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**“WE ARE FIRING UP OUR MANUFACTURING ENGINES,
WE ARE TILLING OUR LANDS AND WE ARE BUILDING OUR
CITIES AND VILLAGES. WE ARE EDUCATING OUR MINDS,
WE ARE SKILLING OUR HANDS AND WE ARE HOLDING OUR
HEADS HIGH!”**

India is on the move. We are firing up our manufacturing engines, we are tilling our lands and we are building our cities and villages. We are educating our minds, we are skilling our hands and we are holding our heads high! We are playing with innovation, we are growing with productivity and we are serving with efficiency. And this momentum comes not just from the optimism but is also powered by the friction of the conflict. So as we celebrate the bliss of the future, let us also rejoice in the joys (and pains) of today. That is the only message we have for this New Year as well as our 11th Anniversary issue. Do share yours with us.

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TM Star List 2016

30 The 2016 Edition features what we call the Dynamic Dozen! This year's list spans captains of diverse industry sectors like automotive, aerospace, farm equipment, construction equipment, railways and beyond. In fact, some of them represent more than one industry segment.

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CIL to procure 2000 wagons from Railways

A MEMORANDUM of Understanding (MoU) has been signed between Ministry of Railways and Coal India Limited here today. The MoU will lead to procurement of 2000 wagons (33 rakes) in the first outgo. Union Minister for Railways, Suresh Prabhakar Prabhu said that this is a path-breaking agreement which will result into speedy supply of wagons for coal loading in dedicated circuits. Prabhu informed that the initial investment of Rs500 crore will lead to anticipated investment of



Rs5000 crore. Stating coal as mainstay of Railways, the Minister informed that the two-third of its revenue comes

from the coal. Union Minister of State (Independent Charge) Coal, Power and New & Renewable Energy, Piyush Goyal said that the MoU will help in fulfilling the 1 billion tonne target of Coal India. The Minister said that there is no single power plant in the country today that falls in critical category. This became possible only because of the support of Ministry of Railways.

Goyal defined this MoU as first step in large partnership with the Ministry of Railways to serve people of India.

Amway opens its first Indian manufacturing facility

AMWAY HAS recently opened its new US\$100 million manufacturing plant in India. It is the company's first manufacturing facility in the nation and is located at Nilakottai in the Dindigul district of Tamil Nadu. The new facility will house manufacturing efforts for nutrition, beauty, personal care and home care products for sale in India. "The manufacturing plant in Tamil Nadu is another example of Amway's belief in the India market and reiterates our commitment to Make in India, Make for India," said Amway President Doug DeVos. "We believe the facility is amongst the very best in the nation. The state-of-the-art opera-



tions will further strengthen our efforts to develop India-specific products, which should support greater growth and meet the increasing demand of consumers." The manufacturing plant is one of the first in India to be built to achieve LEED GOLD standards and will be a zero discharge waste facility. It has one of the largest solar rooftops in Tamil Nadu.

Uttam Galva Metallics signs MoA with POSCO

UTTAM GALVA Metallics Ltd (UGML), a part of Uttam Galva Group and world's leading steel maker - POSCO of South Korea, have signed an MoA (Memorandum Of Agreement) to deploy FINEX (Fine Ore Reduction Process - an alternative

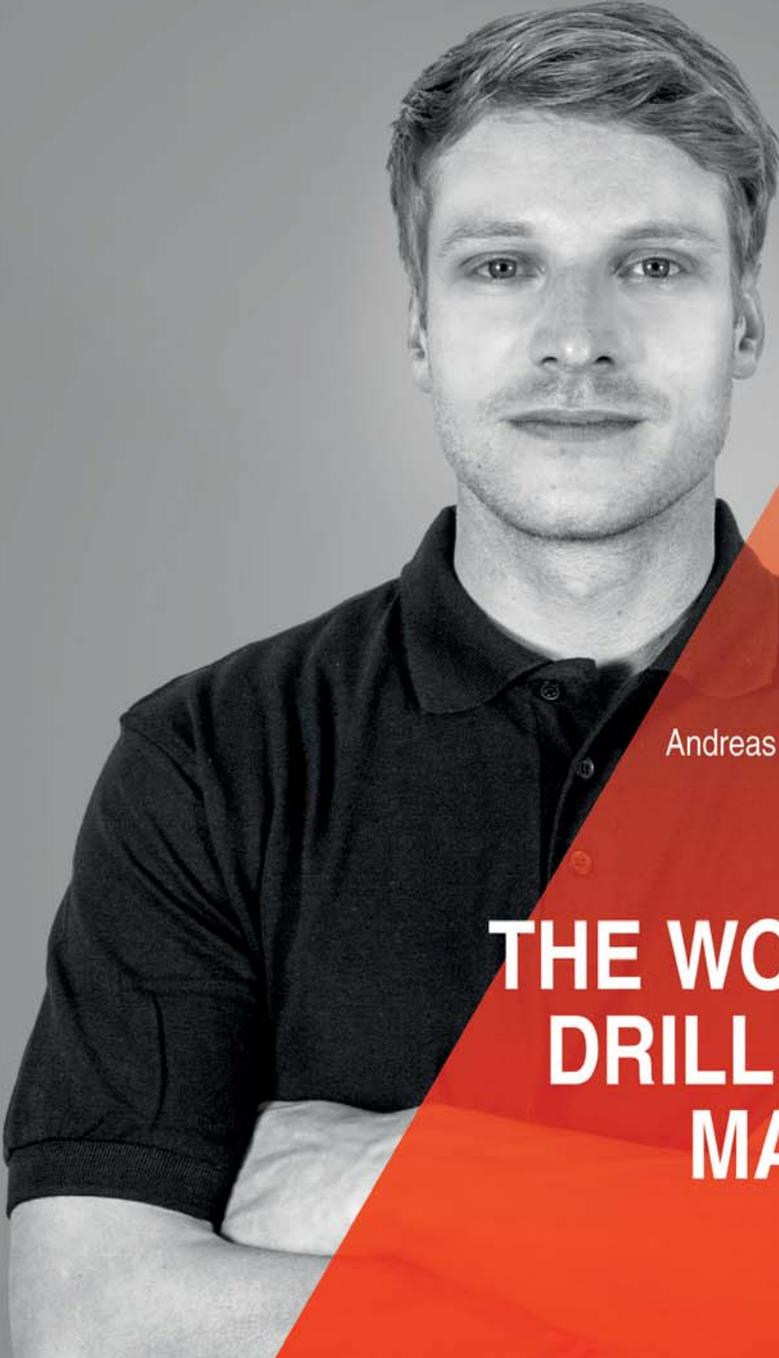


iron making technology using iron ore fines) and CEM (COMPACT END-LESS CASTING AND ROLLING MILL - a process to replace a large portion among the CR products with thin Hot Rolled products) technologies for its plant in Wardha (Maharashtra). POSCO's FINEX technology, coupled with its CEM processes will constitute POSCO's equity in UGML as per the MoA inked. As a result of this collaboration with POSCO UGML's Wardha Plant will have an initial steelmaking capacity of 1.5 million tonnes per annum (MTPA) and will be operational by April 2019.

Voxeljet expands to India

THE GERMAN manufacturer of industrial 3D printing systems has established voxeljet India Pvt. Ltd. in December 2015. The new voxeljet subsidiary is located in Pune, a large automotive and manufacturing center near Mumbai. India's foundry industry still features a fairly traditional structure. The global popularity and acceptance of the 3D printing technology has led to growing interest in 3D printers

and on-demand parts services on the part of the Indian industry. voxeljet, one of the world's leading providers of industrial 3D solutions, wants to build up a strong market position in India already at this early stage. Nidhi Shah, the new Managing Director of voxeljet India, plays an important role in establishing the voxeljet brand in India and promoting the development of an operational presence in the market.



Andreas Kleinhans, Product Manager, Drilling

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NEWS

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QCI and FICCI join hands to create ZED Cell

DR. R P SINGH, Secretary General, Quality Council of India (QCI) and Dr. Arbind Prasad, Director General, Federation of Indian Chambers of Commerce and Industry (FICCI) have recently signed a Memorandum of Understanding (MoU) outlining the scope of collaboration between QCI and FICCI to create a ZED Cell at FICCI for implementation of the ZED Maturity Assessment Model. This would be the first MoU which QCI has signed at the national level with an apex industry body. The endeavour will leverage QCI's nationwide established accreditation system (for consultants, assessors, rating agencies etc.) and FICCI's large network of membership and state offices. The objective of the MoU is to implement the Prime Minister's vision

of "Make in India" with Zero Defect, Zero Effect covering all sectors, industries (including healthcare, education etc.) and government public services. Under the MoU, the scope of activities would include enhancing capacities for implementing the ZED model across all levels of MSMEs. It would also include developing an ecosystem through sensitization of industry bodies to drive the ZED model for continuous improvement among MSMEs.



Indian pharma industry to touch US\$ 55 bln by 2020: study

INDIAN PHARMACEUTICAL industry is expected to touch US\$ 55 billion by 2020 as against the current size of US\$ 18 billion but the exports may slow down to grow at a CAGR of

the presence of leading players that hold better bargaining power. Major instances are the acquisition of the US distributor Celesio by US pharmacy Mckesson's in 2014, and formation of a joint venture between the US wholesale distributor, Cardinal Health, and CVS Caremark in 2013. Consolidation of pharmacy players is leading to an increase in pricing pressures for generic companies existing in the US market, which is expected to result in a decline in the year-on-year growth of pharmaceutical exports from India over the next five years. Further, a steep decline in currency in



7.98% in value terms due to tightening of regulatory mechanism in top exports markets of US, Russia and Africa, reveals the joint study. The joint study undertaken by ASSOCHAM and TechSci Research says, in addition consolidation of pharmacy players in North America have resulted in

emerging markets like Africa, Russia, Ukraine and Venezuela, is expected to add woes to drug manufacturing companies that supply pharmaceutical drugs to that region, and are unable to generate high revenues on account of selling their drugs at a low priced currency.

'Chandrayaan-2' to land on moon in 2017: Dr Jitendra Singh

The Union Minister of State (Independent Charge) for Development of North Eastern Region (DoNER), MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh has announced in the Parliament that 'Chandrayaan-2', India's Lunar Probe, will land on the surface of moon in 2017 and, among other things, it will explore the possibilities of extra-terrestrial life there. Similarly, India's landmark Solar Mission "Aditya-L1" is to be launched in 2019, he informed.

Lauding the glorious achievements of Indian Space Research Organization (ISRO) during the last one year, Dr Jitendra Singh informed about the successful launch of six Singapore satellites from Sriharikota to mark the Golden Jubilee of the independence of the Republic of Singapore. He further informed that this launch was agreed upon on commercial basis and the government of Singapore has paid 26 million euros for it.



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A list of key events happening between January 2016 to December 2016, both nationally and internationally.

<p>IMTEX FORMING 2016 & Tooltech 2016 January 21-26, 2016, Bengaluru (BIEC) www.imtex.in</p>	<p>Auto Expo 2016 - Components February 4-7, 2016, New Delhi http://www.autoexpo.in/components-show/index.aspx</p>	<p>Auto Expo 2016 - The Motor Show February 5-9, 2016, Greater Noida http://autoexpo-themotorshow.in/</p>	<p>Grindex International 2016 March 3-5, 2016, Mumbai www.grindexpo.in</p>
<p>MODEX 2016 April 4-7, 2016, Atlanta (USA) http://www.modexshow.com/</p>	<p>Hannover Messe 2016 April 25 to 29, 2016, Hannover (Germany) www.hannovermesse.de/home</p>	<p>CeMAT 2016 May 31-June 3, 2016, Hannover (Germany) http://www.cemat.de/home</p>	<p>AMTEX 2016 July 8-11, 2016, New Delhi http://www.amtex-expo.com/</p>
<p>IMTS 2016 September 12 - 17, 2016, Chicago (US) www.imts.com</p>	<p>MINExpo International September 26-28, 2016, Las Vegas (USA) http://www.minexpo.com/</p>	<p>India International Textile Machinery Exhibition 2016 December 3-8, 2016, Mumbai http://itme2016.india-itme.com/</p>	<p>BAUMA CONEXPO India 2016 December 12-15, 2016, New Delhi http://www.bcindia.com/</p>

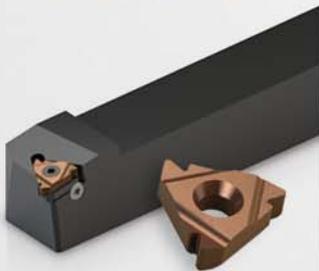


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MARY BARRA NAMED CHAIRMAN OF GENERAL MOTORS

The General Motors Board of Directors has unanimously elected Mary Barra as its next Chairman, effective immediately. She succeeds Theodore (Tim) Solso, who will continue serving as the Board's Lead Independent Director. Barra has served as GM CEO since January 15, 2014. "At a time of unprecedented industry change, the Board concluded it is in the best interests of the company to combine the roles of Chair and CEO in order to drive the most efficient execution of our plan and vision for the future," said Solso. "With GM consistently delivering on its targets and on track to generate significant value for its shareholders, this is the right time for Mary to assume this role." Barra began her career with GM in 1980 as a General Motors Institute (Kettering University) co-op student at the Pontiac Motor Division.



HARSHAVARDHAN NEOTIA IS THE NEW FICCI PRESIDENT

Harshavardhan Neotia took over as the President of the Federation of Indian Chambers of Commerce & Industry (FICCI) at the conclusion of the Chamber's 88th Annual General Meeting. Pankaj Patel was elected Senior Vice President and Rashesh Shah, Vice President. Neotia is the Chairman of Ambuja Neotia Group. Pankaj R. Patel is Chairman and Managing Director, Zydus Cadila Cadila Healthcare Ltd. Rashesh Shah is Chairman and CEO, Edelweiss Group.

Image courtesy: Ambuja Neotia Group

P.G. JADEJA ELECTED AS NEW IMTMA PRESIDENT

The Indian Machine Tool Manufacturers' Association (IMTMA) held its 69th Annual General Meeting (AGM) on December 10, 2015 at the Bangalore International Exhibition Centre in Bangalore. At the Executive Committee meeting following the AGM, P.G. Jadeja, Chairman and Managing Director, Jyoti CNC Automation Ltd. was elected as the President of IMTMA and P. Ramadas, Managing Director, Ace Manufacturing Systems Limited as the Vice President of the Association. The new Executive Committee of IMTMA for the year 2015-2016 was formed. The details of the new members can be accessed on IMTMA website.



