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ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

# THE MACHINIST

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Technology

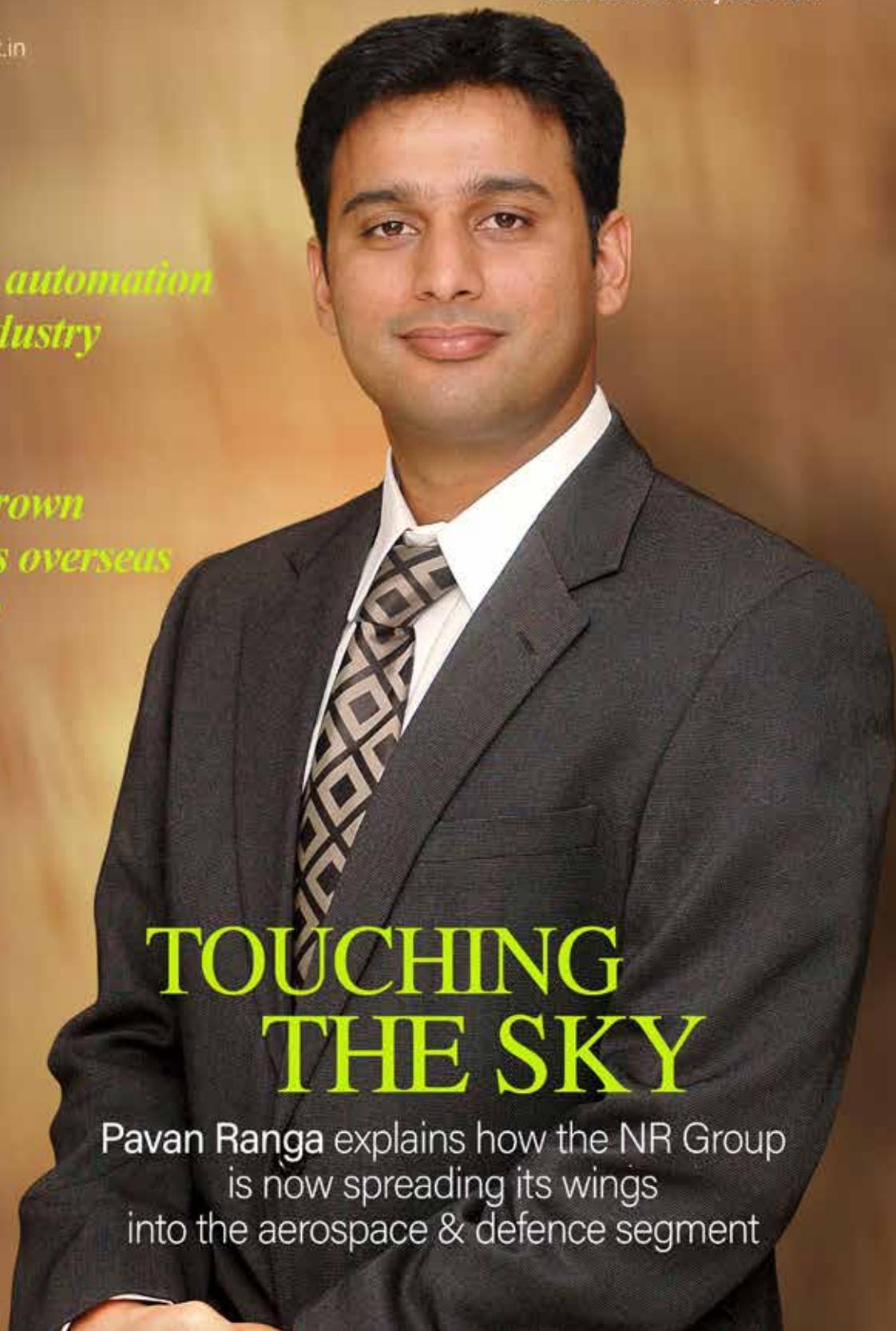
*Advanced automation  
in steel industry*

Interview

*A home-grown  
company's overseas  
expansion*

## TOUCHING THE SKY

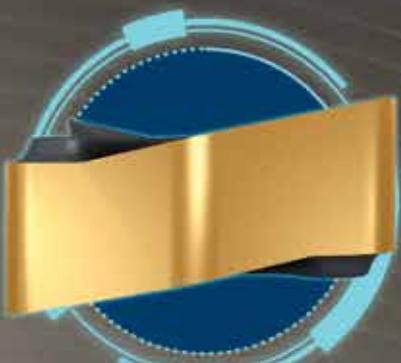
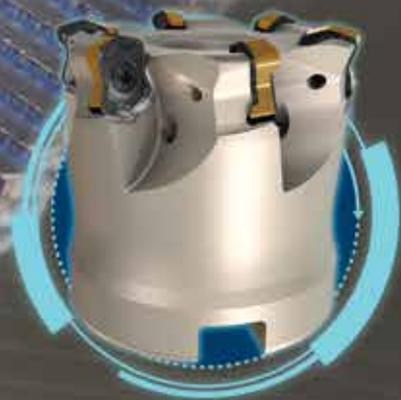
Pavan Ranga explains how the NR Group  
is now spreading its wings  
into the aerospace & defence segment



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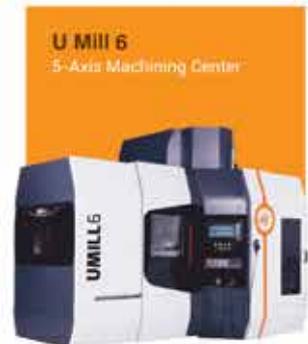
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## BUILDING THE NEW INDIA

**T**he Union Budget 2019-2020 has presented an excellent roadmap for building the New India. It has comprehensively addressed the fundamentals of a growing economy. And while it has avoided being populist, I believe that there should have been a little push for the middle class. Nevertheless, the Union Minister of Finance and Corporate Affairs, Smt. Nirmala Sitharaman has brought out a commendable budget in her maiden attempt.

This budget also recognises the fact that India should not only get integrated into global value chain of production of goods and services but must also become a key part of the global financial system. This vision is vital to India's emergence as an economic power in the global arena.

**“THE VISION TO DEVELOP INDIA AS A GLOBAL HUB FOR ELECTRICAL VEHICLES REQUIRES MORE ACTION ON THE GROUND. IMPORTANTLY, THE ACTION HAS TO BE COLLABORATIVE IN NATURE.”**

I am equally happy that the budget envisages taking India forward through technology, importantly in both urban and rural areas. The government has also looked at Big Data and AI; this will surely enhance decision making, speed and accuracy leading to the ability to benchmark and track the progress of developmental projects. The boost provided to the electrical vehicles industry does not come as a surprise at all. It is in line with the government's policy in the last few years. Of course, the vision to develop India as a global hub for EVs is definitely commendable. But it requires more action on the ground. Importantly, the action has to be collaborative in nature.

The proposal to streamline multiple labour laws into a set of four labour codes to ensure standardization and streamlining of registration and filing of returns is also remarkable. Now, the time is ripe to make it happen.

Editor & Chief Community Officer

**THE MACHINIST**  
ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

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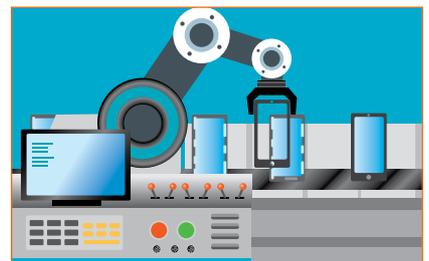
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## Economic Survey focussed on GDP growth rate of 8%; #Economy@5trillion

**THE ECONOMIC SURVEY** lays down the strategic blueprint for fructifying the Honourable Prime Minister's vision of India becoming a \$5 trillion economy by 2025 (#Economy@5trillion). The Economic Survey 2018-19 was tabled by the Union Minister for Finance and Corporate Affairs, Nirmala Sitharaman in the Parliament recently.

The theme of the Survey is about enabling a "shifting of gears" to sustained economic growth for objective of US\$5 trillion by 2024-25. To achieve the vision of #Economy@5trillion, India needs to shift its gears to accelerate and sustain a real GDP growth rate of 8%. The Survey departs from traditional thinking by viewing the economy as



being either in a virtuous or a vicious cycle, and thus never in equilibrium. Rather than viewing the national priorities of fostering economic growth, demand, exports and job creation as separate problems, the Survey views these macroeconomic phenomena as complementary to each other. The cover design captures the idea of complementary inter-linkages between these macroeconomic variables using the pictorial description of several inter-linked gears. The team for Economic Survey 2018-19 has been guided by "blue sky thinking."

The Survey adopts an unfettered approach in thinking about the appropriate economic model for India. This endeavour is reflected in the sky blue cover of the Survey.

## Servicification of manufacturing helping global trade: Piyush Goyal

**UNION MINISTER OF COMMERCE & INDUSTRY AND RAILWAYS**, Piyush Goyal, held a series of bilateral talks with a number of countries on the side lines of the two-day G20 Ministerial on Trade and Digital Economy in Tsukuba, Ibaraki, Japan recently. During the bilateral meetings with host Japan and other



countries, Piyush Goyal emphasized the need for reciprocal market access for Indian products. He said that the slowdown in global trade and investment is of serious concern to all of us as it adversely affects economic growth, develop-

ment and job creation. He called for de-escalating trade tensions and reviving confidence in the rules based multilateral trading system which all countries had so painstakingly created. The Commerce Minister said that while India is committed to working towards building free trade, that is inclusive and development centric to bring prosperity to people around the world, focus on the imperatives of meeting the goals of SDGs, and eliminating poverty and deprivation must not be lost.

He further reiterated that with the advent of digital technologies, services are vital drivers of growth. Servicification of the manufacturing sector is enhancing the importance of services in global trade. Major investment is also being driven by the services sector. "Thus, we need to remove barriers and facilitate temporary movement of highly skilled professionals to sustain this investment and growth."

## Indian Navy wants partners for six P 75(i) Submarines: Cost Rs.45000 crore

**AS A MAJOR INITIATIVE** towards 'Make in India', the Government immediately on taking over has issued the Expression of Interest(s) for shortlisting of potential Indian Strategic Partners (SPs) for "Construction of six Conventional Submarines" for P-75(I) Project of the Indian Navy on 20 Jun 19. The project cost is about Rs 45,000 Crores. This is the second project being undertaken under the latest Strategic Partnership (SP) Model, with the first being the procurement of 111 Naval Utility Helicopters (NUH). This would provide a major boost to the indigenous design and construction capability of submarines in India, in addition to bringing in the latest submarine design and technologies as part of the project. The SPs in collaboration with OEMs have been mandated to set up dedicated manufacturing lines for these submarines in India and make India the global hub for submarine design and production. All six submarines under this project will be built in India by the selected Indian Strategic Partner in collaboration with the selected OEM.

## UP Govt. plans Defence Industrial Corridor

**THE GOVERNMENT** of Uttar Pradesh has informed that they have procured 678 hectares of land in Jhansi for the purpose of Defence Industrial Corridor. They propose to acquire a total of 862 hectares of land in phase I and the procurement of remaining land is expected to be completed this month (July 2019). Jhansi is one of the identified nodes of Defence Industrial Corridor being set up in Uttar Pradesh. The setting up of Defence Corridor will facilitate in the development of internationally competitive enterprises to manufacture and maintain all major defence eco-system and platforms within the country in order to be strategically independent in defence manufacturing.



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## GKN Aerospace's JV in India wins contract

**GKN AEROSPACE** has announced that its Indian Joint Venture, Fokker Elmo SASMOS Interconnection Systems Ltd (FE-SIL), in Bangalore has been awarded a contract to manufacture electrical wiring interconnection systems (EWIS) for the Pilatus PC-24.

The USD multi-million contract of the program is another milestone in the business relationship between GKN Aerospace's FE-SIL and Pilatus Aircraft Ltd that currently includes the company providing wiring systems for the PC-21 and PC-7 MkII. Activities in Bangalore to start the production for PC24 EWIS involve more than 30 highly skilled operators in India. This number will grow after further production ramp-up.

More than 30 PC-24s are currently in operation around the world, including three PC-24s used as medevac aircraft for the Royal Flying Doctor Service of Australia. Pilatus plans on delivering about 40 PC-24 Super Versatile Jets in 2019 and 50 in 2020.



John Pritchard, CEO of GKN Aerospace ASEA said: "We are very proud of our continued participation in the Pilatus aircraft family. We've been producing EWIS at FE-SIL in India for Pilatus aircraft since 2015 and thanks to the team's continued commitment to quality, on-time delivery and customer focus, we have strengthened our business relationship for many more years to come."

## India's 1st BS-VI certificate for 2-wheelers released

**INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY** (ICAT) released India's first Type Approval Certificate (TAC) for Bharat Stage - VI (BS-VI) norms for the two-wheeler segment in New Delhi. The certificate was released and handed over by Director ICAT, Dinesh Tyagi to top officials of the OEMs (Original Equipment Manufacturers).

Speaking on this occasion Dinesh Tyagi said that this is India's first certification in the two-wheeler segment for the BS-VI norms that are the latest emission norms as notified by the Government of India. He said that ICAT has taken many steps in providing assistance and support to the automotive industry for the development, optimization and calibration of engines and vehicles for complying with these upcoming emission norms.

Bharat Stage norms are the automotive emission norms which the automotive manufacturers have to comply to sell their vehicles in India. These norms are applicable to all two-wheelers, three-wheelers, four-wheelers and construction equipment vehicles.

To curb growing menace of air pollution through the vehicles emission, the Government of India has decided to leapfrog from the existing BS-IV norms to the BS-VI, thereby skipping the BS-V norms, and to implement the BS-VI norms with effect from 1st April 2020. Only those vehicles will be sold and registered in India from 1st April 2020 onwards, which comply to these norms. The norms are stringent and at par with global standards.

