emission factories at Panasonic Eco Technology Center Co., Ltd. (PETEC) in Hyogo, Japan and Panasonic Energy Belgium N.V. (PECBE) in Tessenlo, Belgium, in January 2019.

Panasonic Corporation formulated the long-term envi-

ronmental management vision “Panasonic Environment Vision 2050” in June 2017, and has been promoting environmental activities with a clear direction toward 2050. As one of these activities to promote businesses aiming for a sustainable society, the company is working globally to create factories that do not emit CO2 during their operation. Two factories at PETEC, a home appliance recycling company, and PECBE, which produces dry batteries, have become the first zero-CO2 emission factories for Panasonic by installing renewable energy power generation systems, procuring renewable electricity, and utilizing carbon credits to offset CO2 emissions from fossil fuels.

By making these factories the leading model of the company’s zero-CO2 factories, and by gradually expanding the activities to global plants, Panasonic will steadily promote production that does not emit CO2, aiming for a sustainable society as envisioned by the “Environment Vision 2050.”

## Voltas to invest over Rs. 500 crore in new plant in Tirupati, Andhra Pradesh

**V**oltas Limited, a Tata Group enterprise, has announced its intention to start construction of their new manufacturing facility, spread over 65 acres, in Tirupati. This facility will initially manufacture and assemble air conditioners and related cooling products with a total capacity of more than 1 Million units to start with. Continuing its thrust on Research and Development, Voltas aims to create technologically advanced products which are expected to start rolling out from the second half of 2020. The Company plans to invest over Rs.500 Crore while putting together an OEM base for home appliances, and simultaneously creating local employment opportunities in the region. This manufacturing facility will be one of the first cooling appliances unit in the State of Andhra Pradesh.

The choice of Andhra Pradesh as the destination for the new manufacturing unit was due to the State’s ‘ease of doing business’, and growing focus on ‘Make in India’. The chosen location provides dual benefits of superior market access and cost effective connectivity via road and port.

Pradeep Bakshi, MD & CEO, Voltas Limited, said, “We are delighted to have laid the ground for the Voltas manufacturing plant here in Tirupati. We are thankful to the Government of Andhra Pradesh, and APIIC officials for all the support extended. As an undisputed market leader, we have always kept the customer at the core of all our decision making. This facility helps us in expanding our manufacturing capabilities while increasing our reach in the Southern market. As a Tata Group company, we have always focussed on creating delightful experiences for our customers and shall continue to serve them even better through this plant.”

## GE Appliances launches IoT based Water System

**G**E Appliances is expanding its portfolio of IoT products with the introduction of the Smart Water Whole Home Filtration System and Smart Water Softener System with leak alerts and remote shutoff capabilities.

“The new GE Appliances Smart Water Whole Home Filtration and Softener systems were designed to provide a great ownership experience through easy installation, premium filtration or softening, and meaningful connected features,” said Trent Jacobi, senior director, water filtration, GE Appliances. “Leveraging our deep technical capabilities in water treatment with our connected technology, we have designed a truly innovative product that not only provides clean water throughout the home, but also potential leak alerts and the ability to remotely shut off water.”

The new water solutions enable people and families to receive home water leak alerts, access details about their water systems, and perform remote water shutoff.

## Daikin completes acquisition of AHT

**D**aikin has announced that it has obtained all equity interest for AHT effective February 22, 2019, through its subsidiary Daikin Europe N.V. and has completed its acquisition. The acquisition price was 579 million euros. This acquisition will be reflected in the company’s consolidated financial settlement. In the company’s consolidated balance sheet from the fiscal year ending March 31, 2019, and the company’s consolidated statement of income from the second quarter of the fiscal year ending March 31, 2020.



# Mechanised farming – boon or bane?

It is proven that technologically aided mechanized-farming maintains consistency, reduces costs, increases production all while ensuring a safe, wholesome product for consumers across the globe.

By Srinivas P Kamisetty

Let's take the route of talking about relevance of farming and particularly mechanized-farming through referring to one of our favourite topics food. On a day-to-day basis an average person consumes three meals, one-two snacks and one-two beverages. The number of food staples and supplements that go into preparing this range anywhere between 35-60. Some food-for-thought would be reflecting upon the variants of crops are being cultivated to cater to the requirement of the globes nearly 7.7 billion people having thousands of diverse cuisines! With this gastronomic scene in the backdrop, it is indeed interesting to engage our thoughts in the food production cycle; where the food comes from, how it is produced, how much is produced and how the farmers produce the quality and quantity of food that is being supplied to end-users. Supplying to a population of over a billion Indians alone is certainly a gargantuan task.

### Impact on quality and quantity

With the growing food demand, the role of mechanisation in farming to improve the quality and quantity of food and methodology of growing it has become indecisive. Pondering over this a little further, perhaps one could infer to mecha-

The area under certified seeds has increased from less than 500 hectares in 1962-63 to over 500,000 hectares in 1999-2000. The quantum of quality seeds now has crossed 1.5 Million tonnes.

nized-farming as the most apt formulae to satiate to the ever-growing food consumption pattern. Large-scale food produces are really the summation of material inputs, farming techniques and automation. Using technology to grow food is not a new concept, hence it would be no exaggeration to iterate the fact that mechanized-farming has proved to be a boon to humanity and it can be comfortably referred to the evolved version of farming itself.



“Mechanization provides consistent yield to the farmers. Even in the early phase of the crop-cycle, farms that have used rotavators to till soil have shown consistency in yield, seeding, accurate density, row and columns.”

Tractors replaced animal drawn farm equipment decades ago; thus, until quite recently proliferation of mechanization in farming was associated mainly with tractorization. However, the simple replacement of animals and plough is not enough to produce enough food today. This misconception has to be cleared and mechanization must be redefined in its true sense by building awareness about the availability and importance of technology that has led to effectively managing the crop cycle --- right from seed bed preparation, seeding, crop care harvest and post-harvest needs of farmers.

Technology forms the basis of mechanization and is defined as a science to solve problems technically. Given the constantly growing food demand, agriculture producers are constantly on the cutting edge of technology to find new ways to meet this demand. It is proven that technologically aided mechanized-farming maintains consistency, reduces costs, increases production all while ensuring a safe, wholesome product for consumers across the globe.

Elucidating a few advantages of mechanized-farming explain its significance:

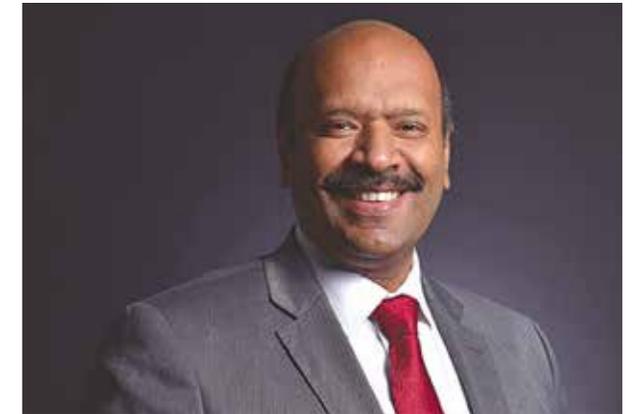
### Consistency

Mechanization provides consistent yield to the farmers. Even in the early phase of the crop-cycle, farms that have used rotavators to till soil have shown consistency in yield, seeding, accurate density, row and columns. This means every seed sowed will be productive and unproductive loss of crop owing to inconsistencies in spacing of seeds leading to shadow or water shortage death suffered by saplings will be eliminated. This is affirmed by the seed sector of mechanized-farms that have made impressive progress over the last four decades. The area under certified seeds has increased from less than 500 hectares in 1962-63 to over 500,000 hectares in 1999-2000. The quantum of quality seeds now has crossed 1.5 Million tonnes.