ABB INDIA ANNOUNCES NEW MANAGING DIRECTOR

ABB India Limited has appointed Sanjeev Sharma as the Managing Director, with effect from January 1, 2016, to continue the path of next level of growth across utilities, industries and infrastructure in the country. Sanjeev Sharma first joined ABB in 1990 and since then has held a number of global senior management roles. He brings extensive experience in industrial automation and electrification across market segments and geographies and has led several successful change management initiatives across global operations.

BHARATBENZ EXECUTIVE MOVES TO HERO CYCLES

Hero Cycles has recently appointed Sreeram Venkateswaran as Director, Marketing. He joins Hero Cycles from Daimler India Commercial vehicles where he extensively contributed to establish the BharatBenz brand in India successfully. Sreeram holds a B.Tech (Mechanical) Degree from Bhopal University and has over 25 years of rich experience in the automotive industry, primarily in customer facing roles. Some of the key organizations where he has worked include Mahindra & Mahindra, Tata Motors, Eicher, and Bajaj Auto. At Hero Cycles, his focused mission and key objective is to build and grow the "Premium and New Generation" bicycle business for the company.



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Rolls-Royce Motor Cars announces new architecture

In February 2015, Rolls-Royce Motor Cars announced the development of an all-new aluminium space-frame architecture that will underpin all future Rolls-Royce models arriving in market from early 2018. The company recently announced that it has begun the testing phase of this new architecture, with early preparatory activity seeing new engineering mules tested in public around the world. The future of pure luxury motoring is already taking shape as Rolls-Royce Motor Cars begins testing its new aluminium space-frame architecture which will underpin all future Rolls-Royce model lines. The architecture will arrive in market from early 2018.

Engineering mules will be assessed on public roads in various locations around the world. The current testing phase aims to ensure that the new space-frame structure perfectly delivers Rolls-Royce's trademark 'magic-carpet ride' on a variety of sur-



faces and that it is resilient to extreme weather conditions. The assessment of the new proprietary architecture is the first stage of a development programme that will see a new generation of Rolls-Royce motor cars become available from early 2018.

Audi Group to invest more than € 3 billion in 2016



Caption: Inside the Ingolstadt site. Courtesy: Audi

Audi will lay the foundations for future growth in 2016. In the coming financial year, the company plans to continue with its high levels of investment. Along with further process and cost optimization, the planned capital expenditure is to amount to more than € 3 billion, and will support the Ingolstadt-based company along its successful path. Half of the planned investment will take place at the German sites in Ingolstadt and Neckarsulm. Furthermore, Audi will recruit additional experts in the field of future technologies once again in 2016. The company intends to push forward with its growth strategy with the approved investment program in 2016: "We are continuing with our high levels of investment in future technologies to enhance the strong position of our brand," emphasized Audi CEO Rupert Stadler. While Audi is consciously investing in new models and technologies, as well as in the expansion of its worldwide production network, CFO Axel Strotbek also sees potential for continual cost improvements: "With the current investment program, we obviously want to enhance the brand's strong position, but at the same time, we aim to achieve additional financial scope by means of further process and cost optimization."

Hanon Systems to launch new plant in US

Hanon Systems, a leading global provider of automotive thermal solutions, has recently announced plans to launch a new U.S. manufacturing facility to support its growing business with global vehicle manufacturers. The facility includes approximately 95,000 sq ft (approximately 8,825 sq m) of manufacturing space, with room for expansion based on business needs. Initially, the facility will injection mold and assemble innovative and eco-friendly heating, ventilation and air conditioning (HVAC) modules on a range of future model year vehicles for various global automakers. At full production, the company expects to employ nearly 140 hourly and salaried employees. The new Ohio facility will be the first plant to launch under the Hanon Systems name, which changed from Halla Visteon Climate Control (HVCC) in July 2015. It also becomes the company's 40th global manufacturing site, and is the first U.S. plant to open since 2003.

M&M acquires iconic Italian design brand Pininfarina

Tech Mahindra and Mahindra & Mahindra have jointly entered into an agreement with PincarS.r.l., to purchase a controlling stake in Pininfarina S.p.A., an iconic Italian brand in automotive and industrial design. Pininfarina's legendary brand status will allow Tech Mahindra powerful access to relationships the iconic designer has nurtured over its 85-year history, including with Ferrari, Alfa Romeo, Maserati and Peugeot. This gives an opportunity to Tech Mahindra to influence product conceptualization and design & styling through Europe's best-in-class design house.

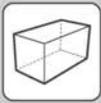


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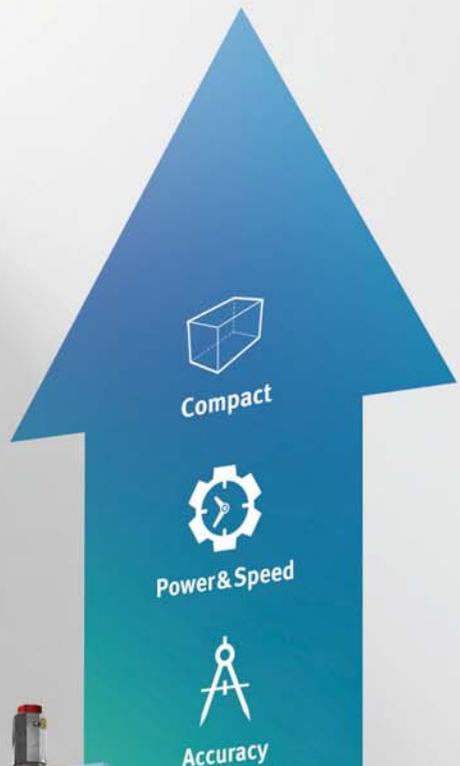
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Toyota signs pact with Ford & Livio for new telematics system

Toyota Motor Corporation has entered into an agreement with Ford and Livio to establish an industry development and operation framework to deploy Livio's SmartDeviceLink (SDL). Other automakers and app developers are welcome to join this collaboration. Toyota will also commercialize a telematics system using SDL. SDL is an open source platform for smartphone apps and car connectivity where customers can use apps in their vehicle through voice recognition function and operation panel. Shigeki Terashi, Executive Vice President of Toyota Motor Corporation, said: "Developing a safer and more secure in-car smartphone connectivity service which better matches individual vehicle features is exactly the value and advantage an automaker can offer customers. We expect that many companies share our view and will participate in the industry SDL collaboration."

Delphi acquires HellermannTyton

Delphi Automotive PLC has acquired the HellermannTyton Group PLC, a leading global manufacturer of high-performance and innovative cable management solutions. The transaction is valued at £1.07 billion on a cash and debt-free basis. Delphi expects the transaction to be 15 cents accretive to earnings per share starting in 2016, excluding one-time expenses for integration. "This transaction strengthens Delphi's leadership position in the automotive electrical architecture market, while also providing growth opportunities in HellermannTyton's adjacent industrial end markets," said Kevin Clark, Delphi President and CEO. "The combined capabilities will allow Delphi to further capitalise on future growth trends while creating significant value for our customers and shareholders."

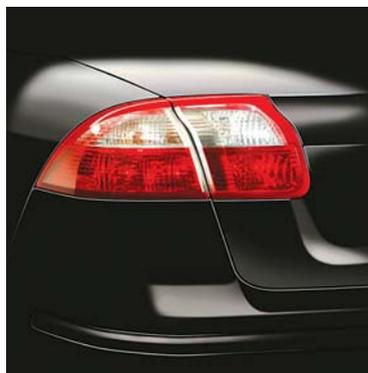


Jaguar Land Rover confirms new factory in Slovakia

Jaguar Land Rover has confirmed that it will be the first British carmaker to open a manufacturing facility in Slovakia. The announcement follows an agreement between the company and the Government of the Slovak Republic to build a new plant in the city of Nitra, western Slovakia. The new world-class £1 billion premium manufacturing facility will eventually employ around 2,800 people. This announcement follows Jaguar Land Rover's recent confirmation to double its investment in its engine plant in the UK to almost £1 billion - the largest injection into a new British manufacturing plant in decades creating several hundred new jobs. Dr Ralf Speth, Chief Executive Officer, Jaguar Land Rover commented, "Jaguar Land Rover is delighted today to welcome Slovakia into our family. The new factory will complement our existing facilities in the UK, China, India and Brazil and marks the next step in the company's strategy to become a truly global business." Slovakia has an established premium automotive sector, which represents 43 percent of the country's overall industry. It has more than 300 suppliers in close proximity and an excellent logistics infrastructure; this confirmed our decision that this country was the ideal location.

Magneti Marelli sets up JV in China for lighting systems

Automotive Lighting, the Magneti Marelli company devoted to the automotive lighting sector, and Changchun Fudi Equipment Technology Development Co. LTD. (FUDI), a Chinese investment company active in the automotive components industry, have signed an agreement to establish a joint venture (JV) company aimed at the production and sale of automotive lighting systems for the automotive market. Magneti Marelli and FUDI are already partners in a JV manufacturing power-



Only for representation. Courtesy: Magneti Marelli

train components since 2012. According to the agreement, Automotive Lighting Reutlingen GmbH will own 60 percent of the share capital of the new company, Changchun Magneti Marelli Automotive Lighting System Co., Ltd., while FUDI will hold the remaining 40 percent. The industrial facilities of the JV will be located in the Xin Xing Industrial Park of the Economic and Technological Development Zone of Changchun, Jilin Province and will be aimed at supplying carmakers in the North-East of China.

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The clear winner

According to a recently concluded study conducted by apex industry body ASSOCHAM, Maharashtra has topped India's investment destinations

Maharashtra has topped Gujarat as the most sought after destination for global and domestic investors as the latter recorded least growth rate of just over two per cent amid top 21 states across India during the course of past five years, revealed a recently concluded study by apex industry body ASSOCHAM.

"Maharashtra, Gujarat and Odisha have emerged as most lucrative investment destinations as they together account for over one-fourth share (26.6 per cent) in the total outstanding investments worth over Rs 154 lakh crore attracted by various sectors from both public and private sources across major 21 states in India as on December 2014 which grew from Rs 105 lakh crore as on December 2009," noted the study titled 'A Comparative Analysis of Investment Pattern in States,' conducted by The Associated Chambers of Commerce and Industry of India (ASSOCHAM).

"With a share of about 10 per cent, Maharashtra has ranked on top attracting investments worth over Rs 15 lakh crore as on December 2014 closely followed by Gujarat (9.2 per cent share), while Odisha (7.5 per cent), Karnataka (6.8 per cent) and Tamil Nadu (6.5 per cent) are other states with significant share in this regard," highlighted the study prepared by the ASSOCHAM Economic Research Bureau (AERB).

"Investment is the key driver of productivity and sustain-

"Investment is the key driver of productivity and sustainability that leads to development and growth making most state governments to strive to better the investment climate prevailing in their respective states to make them conducive to attract domestic and foreign investors."

D.S. Rawat,
Secretary General of
ASSOCHAM

ability that leads to development and growth making most state governments to strive to better the investment climate prevailing in their respective states to make them conducive to attract domestic and foreign investors," said D.S. Rawat, secretary general of ASSOCHAM while releasing the chamber's study.

With investments worth over Rs 84.5 lakh crore, private sector accounted for almost 55 per cent share in total investments attracted by major 21 states across India. While investments attracted from public sector grew at a compounded annual growth rate (CAGR) of just over 11 per cent, those from private sector grew at just about five per cent during the five year period of December 2009-December 2014.

Private sector accounted for highest share of over 81 per cent in the total outstanding investments attracted by Haryana. While in Gujarat private sector accounted for 74 per cent share in total investments attracted by the state as on December 2014.

Infrastructure sector accounted for lion's share of 64 per cent in terms of total investments made by public and private sectors (both foreign and domestic) across India followed by manufacturing (20 per cent), construction (9.5 per cent), mining (3.5 per cent) and irrigation (three per cent).

Similarly in Gujarat, infrastructure accounted for highest share of 57 per cent in total investments attracted by the west-

2

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Long delays in implementation of investment projects hurt the sentiment of investors

ern state followed by manufacturing (25 per cent), construction (13 per cent), mining (three per cent) and irrigation (two per cent) as on December 2014.

With a share of 11.5 per cent and 10 per cent, Gujarat had attracted third highest share in investments attracted by manufacturing and construction & real estate sector across India, while the state attracted fourth highest share of about eight per cent share in infrastructure sector investments.

Interestingly, share of manufacturing sector had increased by five per cent in the total investments attracted by Gujarat as on December 2009 (20 per cent). While the share of infrastructure and mining both had increased by about two per cent respectively, the share of construction and irrigation sectors had declined by six per cent and three per cent respectively, highlighted the ASSOCHAM study.

Projects with investments worth over Rs 86.5 lakh crore i.e. over 56 per cent of the total investments were under implementation or remained non-starter as on December 2014 and private sector accounted for major share (51.5 per cent) in this regard.

Maharashtra had maximum share of over 10 per cent in

Infrastructure sector accounted for lion's share of 64 per cent in terms of total investments made by public and private sectors (both foreign and domestic) across India followed by manufacturing (20 per cent), construction (9.5 per cent), mining (3.5 per cent) and irrigation (three per cent).

projects under implementation followed by Karnataka (7.4 per cent), Gujarat (7.4 per cent), Odisha (seven per cent) and Tamil Nadu (6.5 per cent).

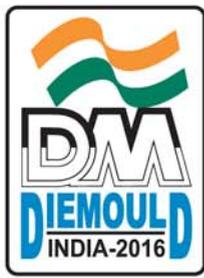
Public sector accounted for 56 per cent share in projects that remained non-starter in Gujarat as on December 2014 which had increased from 50 per cent in 2009.

Long delays in implementation of investment projects hurt the senti-

ment of investors and also results in incurring of huge costs as such the government needs to have a strong plan and must prioritize cleaning up delayed projects in the form of effective implementation which would only be possible through an appropriate, target-oriented roadmap for both the clearance authority and the investors, suggested the ASSOCHAM study.

"The government needs to limit the time frame for each clearance authority and if they are unable to meet the deadline, they should be penalized," the report said.

Inappropriate planning, change of ownership, lack of finance, lack of co-ordination with the contractors and others have also resulted in delay in implementation which calls for strict monitoring of such activities in an appropriate manner, it added. 