## Schneider's takeover of Larsen & Toubro's electrical and automation business approved by CCI

**THE COMPETITION COMMISSION OF INDIA** (Commission) has published the order approving the acquisition of electrical and automation (EA) business of Larsen & Toubro Limited (L&T) by Schneider Electric India Private Limited (Schneider) and MacRitchie Investments Pte. Ltd. (MacRitchie). The approval is subject to modifications that are aimed at eliminating the likely anti-competitive effects of the proposed acquisition. The above order was a result of an in-depth inquiry undertaken pursuant to the notice given by Schneider and MacRitchie under sub-section (2) of Section 6 of the Competition Act, 2002 (Act) on July 16, 2018. The Commission found that Schneider and L&T are the first and second leading players in terms of sales and distribution reach in the low voltage (LV) switchgear industry in India. Their consolidation would inter alia lock a large part of the LV switchgear distributors and other downstream players with the combined entity, thereby making it difficult for new players to enter the market. Thus, the Commission was of the view that the acquisition of EA business of L&T would reduce competition and confer the combined entity, the ability to increase price.

## Visaka Industries to commission INR 100 crore plant

**VISAKA INDUSTRIES LIMITED** has announced the expansion of its Vnext division with a new plant for Vnext board in Tamil Nadu to increase its capacity from 1,70,000 MT to 2,20,000 metric ton (MT). The company will be investing INR 100 crore using internal accruals for the new plant. The plant will be completed in the next 15 months. It will cater to the market demands of Vnext board in the southern markets of the country. Currently, Vnext plants are operational at Telangana, Maharashtra, and Haryana. Vnext's range of products is designed to substitute plywood and gypsum plaster boards with eco-friendly, modern and sustainable materials. It has a large customer base across India, the Middle East and Africa. Vamsi Gaddam, the Joint Managing Director of Visaka Industries, said, "We have been in the fibre cement board market for over 10 years and have created a strong base in terms of network and a brand. Vnext's new plant in Tamil Nadu is a part of our expansion plans of the Vnext division."

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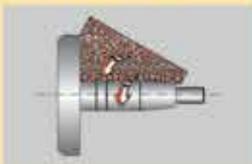


FIG-300 CNC  
FOUR STATION TURRET



FIGE-150 CNC  
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SWH-400 CNC  
AUTO LOADING

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SG-106 CNC  
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SGR-60  
ROTARY GRINDER



SG-63  
HYDRAULIC / PLC

## Automats



A15/25

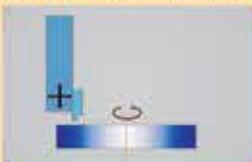


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# • MARK YOUR DIARY •

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

**AUGUST**  
**08–11, 2019**

**Delhi Machine Tool Expo**  
Greater Noida, India  
[www.mtx.co.in](http://www.mtx.co.in)

**AUGUST 30**  
**–SEPTEMBER 1,**  
**2019**

**AgriTech India 2019**  
Bangalore, India  
[www.agritechindia.com](http://www.agritechindia.com)

**SEPTEMBER**  
**16–21, 2019**

**EMO Hannover 2019**  
Hannover, Germany  
[www.emo-hannover.de](http://www.emo-hannover.de)

**SEPTEMBER**  
**20–22, 2019**

**TechIndia**  
Mumbai, India  
[www.techindiaexpo.com](http://www.techindiaexpo.com)

**SEPTEMBER**  
**25–28, 2019**

**Automation Expo 2019**  
Mumbai, India  
[www.automationindiaexpo.com](http://www.automationindiaexpo.com)

**OCTOBER**  
**7–10, 2019**

**Motek**  
Stuttgart, Germany  
[www.motek-messe.de/en/](http://www.motek-messe.de/en/)

**DECEMBER**  
**10–14, 2019**

**Excon**  
Bengaluru, India  
[www.excon.in](http://www.excon.in)

**JANUARY**  
**23–28, 2020**

**IMTEX Forming 2020**  
Bengaluru, India  
[//imtex.in/imtex2020/](http://imtex.in/imtex2020/)

**FEBRUARY**  
**26–28, 2020**

**Asiamold**  
Guangzhou, China  
[asiamold-china.cn.messefrankfurt.com](http://asiamold-china.cn.messefrankfurt.com)

**MARCH 31**  
**–APRIL 4, 2020**

**SIMTOS**  
Seoul, South Korea  
[www.simtos.org](http://www.simtos.org)

**APRIL 22-25, 2020**

**Die & Mould India**  
Mumbai, India  
<https://www.diemouldindia.org/>

**SEPTEMBER**  
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## BMW Group India appoints new President & CEO



Rudratej Singh has been appointed as the President and Chief Executive Officer of BMW Group India effective 1 August 2019. Rudratej 'Rudy' Singh brings more than 25 years of experience and has held multiple leadership positions both in the automotive and non-automotive industry. In his last assignment, Rudratej Singh was the Global President at Royal Enfield. Prior to this, he worked with Unilever in India and international markets for over 16 years. Singh graduated from Delhi University and holds an MBA degree in Marketing and Finance from Institute of Management Technology, Ghaziabad.

Hendrik von Kuenheim, Senior Vice President, Region Asia-Pacific, Eastern Europe, Middle East and Africa, BMW Group said, "We are delighted to welcome Mr. Rudratej Singh as the President and Chief Executive Officer of BMW Group India. As a priority market for the BMW Group, India presents tremendous potential for future growth and development for the luxury automotive segment. Having worked across diverse industry segments, Mr. Singh has deep understanding of strategic business techniques based on fundamental consumer insights, a transformational leadership approach and fresh thinking that will strengthen BMW Group's operations in India."

## Surendra Ahuja named as Managing Director of Boeing Defence India



Boeing has announced the appointment of Surendra Ahuja as managing director of Boeing Defence India (BDI), based in New Delhi.

Ahuja will lead BDI in alignment with Boeing's accelerated growth strategy for India. This includes the execution of current and future programs across all BDI business sectors in a collaborative environment with Boeing Defense Space and Security (BDS) and Boeing Global Services (BGS). Ahuja will be responsible for delivering on Boeing's commitments to its Indian defence customers while positioning it for new business opportunities. Ahuja will work closely with Salil Gupte recently appointed as the leader and president of Boeing India.

"We are thrilled to have Surendra Ahuja join our team," said Torbjorn (Turbo) Sjogren, vice president, International Government & Defence. "His vast experience and capable leadership will allow us to accelerate growth in India and build upon the value we provide to our defence customers."

Ahuja joins Boeing from the Indian Navy where he served as Rear Admiral before early retirement in 2018. He has held several leadership and operational roles with the Indian Navy, as well as an assignment with the U.S. India Defence Trade & Technology Initiative (DTTI), where he led the joint working group of Aircraft Carrier Technology Cooperation from inception, in co-operation with the U.S. Navy.

As a former Indian Navy Test Pilot, Ahuja has flying experience on 22 different types of aircraft. He also holds the distinction of becoming the first Indian pilot to fly from a U.S. Navy aircraft carrier.

## Ashok Leyland announces organisational changes

Ashok Leyland (ALL) has announced a set of organisational changes. These changes are in line with the company's plans to shape the future growth strategies and its portfolio of investments.

Gopal Mahadevan, who was recently appointed as Whole Time Director in addition to his current role as CFO and President, Customer Solutions Business, will also be responsible for Information Technology (IT), Corporate Strategy & Business Analytics.

Anuj Kathuriawas appointed as Chief Operating Officer and will be responsible for all of Medium & Heavy Commercial Vehicle (MHCV) Business.

Nitin Seth was appointed as Chief Operating Officer and will be responsible for Light Commercial Vehicles (LCV), Defence, International Operations (IO) & Power Solutions Business (PSB).

Dr. N Saravanan who was recently appointed as Chief Technology Officer in addition to his current role will also be responsible for the Electric Vehicles (EV) Business.

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## INDIA RISING!

The Machinist captures the essence of Budget 2019-2020



Announcements such as proposed tax breaks on Mega investments for lithium battery and cell manufacturing will pave way for a "Make in India" focus across entire supply chain of EV manufacturing in India.

**Sulajja Firodia Motwani**, Founder and CEO of Kinetic Green and Vice Chairperson, Kinetic Group

We welcome the move of the Government to reduce corporate tax by five percent for companies having turnover up to Rs.400 crore was a long pending reform, and this will create extra space for mid-size companies to invest more into R&D and capacity creation.

**Rajeev Kapur**, MD, Steelbird Helmets & President, Two Wheeler Helmet Manufacturers Association

Indian economy will become a 3 trillion-dollar economy in the current year and is on the path of achieving the Prime Minister's vision of a five trillion-dollar economy by 2024-25.

Union Minister of Finance & Corporate Affairs, **Nirmala Sitharaman**

While the budget talks about the need to curb non-essential imports and cut India's import dependence, we are hopeful that steps will also be taken to safeguard domestic industries like aluminium, copper, iron ore and coal by raising import duties or correcting inverted duty structure.

**Anil Agarwal**, Executive Chairman, Vedanta Resources

Reinforcement on public private partnerships (PPP) will gain momentum with faster development of railway infrastructure, including rolling stock, and gives reassurance to the private sector.

**Sudhir Rao**, MD, India, Bombardier Transportation

We welcome this year's progressive Union Budget for its focus on addressing the most burning issue that the country is battling – water crisis.

**Ranganath N. K.**, Area MD, INDO Region, Grundfos.

### Highlights of Budget 2019-2020

Indian economy becoming a three trillion-dollar economy this year with World's third largest economy in terms of Purchasing Power Parity, government's intention to invest Rs. 100 lakh crore in infrastructure in next five years, enhanced target of over one lakh 5,000 crore of disinvestment in 2019-20, proposal to provide Rs.70,000 crore to PSBs to boost credit, doubling of food security budget in last 5 years, faster adoption of Electric vehicles with an outlay of Rs.10,000 crore, opening of 18 new Indian diplomatic missions in Africa, development of 17 iconic Tourism Sites into world class tourist destinations and issuance of new series of coins of 1,2,5,10 & 20 rupees are some of the key highlights of the Union Budget 2019-20

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## ZF inaugurates new off-highway assembly line in Coimbatore



ZF has inaugurated a new state of the art assembly line for off-highway products at its Coimbatore plant. The assembly line, which is based at ZF Windpower Coimbatore Pvt. Ltd., is built to accommodate, assembling of axles for backhoe loader, wheel loader, dump trucks and compactor applications. While joining the event Vipin Sondhi, MD & CEO of JCB India said "JCB India has had a long and valuable relationship with ZF. It has been an equal partner in our commitment to manufacture world-class products in India for our customers worldwide. With this new assembly line, we are certain that ZF will set the bar even higher for quality and reliability of their products."

Tilo Huber, Head of Construction equipment business from Passau, Germany said, "This new state-of-the-art facility will help us to address increasing demand. The Indian market is increasingly important for ZF Group and particularly for our off-highway business. Our activities are appreciated by local OEMs and support our competitiveness for global customers."

Adding on the importance for the Indian market Suresh KV, Head of Region India states, "Private and public investment in building and infrastructure are key for India's economic growth. With this assembly line we support the localization of vehicle production for off-highway applications. Bringing key technology to the Indian market underlines the growing importance of our home market."

## Eicher unveils India's 1st BS-VI CV Range; will address various applications

Eicher Trucks and Buses, part of VE Commercial Vehicles Limited, has revealed India's first BS-VI compliant all-new range of Eicher Pro 2000 series of Light-Duty Trucks. The entirely new range of ultra-modern trucks will expand the light-duty portfolio of Eicher, will address a wider range of applications and help enter new segments. Speaking at the occasion, Vinod Aggarwal, MD & CEO, VE Commercial Vehicles said, "It is a moment of immense pride for us to usher the automotive industry into its next evolution with BS-VI emission technology. We have always believed in investing rigorously in R&D to



stay ahead in the industry by improving transportation efficiency and the Pro 2000 series is a testament to that mission. With a strong blend of technology and engineering innovations, we are yet again bringing in a new benchmark for the industry, offering our customers a radically differentiated experience in the CV space. We have a superior and long-standing expertise in manufacturing and exporting base engines for Euro VI requirements of the Volvo Group for

## Piaggio enters into the mid-body segment of 3-wheelers in India

Piaggio Vehicles Pvt Ltd (PVPL) has recently launched the new Ape' City+ and marked its entry into the mid-body segment of 3 wheelers. The newly launched Ape' City+ has India's first 230 cc engine with 3 valve technology in the AF category. This product is an all new ground up platform jointly developed by Piaggio's product development teams from Italy and India. Ape' City+ will be available in 4 fuel variants- LPG, CNG, Petrol and Diesel.

Speaking on the occasion, Diego Graffi, MD & CEO of Piaggio Vehicles Pvt. Ltd. said, "The last mile passenger transport dynamics in changing rapidly as cities are expanding into suburbs.



There is a requirement of a versatile commercial people carrier which can cater to both in-city and outskirts applications. Keeping this in mind we have developed the new Ape' City+ which is suitable for both city as well as outskirts and it will definitely address the gap which is there in the last mile connectivity. It has been designed in such a way that it will give our customers assured superior performance. It is equipped with India's 1st 230cc 3-valve technology engine in alternate fuel variant and proven 436cc engine in the diesel variant both of which offer great power."

the last 6 years. This extensive experience with Euro VI allows us the first mover advantage to deliver products engineered to cater to the new emission norms in the country."

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By Fiona Fernandes

## AGARBATHIES TO AEROSPACE

From being the largest selling incense stick brand in the world, the NR Group is now spreading its wings across industry sectors including aerospace and defence, says **Pavan G Ranga**, Chairman, Rangsons Defence Solutions Pvt Ltd, Rangsons Schuster Technologies Pvt Ltd.

