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THE MACHINIST

ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

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www.themachinist.in

Make in India map gets 'Compass'

Kevin Flynn, Fiat Chrysler's India chief, believes the new made in India Jeep will turnaround the company towards success and growth

Market
GST: A welcome change

Farm Equipment
Ploughing success!

SANDVIK
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Reducing vibration in focus

Vibration-prone operations pose a constant threat to productive and secure machining, especially when dealing with long overhangs or deep cavities. Reducing process parameters such as depth of cut, speed or feed is one aspect to consider, but it will most likely have a negative impact on productivity.

A more productive solution is to use Silent Tools™. Silent Tools is a unique range of long-reach cutting tools and adaptors for turning, milling and boring, designed with a damping system inside the tool body to minimize vibration.

For components requiring slender tool assemblies, Silent Tools can be your one and only choice for productive machining. However, Silent Tools is not only a problem-solver, it can also be used as a powerful productivity booster when working with shorter overhangs.

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Silent Tools™ benefits

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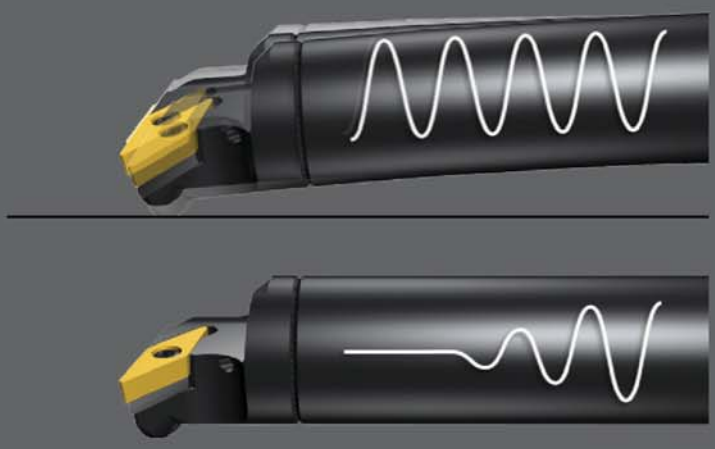
- Improved surface finish
- Productivity gains
- Reduced cost per component



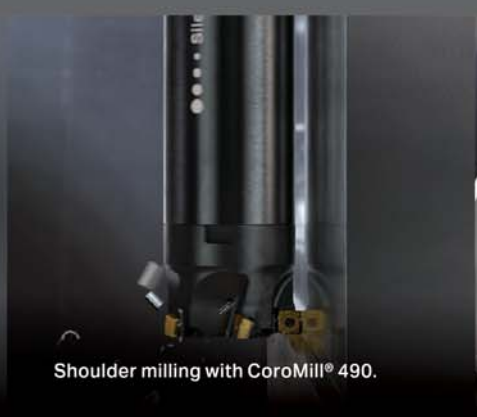
Difference in vibration between undamped and damped tool.

Inside the tool is a pre-tuned damping system that consists of a heavy mass, supported by rubber spring elements. If vibration arise, the kinetic energy will be absorbed by the damping system. This leads to minimized vibration and greatly improved productivity.

Internal turning of mandrel.

CoroTurn® SL with Silent Tools turning adaptor.

Maximum reach with Silent Tools elliptical adaptors.



Shoulder milling with CoroMill® 490.

Titanium milling of aerospace landing gear beam with CoroMill® 390.

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Better & Bigger!

First of all, heartiest congratulations to all the winners of this year's Machie Trophy. You guys are the rockstars for us! Well, some things just get better with time and 'The Machinist Super Shopfloor Awards' function is definitely one of those things. The platform is now three years old and the kind of popularity as well as credibility it has achieved is simply amazing! It continues to scale new heights of excellence and excitement. And all of this is possible only because of this fabulous industry.

We did a couple of distinctly different things in this year's edition. First, we dropped the runner up category completely. The objective is to make the

"TRULY, THE MACHIE SYMBOLISES ALL THAT IS GOOD AND GREAT ABOUT THE INDIAN MANUFACTURING INDUSTRY!"

platform more competitive and more coveted. Secondly, we introduced the practice of showing the top three nominees in each category. This gives a very good idea to the winning team about the competition it has faced on its way to winning the Machie trophy. Both of these practices have been heartily welcomed by the participants. So, we will obviously continue with these two in the next edition. Of course, that's far away and right now we want to celebrate the success of the winning super shopfloors of this year. Well done and well deserved!

I mentioned about the growing national stature of this platform in last year's note. I would like to reiterate it this year. In fact, not only have we seen an increase in the number of nominations but we have also seen a growing trend with regards to the participation of different industry sectors. Truly, the Machie symbolises all that is good and great about the Indian Manufacturing Industry! Cheers!

Editor & Chief Community Officer

THE MACHINIST
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THE MACHINIST
ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

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NEWS

HCL to invest Rs. 500 crore in Vijayawada and Amaravati, Andhra Pradesh

THE GOVERNMENT OF ANDHRA PRADESH executed an Agreement with HCL Technologies regarding HCL's proposed facility in Vijayawada and Amaravati in Andhra Pradesh. The agreement was executed between Government of Andhra Pradesh and HCL Technologies, which were represented by B Sreedhar, IAS, Principal Secretary I/C Information Technology, Electronics and Communications Department, Government of Andhra Pradesh and Vineet Vij, Vice President – Legal, Commercial, Regulatory & Compliance, HCL Technologies respectively, in presence of Nara Lokesh, Minister of ITE&C, Panchayati Raj and Rural Development, Government of Andhra Pradesh and Shiv Nadar, Founder & Chairman - HCL, Shiv Nadar Foundation.

The parties executed a Memorandum of Understanding (MoU) wherein they agreed to the broad outline of the proposed investment by HCL in Andhra Pradesh.

HCL's proposed facility in Vijayawada marks the first marquee investment by a leading IT company post the bifurcation of Andhra Pradesh. The company will invest Rs 500 crore in ten years, for a development centre, training facility and other ancillary facilities.

HCL aims to hire, employ and train 5,000 local residents in the region across the two phases.

India-Chile PTA expanded further to facilitate more bilateral trade

INDIA AND CHILE have entered into another milestone in their trade relations as an agreement on expansion of India-Chile PTA which was signed on September, 2016 is finally being implemented.

The expanded PTA would immensely benefit both sides as a wide array of concessions has been offered by both sides on a number of tariff lines which will facilitate more two way trade.

India and Chile had earlier signed a Preferential Trade Agreement (PTA) on March 8, 2006 which came into force with effect from August, 2007. The original PTA had a limited number of tariff lines wherein both sides had extended tariff concessions to each other. India's offer list to Chile consisted of only 178 tariff lines whereas Chile's offer list to India contained 296 tariff lines at 8-digit level.

The expanded PTA has a wider coverage wherein Chile has offered concessions to India on 1798 tariff lines with Margin of Preference (MoP) ranging from 30-100 percent and India has offered concessions to Chile on 1031 tariff lines at 8-digit level with MoP ranging from 10-100 percent.

These tariff lines were based on HS 2012 when the negotiations had been concluded. With the implementation of the HS 2017 Nomenclature with effect from 1st January, 2017, both sides have aligned their Annexes on India's Schedule of Tariff Concessions, Chile's Schedule of Tariff Concessions and the Schedule on Rules of Origin as per HS 2017 Nomenclature for issue of Notification.

This would facilitate exporters of both sides to take the advantage of tariff concessions as per the expanded PTA immediately which covers around 96 percent of bilateral trade.

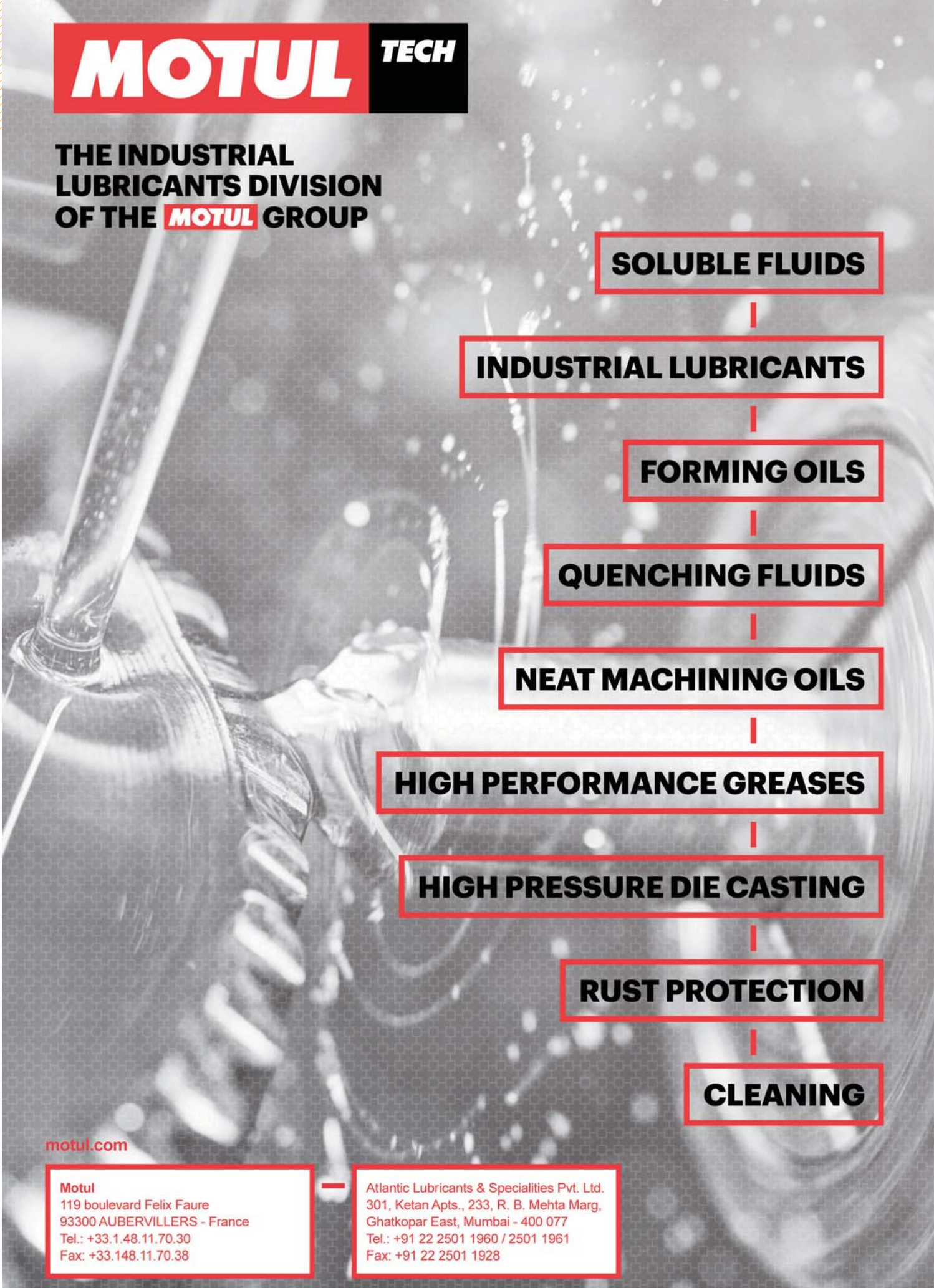
Indian Manufacturing grows for fifth consecutive month

THE INDIAN MANUFACTURING SECTOR stayed in expansion mode in May as a further upturn in new business supported output growth. That said, rates of increase eased in both cases. Spending patterns varied, with employment down but quantities of purchases up from April.

Meanwhile, input costs rose at the slowest rate since last September, whereas charge inflation accelerated. With regards to future performance, goods producers were at their most optimistic in six months. Remaining above the no-change mark of 50.0 in May, the headline Nikkei India Manufacturing Purchasing Managers' Index (PMI) signalled a further improvement in operating conditions. That said, the PMI was down from 52.5 in April to a three-month low of 51.6.

May data pointed to softer expansions in both new orders and production. Incoming new work rose at the weakest pace since February, with slowdowns evident in the consumer and intermediate goods categories. Capital goods producers, meanwhile, recorded a contraction in order books. Output growth across the manufacturing sector as a whole was at a three-month low.

Businesses further increased their purchasing activity during May. Moreover the upturn in buying levels was more pronounced than in April.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India and Fiji sign MoU on defence cooperation

THE MINISTER OF DEFENCE and National Security of Fiji, Ratu Inoke Kubuabola accompanied by his delegation met the Minister of Defence, Finance and Corporate Affairs, Arun Jaitley in New Delhi yesterday (May 29, 2017).

The Ministers discussed expanded defence partnership in maritime security between both the countries, and naval cooperation was identified as an area of promise.

An MoU on defence cooperation envisaging several areas of cooperation including in defence industry, military training and humanitarian assistance & disaster management was signed.

The visiting Minister was received by a Tri-Services Guard of Honour at the lawns of South Block. He also laid a wreath at the Amar Jawan Jyoti at India Gate. Earlier in the day before his arrival in New Delhi, Honourable Ratu Inoke Kubuabola visited the Western Naval Command in Mumbai.

Govt to develop indigenous defence manufacturing capability

THE GOVERNMENT is working towards progressively reducing dependency on foreign manufacturers and developing the defence capabilities indigenously. This was informed by Minister of State for Defence Dr Subhash Bhamre while addressing a seminar, jointly organised by the Indian Air Force (IAF) and Confederation of Indian Industry (CII).

Dr Bhamre further said, "We have included a new procurement category called the Buy Indian – IDDM (Indigenously Designed, Developed and Manufactured) category in the DPP [Defence Procurement Procedure]. This would be the most preferred category for procurement and it is expected to promote indigenously designed products and bring significant investment in defence R&D."

Speaking of partnership with defence industry, Dr Bhamre informed that "The Government of India has been working on formulating a 'Strategic Partnership' model for creating capacity in the private industry on a long term basis." The Government had constituted a task force with experts from various fields to recommend criteria and prescribe methodology for selection of Strategic Partners. The report submitted by the task force has been examined at length and Government shall be issuing the policy for selection of strategic partners shortly.

Asahi India Glass to invest Rs.500 crore in Gujarat

ASAHI INDIA GLASS LTD (AIS) has announced its plans to invest in a state-of-the-art 'Greenfield Automotive Glass Plant' near Mehsana in Gujarat.

The investment is being made to primarily meet the automotive glass requirements of Maruti Suzuki India Limited at its newly-established Gujarat plant. AIS will make an investment of up to Rs.500 crore in the facility in two phases, to be implemented in modules. In the first phase, the plant will have capacities to produce 1 million laminated glasses and 1.2 million tempered glass sets per annum. Investment for the first phase was approved at the AIS board meeting held recently.

This investment is in line with the Make in India initiative launched by the Government of India, and with this investment, AIS will further expand its footprint across India with manufacturing plants and advanced sub-assembly units across multiple locations in the country.

Speaking on the occasion, Sanjay Labroo, Managing Director & CEO, AIS mentioned, "The company has always remained committed to deep and meaningful customer satisfaction much beyond excellent QCDDM – Quality, Costs, Delivery, Development, and Management. Our symbiotic relationship with Maruti Suzuki India Ltd will be further strengthened with this Greenfield investment near Maruti Suzuki's Gujarat plant."

Samsung to invest Rs.4,915 crore in Noida facility

SAMSUNG ELECTRONICS CO., LTD. has announced an investment of Rs.4,915 crore in India. The investment will be used to add fresh capacity at Samsung's Noida plant, where the Company manufactures smartphones, refrigerators and flat panel televisions.

Samsung's investment reconfirms its commitment to 'Make in India' and 'Make for India' and to the state of Uttar Pradesh. The expansion of the Noida plant on an additional 35 acres of land adjacent to the current facility will double the production capacity of both mobile phones and refrigerators, further consolidating Samsung's leadership in the mobile phones and consumer electronics segments.