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MADURA F&L

When Madura Fashion & Lifestyle (MF&L) started its sustainability journey, it naturally decided to follow the Aditya Birla Group's Sustainability Framework. Accordingly, in June 2013, the Apparel & Retail Sector (A&R) leadership, comprising of MF&L, Pantaloons Fashion & Retail Ltd. (PFRL) and Aditya Birla Retail Ltd. (ABRL), adopted the Aditya Birla Group vision statement.

The Aditya Birla Group vision statement declares: "By 2017, the Aditya Birla Group endeavours to become the leading Indian conglomerate for sustainable business practices across its global operations, balancing its economic growth with environmental and societal interests". It addresses various aspects related to the long-term sustainability of the businesses, through defined Sustainability Missions. Leaders at MF&L have been keenly involved in driving these Sustainability Missions.

"We must balance our economic growth with environmental and societal interests by integrating sustainable business practices into our ways of working. We are committed to giving back more than we take from our ecosystem," said **Pranab Barua, Business Director, Apparel & Retail Business, Aditya Birla Group.**

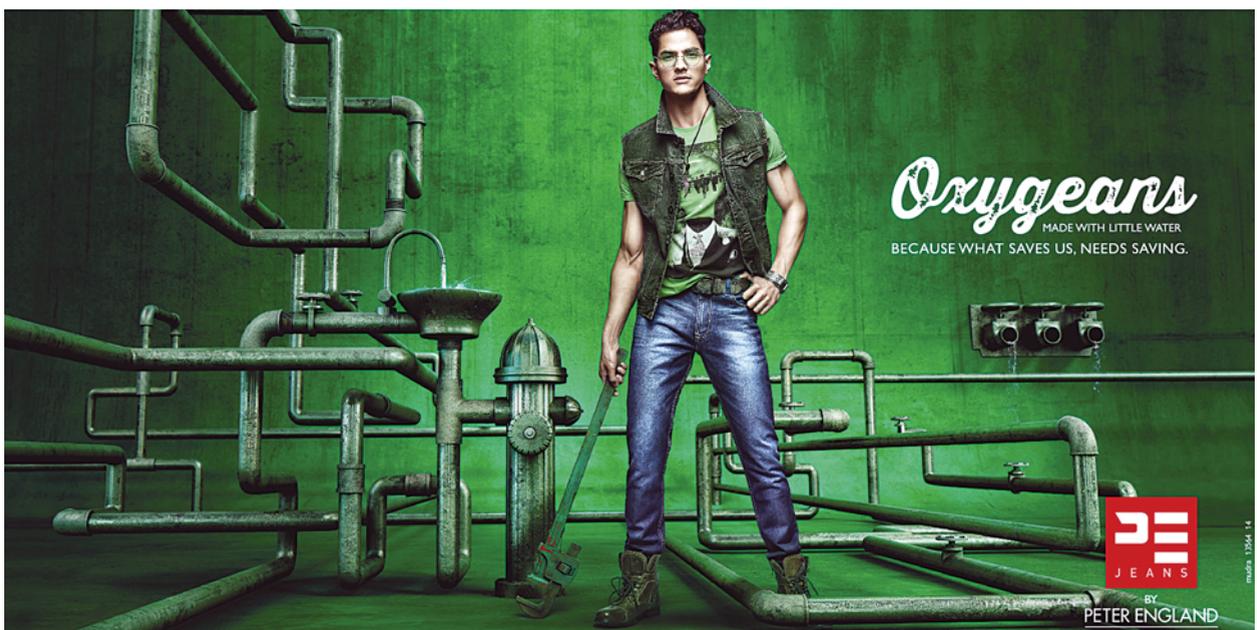
Over the years, the community initiatives at MF&L have evolved from being focused on providing benefit to the com-

munities around its factories, to encompass a larger sphere of activity. In doing so, MF&L has been able to touch 1.25 lakh people across 34 villages and provide employment to close to 15,500 people, 70% of whom are women from semi-rural areas.

"At MF&L, we strive to integrate sustainability into our business by means of conserving natural resources and developing products which have minimum negative impact on the environment and society," said **Ashish Dikshit, Business Head, Madura F&L.**

Corporate Social Responsibility at MF&L

MF&L's Corporate Social Responsibility mission is to create sustainable livelihood for 25,000 people, impact 3,000 girl children and create 100,000 hours of employee volunteering by FY18. The three key pillars of its CSR focus on communities who hail from socio-economically challenged backgrounds with special emphasis on:



Oxygeans from Peter England is an eco-friendly line of jeanswear that saves approximately 80 litres of water per pair in its manufacturing process

- **Girl Child Education**
- **Building Sustainable Livelihoods, and**
- **Health & Sanitation**

Notably, MF&L's educational initiatives have helped more than 21,000 students, and its healthcare activities have aided over 2,11,000 people. Its teams from CSR, factories, Aditya Birla Centre of Retail Excellence (ABCRE) and employees have together contributed to this endeavour. Some of the key initiatives undertaken by them include **'Help Vidya Write', 'Give India Campaign', blood donation camps, and support for cancer patients**, among others. MF&L employees and brand teams have also contributed generously during natural calamities such as the Uttarakhand and Jammu & Kashmir floods, Nepal earthquake and most recently the Chennai floods with cash and relief material.

MF&L has also progressed much in the three areas identified under the CSR Mission:

For **'Girl Child Education'**, MF&L provides education to 50 tribal girl children in the remote parts of Karnataka through its partnership with the Swami Vivekananda Youth Movement. While **Project Gyanarjan** supports higher education coaching for Class 10-12 students, **Project Sukanya** supports 7,000 students in 47 government schools (including 10 Kasturba Gandhi Balika Vidyalayas).

Towards **'Building Sustainable Livelihoods'**, **Mission Sankalp** focuses on skill building programmes through Skilling Partners for youth from economically challenged backgrounds. Even as this programme is being rolled out nationally, 25 of its members have successfully joined MF&L stores. MF&L has also partnered with CII for **Project Kaushalya** and **Model Career Centres**, focused on vocational skills and providing opportunities for employment respectively.

MF&L's **'Health & Sanitation'** initiatives impact the **local communities around its factories**. For example, last year, it built 150 sanitation facilities at homes situated around its factories.

"MF&L is committed towards realizing our Chairman's sustainability vision by ensuring compliance with the Group's sustainability policies & technical standards, and by adopting industry best practices," said, **Biren Vora, Head-Sustainability & Business Excellence, Apparel & Retail Business, Aditya Birla Group**.

MFL Sustainability Initiatives & Framework

MFL has taken a slew of initiatives to walk the path of sus-



Easy Wash shirts from Van Heusen

tainability. As a process oriented organisation, the journey has evolved:

- MF&L has a strong governance structure in place under which all the sustainability initiatives are periodically reviewed by the leadership team.
- As an organisation, it has set for itself key benchmarks or Sustainability Metrics to enable efficient tracking of its initiatives towards energy efficiency, carbon and water footprint, sustainable packaging, safety and more.
- Regular sustainability training has been instituted for MF&L's leadership team and the rest of the organisation; several intense training sessions have already taken place. Several members of MF&L's top management are certified CII-ITC Sustainability assessors today.
- Implementation of sustainability software to enable reporting – Through this software, MF&L is able to keep track of its sustainability initiatives and implement them in a phased manner.

Progress of missions: In its endeavour to make the operations capable of meeting international standards and expectations, MF&L has embarked on several sustainability missions. The progress on some of these missions is tabulated below:

- Energy** – Achieved a significant reduction in energy consumption through LED lighting. Work on this front has been in progress since the last two years to convert all its 2000+ stores to LED lighting. MF&L is also looking at improving operational efficiencies and increasing use of renewable energy.
- Packaging** – A significant percentage of its packaging material today is 'zero pollution' material.
- Sustainable Product** – MF&L adopted the Higg Index, an apparel and footwear industry self-assessment standard for assessing environmental and social sustainability through-

out the supply chain. The Higg Index has been developed by the Sustainable Apparel Coalition (a global non-profit organisation) of which MF&L is a member. At MF&L, Higg Index self-assessment and improvement plan, trainings on Higg Index, sustainable sourcing of raw material or recycled material, life-cycle assessment study are conducted for some products to identify opportunities for reducing the environmental impact on society, and Brand Sustainability Guidelines are related initiatives undertaken by the company.

d. **Safety** – Safety is a priority at MF&L. Adequate safety training is provided for all employees. This includes reg-



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Audit System, and Restricted Substances List to top vendors of MF&L.

MFL Sustainability mission targets: MF&L has also identified certain Sustainability Mission Targets which are enumerated below:

Green buildings – MF&L is looking to achieve Green Building certifications for identified facilities by 2018. The methods it is using in this regard are as follows:

- MF&L will assess the opportunity or viability for converting existing and new buildings into green buildings.
- It will assess the possibility for improving the sustainability ratings for identified factories.
- It will facilitate a feasibility review for Leadership in En-

Louis Philippe's range of 'Evolve' shirts use natural herbs and mineral dyes in the manufacturing process



ular fire drills, roll out of Occupational, Health & Safety (OHS) Policy, guidelines, standards & checklist, Reward & Recognition programme for safety champions and facilities, safety audits, and Integration of Crisis Management into the Risk Management Framework of the organization. As a result, no major injuries or fatalities have been reported at the work place.

- e. **WASH** – In line with Aditya Birla Group's signing of the WASH pledge, which is an initiative by the World Business Council for Sustainable Development (WBCSD) wherein conglomerates reaffirm their commitment to provide employees with safe and sustainable drinking water and sanitation and hygiene, MF&L has undertaken a baseline assessment and is working towards compliance to the WASH pledge over the next two years.
- f. **Water & Carbon foot printing** – MF&L has initiated work towards understanding its water and carbon footprint and the impact it has on the environment.
- g. In line with MF&L's sustainability practices, the company also released its **Vendor Code of Conduct, Laundry**

ergy and Environmental Design (LEED) certification for the remaining facilities.

Carbon foot printing: MF&L aims to be amongst the premier organisations in the retail sector in terms of lowest greenhouse gas emissions, in line with its commitment to the UK-based Carbon Disclosure Project (CDP) to reduce greenhouse gas emissions by global conglomerates. It aims to do this through the following methods:

- Conduct capacity building workshops for the carbon mission team
- Identify opportunities for reduction in carbon foot printing
- Analyse the CDP score and submit carbon foot print data to CDP

Water: It is MF&L's aim to achieve water neutral / positive status for facilities under its direct control. It also aims to extend the mission to its Tier 1 suppliers for water re-use and recycling.

Waste: MF&L has carried out a waste inventory study and is in the process of identifying opportunities to reduce waste across the supply chain.

Stakeholder engagement: As part of its engagement with business stakeholders, MF&L regularly engages in a positive dialogue about its operations, products and services across the value chain. MF&L also tracks global megatrends to determine how such externalities can influence its business success. Activities already conducted in this regard include an internal stakeholder engagement survey and external experts' opinions obtained on various sustainability initiatives.

Future proofing: For any organisation, future proofing one's business is important to prepare for the effects of external sustainability themes on its future. At MF&L, it is done by integrating the response to the opportunities and risks into the organisation's strategic business plans. An example of this is the 'scenario planning activity' which was conducted in association with global consultants. MF&L's activities for future proofing are based on the points below.

fruits, and vegetables to dye and print fabrics. Waste generated from the processing can be used for agricultural purposes as a bio fertilizer. Louis Philippe worked in collaboration with Jayshree Textiles to create this exquisite range of linen shirts and trousers.

Peter England: 'Oxygeans' from Peter England is an eco-friendly line of jeanswear that saves approximately 80 litres of water, per pair through indigenously developed washing methods during its production phase.

Van Heusen: Van Heusen partnered with Huntsman Textile to create a combination of Stain Repellent, Soil Release and Anti-Microbial technology to give birth to something that it calls 'Easy Wash'. This technology:

- utilises 50% less energy
- dries quicker
- works in cold water



- Understanding the factors that will influence the future operating context of its businesses in an environment of scarce resources, higher competition, higher cost of resources and tighter regulation.
- Analysing the evolution of the retail business over the next few years and working backwards on action needed to be taken today.

Following these guidelines will ensure that MF&L's future proofing strategy is robust, stress tested and equipped to respond to changing circumstances, with the use of innovative approaches to take advantage of new opportunities.

Sustainability in the manufacturing process

Making good on its 'Sustainable Business Objectives', MF&L puts them into action in the garment manufacturing process. Some examples of sustainable technology used in the apparel business are outlined below:

Louis Philippe: "Evolve" from Louis Philippe is created with natural herbal and mineral dyes. The dyeing technique involves using 100% biodegradable herbs, plants, minerals,

- requires no washing detergents
 - increases life cycle of a garment.
- Easy Wash shirts allow removal of 21 types of everyday stains without the need for detergent.

Conclusion

As it progresses in the journey of sustainability, Madura Fashion & Lifestyle (MF&L) is positively transforming all key aspects of its activities like corporate, business, operational, social as well as environmental.

Indeed, in line with the Aditya Birla Group's vision statement, Madura Fashion & Lifestyle successfully endeavours to play a holistic role in the overall development of the communities in which it operates. Its journey of sustainability encompasses not just the well-being of the environment but also the socio-economic welfare of the people whose lives it touches in the course of its activities. This journey truly reflects its leadership role in contributing to the positive transformation of the society while also ensuring that it remains at the forefront in achieving comprehensive business excellence. 



HAL's new helicopter manufacturing unit coming up in Tumkur, Karnataka

Prime Minister Narendra Modi has recently unveiled a plaque for the foundation stone of a new helicopter manufacturing unit of Hindustan Aeronautics Limited in Tumkur district in Karnataka. Speaking on the occasion, he said that the manufacturing unit coming up in Tumkur would not be an ordinary one, but one which would make the whole world take notice.



The Prime Minister said the Indian Armed Forces were second to none, and now the time had come to ensure that the weapons and equipment they carried and used were also the best in the world. For this, he said, India needed to end dependence on imported weaponry, which is expensive and is not of the latest technology. Modi said the Union Government has decided to lay stress on manufacturing of defence equipment. He said the helicopters manufactured in Tumkur will serve soldiers stationed in remote locations. The Prime Minister said that the first helicopter built in this unit should take flight by 2018.