**Tell us briefly about the journey of the NR Group until now.**

The NR Group was founded more than 70 years ago. It has ever since strived to achieve greater heights with every passing year. The Mysuru-based NR Group was

founded by Shri N. Ranga Rao in 1948. A true visionary and philanthropist, he created the ubiquitous Cycle Pure Agarbathies which has today become the largest selling incense stick brand in the world. From a home-grown enterprise, NR Group has evolved into a successfully run business conglomerate with its established presence in India and international markets. The Group has diversified into various business categories like functional air care products (Lia brand of room fresheners and car-fresheners), wellness home fragrance products (IRIS) under Ripple Fragrances, floral extracts (NESSO) and Rangsons Technologies. Today, the NR



Under tactical communications, RDS works with tactical data links, navic receivers and satellite communication as well as heat exchangers for aircraft and space applications.

Group is truly an Agarbathi to Aerospace conglomerate as it has also got involved into making parts for defence helicopters. The organization has also largely committed towards social responsibilities and fulfills them through its charity arm called NR Foundation. The NR Group is currently managed by the third generation of the Ranga family.

**Can you throw light on the various business sectors that fall under the NR Group's umbrella?**

While the Cycle Pure Agarbathies business is at the heart of the group's activities, it has diversified into various other sectors as well. These include Ripple Fragrances (Lia Air Care and IRIS Home Fragrances), Rangsons Defense Solutions (RDS), Natural and Essential Oils Pvt. Ltd., Vyoda – Solar powered





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irrigation and Senzopt - IoT solutions. Rangsons Defence Solutions has one manufacturing unit in Bangalore and one in Mysuru. Cycle Pure Agarbathies has a unit in Mysuru besides many others. Majority of the agarbathi production is outsourced to rural women and packaging units across the country.

**Tell us about the aerospace & defence business that you are heading at the Group?**

At present, Rangsons Defence Solutions works with tactical communications and thermal solutions. Under tactical communications, RDS works with tactical data links, navic receivers and satellite communication as well as heat exchangers for aircraft and space applications. We currently supply products for numerous clients of whom the major one is our very own Indian military helicopters and UAVs (unmanned aerial vehicles).

At Rangsons Defence Solutions, we have vast experience in designing, developing, manufacturing and certifying the RF/Microwave, Antenna Products and Subsystems according to our customer requirements. Our expertise includes Microprocessor, Microcontroller, FPGA, DSP, SoC, and an array of communication interfaces conforming to the standards of MIL-256 and DO-160. We have specific expertise in BSPs development and Device Drivers for almost every operating system. We have been successful in designing, developing and delivering the most sophisticated and reliable applications like aircraft simulators, real-time control and monitoring software, and ATE. Our mechanical capabilities include integrating units of all sizes to build a system.

**Tell us about your R&D activities.**

We at Rangsons Defence Solutions are always innovating new products in the tactical communications and thermal solutions space. We craft innovative products and develop reliable aerospace and defence solutions by integrating technology, engineering and manufacturing expertise at our state-of-the-art facility.

//

“Apart from being a niche segment, the aerospace & defence business is an extremely competitive one as well. This means that we need to always be at the top of our game and maintain high quality standards round-the-clock.”

**How do you see the aerospace & defence manufacturing sector in India growing in the next five years?**

The aerospace & defence manufacturing sector is determined to grow ten times in the next five years. With the Indian government opening doors to Indian MSMEs for Public-Private Partnerships (PPPs) and Government initiatives like “Make in India” and “The Indigenously Designed Developed and Manufactured” category. The sector is bound to see exponential growth across its disciplines.

**Since yours is a niche segment, has it been challenging to find the right talent in India? Do you have in-house training infrastructure and programmes to address this issue?**

Apart from being a niche segment, it’s an extremely competitive one as well. This means that we need to always be at the top of our game and maintain high quality standards round-the-clock. We regularly conduct in-house trainings for new capabilities and resources. We also conduct overseas training for the existing staff at Rangsons Defence Solutions.

**Tell us about the technical collaborations or partnerships that you have with international companies.**

Rangsons Defence Solutions supplies components to clients from across the global aerospace and defence sector. Our current clientele spreads across countries like Israel, South Africa, European countries like France and The United Kingdom among many others.

**You and your brothers have recently been honoured with The Machinist Super Family Leaders of 2019. What does this award mean to you and how do you look at such award platforms?**

The Machinist Super Shopfloor Awards is a brilliant platform, and we commend it for recognizing excellence in the manufacturing sector. We thank The Machinist for this award and for rightfully recognising our efforts at achieving exceptional manufacturing standards across diversifications. 

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By Niranjana Mudholkar

## EXPLORING NEW FRONTIERS!

We are looking for growth in the domestic market in India as well as further expanding our business in overseas markets, says **Dr. Mahesh Gupta**, Chairman & Managing Director, Kent RO Systems Ltd.



### How's been the overall business in recent times?

The business has been encouraging. We are looking for growth in the domestic market in India as well as further expanding our business in overseas markets. New markets are opening up as the water quality is deteriorating worldwide. Water bodies are getting contaminated by industrial waste, pesticides and chemicals are finding their way into rivers, and groundwater is contaminated with Arsenic and Fluoride and intermittent water supply causing rusting of pipelines. Because of this entire deterioration, more and more people are understanding the critical need for pure water and adapting to more modern methods of water purification wherein RO and UV Purification are at the forefront.

### Kent has already entered GCC and Sri Lankan markets for exports. What is the next frontier?

Where ever there are impurities in the water we will go and fight it out. Today people across the globe are fighting the water crises. This is also leading to people ready to drink without even thinking. That's not good for the world's health. We are currently exploring the African Continent, UAE, and Saudi Arabia apart from Sri Lanka and GCC markets.

### What kind of revenues are you currently making from exports and what kind of targets have you set?

We do about Rs. 40 crore of export annually. Aim is to grow at 50 percent every year. This year, we are looking at around Rs. 60 crore from exports. We do around 1,000 RO purifiers (a month) in each country and we also do good business in Dubai and the Middle East.

### Tell us about your foray into the automotive security space. What has been the idea behind this and what are the plans for growth?

Every day we hear about incidents of violence against women and children while they are traveling outside



"Our automotive security product is a result of over two years of R&D and an in-depth understanding of the needs of various consumer groups. The product has been completely designed and developed in India. The brand has a firm roadmap to launch a couple of new products in the security domain in this financial year."

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their homes. Crime against women while traveling in public transport has been on a rise and it has become imperative to ensure their safety and security while they travel alone. Kent CamEye is a first-of-its-kind device that ensures the safety of children and women in driver-driven cars. It also facilitates monitoring undisciplined driver behaviour such as AC misuse and over speeding. It should bring a paradigm shift in the way we look at the security of females in public taxis, the safety of children in school buses, bringing inefficiencies in fleets of cars and trucks and various benefits in many other commercial vehicles.

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“We do about Rs. 40 crore of export every year. The aim is to grow at 50 percent every year. This year, we are looking at around Rs. 60 crore from exports. We do around 1,000 RO purifiers (a month) in each country and we also do good business in Dubai and the Middle East.”

Our product is a result of over two years of R&D and an in-depth understanding of the needs of various consumer groups. The product has been completely designed and developed in India. The brand has a firm roadmap to launch a couple of new products in the security domain in this financial year.

Dash cams are a very popular product in international markets. However, they haven't really proliferated in India yet. So, with the launch of our product, the brand aims to sell 75,000 units in this FY. The core TG for the brand are owners of chauffeur driven cars, in Sec A/A1 and premium car owners (car price being above Rs. 10 lakh). The brand is also targeting parents, especially fathers (in the age group of 30-55) with children (in the age group of 5-16) and expects maximum trials from Tier 1 cities.

The company is also planning to make all features available on a web portal for B2B users soon. It will allow fleet operators to manage hundreds and thousands of devices from a single window. It will also have many tailor-made features for large fleet operators that will enable them to deploy and manage multiple devices seamlessly.

“The company has entered categories such as air purifiers, kitchen appliances (vegetable and fruit cleaner, cold-press juicers, noodle and pasta maker, rice cooker, Bread Makers, OTGs, etc) and vacuum cleaners over the past two to three years.”

**The company has also recently forayed into the small kitchen appliance segment. How's been the response there?**

Kent RO Systems has also forayed into small kitchen appliance segment. The main criteria, when it comes to adding a product category, is that it should be able to leverage the plank of purity that Kent has already created, and it should have little or no competition.



“We don't want to add a 'me too' product. For example, we launched a fruit and vegetable cleaner addressing an India-specific problem of pesticides. The company has entered categories such as air purifiers, kitchen appliances (vegetable and fruit cleaner, cold-press juicers, noodle and pasta maker, rice cooker, Bread Makers, OTGs, etc) and vacuum cleaners over the past two to three years.

The response has been really good, which is giving us the motivation to add new products to the category.

**Now that your product offerings are getting enhanced as well as diversified, please update us on Kent's manufacturing facilities?**

The company is presently manufacturing its range of water purifiers at its plant at Roorkee at Uttaranchal, and with an investment of Rs.150 crore, the company has put up its second manufacturing plant at Noida. It is five lakh unit capacity plant. In the next 4-5 years, the company will set up one more plant also in Noida for which land has been already purchased. We have already signed an MoU with the Uttar Pradesh government to invest Rs. 200 crore and under that programme, this (third) plant will come up. 🇮🇳

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By Swati Deshpande

## MAKING INDIA FUTURE READY

We have been closely following the ambitious expansion and modernisation plan by the Indian Railways, says **Mangal Dev**, Head of Hitachi Railway Systems, India & South Asia Region



### Tell us about Hitachi's business in India.

Hitachi's partnership with India dates back to 1930s with importing of table fans and later went on to supply steam engines followed by Turbines for the Bhakra Nangal Dam and the first steam locomotive to Indian railways in the year 1953. Since then Hitachi India has grown multifarious with presence of 27 group companies. The company operates in diverse industrial sectors such as Infrastructure, Railways, Energy, Construction Machinery, Healthcare, Information Technologies (IT), Automotive Systems and Payment Services amongst many others.

With regards to railways, the company has undertaken projects such as enhancing transport throughput with safety; dedicated freight corridor traversing the biggest industrial cluster between Delhi and Mumbai, like automatic signalling with train management & diagnostic systems between Rewari and Vadodara and the European Train Control System (ETCS) between Rewari and JN Port Trust.

**Hitachi design traction motors till recently were manufactured by Indian Railways at their Chittaranjan Locomotive Works, which is a state-owned electric locomotive manufacturer based in India.**

### How has been the company working with Indian Railways since 1953?

As I said earlier, the company's relationship with Indian Railways dates back to 1950s, when it delivered the first steam locomotive to India, shortly after independence. It was also one of the first companies to deliver electric locomotives DC 3000V, 3600 Horsepower and DC 1500V, 4500 horsepower. Its contributions to developing new standards in the Indian railways on critical occasions, has translated to a trusted and enduring association between Hitachi and Indian Railways.

We have been closely following the ambitious expansion and modernisation plan by the Indian Railways. One of the objectives of the Railways is to segregate freight operations from the present mixed movement through the implementation of Dedicated Freight Corridors (DFCs) along the Golden Quadrilat-



**"The country's first high-speed railway (HSR) project in India is slated to connect the 508 kilometre stretch from Mumbai to Ahmedabad. The bullet train will be heralding in a new era with an operational speed of 320 km/hr."**

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## Dedicated Freight Corridors will help increase the speed of both freight as well as passenger trains.

eral. That would mean that the DFCs will help increase the speed of both freight as well as passenger trains. This is of much interest to us as it implies not only the construction of DFCs but also the upgrading of the existing corridors with new higher speed Trainsets, European Train Control System (ETCS) Level 2 signalling systems, to enable operations at higher speeds. In 2015, the company signed its prestigious railway contract for implementation of the signalling and telecommunication systems on western DFC.

In terms of the Indian Railways' Mission RAFTAR, we were involved in the commissioning of TPWS signalling for the first high speed corridor between Delhi and Agra for running the Gatimaan Express trains.

### How do you look at the upcoming Mumbai-Ahmedabad high-speed railway project?

We already have an experience in developing such future-ready railways in multiple countries and hence have gathered multi-level, multi-cultural experience in solving a gamut of practical and local issues in the process. The country's first high-speed railway (HSR) project in India is slated to connect the 508 kilometre stretch from Mumbai to Ahmedabad. The bullet train will be heralding in a new era with an operational speed of 320 km/hr and will also aim to adopt the Shinkansen culture of apologising to each and every passenger for even a slight delay. The project will be a decisive move

forward in putting India at par with other countries in the world.

### The company also caters to the Metro's solutions. Can you please elaborate on projects that you are undertaking in India?

Recently, we successfully implemented the signalling and telecommunication system for Noida metro project in a record time of 28 months. ANSALDO STS Transportation Systems India Pvt. Ltd., which is a Hitachi Group Company, was awarded the contract to deliver Communication Based Train Control (CBTC)-based Signalling with Automatic Operations (ATO) and the Telecommunications system for the 29.7km Aqua Line Metro from Noida Sector 51 to Delta Depot Station in Greater Noida. This project inaugurated recently in January 2019.

In addition, there are few more significant projects which we are associated includes Kolkata Metro East West and Navi Mumbai (CIDCO) Metro.

### Driverless trains are not new to the railways or metros. Where do you think the future of autonomous technologies lie in the future?

Driverless trains are already in operations for many years in other parts of the world. We have been offering trains and CBTC signalling system to operate as driverless or unmanned operations (UTO). The company recently implemented the driverless system for Freight train operations for Rio Tinto in Australia.