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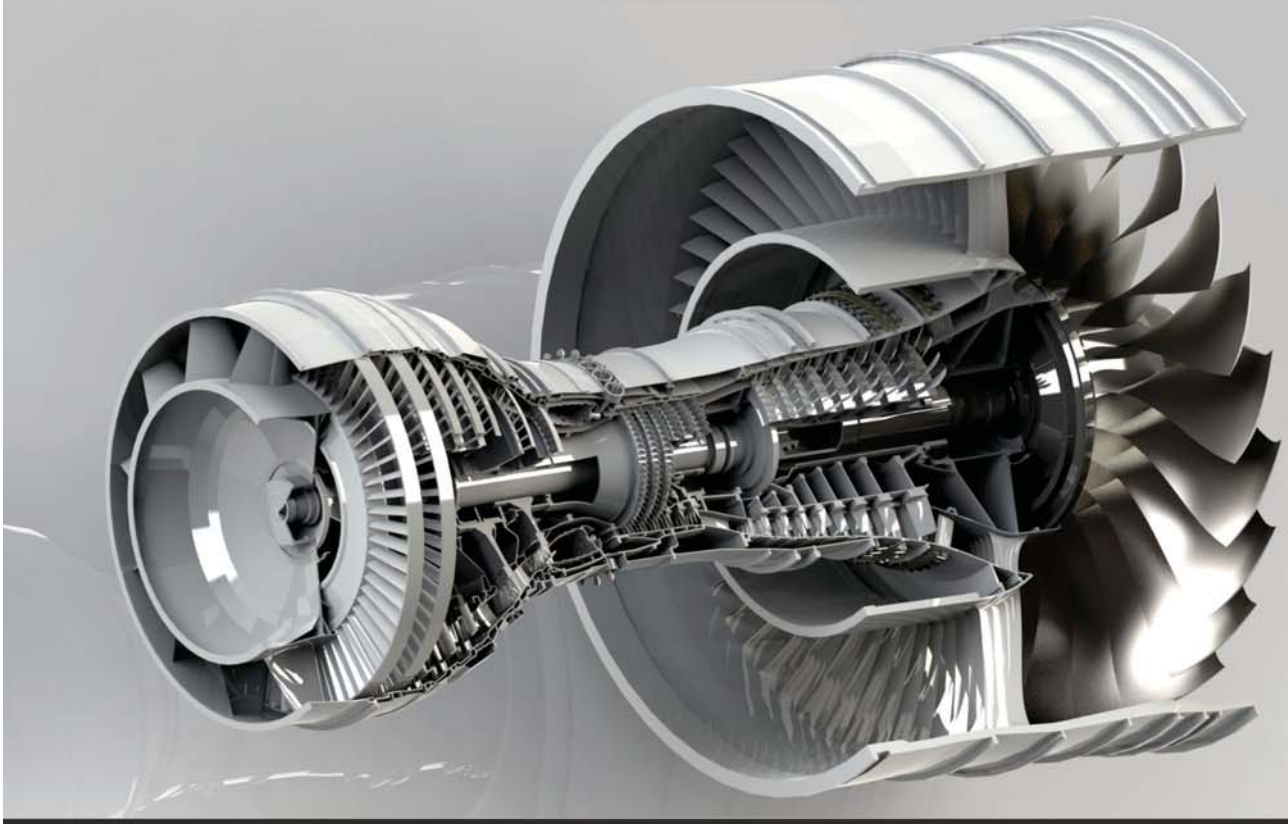

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• MARK YOUR DIARY •

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

AutomationExpo 2017 **August 09–12, 2017** Mumbai *www.automationindiaexpo.com*	**Delhi Machine Tool Expo** **August 10–13, 2017** New Delhi *www.mtx.co.in*	**Tech India** **September 08–10, 2017** Mumbai *http://www.techindiaexpo.com/*	**EMO Hannover** **September 18–23, 2017** Hannover, Germany *www.emo-hannover.de*
ArabiaMold Sharjah **December 11–14, 2017** Sharjah, UAE *http://www.arabiamold.com/*	**ExCon** **December 12–16, 2017** BIEC, Bengaluru *http://excon.in*	**IMTEX 2018** **January 25–30, 2018** BIEC, Bengaluru *http://imtex.in*	**ELECRAMA** **March 10–14, 2018** India Expo mart, Noida *http://elecrama.com/*
SIMTOS **April 03–07, 2018** Seoul, South Korea *http://www.simtos.org*	**Die & Mould India International Exhibition** **April 11–14, 2018** Mumbai, India *www.diemouldindia.org*	**Hannover Messe** **April 23–27, 2018** Hannover, Germany *www.hannovermesse.de/home*	**CeMAT** **April 23–27, 2018** Hannover, Germany *http://www.cemat.de/*

OUR INHOUSE UPCOMING EVENTS

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

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

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

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Delta Standard Power Supplies

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DIN Rail	Panel Mount	Open Frame	LED Driver	Medical Type
CliQ	PMC	PJ	LNE	MDS
CliQ II	PMT	PJB		
CliQ M	PMF	PJT		
Lyte	PMH			
Chrome	PMR			
Sync	PMU			

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ADNAN AHMAD IS CLARIANT'S INDIA PRESIDENT

Clariant has announced the appointment of Adnan Ahmad as Region President, India. He succeeds Deepak Parikh who has been instrumental in implementing and leading Clariant's growth strategy in India for the past four years.

Deepak Parikh will now serve as the Region President for Clariant in North America as well as chief executive officer of both Clariant Corporation and Clariant Canada Inc.

Effective June 1, 2017, Adnan Ahmad assumes the role of Region President for Clariant in India and also the Vice-Chairman & Managing Director of Clariant Chemicals (India) Ltd. Adnan, an Indian citizen, has over 32 years of industry experience across sectors and continents. He began his career with ICI where he worked in a variety of manufacturing, supply chain and business roles across India.

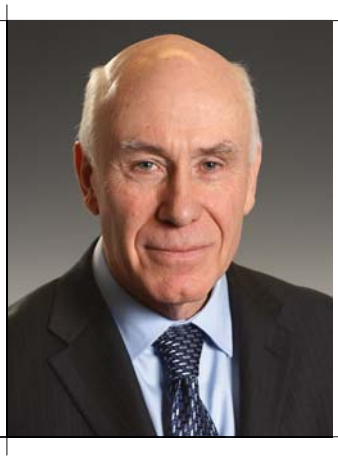
FORD APPOINTS JIM HACKETT AS THE NEW CEO

Ford Motor Company has named Jim Hackett as its new President & CEO and announced key global leadership changes designed to further strengthen its core automotive business and accelerate a strategic shift to capitalise on emerging opportunities.

Hackett, 62, has a long track record of innovation and business success as CEO of Steelcase, Interim Athletic Director at the University of Michigan and executive chairman of Ford Smart Mobility LLC since March 2016.

Reporting to Executive Chairman Bill Ford, Hackett will lead Ford's worldwide operations and 202,000 employees globally. He succeeds Mark Fields, 56, who has elected to retire from Ford after a successful 28-year career with the company.

LANXESS APPOINTS STEPHEN FORSYTH AS MEMBER OF BOARD OF MANAGEMENT



LANXESS has expanded its Board of Management: effective June 1, 2017, Stephen C. Forsyth (61), a British citizen, will serve as Chief Integration Officer responsible for integrating the Chemtura businesses into the Cologne-based company. LANXESS acquired the U.S. chemical company in April 2017. This newly created position is limited to one year.

Forsyth has more than 35 years of management experience in the chemical industry. Since 2007 he has acted as Executive Vice President and Chief Financial Officer of Chemtura and in that time has played a decisive role in developing Chemtura into a profitable company. Prior to that, he worked 27 years for the materials company Hexcel Corporation, holding various positions. There, he was appointed Chief Financial Officer in 1996, having previously worked as Vice President International Operations, heading up the business outside the United States. Forsyth holds an MBA from the London Business School.

TATA SONS APPOINTS SHUVA MANDAL AS GROUP GENERAL COUNSEL

Tata Sons has announced the appointment of Shuva Mandal as the Group General Counsel. Mandal will join the company with effect from July 2017. As a prelude to his retirement next year, Bharat Vasani, the current Group General Counsel of Tata Sons for the last 17 years, has expressed a desire to move into a more strategic and advisory role. Accordingly, Vasani will continue with the group as Legal Adviser to the Chairman's office.

A graduate of the National Law School, Bangalore, Mandal has over 17 years of experience in the legal profession and has advised leading Indian enterprises, global private equity firms as well as Fortune 500 companies.

A member of the Bar Council since 2000, Mandal began his career with legal firm AZB Associates between 2000-15 before moving to Shardul Amarchand & Co (Advocates & Solicitors) as Partner and National Practice Head for Corporate, M&A and Private Equity. During his career, Mandal has been actively involved in deal structuring, advising on securities law and development of legal strategy for corporations.

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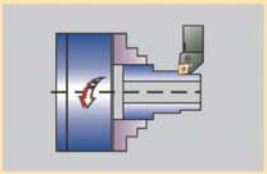


SC-8K
GANTRY LOADER

SC-14
BIG BORE LATHE

SC-25
CNC HEAVY DUTY LATHE

CNC Internal Grinding

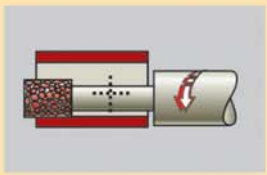
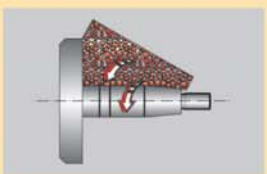


FIG-200 SPL CNC
BIG BORE GRINDER

FIGT-300 CNC
FOUR STATION TURRET

FIGE-150 CNC
ID / OD GRINDER

CNC Cylindrical Grinding

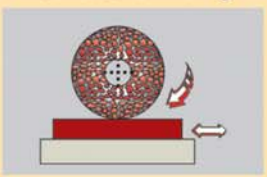


AWH-1500 CNC
LONG SHAFT GRINDER

AWH-2000 CNC
HEAVY DUTY GRINDER

SWH-400 CNC
AUTO LOADING

Surface Grinding



SG-106 CNC
CREEP FEED GRINDER

SGR-60
ROTARY GRINDER

SG-63
HYDRAULIC / PLC

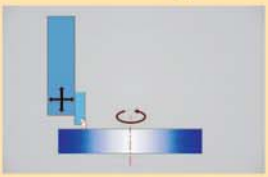
Automats

A15/25

TD36
AUTOLOADING

A42/60

Vertical Turning Lathe



VIG-500 CNC
VERTICAL INTERNAL GRINDING

VC - 60C
1.5 M

VC - 75C
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FABRICE CAMBOLIVE TO BE SR. VP., CHAIRMAN OF GROUPE RENAULT'S AMI REGION

Fabrice Cambolive will become Senior Vice President, Chairman of the Africa-Middle-East-India (AMI) region. He will report to Stefan Mueller, Chief Performance Officer of Groupe Renault, and join the Renault Management Committee (CDR).

The appointment follows the departure of Bernard Cambier who will leave the company.

"I extend my sincere thanks to Bernard Cambier for his contribution to Groupe Renault performance. Thanks to his determination and professionalism, he has successfully tackled numerous challenges, notably in international trade. His knowledge of markets, good business sense and customer management skills have strongly contributed to the Group's sustainable growth", said Stefan Mueller.

COVESTRO CEO TAKES OVER AS INTERIM CFO

Covestro CEO Patrick Thomas will assume the role of interim CFO following the resignation of Frank H. Lutz. Patrick Thomas has an excellent reputation within the capital markets based on his long-standing financial and industry expertise, particularly since Covestro's successful IPO under his leadership in 2015.

Dr. Richard Pott, Chairman of the Supervisory Board of Covestro said, "We regret Frank Lutz' decision but of course we respect this step and thank him for his contribution to the succesfull development of the company. Covestro is in an excellent position to pursue its strategy of long-term profitable growth, based on operational strength and strong financial results. The search process for a successor is on the way."

ATLAS COPCO APPOINTS CECILIA SANDBERG AS SR VICE PRESIDENT HR

Atlas Copcohas appointed Cecilia Sandberg as Senior Vice President Human Resources and member of Atlas Copco's Group Management. Cecilia Sandberg will start in this position by October 1, 2017.

"Cecilia has a broad knowledge of all aspects of the human resources area and has successfully contributed in attracting talent and in building successful teams," said Mats Rahmström, Atlas Copco's President and CEO. "She has a solid experience, not only from Atlas Copco, which will be beneficial moving forward with our ambitious plans."

Sandberg began her career in 1994 as Human Resources consultant for a travel agency. From 1999 to 2007 she held different Human Resources roles at Scandinavian Airlines and at multinational pharmaceutical company AstraZeneca.

Between 2007–15 Sandberg was Vice President Human Resources for Atlas Copco's Industrial Technique business area. Her current position is Senior Vice President Human Resources for Swedish-based power wheelchair manufacturer Permobil.

ROLLS-ROYCE APPOINTS NEW DIRECTOR

Rolls-Royce has announced the appointment of Ben Fidler into the new senior leadership role of Director, Group Financial Planning & Analysis, reporting to Chief Financial Officer Stephen Daintith. Ben, presently an Aerospace and Defence Analyst with Deutsche Bank, will take up his new appointment at the beginning of September 2017 and will have responsibility for management reporting, forecasting, budgeting and long-term planning.

Stephen Daintith, Chief Financial Officer said, "Ben will bring exactly the right sort of rigour and challenge that Rolls-Royce needs to achieve our long-term goals and secure a more profitable and cash-generative future."

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New Holland delivers India's first 230HP tractor to Antony Lara

New Holland Agriculture has delivered the first 230-hp tractor in India to Antony Lara Enviro Solution Pvt Ltd recently. The award-winning T7070, from the New Holland exclusive Blue Power range, will be part of a project in Greater Mumbai, which aims to cut the city's greenhouse gas emissions by improving solid waste treatment. The T7070 will operate a compost windrow turner, a large machine which aerates biodegradable waste.

Antony Lara is a waste management company, currently working on the project for processing and disposal of 4,000 tons of waste per day for a period of 25 years. This solid waste management project will reduce direct dumping of solid waste in the dumping grounds and in turn the emission of greenhouse gases. It will also enable production of by-products which can be used for power generation and heat recovery, horticulture or farming, thereby promoting sustainable waste management in the city.

John Deere upgrades harvester stick boom attachment across two ranges

To help loggers maximise timber quality, John Deere has upgraded its harvester stick boom attachment across all 800MH- and 900MH-Series tracked harvesters.

The new stick boom geometry delivers the same high level of boom envelope performance, but with a narrower design to help operators minimise damage to harvested trees.

"Avoiding unnecessary damage to harvested trees while operating out in the field has always been a major concern for the industry. When tree damage occurs, it greatly reduces the value of the logs," said Brandon O'Neal, Global Product Marketing Manager, John Deere.

"The narrower boom allows loggers to significantly reduce boom to tree contact, resulting in higher quality logs and a better bottom line," added O'Neal.

The new boom stick is 122mm (4.8 inches) narrower at the attachment end than the existing booms, reducing contact with the harvested tree. This narrower boom uses the standard Waratah supplied dogbone adapter for traditional external hose routing.

A new, narrower cradle supplied by Waratah will continue to offer customers with an optional through-the-nose plumbing solution.

KUHN Farm Machinery introduces new seed bed cultivator

KUHN Farm Machinery will has recently launched a new multi-purpose seed bed cultivator. Available in two working widths, the PROLANDER 6000 (6.0m) and PROLANDER 7500 (7.5m) feature five rows of tines mounted on a high clearance frame. Both machines are designed for a range of minimum tillage cultivation purposes: from second pass seedbed preparation to shallow stubble cultivation. The PROLANDER series is fitted as standard with hydraulically adjustable forward mounted support wheels and can have the option of a hydraulically adjustable levelling board. A choice of rear rollers can also be selected, thereby enabling users to customise their machine to suit specific soil and cropping conditions. Rear levelling harrow options are also available.

Both models fold to a width of 2.83 metres for easy transportation purposes and feature five rows of tines (39 tines on the PROLANDER 6000, 49 tines on the PROLANDER 7500). Vibrating S tines (70x12mm) are positioned at 155mm intervals and can be fitted with 60mm shares for seedbed preparatory work, or with 180mm duck-foot shares for surface stubble ploughing.

Escorts Profits grow by 91.6 percent reporting profit of Rs. 160.4 crore

Escorts Ltd reported a profit of Rs. 160.4 crore in year ended March'17 up by 91.6 percent as against a profit of Rs. 83.2 crore in the previous fiscal.

In year ended March'17, Tractor sales were up by 24 percent at 63,786 tractors as against 51,455 tractors in the previous fiscal. Construction equipment volume went up by 29.6 percent at 3,315 units as against 2,555 units in the previous fiscal.

Turnover up by 21.2 percent to Rs. 4,167.6 crore as against Rs. 3,438.7 crore in the previous fiscal. Material cost was down by 90 bps at 67.0 percent as against 67.9 percent in the previous fiscal.


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Honeywell Starts automotive refrigerant production facility at Geismar

Honeywell has announced that it has started commercial operations at its new manufacturing plant in Geismar, La., to meet the growing global demand for its next-generation mobile air conditioning refrigerant. With this start-up, the plant has become one of the world's largest site for producing HFO-1234yf, sold commercially as Solstice yf. Solstice yf is a product that was developed by the company's team of scientists to meet the needs of the automotive industry to replace R-134a, the most widely used auto refrigerant. Solstice yf has a global-warming-potential (GWP) of less than 1, which is lower than carbon dioxide and 99.9 percent lower than R-134a, which has a GWP of 1300. R-134a is a hydrofluorocarbon (HFC), which many governments and industries have been looking at phasing out since the early 2000s.

"Solstice yf is a breakthrough innovation that is helping the auto industry transition to more environmentally preferable technologies without sacrificing performance," said Ken Gayer, vice president and general manager of Honeywell Fluorine Products. "Honeywell invested significantly in research

and development for more than a decade to enable our award-winning scientists to create new, near drop-in alternatives to meet the rising demand to replace HFCs. Solstice yf is one of the best solutions available to meet global requirements because it is safe for intended use and is capable of addressing both fuel efficiency and greenhouse gas emissions."

Volkswagen starts new JV for e-mobility with Chinese Automaker

The Volkswagen Group is expanding its engagement in the People's Republic of China with a new joint venture. In the presence of Federal Chancellor Angela Merkel and Chinese Premier Li Keqiang, Volkswagen signed a joint venture agreement with the Chinese automaker Anhui Jianghuai Automobile (JAC) in Berlin recently.

Each of the partners is to hold a 50 percent stake in the new company, which is to develop, produce and market electric vehicles and mobility services. "The new partnership is a further milestone in our electric offensive in China," said Matthias Müller, CEO of the Volkswagen Group, commenting on the agreement. "Just as we have played a key role in shaping mobility together with our partners in China over the past 30 years or more, we want to play our part in shaping the mobility of the future: electric, fully networked and in line with the needs of our customers."

The new joint venture, which has initially been concluded for a term of 25 years, will develop electric vehicles together and launch them on the hotly contested Chinese mass market. The agreement provides for the construction of a further factory as well as a research and development center.

The joint venture also includes the development and production of components for new energy vehicles (NEV), the development of vehicle connectivity and automotive data services. In addition, it is intended that the joint venture should establish new used vehicle platforms and engage in all related business activities.

Daimler, BAIC Group sign a framework agreement

Daimler AG and its Chinese partner BAIC Group recently signed a framework agreement on further strengthening their strategic collaboration through investments for New Energy Vehicles in China.

Hubertus Troska, Member of the Board of Management of Daimler AG, responsible for Greater China, and Xu Heyi, Chairman of the BAIC Group attended the signing ceremony held in Berlin.