Kawasaki to set up its 1st aerostructures assembly line in US

Kawasaki Heavy Industries, Ltd. will establish an assembly line for the cargo doors of Boeing's state-of-the-art commercial airplane, the 777X, at Kawasaki Motors Manufacturing Corp., U.S.A. (KMM), which is Kawasaki's U.S. local subsidiary located in Lincoln, Nebraska. This is the first time for Kawasaki to establish an aerostructures production line in the U.S. The necessary equipment is scheduled for installation in the work area of about 2,800 square meters in the existing building prior to March 2017, so that the factory can start the operation from May 2017. The 777X is the newest member of Boeing's bestselling 777 family, the market-leading twin-engined large passenger airplane. Production is set to begin in 2017, with the first delivery targeted for 2020.

Fokker and Aequs to supply parts for Chinook helicopter

Fokker Technologies, a division of GKN Aerospace, and Aequs of India, has signed a Long Term Agreement (LTA) for the supply of machined components for Boeing's Chinook helicopter. The signing took place at the Boeing India Supplier Conference in Hyderabad. Under the agreement, Aequs will supply machined detail parts which will be made in India for the Chinook heavy lift helicopter. Fokker Technologies will build the parts into final sub-assemblies in facilities in Papendrecht, The Netherlands. Aequs was selected after a careful process of qualification proving the ability and affordability through trial production. "This agreement between Fokker Technologies and Aequs is significant because it capitalizes on India's industrial capability, innovation and talent to contribute to the country's long-term competitiveness as a global aerospace leader," said Pratyush Kumar, president, Boeing India. "Boeing is rapidly expanding its supplier footprint in the country to reinforce our commitment to 'Make in India' and we have doubled our sourcing from India in the last 12 months."

Airbus Beluga XL production starts



The first cut of the Beluga XL MSN001 rear fuselage has been successfully achieved in Spain, paving the way for the final assembly to begin in early 2017. MSN001 will be the first Beluga XL to fly. The rear fuselage, produced by Aernnova, will be the first part to be delivered to the Beluga Final Assembly Line in Toulouse. The Beluga XL entry into service is planned in mid-2019. The Beluga XL was launched in November 2014 to address the transport capacity requirements in view of the A350 XWB ramp-up and other aircraft production rate increases. Based on the A330-200 Freighter with a large re-use of existing components and equipment, the Beluga XL will be powered with Rolls Royce Trent 700 engines. The fleet of five Beluga XL aircraft will provide Airbus with an additional 30 percent extra transport capacity.

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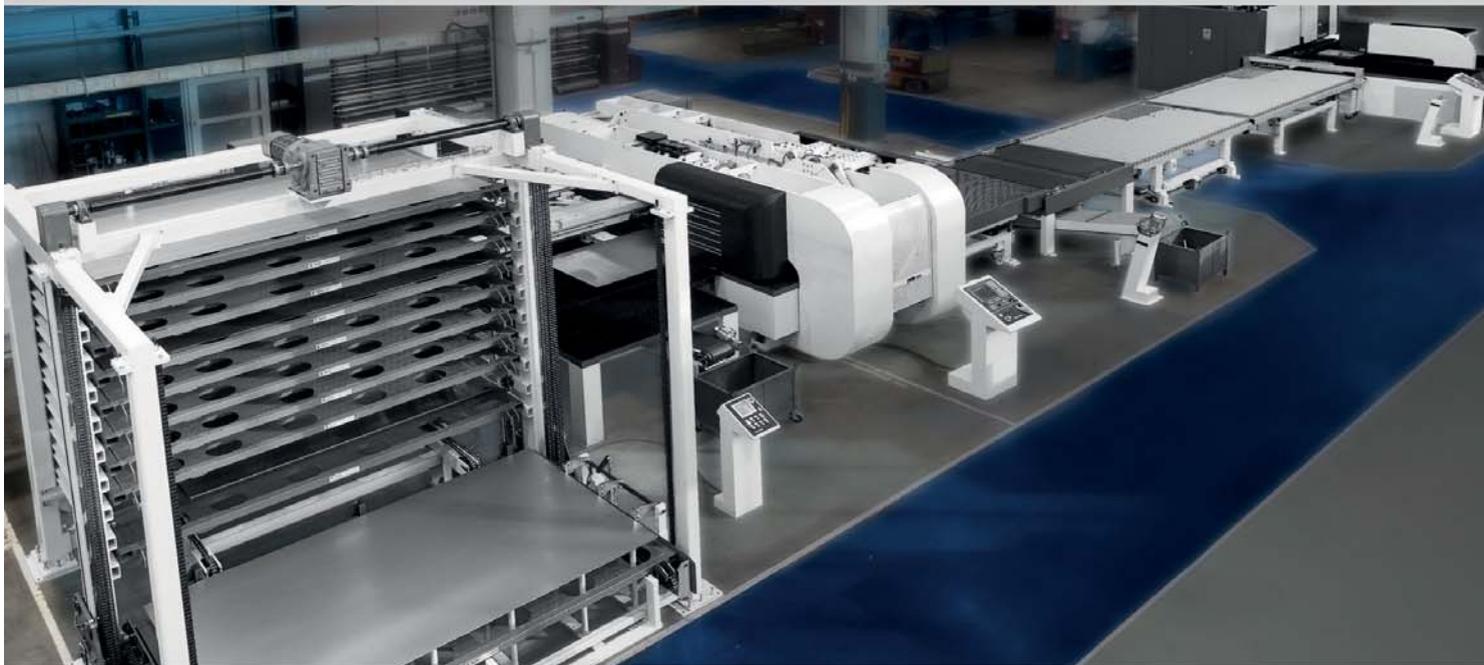
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TM Star★ List

The Machinist Star List was created last year with the aim of recognising the iconic leaders of Indian manufacturing. We started off with Terrific Ten and the 2016 Edition features what we call the 'Dynamic Dozen'! This year's list spans captains of diverse industry sectors like automotive, aerospace, defense, farm equipment, construction equipment, railways and beyond. In fact, some of them represent more than one industry segment. What brings them together is their sterling performance in 2015 and the even greater promise that they hold for 2016. What also binds them is their belief in excellence and their astonishing vision. Of course, there are many other great leaders out there. But this is The Machinist Star List 2016! Elite and Exclusive!!



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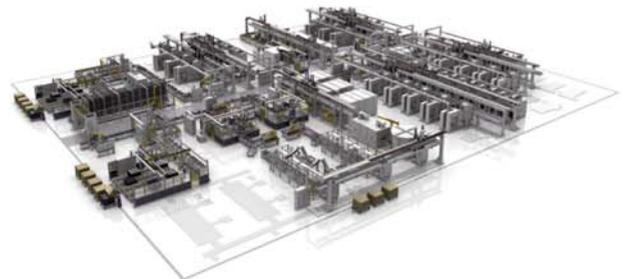


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“WE WERE THE FIRST TRACTOR COMPANY TO GET A JAPANESE QUALITY MEDAL, WHICH WE ARE VERY PROUD OF AND THAT TRADITION HAS CONTINUED.”

He joined the Mahindra Group in 1993 with a lot of promise. And Pawan Goenka has more than delivered that promise. The beginning was of course with the development of the legendary Indian SUV, the Scorpio. And since then, he has only charted and conquered newer horizons. About 18 months back, he told us that one of his key focuses will be to reassert the Group’s leadership position in the overall UV segment and that’s why Mahindra would launch two compact SUVs in about 18 months. “Our focus is now on the compact SUV segment because we are the UV player. We are ‘the UV brand’ in India and we need to ensure that we remain at top of the UV segment,” he had said. Well, as always, he has delivered on his promise with the TUV 300 and KUV 100! TUV300 has already received very good customer response. Well, Goenka remains a true blood automotive professional but he is also passionate about other Group businesses. More so about the tractor business, perhaps.

And while he has definitely given huge direction to the R&D activities at the Mahindra Group, Dr Goenka’s finest contribution (to the Group) has been the efforts and focus on the quality of manufacturing and processes. Quite early, he introduced what he calls the BPR – Business Process Re-engineering. And he is happy that the tractor division took a lead in implementing BPR. “We were the first tractor company to get a Japanese quality medal, which we are very proud of and that tradition has continued,” he says.

Today, of course, this distinguished alumnus from I.I.T. Kanpur is driving not just business excellence but also business strategies and success at the macro level and at a larger scale.



Dr. Pawan Kumar Goenka

**Executive Director and President
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There was a time when the brand Royal Enfield had been almost written off. But Siddhartha Lal not only gave it a new lease of life but also has brought it on the verge of global glory today. Of course, it is work in progress but the foundations have been laid quite strongly.

Today, Royal Enfield (part of Eicher Motors Limited) is the oldest motorcycle company in continuous production having made its first motorcycle in 1901.

Under Lal's youthful and dynamic leadership, Royal Enfield has created the mid-size motorcycle segment in India with its unique and distinctive modern classic bikes. With 50 percent growth every year for the last three years, Royal Enfield is fast becoming a very important player in the global mid-size motorcycle market.

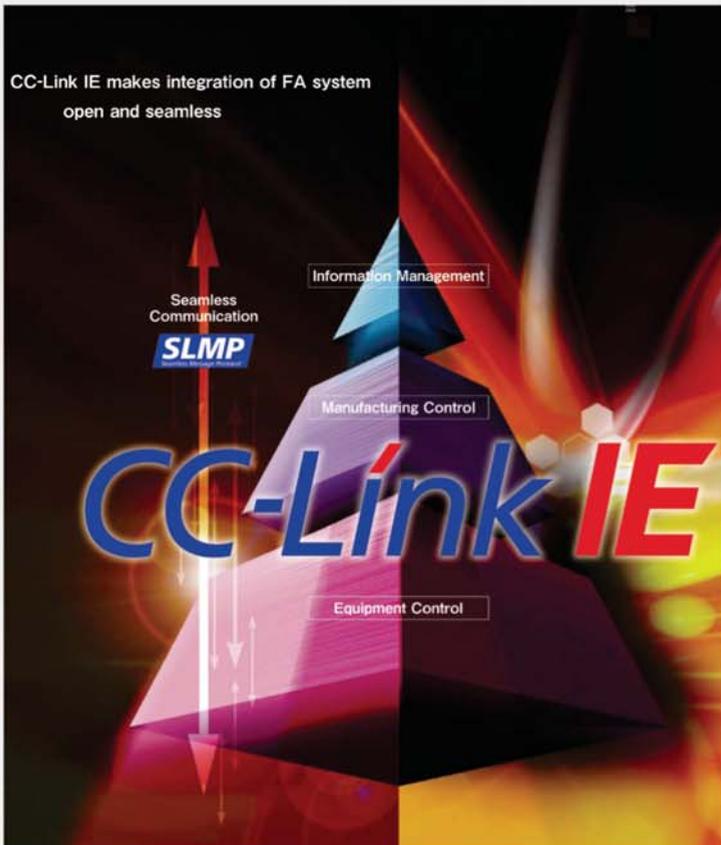
Royal Enfield continues to do well in Q3 2015 with its best ever quarter results. “We have registered

a phenomenal y-o-y growth of 55.7%, selling 127,611 units in Q3 2015 compared to 81,977 units in Q3 2014. We continue to extract maximum operating leverage from the business, thus improving the EBIT margin to 25.7% in Q3 2015 over 23.4% in Q3 2014,” says Lal.

The board at Eicher Motors Ltd. accorded in-principle approval for additional capacity creation at Royal Enfield. In the last quarter, Royal Enfield has taken some significant steps as a part of its growth strategy and focused international thrust of leading and expanding the mid-sized motorcycle segment globally. Royal Enfield announced its first direct distribution subsidiary outside India, in North America in August 2015. Talking about it, Lal said, “North America is a nodal market for motorcycles and one of the biggest in value terms. Given its critical importance to our global ambitions, we have decided to operate our wholly owned subsidiary there.”

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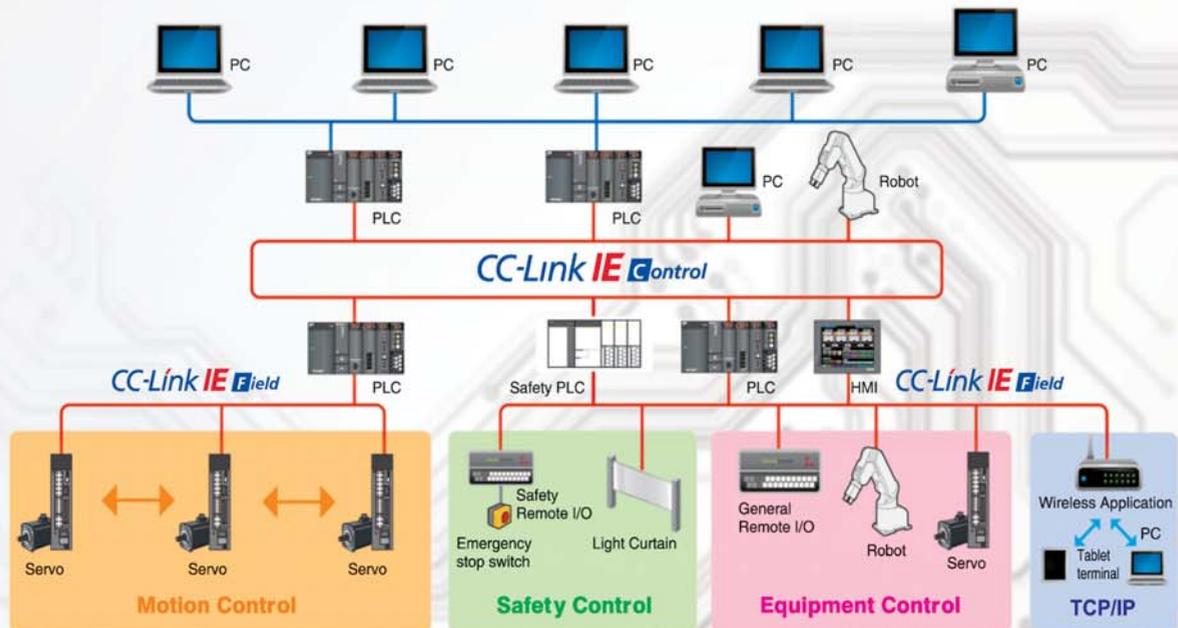
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Kamal Bali

Board Member and Managing Director, Volvo India Private Limited

“WE ARE POISED TO FURTHER ENHANCE OUR ROLE AS A KEY PARTNER IN THE SUSTAINABLE DEVELOPMENT OF THE INDIAN ECONOMY, IN THE AREAS THAT COINCIDE WITH KEY NATIONAL PRIORITIES.”