### Cost Efficiencies

The agriculture sector in India is witnessing a huge labour shortage as a result of farm labour migration from different parts of the country to the urban areas seeking better work opportunities and higher wages in cities and in industrial areas. High economic development in various states in last few years has also led to sudden decline in the availability of farm labours. In this dearth situation, techniques such as transporting and crushing among the others can be easily delivered by machines in absence of labours and are more productive in form of cost. Hence, mechanized-farms have a proven track record of increasing income of farmers, backed by inflating prices of agricultural commodities. The purchasing power of farmers in Asia is therefore increasing. For example, harvesting paddy if done by hand, the losses are very high and if done by

Large-scale food produces are really the summation of material inputs, farming techniques and automation. Using technology to grow food is not a new concept, hence it would be no exaggeration to iterate the fact that mechanized-farming has proved to be a boon to humanity and it can be comfortably referred to the evolved version of farming itself.



“Mechanized-farming is a scientific approach to farming hence grounded on accuracies. It is also used to help protect plants from disease and sicknesses, reduce the amount of water, land and chemicals needed to grow food. Row cropping method increased yields and total production, giving us more total pounds of food per acre.”

machine, then loss is less than two percent.

### Production Efficiencies

Mechanized-farming is a scientific approach to farming hence grounded on accuracies. It is also used to help protect plants from disease and sicknesses, reduce the amount of water, land and chemicals needed to grow food. Row cropping method increased yields and total production, giving us more total pounds of food per acre.

### Environment-Friendly

Several times machines are better for environment. This can be explained best in reference to winter smog concerns of North India to which one of the key contributors is conventional straw-burning practices of farmers as it is the quickest way for them to get rid of it. On the other hand, same straw is used as cattle feed in South India; if it is bailed it can be used for this purpose. In an hour, one acre of land can be bailed using a bailer, whilst avoid all the pollution that is caused by burning.

The world population will grow by two billion people in the next 50 years; and The United Nations predicts we will need to grow more food in the next 50 years than was grown in the past 10,000 years. Clearly, it is mechanization of farming which has led to growth in scale of farming; this fact is undeniable. In the evolution process, mechanized-farming will give birth to more novel and safer techniques to provide for an ever-growing population.

The author is Founder, Paama Agrico.



# Industry Transformation

The material handling industry is under transformation says **Anil Lingayat**, Executive Vice President & Business Head at Godrej Material Handling.

By Swati Deshpande

## **Q** How do you see the material handling industry faring in India?

The material handling industry has three clear levers – 1. Logistics 2. Manufacturing sector 3. Labour cost. Mechanisation in factories happens when either cost of the labour is high or availability of the labour is short. In India, labour shifts are happening not because any of these reasons but due to the demographic profiles. We have 65% of the population who are under 30 and aspirations of village & urban youth are same due to digitalisation and no one is keen on doing a menial job. Their aspirations are much higher than their capabilities and competencies. The Indian economy is growing along with the manufacturing industry but youth is reluctant to take opportunities that exist in the market. So, one of the drivers for the growth of the mechanised material handling equipment comes from this factor.

Secondly, material handling has significant gained importance lately due to implementation of GST. India had one of the most complex tax systems in the world. There was no way for companies to optimise its logistics as they had to have a warehouse in every state as the tax system differed from the state to state. Most of these warehouses were rented and hence no one invested in the right material handling systems. Now, GST has changed this picture as it allows companies to have their own central warehouses. As a result, everyone is relooking at their supply chains and logistics. And this will boost the material handling industry.

The third lever is a global trend i.e. emerging e-commerce sector. In this industry, competition thrives on the factors of how fast and competitively one can make the products available to the consumers. If one has to win this race, they have to invest in the modern material handling systems. Also, penetration of the e-commerce industry is higher in India because



of the younger population.

## **Q** Which are the key industries driving growth of the material handling businesses?

Usually material handling systems are used in all industries but industries that handle high volumes of material drive the growth. To name a few are auto, pharma, F&B, retail, discrete manufacturing, etc. are the sectors driving the growth.

## **Q** Tell us about Godrej Material Handling division?

We are in the business for almost five decades. It has been foresight of our Chairman who thinks that if industrialisation has to grow in India, material handling industry has to be strong. Even in the Godrej, many of the businesses have originated from the thought that if India has to survive there is no option to industrialisation. And technologies should be developed in India. Way back in 50s we collaborated with an American company and brought the technology for making automatic transmission in India. Since then, we have been making automatic transmissions whereas this technology emerged in India much later. Although over the period of time, expected industrial growth did not happen, the graphs are changing in last 2-3 years and the future looks bright. To meet this growing demand, we are investing into a new manufacturing facility at Khalapur, Maharashtra. Currently, we have two manufacturing units, at Vikhroli and Bhiwandi. We plan to implement, modern manufacturing technologies in the new plant. 



GST has changed this picture as it allows companies to have their own central warehouses. So, everyone is relooking at their supply chains and logistics.



# Ready for growth!

R&M's Bangalore facility will be acting as a global manufacturing hub for domestic as well as for the overseas markets, says **Hans Hess**, Chairman of Board of Directors, Reichle & De-Massari AG (R&M)

By Niranjan Mudholkar

**Q R&M inaugurated its state-of-the-art production hub in a sprawling facility in Bangalore last year. What's been the progress since then?**

R&M started its Indian operations in the year 2005. From past 13 years, we have witnessed a lot of developments in structured cabling market. By analysing the current go-to-market strategy for India, we have invested in setting up a state-of-the-art production facility which is the largest in our group, as well as Customer's Experience Center in Bangalore. We also invested in the world's best manufacturing lines and fibre assembly units. We are planning to purchase more equipment to increase the capacity. In terms of man power, we have created employment opportunities by moving from 60 to 300 head counts and are planning to double the number by end of 2019. The current production facility is running on 500,000 man-hours which will be increased to 750,000 man-hours.

**Q How do you see the evolution of the Indian manufacturing market for the last 4-5 years?**

India is very vibrant market in terms of industries and manufacturing sector. Industrial manufacturing is one of the major growth contributors for Indian economy. The flagship initiatives of the Indian government like 'Make in India' have placed the country as a feasible manufacturing hub. This drive helped to promote healthy environment and boosted investments from global giants to set up their production facilities in India. Overall, there is a huge surge in Indian manufacturing sector and this continuous further as the sector is booming.



"India is a strategic market for R&M. Currently Indian market marks six to seven percent of our total global share. We are aiming to increase this figure to 10 per cent in next five years."

**Q How was the last financial year (FY) for R&M in India in terms of business and overall growth? How are things in the on-going FY?**

FY 2018 has brought good amount of business for R&M in India. We were active in Smart cities, Metro Rail projects and city surveillance projects. Indian telcos are gearing up to survive the upcoming 5G era and reframing their network backbone with fibre cabling. We would foresee business coming from telcos in the on-going year.

**Q How much does the India operations contribute to the parent company's kitty in terms of percentage?**

India is a strategic market for R&M. Currently, Indian market marks six to seven percent of our total global share. We are aiming to increase this figure to 10 per cent in next five years.

**Q Do you see exporting out of India?**

We see India as a business advantage in terms of exports with less price brackets. R&M's Bangalore facility will be acting as a global manufacturing hub for domestic as well as for the overseas markets.

**Q There is an increasing pressure on manufacturing companies to keep their prices low in a highly competitive market. How are you reducing costs on manufacturing?**

R&M believes in catering high quality products and tech savvy solutions to the clients. It maintains Swiss quality products at the best competitive price range.

**Q Tell us about your future expansion plans. Where do you see R&M India five years down the line? Would you also look at inorganic growth in India?**

We are planning to expand our current production facility and bring in more sophisticated assembly units which can increase our manufacturing capabilities as well as capacity of the unit. We will be deploying more global lines in operations by 2022. R&M is always open for partnerships and will be looking forward for acquisitions. We are also planning to increase our channel reach locally and globally. 