The framework agreement will center on two significant investments. As one part of this investment agreement, Daimler intends to acquire a minority share in Beijing Electric Vehicle Co., Ltd. (BJEV), a subsidiary of the BAIC Group, with the purpose of strengthening strategic collaboration with BAIC in the NEV sector.

As another part of the framework agreement, investment will also be placed in the upgrade of the current production facilities at their joint venture Beijing Benz Automotive Co., Ltd. (BBAC), paving the way for the introduction of New Energy Vehicle production.

"Localisation is the key to Daimler's sustainable growth and future success here in China. We have been intensifying local research and development, as well as local production, to highlight the preferences of our Chinese customers. They have made this the largest market worldwide for Mercedes-Benz, and this is especially thanks to the strength of our Sino-German cooperation with local partners," said Hubertus Troska.

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Maruti Suzuki plans to set up Automobile Skill Enhancement Centres

Maruti Suzuki India Ltd (MSIL) plans to set up Automobile Skill Enhancement Centres (ASECs) across 15 Government run ITIs, across 11 states, in the next three months. These ASECs will be part of the Company's skill development initiative under Corporate Social Responsibility.

The first of these ASECs was inaugurated by Kenichi Ayukawa, MD & CEO of Maruti Suzuki at ITI Nizamuddin in New Delhi. Each ASEC will be equipped with a state-of-the-art workshop to provide practical training in automobile service and repair to students.

The workshops will be equipped with modern-day service tools and equipment and latest Maruti Suzuki vehicles. Along with this, the company will appoint full-time trainers. It will arrange training for the existing ITI teachers on latest technology and equipment. Maruti Suzuki will also organise industrial outreach programmes to upgrade skills of students and make them job-ready.

Mahindra Electric unveils the EV 2.0

Mahindra Electric recently unveiled a comprehensive technology and product roadmap, leading to the next generation of Electric Vehicles, which the company internally refers to as EV 2.0. With increasing concerns over clean air, urban congestion and rising fuel import bills, electric mobility is set to become mainstream. The Government of India recognises this fact and is actively pursuing rapid adoption of electric vehicles, for private as well as public – shared mobility.

Recognising this fact, the Company now offers a range of EVs, suitable for personal as well as shared and last mile connectivity. At the same time, the Company is investing in next generation EV technology solutions which will deliver longer range, higher speeds and the next generation of connected car technologies.

Further, Mahindra is actively engaging with the ecosystem stakeholders, both private and public to drive faster adoption of electric vehicles. This includes setting up of charging infrastructure and fleet operations, delivering mobility as service. The connected car solution that is already rolled out will serve as the building block for smart mobility in the smart cities, which are currently under development.

Tata Elxsi's offers new software for carmakers and component suppliers

Tata Elxsi, a global design and technology services company and a leader for automotive electronics and software development, announced the licensing of its advanced autonomous vehicle middleware platform 'AUTONOMAI' to one of the world's top five automotive OEMs for their driverless car R&D.

The AUTONOMAI platform provides carmakers and Tier 1 automotive suppliers with a comprehensive and modular solution covering Perception, GNC and Drive-by-wire systems, to quickly build, test and deploy autonomous vehicles.

This solution supports sensor fusion with a variety of sensors from cameras to Radar and Lidar, and leverages sophisticated artificial intelligence (AI) and deep learning-based algorithms to deliver the complex use-case scenarios expected of driverless cars.

AUTONOMAI also allows rapid region-specific adaptation through its pre-integrated validation datasets and AI and deep learning capabilities.

Magna expands seat facility in Serbia from 4,300 sq m to 10,000 sq m

To accommodate new business and expected employee growth in the facility of 30 percent, Magna has started construction to expand its seat trim facility in Odžaci, Serbia, from 4,300 square meters to 10,000 square meters. A $3.5 million investment, the expansion doubles the amount of floor space available in the facility. Serbian Prime Minister, Aleksandar Vučić, recently joined Magna employees in celebrating the expansion.

"It is exciting to improve upon and expand our trim facility in Odžaci, which we have seen strong growth in terms of business and employment levels," said Mike Bisson, President of Magna Seating. "The expansion of the facility positions us even further to bring in new business and service our customers throughout Europe."

The seat trim facility originally opened in Serbia in 2013 with roughly 400 employees. Today, the facility houses nearly 1,200 employees and is expected to create an additional 400 jobs in the next two years.

Magna's Serbia facility produces seat trim covers to customers including Ford, Skoda, Audi and Renault.

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The Machinist caught up with **Varun Gadhok,** Country Manager - Manufacturing Solutions, India & SAARC - Autodesk India Pvt. Ltd., at the Company's Moldflow Users Conference 2017 in Pune recently to understand about the event as well as to discuss some industry trends.

By Niranjan Mudholkar

Q How have you seen this event 'Moldflow Users Conference' grow over the years?

At Autodesk, we have a lot of offerings for the industry with Moldflow being one of them. For Moldflow, we have seen that this has become our flagship event. That's the reason you see a lot of our global representatives also participating here. In fact, this is one of the key events for Moldflow globally. The whole idea is to let users share their experiences rather than we talking about it.

Through this platform, we facilitate customers to interact with each other and exchange ideas as well as best practices. We also have customers talking about their success stories. Besides our Indian customers, we also invite customers from other markets to come and share their case studies. So this year we had a speaker from China and last year we had one from Australia. We take consistent customer feedback about what they would like to see in future releases and so on. It's very interactive in nature and our customers find it very useful, which is why the registrations keep on increasing every year.

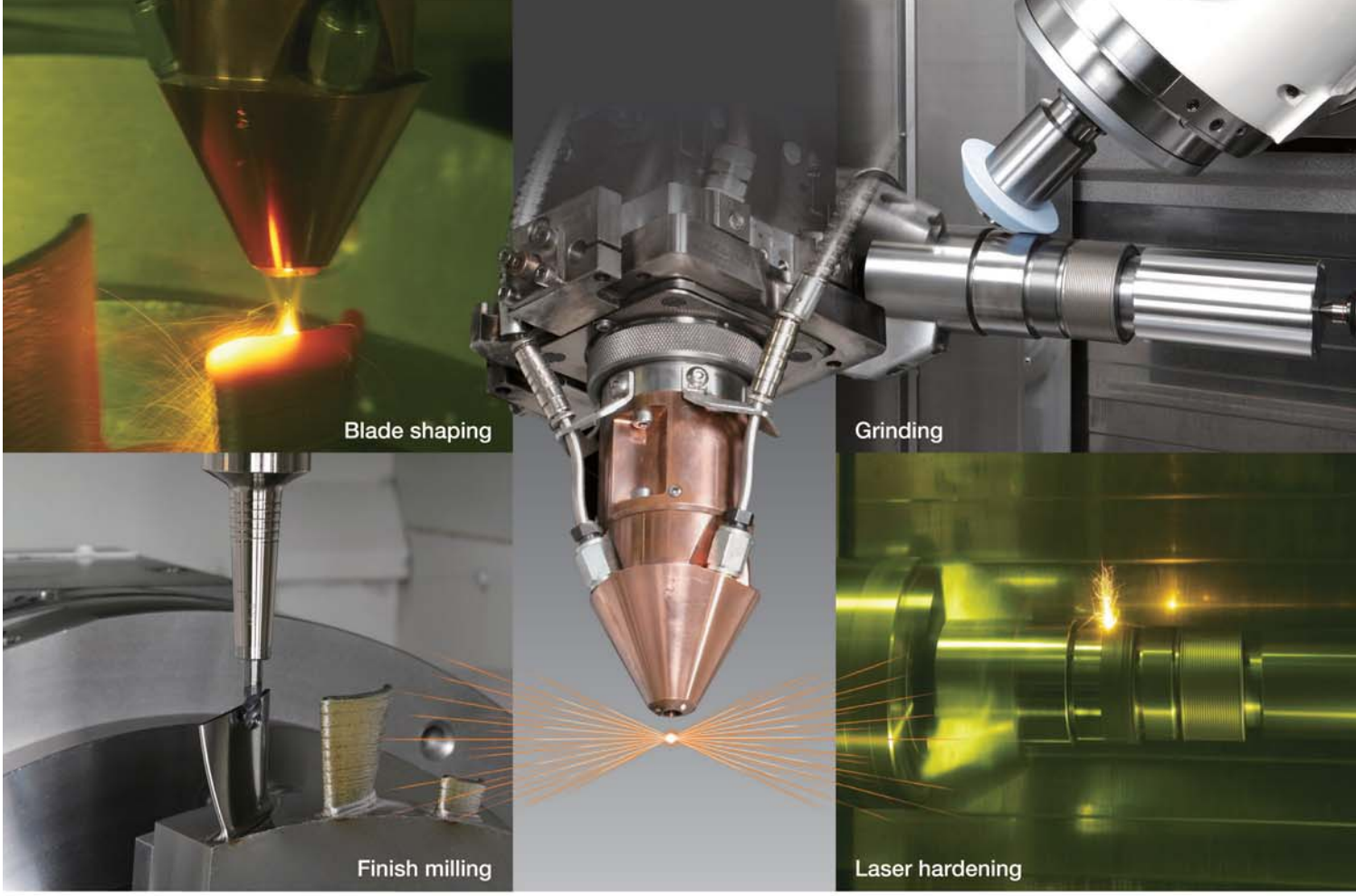
Q That's quite interesting. What's your take on the overall manufacturing scenario in the country and the way it is evolving?

We are living in an interesting era. In fact, it is a very disruptive era and it is very much applicable to the manufacturing industry. Earlier the industry used to primarily talk about aspects like productivity and processes. But now is the time when disruption is happening. If manufacturing companies need to be in leadership position then they need to also do a lot of other things. Today, companies also need to look at flexible manufacturing. Secondly, they need to keep pace with the constantly changing customer demands. And thirdly, they need to make their products smarter. Today, the product itself is getting so smart that manufacturers need to ensure that they build in all the important factors in it to keep it relevant. Companies are today moving from optimisation to connectivity. For this, we are providing the companies a product innovation platform, which is not a piecemeal solution. It is Fusion 360, the first 3D CAD, CAM, and CAE tool of its kind, which connects your entire product development process in a single cloud-based platform. The key challenge for the manufacturing industry is the disintegrated work flows and they have different solutions for different aspects. This is an end-to-end solution that integrates every aspect of the manufacturer's work flow.

"Today, companies also need to look at flexible manufacturing. Secondly, they need to keep pace with the constantly changing customer demands. And thirdly, they need to make their products smarter."

Q A lot of talk is happening about Industry 4.0 and IoT. How is Autodesk helping its customers on that front?

Within this product innovation platform mentioned earlier, we cater to all the three key aspects – design, make and use. That is what Industry 4.0 is all about – the interconnectivity of these three aspects at the product level as well as at the factory level. But the misconception about this technology is that it is very futuristic and very expensive because that has been the case in the past. But we are enabling our customers to design, make and use in a very cost effective manner. That is the reason why you have seen that our model has also changed from a perpetual model to the subscription model, which is a pay-per-use model. It is a lot more flexible as well as cost effective model. That is how we are helping the industry keep pace with the changing times.



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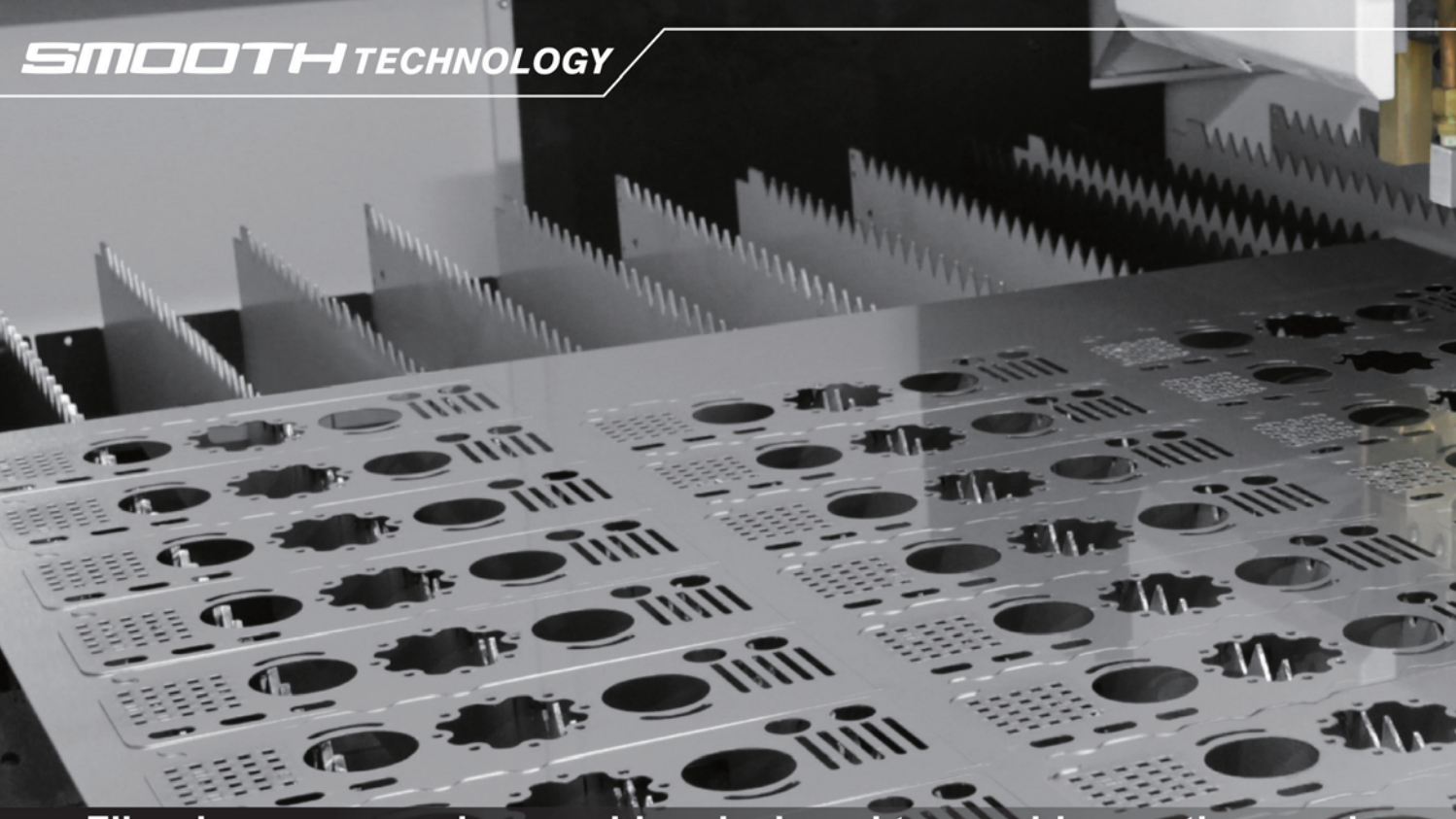

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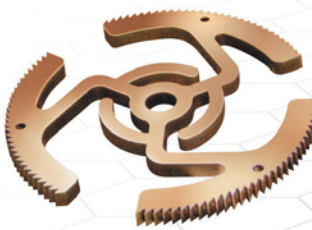

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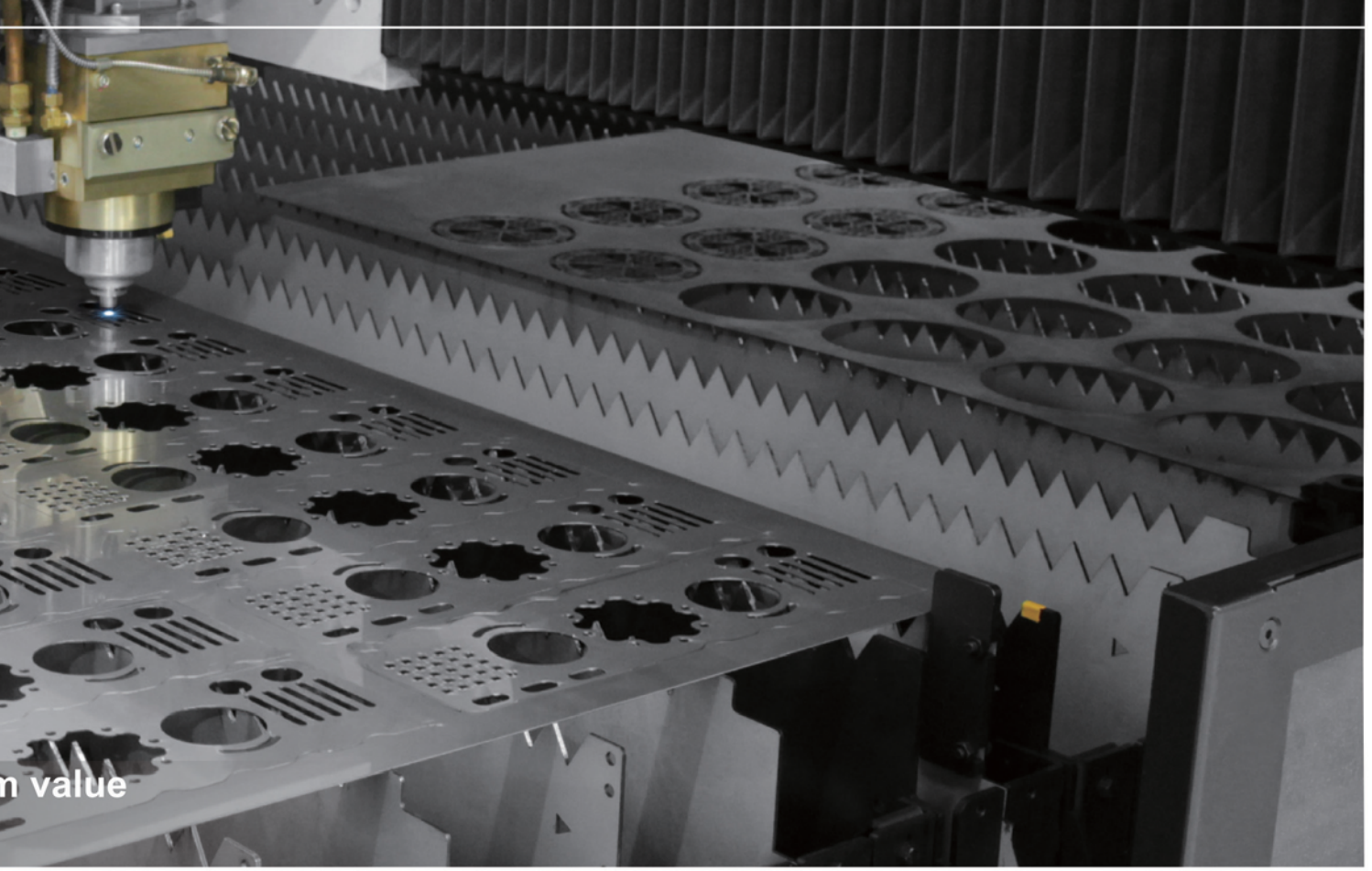

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Make in India map gets 'Compass'

Kevin Flynn - President and MD, Fiat Chrysler Automobiles (FCA) India, believes that Jeep Compass will not only turnaround the fortunes of FCA India positively but will also create a big impact on the SUV segment in the country.