It has been less than two years since Kamal Bali has taken charge as the Managing Director of Volvo India Private Limited but Bali is already rolling out key strategies to consolidate the Group’s large and diversified presence in the country. As recent as December 31, 2015, Volvo Buses India, the bus unit of Volvo Group (which was earlier a standalone entity) merged with Volvo India Pvt. Ltd.

“The most satisfying aspect of Volvo

Group’s impactful presence in India, over the last 17 years, has been its success to bring about a paradigm shift in customer experience and productivity, by re-defining and establishing new products and creating completely new segments.”

Bali understands that with a unified front, Volvo would be better placed to utilise the synergistic strengths of each businesses and provide greater value to all stake holders while building on its leadership in providing mobility answers to a nation on the move.

For example, during the first half of 2016, Volvo Group in India will be rolling out hybrid buses in the beginning with Navi Mumbai as part of a city pilot project. These Volvo hybrids will be manufactured at the company’s facility in Bengaluru. Volvo Trucks is also the only manufacturer to offer a higher capacity 5 axle mining dump trucks in India. In fact, the Company has also introduced the 75 ton Volvo Excavators to provide matching excavation capability for these trucks.

With various ambitious programmes like Make in India, Smart Cities and FAME being rolled out across the country, Bali knows that Volvo India is in a sweet spot to deliver transport solutions that India needs. And this seasoned campaigner of more than three decades obviously wants to make the most of it.

“We are poised to further enhance our role as a key partner in the sustainable development of the Indian economy, in the areas that coincide with key national priorities – infrastructure development, urbanisation, providing solutions that are safer and environment friendly,” he says.



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Vinod K. Dasari

Managing Director, Ashok Leyland Limited

“ASHOK LEYLAND’S VISION IS TO GLOBALLY BE AMONG THE TOP 10 MANUFACTURERS IN TRUCKS AND TOP FIVE IN BUSES IN VOLUME TERMS.”

The Indian truck industry is often described as a duopolistic industry with two big players dominating the scenario for several decades. While these two players also have to compete with each other for the top most position, the pressures are enormous today with the rapidly growing presence of several other players including European majors. And leading one of these two market leaders is no mean task. But Vinod K. Dasari has been doing an absolutely fine job with this Herculean task since 2011. It has been Herculean because the beginning of his tenure coincided with a very bad phase for commercial vehicles in the Indian market. It has been a game of patience and Dasari has been playing it well by utilising the lean period to

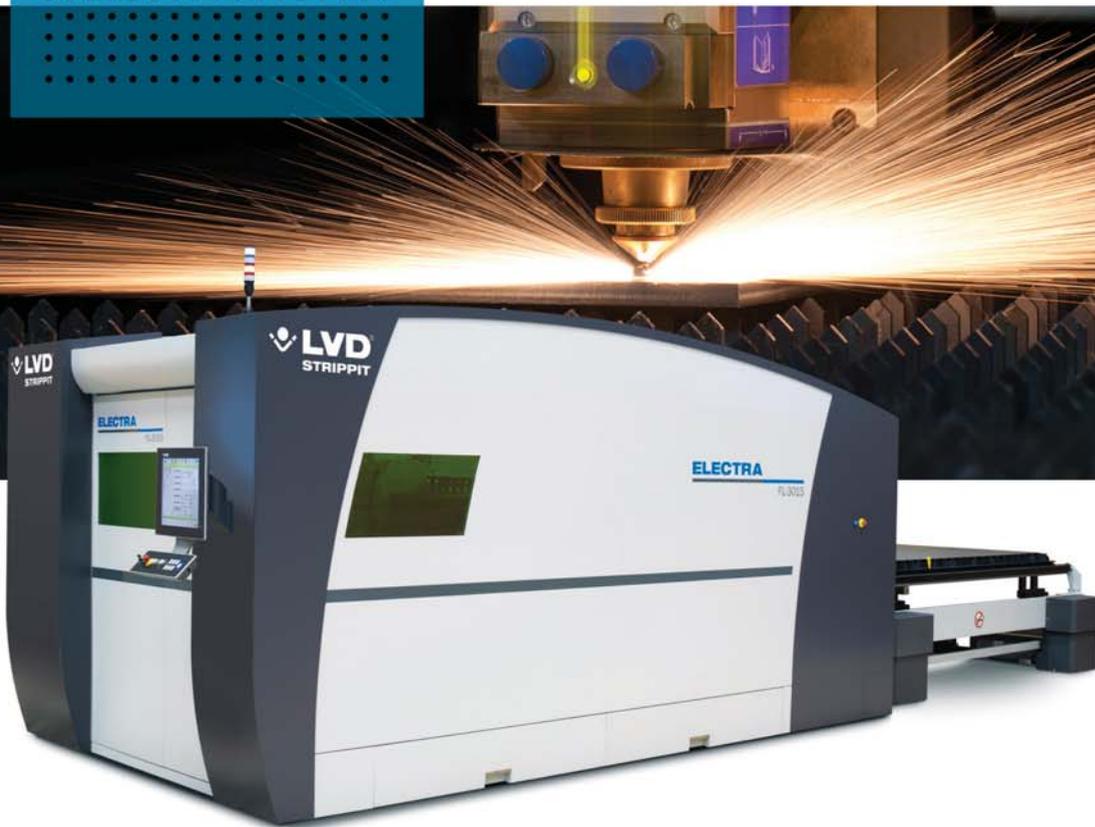
smoothen out operational issues and creating newer strategies. The market bounced back last year and Dasari delightfully guided Ashok Leyland with fantastic numbers. The Company’s revenue increased 54% to Rs. 8,781 Cr, against Rs. 5,695 Cr, same period last year. Net profit stood at Rs. 446 Cr against Rs.73Cr, same period last year, while EBITDA was Rs. 983 Cr (11.2% of total revenue), against Rs. 329 Cr (5.8% of total revenue), same period last year.

In his other previous assignments, he has also worked with big names like General Electric, Timken and Cummins India. So, he has been making the most of his robust experience to lead Ashok Leyland and achieve the Group’s ambitious targets. “Ashok Leyland’s vision is to globally be among the top 10 manufacturers in trucks and top five in buses in volume terms. We are already among the top five in buses - a position we will consolidate, while we drive growth in trucks to achieve our vision. Phase 1 we are focused across SAARC, Middle East and Africa. We have a dominant position in large buses in the Middle East, and we intend to introduce our truck range as well. In Africa, we sell a wide range of buses and trucks and are now expanding our presence across the geography,” he says.

Currently, Dasari also serves as President of ARAI (the Automotive Research Association of India), and President of SIAM (the Society of Indian Automobile Manufacturers).

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Vipin Sondhi

Managing Director & CEO,
JCB India Limited

“THE FIRST SIGNS OF A ‘U’ SHAPED RECOVERY ARE ALREADY VISIBLE IN THE INDUSTRY AS WE ARE NOTICING SOME ON THE GROUND MOVEMENT IN ROADS & HIGHWAYS SECTOR.”

He has been successfully spearheading the company’s growth journey in India for more than a decade now. Today, JCB India is an undisputed market leader in the construction and earthmoving equipment industry and Vipin Sondhi’s leadership has obviously played a huge role in this achievement. And that’s not all; he has also led the growth of JCB India’s export business spanning over 60 countries.

With five world class manufacturing facilities – including the world’s largest backhoe loader factory at Ballabgarh – and an in-house Design Centre in India, JCB India Limited is a big contributor to the Government’s Make in India campaign. In fact, the latest factory at ‘Jaipur’ is a ‘Zero Effect’, Green Manufacturing facility.

A key to Sondhi’s leadership success has been his astute understanding of the market pulse. He has been ensuring that JCB India moves in absolute sync with (and many times, even ahead of) the market demands and requirements. For example, in 2015, the Company launched JCB Livelihood – an advanced

Telematics technology that enables its customers to manage their machines in real time. “We also rolled out our 100,000th JCB ‘ecoMAX’ engine from our Engine facility in Ballabgarh, now in its fifth year of production. Today, we offer both types of engines - Naturally Aspirated and Turbo Charged. Earlier this year, we launched a brand new product line of ‘Made in India’ Diesel Gensets in the range of 63-100 kVA.” Another key highlight of 2015 was marking the milestone of selling over 200,000 backhoe loader units in India.

With already a substantial market leadership position, JCB India is further well poised to make the most of an economy on the path of revival. “The first signs of a U shaped recovery are already visible in the industry as we are noticing some on the ground movement in Roads & Highways sector. Moreover, the announced investments in various sectors and projects like Smart Cities, High speed Railway Corridors etc. will hopefully upsurge the demand for Construction Equipment in the coming years. The Government from the beginning has shown a strong intent towards infrastructural development however, and we are hopeful of a full recovery soon,” he says.

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“WE STARTED MAKING IN INDIA IN 2010 WHEN WE OPENED OUR PLANT. BUT TO ME IT IS NOT JUST ‘MAKE IN INDIA’ WHICH IS IMPORTANT BUT IT IS ALSO ‘ENGINEERED IN INDIA’ THAT IS IMPORTANT.”

Nissan India’s ambition of grabbing 10 per cent market share in India by 2017 hasn’t really been on track. And Guillaume Sicard knows that. In fact, more than just knowing it, he looks at it realistically. “I think ‘the ten percent story’ is something I learnt when I arrived here. For me, it is like a dream; it is a vision. But in India, we are just five years old. So ten percent by 2017 is extremely ambitious,” he admits and adds that it still is a dream and a vision. “If you talk about reality, I think five percent market share by 2020 is something that we should be able to achieve if we keep on developing the brand properly, offering the right products, developing our offers and maintaining the improvement in customer satisfaction that we are doing currently. I think it is possible.”

India being a very price sensitive market, reducing cost at the manufacturing level is a key to produce competitive vehicles. “Well, it (price sensitivity) is a very good thing for the consumers but it is making our job as global OEMs extremely difficult,” he says. Then he points out that if you look at the profitability of the global OEMs in India, excluding the two major ones, all of them are having a hard time in terms of profitability. “We are fortunate because we have selected a good strategy, which was to have exports at the beginning. It is helping us not to be in a bad shape in terms of P&L. So I would say that we are in an acceptable situation today.”

Sicard is hundred percent in favour of ‘Make in India’ both for the domestic as well as the exports market. “We started making in India in 2010 when we opened our plant. But to me it is not just ‘Make in India’ which is important but it is also ‘Engineered in India’ that is important. We don’t want India to be only assembling; we want India to be a brain country. We have 5,000 engineers working at our R&D center in Chennai making sure that we engineer, we develop, we create and we innovate in India both for Indian as well as for the world. So our strategy and philosophy is not just to make in India but also to engineer and develop in India,” he states.

Guillaume Sicard

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EMPOWERING INNOVATION

THE PRODUCT OFFENSIVE OF MERCEDES-BENZ IN 2015 WITH THE '15 IN 15' APPROACH HAS BEEN HIGHLY SUCCESSFUL AND IS BEARING FRUIT."

While he has worked across various countries and cultures, he has always been fascinated with India as a nation. So when he got the opportunity to head Mercedes-Benz India starting October 1, 2015, he was quite delighted to take charge. Of course, he is quite aware of the brilliant legacy left behind by his predecessor Eberhard Kern but he is equally excited to 'head the operations in India, which is an emerging luxury car market in which Mercedes-Benz is the fastest growing luxury automotive brand'.

Folger's confidence also stems from the fact that he is a Mercedes-Benz veteran for over three decades. He joined Daimler-Benz in 1979 and has been holding several senior positions across different departments getting a comprehensive view of the business.

And Folger couldn't have taken charge in India at a better time. Mercedes-Benz India continued its strong sales performance as it registered its highest ever Jan-Sep sales in 2015, with a robust 34 percent growth delivering 10,079 cars to its customers, in this period. And Folger knows it: "We sold almost the entire 2014 volumes in first nine months of 2015...I am glad to see the India strategy is bearing fruits."

The challenge for Folger will be to build on this momentum and deliver a masterstroke to grab maximum market share over the two traditional rivals. One of the ways will be to continue the assault by launching India centric models at regular intervals. And Mercedes-Benz India is already doing it. Earlier in December, it launched the new A-Class. "The product offensive of Mercedes-Benz in 2015 with the '15 in 15' approach has been highly successful and is bearing fruit, as is visible with our sustained growth momentum. We are confident that the addition of the new A-Class will further strengthen our New Generation Cars portfolio and will continue our conquest of new customer base," Folger says.

A photograph of Roland S Folger, Managing Director & CEO of Mercedes-Benz India, standing in front of a Mercedes-Benz car at a track event. He is wearing a light blue shirt and khaki pants. The background shows a race track with other cars and spectators.

Roland S Folger

**Managing Director & CEO,
Mercedes-Benz India**

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“HE CONTINUES TO DOMINATE WITH CLEAR MARKET LEADERSHIP IN THE SELECTED SECTORS OF HIS CORE BUSINESS OF UTILITY COMMERCIAL VEHICLES WITH BRANDS LIKE TRAVELLER AND TRAX.”

In 1997, Daimler asked Force Motors to set up a dedicated facility for assembling and testing engines for Mercedes passenger cars to be made in India. And since then, Force Motors has supplied over 50,000 engines. In July 2015, Force Motors made operational the first independent plant outside of the BMW Group that assembles and tests engines for the German Luxury Car Maker.

To be a preferred Tier one supplier to the finest of luxury brands is no mean achievement. But for Prasan Firodia, setting up new milestone comes quite naturally. Surprisingly, Force Motors is a lot more than being an auto component player. That's just one dimension of the business that this third generation entrepreneur has been growing steadily.

In fact, he continues to dominate with clear market leadership in the selected sectors of his core business of utility commercial vehicles with brands like Traveller and Trax. And he is also extending the reach and success of these brands further. While his foray into the SUV segment with Force One may not have been successful, the experience will definitely count when Force Motors prepares for its next ambitious plans in the personal vehicles segment. Like it did with the Gurkha Extreme Off-roading Vehicle (EOV).