Representatives of the Best Brands on the stage with the Chief Guest Quaiser Khalid (IPS) Inspector General, Protection of Civil Rights Branch, Maharashtra Police.

# Outstanding Brands

An overview of The Economic Times Best Brands in Plastics & Polymers 2019 felicitation ceremony

In the best interest of the Indian plastics industry, The Economic Times along with its Knowledge Partner-BDB India has consolidated a list of 50 Best Brands in the Plastics & Polymers industry.

These Best Brands have offered the Plastics Industry a fantastic combination of economics, excellence, engineering and environment friendly solutions.



## HPL Additives Limited

It is a prominent name in the global market for Polymer Additives and Specialty Chemicals. It is a significant player in the Indian Market with a market share of over 75%. It is also a distinct player in the international industry with exports to more than 49 countries across the world.

## igus India Private Limited

It is a motion plastics specialist. The company undertakes turnkey projects in moving cable management system in various industries including material handling, power plants, defence, automation, etc. It has also contributed towards prestigious projects of Chandrayan Moon mission.

## J P Extrusiontech Limited

Founded in 1987, the company manufactures Plastic Processing Machinery & Equipment. The company has state-of-the-art manufacturing facilities with most modern machine tools.

## Jagmohan Pla-Mach Private Limited

Since 1980 Jagmohan has been designing and building Extrusion Blow Moulding Machines for the plastics industry. Today, it is one of the few companies in India that covers various applications ranging from from 200 ml to 5000 litres.

## J J Plastalloy Private Limited

The company specialises in manufacture of various thermo-plastic compounds and masterbatches. What sets it apart is its tremendous focus on research & development. Along with the domestic market, the company exports to 30 countries.

## Kabra Extrusiontechnik Limited

It is one of India's premier manufacturers & exporter of extrusion plants. The company's constant endeavour is to offer better solutions to plastics processors across the globe. The

company has set benchmarks in plastics extrusion industry with its modern R&D techniques & various processes to cater the market requirements.

## Kandui Industries Pvt Ltd

It is a renowned and dynamic player in the Masterbatch Industry. This leading manufacturer of masterbatches firmly believes in giving the customer the very best quality 'First Time, Every Time & On time'

## Kuraray India Private Limited

Kuraray India is a local subsidiary established in September 2008. Globally, the company has been manufacturing and marketing ethylene vinyl-alcohol copolymers under the name EVAL since 1972, and remains the world leader in EVOH production and market development.

## Mahalaxmi PET Machines

Established in the year 2008, Mahalaxmi Pet Machines has been in the business of manufacturing Pet Stretch Blow Moulding Machines for the past 10 years. The range of its solutions includes Fully Automatic Pet Blow Molding Machines & Semi-automatic Pet Blow Molding Machines.

## Mamata Machinery Private Limited

It is a market leader in the field of flexible packaging. The company offers complete range of Servo Driven Bag and Pouch making machines that take care of customers' plastic bag and pouch converting needs.

## Milacron India Private Limited

It is the leading manufacturer of Plastics Injection Moulding Machines & Blow Moulding Machines in India, serving the entire gamut of Plastic Applications in 40 countries. The company constantly strives to offer its Plastics Injection Moulding Machine customers Innovative Solutions to keep them ahead in this competitive arena.

## ONGC Petro Additions Limited

Popularly known as OPaL, it is a

multi-billion joint venture company incorporated in 2006. It has set up a grass root mega petrochemical project in the port city of Dahej in Gujarat. OPaL aims to provide world-class products and services across the globe by making effective use of technology, while being sensitive towards the environment.

## Plastiblends India Limited

It is India's largest manufacturer & exporter of Colour & Additive Master Batches & Thermoplastic Compounds for the Plastic Processing Industry. The company with strong global aspirations, exports to over 40 countries in the world.

## Ravago Shah Polymers Pvt Ltd

IT is a JV between Ravago, a global manufacturing conglomerate in Belgium & Shah Polymers, a prominent importer & distributor of polymers across India. Within 3 years, the company has rapidly amplified their supply three-folds, penetrated challenging markets and enhanced their infrastructure to deliver consistent excellence to their customers.

## Yudo Hot Runner India Pvt Ltd

Since its foundation in 1980, YUDO has strived to develop and produce quality hot runner system. YUDO is also a leading solution provider for automated takeout robot and factory automation, injection auxiliary equipment, machine tool automation system, Packaging and PET Preform solutions.

## Yupo Corporation

Yupo is a world leader in Synthetic Paper. Green, smart and cost effective. Using one ton of Yupo Synthetic Paper instead of conventional paper, one can save 17 trees and use 250 times less water. It specialises in creating a variety of grades with technical superiority for many applications for industry and design make the company stand tall amongst the rests. 

50 Best Brands in Plastics & Polymers Industry 2019

Ace Designers Limited
Alok Masterbatches Pvt. Ltd
APPL Industries Limited
Blend Colours Pvt. Ltd.
Borouge (India) Pvt Ltd
Brahmaputra Cracker and Polymer Limited
Branson Ultrasonics – A Div. Of Emerson Electric Co. (I) Pvt. Ltd.
Clariant Chemicals India
Covestro India
Dow Packaging Specialty Plastics
DSM India Pvt Ltd.
E.I.DuPont India Private Limited
ECON Machinery Private Limited
Electronica Plastic Machines Ltd.
Ester Industries Ltd.
GAIL (India) Limited
Haitian Huayuan Machinery (India) Pvt. Ltd.
HPL Additives Limited
HRSflow India Pvt. Ltd
Husky Injection Molding System
igus (India) Private Limited
Illig India Private Limited
Indian Oil Corporation Ltd
J P Extrusiontech Limited
Jagmohan Pla-Mach Pvt Ltd
JJ Plastalloy Pvt. Ltd.
Kabra Extrusiontechnik Limited
Kandui Industries Pvt. Ltd.
Kuraray India Private Limited (EVAL)
Lanxess India Private Limited
Lohia Corp Limited
Mahalaxmi Pet Machines
Mamata Machinery Pvt. Ltd.
Milacron India Pvt. Ltd.
Motan Colortronic Plastics Machinery India Private Limited
NA Roto Machines & Moulds India
ONGC Petro additions Limited
Plastiblends India Limited
Rajoo Engineers Ltd.
Ravago Shah Polymers Pvt Ltd.
Reliance Industries Ltd
SABIC India Pvt. Ltd.
SCJ Plastics Limited
Solvay India
Steer Engineering Private Limited
Toshiba Machine (Chennai) Pvt. Ltd.
Windsor Machines Limited
Wittmann Battenfeld India Pvt. Ltd.
Yudo Hot Runner India Private Limited
Yupo Corporation



## BHEL installs first Solar EV charging station under the FAME Scheme

**B**harat Heavy Electricals Limited (BHEL) is setting up a network of Solar-based Electric Vehicle Chargers (SEVC) on the Delhi-Chandigarh Highway.

The first in the series of Charging Stations was inaugurated by Dr. A.R. Sihag, Secretary, Department of Heavy Industry (DHI), in the presence of Atul Sobti, Chairman & Managing Director, BHEL, at Ethnic India Resort, Rai, District Sonapat, Haryana.

Senior officials of BHEL and Haryana Tourism were also present on this occasion.

The project is covered under the FAME scheme [Faster Adoption and Manufacturing of (Hybrid) & Electric Vehicles in India] of the Department of Heavy Industry (DHI), Government of India. The establishment of EV chargers at regular intervals over the entire 250 kms stretch between Delhi and Chandigarh would allay range-anxiety among the Electric Vehicle users and bolster their confidence for inter-city travel. As part of the project, BHEL has also developed a Central Moni-



toring System (CMS) for EV Chargers with a user friendly Mobile App.