By Niranjan Mudholkar

Kevin Flynn, President and MD, Fiat Chrysler Automobiles (FCA) India, is an excited man. And why not? Fiat Chrysler's global dream project of the all new Jeep Compass has now taken off at the production stage at its Ranjangaon facility in Pune, Maharashtra. The first Jeep Compass rolled out of the Ranjangaon plant on June 1, 2017, driven out by the Chief Minister of Maharashtra Devendra Fadnavis. And now Kevin and his team are focussed on the market launch of the vehicle scheduled in the third quarter of calendar year 2017. That's just around the corner and the team is all geared up.


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The journey

Of course, it has not happened overnight. It is a culmination of the hard work of a few years. In fact, Kevin has been part of this journey for over two years ever since he took charge of FCA India in February 2015. And he says his journey has been fascinating. "Actually, it's been invigorating. I have learnt so much in the past two years. This market is absolutely unique. And to have an opportunity to take on the challenges of the Indian market, I actually count as a privilege. I think it is a test. So it's been a really brilliant journey so far. For me, the culmination of these two years is bringing together of this Compass project," he shares. "Introducing some of the new technologies that we have brought to the market place for this car and getting ready to take on the market in India as well as becoming an export hub for the right hand drive markets in itself has been a great journey."

> "Jeep Compass is a global car and we are one of the four global plants manufacturing it to global standards. The beauty for India, as a car market, is that it is getting a global car that is manufactured here to those exacting global standards."

Kevin humbly acknowledges that the Company and his colleagues started that journey ahead but he also has had the privilege to be part of the landmarks that the team has achieved in this journey. "It's a phenomenal learning as well as experience, and now we have started to see the fruits. So I am very excited." In fact, Kevin believes that the Jeep Compass will not only turnaround the fortunes of FCA India positively but will also create a big impact on the SUV segment in the country.

"We want to give our Indian customers a truly global product with unmatched features that will definitely appeal to their aspirational tastes. While the product itself has many industry-first features in the Indian SUV segment, we have also used many new and advanced manufacturing technologies at our Ranjangaon facility to produce this vehicle," he adds.

A global product

Jeep Compass, which was first unveiled to select journalists at a technical immersion session at the Ranjangaon facility in April early this year, is the first Jeep product to be manufactured in India. While FCA launched the Jeep brand in the Indian market for the first time in August 2016 with its Completely Built Units (CBU), it is counting big on the Jeep Compass to establish the brand presence in this market.

James Lyijynen - Chief Program Engineer Jeep Compass FCA Global, who was also present to witness the unveiling of the SUV at the Ranjangaon plant, says that the Compass is being built in four plants globally. "The Ranjangaon plant in Pune, India is the fourth plant. We launched the Compass in the plant in Brazil followed by China, Mexico and now in In-

Investments at manufacturing level

"The investment at our plant and the investment at our suppliers is US$ 280 million. We have put up a completely new advanced body shop and we have extended our assembly and have integrated absolutely state-of-the-art equipment into that. This is one of the most flexible lines in the country in terms of the number of products that we can roll out from it. Our logistics and supply chain are also geared to handle the flexibility and complexity of the production line. We have a facility that can make a total 1,60,000 cars annually. Depending on the market demand, we will allocate the capacity to specific products."

- **Gurpratap Boparai,** CEO Fiat India

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"A lot of car companies will make a car first for India, make it work financially in India and then look for opportunities in other markets. That is not what we are doing. India is getting a global car built to global standards in India. It's a tremendous accolade for Indian manufacturing and engineering."

dia. The other three plants are left hand drive markets. India is a growing right hand drive market, it gave us the opportunity to do two things --- to develop the right hand drive product for India and to centralise our product for right hand drive markets in one plant. And we have done that," he says, with a certain pride. "All our four plants talk to each other in terms of exchanging relevant information. So one of the benefits that the India plant has that it has all the lessons learnt from the three previous plants," he adds.

Speaking about the plant's readiness to roll out a truly global product, Gurpratap Boparai, CEO Fiat India, says that the plant has worked very hard to get to the global standards. "And we are absolutely now at global standards. The quality of our current products has improved dramatically. Even though we don't do much volume, all the inputs from the first line quality are absolutely at global levels. We are one of the lowest cost warranty sites in the world for FCA. We are ready and that's why the top management has entrusted us with the responsibility of making cars not just for any right hand market but even for places like UK, Japan, Australia and New Zealand. These are absolutely developed markets which get products from everybody. And this is not a low cost product," he states.

Ralph Gilles, FCA's head of global design, has said that the Compass has been designed to appeal to consumers around the globe. So how has FCA designed a vehicle that can appeal to such a wide audience? Bill Zheng - Head of Design, FCA APAC, also present at the unveiling, has an answer. "We have taken a lot of market inputs from around the world from our design and planning teams located in different markets. The communication has been going on for a long time on his project. That's why we say that the all new Compass is the first global product because all the inputs have been generated from the markets and from the customers. The signature Jeep design and the DNA cannot be compromised but we have a lot of other aspects like the packaging, and the styling where we have incorporated the inputs for the global product," he explains.

Emphasising on the 'global' nature of the car, Kevin also emphasises that there will be absolutely no difference in the products sold in the Indian market and the products exported to the other RHD markets globally. Highlighting the differentiating factor, Kevin further explained how FCA distinguished itself from the other OEMs in this aspect. "One of the important things about this project is the fact that 70 times out of 100 you have car manufacturers making a car for India and then looking to see what they can do with it. We have not done that; we are part of the global programme. Jeep Compass is a global car and we are one of the four global plants manufacturing it to global standards. The beauty for India, as a car market, is that it is getting a global car that is manufactured here to those exacting global standards."

One plant, one standard

In fact, Kevin also adds that this 'one plant, one standard' principle is something that the Ranjangaon plant has followed even for its Fiat brand cars. "Every Fiat car manufactured at our plant has been very much a European car built to European tolerances and we have stuck to that. We have not changed that ethos with the Jeep Compass because we are part of the global programme. And that's very different from what many other car companies are doing. A lot of car companies will make a car first for India, make it work financially in India

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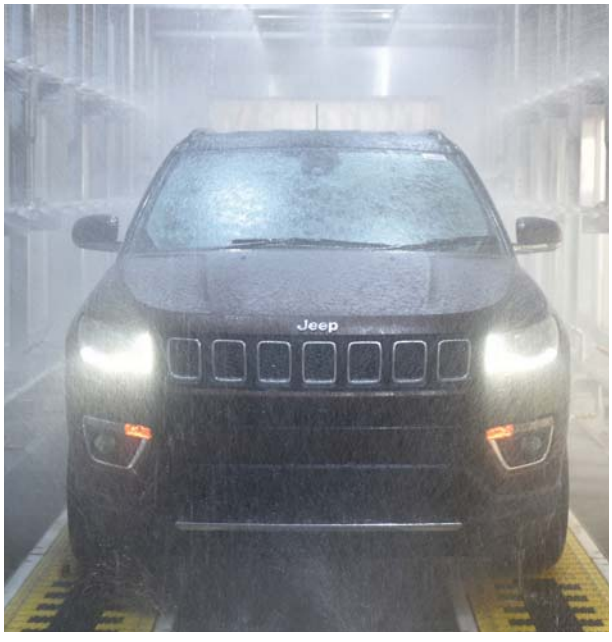
and then look for opportunities in other markets. That is not what we are doing. India is getting a global car built to global standards in India. It's a tremendous accolade for Indian manufacturing and engineering."

> "Jeep makes SUVs and we are about SUVs. Our history is about SUVs. So this car has to live up to that legacy and up to the expectation that people would have with Jeep. We are doing that with the Jeep Compass."

So while many OEMs highlight that their cars are made in India and for the Indian market, FCA is emphasising on the fact that the Jeep Compass is a global car and it is also made in India now. Gurpratap also adds that even with many of the export programmes that happen in India, the car sold in India is very different from the car which is getting exported. "We are not doing that. We will export the same car that we will be selling in India."



Well timed

Kevin reiterates that the Jeep compass is the next chapter in the history of FCA in India and it is a chapter that he is incredibly proud of and excited about. Obviously, FCA has attached a lot of hopes to the vehicle as well as to the overall Jeep brand. And Kevin has a few good reasons why he believes the brand will do well in India. He believes that the timing is just right with the SUV segment growing at a fast pace. "I think the timing is perfect. I said this when we did the launch in Delhi and subsequently in Jodhpur. The way the SUV segment is developing in India is very good; and it is logical for the kind of terrain that is India. An SUV, compared to a sedan, offers you greater flexibility.

"The sense of adventure, the sense of security and the feeling that you are seating slightly above the rest of the traffic is what people like. It can handle the diverse conditions that we have from the highway to the rough roads, it is perfect for India. It is no surprise to us that the SUV market in India is expanding and the projection of its expansion over the next five years is incredibly healthy. Jeep is an SUV brand that has created the SUV segment. SUV is the DNA of Jeep and we have almost the authority to make the SUV. And therefore in a market place that is now getting this expansion, it couldn't be a better time for us," he explains.

At the same time, Kevin is also aware that the brand has certain legacy in India. Kevin believes that it will actually help the brand. "People's awareness of the name Jeep is high and if we can get the right connection with a group of products

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that just exceeds the expectations of that segment then I think it's actually very positive as opposed to starting from nothing. So I think it is good. The Jeep Compass is going to open up a whole new awareness and desire for us," he adds.

"People's awareness of the name Jeep is high and if we can get the right connection with a group of products that just exceeds the expectations of that segment then I think it's actually very positive as opposed to starting from nothing. So I think it is good. The Jeep Compass is going to open up a whole new awareness and desire for us."

Spreading positivity

With such good response anticipated for the made in India Jeep, does Kevin expect the Jeep brand's positive vibes to rub on to the Fiat brand in India? "Definitely," says Kevin. But he also explains that the Fiat portfolio is in a different segment. "We know that there is a job to be done on Fiat and we are working hard on that. The bottom line is that people who are going to come to our dealerships wouldn't have considered coming to us before. And they are going to be attracted by what Jeep is becoming. So there will be some positive spin off clearly.

"Probably many people may not have sat inside a Fiat car for a long time and now they will know that we really make very good cars. Of course, the primary objective of this project is to make sure that the Jeep brand business is successful and that we establish it correctly with all the peace of mind that one would require for the customers in that segment, including technical competence, back up and everything else. All that undoubtedly is going to have a positive spin on our Fiat business as well," he says.

Sensitive about pricing

FCA India has not yet revealed the price range for the Jeep Compass but according to Flynn, 'the competitive price point of Jeep Compass will surprise the market'. And how is the company managing that without compromising on the 'Signature Jeep design, overall product refinement and the complete package that it brings' – to use the words of James Lyijynen - Chief Program Engineer Jeep Compass FCA Global? According to Gurpratap, the Ranjangaon facility is one of the most efficient facilities that FCA has in terms of conversion cost. "Beyond that of course, the material cost has been kept low with high degree of localisation without compromising on quality. (*The local content is around 65 percent for the Jeep Compass.*) This is a global car and it has to go everywhere with those parts. There was a challenge but we have done a very good balance of cost and quality. It is quality that will be relevant in any market to any standard, and cost that stands good in the Indian market as well," he says.

Kevin adds that the FCA India team has 'worked incredibly closely with its engineers at the global stage to get the product where it is'. He explains: "We understand clearly the need for appropriate pricing. I believe we have cracked it. When we bring this car to the market and announce the pricing, I think it will have a lot of approval. I think we have got it right. We understand entirely the sensitivity of pricing in India. But what we are also bringing is not just an SUV shape; we are bringing a car with incredible competence and real substance that actually doesn't exist necessarily in other SUV products in the market. Jeep makes SUVs and we are about SUVs. Our history is about SUVs. So this car has to live up to that legacy and up to the expectation that people would have with Jeep. We are doing that with this product."

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Underlining **manufacturing prowess**

INTEC 2017 provided an ideal platform for exhibitors to display their finest innovations. While visitors could catch glimpses of future trends. Read on to know more about the trade fair.

The trade exhibitions are of paramount importance and especially those which have regional emphasis. INTEC is one of such events that hold significance in the Southern manufacturing market. The exhibition that is organised by CODISSIA (The Coimbatore District Small Industries Association) took place at CODISSIA Trade Fair Complex, Coimbatore from June 1–5, 2017.

Inauguration

The trade fair concentrating on the manufacturing segment was inaugurated by Haribhai P. Chaudhary, Minister of State (MSME), Govt of India. The other Ministers who graced the occasion were Ministers from the Govt of Tamilnadu; M. C. Sampath, Minister for Industries, Govt of Tamilnadu; P. Benjamin, Minister for Rural Industries, Govt of Tamilnadu; Pollachi V Jayaraman, Deputy Speaker, Tamilnadu Legislative Assembly. The other personalities who graced the occasion were K. K. Jalan, IAS., Secretary (MSME), Govt of India; Mangat Ram Sharma, IAS., Principal Secretary (MSME), Govt of Tamilnadu; S P Velumani, Minister for Municipal Administration, Rural Development, Panchayat & Panchayat Unions, Poverty Alleviation Programmes, Rural Indebtedness, Urban & Rural water Supply, and Implementation of Special Programmes, Govt of Tamilnadu; C P Radhakrishnan, Chairman, Coir Board.

> The exhibition that is in its 17th edition witnessed participation from more than 500 exhibitors and more than 200 product categories were on display at the event. The exhibition was spread over two lakh sq ft.

Products displayed at INTEC 2017

- Lathes
- Drilling machines
- Boring machines
- Milling machines
- Pump & fittings
- Sheet metal machinery
- Foundry equipment
- Instrumentation & automation
- Grinding machines
- Machining centers

The display

The exhibition that is in its 17th edition witnessed participation from more than 500 exhibitors and more than 200 product categories were on display at the event. The exhibition was spread over two lakh sq. ft. The exhibition witnessed a wide range of technological display. The products showcased on fairground were lathes, drilling machines, boring machines, milling machines, pump & fittings, sheet metal machinery, foundry equipment, instrumentation & automation, grinding machines, machining centers, etc. Visitors could browse through cutting-edge technologies in the manufacturing sector at this fair ground. While it acted as a perfect forum

Along with the exhibition, the organiser had also created a knowledge sharing platform through a conference programme namely Global Manufacturing Cluster Vision 2020 (GMCV 2020).

for networking for exhibitors, it also served as a platform to learn about new technologies and solutions for visitors.

Supplementing INTEC 2017 were two concurrent events – 'Industrial Automation Expo' and 'Toolex'. With industry, tools and automation in sync with each other, the fair turned to be a platform that synergized and showcased these integral aspects together.

The visitors came from varied industries and profiles. Industrial entrepreneurs, technical experts, top executives of large and medium industrial manufacturing and engineering enterprises; consultants and contractors; engineering, turnkey project consulting and service providers were amongst the visitors.

The conference:

Along with the exhibition, the organiser had also created a knowledge sharing platform through a conference programme namely Global Manufacturing Cluster Vision 2020 (GMCV 2020). Texas Ventures joined hands with INTEC 2017 and CODISSIA to organise the conference. This platform focused on current trends and issues related to SME sector.

Along with apt conference programme and advanced display of technologies, INTEC 2017 received an overwhelming response from visitors and the industry.

Ploughing **success!**

With an investment of over Rs. 800 crore, the technologically advanced plant located at Hoshiarpur is spread across area of more than 85 acres and is fully equipped to manufacture three lakh units ranging from 20HP to 120HP tractors.

Sonalika ITL, the youngest and the third largest tractor manufacturer in the country, has recently inaugurated its largest integrated tractor manufacturing unit at Hoshiarpur in Punjab. With an investment of over Rs. 800 crore, the technologically advanced plant is spread across a massive area of more than 85 acres and is fully equipped to manufacture three lakh units ranging from 20HP to 120HP tractors.

According to Sonalika's top management, the new plant located at Hoshiarpur is the world's largest and number one integrated tractor manufacturing plant. The company, which produces technologically superior tractors in a range from 20HP to 120HP, is recognised in both domestic as well as international markets as a formidable player. The company has earned the trust of over seven lakh customers in more than 80 countries in two decades and is looking to grow further.