The young Firodia also successfully heads Jaya Hind Industries, where is focussed on harnessing the latest technology from world leaders in the field of casting, setting up world class manufacturing facilities, and implementing total quality management. Force Motors also manages to grab some share in the top heavy agricultural segment. Well, while he surely has his priorities clear, Prasan Firodia also displays strong entrepreneurial risk taking abilities which more often than not translate into success.



Prasan Firodia

**Managing Director - Force Motors Ltd
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“2016 IS THE YEAR OF RAPID IMPLEMENTATION OF OUR STRATEGY. IT IS ALSO A SPECIAL YEAR FOR US AS WE WILL BE CELEBRATING 100 YEARS AS A LEADER IN AEROSPACE.”

The Aerospace and Defence sector in India is on the verge of a phenomenal transition and one company that is very well placed to be a key driver of this evolution is Boeing. And Pratyush Kumar is the man at the helm making sure that Boeing gets the best of India and India gets the best of Boeing. “This is a win-win proposition which allows us to harness productivity while supporting India’s objectives,” he says. You just cannot disagree with him on that point. 2015 has been an immensely successful year for Boeing in India. Along with marketplace success on both commercial and defense sectors, it has closely aligned its strategy with India’s strategy of Make in India and Skill India.

Recently, Boeing and Tata Advanced Systems announced a joint venture for manufacturing aerostructures for aircraft and collaborate on integrated systems development opportunities in India. The JV will initially create a manufacturing center of excellence to produce aerostructures for the AH-64 Apache helicopter and to compete for additional manufacturing work packages across Boeing platforms, both commercial and defense.

Having created a good launching pad in 2015, Kumar sees things taking off for Boeing in India towards new skies in 2016. “2016 is the year of rapid implementation of our strategy. It is also a special year for us as we will be celebrating 100 years as a leader in aerospace. This year we plan to get going with our manufacturing JV with Tata and accelerate skill development for frontline factory workers for aerospace manufacturing in partnership with NSDC. We look towards strengthening our support for customers in both the defense and commercial sectors in India,” he says.



Pratyush Kumar

**President, Boeing India
Vice President, Boeing International**

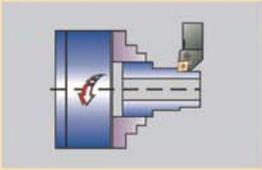
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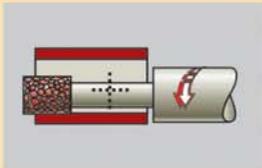


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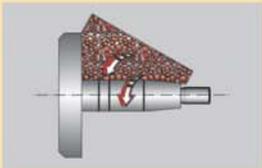


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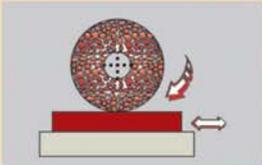


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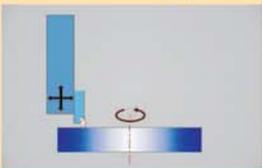


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Anders Grundströmer

MD, Scania Commercial Vehicles India & Senior Vice President Scania Group

“WITH INDIA POISED TO TRANSFORM INTO A KNOWLEDGE ECONOMY, IT’S IMPERATIVE TO TAKE ADVANTAGE OF THE CURRENT TECHNOLOGY WAVE.”

When Anders Grundströmer spoke at the ‘Manufacturing Excellence Summit 2015’ organised by The Machinist magazine in October, his common sense approach and fine understanding of the Indian socio-economic and political scenario clearly highlighted his expert view points. Importantly, while he was also critical, his criticism was positively constructive. He offered valuable insights into making manufacturing profitable and backed them up with actual experiences at Scania.

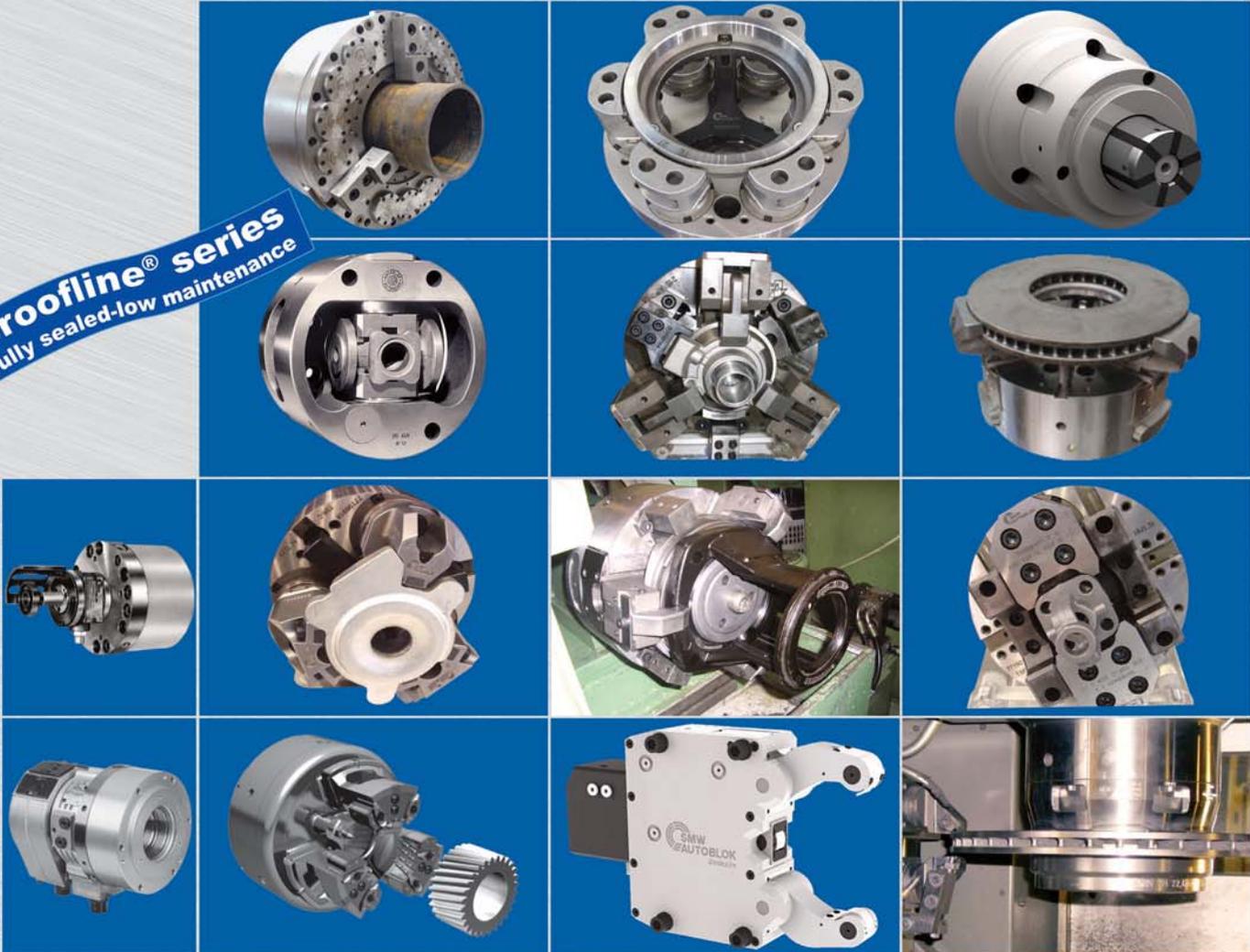
Well, Grundströmer knows his

manufacturing but he also knows his business. He knows that ‘2016 is will be important year not just for Scania but also to the Indian automotive industry. With India poised to transform into a knowledge economy, it’s imperative to take advantage of the current technology wave’. “The commercial vehicle manufacturing industry is no different and we have seen increased appetite amongst manufacturers for leveraging technology advancements to transform their businesses and optimise product efficiencies,” he says.

With more than three decades of solid experience, which started with SAAB-Car division, Grundströmer has successfully handled quite a few challenging assignments in his career. Some such feathers in his cap include developing the Scania distributorship concept in Europe as Managing Director Scania Czech Republic and Slovakia in 2000, and later as Managing Director of Scania in Netherlands and the BeNeLux Business Unit between 2004 and 2008. But having worked here for almost three years now, he very well understands that India is a very different market.

Scania’s India plant has a current capacity of manufacturing 2,500 trucks and 1,000 buses a year. “We are planning to double the capacity in the next five years, to be able to produce 5000 trucks and 2500 buses per year. We will invest another Rs150 crore in the plant expansion. We will continue our emphasis on sustainable transport system in India and drive the initiative on the model of ‘Local waste to local fuel for local transportation’. All our products and solutions in this space are proven technology and they are ‘Here and now’.”

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“THE FINANCIAL RESILIENCE OF A COMPANY SIGNIFIES THE ORGANISATION’S ABILITY TO TAKE ADVANTAGE OF GROWTH AND DEVELOPMENT OPPORTUNITIES AS THEY APPEAR AND ALSO TO WEATHER ECONOMIC TURBULENCE.”

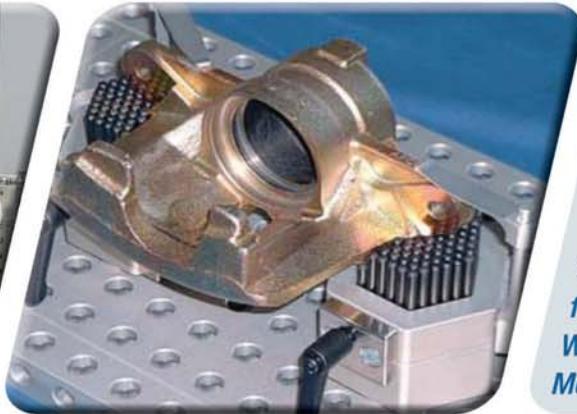
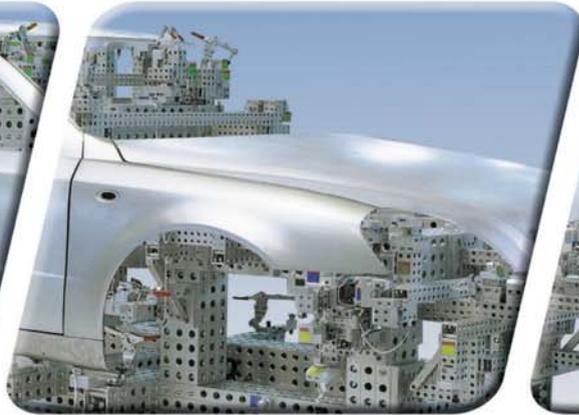
The word Baba also means ‘father’ in many Indian languages. It was perhaps destined that this man would go on to acquire a fatherly stature in the domain of Indian manufacturing. Not only has he been leading from the front (like a father does in a family) but also he has been creating new benchmarks for the next generation. Never afraid to take risks and never to shy away from the market dynamics, Baba Kalyani has re-written the rules of manufacturing business in India.

When others were satisfied with domestic successes, Kalyani ventured into the difficult and dangerous global markets. When others couldn’t look beyond their core businesses, Kalyani forayed into newer segments. Some laughed and a few even called him mad. But there was method in his madness. “Recessions are always cyclical in nature in the sense that they affect certain sectors and geographies at a time. That’s the reason you need

to keep your business interests diversified,” he said. Even today, he continues to widen his horizons with spark of a young man and the wisdom of a legend. “We are exploring further opportunities in high value, high growth sectors, such as Power, Oil & Gas, Rail & Marine, Construction & Mining and Aerospace, among others. The financial resilience of a company signifies the organisation’s ability to take advantage of growth and development opportunities as they appear and also to weather economic turbulence,” he says.

When he was conferred upon the very first ‘The Machinist Hall of Fame Award’ last year, Baba Kalyani first and foremost acknowledged the support and contribution of his dear ones. “This honour is not mine alone; my organization, my family and my industry have played an equally important role in my quest for excellence and my vision of bringing global glory to the brand ‘Make in India for the World’,” he said.

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“BEING DEEPLY ENGAGED IN INDIA’S SOCIO-ECONOMIC PROGRESS, OUR FOCUS ON ‘ENGINEERING THE FUNDAMENTALS OF GROWTH’ DEPICTS THE CORE OF OUR EXISTENCE.”

Notwithstanding the complicated and not so positive global economic predicament, the ‘India Growth story’ remains intact. And the narrative of this story flows through roads & highways to seaports & airports, from agriculture progress and creating industrial corridors to building and running cars and trains. Interestingly, Escorts Limited manufactures many products required for this growth story. However, it would be foolish to dismiss this as coincidence or sheer luck. Far from it. In fact, Escorts’ strengths have been painstakingly built and developed to be in sync with the national economy.

And Nikhil Nanda has played a significant role in making it happen. “Since inception, Escorts’ evolution has reflected serving the priorities of the country by leveraging our engineering prowess and innovation to address some of the core building blocks of the nation - ‘better food & prosperity’ through our agriculture business; ‘better & safe infrastructure’ through our construction business; and ‘better technology-driven personal mobility’ through our auto and railway businesses. Being deeply engaged in India’s socio-economic progress, our focus on ‘Engineering the fundamentals of growth’ depicts the core of our existence,” he explains without hiding his emotions.

And while the four core segments (agri machinery, construction equipment, railway products and auto products) form a formidable business proposition at the national level, it is far from comprehensive. So, is there a possibility of looking at another segment now that things are getting better? Nanda has the answer ready. “Having taken some tough decisions in the past, we are now clear about our strengths vis-a-vis our participation in the verticals that we are functioning in.” Of course, he is also keeping his options open! “Having said that, the day a company says it is not looking at newer avenues of growth, you can be sure something is wrong with the leadership. I am fortunate that I have a very capable team running the show, which gives me the time to dream a little on where the company needs to be and what we should be doing to get there,” he adds that with a knowing smile.

Nikhil Nanda

**Managing Director,
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Survivors!

With an already lacklustre Diwali sale, the struggling auto industry was beaten further with the halting of production due to the November rains and December floods in and around Chennai. But a fighting spirit saw both the city and the industry get back with a great sense of humanity.

By Pushpendra Shukla

A disaster that revealed the vulnerability at the State and Central Government levels, a tragedy that dwarfed the destruction caused by the Tsunami of 2006, and an adversity that brought out the strength of the city – a beast called the Chennai floods of 2015. As the State's economy now limps back to normalcy, both the Private and Government sectors are now looking at minimising their losses.