Currently under implementation, we will soon witness Delhi Metro and many other Metros also operate on driverless trains on their network. 

## FRENCH SUPPORT FOR INDIAN RAILWAY STATIONS

Indian Railway Station Development Corporation (IRSDC) entered a Tripartite Agreement with French Railways (SNCF) & AFD, a French Agency on 10th June, 2019. On this occasion, Suresh Angadi, Minister of State of Railways and Jean Baptiste Lemoine, Minister of State, Ministry of Europe and Foreign Affairs, Government of France, Alexandre Ziegler, Ambassador of France in India and senior officers were present from both side.

Under this agreement, AFD a French agency, has agreed to provide in-kind grant financing up to 7,00,000 EURO, through French National Railways (SNCF)-Hubs and Connexions as a Technical Partner to IRSDC to support the Railway Station Development Program in India. This will impose no financial liability on IRSDC or Indian Railways.



Under this agreement, AFD a French agency, has agreed to provide in-kind grant financing up to 7,00,000 EURO, through French National Railways (SNCF)-Hubs and Connexions as a Technical Partner to IRSDC to support the Railway Station Development Program in India.

Suresh Angadi, Minister of State said, "India and France have a strong and long standing prosperous partnership in the Railway sector." 



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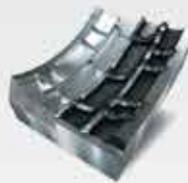
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By Niranjana Mudholkar

## DELIGHTFUL ENTRY

We invested more than 12 months to try and test the Indian market and finally decided to move on with a product which suits the need of the consumers, says **Ankit Kumar**, CEO & Founder, GoZero Mobility



**GoZero Mobility has recently forayed into the Indian Market by launching its flagship products 'One' and 'Mile'. What kind of response have you received for these products?**

We received overwhelming response from all across India. Our first lot of 200 units have already been shipped to consumers, we have order books full for next two months. We estimated the 2019 sales to be 3000 units, however we have now increased the estimations to 6000 units.

**Tell us something about the legacy of GoZero and what made you consider the Indian market at this point of time?**

GoZero, being a British brand is creating a very exciting space 'e-bike' in the global market. Backed with an experienced designed team, we have got the right mix of team from design to engineering to delivery, who are working on making every delivery delightful. We keep customer centricity as a core part of every department here at GoZero. We invested more than 12 months to try and test the Indian market and finally decided to move on with a product which suits the need of the consumers.

**What kind of investments are you making in India at present?**

We are making an investment of Rs.1.5 crore towards

manufacturing setup, strengthening local presence through experience centres, distribution partners, marketing etc.

**I understand that you have a manufacturing partnership with Kolkata based Kirti Solar (KSL). Please elaborate on the same.**

Yes, KSL is a partner for manufacturing and also an investor in GoZero. KSL has brought the manufacturing facility and its experience for product assembly, testing and logistics.

**What are your plans with regards to sales and service?**

We are taking a phase wise approach to establish exclu-



"We see the e-mobility space to get more exciting with more companies jumping in the segment. Globally, we see Harley Davidson, General Motors, Tesla, Skoda releasing e-bike models and have started focusing on this segment, making it an exciting space."

# VLC 200 GT

## HIGH PERFORMANCE HARD MACHINING FOR GEARBOX PARTS



**PRECISE**



**DYNAMIC**



**PRODUCTIVE**



**COMPACT**

Gearbox production with 12 tool position tool turret and internal/external aluminum oxide/CBN grinding spindle.

### HIGHLIGHTS

- + **Reduced machining time:** The combination of hard pre-turning and finish grinding reduces machining time.
- + **Maximum workpiece quality:** A combination of the best technology and a single clamping operation is used to ensure the best workpiece quality.
- + **Shorter process chain:** By combining the different processes, the process chain can be shortened.
- + **Maximum technological diversity:** Internal and external grinding spindles, tool block holders or the time-tested EMAG turret equipped with 12 tool positions are available.



Technical data for the VLC 200 GT: Chuck diameter, max. 210 mm | Swing diameter, max. 270 mm | Workpiece diameter, max. 160 mm | Workpiece length, max. 100 mm | Travel distances X (total stroke from pick-up to turret) / Z 1,700 / 250 mm | Loading time (depending on clamping device) 6 – 10 sec. | Main spindle capacity: 40% duty cycle / 100% duty cycle, 22 / 18 kW | Main spindle torque: 250 / 202 Nm | Main spindle max. speed: 3,000 rpm | Spindle bearing dia., front: 110 mm



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“Technology is an ever-changing process and we want to focus on upgrading our technology and business model for India and other markets.”

sive experience centres, distribution partners and DSP across India. Our first experience centre is now live in Guwahati and soon to start in Nashik, Pune, Bangalore and Chennai. We estimate to have 18 experience centres within next 18 months. These experience centres will also act as service centres. Aside experience centres, as we are expanding through distribution partners and DSP, we are also training local service technician to support the consumers in the area.

**Would you be looking at launching more products in the near future?**

Yes, we would be launching ‘GoZero DelivR’ which is for B2B applications, ‘GoZero One W’ which is a unisex bike and our premium smart model ‘Project X’ in this FY.

**What are your views about India’s e-mobility policies and what more do you expect from the government?**

We see the e-mobility space to get more exciting with more companies jumping in the segment. Globally, we see Harley Davidson, General Motors, Tesla, Skoda releasing e-bike models and have started focusing on this segment, making it an exciting space. Technology is an ever-changing process and we want to focus on upgrading our technology and business model for India and other markets.

In India, we are approaching state governments to enable Green Commutation Lanes and look forward to some positive activity happening soon. 

## DELHI MACHINE TOOL EXPO 2019 ALL SET FOR AUGUST

Indian Machine Tool Manufacturers’ Association (IMTMA) is organizing the third edition of Delhi Machine Tool Expo (DMTX 2019) at India Expo Centre & Mart, Greater Noida, Delhi - NCR from 8th to 11th August 2019. The expo will also feature special pavilions on Metrology Expo (metrology, testing instrument and equipments), Weld Expo (welding, cutting and joining), Additive Manufacturing Expo (3D printing), and Factory of the Future (Industry 4.0).

DMTX 2019 is likely to feature over 200 exhibitors occupying an exhibition space of 12,240 sq.mts. of gross area showcasing latest technologies in metal cutting and metal forming. Foreign exhibitors are also expected to participate.

The machines and accessories on display is expected to serve the needs of key user industries such as aerospace, defence, railways, automotive, medical engineering, construction, information technology, and electronics, etc. The expo will provide a platform for the manufacturing industry to upgrade and improve productivity and quality requirements and demonstrate solutions to manufacturing industries, especially the various small and medium enterprise industries. Focus will be on the industrial units located in Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan, Uttar Pradesh and Uttarakhand, etc.

Stating his views on DMTX 2019, P. Ramadas, President, IMTMA said, “We are glad to organize the third edition of the expo as the past two editions of the show evoked an encouraging response from the machine tool industry. Manufacturers who participated



in the previous shows were able to expand their range and I firmly believe that this edition of the show will help them to build on to their earlier success and reach out to the regional industries.”

Speaking on the objective behind organizing the expo, V. Anbu, Director General & CEO, IMTMA said, “IMTMA is organizing the show to enable India’s regional industrial units to keep pace with the changing technologies. Shows like DMTX will play an enabling role in addressing the numerous requirements of OEMs and component manufacturers in Tier 2 and Tier 3 cities. We expect a good turnout and I am confident that the expo will continue to evolve and grow bigger in future editions.”

The previous edition of Delhi Machine Tool Expo held in 2017 at Pragati Maidan, New Delhi had featured 242 exhibitors from 10 countries and attracted a footfall of 11,279 visitors including 93 business delegations. 

## FROM SMEs TO MNCs: EMPOWERING THE NATION THROUGH HUMAN ROBOT COLLABORATION

Enabled to work safely with humans on shop floors, cobots are increasingly the go-to automation tool for Indian manufacturers seeking to boost productivity & variability

A shop floor where humans and robots safely work together to take efficiency to the next level may sound like a highly optimistic daydream. However, this is just a normal day in the life of manufacturers who have deployed collaborative robots, or cobots, on their production floor. The fastest growing robotic technology in popularity, cobots are increasingly becoming the go-to automation tool for Indian manufacturers seeking to boost productivity.

Empowering affordable and accessible automation to all, cobots were especially created to cater to the needs of SMEs. By enabling the optimization of efficiency through partial automation, collaborative robots present the perfect solution for small manufacturers who may not have the technical prowess, space, or large amount of time involved in the setup of the traditional industrial robot, which requires cumbersome fencing and specialized programming experience.

Take, for example, Shruti Engineers, a Pune-based MSME that wanted to take a step in the direction of Industry 4.0. They deployed a single cobot for CNC machine tending, and increased efficiency from 300 to 400 parts per day, ensuring that quality line items reach his customers on time. Despite no prior experience with robots, Suhas Pitke (owner) and his staff were able to learn the programming of a cobot from Danish cobot manufacturer, Universal Robots, within a day, and the cobot has empowered the 10-person Indian business to stay ahead of the manufacturing game.



**Compact with safety features allowing them to work alongside humans, cobots are often deployed with no cages, making them ideal for shop floors of all sizes. They can even be flexibly re-deployed for different applications.**

New Engineering Works, Jamshedpur, Jharkhand is another prime example of a small-scale Indian company that envisioned becoming a world-class manufacturer by implementing the latest technology. After much research, the SME acquired a cobot for itself in 2016. Impressed with the results, the company obtained five more cobots for CNC machine tending within just 18 months, and a seventh cobot to spray anti-rust oil on auto components. The deployment of cobots resulted in a 40 percent growth in the production process, and the manufacturer is now able to run 24x7, as cobots enabled a third 8-hour shift.

As the pioneers in the field, Universal Robots is making cobot technology accessible to all. It has globally over 34,000 cobots deployed and 300 partners. Indian operations commenced in 2016, growing rapidly with acceptance from both MNCs and SMEs, although customers in India have been served since 2011 by Universal Robots A/S, Denmark. Universal Robots has had some remarkable success stories where cobots created skilled jobs and made many small businesses competitive. Large companies

like Bajaj Auto (with over 100 cobots) and L'Oréal India have eliminated ergonomic risks and empowered their workers through the deployment of cobots. The approach of human-robot collaboration is particularly appealing in Indian Manufacturing, where labor-intensive conditions and collaborative robots together can help the Indian Market achieve the best of both worlds. The Indian manufacturer has begun recognizing the significance of using cobots, witnessing a visible growth in quality, variability, and productivity, along with increased efficiency, absence of error, and reduced production costs.

Universal Robots makes robot technology accessible for companies of all sizes with the aim that the end-user gains twice the value creation from cobots. UR's vision is to empower automation of enterprises around the world, ranging from MSMEs and SMEs to MNCs, by giving back the control of factory automation into the hands of operators by being user-friendly through easy reprogramming, while also remaining affordable. 

Source: Universal Robots

## IN THE FAST LANE

Manufacturing industry's hybrid cloud usage and plans is outpacing the global average across industries, says a recent report.



**“The Enterprise Cloud Index findings indicate that manufacturing leaders are aggressively adopting new technology to embrace modernization.”**

**M**anufacturing industry's hybrid cloud usage and plans is outpacing the global average across industries, says a recent report. The report has been brought out by Nutanix, Inc and it measures manufacturing companies' plans for adopting private, public and hybrid clouds. The deployment of hybrid clouds in manufacturing and production companies has currently reached 19 percent penetration, slightly ahead of the global average. Moreover, manufacturers plan to more than double their hybrid cloud deployments to 45 percent penetration in two years; outpacing the global average by four percent.

The opportunity for manufacturers to embrace digitization efforts including “Industry 4.0” initiatives can break the impasse, but executives must focus on new opportunities to create value and not only prioritize traditional business operations. Manufacturing organizations face the constant challenge of trade-offs: they are under pressure to meet current productivity and operational goals in an increasingly global and highly competitive marketplace, but they also need to invest in future growth.

This challenge has created a demand for new technology solutions that can help balance the trade-off between current and future goals. IT leaders in manufacturing must avoid the beaten path of finding short-term fixes for increasing revenue; instead, they should look to long-term solutions.

### Other key findings of the report include:

- 43 percent of manufacturers surveyed are currently using a traditional data center as their primary IT infrastructure; global average is 41 percent
- However, manufacturers currently use a single public cloud service more often than any other industry. 20 percent of manufacturing firms reported using a single cloud service, compared to the global average of 12 percent — a testament to the fact that manufacturers are starting to turn to the cloud as a solution, given that they deal with legacy IT systems and cannot handle workloads on-prem.
- 56 percent of manufacturers surveyed said that they run enterprise applications in a private cloud, outpacing the global average by 7 percent.
- One motivation for deploying hybrid clouds is enterprises' need to gain control over their IT spend. Organizations that use public cloud spend 26 percent of their annual IT budget on public cloud, with this percentage predicted to increase to 35 percent in two years' time. More than a third (36 percent) of organizations using public clouds said their spending has exceeded their budgets.
- Manufacturers chose security and compliance slightly more often than companies in other industries as the top factor in deciding where to run workloads: while 31 percent of respondents across all industries and geographies named security and compliance as the number one decision criterion, 34 percent of manufacturing organizations chose security and compliance as the top factor.

“Manufacturers are investing in modernizing their IT stack, and adopting industry 4.0 solutions to keep up with ever-changing business demands in areas like production and supply chain management,” said Chris Kozup, SVP of Global Marketing at Nutanix. Muthukrishnan G, GM-IT, Ramco Cements, commented “Technologies such as automation, cloud, IoT, AI and ML, are being used by manufacturers in production, supply chain management as well as in customer and employee experience management. Like most manufacturers, the traditional infrastructure at the core of our datacentre operations was too complex.” 