> "With this new advanced facility, we aim to further strengthen our position in India and the overseas markets. Our advanced technical processes, large-scale manufacturing set up and eco-friendly focus in the plant has created a new benchmark in the tractor industry."
>
> **L D Mittal,** Chairman Sonalika ITL

Highlights of the plant

- Technically upgraded to roll out a tractor every two minutes
- Fully equipped to manufacture 3 lakh tractors annually
- Two-minute cycle time production line
- Caters to India and 80 global markets including the USA, Africa and Europe
- Tractors are also made for Japan major, Yanmar
- Manufactures range from 20-120 HP
- Fully automated and environment friendly CED and Robotic paint facility
- Spread across a massive area of more than 85 acres
- Sub-assemblies as close as possible to the main assembly lines
- Safe and smooth handling of aggregates
- Certified with ISO 9001:2008 for matching the quality management system standard & IS0 14001:2004 for environmental management system

Inaugurating Sonalika ITL's technologically advanced World's number one integrated tractor plant, Captain Amarinder Singh, Chief Minister of Punjab said, "Many congratulations to Sonalika ITL family for this new plant with increased production capacity. I was amazed to see the dedication of the people working here. This reflects the reasons of Sonalika ITL growing from a small company to a leader in many countries. With this effort we hope Sonalika ITL will make Punjab and India proud."

Technically upgraded to roll out a tractor every two minutes, this integrated manufacturing plant manufactures three lakh tractors annually. Producing export quality tractors catering to over 80 global markets including USA and Europe, this plant endeavours to bring top-of-the-line exceptional prod-

ucts to Indian farmers as well. Given its scale and production capacity, the Japan major, Yanmar has partnered with Sonalika and will have its global tractors manufactured in this plant.

Speaking at the inauguration, L D Mittal, Chairman Sonalika ITL said, "With this new advanced facility, we aim to further strengthen our position in India and the overseas markets. Our advanced technical processes, large-scale manufacturing set up and eco-friendly focus in the plant has created a new benchmark in the tractor industry. Apart from industrial growth in the state through this plant we have also generated significant employment opportunities for residents. Sonalika ITL plant is indeed a real story of Make in India campaign."

Strategically designed, the sub-assembly lines, the differential assembly, gearbox assembly and the engine assembly are close to one another, offering a smooth and quick flow operations to form the single framework of the tractor. It allows majority of components like engine, transmission, chassis and sheet metal body parts to be produced under one roof in the plant. Furthermore, its technologically advanced Global first CED & Robotic paint facility offers high quality paint work. This world class plant has been certified with ISO 9001:2008 for matching the quality management system standard & IS0 14001:2004 for environmental management system.

"Strategically designed, the sub-assembly lines, the differential assembly, gearbox assembly and the engine assembly are close to one another, offering a smooth and quick flow operations to form the single framework of the tractor. It allows majority of components like engine, transmission, chassis and sheet metal body parts to be produced under one roof in the plant."

3D printed auto parts

3D printing process enables swift realisation of customers' demands, small series and replacement parts

Daimler Buses is exploiting the benefits of 3D printing to produce small batches and replacement parts for the Mercedes-Benz and Setra brands. The company is making use of the advantages of this cutting-edge digital component and production technology. At the current point of time it is already possible to print complex parts located in the bus interior in a single step, which formerly consisted of several and in some cases even moving components. In this field Daimler Buses is drawing on over 25 years of experience with 3D printing processes in truck and prototype construction.

The 'printed' special and replacement parts consist of high-quality polyamide plastic components. They are created with state-of-the-art 3D printers based on the Selective Laser Sintering (SLS) printing process.

3D component production enables perfect solutions in response to the enquiries which are received on a daily basis from customers who are seeking special equipment features or waiting for a corresponding replacement part.

"In the medium term, we see digital production technologies as harbouring vast potential to enable us to address market and customer requirements in a flexible manner while at the same time minimising investment risks," says Hartmut Schick, Head of Daimler Buses.

3D printing provides the bus division within the Daimler Group with a means of responding swiftly, flexibly, economically and ecologically to individual customer requests and requirements for replacement parts. In top quality and with low production costs: the 3D parts correspond to the injection moulding standards stipulated by Daimler AG, while avoiding the costs relating to tool production, component storage and the disposal of surplus materials.

The potential of 3D printing is manifest in the area of special customer requests and replacement parts at Daimler Buses, where some 780 components have been printed for customer vehicles to date. In addition, more than 150 different replacement parts for buses are currently being scrutinised and validated with regard to their feasibility as 3D printed parts.

3D printing process revolutionising the production of bus parts

Daimler Buses has perfected the production of 3D parts which are available at short notice in the special and replacement parts segment. The 'printed' special and replacement parts consist of high-quality polyamide plastic components. They are created with state-of-the-art 3D printers based on the Selective Laser Sintering (SLS) printing process. In this generative layer-building process the three-dimensional structures of the preprogrammed 3D part are produced layer by layer from the powder-form polyamide materials by means of a laser.

3D printing allows any desired geometry, even for complex bus components. Special parts and low-volume parts can be modified at will, adapted to customers' special requirements and produced in an attractive design. This proves particularly economical in small series involving batches sizes from 1 to 50 units. The entire process, from the initial idea through design, costing and production to delivery, takes only a matter of days.

The customer can subsequently re-order any 3D part using a specific part number under which it is specified in the order code lists and the replacement parts catalogues of Daimler Buses. This guarantees a swift supply of replacement parts

even after several decades – and worldwide.

In most cases, 3D-printed parts also prove more favourable than their conventionally produced counterparts in terms of weight, as the design engineer is no longer restricted by the constraints previously imposed by the production processes and can adapt the components ideally to the given functions, for example.

Custom-tailored 3D parts in buses and touring coaches ensure variety of parts and individuality

Numerous components are already adapted to customers' special wishes at Daimler Buses and produced by way of the 3D printing process 'at the push of a button'. Drawers, cover mouldings, retaining strips, adapter and surround rings represent just some examples of the economical production of special and replacement parts in top quality which is made possible by the 3D printing method.

From now on, 3D printing will render it possible to print complex, moving parts which have consisted to date of several components in a single step and without requiring extensive assembly operations, which will also result not least of all in markedly reduced costs. The multi-piece stowage compartment for banknotes which Mercedes-Benz integrates on request in the side panelling on the left-hand side of the driver's area in place of the cup holder is just one of many examples here. This complex component comprises a number of individual parts: the housing, various assembly clips, hinges, lid, handle and compartments. The conventional production process would entail manufacturing the individual parts using various sophisticated thermoforming and injection moulding tools, followed by joining of the individual parts. 3D printing is a particularly interesting proposition for customers who attach great importance to special shaping for colour-coordinated components in the interiors of their touring coaches.

3D printing raises environmental acceptability

In addition to avoiding the costs of manufacturing special production tools, additional savings arise in particular for small series and special parts as a result of the fact that it is no longer necessary to produce all-time stocks. The 3D technology avoids bottlenecks and surplus production.

"In the medium term, we see digital production technologies as harbouring vast potential to enable us to address market and customer requirements in a flexible manner while at the same time minimising investment risks."

Hartmut Schick, Head, Daimler Buses.

3D printing provides the bus division within the Daimler Group with a means of responding swiftly, flexibly, economically and ecologically to individual customer requests and requirements for replacement parts.

This ensures that special parts are produced and replacement parts are supplied in precisely the required quantities. As the parts can be delivered quickly and without requiring large-scale stockpiling, no stocks require to be maintained.

Costs are saved while at the same time conserving resources and protecting the environment: there is no surplus production. Fast delivery is a further crucial aspect. Here, 3D printing offers an excellent means of quickly and efficiently meeting customers' individual requirements.

"The 3D printing process allows us to install local printers at the production plants operated by Daimler Buses worldwide. It also enables us to respond in a flexible manner at local level to customers' special wishes and replacement part needs. In this way, the availability of parts can be speeded up considerably while avoiding long transport distances as well as high transport costs and customs charges," explains Hartmut Schick.

3D printing technology is fully integrated into the development process and series production within the commercial vehicles segment at Daimler. All the innovations pertaining to the 3D printing process for Daimler Trucks & Buses have been introduced and undergone crucial development in an extremely short period of time by way of a Group-wide research and advance development project in which the area of business innovation also plays an important role.

Source: Daimler

Leading a way **through innovation**

Maulik Patel, Executive Director, Sahajanand Laser Technology Ltd (SLTL) talks about various innovations that the company has brought into the market.

By Swati Deshpande

Q. Can you please tell us about your company and its journey since its inception?

Trailblazer would be the right word to describe Sahajanand Laser Technology Ltd (SLTL).The company invented fiber laser cutting machine, that went on to become the game changer for the metal forming industry.

The innovation is into the foundation of this organisation, as just after its establishment, Dr. Arvind Patel, Founder of SLTL invented fiber laser cutting machine. Eventually Sahajanand Laser Technology Ltd emerged as the first Indian company accounted for laser revolution across the globe. With an aim to make metal forming process simpler and quicker than ever, SLTL inaugurated the operations in Gandhinagar, Gujarat.

The inception of our service diversification took place in 1995, since then we expanded into multiple disciplines across the spectrum which are: cutting, marking, welding, micro machining, solar cell scribing/ cutting, diamond processing and scanning. We explored aforementioned domains keeping laser at the center of our deliverables. SLTL is a global leader in Computer Numeric Controlled (CNC) Laser services, a highly advanced service.

Q. Please tell us about one your latest innovation in the laser machining.

Generic micromachining capabilities and laser micromachining & precision system are to name a few.

In recent years, we have seen that the devices such as mobiles are getting compact like never before. The manufacturing of such compact devices are enabled through micromachining.

Micromachining is a term that refers to the processing over the small and micro objects. Though the technology is into action since long, use of laser in micromachining has taken the precision at unprecedented height.

SLTL introduced Laser Micromachining that is extending incredible edge for materials processing in an ever-increasing scope of works. From micro holes with diameters down to a few microns and sub-micron tolerances laser processing has proven to be virtuoso

It has revolutionised micro machine manufacturing around the world in short span. To keep this revolution consistent, SLTL introduced devices capable of executing fine micromachining operations. The laser devices exquisitely process the materials such as polymer, composite, ceramic, metal, glass, etc.

SLTL introduced Laser Micromachining that is extending incredible edge for materials processing in an ever-increasing scope of works. From micro holes with diameters down to a few microns and sub-micron tolerances laser processing has proven to be virtuoso

The applications of SLTL's micro-machine solution are - laser micromachining, laser micro drilling, laser micro milling, laser micro cutting, laser micro patterning, laser micro scribing, laser dicing, laser micro welding, laser probe card drilling and laser processing PV cells.

Q. How is the demand for laser machines faring in India? Which driving industries are driving the growth of your business?

India is gradually advancing in the steel sector since last couple of years. As steel is amongst highly utilised metal, the increase of its demand will bring huge benefit for the metal forming industry.

Make in India initiative has given much needed boost to the manufacturing sector. What the campaign is essentially doing is distributing the progress in more balancing way. The focus on 'Make in India' will lead to proliferation of small to medium size industries and that involves substantial amount of segments and sub-segments of the metal forming industry. It reflects that the drive is all set to revolutionise the face of the Indian manufacturing industry as the government has determined to transform the ecosystem right from small extending to big enterprises.


Sahajanand's production facility

When we measure this into numbers, currently, Indian Auto part industry is growing with a CAGR of 11 percent. According to statistics, India will be the fourth highest steel manufacturer in the world by 2020. Automobile sector is also advancing considerably with 7.1 percent contribution in GDP. Along with that, the construction industry is earning second highest flow of FDI and improvising the infrastructure in the country.

These are the favourable conditions for increasing demand for laser machines and we anticipate the demand to grow in the coming future.

Please tell us about your manufacturing capability and capacity?

Harmony in manufacturing is our deepest belief that has led us towards immense accomplishments. We at our premises follow quality and process management approaches such as continuous improvement, 5s, and six sigma. SLTL spans into six manufacturing plants and has been acknowledged with ISO certification for total quality management across the facilities. The more accuracy in the process allows the incarnation of refined product which we have been practicing since decades. Moreover, SLTL's exploration is not restricted to an industry or two; instead, it is beyond the limits of the industry. So far, we have entered and marvelled verticals such as automotive, machine tools, electronics, jewellery, medical, micromachining and so on. The aforementioned list manifests the saga of our years of excellence across the globe.

SLTL brought the laser technology for the diamond industry and established the milestone for the world. The company has been actively contributing to the industrial development of India, ever since. SLTL's strength is its ingenious research and development department, through which the company has marked its presence as the world's largest manufacturer of CNC laser systems for the diamond industry.

> The focus on 'Make in India' will lead to proliferation of small to medium size industries and that involves substantial amount of segments and sub segments of the metal forming industry. It reflects that, the drive is all set to revolutionise the face of all the Indian industry as, the government has determined to transform the ecosystem right from small extending to big enterprises.

As an endeavour to bring usability at ease, we came up with our in-house laser marking interface named 'MARK PRO'.

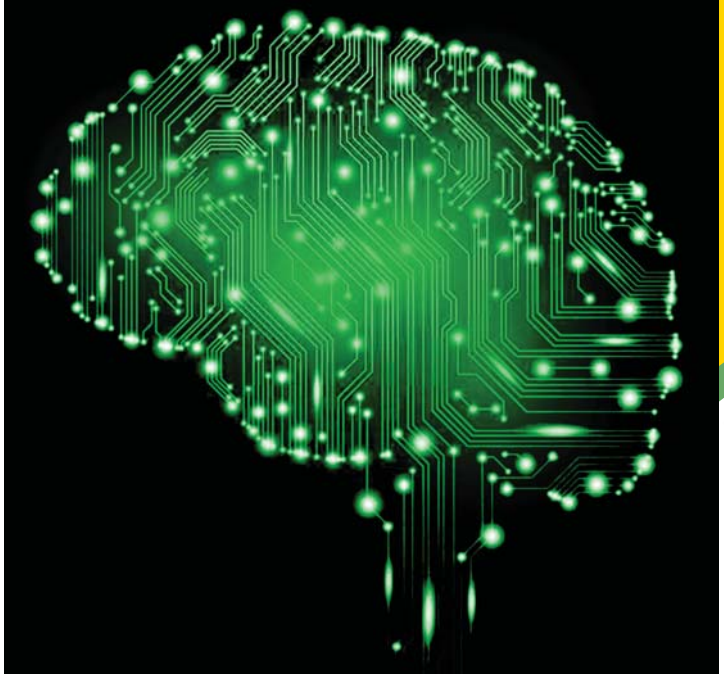
R&D is an important aspect of a manufacturing unit. Can you please elaborate on your R&D efforts?

Highly experienced research scholars, laser specialists, engineers specialised in the fields of software, electrical, mechanical and instrumentation, etc. are amongst our R&D team members. All of them dedicatedly contribute in the organisational ambition of Excellence through Empowering Innovations. Following the legacy, SLTL's recent initiative focuses to uplift the metal forming process for the betterment. SLTL has launched sheet stacker and loading unloading machine in 2016 for the first time in India. As their names suggest, the machines set the metal forming works on incredible speed at the factories.

Rex is our latest in-house invention that is redefining the compactness in laser marking machines. With Adaptive Control System turns our laser machine immensely flexible and enable the flawless marking over any shape of the subject. The Laser head adapts to the shape and undertakes the marking process within seconds. The subtle Marking Machine REX comes with huge marking range that measures, 330 (X) × 330 (Y) × 50 (Z) mm. The significantly wide range comes really helpful while marking large objects, where it effectively executes the laser marking and proves to be extremely productive.

Please tell us about the company's exports.

The company exports to over 21 countries including Indian subcontinent, South East Asia, Middle East, Russia, China, Europe, USA, Canada, and Latin America. Apart from main line of businesses, technical enlightenment is what we believe in, thus we extend our knowledge to the scientific research institutes regardless of location and ownership.



Leaders or Teachers?

For organisations to learn and leverage the lean principles it is imperative that managers are oriented on how to build and sustain a culture of continuous improvement, which is accepting of good ideas from others.

By Amogh Deshmukh

The steady growth of Toyota, from a small company to the world's largest automaker Toyota owes a large part of its success to the creation and implementation of a lean manufacturing framework called Toyota Production System (TPS), which was based on the idea of preserving (or increasing) value with less work. According to this famous lean philosophy anything that doesn't increase value for the customer should be considered waste, or 'Muda', and every effort should be made to eliminate that waste.

Seeing the spectacular success of Toyota countless organisations across the world have applied and leveraged the lean philosophy in some shape or form with varying degree of success. In the last 30 years, the practice of lean enterprise and the pursuit of lean transformation have evolved from being a competitive advantage to a necessity of survival for all businesses across sectors. Indian automobile industry's application of lean principles is a case in point. Being one of the largest industries in the world with a growth rate of over 8 percent, contributing at 7.1 percent to India's GDP, ably supplemented by the Government's policy push, a resurgent middle class and substantial exports it has its own challenges as players find new ways to earn and expand their market share.

For organisations to learn and leverage the lean principles it is imperative that managers are oriented on how to build and sustain a culture of continuous improvement that is accepting of good ideas from others. Also, research shows that most managers want to spend more time coaching their team members since coaching creates value by building capability in team besides creating competence and confidence in the team members. In reality, however, a large part of a manager's time goes in 'managing' others. What complicates this further is the fact that most managers themselves receive little or no formal coaching / support as they transition to a managerial role. It is assumed that they will learn the 'tricks' on the job. That is a costly mistake.