The torrential rains rendered citizens homeless. Thousands were left stranded in their offices and over ten thousand families were evacuated from their houses - thanks to the Emergency Rescue Services. Chennai's flyovers were the refuge for many. Unfortunately, a few hundred lost their lives.

As the economy of Chennai came to an abrupt halt, one of the worst affected sectors was the auto majors around Chennai. Chennai touted as the Detroit of Asia boasts of manufacturers such as Hyundai, Ford, BMW, Daimler, Renault-Nissan, Ashok Leyland, Royal Enfield, Apollo, Michelin, MRF and thousands of tier 1 and tier 2 suppliers supporting these manufacturers. The rains did not spare anyone. With an already lacklustre Diwali sale, the struggling auto industry was beaten further with the halting of production due to the November rains and December floods.

As per the Nikkei India Manufacturing PMI newsletter released early January 2016, Indian manufacturers saw business conditions deteriorate at the end of 2015. The incessant rainfall in Chennai impacted heavily on the sector, with falling new work leading companies to scale back output at the sharpest pace since February 2009. Ending a 25-month sequence of growth, incoming new work decreased in December. Around 18 percent of panellists reported lower levels of new orders, which they commonly linked to heavy rains weighing on domestic demand.

Chennai based Ashok Leyland, known for its trucks was by hard hit along with Royal Enfield as their production plants are located in North Chennai which was submerged. N V Balachandar, Sr VP – Group Head HR & CSR, Ashok Leyland said, "We declared the plant closed for four days. Nearly 75 percent of our employees have been affected and are in the process of getting their lives back together."

Colin MacDonald, Managing Director, Renault Nissan Automotive India said, "Some of our employees have been affected in the Chennai floods. We have provided food, temporary accommodation, medical help, blankets and other essentials along with easy loan facility to the families. We are extending all possible help to ensure they can resume back normal life at the earliest."

Varghese M. Thomas, Vice President – Corporate Communications, TVS Motors said, "TVS Motors employees were affected in the rains. We got into action by providing relief assistance and timely help to one and all". After the employee's



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"Some of our employees have been affected in the Chennai floods. We have provided food, temporary accommodation, medical help, blankets and other essentials along with easy loan facility to the families. We are extending all possible help to ensure they can resume back normal life at the earliest."

Colin MacDonald,
MD, Renault Nissan Automotive India



"We declared the plant closed for four days. Nearly 75 percent of our employees have been affected and are in the process of getting their lives back together."

N V Balachandar,
Sr VP – Group Head HR & CSR, Ashok Leyland



"TVS Motors employees were affected in the rains. We got into action by providing relief assistance and timely help to one and all."

Varghese M. Thomas,
Vice President – Corporate Communications, TVS Motors

safety, the damage caused to their plants was next in agenda of the companies.

Ford India's Kapil Sharma, stated "Having halted the operations first for two days in November and then again on December 1st, the engine assembly was resumed on December 7th and vehicle assembly on December 21st. The decision to resume operations followed a careful evaluation of safe working conditions for our employees."

Renault Nissan did not incur any damage to their plant, facilities or their warehouse. Production was halted due to employees not being to travel to the plant which is located in Orgadam. "We have resumed operations since December 06, 2015, said Colin MacDonald.

Ashok Leyland's plant in North Chennai was the most affected as the rains battered North Chennai relentlessly. The Ennore plant was impacted due to the flood in Chennai. Around 17 shift operations were shut down for five and half days. Production started with 60 percent attendance on December 7, 2015

and will attain full capacity in the near future. Once the production is in full swing, the production capacity of 98 units per day will be achieved," Balachandar said.

TVS Motors who has a plant in Hosur (besides at other locations like Mysore and Himachal Pradesh) did not suffer but its suppliers were surely impacted. With the assembly lines gradually gaining steam, suppliers who play an integral part of every vehicle was looked at. For some companies, about 40-50 percent of their suppliers got affected while others are evaluating and figuring out ways to bring them back to normalcy.

According to the Nikkei release, December's floods also affected supplier performance, which deteriorated to the greatest extent since March 2013. This was despite input buying decreasing over the month.

The fragile infrastructure specifically the major roads across

"Having halted the operations first for two days in November and then again on December 1st, the engine assembly was resumed on December 7th and vehicle assembly on December 21st. The decision to resume operations followed a careful evaluation of safe working conditions for our employees."

Ford India's Kapil Sharma

the city and connecting the National Highways has affected movement of transportation of goods across the city. The Government has on a war footing basis commenced the repairs of these roads. Unfortunately, exports of vehicles were stopped with Ashok Leyland having a delay of 10 days. Renault Nissan has a production shortage of 10,000 cars and is working overtime including holidays to catch up quickly.

Though the city was flooded with water, overall, there was not much damage to the plants nor was loss of power an issue. The plant heads self-managed with DG sets and in built water tanks drained out the water.

As per published reports in the past few weeks, SIAM has stated about 10-15 percent of the country's production was impacted in November because of rains. To give an idea of the enormity of the situation, Chennai accounts for 25 percent of India's US\$38 billion per annum production with the auto industry contributing more than 40 percent to the country's manufacturing sector. Every

non-productive day in the region's automobile plants leads to a loss of around Rs180 crore to the industry. A staggering Rs15,000 crore is estimated to be the loss for the economy though this is not a confirmed estimate. Other auto and tyre majors as per reports are yet to commence production or open up their plants at the time of writing the story.

Normally, Diwali and December are months wherein heavy discounts are offered to entice customers to purchase vehicles. This time, apart from heavy sales offers, auto majors have stepped in to offer spare parts at discounted prices and increase the number of service engineers to ensure customer loyalty with insurance companies promising faster processing of claims. 

The author is a Chennai based freelance writer.

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Achieving impossible GROWTH!

Escorts Limited is sharpening its products and business strategies to grow like never before, and not just in India but also across global markets, says **Nikhil Nanda**, the Company's Managing Director

By Niranjan Mudholkar

When Nikhil Nanda became the sole Managing Director of Escorts about two years back, not many would have expected that he would be successfully leading a remarkable makeover in a relatively short span of time. And not only has he positively turned around the organisation towards the path of profit but has also brought in an attitudinal transformation that is ensuring a long-term progress for the Group.

The Strategies

The recent (and excellent) Q2 results further show that this third generation entrepreneur is more than managing the show; he is driving it. Given the current market scenario, it is indeed a very commendable job. Well, there are some signs of economic revival but the industry is far from celebrations. So what have been the strategies implemented by Escorts Group to deliver profitability and growth during recent times under his leadership? He agrees that Escorts has done fine in difficult market conditions but also acknowledges that the Group still has a long way to go. And the Indian farmer remains at the centre of most of the things that Escorts does. "The companies we have partnered with and the kind of products we have launched are testimony to our pioneering efforts in bringing global agriculture technology to Indian farms," Nikhil Nanda says.

In the last few years, the Company has invested more than Rs400 crore in putting some of the finest products





Xxx

in the market. "I might sound biased, but these products give us an edge in meeting customer requirements, and will help us in achieving leadership position in the domestic market," he says.

Nanda has also embarked on an ambitious program that emphasises on lean management and consolidation of operations to create a more profitable manufacturing practice. "Simultaneously, we are looking to engage with best-fit global partners for technology infusion to tap into the larger opportunities available within our operational sectors. In the long run, our focus is to first boost earnings and then efficiently allocate capital in the productive assets in order to generate better returns. Going into 2016 and beyond, I am very hopeful these initiatives will not only enable us to target higher market share and margins but also make us the brand and partner of choice across our businesses," he says with a certain confidence that remains grounded.

India's growth story and Escorts

Despite the difficult global economic conditions, India remains poised for excellent growth given its demographic, democratic and domestic advantages. And the 'India Growth Story' ranges from roads & highways to seaports & airports, from agriculture progress and creating industrial corridors to from building and running cars and trains. Nanda couldn't have asked for better conditions given the fact that Escorts manufactures many products relevant for this growth story. "Since inception, Escorts' evolution has reflected serving the priorities of the country by leveraging our engineering prowess and innovation to address some of the core building blocks of the nation - 'better food & prosperity' through our agriculture business; 'better & safe infrastructure' through our construction business; and 'better technology-driven personal mobility' through our auto and railway businesses. All our products have

been developed with the intention of enhancing the life quality of consumers, communities, and the society at large. Being deeply engaged in India's socio-economic progress, our focus on 'Engineering the fundamentals of growth' depicts the core of our existence," he explains without hiding his emotions.

Escorts has, over the years, augmented its capabilities to address national and global priorities both on the economic and resources front – including low agricultural yields, outdated farm practices, infrastructural deficit and employment generation. "At Escorts, it is finding a solution to these challenges that drives us every single day. All our people are devoted to realise the potential of an India that is resurgent, forward-looking and truly committed to an inclusive growth philosophy," Nanda adds.

"We listen very closely to what the market says and in particular what our users say. As a result of that, we are proud of our ability to take on the challenges that our customer throws at us."

Beyond the core?

And while the four segments (agri machinery, construction equipment, railway products and auto products) form a formidable business proposition at the national level, it is far from comprehensive. While Nanda is well aware of that, he had a few years ago said that there was no need to look beyond these four core sectors. Would he still continue with the same thought process or is there a possibility of looking at another segment now that things are getting better? Nanda has the answer ready. "Escorts today has tremendous clarity of who we are and what we want to build. Having taken some tough decisions in the past, we are now clear about our strengths vis-a-vis our participation in



Escorts Ltd. has benchmarked with the best engineering companies in the world and is closely tracking what they do.

the verticals that we are functioning in.” Of course, he is also keeping his options open! “Having said that, the day a company says it is not looking at newer avenues of growth, you can be sure something is wrong with the leadership. I am fortunate that I have a very capable team running the show, which gives me the time to dream a little on where the company needs to be and what we should be doing to get there,” he adds that with a knowing smile.

The Escorts Production System

His response also shows that he is very well connected with his team. In fact, he makes it a point to communicate with his team in every possible way. Of the many methods that he employs for reaching out to his associates spread in different geographical locations is a regular blog. For example, his recent post for the New Year says this: *“Don’t let anyone tell you It can’t be done!! There are few who will believe in you, but the starting point is that you must believe in yourself. God bless you and I wish you and your family a very happy 2016, a year of growth for us all and a year of impossible growth.”* When the leader is using terms like ‘impossible growth’, it only shows the confidence he has in his people.

One of Nanda’s previous posts titled ‘Transforming Manufacturing Excellence’ (dated ‘December 9, 2013’) also speaks about the ‘2020 vision’. So what exactly is this vision? In fact, the same post also describes the aspiration to have the EPS

“In the last few years, we have invested more than Rs400 crore in putting some of the finest products in the market. These products give us an edge in meeting customer requirements, and will help us in achieving leadership position in the domestic market.”

– ‘The Escorts Production System’. So, how far or close is he from the EPS today? First, he explains the ‘Vision’: “Our Vision is to be the most respected innovation-driven engineering company in the country. The leadership team at Escorts has a clear-cut plan of growing market share, profit share, topline for domestic market and also our global share for the year 2020 and beyond. We are clear about the companies we will look at for acquisitions to ensure we have adequate knowledge in terms of product competence.” He also adds that Escorts is working rigorously to de-risk its cyclicity dependence on agriculture. “Whether it is our construction business or railway component business, we are developing products and technology that meet the discerning needs of our

growing economy.”

Talking about the ‘Escorts Production System’, Nanda shares that the aspiration is to create a production system that is not just frugal in the typical Indian way, but also capable of developing products that are world-class in quality and technology. “To make this happen, we have benchmarked with the best engineering companies in the world and are closely tracking what they do. We have sought the expertise of world-renowned consultants who are monitoring our processes and systems and steering us in the right direction,” he says.

On the Agri Machinery sector

While the last couple of years have been subdued for the over-

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to cause faster or
greater activity,
development, growth



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“We are looking to engage with best-fit global partners for technology infusion to tap into the larger opportunities available within our operational sectors.”

all Indian market, Nanda says that this has been - strangely enough - the most exciting in terms of the tractors that Escorts’ engineers have brought to the market. “Escorts’ inherent ability to listen to our customers has been an anchor guiding us ahead. This is our most valuable business driver that allows us to gain traction in driving product value, market value, brand value and ultimately, shareholder value. I am very proud of our passion to improve our products by embracing a clear strategy to introduce innovative, features-rich and technology-led products. Our mission of enhancing agri-mechanisation and offering safe and cost-effective haulage operations across our product range has stood us in good stead.”

Escorts launched the Farmtrac 6050 4x4 Heritage Series in 2015. This has been a major hit because a significant chunk of the international market runs on 4x4 tractors and this is indicative of the kind of potential that exists for these products in India. “Along with that, we also launched Escorts’ Powertrac haulage tractors, India’s first AntiLift Tractor (ALT) series, which were positioned around the core benefit of ‘Driver safety, owner savings’. These along with other launches, have seen us doing well despite the subdued conditions

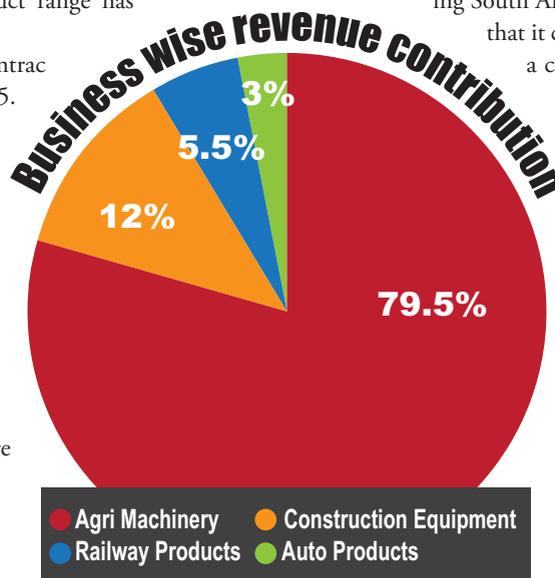
across India.”

European market: About two years back, Escorts had announced plans to create a new 80 HP in European tractor market (at the AGRITECHNICA 2013 show) with the aim of grabbing 10 percent share of the European market. How successful has Escorts been in achieving the set target? The confident smile returns: “We are well on track to achieve 10 percent market share by 2020 as that is the target we had set ourselves when we launched the 80 HP Farmtrac Tractor in Europe. The tractor has proved itself in a tough market and we have launched it in other parts of the world including South Africa. The USP of the product range is

that it comes with world-class components at a competitive price. It is all produced in Poland by our 100 percent subsidiary.