BHEL's scope of work in the project includes design, engineering, manufacturing, supply and installation of the EV charging stations along with a Central Monitoring System. Each SEVC station will be equipped with a rooftop solar power plant to supply green energy and EV chargers.

## JBM acquires major shareholding in Linde-Wiemann

**J**BM Group has acquired major shareholding in Germany based Linde-Wiemann GmbH KG, a leading manufacturer of complex structural components & assemblies to automotive OEM's worldwide. The acquisition brings to the foray a plethora of synergies for JBM Group in the form of new products, global customers, new German technologies that will not only help in expanding the global footprint of the home-grown conglomerate but will also aid in adding strategic value to its Indian operations, thereby increasing the Group's long-term competitiveness.

Linde-Wiemann, headquartered in Dillenburg, Germany, specializes in proprietary technologies in areas such as hot forming, tubular assemblies and usage of alternate materials such as aluminium resulting in lightweighting in auto systems. The company has a strong base of 17 manufacturing plants across 8 countries i.e. Germany, US, China, Spain, Turkey, Czech Republic, Hungary and South Africa with an employee strength over 2300 plus.

Speaking on the acquisition, Nishant Arya, ED, JBM Group said, "This business activity is a strategic fit perfectly in sync with our existing scope of operations & solutions and will also further consolidate our global footprint. Both entities together will bring forward an impeccable combination of frugal engineering & world class technology. We are looking forward to leveraging L+W's experience in Europe coupled with our expertise in the auto component domain. JBM and L+W will together focus on developing new products that contribute towards improving the safety and performance of vehicles." He takes over additional charges as Chairman, Linde-Wiemann.

## Hella opens second electronics production facility in India

**T**he global automotive supplier Hella has opened a second electronics plant in India. The new production facility in Mehsana, India, north of the city of Ahmedabad in the state of Gujarat, will meet the growing demand for electronic components and strengthen proximity to local customers.

Production at the new location will initially focus on sensor solutions for accelerator pedal sensors and will gradually be expanded by further electronic products. In the first expansion phase, the plant will comprise a building area of around 5,000 square meters and employ up to 200 people in the future. The investment volume required for this amounts to a lower-double-digit million euro figure.

"India is one of the largest and most promising automotive markets in the world," said Hella CEO Dr. Rolf Breidenbach. "The Indian market therefore plays an important strategic role for Hella. With the opening of a second electronics plant, we are reaffirming our commitment and laying the foundation for further profitable growth in one of the world's fastest-growing regions."

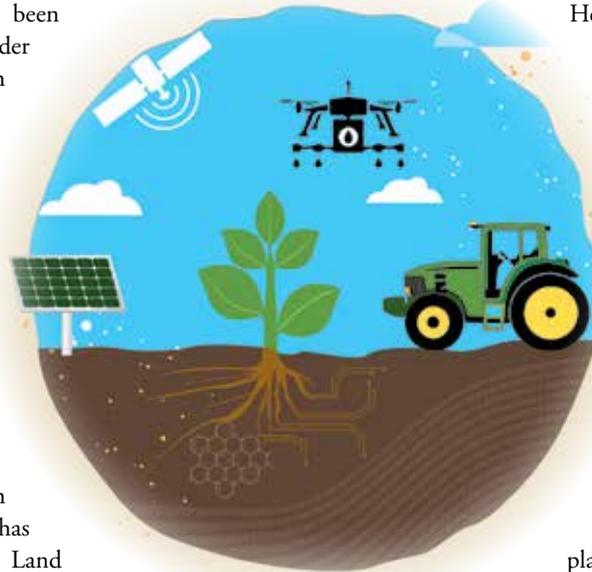
Dr. Naveen Gautam, member of the Electronics Management Board and responsible for Hella's electronics business in India, said: "In comparison with the worldwide development, vehicle production in India has grown significantly faster in recent years. In addition, key market trends such as electrification and digitalization will further boost demand for electronic solutions. By providing specific product solutions for the Indian market and expanding our capacity, we will now be able to meet demand even better."



## Use of Space Technology in Agriculture Sector

The Ministry of Agriculture and Farmers Welfare, has been pro-active in using the space technology in agricultural sector. The Ministry, since early 80s has been funding various projects, under which Indian Space Research Organisation developed methodologies for Crop Production Forecasting. The Department of Agriculture, Cooperation and Farmers Welfare established a Centre, called Mahalanobis National Crop Forecast Centre, in 2012, for operationalisation of the space technology developed in the Indian Space Research Organization, for crop production forecasting. The Department has another centre called Soil and Land Use Survey of India, which uses satellite data for soil resources mapping. Currently, the Department is using space technology for its various programmes/ areas, such as, Forecasting Agricultural Output using Space, Agro-meteorology and Land-based Observations (FASAL) project, Coordinated programme on Horticulture Assessment and Management using geoinformatics (CHAMAN) project, National Agricultural Drought Assessment and Monitoring System (NADAMS), Rice-Fallow Area Mapping and intensification, geo tagging of infrastructure and assets created under Rashtriya Krishi Vikas Yojana, and Crop Insurance.

The space technology helps getting fast and unbiased information about the crop situation in the country. It provides



digital data, which is amenable to various analysis. Because of its synoptic view, it provides images of the whole country in a very short duration.

Hence, this data can be used for various programmes, which need information on crop type, crop area estimates, crop condition, crop damages, crop growth etc.

The Department of Agriculture, Cooperation and Farmers Welfare had launched KISAN [C(K)rop Insurance using Space Technology And geoinformatics] project during October 2015. The project envisaged use of high-resolution remote sensing data for optimum crop cutting experiment planning and improving yield estimation. Under this project, pilot studies were conducted in 4 districts of 4 States viz. Haryana, Karnataka, Maharashtra and Madhya Pradesh. The study provided many useful inputs [for smart sampling, yield estimation, optimum number of Crop Cutting Experiments (CCEs) etc.], which were used to define Standard Operating Procedures for use of satellite data in the revised guidelines of Pradhan Mantri Fasal Bima Yojna (PMFBY).

The Department is carrying out a large number of pilot studies, through government and non-government agencies for use of space technology in optimising CCEs, a major requirement for PMFBY. The Department is also using satellite remote sensing data for monitoring agricultural situation of 29 double risk districts.

## Promotion of Agricultural Mechanization

In pursuance to Budget 2018 announcement a new Central Sector Scheme on 'Promotion of Agricultural Mechanization for In-Situ Management of Crop Residue in the States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' for the period from 2018-19 to 2019-20 has been introduced with the total outgo from the Central funds of Rs. 1151.80 crore (Rs. 591.65 crore in 2018-19 and Rs. 560.15 crore in 2019-20). The Scheme has the following components (100% Central Share):

Establish Farm Machinery Banks for Custom Hiring of in-situ crop residue management machinery- Financial assistance @ 80% of the project cost is provided to the Co-operative Societies of farmers, FPOs, Self-Help Groups, registered Farmers Societies / farmers groups, Private Entrepreneurs, Group of

women farmers or self-help groups for establishment of farm machinery banks or custom hiring centres of in-situ crop residue management machinery.

Financial Assistance to farmers for Procurement of Agriculture Machinery and Equipment for in-situ crop residue management- Financial assistance @ 50% of the cost of machinery/equipment is provided to individual farmers for purchase of machinery/equipment for crop residue management.

Information, Education and Communication for awareness on in-situ crop residue management- Financial assistance is provided to the State Governments, KVKs, ICAR Institutions, Central Government Institutions, PSUs etc. for the activities to be undertaken towards Information, Education and Communication (IEC).