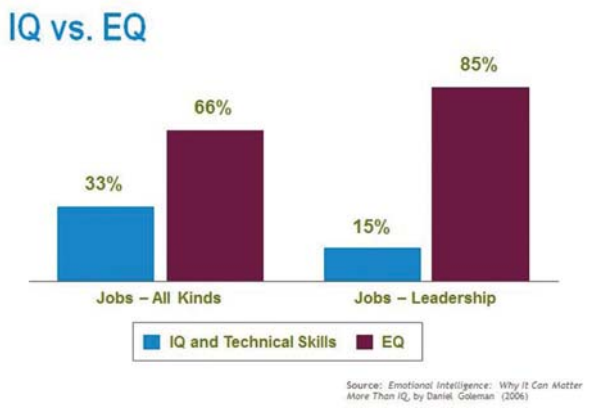
In reality, a large part of a manager's time goes in 'managing' others. What complicates this further is the fact that most managers themselves receive little or no formal coaching / support as they transition to a managerial role.

So what is it that organisations can use to enable Leaders become better coaches to their teams?

Make Talent Management a business priority: In recent time many organisations have come around to the fact that talent being the only real differentiator in today's competitive world it is too important to be left to human resources (HR) department alone. Research by DDI conclusively proves that organisations that outwit their peers on various parameters of performance are led by leaders who are driving an organisation wide talent strategy. These leaders first articulate their business and cultural priorities for the organisations and then assess the readiness of their leadership, across levels, to deliver on those priorities. This ensures that business priorities sync well with the availability and readiness of talent at all levels in the organisation.

Focus on Developing EQ of Managers: Manufacturing organisations puts a lot of emphasis on hiring candidates that demonstrates high level of conceptual & technical proficiency – and that is indeed important. However, equally important, if not more, is the Emotional Intelligence side that often gets marginalized. As leaders transition into senior roles EQ becomes even more critical in deciding their effectiveness at senior leadership roles. The good news is that unlike IQ, EQ is not static & can be developed and leveraged.

Involve the Manager of the Managers: Research shows that the manager of the leader is essential to ensuring that newly developed skills are transferred and applied back on the job. Without leader support or without an environment that sup-



ports and reinforces practice of the newly acquired skills, they won't 'stick,' the investment in learning is sub-optimised and possibly even wasted, and you have what is known as 'scrap learning.' To avoid this—and more importantly, to drive lean—managers of leaders need to step up as role models, coaches, mentors, and teachers; they need to accept and be accountable for ensuring new skills and lean leadership principles are applied. However, many interpret this as developing great technical skills; but it's so much more than that. It's also about developing broader skills in coaching, engaging, delegating, holding others accountable, and inspiring teams.

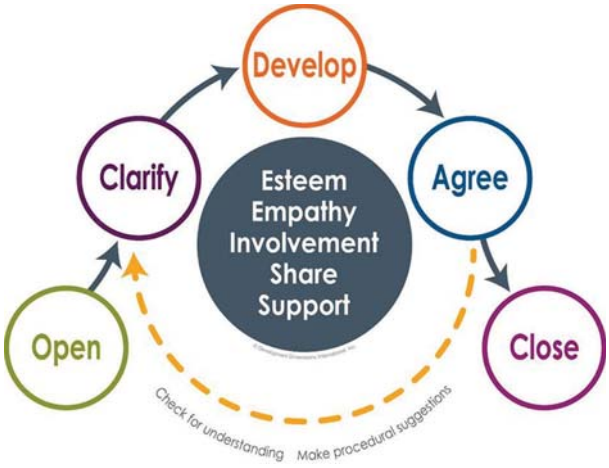
Who better to drive development—either informal or formal—than managers of learners? Not only do they possess a wealth of experience, but they can also place it in the proper, shared context for the learner. When the leader is a teacher, learners don't experience the frustration of returning to the job only to find out that their managers don't even know or demonstrate the skills they just learned. Through feedback and reinforcement, leaders of learners are integral in helping the skills 'stick' once they're back on the floor. If managers do not support, reinforce, or model the skills themselves, why would you expect their direct reports to improve?

Equip managers to manage interactions: Effective leaders apply the Interactions Essentials framework for satisfying the two critical components of effective interactions: the practical and personal needs of the participating parties. This standardised approach includes the Interaction Guidelines—the five steps that target the practical needs of participants by guiding the structure of the conversation. These steps—Open, Clarify, Develop, Agree, and Close—form a process that progresses from the beginning of the interaction, through the engagement of participants, to the resolution.

Personal needs, meanwhile, are met through the application of a set of Key Principles, (centre of Figure 1). The Key Principles guide how participants interact with one another during the conversation and focus on fostering esteem, empathy, involvement, sharing, and support. Meeting personal needs addresses one of the foundational elements of lean: respect for employees. And, the consistent and effective application of the Key Principles builds trust—another fundamental element of successful lean operation.

Managers can learn how to utilise these principles to ensure positive interactions, Two additional process elements—checking for understanding and making procedural suggestions—help keep an interaction going and ensure the discussion achieves its set objectives. Through the use of the Interaction Essentials, interactions such as giving performance feedback, seeking suggestions, or setting performance goals can be standardised, and the waste generated by missing a step or violating the Key Principles can be eliminated.

For example, if managers skip the 'open' step (and fail to explain the purpose and importance of the discussion), the conversation has no context. Likewise, if they don't 'clarify' essential background information, the interaction can derail



because all involved are not on the same page. DDI research shows that a whopping 85 percent of frontline leaders don't clarify before moving on to discuss an issue.

Also, when leaders fail to seek and listen to employees' input, they cannot effectively 'develop' a course of action. They miss getting great ideas from others and can fail to identify the root cause of the problem. An alarming 94 percent of frontline leaders rely more on their own ideas, instead of involving the people closest to the work—their employees.

Finally, when leaders skip over the 'agree' and 'close' parts of the process and fail to review the WHOs, WHATs, and WHENs of next steps, there can be no commitment and, consequently, no action. Just think about all the meetings you've walked out of, unsure of what was decided and what action items were assigned to whom.

Amongst the four factors of production namely Men, Machine, Money & Material only the first one offer a meaningful competitive advantage as access to machine (technology), Money (Capital) & Material (Suppliers) is now a given. The future will belong to organisations who invest in nurturing this critical factor.

The author is Managing Director, DDI India.

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'Super'stars of the manufacturing

Here are the glimpses of third The Machinist Super Shopfloor Awards

Catch up with all the Machie Winners in our Awards Special Digital Edition at www.themachinist.in

Ace Micromatic Group Presents

3rd THE MACHINIST Super SHOPFLOOR Awards

Powered By MOTUL TECH

India's leading manufacturing plants like Hyundai (Chennai), Ashok Leyland (Pantnagar) and BrahMos (Hyderabad) were awarded at The Machinist Super Shopfloor Awards 2017 organised by Worldwide Media Pvt Ltd (WWM) in Chennai on May 18. The third edition of the awards organised at Feathers – A Radha Hotel, celebrated excellence in Indian manufacturing. The 'Machie' trophy was conferred upon the winners in various categories such as Safety, Productivity, Machining Excellence, Digital Manufacturing, Innovation and Green Manufacturing. Taking the awards platform to the next level, three new categories namely — Corporate Social Responsibility (CSR), Human Resources (HR), Supply Chain Management — were introduced in this edition. Supreme Treon, Sanand plant was declared as 'The Machinist Super Shopfloor of the Year' in the SME segment while Ashok Leyland Ltd's Pantnagar plant won 'The Machinist Super Shopfloor of the Year' in the Large Enterprises category. Apart from rewarding best practices adopted by the shopfloors and plants, The Machinist also recognised individual contributions towards the Indian manufacturing sector. In this effort, Anshul Goel, MD, Duroshox Pvt Ltd was announced as 'The Machinist Super Next Generation Leader 2017' and Ayush Lohia, CEO, Lohia Auto Industries Ltd was declared as 'The Machinist Super Entrepreneur 2017.' The most prestigious 'The Machinist Lifetime Achievement Award 2017' was bestowed upon Sandeep Singh, Managing Director, Tata Hitachi Construction Machinery Company Pvt Ltd.

On the occasion, an engaging 'CEO Panel Discussion' was held on the topic of 'Can India become a Manufacturing Super Power?' The eminent speakers in the industry threw light on the challenges and possibilities of the theory.

The Machinist Super Shopfloor Awards 2017 was presented by Ace Micromatic Group and was powered by MotulTech. The other partners for the ceremony were Cutting Tool Partner — Forbes & Company Ltd (TOTEM), Talent Management Partner — DDI, Associate Partners— igus India and Tyrolit Group, Trophy Partner—EOS and Hospitality Partner—Feathers - A Radha Hotel.

Cutting Tools Partner: TOTEM High Performance Cutting Tools

Talent Management Partner: DDI

Associate Partners: igus, TYROLIT

Trophy Partner: eos e-Manufacturing Solutions

Hospitality Partner: FEATHERS A RADHA HOTEL

Sandeep Singh, MD, Tata Hitachi Construction Machinery Company Pvt Ltd was bestowed upon The Machinist Lifetime Achievement Award 2017

Ayush Lohia, CEO, Lohia Auto Industries Ltd is The Machinist Super Entrepreneur 2017

Anshul Goel, MD, Duroshox Pvt Ltd is The Machinist Super Next Generation Leader 2017

The Machinist Super Shopfloor of the Year (Large Enterprises) is Ashok Leyland Ltd., Pantnagar

The Machinist Super Shopfloor of the Year - SMEs is Supreme Treon, Sanand

BrahMos Aerospace, Hyderabad wins the Machie in the category of Innovation - Large Enterprises

Category	Winner
Quality	• Sany Heavy Industry India Pvt. Ltd., Pune [SMEs (MNC)] • Hyundai Motor India Ltd, Engine -2 Chennai [Large Enterprises]
Innovation	• Racold Thermo Pvt. Ltd., Pune [SMEs (MNC)] • BrahMos Aerospace, Hyderabad [Large Enterprises]
Productivity	• PPAP Automotive Ltd., Noida [SMEs (Indian)] • Honda Cars India Ltd., Tapukara Plant [Large Enterprises]
Digital Manufacturing	• Scania Commercial Vehicles India Pvt. Ltd., Narsapura [SMEs (MNC)] • Continental Automotive Components India Pvt. Ltd., Manesar[Large Enterprises]
Green Manufacturing	• Cummins Technologies India Ltd., Dewas [SMEs (MNC)] • Hero MotoCorp Ltd., Gurgaon [Large Enterprises]
Safety	• TECHNOSYSTEMS, Belgaum [SMEs (Indian)] • Bosch Ltd., Adugodi (Bengaluru) [Large Enterprises]
Machining Excellence	• Faurecia Interior Systems (I) Pvt. Ltd., Chennai [SMEs (MNC)] • Godrej & Boyce Mfg. Co. Ltd., Mohali [Large Enterprises]
CSR	• RSB Transmissions (I) Ltd., Pune [SMEs (MNC)] • Mahindra & Mahindra - Farm Division, Kandivali (Mumbai) [Large Enterprises]
HR	• Cooper Corporation Pvt. Ltd., M-60-1, Satara [SMEs (Indian)] • Eaton Fluid Power Ltd., Pune [Large Enterprises]
Supply Chain Management	• Mahle Behr India Pvt. Ltd., Pune [SMEs (MNC)] • GKN Driveline (India) Ltd., Pune [Large Enterprises]
Editorial Choice Awards	• Volvo Construction Equipment, Bangalore [Quality - Large Enterprises] • HAL TAD, Kanpur [Green Manufacturing - Large Enterprises]

GST implementation will have positive impact

World Bank says India's economic fundamentals remain strong; adds that demonetization has potential to bring positive transformation.

India remains the fastest growing economy in the world - economic fundamentals are strong, and reform momentum continues. GST is on track for implementation in the second quarter of the fiscal year, and is expected to yield substantial growth dividends from higher efficiencies, and raise more revenues in the long term, according to a new World Bank report released recently.

While, agriculture growth delivered in 2016-17, the report notes that investment growth remains subdued, partly because of banking sector stress.

The report also highlights the low and falling participation of women in the labour market. For India to achieve higher growth, it needs to create safe, flexible and well-paying jobs for a large number of women who are currently not in the labour market.

The report says the fundamentals of the Indian economy remain strong, with robust economic growth, strong fiscal consolidation, low current account deficit, higher agricultural output, growing FDI, low inflation and higher wages in rural areas.

Fundamentals of the Indian economy remain strong, with robust economic growth, strong fiscal consolidation, low current account deficit, higher agricultural output, growing FDI, low inflation and higher wages in rural areas.

Favourable monsoons boosted agriculture and rural consumption, while urban consumption remained robust and exports rebounded in the third quarter of 2016-17.

Timely and smooth implementation of landmark reforms such as the GST and a new code to deal with bankruptcies, as well as decisive action to resolve the NPA challenge of public sector banks, is crucial to enhance the economy's potential growth, says the May 2017 edition of the Indian Development Update.

The report notes that India will achieve a major reform of indirect taxes through the GST without increasing the burden on the poor. Given the efficiency and revenue gains that the

reform will eventually achieve, the overall impact of the GST on equity and poverty is likely to be positive.

"India remains the fastest growing economy in the world and it will get a big boost from its approach to GST which will - reduce the cost of doing business for firms, reduce logistics costs of moving goods across states, while ensuring no loss in equity," said Junaid Ahmad, World Bank Country Director in India. "Low female labour force participation, however, remains a serious concern. Higher level of women participation in the economy can help propel India closer to double digit growth".

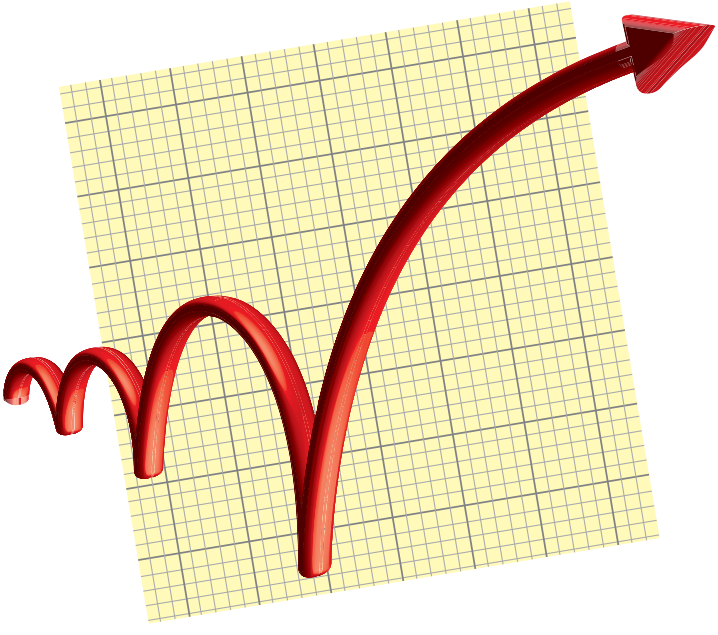
Positive transformation

India's economy was slowing down in early FY17, until the favourable monsoon started lifting the economy, but the recovery was temporarily disrupted by the government's "demonetistion" initiative.

On November 8, 2016, the government demonetised (i.e. removed legal tender status from) an estimated 23 billion INR 500 and INR1000 banknotes, corresponding to 86 percent of India's currency in circulation. Demonetisation caused an immediate cash crunch, and activity in cash reliant sectors was affected. GDP growth slowed to 7.0 per cent year-on-year (y/y) during the third quarter of 2016-2017 from 7.3 percent in the first quarter.

As a result, a modest slowdown is expected in the GDP growth in FY 2016-2017 to 6.8 percent. According to the Update, growth is expected to recover in FY 2017-2018 to 7.2 percent and is projected to gradually increase to 7.7 percent in FY 2019-2020.

While limited data is available, demonetisation may have had a disproportionate impact on poorer households, which are more likely to work in construction and informal retail. Demand for guaranteed employment up to February 2017 exceeded the full year of FY2015/2016 and rural consumption (in particular, sales of two-wheelers) contracted sharply in November. Greater data availability, especially on labour markets, is needed to better gauge the social impact of policies in the future.



In the long-term, demonetisation has the potential to accelerate the formalisation of the economy, leading to higher tax collections, and greater digital financial inclusion.

Despite this, there was a relatively modest slowdown in the economy. The Update attributes it to coping mechanisms (which included greater usage of digital transactions), higher rural incomes, and robust public consumption. The pick-up in rural wages in November and December, and the growth of agricultural output suggests the positive impact of the monsoons substantially dampened the disruption from demonetisation.

In the long-term, demonetisation has the potential to accelerate the formalisation of the economy, leading to higher tax collections, and greater digital financial inclusion provided measures such as increased use of property taxes is taken in the areas of tax policy and administration, and share of the population with access to the internet and digital means of payments are increased. The implementation of the GST could is a key complementary reform that will support formalization, as firms have a strong incentive to register with GST to obtain input tax credits, the Update adds.

The monsoon delivered, but investment growth remains subdued

The Update acknowledges that agricultural growth has had the most positive impact on the Indian economy in FY17. Agriculture growth jumped to 6.0 percent in the third quarter of FY2017 from 3.8 percent in the second quarter. This was the highest growth in nearly five years. The second advance estimate of production puts cereal output for FY2017 at nearly 250 million tons, crossing the previous record of about 246 million tons harvested in 2013-14.

The Update is also optimistic that growth in private investments is likely to pick up once there is greater certainty on the global outlook, as well as when implementation of the GST is more advanced.

"Private investment growth continues to face several impediments in the form of excess capacity, regulatory and policy challenges, and corporate debt overhang. However, the recent push to increase infrastructure spending and to accelerate structural reforms will eventually drive a sustained rebound of private investments," said Frederico Gil Sander, Senior Country Economist and the main author of the India Development Update.

Source: World Bank

GST: Industry opines

GST implementation is just around the corner. Read on to know more about how the manufacturing industry reacts towards it.

BMW Group India welcomes the implementation of Goods and Service Tax (GST) in India. We strongly believe that GST will strengthen and foster growth in the country and benefit consumers at large. BMW is the fastest to offer preponed GST benefits to our customers much before the roll-out of GST itself. We are confident that our customers and prospects will enjoy their Sheer Driving Pleasure with value enhanced benefits such as a lower rate of interest, assured buyback and complementary service and insurance in addition to the GST benefits.