Source: Nutanix, Inc

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By Niranjana Mudholkar

## FASTER, BETTER, STRONGER!

There is huge scope for further growth in the steel industry, and the Government's mission to achieve 300 million MT by end of the next decade should be an achievable target, says **Sameer Nagpal**, CEO, Dalmia-OCL



**Dalmia Seven (a JV between the Dalmia Bharat Group and Seven Refractories of Europe) has set up an integrated state-of-the-art manufacturing facility at Katni to meet the growing demand of Steel in India. How will this help Dalmia OCL in its growth plan for the India market?**

Government of India has set up aggressive growth targets for Steel production in India. The industry is also witnessing advancement in the quality of Steel being produced in India. Our new production line at Katni, MP is one of the most advanced monolithics production facilities in the world and is well poised to cater to both these requirements through production of advanced monolithics with high flexibility. Combined with this, the latest application techniques that Dalmia Seven brings to India will help us grow significantly.

**Tell us about the unique technology deployed by Dalmia Seven at the Katni plant? Has this technology been used before in India?**

This facility is India's first technologically advanced Monolithic production line. The production line features high level of automation which enables precision dosing of several raw materials for efficient production of high-grade refractory. The line allows for faster

production cycles with minimal human intervention making it the most advanced monolithic refractory production line in India, ensuring highest standards of technology and quality. The technological augmentation at the facility is symbolic of the Groups' commitment to manufacturing excellence and sustainability.

**What will be the production capacity of this new unit?**

The new line at Katni MP adds a capacity of 45000 MT per annum to our existing facilities. This expansion will help meet the growing demand of high-grade refractory products from iron, steel, cement and other industrial segments in a big way.

**What is your analysis of India's steel industry?**

**Where do you see it heading?**

Indian steel industry has been undergoing structural changes with production assets moving to new owners. This will help put the assets to a more productive use. Though India has become second largest producer of



**"The new line at Katni MP adds a capacity of 45000 MT per annum to our existing facilities."**

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This takeover has given us access to customers in the heartland of steel and refractory making belt in Europe.

steel recently, per capita consumption at 68kg is still significantly lower than global average of 200kg. Thus, there is huge scope for further growth and I believe that the Government of India's mission to achieve 300 million MT by end of the next decade should be an achievable target.

**How will the new plant help in fulfilling India's steel growing demand and reduce our dependency on imports?**

The new line has been set up to cater to the increasing demand of high grade steel from iron, steel and industrial segments. Aligned with the Government's 'Make in India' mission, this facility will help us substitute high-end products which are still imported from Europe. We are committed to bring to our customers, products that match global standards.

**What kind of employment is generated through this facility? Are you providing any special training or skill development to the employees?**

We are committed towards sustainable business operations through communities in and around the facility by creating both direct and indirect employment opportunities. Like every new technology deployment requires training, we will have special training programs designed to skill the workforce on the use and impact of the new process at the facility. Few people have also been trained in Europe in this regard.

**How's been the last one year for Dalmia- OCL in terms of business?**

Last one year has been quite an eventful year for Dalmia-OCL. Not only we are the fastest growing refractory company in India, we also expanded our foot print in Europe with the acquisition of GSB Group, Germany. This takeover has given us access to customers in the heartland of steel and refractory making belt in Europe. Additionally, commissioning of Katni, MP facility positions us as the top-notch manufacturer in India. 

UPDATE

## TO GO BELOW THE TECHNOLOGY OCL INTERVIEW

### Pratt & Whitney launches connected factory initiative

Pratt & Whitney, a division of United Technologies Corp. (NYSE: UTX), has announced it has launched a Connected Factory pilot project. This is a three-year pilot program that will take place in phases in facilities around the world, with Pratt & Whitney Component Solutions in Singapore as the launch host.

"Through our Connected Factory project, Pratt & Whitney will drive further efficiency of energy consumption, enhanced product quality, improved real-time maintenance and more efficient equipment operations," said Joe Sylvestro, vice president of Aftermarket Operations at Pratt & Whitney. "We're making significant investments in technology and infrastructure to better support our customers and their engines, and this pilot program further positions us to do so."

The program expects to improve order fulfilment time up to 30 percent, reduce machine idle time up to 30 percent and reduce energy consumption by up to 10 percent.

"We are building a digital thread enabling end-to-end visibility across our operations," said Sudeep Gautam, chief digital officer at Pratt & Whitney. "The improved productivity, maximized machine use and



Image courtesy: Pratt & Whitney

enhanced material flow visibility will help us deliver on customer commitments with speed, uncompromised quality and optimized cost."

Pratt & Whitney aims to extend Connected Factory to other operations and maintenance, repair and overhaul facilities globally, using best practices from the lighthouse cell pilot project. By connecting the various facilities, Pratt & Whitney will look to optimize this concept to drive competitive advantages by adopting systems that bring maximum operational benefits. 



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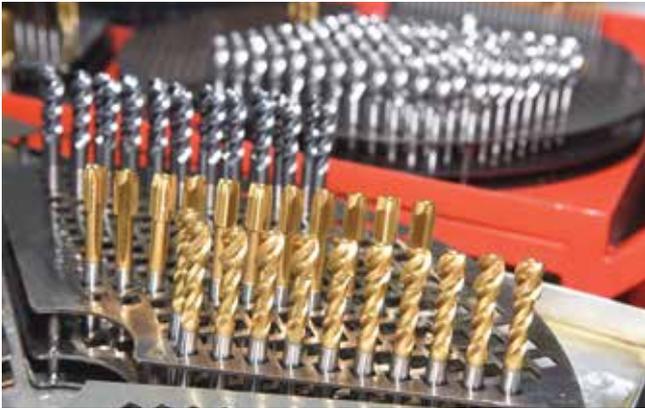
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By Niranjana Mudholkar

## A WELL ROUNDED APPROACH!

The market potential for Solid Round Tools is growing at an increasing pace and we see lots of opportunities for us in this area, says **Sharad Kulkarni**, Vice President – Round Tools, Sandvik Coromant - South & East Asia



### In July 2018, the Sandvik Coromant Center, Pune, was started to help customers. How well is this 'Center' equipped to help the round tools clientele?

The Sandvik Coromant Centre in Pune is a strong statement from our parent company on its commitment to serve the Indian market. Entrenched in its construction and running is the vision of Sandvik Coromant's "Shaping the future together" philosophy. The centre offers world class training to Indian customers on metal cutting, coming true to the brand promise of sharing knowledge. Its appeal is enhanced by the fact that customers can also develop metal cutting process for their components which they may find challenging in their normal course of development.

Solid round tools range is an integrated part of overall product offer from Sandvik Coromant. The capabilities of these products are showcased through rigorous demonstrations on the modern machines. Additionally, the same is also broadcasted live to reach many more customers who can watch the same in the comfort of their offices. Overall, the Sandvik Coromant centre is able to build the confidence and competence of customers who wish to enhance their own productivity through usage of modern solid round cutting tools.

### How much is the round tools business contributing to the overall Sandvik Coromant business?

The market potential for Solid Round Tools is growing at an increasing pace and we see lots of opportunities for us in this area. Having seen a strong growth in Asian markets during past few years, we are keen to increase our presence in this area even more. Through a combination of great products and services backed by our digital offerings we are in a great position to serve our customers in this region.

### Are Round Tools more suitable for some sectors?

The use of solid round tool is widely spread across industry segments. Along with increased usage of high-end machine tools, these products can greatly enhance productivity and efficiency in metal cutting applications. The demand for higher accuracies and the increasing nature of high complex features on components is generating lot of demand of good quality and reliable solid round tool products and reconditioning services. Sectors like aerospace, automotive and medical component industries are increasingly adapting the usage of these tools.

### What are the benefits of using Solid Round Tools?

Solid round tools are mainly adapted to meet the increased demand of accuracies and productivity in machining operations. Generally used as finishing tools, their role is a very important one in meeting the required quality features in the component. It is



"Solid round tools are mainly adapted to meet the increased demand of accuracies and productivity in machining operations."

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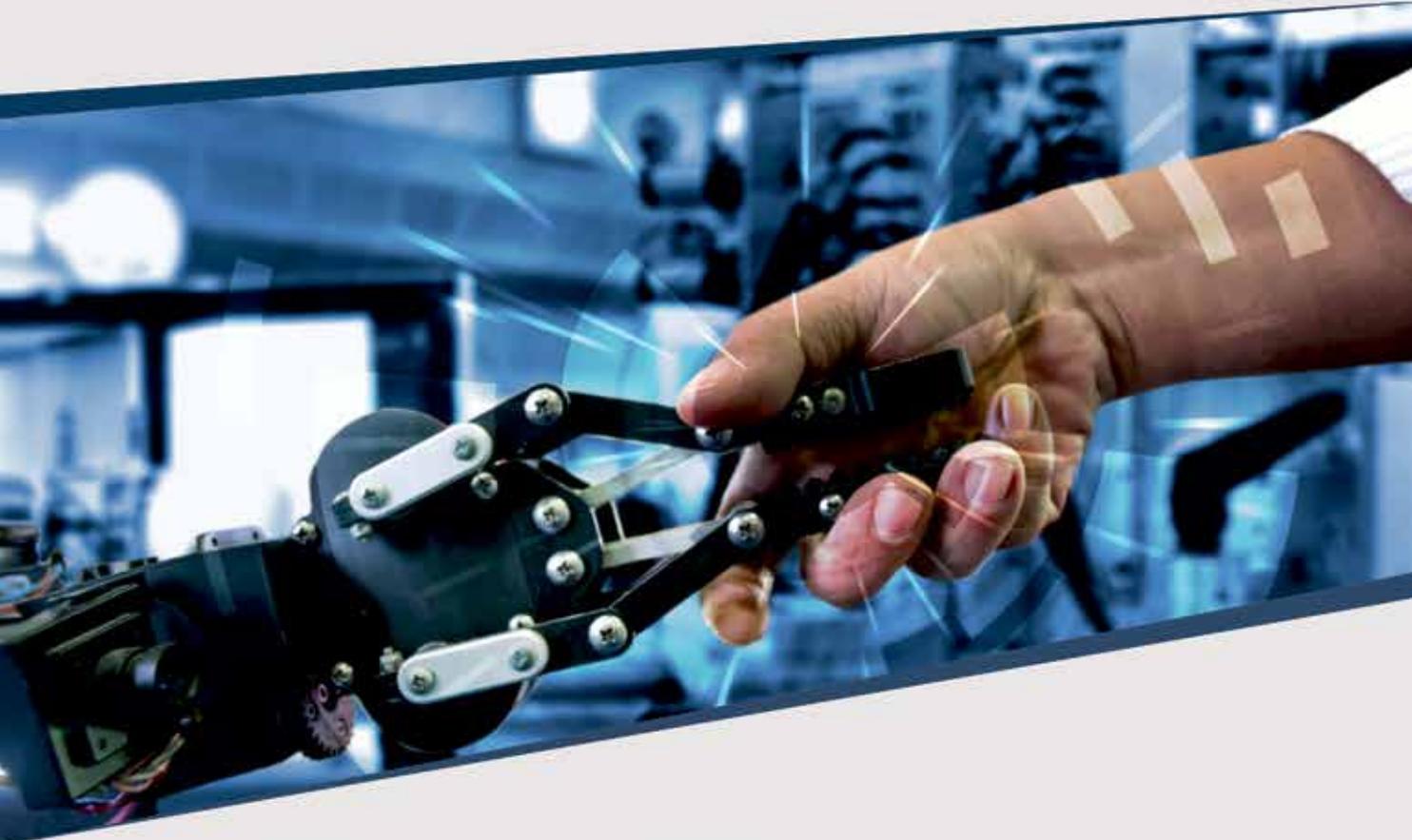
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very important to select the right tool and the recommended cutting tool parameters. These days with the advent of high-speed machining concepts, sometimes these tools are used for making the complete component from start-to-finish, thus eliminating the use of multiple tools in the process. One more feature which distinguishes these tools from conventional indexable tools is the possibility of reconditioning. With a reliable reconditioning service, the customer should expect 100 percent of the tool performance for a minimum of three times. This brings in cost effectiveness. We offer world class reconditioning services from our Production unit in Pune.

#### How is the industry responding?

The response of the industry has been overwhelming which has surpassed our expectation. We strongly believe that this portfolio will continue to drive our image of being a total solution provider coupled with strong support services in front of the customer.

#### What are the major themes that you see in the metal working industry?

At a very broad level, we see the themes that are being played are issues regarding increasing knowledge gap, focus on sustainability and digitisation.

When it comes to the metal working industry, we see a new trend of light, but strong materials increasingly put into use. Examples like Titanium, Inconel and composites are the now sought after especially in the aerospace industry. Today, machine tools can do so much more even if we compare this with a decade ago. Multi-axis machines are now common place which reduces the set-up time drastically for the components. This is being supplemented by widespread usage of CAD/ CAM which leads to process optimisation and improved productivity. In every industry segment, we see complex featured components and this puts pressure on manufacturers to meet quality and productivity. Batch sizes are getting smaller and there is increased customisation demand for the cutting tools. Digitisation and automation along with 3D printing process are being now increasingly adopted by manufacturers.