## M&M sells 18,105 units in India in February 2019

**M**ahindra & Mahindra Ltd.'s Farm Equipment Sector (FES) recently announced its tractor sales numbers for February 2019. Domestic sales in February 2019 were at 18,105 units, as against 19,442 units during February 2018. Total tractor sales (domestic + exports) during February 2019 were at 18,978 units, as against 20,658 units for the same period last year. Exports for the month stood at 873 units.

Commenting on the month's performance, Rajesh Jejurikar, President - Farm Equipment Sector, Mahindra & Mahindra Ltd. said, "We have sold 18,105 tractors in the domestic market during February 2019. The tractor industry has remained subdued in February. However, it is expected that positive sentiments associated with the recently executed direct beneficiary transfers to marginal farmers and other pro-rural initiatives by the government, will help create momentum for tractor sales in the near term. In the exports market, we sold 873 tractors."

## First Case IH Sugarcane Harvester delivered in Uttar Pradesh

**R**ecently, CNH delivered first of its sugarcane harvester in Uttar Pradesh. It is the first time that the machine is being adopted in the northern state of India for sugarcane mechanization. Senior officials from Case IH handed over the keys of the sugarcane harvester to HABS Agriculture Farmers from Sambhal and Amroha districts.

Case IH leads the world in cane-harvesting technology. The Austoft Series has a long history of leading the world in cane-harvesting technology, promoting excellent cane quality and ultra-clean samples. It has also earned a solid reputation for its advanced solutions, performance and high levels of customer satisfaction which have been proven the world-over.

Among Case IH's sugarcane harvesting solutions, the Austoft 4000 Series is specifically designed for small to medium landholdings or big plantations with reduced row spacing. The new 4000 Double Plus is compact and designed specially to streamline the harvesting process in sugarcane fields that use reduced row-to-row spacing of 4 feet and above depending upon field conditions.



### UPDATE

## U-Tech Utpadan opens new manufacturing facility

**U**-Tech Utpadan had recently entered into an agreement with BFW – a machine tool major in India to manufacture and supply Chip Conveyors and Coolant Systems that meet BFW's requirements. Just a few months later, the new U-Tech Utpadan manufacturing facility, specially set up under this agreement, commenced production.



The new modern assembly facility and a full-fledged fabrication shop were inaugurated at the hands of Ravi Raghavan, Managing Director & CEO, BFW, recently. L. S. Umesh, CEO and Director of Ace Manufacturing were also present. The project cost, Rs. 1 crore, has been part financed by BFW under a soft loan arrangement.

For U-Tech Utpadan, a part of the Bangalore based 60 crore U-Tech Group, this is a big step forward in its growth story.

Under the 'JIT' model, U-Tech Utpadan will manufacture and stock BFW requirements, supplying the same to the BFW production line just in time, reducing inventory costs. Being in the same city, the physical proximity of U-Tech Utpadan's new facility to the BFW manufacturing plant will also help

reduce transportation costs.

The U-Tech Utpadan plant will work at peak capacity with the major production being utilized by BFW.

Shortly, plan is also to supply to BFW, specially packaged, self-contained, ready to install plug and play Coolant Systems – which BFW can supply directly to its customers.

U-Tech Utpadan to manufacture and supply Chip Conveyors and Coolant Systems that meet BFW's requirements.

Anant Deshpande, Executive Director, will be heading this new project. He will have the able guidance of H.A. Udaya, Founder and Managing Director of the U-Tech Group. Directors Raghupathi and Santosh will support in manufacturing / assembly and complete the core team. 

Source: U-Tech Utpadan



# Selecting Tool Materials

The right grade creates the right tool

**C**utting tools have different design configurations. Some of them are assembled comprising a body with replaceable cutting elements (E.g. indexable inserts), another is wholly produced from solid material. Functionally, a cutting tool may be divided into a cutting part that is involved in cutting, and a mounting part, which is necessary for mounting the tool in a holder or a machine spindle.

A tool material is the material from which the cutting part of a tool is produced. This is the material that directly contacts a workpiece during cutting.

The tool material must be harder than the workpiece material so that it can cut the workpiece. In machining, the tool material needs to withstand mechanical and thermal loads, and oxidation. These factors cause gradual loss of the tool material or a change in its original shape: this is known as 'tool wear'. When wear reaches a certain limit, the cutting part cannot work, and the tool fails. The machining time interval, within which the tool cuts normally from its original (new) state to a failure, is known as 'tool life'. The tool must meet appropriate requirements of hardness, strength, and thermal and oxidation resistance to withstand wear and ensure an acceptable tool life.

Cutting tool manufacturers produce a variety of tools from different tool materials according to the desired tool application. 'Which material is more suitable for my specific needs? Is the material of one producer better than another?' Customers often ask themselves these questions when selecting the tool or choosing their cutting tool supplier.

Industry utilizes the following tool material groups to produce cutting tools: high speed steel (HSS), cemented carbide (hard metal, HM), ceramics, cermet, and ultra-hard materials such as cubic boron nitride (CBN) and polycrystalline diamond (PCD). Each group features various types within the group; these are referred to as "tool material grades" or simply "grades".

## Classification

International standard ISO 513 classifies tool material based on their reasonable applicability with respect to the materials.



ISCAR adopted this standard and uses the same approach in tool development. In accordance with the standard, the tool material grades are characterized by a class of engineering materials, to which a tool produced from the grade can be applied successfully. Each class has a specific identification letter and colour:

P (blue colour) – steel and cast steel except stainless steel with austenitic structure

M (yellow) – austenitic and duplex (austenitic/ferritic) stainless steel and cast steel

K (red) – cast iron

N (green) – aluminium and other non-ferrous metals and materials

S (brown) – high-temperature superalloys and titanium

H (grey) – hard materials like hardened steel and cast iron, chilled cast iron

A classification number follows the letter to show the hardness-toughness ratio of the grade according to a conventional scale. Higher numbers indicate an increase in grade toughness, while lower numbers indicate an increase in grade hardness. Higher numbers represent increasing feed and lower numbers represent increasing speed.

## Cemented carbide

Cemented carbides are very hard materials and therefore they can cut most engineering materials, which are softer. Some carbide grades demonstrate better performance than others when applied to machining a specific class of materials.

A carbide grade is the result of combining cemented car-

CUTTING TOOL MATERIALS FOR INDEXABLE MILLING							NOTES
GRADE	ISO GROUP						
	P	M	K	N	S	H	
IC845	P25-P45						PVD
IC830/IC928	P20-P40	M25-M35			S15-S30		PVD
IC330/IC328	P25-P40	M30-M40			S20-S30		PVD
IC5500	P20-P35						CVD
IC808/IC908	P15-P30	M20-M30	K20-K30		S10-S25	H20-H30	PVD
IC810/IC910	P15-P30		K15-K35				PVD
IC30N	P10-P30					H10-H25	Cermets
IC5400	P10-P20						CVD
IC882*		M25-M40			S20-S30		PVD
IC840*		M20-M35			S15-S25		PVD
IC5820		M20-M35			S15-S25		CVD
IC5100/IC4100			K10-K25				CVD
DT7150			K10-K25			H20-H30	CVD+PVD
IS8			K05-K15				Si <sub>3</sub> N <sub>4</sub>
IC380					S15-S20	H15-H25	PVD
IC28				N15-N30			Uncoated
IC08				N10-N20			Uncoated
IC4				N05-N10			Uncoated

Post-coating SUMO TEC® treatment  
\* Post-coating treatment  
Main application range of grades is emphasized by bold

Figure 1: Table that specifies the cutting area of milling tools

Cemented carbides are very hard materials and therefore they can cut most engineering materials, which are softer. Some carbide grades demonstrate better performance than others when applied to machining a specific class of materials.

bide, coating and post-coating treatment. Only one of these components - the carbide - is an essential component of the grade. The integration of coating and post-coating elements depends on the main field of the grade application. Produced by powder metallurgy technology, cemented carbide is itself a composite material and comprises hard carbide particles ‘cemented’ by a binding metal, which is principally cobalt. The term ‘cemented carbide’ can refer to both — the substrate of a coated grade and an uncoated grade.