Vikram Pawah, ***President, BMW Group***

The implementation of the Goods and Services Tax (GST) will set off a transformational shift for a complex multi-layered indirect taxation system to a cohesive indirect taxation system. The Goods and Services Tax Bill redefined the term for the country putting manufacturing sector in the highest slab, of 28 per cent as opposed to the current rate of ~22 percent (including excise duty and value added taxes, except solar business). Higher tax incidence under GST may increase costs for the company / end consumers. GST will convert entire India into a unified common market and will likely lead to higher growth in the organized sector as it reduces the incentive for tax evasion. However, a smooth transfer and proper implementation would lead to higher controls, better efficiencies, stringent compliances. Depending on earlier and new tax brackets being higher or lower prices to end consumers will be impacted positively or negatively considering the end consumers. With five percent GST on solar products against zero percent tax (except 5.5 percent VAT in Karnataka State), solar products prices will definitely rise by similar percentage i.e. 5~6 percent from July 1, 2017.

Manufacturers, suppliers, sellers, vendors, service providers who have most efficient last mile input to output chain mechanism shall be able to maximize benefits from the GST regime. Having said that due to invoice to invoice uploading on servers by crs of people and this being daily exercise there will be huge load on infrastructure and is our infrastructure ready for same? Also this shall definitely mean increase in costs for all as there will be increased consultancy, manpower, bandwidth, paper work, compliance checks etc. Boom for service industry!

V. Ramnath, ***Managing Director, Ariston Thermo India***

Uniform tax structure across the country will provide the much needed boost to the overall industry. Roll out of GST is definitely a positive step, which will provide manufacturers great relief from mutli-level tax structures and will boost our business.

Farrokh N. Cooper, ***Chairman and Managing Director, Cooper Corporation Pvt. Ltd.***

A major boost for the industry can come in the form of implementation of GST, which is probably the most awaited reform to be implemented by the GOI. Not only is GST slated to simplify the tax structure and thus improve the 'ease of doing business', it is also slated to substantially decrease the operational costs across all industries. This will bring in efficiency, proving beneficial to both industries as well as end-consumers.

Copper and its downstream products are basically industrial products wherein value addition is about 10 percent and net profit is about 1 – 2 percent. If we account for consumables and services, there is hardly any gap of about 5 percent which has to be paid as net GST. Bullion, as a policy of Government of India, normally attracts very low rate of tax as these are expensive metals. Copper also falls in the category of expensive metals, costing more than other metals such as steel, aluminium etc. Since the majority of downstream copper products manufacturers are from the small scale sector, including units converting these products from copper scrap, they pay only VAT of 5-6 percent. Higher tax rates would have a direct adverse impact on the working capital and finance requirement of such units and may result in non-compliance. A lower rate would encourage such units to comply with the laws. We can only hope that Copper receives the merit GST rate as Copper is very critical for the Infrastructure development of the country.

Sanjeev Ranjan, ***Managing Director, ICA India***

GST will play a significant role in reducing the production cost, which will have a direct impact on the state of the manufacturing industry – a highly competitive arena where cost of production is one of the most important performance indicators. This will translate into creating better values for the consumers.

It will be a great influence in boosting demand too, which will lead to rise in production levels. Lot of unorganised sector, which is thriving because of tax arbitrage, is expected to move to organised sector. This is expected to cause a spur in demand for better manufacturing facilities fuelling the growth in factory automation sector.

The model will also help in streamlining the supply of goods and raw materials by unifying the diversified Indian market leading to curbing unproductive cycles, logistics and transit time. This will have a broader impact on the total supply chain management, because of the availability of input tax credit on state supply of goods and services, which will lead to pruning of unrequited levels of warehousing in the supply chain generating greater cost benefit.

Sameer Gandhi, ***Managing Director, OMRON Automation, India***

GST is said to be the largest taxation reform in independent India. GST has all the positives to it. It will have long term effect on industry and will bring down the cost of products. Single tax will help in increased tax compliance.

Abhishek Somany, ***Managing Director, Somany Ceramics Ltd***

Discussion on 'Super' Power

Read on to know more about what was discussed at the panel discussion emphasising on 'Can India become Manufacturing Superpower?'

By Swati Deshpande

During The Machinist Super Shopfloor Awards 2017, an engaging panel discussion was held on the topic of 'Can India become Manufacturing Superpower?' The discussion was moderated by Niranjan Mudholkar, Editor, The Machinist. Eminent speakers from the industry including Dr. Andreas Wolf, Joint MD, Bosch Ltd; Chandra Nataraja, MD, Knorr-Bremse Technology Center India Pvt Ltd; Colin Macdonald, CEO & MD, Renault Nissan Automotive India Pvt Ltd; T K Ramesh, CEO, Micromatic Machine Tools Pvt. Ltd. participated in the panel discussion.

While discussing on topic, Nataraja said, "When we are talking about making India Manufacturing Super Power, we are aiming at a journey of 25 years. This is a long journey and we should be prepared and patient enough. We should inculcate this patience in young minds. We have the competency and strengths to be the superpower. Keeping this in mind, we should train our youngsters and prepare them for the future."

Giving another dimension to the discussion, Dr. Wolf mentioned, "India has already achieved the status of 'superpower' in the field of IT. For India to gain the similar status in the manufacturing, what we need to do is to create passion for manufacturing amongst youngsters. Their mindset towards manufacturing needs to change. Also, we have to develop competencies not for the local but for the global market."

Aspiring young minds

During the discussion, the panel unanimously agreed on the fact that India lacks passion towards manufacturing. To achieve this, marketing will play a significant role. It can create buzz and help make it aspirational for youth in the country. Speaking on the same, Macdonald mentioned, "India has vast population that creates an opportunity for the manufacturing industry to be further successful. What we need to do today is to publicise and share our success stories. This will help create aspiration towards manufacturing amongst young minds. We need to spread the word that the manufacturing is cool. The dream of being super power can be achieved only when youngsters would work towards it".

India is already a super power in IT. Just like IT, we need to create passion amongst people towards manufacturing especially youngsters. People's mind set towards the manufacturing has to change. Additionally, we have to develop competencies not for the local but for the global market.

Dr. Andreas Wolf, Joint MD, Bosch Ltd

India has vast population that creates an opportunity for the manufacturing industry to be successful. What we need to do today is to publicise and share our success stories. We need to spread the word that manufacturing is cool. It is then the youngsters will aspire to join the industry.

Colin Macdonald, CEO & MD, Renault Nissan Automotive India Pvt Ltd

Agreeing to the most of the panellists, Ramesh said, "Youth is all about aspiration. We need to catch them young and aspire them to pursue manufacturing. The government is also aiming at the same thing through its various programs such as Skill India. Currently, its youngsters' perception is that manufacturing is about hardship, dust, grease, etc. This has to change to the positive picture. Ultimately, after agriculture what really contributes to the GDP is manufacturing. Hence, there is to be enough emphasis on it."

Audience speaks

Audience did not only appreciate the topic and the discussion but also participated in the same enthusiastically. Speaking about young minds, Rajesh Nath, MD, VDMA India Service Pvt Ltd added saying that there is a dire need to connect academia with the industry. "This will ensure that the graduates are industry ready at the end of their courses, which would be a win-win situation for students as well as the industry."

Speaking about her experience as woman on the shopfloor, Manisha Cooper, Director, Marketing & Corporate Communication, Cooper Corporation mentioned, "There are lot of youngsters especially women who aspire to work on the shopfloor. However, current Factory Laws are not that favourable."

In all, patience, passion, aspiration are the things that would take India to the next level. The level of where India would lead the world of manufacturing but there is long way to go and lot of hardship to start with.

Youth is all about aspiration. Hence we need to make the manufacturing aspirational, which is what the government is trying to do. Currently, the youngsters' perception is that manufacturing is about hardship, dust, grease, etc. This perception has to change. After agriculture what really contributes to the GDP is manufacturing. Hence, there has to be enough emphasis on it.

T K Ramesh, CEO, Micromatic Machine Tools Pvt. Ltd

When we are talking about Making India Manufacturing Super Power, we are aiming at a journey of 25 years. And we should be prepared and be patient enough. We should inculcate this patience in young minds. We have the competency and strengths to be the superpower. However, we need to understand that it is a long journey.

Chandra Nataraja, MD, Knorr-Bremse Technology Center India Pvt Ltd

How to create the **perfect digital twin**

Digitalisation of tool- selection and assembly creation increases machining efficiency.

As well as achieving in machining efficiencies through advanced tooling technologies and strategies, there are many gains to be had earlier in the process, at the design and planning stage. Here, the digitalisation of previously manual processes such as tooling item selection and tool assembly creation can help to significantly increase efficiency and machining security. Cutting tool data can in fact be gathered more accurately and used to create precise digital twin representations – a functionality that has become fundamental in the modern workflow to prevent errors at the machining stage. Today, such processes can be fully integrated with the user's CAM software, and can be completed with a few simple clicks as part of an easy to use menu driven process.

In machining applications, it is not individual tool items such as toolholders, cutters and inserts that are used on machines, but tool assemblies. In many instances this creates a somewhat laborious task for the CAM programmer, where there exist several opportunities for error, not least failing to select the optimum tool items in the first instance. Furthermore, many typical tool assemblies can take up to 1 hour to create. With some components demanding the use of 25 or more different tool assemblies, this is an enormous overhead to the business in terms of both time and cost.

The challenge isn't to create the assembly itself – nowadays this can be created in just a few seconds by adding a description and the relevant parameters, for example diameter and length, into a CAM system without any external help. However, creating a digital twin representation for a tool assembly simulation is far from being a simple task. In order to make the most accurate possible representation of a tool assembly in a CAM system, the creator would first need to search various vendors' catalogues, download the 3D model files, and assemble them in a CAD programme. Only then can they finally be created as a tool assembly in the CAM system, including the technical parameters.

> For a productive CAM process, the programmer needs access to tool data which is usually stored in so called tool libraries.

Streamlined process

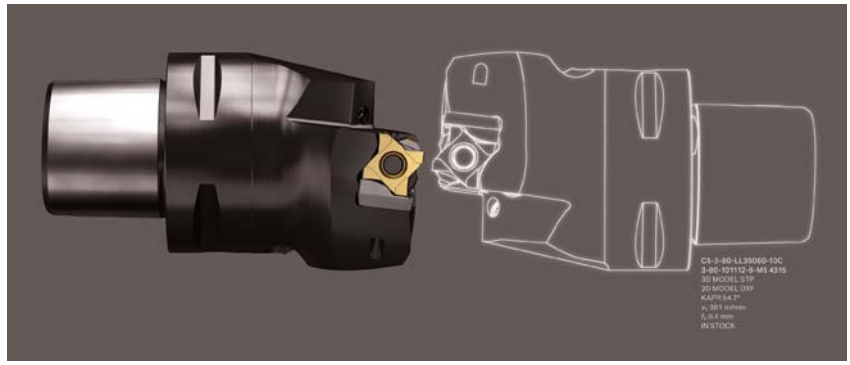
Clearly there is an opportunity to streamline the pre-machining process and make it more agile, something that can be achieved by integrated tool item recommendation and tool assembly creation within the CAM software platform. In this way, it is possible to cut the time required and increase security in design and planning processes.

With regard to tooling item recommendation and selection, an optimised and integrated solution would allow CAM programmers to select from holders, tools and inserts for milling, for example. Here, users would be able to choose a preferred source, such as a digital catalogue stored locally or a cloud assortment whose data are constantly and automatically updated. Then, once data such as component, type of machining operation and material has been input, users could simply click 'get results' to receive the speeds and feeds required for

the selected tool.

One such solution is CoroPlus ToolGuide from Sandvik Coromant, which uses an open Application Programming Interface (API) to connect with the CAM software. In short, CoroPlus ToolGuide enables users to find a suitable cutting tool for a given task. It creates an organised list of all the suitable tools, with the most economical choice at the top. It will also show the suggested machining process and cutting data.

The list is generated by an algorithm that matches the stated task and conditions with Sandvik Coromant tools. This algorithm holds information about the different machining processes that can be used for different tasks, while the product data on the tool holds information on the machining processes to which the cutter is suited. Importantly, all of the data can be sent to CoroPlus ToolLibrary, where standard tool assemblies can be created ready for export to the CAM or simulation software.



Clearly there is an opportunity to streamline the pre-machining process and make it more agile.

Easy access to tool data

For a productive CAM process, the programmer needs access to tool data which is usually stored in so called tool libraries. However, most of today's tool libraries are empty, for a number of reasons, not least because it is difficult to find tool data and keep it up to date. In addition, until recently there has been no industry standard for communicating tool data.

There are approximately 1.2 million manufacturing units in the world today, and all CAM vendors, machine tool builders and tool suppliers have historically had their own way to denominate and structure tool information. This is why ISO 13399 has been created. Sandvik Coromant, the KTH Royal Institute of Technology and other players in the metal cutting sector are behind the development of ISO 13399, which is now a globally recognised way of describing tool data.

This international standard defines tool attributes – for example length, width and radius – in a standardised way. Before the standard was written, three different suppliers may have called the diameter D3, D1 or DC2. With ISO 13399, however, the diameter will always be DCX, regardless of supplier.

ISO 13399 also simplifies the exchange of data for cutting tools. When all tools in the industry share the same parameters and definitions, communicating tool information between software systems becomes very easy.

CoroPlus ToolLibrary is built on the ISO 13399 structure and is open to all tooling suppliers, ensuring there is no longer any need to interpret data from paper catalogues and then manually enter it into the system.

Failsafe system

CoroPlus ToolLibrary allows CAM programmers to work with any tool vendor catalogue compliant to ISO 13399 standards and to create assemblies safe in the knowledge that all suggested items will fit together. The results can be viewed instantly in 2D and 3D, while users can also digitally store all information about the tools. Once saved, programmers simply import the tool assembly into their CAM or simulation software. All of the tool data is preset and a 3D model included.

Users report that this efficient and easy process makes it possible to cut the time from tool assembly to simulation by at least 50 percent. Plus, there is a much better chance of making the right tool choice in the first instance. Of course, having accurate tool data also means that collisions are possible to detect and avoid during simulation routines due to having the real tool shape and a precise digital twin representation.

The importance of accessible and accurate tooling data in pre-machining is vital to help address the challenges faced by CAM programmers on a daily basis. Through the latest digital solutions such as CoroPlus ToolGuide and CoroPlus ToolLibrary, it is possible to demonstrate how much easier and faster pre-machining tasks can be executed. Both are part of the wider CoroPlus suite of connected solutions from Sandvik Coromant aimed at helping manufacturers prepare for Industry 4.0.

Source: Sandvik Coromant

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

Contact person: Nikki Stokes

Data cables for the smallest bend radii in moving applications

The latest generation of chainflex data cables with a new alloy conductor and a halogen-free TPE outer jacket is ideally suited for the smallest bend radii down to 4xd with cycle numbers of over 40 million strokes. The new high-performance conductor alloy from igus is the solution for highly dynamic, fast applications with small radii from 15 millimetres. The new chainflex series CF298 and CF299 are a unique cable series for extremely heavy duty at the smallest radii, and can be delivered from stock.

Dynamic applications with very small bend radii can quickly allow the copper cores of conventional cables to meet their mechanical stress limits. For confined spaces, igus has now introduced the new data cable series in the product range. The CF298 (unshielded) and the CF299 (shielded) have been tested intensively in the largest test lab in the industry with a floor space of 2,750 square metres, and have qualified for small bend radii down to 4xd in continuous motion. This enables igus to offer on the market the smallest bending factor for moving data cables in e-chains. This is made possible mainly by the combination of the new high-performance alloy conductor material and the highly flexible igus TPE outer jacket, which prevents cracks and breaks. The jacket material additionally offers the highest possible abrasion resistance in combination with energy chains from igus.

For extremely heavy duty and tough environments

The new generation of igus data cables is ideal for short, very

quick movements, for example, in pick-and-place machines or other very fast handling applications. They are also suitable for both indoor and outdoor applications due to their resistance to UV, low temperature and oil. Since the cables are certified according to ISO Class 1, they can also be used in clean rooms. The new data cables are designed for up to 40 million double strokes in e-chains. As a result, igus guarantees a life of 36 months here too, as for all chainflex cables. The CF298 and CF299 are now available from stock with various number of cores and conductor nominal cross-sections.

For more info, contact
Ravikumar Alloli
igus (India) Private Ltd
sreejith@igus.in; www.igus.in

UPDATES

Prototype carbon fiber composite subframe

Magna International Inc., in cooperation with Ford Motor Company, has developed a prototype carbon fiber composite subframe, which reduces mass of the vehicle by 34 percent compared to making a stamped steel equivalent.

By replacing 45 steel parts with two molded and four metallic parts, the prototype subframe achieves a dramatic 87 percent reduction in the number of parts. The moldings are joined by adhesive bonding and structural rivets. The carbon fiber subframe is the result of a research and development project between Magna and Ford to investigate potential mass-reduction benefits and technical challenges of using carbon fiber-reinforced composites in chassis applications. The subframe is a key part of a vehicle's structure, typically providing a place to attach the engine and wheels while

also contributing rigidity and crash management.

The design has passed all performance requirements based on computer-aided engineering (CAE) analyses. The prototype subframes are now being produced by Magna for component and vehicle-level testing at Ford.

"Collaboration is the key to success in designing lightweight components that can give our customers fuel economy improvements without compromising ride and handling, durability or safety. We must continue to work hard to achieve these lightweight solutions at the most affordable costs," said Mike Whitens, Director of Vehicle Enterprise Systems within Ford

Source: Magna International Inc

Cost of downtime in your organisation

Single spark can turn the ready supply of coolant oil and vapour into a major fire in seconds Learn how to prevent downtime

Investing in an industrial CNC milling, turning or grinding center is a smart business choice. A CNC machine can produce parts with amazing speed, accuracy and consistency, which can give you the competitive edge you need to thrive in a tough economy. However, while CNC machines are designed to be as safe as possible, they can be susceptible to fire.