#### Will the trend of digitalisation get bigger ?

There is a growing awareness among Indian companies

about digital manufacturing and the evidence comes in the form of numerous initiatives taken by Indian companies to embrace digitisation in their manufacturing facilities. There is a genuine demand for information and knowledge in this area due to the realisation that digitisation will become the cornerstone for long-term competitiveness of companies. Sandvik Coromant's latest offering of digital solutions built on the foundation of decades of experience in the field of metal cutting promises to fulfil that need in machining area. We offer digital solutions broadly classified into pre-machining, machining and post machining spheres. Round tools like solid carbide drills / endmills require reliability along with productivity and enhanced tool life. These values can be easily enhanced through Digital Ma-

### Sandvik Coromant's range of Solid Round Tools.

- Solid Carbide Drills (Standard and Special)
- Solid Carbide Endmills (Standard and Special)
- Threading taps HSS and Solid Carbide (Standard and Special)
- Exchangeable heads with steel/ or carbide shanks
- Tools for machining the composite material like carbon fibre.

"We have around 10000 standard round tools in our range and equally attractive offer for Special Tailor-made tools as per the customer requirement. Our special tool design and quotation system makes it very easy for customers to design the tools as per their requirement and get a quick offer for the same," says Sharad.

chining products like CoroPlus® ProcessControl and MachiningInsights. In particular, the tool monitoring systems closely track what is happening at the cutting point and feedbacks corrective action thus enhancing the tool performance and preventing breakages. Overall, the customers can expect to see a quantum leap in their round tools application area through a combination of world class products and digital solutions.

#### In November 2018, Sandvik Coromant acquired US based Dura-Mill. How are you leveraging on it?

DuraMill is a recent acquisition by Sandvik Coromant and it will vastly contribute to our round tool business in the US market. The acquisition enhances an already strong position and product offering in North America and primarily within the aerospace segment. The acquisition is aligned with Sandvik Machining Solutions' focus on growing the round tools business. Dura-Mill will add even stronger capabilities for managing customized end mills. 



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- Insightful plant visits to renowned manufacturing companies
- Learn & benchmark from best manufacturing practices
- Listen to keynote presentations from industry leaders
- Learn innovative approaches to address productivity challenges
- Exchange new ideas & concepts – Knowledge networking
- Ideal platform to interact and network with several manufacturing professionals

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**Mr. Vipin Sondhi**  
Managing Director & CEO  
JCB India Limited



**Mr. Bhaskar Bhat**  
Managing Director  
Titan Company Limited



**Mr. G. Parthipan**  
President  
Rane TRW Steering Systems



**Dr. Babu Padmanabhan,**  
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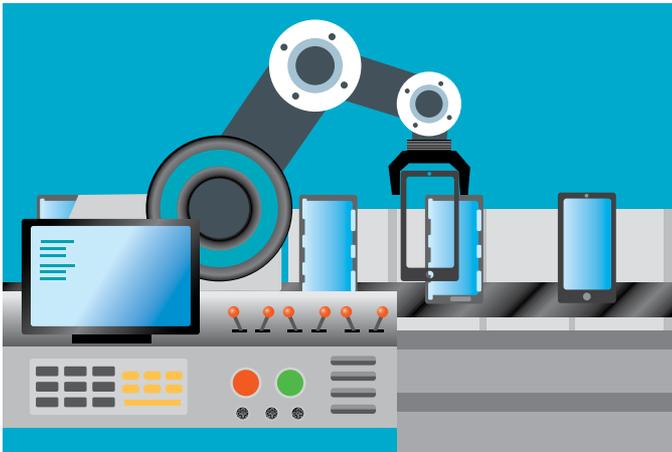
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By Munira Loliwala

## CALLING GROWTH!

With crucial developments in the mobile manufacturing sector and increasing investments, the sector is poised for tremendous growth.



**//** Over the next few years more than four million jobs are expected in the telecom industry. Much of the projected employment growth will also be seen in Tier II and III cities which will attract more talent in the professional services sector.

Internet penetration in India has been increasing every minute, aiding the growth of the telecom sector. In fact, the recent National Digital Communications Policy 2018 was also with the vision to draw about \$100 billion worth of investments into the industry by 2022, thus creating about 7+ lakh jobs in the sector over the next four years. Mobile manufacturing has been a key part of this growth. Now with crucial developments in the mobile manufacturing sector and increasing investments, the sector is poised for tremendous growth.

The industry is growing at a rapid pace and due

to the increased manufacturing of handsets within India; global mobile production being accounted in the country today has incrementally increased from three percent to eleven percent. The telecom industry is amongst the top five industries for employment generation. Over the next few years more than four million jobs are expected in the telecom industry. Much of the projected employment growth will also be seen in Tier II and III cities which will attract more talent in the professional services sector.

### THE GLOBAL PARALLEL

Globally the mobile handset ecosystems are largely organised around few giant players owing to their quality standards and unique supply chain systems. However, there is a lot to be done when it comes to the current policies on taxes, labour laws and e-waste management. By structuring these elements, we will be able to attract core manufacturing processes from global brands which will in turn boost employment.

India has a strong opportunity to bulge out as a major player in the global supply chain as it has a robust domestic economy. However, the country needs to encourage high end production of high-value components as well as strengthen research and development capabilities within the country. As of today, product designing is still done in China, but many players are opting to shift to India soon which shall create and allow quicker innovation thus boosting low costs tariffs and effective production.

To become a true global centre for high-value mobile phone manufacturing, India still needs a more stable, business-friendly policy regime in a country known for heavy-handed regulation and abrupt shifts in industrial strategy, industry executives say. The country also needs better workforce training

### TREMENDOUS MARKET OPPORTUNITIES

In spite of huge demand, handset makers in India im-

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Initiatives like Make in India have enabled Indian mobile manufacturing organizations to maximize local value addition and also deliberate on policies, collaborations for research and development, futuristic technologies such as 5G, AI, augmented reality and hardware research.

port semi-knocked down units which include the circuit board, microchip set of the mobile which accounts for more than half of the value of the phone, Most of the other components are also imported such as display screens, Wi-Fi antenna and Mic which are soldered together in India, With this is packed the made in India battery, chargers, USB cables and ear-phones that are finally packed along with the Instruction manual for the final consumer. Component manufacturing hence is an opportunity for the country to encash on, once the demand increases and the ecosystem develops, component manufacturing will follow. While it will take a huge challenge to bring in the entire electronics manufacturing ecosystem to India, building the expertise to manufacture high-end design flagships locally would also be a big initiative for the local industry. Companies have introduced low cost assembly for their products, but due to minimal domestic demand for high-end

technologies such as 5G, AI, augmented reality and hardware research. More roles in assembly, programming, testing in

packaging (APIP) operations are in the process and will attract young talent holding diplomas in electronics and communication or in chip designing (an upcoming study in India targeting opportunities for 20,000 engineers and multiple technicians). These elements will not only create new roles but will also disrupt present job profiles, making skilling a priority requirement. Skilled labour in telecom manufacturing is not a concern at the current stage as there is a lot that is being done to up skill and train the unskilled manpower to meet the requirements and transform into the skilled category. We will have to ensure that this momentum is continual throughout so that the changing demands of the industry are adequately addressed.

#### IN CONCLUSION

In 2019, mobile manufacturing will contribute to overall 17 percent growth in the manufacturing industry, leading to 7+ lac jobs in the sector. Some of the roles in demand will be sales, customer service representatives and technical skilled shop floor personnel. Much of this scaling will be seen in states/cities like Maharashtra, some northern and as well as some southern states. Up-scaling in the sector therefore will become an important prerogative and companies will focus on increasing investments in creating quality talent pool. India will see growth in direct and indirect jobs within the Mobile Manufacturing setup, as high as 230+ factories would see birth in India in the coming years. If India continues to focus on proper infrastructure development, a supportive tariff regime, strong skills development and robust design knowledge, it has the opportunity to emerge as a major global hub in smartphone manufacturing.

It has been identified that Mobile Manufacturing in the country has the potential to grow to a \$230 billion export hub by 2025. Large players are already working on their mobile manufacturing plants in Noida, Uttar Pradesh and others have also shifted base to India's local manufacturing areas. Further India's location point being close to Europe, Africa and Asian countries can also play a major role in increasing the exports. All that the sector needs is boost in terms of policies and tax incentives that aim towards ease of doing business. This will not only lead to a high valued mobile manufacturing market but also bring in large scale employment opportunities and more business opportunities. 

*The author is Business Head – EMPI, TeamLease Services.*



**India needs to encourage high end production of high-value components as well as strengthen research and development capabilities within the country.**

products, they are resisting government pressures to move more of its work from other global countries.

#### DIVERSITY AND SKILLING CRUCIAL TO THE GROWTH

Interestingly, northern and southern regions are preferred for setting mobile manufacturing units, which accounts for more than 50 percent women employees. This is the only industry that initiated the maximum employment for women at every stage. From chip board making to welding and packaging, everything is completely managed by women employees who bring in the expertise and much needed care and caution to handle minute board particles that accumulate together during the manufacturing process. Players such as Xiaomi, Samsung and Foxconn, leading mobile manufacturers have added over 10,000 people, of which 90 percent are women employees.

Initiatives like Make in India have enabled Indian mobile manufacturing organizations to maximize local value addition and also deliberate on policies, collaborations for research and development, futuristic



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By Niranjana Mudholkar

## GROWTH MARKET!

The overall trend in compressors is positive. India is a growth market, and as the Government focuses on increasing the GDP from manufacturing, it is expected to continue to be a growth segment, says **Conrad Latham**, General Manager, Compressor Technique, Atlas Copco India



**“The major challenge comes as Indian manufacturing needs to compete with other countries if it wants to really realize the true opportunities.”**

### **What is your analysis of the air compressor market in India? Where do you think Atlas Copco stands in the Indian market?**

The air compressor market is very much driven by the manufacturing industry of a country. If the manufacturing is growing, then the compressor market will grow. At the moment, we are seeing positive growth for us due to the strong manufacturing growth in 2018. There are some specific areas that are also helping. For example, growth in infrastructure projects means that industries like steel, glass and cement are investing and these are all segments where compressed air is needed.

We have been present in India for nearly 60 years

and as such has a strong market presence across all parts of India. As there are no independent statistics on market share it is not possible to provide the exact percentage share, but we are certainly a market leader.

### **How would you compare India's air compressor market vis-à-vis global air compressor market?**

The India market is a dynamic market that is seeing changes based on the drive to grow manufacturing and implement the 'Make in India' initiative. The major challenge comes as India manufacturing needs to compete with other countries if it wants to really realize the true opportunities. Another major difference between India market versus the global market is the price sensitivity of the Indian market. Global players are seeing that to be competitive in India they need to provide products that represent their brand promises of quality and reliability but at prices accepted in the market. There are companies that are willing to pay for the value of options that are normally associated with improved energy efficiency like variable speed drive compressors, permanent magnetic motors, cost effective adsorption dryers, energy efficient piping systems or even higher IE rated motors.

### **Tell us about the recent trends, challenges and opportunities in this industry. How are you responding to these?**

The overall trend in compressors is positive. India is a growth market for us and as the Government focuses on increasing the GDP from manufacturing, it is expected to continue to be a growth segment. Challenges have been seen following a slowdown in large projects after

GST implementation in 2017, but these started to recover in 2018 with solid investment coming from steel, cement, chemical and glass segments.

We are focussed to maximize customers' productivity by reducing the energy used in compressors. This requires us to listen to their growth plans, understand their challenges and come with solutions that will help them in all areas of energy saving. This is a very moti-

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vating challenge as it works closely with the Government's drive for energy efficiency across India.

**How important is the India market for you when it comes to the air Compressor business?**

Presently, India is a very important growing market for compressors in the Atlas Copco Group. This growth is

//

**“Both globally and locally the demand for compressors and compressed air systems has grown. This is being driven due to the increased demand in manufacturing and infrastructure developments.”**

important to our Group but also to India as it means we are investing in more and more people especially in our sales and service operations but also in our Global Engineering centre at Pune.

**Tell us about your air compressor manufacturing capabilities and capacities in India.**

Atlas Copco India has two manufacturing factories which are both based in Pune, Maharashtra. Our original factory was opened in 1960 and in 2011 we added our Chakan facility to cope with the increase in demand. Both these factories are making products predominately for Indian customers, but both are also exporting products to global customers as well as sending Indian made components to our European factories for final assembly.

There are plans to grow more with both domestic and export demands driving further investments.

Recently, our Chakan plant opened its solar panel power supply and 85 percent of the electricity we use for manufacturing and testing is provided by these solar panels.

**How's been the last one year for Atlas Copco's air compressor business in India as well as globally?**

Both globally and locally the demand for compressors and compressed air systems has grown. This is being driven due to the increased demand in manufacturing and infrastructure developments.

**Which industry sectors are driving the growth for your air compressor business in India?**

One important strategy that we adopt is to have a very diverse customer base. We are seeing growth in most segments across India, but a few are growing more than others. Segments that serve the infrastructure growth are certainly seeing faster growth than others. For example, the tire manufacturers have invested strongly driven by the demand for dumpers and loaders. Other companies have invested to improve their competitive advantage, i.e. the textile segment has invested a lot in energy saving projects to reduce their overall energy usage. The chemical and glass markets are similar as they have updated plants to reduce their compressed air energy bills.

**What strategy are you adopting to build on this growth?**

We focus heavily on training our sales teams to listen to the customers' needs and understand their requirements. We invest heavily in training all our employees on our products and how they can improve our customers' productivity. We know that the service support to our customers is a major factor in why they chose us and as such we have grown our service teams enormously in the last five years. It is more than 300 people strong and with our indirect service teams from our dealers we have more than 800 service engineers available to support our customers 24/7. We will continue to train and grow these teams to always understand how they can improve the energy efficiency of our customers.

**Tell us about some of the technological advancements and innovations that you are offering to help you customers vis-à-vis other players in the market?**

Compressor technology undergoes regular innovation and the drive to reduce the energy bills of our customers is the main force behind a lot of the innovation. Some of the big changes are the move from fixed speed compressors to variable speed compressors, that use only as much energy as required from the varying demand of the customer's application. Recent changes have seen new designs in the compression process of the oil-free screw compressors. We have invested a lot of money in Computational Fluid Dynamics calculations to truly

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understand the detailed flow patterns of air as it moves through a compressor and has used its years of experience, test data and production statistics to highly refine the air and cooling medium channels in a compressor to drastically reduce pressure drops thereby improving the energy efficiency of the compressors it develops.