Main types of cemented carbide include tungsten (wolfram) carbide (WC), tungsten carbide and titanium carbide (TiC), and tungsten carbide, titanium carbide and tantalum carbide (TaC). Mixed binders, containing not only cobalt but additional elements such as ruthenium, may significantly improve grade performance.

Most cemented carbides used for producing cutting tools integrate wear-resistant coating and are known as ‘coated cemented carbides’. Applying a thin-layer coating to cemented carbide considerably improves the carbide’s working characteristics. The coating may be one- or multi-layer depending on the number of coating materials. Materials used for coating cemented carbides include tungsten carbide and titanium carbide (TiC), alumina (aluminum oxide Al<sub>2</sub>O<sub>3</sub>), titanium carbo-nitride (TiCN), and titanium aluminium nitride (TiAlN). Also, there are

various post-coating treatment processes that are applied to already coated cemented carbide, for example, to the rake surface of an indexable insert.

**Coating Processes**

Two methods may be utilized for coating: Chemical Vapour Deposition (CVD) and Physical Vapor Deposition (PVD). CVD coating is based on chemical reactions in a vaporized medium and PVD uses material sputtering. Technology development allows both methods – CVD and PVD – to be combined for coating cemented carbides as a means of controlling coating properties. E.g., ISCAR’s carbide grade DT7150 features a tough substrate and a dual MT CVD (Medium Temperature CVD) and TiAlN PVD coating. The grade was originally developed to improve machining special-purpose hard cast iron.

**Nano layered PVD coating**

PVD coatings were introduced during the late 1980’s. Applying advanced nanotechnology, PVD coatings performed a gigantic step in overcoming complex problems that were impeding progress in the field. Developments in science and technology brought a new class of wear-resistant nano-layered coatings. These coatings are a combination of layers having a thickness of up to 50 nm (nanometers) and demonstrate significant increases in the strength of the coating compared to conventional methods.

**Applying SUMO TEC technology**

SUMO TEC is a specific post-coating treatment process developed by ISCAR to improve both CVD and PVD coatings: CVD and PVD. In CVD coatings, the difference in thermal expansion coefficients between the substrate and the coating layers causes internal tensile stresses and micro cracks. PVD coatings produce surface droplets. These factors negatively affect the coating and shorten insert tool life. The SUMO TEC treatment has the effect of making coated surfaces even and

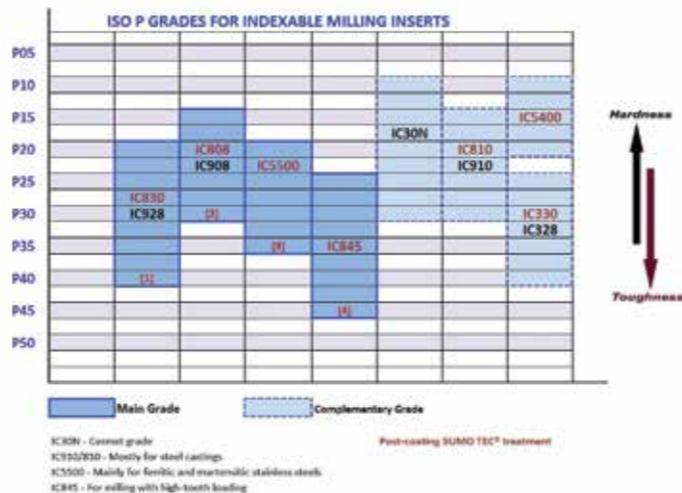


Figure 2: Grades for Indexable Milling

uniform by reducing and even removing the defects - minimizing inner stresses and droplets in the coating.

**Classifying Grades**

ISCAR, which produces a variety of cutting tools with cutting parts mainly fabricated from coated and uncoated cemented carbide, developed a tool material grade characterization system with designated letters indicating the material group and numbers representing identity codes. The numbers also provide quick information on the grade type — E.g. a two-digit number following ‘IC’ in the designation of a cemented carbide grade means that it is an uncoated grade, while a three-digit number relates to a coated grade.

Occasionally, misconceptions occur concerning grade designation for a coating type. IC300, for example, relates to the specific grade in its entirety – including both the grade substrate and coating. Wording such as ‘grade IC328 but with coating IC300’ is inaccurate; the correct definition would be ‘substrate as in grade IC328 and coating as in grade IC300’.

**“The best grade is a grade you have now”**

When a new insert (solid carbide tool or replaceable cutting head) is developed, it is necessary to decide from which grade it will be produced. The answer to this question depends on the insert’s designated application and this represents a starting point for tool designers in their work. Grade properties and their relative hardness-toughness ratio will be the main determinants to take into consideration. In some cases, stock availability and delivery terms may be the significant factors in the decision-making process.

As people engaged in production like to say, the best carbide grade is the grade that you have in your stock. This statement can be applied to the cutting tool as a whole; it is probably true if it relates to a production situation that requires an immediate decision. However, productive process planning - or effective tool stock management - requires a more in-depth applicative analysis of the pros and cons of the proposed carbide grades.

Selecting a grade is strongly connected with the cutting geometry of a tool and other factors. The cutting tool manufacturer should provide the customer appropriate information about grade properties to assist in their correct selection. While computerized grade selection systems are impressive



Developments in science and technology brought a new class of wear-resistant nano-layered coatings. These coatings are a combination of layers having a thickness of up to 50 nm (nanometers) and demonstrate significant increases in the strength of the coating compared to conventional methods.

and effective, often simple graphical figures, charts and tables can act as a good information ‘compass’ to visualize a grade position in the field of application in accordance with standard ISO 513, and characterizing the grade properties compared with other grades.

ISCAR uses charts and tables to specify the cutting area of milling tools (Fig. 1, 2) and proposes suitable grades for replaceable inserts in indexable milling cutters, solid (mainly solid carbide) endmills, and replaceable solid milling heads with Multi-Master adaptation.

ISCAR characterizes the grades as main and complementary. The main grades are more popular in machining specific engineering materials, but complementary grades can be effective as well in certain cases. When a main grade is not available for producing a certain product, a complementary grade provides an acceptable alternative.

The tables provide summary data for grade applications and the charts show ‘an applicative map of grades’,

in coordinates of classification numbers from standard ISO 513. The figures often prioritize the main grades by numbers in brackets below the designation of a grade. Prioritizing is general in character and is intended to assist in selecting the correct grade when there is insufficient information about the application.

The basic principle for selecting the grades is that when abrasive wear is dominant, a hard grade should be used, whereas a tough grade is needed for substantial mechanical loading during cutting. For example, for finish milling with typically small machining allowance (machining stock), high cutting speed and low feed, hard grades will be more efficient. However, tough grades will be required for heavy-duty roughing that removes significant volume of material and features considerable cutting load.

Using summarized tables and charts to represent performance attributes of various parameters is a well-known grade selection tool that is often preferred by tool manufacturers, even with the myriad of digital options available today. The simplicity and clear visuals offered by the traditional tables and charts provide important data in an easily interpretable and effective way, allowing optimal selection of the right tool materials for each application.