Many CNC/EDM machines operate using oil-based metalworking fluids, coolants and lubricants. These oils and fluids are flammable, with flash points ranging from 170–350° Celsius, and are continually exposed to extremely high levels of friction and heat. A mistake in programming or a mechanical failure can quickly turn a normal machining operation into a hazardous situation. Even a single spark can turn the ready supply of coolant oil and vapour into a major fire in seconds. The result:

- Lost productivity/ Downtime
- Lost customers
- Lost profits & market share
- Loss of life
- Property Damage and recovery cost

Advantages/ disadvantages of oil-based fluids

Straight oil-based metalworking fluids, coolants and lubricants offer several advantages over water-soluble fluids. The use of oil-based metalworking fluids in industrial CNC and EDM machines will increase tool life, reduce friction and heat, improve surface finish and help flush dross from the work area. Perhaps the greatest advantage of straight oils is the excellent lubricity or 'cushioning' effect they provide between the cutting tool and workpiece. This is particularly desirable for applications that require high quality surface finishing.

The greatest disadvantage of straight oils is their poor heat dissipating properties, which leads to an increased fire risk, which is why they are usually limited to low temperature and low-speed operations.

Titanium fires

High tolerance machined titanium parts are always in demand in the aerospace and medical industries. Unfortunately, many shop owners refuse to turn titanium because they are convinced, it presents a constant and serious fire danger. This is in large part a misconception. While a small percentage of machine fires are sparked by the titanium, the vast majority of fires actually begin in the coolant oils, where the flash point is typically less than half of the flash point of titanium. Once the oil catches fire, it can grow until it becomes hot enough to auto-ignite titanium. The real key to preventing titanium fires is to detect and suppress oil fires quickly, before the heat can build to the titanium flashpoint.

How to contain the threat of Machine fires

Adding an automatic fire detection and suppression system is a reliable and cost-effective way to protect your CNC machines from the threat of fire and the inevitable losses caused by machine downtime. However, not all fire protection systems are equal. The trick is to bring the fire detection and suppression apparatus into the micro-environment of the machine itself in order to quickly detect and extinguish a fire at its source.

One solution, pioneered by Firetrace, relies upon heat-sensitive pressurized tubing as detection and delivery device. The tubing can react to a fire in less than 10 seconds and deliver total suppression in less than 15 seconds using a clean agent such as Novec 1230.

With a Firetrace system, a machine oil fire is quickly detected and suppressed, inhibiting the ignition of the metal work piece. Additionally, the clean agent used requires no cleanup and will not contaminate the coolant oil. After rectifying the cause of the fire, most CNC machines can be immediately returned to service.

Adding Firetrace capability allows for a constant presence within the machine and a "24/7 fire watch." Even if your machine operator is away from the machine or you are running lights out, a Firetrace automatic fire detection and suppression system provide round-the-clock protection for your machine.

To know more, E-mail: info@wepune.co.in

A gentle gripper for cobots

Know more about the new generation of cutting edge grippers will designed for collaboration between humans and robots

The SCHUNK Co-act gripper JL1, a new generation of cutting edge grippers specially designed for collaboration between humans and robots was introduced by SCHUNK. This gentle powerhouse, personally endorsed by SCHUNK brand ambassador Jens Lehmann, turned out to be a visitor magnet on the first day of the show.

The SCHUNK Co-Act Gripper JL1 is the world's very first collaborative gripper capable of directly interacting and communicating with humans. Its most distinguishing features are its flexible outer skin with curved edges, integrated protection against workpiece loss as well as the LED panel used as an interface for communication with humans. Even at a basic level, the SCHUNK Co-act gripper JL1 satisfies the most critical requirements of safe human/robot collaboration: it never loses grip of an object, it always detects contact with humans and it will never cause injury when gripping. A safe drive provides for both a wide gripping force range and functional safety. If a process is interrupted, such as in the case of an emergency stop, the part is ensured to remain in a reliable grip. With the help of an environment sensor, the gripper continuously detects factors in its environment and processes the data using integrated software. If it comes into unwanted contact with humans, it automatically limits its gripping force. With the help of specially designed gripping techniques and force-measuring jaws in its fingers, the SCHUNK Co-act gripper JL1 adjusts its behaviour in real time depending on whether it is gripping a workpiece or a human hand. It is based on the DIN EN ISO 10218 safety requirements for industrial robots. It has also factored in the future DIN EN ISO 20218 safety requirements for industrial robots.

Even at a basic level, the SCHUNK Co-act gripper JL1 satisfies the most critical requirements of safe human/robot collaboration: it never loses grip of an object, it always detects contact with humans and it will never cause injury when gripping.

Gripper turned communication tool

SCHUNK has also designed the gripper to be used as a communication tool between the system control and the operator. LED lights and a colour coding system communicate whether the automated system is ready for operation and whether it has gripped the correct workpiece. But plans far exceed these features: in the future, the SCHUNK Co-act gripper will enable complex relationships between various sensors and safety mechanisms. Force-measuring jaws and visual monitoring will be incorporated as well as skins made of tactile and capacitive sensors or current-based force control. As with humans, who generally combine multiple senses in order to evaluate a situation, the SCHUNK Co-act gripper will be capable of collecting information from several sensor sources, allowing it to determine the most accurate possible picture of reality. OPC UA interfaces will enable the collaborative SCHUNK gripper to communicate both with robots and with the higher ranking plant control.

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

Connector 4.0

Does the digital world still need connectors? The challenges brought about by globalisation, digitalisation, sustainability and demographic changes don't spare connectors, after all.

Industry 4.0 means that production is becoming more modular and flexible. Automotive manufacturers are already trialling scenarios in which machining stations are mobile and search for the parts to be machined themselves. The question is whether this subsequently makes cables and connectors redundant. Nothing could be further from the truth. "Cables and particularly connectors will be indispensable for a long time to come. If anything, their importance is likely to increase," says Martin Guserle, BE Head of EPIC at Lapp. Even if wireless communication brings about certain shifts, it will nonetheless remain limited to specialist applications on the factory floor. Cables are indispensable for enabling machines to communicate among each other quickly and free of interference – such as for transmitting sensor data in real time – or supplying power to drive systems.

What will change, however, is that these cables are more rarely hard-wired and more frequently connected. After all, machining stations are becoming increasingly modular and occasionally get rearranged depending on the product being manufactured on them. This requires connectors that can be quickly released and plugged in elsewhere again; these can replace the direct-wired variants which are still predominantly used in older facilities. It is certain that this will cause the number of connectors in industrial applications to rise further.

> Machining stations are becoming increasingly modular and occasionally get rearranged depending on the product being manufactured on them.

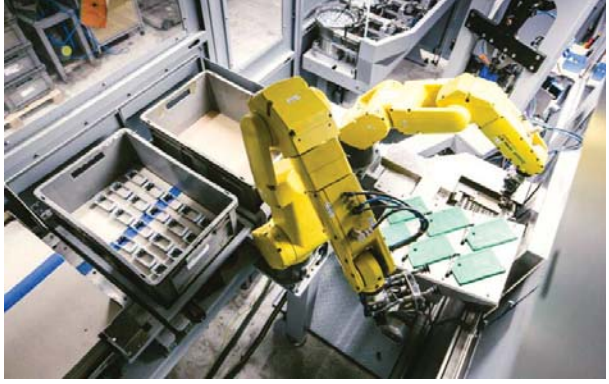
Industry 4.0 is thus not the goal of such measures, but rather a means to a much bigger end. It concerns meeting the greatest challenges that humanity faces, namely globalisation, digitalisation, sustainability and demographic changes. These topics give rise to a multitude of questions. How will we feed 7.5 billion people, let alone the 9.7 billion who will inhabit the Earth in 2050 according to the UN's forecasts? How will these people work if machines take on more and more jobs? And how will we shape progress in a way that is sustainable and conserves resources? Industrial companies can't just simply detach themselves from these mega-topics: they are required to contribute solutions in their respective sectors. This brings us back to connection systems. The Lapp Group has realised that it must always take these mega-topics into consideration when developing products. The example of connectors is intended to show where interrelationships exist.

Globalisation: The mechanical engineering sector is becoming more global, with many manufacturers active across all continents. However, it might be misleading to talk about internationalisation in this case. "At the same time, we are observing factors which are increasingly different at a national and local level," says Guserle. Local standards need to be fulfilled in many markets, particularly UL certification in North America. Certain sectors also require special certification, such as wind and solar energy or the rail and food industries. Many products are suitable for a vast range of applications. Leading suppliers such as Lapp therefore always bear the very highest requirements in mind and then derive variants for various markets and sectors from this standard.

It helps that certain connectors have established themselves as standard equipment on a global level. Rectangular connectors have been commonplace for many years and continue to thrive in new applications worldwide. This is where Lapp can bring its talents to bear, with a global presence and the ability to supply the majority of over 40,000 standard catalogue products quickly – even to the farthest corners of the Earth. But how does the customer find the configuration that's right for them among the 138 million possible options that Lapp offers for the housings of its EPIC rectangular connectors alone?

Digitalisation: Using the online housing configurator from Lapp, the customer can create a connector housing that matches their individual needs. The order is then passed on to be manufactured immediately and the customer receives the products after five working days at the latest. Of course, digitalisation also means that more and more data connections are created everywhere in industry. Connectors for transmitting digital data at ever higher rates are therefore increasingly in demand. Various circular connectors are also suitable for this application. Standards among these include the thread sizes M23, M17 and – more and more often – the compact M12 connector, which garners praise in many different applications.

Sustainability: Connectors for industrial applications are not



disposable products. They are occasionally intended to last for 30 years or even longer. Yet requirements have become much more stringent over the past few years as far as movement and vibration are concerned, to name just two examples. The number of moving applications is growing, and likewise the speed and acceleration of these applications – such as in drag chains or robots.

However, sustainability means more flexibility above all else. If a robot is retrofitted with a camera for quality inspection, the connector of this expansion should also be easily realised. Modular rectangular connectors are available for such cases, including the easily expandable EPIC MH connector system from Lapp. It can be flexibly equipped for cables that fulfil the widest variety of functions and can accommodate all kinds of connector modules for power, signals and data. If a new function is added, an additional module can be easily implemented or a different one replaced. This is particularly beneficial to sectors which are industrialising on a large scale, such as the food industry.

Demographic change: The world's population is growing rapidly, but arable land is limited. If mankind is to be fed, then highly productive, increasingly industrialised food production is the only answer. At the same time, consumers demand food that can be prepared more conveniently and that is packaged in smaller portions, as the trend towards households with fewer occupants persists in highly advanced, industrialised countries. In production, this means that food is industrially processed and packed by machine. This requires a wide range of sensors and drive systems – and therefore also cables and connectors to transmit data and convey power. It goes without saying that these also have to withstand frequent cleaning with aggressive detergents, as the requirements for hygiene are also continuing to multiply. For connectors, this means fulfilling ever more stringent requirements in terms of robustness. One consequence is that more and more technology from other branches of industry is being introduced in the production and processing of food. Wherever possible, end users then opt for industry standards from other sectors. For connectors, however, there is likewise a trend towards custom solutions if standard ones will no longer do the job. In this case, there is a need for the manufacturer to provide intensive consultation and support in engineering.

"The next few years will bring about many changes in industry – I believe we are prepared for these and that we will be able to provide our customers with the support they need," says Guserle optimistically.

Source: Lapp

Milling cutters

Know more about milling cutters that work precisely, smoothly and allow the machine to operate with low power consumption.

Wherever straight edges are needed, LMT Fette makes precise 90° face milling possible – with Univex Premium, which works on steel, cast iron, stainless steel and non-iron materials. Univex Premium milling cutters have outstanding machining properties: They work precisely, smoothly and allow the machine to operate with low power consumption. This means high productivity and excellent processing safety. Wide range of cutter bodies and indexable inserts – beneficial for your production

The wider range of milling cutters featuring the new Univex Premium from LMT Fette offers cutter bodies in three designs:

- as a shaft,
- as a face milling cutter,
- as screw-on type end mill.

Higher feed rates are achieved, thanks to the large number of teeth. The highly positive geometry and uneven pitch ensure a soft cut and smooth run. Extra-long end mills are suitable for work with particularly deep throats. All Univex Premium cutters are also equipped with internal coolant supply and coated with a protective layer on the surface. This protects the cutter bodies from wear and ensures their long tool lives. Equipped with high positive inserts, they allow deep cuts up to 16.5 mm.

For machining of steel, cast iron, stainless steel and non-iron materials, LMT Fette offers a wide range of indexable inserts in four sizes and different corner radii.

The indexable inserts are available in both precision-sintered and ground versions. They benefit from wear-resistant substrates and produce excellent surface qualities.

For more info, contact:
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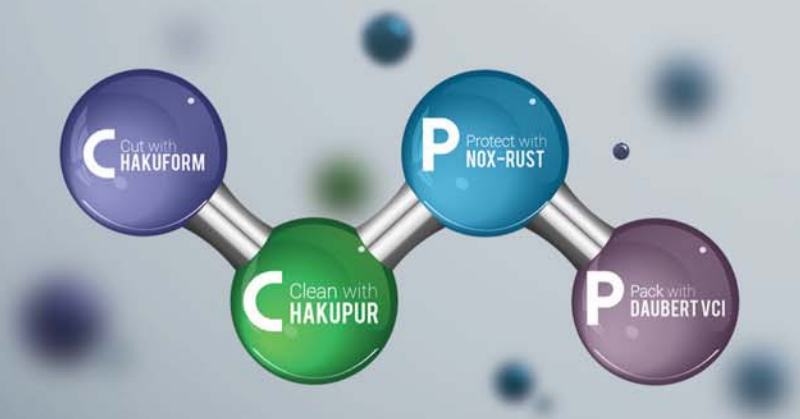

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High-speed, high-efficiency hole drilling at reduced cost

New design enables 6D deep drilling with excellent chip control ideal for automobile, aviation and medical device industries

Kyocera Corporation has developed a new line of indexable modular drills, Magic Drill DRV, to be used mainly for hole drilling in the machine tool business. Ideally suited for the automobile, aviation and medical device industries, the new indexable drills combine a chemical vapor deposition (CVD) coated insert on the outer edge and a physical vapor deposition (PVD) coated insert on the inner edge for the first time, enabling high-speed and high-efficiency processing. The uniquely developed chipbreakers have improved chip evacuation and the holder's thicker center core provides enhanced rigidity. The new drill is now capable of deep drilling up to 6D (six times the holder diameter) for the first time. Kyocera aims to contribute to its customers' increased productivity by broadening its product lineup to meet more diversified needs.

Magic Drill DRV

Product name	Magic Drill DRV
Size	Drilling depth: 2D to 6D Drilling diameter : ϕ14mm to ϕ32mm
Processing condition	Hole drilling, etc.
Recommended materials	Low carbon steel, Carbon steel, Alloy steel, Die steel, Stainless steel, Gray cast iron and Ductile cast iron
Production base	Shiga Yohkaichi Plant (Japan) Kagoshima Sendai Plant (Japan)

Development background

Reduced weight and greater functionality of components are currently being promoted in the automobile, aviation and medical device industries. This trend increases the demand for products that enable high-speed and high-efficiency drilling of various workpiece materials under diversified drilling conditions. With previous indexable drills, PVD-coated chipbreakers were adopted for both the outer and inner edges, which has the disadvantage of increased wear and tear on the outer edge because it comes into contact with the workpiece material at a higher speed. To solve the problem, this new model adopts a CVD-coated chipbreaker with heat and wear resistance for the outer edge and a PVD-coated chipbreaker for the inner edge so that stable processing can be achieved even if a strong force is applied to the inner edge. By making use of the features of both CVD and PVD coatings, high speed and high-efficiency processing become feasible.

Product Features

High-speed and high-efficiency processing of various materials

With an optimum chipbreaker selected from the four types available, the Magic Drill DRV series is capable of working with a variety of workpiece materials. The chipbreakers are designed so that four corners (edges) can be used, thereby reducing the customer's processing costs.

Unique cutting edge enables excellent evacuation of drilled chips even in deep drilling – 33 percent increase of holder center core and drilling hole up to 6D

The outer edge has a 'U-shaped' design to evacuate drilled chips easily and prevent the chips from clogging; and the inner edge has a 'spoon-shaped' design to reduce frictional resistance during evacuation of drilled chips, thus enabling excellent evacuation of drilled chips. With this design, it becomes possible to form the flute (groove) into an optimum shape and increase thickness of the holder center core by approximately 33 percent compared with competitors' products. Through the achievement of high rigidity and low resistance, the new model is capable of drilling a deep hole up to 6D, which has never been possible with a conventional indexable drill.

GM Chipbreakers (Left: Outer edge insert is CVD coated) (Right: Inner edge insert is PVD coated) For steel machining (recommended)

Chipbreaker	Type	Description
GM	Multi-purpose	- Low resistance, stable deep drilling is possible. - For steel machining (recommended)
GH	Strengthened flute tip	- Interrupted cutting of steel - Makes it possible to reduce chipping troubles in through hole drilling - For cast iron machining (recommended)
SM	For stainless steel machining	- Enables stable evacuation of chips from stretchy stainless steel - Prevents chips from getting tangled into the holder
XM	For mid steel and stainless steel machining	- Enables stable control of sticky and stretchy chips drilled with the outer edge

For more info, contact: KYOCERA Corporation (Japan)
webmaster.pressgl@kyocera.jp

Panasonic

Panasonic recommends Windows 10 Pro.

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FZ-X1-5" (12.7 cm)


FZ-N1-4.7" (11.9 cm)

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