A lot of innovation is taking place with Industry 4.0 and We have developed the Smartlink system, where it connects the compressors and dryers to a centralized data warehouse. From here, it can provide a huge amount of running data to improve uptime reliability for its customers as well as energy optimization solutions. The latest central compressed air room controller, Optimizer 4.0, is a great development in innovation, again driven by the desire to reduce customers' energy usage. This unique controller can centrally optimize multiple compressors and dryers of different technologies as well as different compressor manufacturers.

It is not only in compressors and software that developments are taking place. Compressed air dryers are also a great area of energy saving and recently

we launched the world's first rotary drum dryer that guarantees -40-degree C pressure dew point. This is a compressed air dryer that uses almost no electricity to provide compressed air at a very high quality. Normally such systems would cost customers more than 11 lakhs in electricity per year, and now we can provide a solution that is almost free to operate. This is real innovation.

#### What is your outlook for the next one year for the air compressor business in India?

Our expectancy is positive. We believe that with the government being re-elected, the focus will remain on growth in manufacturing. With this growth, we expect a growth in compressor and compressed air systems sales. We know that many companies in India now demand more efficient products and understand that energy savings in compressors will bring their overall energy costs down. We will continue to invest in new products and will launch several products in July this year that are made specifically for the Indian market and with these we expect a good growth. 

## NEW PHASE OF UK-INDIA RESEARCH COLLABORATION

A new collaborative research centre in Bengaluru will focus on the development of the next generation of cutting-edge AI, mobility and software engineering technologies.

**B**T and the Indian Institute of Science (IISc), one of India's leading research institutions, has recently kicked off a new phase of UK-India joint research with the opening of a new collaborative research centre in Bengaluru (Bangalore), focused on the development of the next generation of cutting-edge artificial intelligence (AI), mobility and software engineering technologies.

The new BT India Research Centre (BTIRC) will join BT's network of collaborative research facilities around the globe, including centres in Northern Ireland, China, the US, and the UAE. This global innovation network is centred on the BT Labs at Adastral Park, Suffolk, UK, one of the world's leading centres for telecommunications research.

The BTIRC will operate multiple research tracks, focused primarily on artificial intelligence, mobility and software engineering technologies for use in BT's strategic programmes, products and services. Future areas will include cybersecurity innovations. BT is one of



the global research leaders in communications technologies and AI, filing the highest number of AI-focused patents amongst all UK companies with the UK patent office over the last 20 years.

The centre will build on these strong credentials, following a well-established model used for the company's other global research locations, combining academic, industry and government partnerships and BT's own commercial and research expertise.

Professor Tim Whitley, Managing Director for Research at BT, said: "The technologies we'll be developing here, in fields such as AI, mobile and software engineering will accelerate the delivery of exciting innovations to our customers around the globe, taking advantage of the brilliant intellectual capital in Bengaluru."

Professor Anurag Kumar, Director IISc said: "The proposed research topics of mobility and artificial intelligence, with the associated software engineering, are sure to attract strong interest from the IISc faculty and students." 

## MACHINE TOOL MAJOR ANNOUNCES A WHOLLY OWNED SUBSIDIARY CALLED M2NXT

To provide Smart Manufacturing Solutions addressing Industry 4.0 needs of manufacturing segment.

**B**harat Fritz Werner Ltd. (BFW) has announced the incorporation of a wholly owned subsidiary m2nxt. The new entity will provide complete offerings for Smart Manufacturing using both the Cyber and physical automation and solutions. Digitization and Automation are the next big disruption in the manufacturing sector. As an industry leader BFW, will be in the forefront of today's Industrial Revolution. The Company will be a knowledge-based solution provider for advanced manufacturing processes including Jig & Fixtures, Industrial IoT, Robotics and Data Analytics. The vision of the company would be to help enhance profitability through enhanced productivity of manufacturing companies.

BFW has inaugurated its first digital factory in Hosur, Tamil Nadu in August 2018. BFW used all its Digital Knowledge and Competency to showcase productivity improvement in this Factory.

Speaking at the announcement Ravi Raghavan, Managing Director, Bharat Fritz Werner Ltd. (BFW) said, "The digital transformation is bringing sweeping paradigm shifts in the manufacturing segment. Our new subsidiary m2nxt will enable our clients to



significantly enhance the efficiencies by creating Smart Manufacturing through Smart Process, Smart Machine and Smart People."

Praful Shende, Chief Sales & Marketing Officer, BFW said, "We are appropriately placed to enable Industry 4.0 ECO System for our Customers with all the three business verticals – Automation, Process Engineering & IIOT solutions." V Jagannath, Business Head, m2nxt said, "Under our new Company, we are excited about bringing in a compelling value proposition to our clients in Manufacturing segment." 

## MULTIPLE JOINT HINGES INVISIBLE AND HIGHLY MOBILE

**E**lesa+Ganter standards experts are used to providing unconventional Eles+Ganter-standard application solutions for a wide range of applications. After all, the goal is to make it as easy as possible for the customer to use standard elements by means of illustrative product descriptions. It is quite normal that every now and then, a 180° turn around the corner must be considered.

In the truest sense of the word, this requirement also applies to the Stainless Steel-Multiple-joint hinges GN 7237, which are now included in the Eles+Ganter product line. Although they are installed to be space-saving and vandalism-proof inside the housing they allow a 180° opening angle of the flaps, hatches and doors.

This helps achieve optimum accessibility to the housing interior and at the same time, it avoids the blocking of escape routes by open doors, for example. Moreover, the housing exteriors remain free of attachments that do not match the design or that should be avoided entirely in the interests of easy cleaning.

The Stainless Steel-Multiple-joint hinges are made up of fixing angle pieces, which are mounted on the housing



or the door, and an intervening 7-speed, clearance-free, self-lubricated joint mechanism.

Thanks to the movement of the joint mechanism designed by simulation software, when opening, for example, a flap is first slightly lifted and then swung by 180°.

Maximum flexibility in installation: Long holes in the mounting bracket and spacer plates make the hinge adjustable on three levels. For

easy mounting, threaded plates and spacer plates are available as accessories.

To meet more complex applications with specific opening or motion sequences, Eles+Ganter also offers custom-made solutions that go beyond conventional hinge usages, as required, with a 4- or 10-fold joint mechanism as a lifting or pull-out system.

More info at [www.lesa-ganter.in](http://www.lesa-ganter.in)

## INNOVATIVE AUTOMATION SOLUTIONS

A specialist in CNC, vertical milling and turning is presenting its new pallet automation to the wider public for the first time at EMO Hanover from September 16 to 21, 2019.



THE AUTOMATION SOLUTION'S HANDLING SYSTEM GUIDES ONE RAW PART AFTER ANOTHER TO THE MACHINE CENTER AND REMOVES THE MACHINED WORKPIECES TOGETHER WITH THE PALLET AFTER THE CUTTING PROCESS HAS BEEN SUCCESSFUL."

Visitors to the CHIRON Open House have already had the opportunity to take a closer look at the FZ 16 S five axis with VariocellPallet. The specialist in CNC, vertical milling and turning is presenting its new pallet automation to the wider public for the first time at EMO Hanover from September 16 to 21, 2019. The industry has other innovations to look forward to as well, such as the modular-based cell control system CellLine and the automation solution VariocellUno, which can be used to enhance a machining center that is completely out-of-date.

### Machine complex workpieces even more dynamically with VariocellPallet

Specific customer requirements from the automotive industry, tool manufacturing and other leading industries laid the foundations for CHIRON to design its new VariocellPallet pallet automation. This innovative automation solution was specially developed for the new FZ/DZ 16 series with the aim of machining small batches in a more dynamic and flexible way. VariocellPallet allows different raw

"WITH A MINIMAL SPACE REQUIREMENT, THE AUTOMATION SOLUTION IS ALSO ALWAYS ACCESSIBLE TO THE OPERATOR AND, IF NECESSARY, CAN ALSO BE LOADED AND UNLOADED MANUALLY."

parts to be clamped on a rotary table on up to ten prefabricated pallets. The automation solution's handling system guides one raw part after another to the machine center and removes the machined workpieces together with the pallet after the cutting process has been successful. This significantly increases productivity. Another advantage is that one pallet can be machined while another is being loaded.

One of the best things about the VariocellPallet is that it can access the machine center with flexibility: the transfer trolley, which is equipped with rollers and is driven by motors, can be moved in three directions. Rail systems are not necessary. With a minimal space requirement, the automation solution is also always accessible to the operator and, if necessary, can also be loaded and unloaded manually. The FZ/DZ 16 is not only available with VariocellPallet, but also with the modular automation solution VariocellSystem, which is adapted to the specific customer

application.

### CellLine: Convenient control for the entire manufacturing cell

The new IT solution CellLine from the SmartLine portfolio is another automation solution highlight: CellLine allows the entire manufacturing cell, including robots, to be conveniently controlled via an operating panel. If requested, CellLine can be equipped with a modern order management function alongside set-up and diagnosis functions for all assemblies. An Internet-capable version is also available as part of the offering to enable remote access via the cloud and in several languages.

### VariocellUno can be retrofitted immediately

Retrofit specialist CMS is also focusing on automation at the world's leading exhibition for metalwork. In Hanover, it is showing how an outdated machining center can be enhanced by a modern automation solution and how this can significantly improve productivity. Automation is gaining significant importance across different industries. That's why retrofits are an attractive and cost-efficient way for many customers to remain future-proof. Therefore, the integration of the VariocellUno automation solution extends CMS's range of services.



For details, visit [www.chiron.de](http://www.chiron.de)

## LVD ADDS NEW 'PRO' MODEL TO ELECTRIC-DRIVE PRESS BRAKE SERIES

**L**V D Company nv introduces the Dyna-Press 40/15 Pro to its Dyna-Press Series of high-speed electric-drive press brakes. The 40-ton press brake features a 1500 mm working length and a precision five-axis backgauge and can bend at speeds of up to 25 mm per second to generate more parts per hour at a lower cost per part. Dyna-Press 40/15 Pro can be combined with an industrial robot to create a compact, high-speed robotized bending cell (Dyna-Cell) for automated bending operations.

### Speed & Efficiency

The Dyna-Press electric ram offers a smooth transition from approach to working speed and minimizes power consumption through the use of an optimal power to inertia motor ratio. The coupling between the ram



and the servomotors is made using two heavy-duty ball screws to distribute force and tonnage evenly across the working length. As a result, the press brake provides fast, energy-efficient operation across a range of bending jobs.

### Performance Features

The Dyna-Press 40/15 Pro is equipped with a five-axis backgauge which provides consistent and repeatable accuracy. The press brake uses vertical removal tooling style for simple and quick tooling changeover, even of heavier tools.

LVD ensures a comfortable and safety-conscious environment for the operator. Like other Dyna-Press models,

the newest Dyna-Press can be operated in a seated or standing position. The IRIS Lazer Safe guarding system also provides an added measure of security.

Dyna-Press 40/15 Pro is easy to operate with minimal training. The 15-inch Touch-B touch screen control features an intuitive graphical display and offers additional functionality by enabling the operator to create and simulate 3D-designs at the control. The controller is compatible with LVD's CAM software, CADMAN®-B.

Dyna-Press 40/15 Pro features a 400 mm opening and 200 mm stroke. A number of machine options are available: front supports, hydraulic clamping on table and ram, robot interface and contact fingers.

*Source: LVD*

## NO CHANCE FOR MICROBES!

Plain bearings made of high-performance plastics ensure clean air in aircraft and buildings.



**F**or the building and vehicle technology as well as for the aircraft industry, microbes is not only a great annoyance, but also a serious health hazard. To prevent this, it is not only important to use the right ventilation technology, but also to use microbes-resistant components. Therefore, igus had its materials tested for microbes growth. The result: all plain bearings are resistant to fungi and bacteria.

If microbes develops in ventilation systems, the microbes spores in closed rooms, vehicles and buildings are permanently distributed in the air and can easily get into the respiratory tract. To avoid this risk, designers rely on machine elements that are resistant to microbes.

The high-performance plastics from igus are such materials. In a lab test, seven iglidur materials were tested for the effect of microorganisms in accordance with DIN EN ISA 846 method A. This examined the resistance of the materials to fungi and bacteria. Plastics can be used by microorganisms as a source of food and can be changed by the metabolic products of the bacteria. For the test, the plain bearings were stored in a special culture for four weeks at 29 degrees Celsius. The result: an alteration was not found on the tested materials, nor was there a case of mildew.

### Various possible uses in ventilation technology

The microbes-resistant, lubrication-free and maintenance-free plain bearings

are used in aircraft seat and arm adjustments and for the storage of on-board kitchen equipment and luggage lockers. In building technology, plain bearings made of iglidur materials can be found in ventilators and in air damper regulators, which also benefit from the corrosion-free nature of the plastic bearings. Here, the plain bearings also display their insensitivity to dirt. The polymer bearings are easy to clean and resistant to temperature, media and chemicals. Another advantage: The service life of iglidur bearings can be easily determined online with the service life calculator.

*For more info, contact:*

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## MAKING TRACKS: NEW CUTTING TOOLS FOR THE RAILWAY SECTOR



A CENTRAL FACTOR IN OPTIMAL TOOL DEVELOPMENT IS THE CREATION OF A VIRTUAL MANUFACTURING ENVIRONMENT THAT SIMULATES MACHINING PROCESSES AND CUTTING CONDITIONS, TO ENSURE THAT THE TOOLS PRODUCED WILL OVERCOME MATERIAL AND MANUFACTURING LIMITATIONS AND THAT THEY WILL PROVIDE THE BEST SOLUTIONS TO THE SPECIFIC NEEDS OF RAILWAY PARTS PRODUCERS.