Source: ISCAR



## FIBRO India inaugurates its second phase of operations

**F**IBRO inaugurated its second phase of Indian operations near Pune recently at the hands of Klemens Schmeiderer, Speaker of the board of LÄPPLE group and Jürgen Gurt- Managing Director of FIBRO GmbH, the part of LÄPPLE group. FIBRO India was established in a rented place in 2008 & subsequently it moved to its own current place in Chakan, Pune in 2013. It started primarily



to manufacture standard parts for Indian customers as well as for FIBRO Germany and other group companies abroad. The basic concept was 'German Precision Crafted in India'. In the whole LÄPPLE group, this has been the first manufacturing unit outside Germany. Having tested the success for standard parts in India, the FIBRO management decided to delegate the Rotary Table business also to FIBRO India in 2015. However, the management realized that the Rotary table business also should follow 'Standard Parts' business model i.e. local manufacturing. As a result, FIBRO India acquired the neighbouring

plot & constructed plant primarily for Rotary Tables which was inaugurated.

FIBRO is the pioneers in rotary tables for automation & metal cutting. The largest table manufactured by FIBRO is of 6-meter diameter & is capable of carrying 400 Tons work load. During the inauguration, Schmeiderer said that FIBRO India has been the major milestone for the whole LÄPPLE group as a part of its

globalization strategy and he is happy with the results. On the other hand, Gurt said that they are planning to invest more for localization of additional products for standard parts and rotary tables. He also added that the products manufactured by FIBRO India ensure strict adherence to the quality standards as per the global standards. Additionally, FIBRO India launched its Made in India Rotary Table for Automation - FIBRO TOR ER 13 on this occasion. Also, the company launched its website & webshop for the convenience of its customers. 

Source: Fibro India

### PRODUCTS

## New automation options for Phoenix Large-Format Fiber Lasers

**L**VD Company nv has introduced new automation offerings for its Phoenix FL 4020 & Phoenix FL 6020 large-format fiber laser cutting machines, including options for an automated load/unload system & a range of Compact Tower (CT-L) solutions for the Phoenix FL 4020. The flexible automation



systems keep pace with the high-speed cutting of the Phoenix laser & reduce material handling & preparation time to maximise machine productivity. They also facilitate fully automated, lights-out processing.

& fabricators processing a high variety of jobs where parts separation & sorting is a bottleneck. It is offered as an option or can be retrofitted to a Phoenix FL 4020 or -6020 machine.

### Robust Load/Unload Pallet System

The load/unload automation system available for Phoenix fiber laser models 4020 and 6020 handles maximum sheet sizes of 4000 x 2000 mm (Phoenix FL 4020) and 6000 x 2000 mm (Phoenix FL 6020) & material thicknesses from 0.8 to 25 mm. It offers fast process cycle times for complete loading & unloading: just 65 seconds for Phoenix FL 4020 & 90 seconds for the Phoenix FL 6020. The load/unload system is a robust construction to handle large pallets. Unprocessed material can be stacked to a height of 159 mm & finished parts can be stacked as high as 240 mm. The system features a streamlined design that enables to access the raw material & easily remove the unload pallet from above. The area above the laser table remains free for manual load & unloading. LVD's load/unload system is ideal for shops with high production volumes

### Compact Material Storage and Retrieval Unit

The Phoenix FL 4020 is available with six different versions of Compact Tower (CT-L) for loading, unloading & storage of raw material & finished parts. The CT-L enables automated production from stored raw material to stacked, cut parts in a compact, small footprint system. CT-L versions for the Phoenix FL 4020 include a basic system with one tower in 5, 10 or 14-pallet configurations, as well as a two-tower CT-L system for high-volume applications. The second tower adds 9 pallets to the CT-L 5, 14 pallets to the CT-L 10, and 18 pallets to the CT-L 14. Each input and output pallet has a capacity of up to 3000 kg and 240 mm of stacking height. Maximum sheet dimensions are 4095 x 2055 mm, 20 mm thickness.

Source: LVD



## Innovative fast-charging technology



Thanks to its know-how and a comprehensive portfolio, the HARTING Technology Group is an expert partner to all national automotive manufacturers and is well-positioned to help the transportation transition achieve a technological and infrastructure breakthrough. At the 89th Geneva International Motor Show, the family-owned company plans to present its innovative fast-charging technology on the Rinspeed 'microSnap' vehicle.

As a pioneer for reliable, clean and environmentally friendly e-mobility, subsidiary HARTING Automotive offers tailor-made solutions and components for all relevant markets and develops and produces charging equipment for electric and

plug-in hybrid vehicles. In addition to the number of electrical charging points and a charging infrastructure, the acceptance and success of electric vehicles will crucially depend on easy to handle, cost-saving and time-saving charging technology.

The technology group can point on decades of experience in connection and transmission technology for data, signals and power, and early recognised the increasing environmental awareness within society with respect to vehicle traffic and the resulting demands and opportunities. "Air pollution control requirements will only be met with e-mobility, especially in cities. Consequently, we've focused on this in our R&D and production and are also involved in all aspects of standardisation," emphasises Marco Grinblats, Managing Director of subsidiary HARTING Automotive.

HARTING manufactures power cables for e-mobility and actuators for automotive applications at its Romanian sites in Sibiu and Agnita. Due to the strong increase in demand, the production capacity at both plants was increased significantly last year.

The technology group has been a direct supplier to VW for a specific e-mobility solution since the end of 2016. Various charging equipment is produced for several models of the VW Group, e. g. the Porsche Panamera 4-Hybrid. HARTING Automotive is also a Tier 1 supplier to the BMW Group.

Source: Harting

## Lightweight jaws offer numerous advantages in turning

With a wide range of lightweight initiatives with chuck jaws, SCHUNK is breathing new life into turning applications. The competence leader for gripping systems and clamping technology is now offering a range of diverse claw and stepped jaw models for raw part clamping from the world's largest range of standard chuck jaws also optionally as a lightweight version. Depending on the jaw type, one saves around 40 percent of the weight but completely retain all of the characteristics of the standard jaws, such as stability.

The lightweight chuck jaws primarily reduce the effects of centrifugal force at high speeds, which reduces the loss of clamping force and increases process reliability. Alternatively, parts that are sensitive to deformation require lower clamping forces in order to machine workpieces in a process-stable way.

Other advantages are improvements to the interfering contour as well as energy saving since less mass is accelerated and slowed down.

The weight-reduced chuck jaws therefore provide the ideal



preconditions for the use on lightweight lathe chucks such as the SCHUNK ROTA NCE, but also on conventional lathe chucks with fine serration or tongue and groove.

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[www.in.schunk.com](http://www.in.schunk.com)



## Technological Prowess

Ace Micromatic showcases its latest machines at IMTEX 2019. Here is an overview.

Ace Micromatic Group participated in the 50th Year of AIMTEX held at the Bangalore International Exhibition Centre. With the largest stall at the event, displaying over 35 machines across all machining capabilities, Ace Micromatic Group was 'All you need in machining'. As the largest machine tools group in India which aims to empower shop-floors worldwide the group didn't hold back in displaying the latest technologies ranging from Turning, milling, grinding, special purpose machining, additive manufacturing, accessories, productivity solutions, service and even provided ecosystem solutions that offered complete and comprehensive solutions across all things machining.

The group was present in two halls, displaying machining capabilities at Hall 5 and additive manufacturing and Industry 4.0 and IoT at hall 6.

The latest innovations displayed by the group in turning are:

### Horizontal Wheel turning machine - WLH 22

The machine is built keeping in mind the demands in the Automotive sector for Alloy wheel in the two-wheeler segment. The machine can accommodate up to 22" in diameter and is equipped with an electromagnetic failsafe brake for x-axis & sensor for x-axis drive belt failure. Reinforced with a rigid build, hardened and ground bolt on guideways for both axes, the machine is equipped with a servo turret and hydraulic clam and de-clamp for efficient and accurate machining.