**T**he railways industry is one of the main consumers of cutting tools and ISCAR is increasing its role as a supplier of complex projects for this key sector that incorporate essential elements to fulfil the need for layout solutions, efficient productivity, and a reduction in machining time and costs – all demanding a large variety of both standard and tailor-made solutions.

Machining railway parts represents a challenge for manufacturers and cutting tool producers alike, who must contend with a host of constraints - such as the relatively large size workpieces, complex structures, and complicated final machined profile - along with the need to remove a large volume of material, ensure predictable tool life, and avoid high maintenance costs.

When selecting the correct tools and inserts for each job, certain parameters need to be taken into consideration, for example the type of material to be machined, the condition of the part, the available machine tool, its condition and power characteristics, clamping fixtures, etc.

A central factor in optimal tool development is the creation of a virtual

manufacturing environment that simulates machining processes and cutting conditions, to ensure that the tools produced will overcome material and manufacturing limitations and that they will provide the best solutions to the specific needs of railway parts producers.

As an example of this dynamic, it is useful to consider how new tools and processes are adapted to machine bogie components and switchers. The bogie frame is utilized in each of the three main categories in the railway sector: urban transit rail, passenger rail, and freight rail. The switcher is one of the most common parts produced, with typical switchers including crossover, switch diamond, and three-way switch.

### Rotating tools

Many operations for railway part machining involve rotating tools, especially for milling and drilling functions.



In milling, due to the high volume of removed material, conical and profile indexable extended flute cutters are used. The cutters with tangentially clamped inserts feature better possibilities for improving tool strength and ensuring higher tooth density that result in increased productivity. In many cases milling the railway parts requires long-reach tools with different overhang. Modular shell mill design configuration offers a flexible and economical alternative to large-size extended flute cutters with integral body (integral-type design).

### T490 – A modular solution

The combinations of the base units and extensions ensure a variety of extended flute shell mills with different cutting lengths. The modular extended flute assembly possesses another advantage in improving operations. As the first-row inserts in extended flute cutters, which are located near a cutter face, are involved not only in side milling but also in face milling, they experience harder loading and their wear is more intense compared with the other inserts of the cutter. In integral-type cutters, a sudden breakage of a first-row insert can cause serious damage of the cutter and even render it inoperable. In the modular assembly, each



damaged insert can be replaced individually, which enables efficient operation and extended tool life.

All the new cutters are designed with coolant through to extend tool life and improve chip evacuation in problematic areas such as slotting and deep shouldering. This is especially valuable for tangential clamping as the special profile extended flute cutters ensure a reduction in machining time.

In some cases, the profile in the switcher can be machined in one single pass and in other cases it is

THE COMBINATIONS OF THE BASE UNITS AND EXTENSIONS ENSURE A VARIETY OF EXTENDED FLUTE SHELL MILLS WITH DIFFERENT CUTTING LENGTHS. THE MODULAR EXTENDED FLUTE ASSEMBLY POSSESSES ANOTHER ADVANTAGE IN IMPROVING OPERATIONS.



necessary to divide the machining into several passes to produce the right profile and diameter with the correct dimensions.

**Face milling**

The newly introduced T890 line represents a range of face mill cutters for rough and semi finish machining that carry tangentially clamped inserts with 8 cutting edges, intended for facing and shouldering operations in the switchers and bogie frames. The inserts feature different cutting geometry, designed for machining various engineering materials.

**FFQ4 for high feed machining**

A new family of high feed mills that carry square single-sided inserts with 4 cutting edges, the FFQ4, is designed to reduce cutting forces when used on low power machines or long overhang applications. The cutters are available in different design configurations: shell mill in 40 up to 100 mm diameters, and

end mills and replaceable milling heads in smaller diameters. The cutters are intended for roughing operations, such as machining plane surfaces, cavities and pockets, including ramping by line and helix.

**Drilling**

Old traditional bridge-type machines sometimes require high overhang and the drills often need to operate in conditions of reduced rigidity.

The new SUMOCHAM drills with exchangeable drill heads, cylindrical shank and internal coolant holes enable high feed drilling, high accuracy and good surface finish.

Exchangeable ICP-type drill heads are recommended for carbon and alloy steel (ISO P material group), commonly used in producing railway components, and have already received good marks in drilling operations in producing bogie frames.

Combined drills enable users to perform drilling and chamfering operations with the use of the same tool. Manufactured in different diameters, cutting depths and overhangs, the design of the drills facilitates an increase in cutting range conditions and a reduction both in cycle time, as well as in the number of drills involved in the process.

The railway industry is a large consumer of special (tailor-made) drills. In many cases applying special drills ensures minimizing tool overhang, increasing durability of a drill body and utilizing a single tool for several operations. ISCAR proposes a variety of special drill solutions for this sector, in particular for connections between the rails and the switchers, which result in significant reductions in machining costs.

The railway sector's distinctive characteristics and demands impact on cutting tool development in many ways. ISCAR has responded accordingly by designing innovative, productive and reliable solutions intended for heavy-duty applications, that have already been adopted with enthusiasm by manufacturers to improve their processes.

Source: ISCAR

## INTELLIGENT IMMERSIBLE PUMPS FOR MACHINE TOOL INDUSTRY

**In general, pumps have three functions in a machining centre: to cool the process, to lubricate the tools and finally to bring the liquid to the filter and back.**

**T**he machine tools industry in India is integral to building India's 'Make in India' and 'Skill India' initiatives. Machine tools play a critical role in manufacturing across industries such as automobiles, plastics, defence, railways and medical electronics.

Pump operation plays an important role in efficient operation of a machining centre. In general, pumps have three functions in a machining centre: to cool the process, to lubricate the tools and finally to bring the liquid to the filter and back.

This machining process must be

- Energy efficient
- Lowest possible cost
- Adaptable
- precise

Grundfos iSOLUTIONS in machining process is an intelligent way to optimize this process.

**“SOME OF THEM ARE MECHANICAL IN NATURE AND CAN BE DEALT WITH BY USING THE RIGHT PUMP IN THE RIGHT SOLUTION.”**

steady level of pressure and flow based on requirements.

Grundfos's IE5 motors in MTRE Pumps increases the overall energy efficiency of the motor by 7-9% in comparison to other products available in the market currently. The VFD and control function is integrated directly with the motor eliminating the need

for individual components that a customer might require otherwise. This reduces the cost involved in purchasing these components from multiple vendors and the system complexity in integration.



**There are many challenges for pumps operating in a machine centre and because of this, there are many pump variants that are available to cope with these challenges.**

Further, these integrated Grundfos iSolutions in MTRE pump ensure that these pumps are constantly monitored, and data is collected during the process to ensure that the downtime, if any is minimized optimally.

Grundfos iSOLUTIONS is the intelligent approach to optimal pump system and application performance. It offers all the benefits of our pump E-Solutions but adds a whole range of new features based on your specific demands. The result is improved reliability, performance and energy efficiency.

### Supreme speed control

Speed control is an essential part of an iSOLUTION. The frequency converter simply adjusts the pump's speed according to the actual demand to offer a variety of benefits:

- Faster production: One can get the needed pressure and flow at the tool, leading to faster production
- Longer tool life: Speed control gives you the right flow and pressure when you need it; this leads to correct temperature and lubrication of the tools and thus longer life.
- Energy savings: Speed control reduces energy consumption – and CO2 emissions.
- Reduced total cost: Speed control can replace regulating valves, sensors and process equipment, and the quick installation contributes to bringing down the total cost.

Grundfos MTRE pump is a regular MTR Pump with a Variable Frequency Drive (VFD) coupled to it. This addition augments the capabilities of the overall solution, as E Pumps can increase cooling efficiency, process safety, lower operating costs and create a flexible interface for the machining industry. The frequency monitor can control the speed of the motor and maintain a

### GRUNDFOS E-SOLUTIONS - INTEGRATED INTELLIGENCE

A Grundfos E-solution features pump, motor and frequency drive all combined into one product. As the frequency drive constantly adapts pump speed according to demand, it is possible to achieve significant pump energy savings.

- Constant pressure  
The E-pump can start quickly and deliver constant pressure to match any operating point required by selected tools.
- High speed – over synchronous operation  
High rpm for very compact pump design, suitable for installations where space is limited i.e. installation in cabinets or machine centres.
- Pre-set operating points  
Set up the E-pump to operate with several predefined set points to provide the necessary pressure for various demands.





THE VFD AND CONTROL FUNCTION IS INTEGRATED DIRECTLY WITH THE MOTOR ELIMINATING THE NEED FOR INDIVIDUAL COMPONENTS THAT A CUSTOMER MIGHT REQUIRE OTHERWISE.

MTR	The MTR range offers a broad range of high efficiency pumps of different immersible length for varying flow and pressure requirements of up to 102 m <sup>3</sup> /h (1700 l/min) and pressures up to 35 bar. MTR pumps are available as a customised solution in cast iron or stainless steel and in number of variants.
MTRE	An E-solution means electronic control and energy savings. This all-in-one solution with pump, motor and integrated frequency converter is packed with intelligent features that makes installation, operation, and service exceptionally easy and performance much more efficient and reliable. The compact, integrated design comes with one drive for use worldwide and complies with all international standards.
MTH	The MTH range of immersible pumps with the motor and pump in one unit is very compact, increasing the ease of installation. Available in cast iron or stainless steel, the MTH range can be supplied in different immersible lengths for varying flow and pressure requirements. The MTH pump comes with dual frequency 50/60 Hz as standard. The MTH range is ideal for machine tool, wash & clean and chiller applications.
MTA	The MTA range of single-stage immersible pumps has been designed especially for filtering systems in the machine tool industry. The semi-open impellers allow the passing of chips up to 10 mm, making the pumps ideal for removing liquid from any machining process – from boring and milling to grinding. The compact MTA pumps efficiently transport liquid containing chips, fibres and abrasive particles on to the filtering unit.
MTS	Grundfos MTS pumps are screw pumps designed for high pressure pumping of cooling lubricants and cutting oils for machine tool applications. These pumps come with various pump sizes and screw pitches to provide the flow and pressure required. Using MTS screw pumps in machine tool applications, where high pressure is required, results in an increased surface quality and a decreased machining time. The MTS pump is available in different installation variants, such as tank top, in-tank and dry installation, all with a range of connection options.

**Mechanical Solutions:**

There are many challenges for pumps operating in a machine centre and because of this, there are many pump variants that are available to cope with these challenges. The picture below shows some of the pump types often used.

As indicated, there are a lot of challenges when it comes to coolant pumping tasks in a machining

centre. Some of them are mechanical in nature and can be dealt with by using the right pump in the right solution. But when it comes to optimizing the process, then a lot can be done by using Grundfos iSOLUTIONS and Grundfos MTRE pump offers the right solution for this application.

Source: Grundfos

## INTELLIGENT TOOLHOLDER CONTROLS THE CUTTING PROCESS IN REAL TIME



Vibrations, chatter marks, tool failure – what has so far robbed many a machine operator of sleep will soon be a thing of the past: With the smart iTENDO hydraulic expansion toolholder, SCHUNK and start-up company TOOL IT present the world's first intelligent toolholder that monitors the machining process directly at the tool, and allows real-time control of the cutting parameters.

The intelligent toolholders from SCHUNK were designed in cooperation with the Vienna University of Technology and TOOL IT GmbH, Vienna. They fully use the potential of integrated process monitoring directly where the chip is formed. SCHUNK calls this strategy “closest-to-the-part”, whereby the intelligence is integrated directly into the first wear-free element of the machine equipment that is closest to the workpiece. The smart tool is offered in the first step in combination with SCHUNK TENDO hydraulic expansion toolholders from 2019, allowing complete documentation of process stability, unmanned limit value monitoring, tool breakage detection, and real-time control of the speed of rotation and feed rate. Says CEO, Henrik A. Schunk, “For the first time, we combine the outstanding mechanical properties of our flagship TENDO with the possibilities of digital process monitoring.” According to Friedrich Bleicher, the Managing Board Director of the Institute for Manufacturing Technology (IFT) of Vienna University of Technology and founder of TOOL IT:

“Embedded systems technology combine the highest degree of process transparency with the potential of autonomous process control without users having to do without the quality and performance of proven precision toolholders.”

### Geometry and performance data remain unchanged with sensors data:

Toolholders with integrated process intelligence have the same interfering contours as the conventional toolholder mountings. The use of cooling lubricant is possible as usual. Equipped with a sensor, battery, and transmitting unit, the intelligent system records the process directly on the tool, transmits the data wirelessly to a receiving unit in the machine room, and from there via cable to a control and evaluation unit, where the data are analyzed. An algorithm continuously determines a parameter for process stability. Depending on the particular application, a web service can be used to define both the exact limits and corresponding reactions if they are exceeded. The entire process data remains within the closed control loop of the machine, ensuring the highest possible data security.

### Permanent process control and regulation

During machining, the intelligent toolholder permanently analyzes the machining process. If the process becomes unstable, it can either be stopped in real time and without the intervention of the operator, reduced to previously defined basic parameters, or adapted until the cut returns to a stable range. On the one hand, the system enables complete documentation and limit value monitoring as well as an improvement of the machining quality by automatically adjusting the cutting data during vibration. Moreover, the intelligent toolholders should additionally enable an analysis of the tool condition as well as an increase in the metal removal rate. The system is extremely easy to retrofit without the need for modification or replacement of machine components. Since the algorithms run autonomously and the operator defines only exact limit and reactions, no expert assessment of the data determined is necessary. Instead, the system manages the process autonomously and in real time based on the specifications.

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