### 4 Axis Vertical Alloy Wheel turning - WLV 24 T

Catering to the four-wheeler segment the dynamic machine tool is perfect to machine alloy wheels. Accommodating a diameter of up to 24" the twin servo turret can hold six tools with hydraulic clamp and de-clamp for efficient machining. Capable of parallel cutting, the machine is equipped with two sets of independent axis (X L & R . Z L & R ) to help reduce



cycle time.

With Hydraulic counter balance for both X-axis and hardened and ground guideways for all axes, the machine has a rigid build with rigid cartridge type spindle A2-11 for high volume machining.

### Competitive Turn-mill centre - LT-2 LM M

The perfect import substitute compact Turn-Mill Centre-LT 2 LM M is developed on the present LT 2 LM Platform. Equipped with a Pragati DST 80 Servo turret with hydraulic clamping and de-clamping the powerful 11/15 kW spindle motor is made for small segment efficient machining.

The latest innovations displayed by the group in milling are

### 5 Axes machining centres

The ergonomically designed compact footprint machine offers complex machining at a cost-effective price. With a highly accurate rotary table and an isolated work zone for better chip and coolant management, the machine is suitable for sectors like Aerospace components that demand high-precision machining.

### MCH-400 XL (HMC –Pallet Pool)

This high-volume machine is made keeping in mind the massive production challenges for better efficiency. The machine comes with five storage locations plus two machining stations, saving space with an ergonomic design for better productivity.

Furnished with high-capacity tool changer of 122 tools the machine can perform non-stop and is perfect for continuous machining.

Source: Ace Micromatic Group



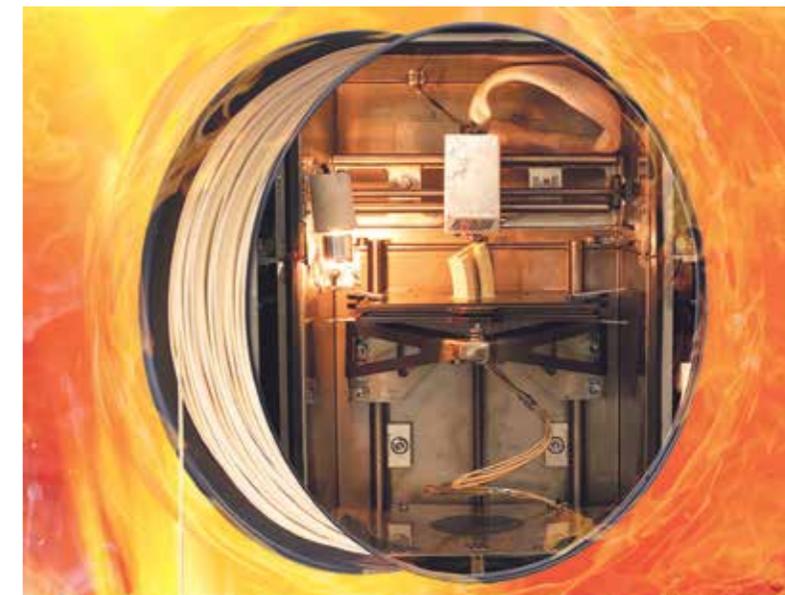
## One hot topic

igus advances the development of high-temperature filaments with self-built HT printer.

"A good example of our Low Cost Automation concept," says Tom Krause, igus GmbH, about his team's newly designed and constructed high-temperature 3D printer

Low Cost Automation in our own factory: Following this idea, igus has built an HT-3D printer for the development of new high-temperature filaments using in-house mechanical engineering components. Thus, complete linear systems, consisting of drylin W linear guides, dryspin lead screws made of stainless steel and the igus standard stepper motors were used. Thanks to the new 3D printer, users can now use a lubrication-free and maintenance-free filament for the production of heat-resistant special parts with the iglidur J350 high-performance plastic.

High temperatures not only create problems for many machine elements in plants but also conventional 3D printers. In order to develop new filaments for wear-resistant parts in high-temperature applications, igus has now built a high-temperature 3D printer. For the mechanical system, the igus engineers relied on heat-resistant stainless steel components of the maintenance-free drylin W linear guide and smooth-running dryspin high helix lead screws in the X, Y and Z axes. Lubrication-free liners and lead screw



"In the new 3D printer, we rely on standard components from igus, which work reliably even with the high installation space temperatures. We use a nozzle that can melt the filament at a temperature of up to 400 degrees Celsius."

Tom Krause, Head of Additive Manufacturing Business Unit, igus GmbH

nuts made from the wear-resistant high-performance plastics iglidur X and iglidur C500 ensure precise adjustment of the building board, even with installation space temperatures of up to 200 degrees Celsius. "In the new 3D printer, we rely on standard components from igus, which work reliably even with the high installation space temperatures. We use a nozzle that can melt the filament at a temperature of up to 400 degrees Celsius," explains Tom Krause, Head of Additive Manufacturing Business Unit at igus GmbH. "Thus we were able to develop and extensively test a new filament for high-temperature environments with iglidur J350."

In order to develop new filaments for wear-resistant parts in high-temperature applications, igus has now built a high-temperature 3D printer.

### Wear-resistant parts suited for up to 180 degree Celsius

The lubrication-free iglidur J350 material is already offered by the motion plastics specialist in the plain bearing and bar stock range. The high-performance plastic is characterised above all by its extremely high wear resistance and its low coefficients of friction on steel. The endurance runner is particularly suitable for rotation and has a high dimensional stability at temperatures up to 180 Celsius.

Medium to high loads are no problem for the iglidur J350. Using the high-temperature 3D printer, the filament can be processed well on a printing plate equipped with a PET film. Typical application areas of the new filament can be found, for example, in the field of vending machine technology, in the automotive sector, in the glass industry and in mechanical engineering. In addition to iglidur J350, six more filaments are available from igus: from materials approved for food contact up to chemical-grade materials.

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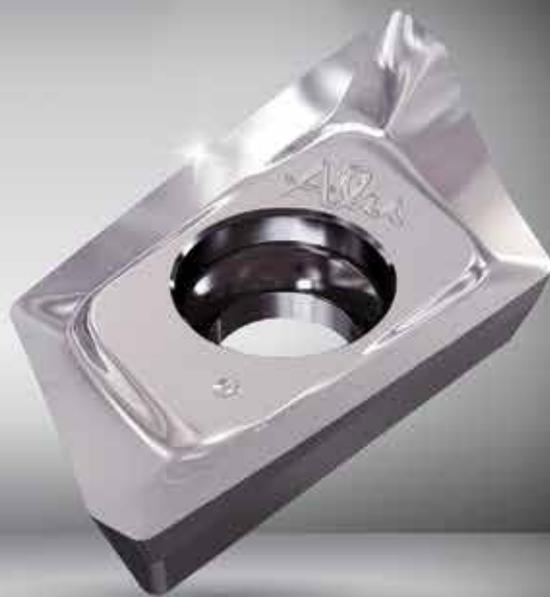
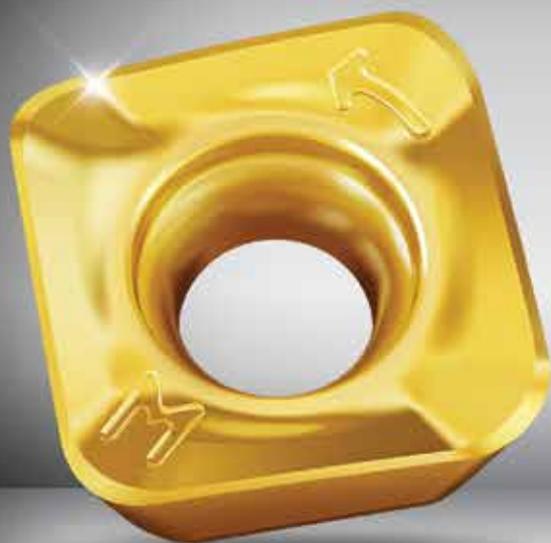
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