The tractors leverage our experience in agriculture mechanisation to produce tractors with value-proposition of fuel efficiency, warranty and cost-effectiveness.”

Product Innovation: Exports form a big piece of Escorts growth strategy in the agri sector. So what is happening on that front? And where do product innovation and R&D figure in this picture? Nanda answers: “As I said earlier, Escorts has an ambitious global program and by the end of this decade, we will attempt to achieve a substan-



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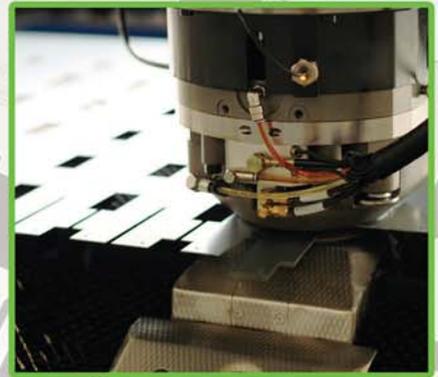
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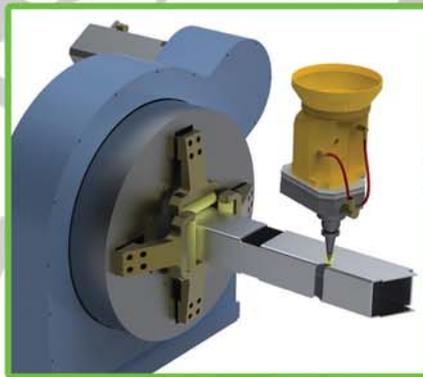
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Escorts Ltd. has sought the expertise of world-renowned consultants who are monitoring its processes and systems.

tial share of our top line through retail and institutional presence in international markets. This may also include M&As in the future. In the last year, Escorts saw a substantial growth in volumes, demonstrating our product acceptance.” Escorts has expanded into new markets and has identified key high potential markets including those of Africa, Europe and the US. These markets present significant scope for growth with regards to being large markets with relatively lower competitive intensity.

Nanda says that Product Innovation and R&D figure very large in Escorts’ approach to the market. He believes in listening very closely to what the market says and in particular what his users say. As a result of that, he is proud of Escorts’ ability to take on the challenges that its customer throws at the Company. Any example? “Yes. In the past year, one example of this was our launching the Anti Lift Tractor. A two wheel drive tractor carrying heavy loads, beyond certain limits can cause it to lift from the front. This is very unsafe for the driver and can cause accidents and deaths. So the inspiration of designing an anti-lift tractor is to provide products which are innovative, safe and do not risk the operator’s life. We have always taken pride in being aware and flexible to the market’s and the consumer’s needs.”

On the construction equipment sector

Some experts believe that there is still a substantial gap between the Indian Construction Equipment market and the

“Our aspiration is to create a production system that is not just frugal in the typical Indian way, but also capable of developing products that are world-class in quality and technology.”

developed Construction Equipment markets in terms of technology maturity, particularly with regard to system engineering and use of embedded electronics. Nanda already has the answer

ready: “Indian infrastructure and the machines we use have come a long way in the past decade or so. Of late, we have been seeing all sorts of latest, global machines being used at our construction sites in India. Escorts, in particular, has had partnerships with the world’s best engineering firms over the last 65 years and I take great pride in saying that our research capabilities are the same as the rest of the world. The products we are building today and the features we provide are at par with the best of the world.”

The last few years haven’t been good for the Indian CE industry due to the obvious slump in the infrastructure sector for various reasons. Does he see the scenario changing with the initiatives taken by the government? “Over the past two years, there has been a sign of a revival in the industry. Things are more positive and the new programs undertaken by the government need to be given more time.”

On the railways sector

The long-term prospect of the railways business gets Nanda all excited. He believes that the concerted efforts being undertaken by the railways ministry is auguring well for the modernisation and capacity de-bottlenecking of the Indian Railways. “Moreover, the talks around high-speed trains and the expansion of Metro rail service in various cities have cer-

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Business wise production details

Business	Plants & Locations	Manufacturing Area	Production Capacity	Products Manufactured
Escorts Agri Machinery	Farmtrac, Powertrac & Component Plants in Faridabad; 100% subsidiary plant in Poland	14,42,364 sq. ft.	1 lakh tractors per annum	Tractors, Crop Solutions, Engines & Gensets, Lubricants
Escorts Construction Equipment	One Plant in Faridabad	6,53,262 sq. ft.	4,500 units per annum	Pick & Carry Cranes, Backhoe Loaders, Vibratory Rollers, Soil Compactors, etc.
Escorts Railway Products	One Plant in Faridabad	1,34,550 sq. ft.	80,000 units per annum	Brake Systems, Couplers, Suspension Systems, Composite Material, Vestibules, etc.
Escorts Auto Products	One Plant in Faridabad	1,50,694 sq. ft.	5 million Shock Absorbers & Struts and 0.5 million Front Forks per annum	Shock Absorbers, Struts, Telescopic Front Forks, Steering Components, etc.

tainly elevated our outlook about the industry.” So what will be the key growth drivers and emerging opportunities in the next two years for this sector? How is Escorts gearing up to make the most of the opportunities? “We closed the last fiscal with substantial worth of orders in hand including the developmental order for our indigenously-designed axle-mounted disc brakes, and going forward, we intend to widen our product suite through either captive development or by forging technology partnerships, thereby taking the business to its next level of growth,” he says.

On the auto components sector

There has been a turnaround of sorts in the auto sector in the last couple of months. Nanda agrees. “The auto industry is definitely getting back on track. To restructure our Auto Products business, we implemented a Group-wide VRS initiative, which was availed by a significant number of employees. We are optimistic this initiative will enable greater efficiencies and productivity. This was paired with a stronger focus on our dealership, productivity and shop-floor efficiency gains, and portfolio optimisation. We had seen EBIT losses for the auto division declining in 2014-15, a traction that is still continuing.”

Escorts Auto Products has a wide product portfolio, which includes products catering to two-wheelers, three-wheelers, passenger cars, commercial vehicles, and the defence segment. “So, we are well geared to take advantage of any recovery in the sector. However, given the uncertain macro-economic environment, demand especially for commercial vehicles, is going to take some time to return to normal levels,” he shares.

For the auto business, Escorts has also placed greater focus on domestic as well as global aftermarkets, and expanded its

merchant exports to Sri Lanka, Bangladesh, Nepal, Indonesia, Egypt and Dubai as well as entered many of these markets through direct dealers.

The way ahead

Nanda is quite upbeat about the ‘Make in India’ initiative. “We are all for ‘Make in India’. Escorts’ founder, Mr. HP Nanda was relentlessly committed to ‘bringing the world’s best to India and taking India’s best to the world’. As an engineering company, we have been pioneers in introducing global technology to Indian markets. Having learnt from some of the world’s most respected companies, we have indigenously developed products that have matched up to global standards,” he shares.

Nanda very well understands that for ‘Make in India’ to truly succeed, it will have to be inclusive growth. He knows that in a decade or two, India is going to become one of the largest contributors to the world economy. Indian companies that are contributing to mass domestic requirement and pioneering this growth will undoubtedly become truly global companies in the future. “To capitalise on this impending growth, Escorts is sharpening its products and technology to ensure that we are investing in our future, not just in the Indian markets, but also for global markets. We have ambitious global programs and by the end of this decade, we will attempt to achieve a substantial share of our top line through retail and institutional presence in international markets, and perhaps M&As in the future. We will also be looking at tie-ups where Escorts could become a technology provider to companies and countries, which will further strengthen our presence in our areas of expertise globally,” he explains. 

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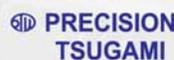
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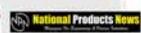
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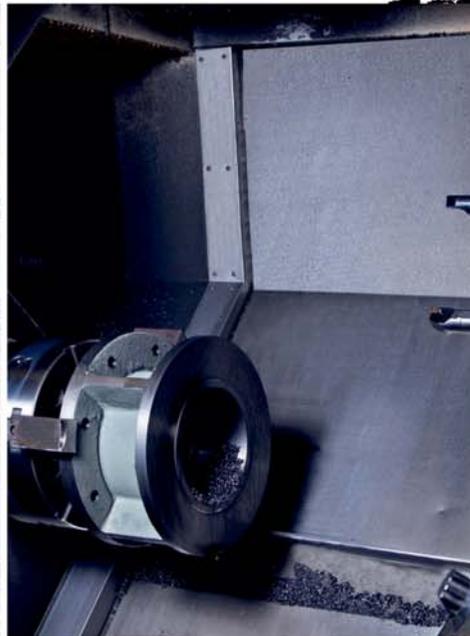
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Industrial automation can play a big role in ensuring that shopfloors remain safe and smart.

By Niranjan Mudholkar

A safe shopfloor is always good for business. And industrial automation can play a big role in ensuring that shopfloors remain safe and smart.

Where does it start!

According to Nitin P Deshpande, Corporate Head-HR & Admin, Cooper Corporation Pvt Ltd., at Cooper safety is of paramount importance to all the employees and involves strong commitment from management and line staff. “We believe safety starts at once home. All employees coming to work on bikes have to compulsorily use safety helmets and are not allowed to enter company premises without helmets. We at Cooper believe that safety starts from top to bottom and has to reflect in our day to day manufacturing practices on shopfloor. Our Chairman Shri. Farrokh Cooper always reiterates the thought that human life is invaluable and hence “Safety First, Quality Production Must.”

Farrokh Cooper’s own practice sends clear message to shopfloor people’s safety and conveys managements priority

for safety. “It helps us in developing “safe work culture in organisation” and gives boost to the overall moral of the employees,” says Deshpande.

Subhendu Ghosh, Executive VP-Global Engineering & Design, Tata Technologies, believes that safety of people is essential and vital for all of us, be it our residence, the design office or the shopfloor. “Safety is an integral part of our day to day life; it starts from our own homes and continues all the way to our workplace. In a professional organisation, safety guidelines and standards are published regularly within the organisation to spread awareness among the employees. Periodic training and drills are carried out to train the employee communities in practicing safety and also to check operational performance of the safety equipment in case of real emergency.”

Ghosh says that daily practices and processes on a manufacturing shopfloor can at times have more safety risk factors than other industries. It is important to recognise and understand these concerns to ensure a smooth workplace environ-

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Whenever Cooper Corporation Chairman Farrokh Cooper visits the manufacturing shopfloor he always insists that all guests visiting the facility and he himself wears safety helmet, safety goggles and other personal protective equipments (PPEs) during plant tour.

Examples of automation improving shopfloor safety

- Simulation in a virtual environment helps create safe working postures at shopfloors and also helps to identify “no zone movement”, thus ensuring safety prior to equipment installation
- Operators are taught to work on Pendant and other remote devices through Automatic Simulators
- Emergency control stoppages are used at each station which can stop the line immediately if required.

By Subhendu Ghosh,

Executive VP-Global Engineering & Design, Tata Technologies

ment. “All new employees should be well-trained on their respective jobs and responsibilities on the shopfloor. They should also be trained so that they are well-acquainted with industry changes. Considering newer technologies and equipment are introduced almost every day, employees should be adequately trained to understand all new processes, environments and machines. It is important for both the organisation and the employees to remember that regular maintenance of all machinery and equipment is necessary in order to achieve a

safe and effective work environment.”

Safety for business success

Bratin Roy, VP, Industry Services, TÜV SÜD South Asia, points out that the Government of India has set a well-determined target of increasing the contribution of manufacturing output to 25 per cent of Gross Domestic Product (GDP) by 2025, from 16 per cent currently. India's manufacturing sector could reach US\$ 1 trillion by 2025. “One of the most important sectors which will contribute to this vision is capital goods sector. The capital goods industry employs 1.4 million people and is estimated to employ 2.8 million by 2017. Managing 2.8 million people will pose various challenges as far as occupational health and safety is concerned. It can therefore be concluded that effective health and safety management can contribute directly to overall business success. Adherence to health and safety measures can add immense value to the manufacturing sector. Injuries and illnesses increase workers' compensation, retraining costs, and the quality of output is compromised. It also impacts productivity, morale, and profits. Businesses operate more efficiently when effective safety and health management systems are implemented.”

According to Deshpande of Cooper, business needs continuity. Our overseas and domestic customers need our products just in time (JIT). Any mishap or accident involving human

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Safety implementation on shopfloor reduces direct and indirect cost of expenses incurred in case of accidents and it impacts on productivity.

being demoralizes workforce. The strong safety systems, practices and record create confidence in customers and community around us. Thus for us, safety, quality and customer service are key for not only business success but for sustenance too.

“Safety implementation on shopfloor reduces direct and indirect cost of expenses incurred in case of accidents and it impacts on productivity. So Safety implementation help us in increasing productivity, reduce overhead expenses, avoid any legal obligation and improve overall image of company as safety implementation comes under best business practices among the top industries,” says Deshpande.

Ghosh says that adherence to safety norms plays a vital role by creating a safe shopfloor to work and enhancing the quality of life. “One of the metrics used to measure shopfloor safety is the number of accidents, major and minor types. While accidents cannot be completely avoided, it should also be noted that the brand of the organisation is enhanced if the shopfloor can reach a “zero accidents” status. Brand building and quality safety practices bring better confidence among investors, customers and employee communities thus increasing business margins, employee engagement and also lesser legal hassles to deal with due to accidents.”

Ghosh further adds that numerous studies indicate that companies adopting a ho-

listic approach to safety, including cultural, procedural and technical elements achieve higher overall equipment effectiveness. “They have also been found to report lesser unscheduled downtime, and less than half the injury rate of average performers. This undoubtedly increases the overall efficiency and productivity of the organisation. By understanding the clear productivity benefits that accrue from using automation techniques on the shopfloor, Indian manufacturing can set new benchmarks of efficiency and safety.”

Role of regulatory compliance

“The mandatory usage of personal protective equipment’s (PPEs) are must where manual raw material handling is done. Safety shoes,

safety goggles helmet and ear plug must be used by all operators on shopfloor. Display of safety instructions at workplace and its recital during ‘Tool Box’ talk always help reinforce safety habits,” says Deshpande.

He adds that regulatory compliances do help in creating strong safety systems as it provides a framework for developing safety practices. EMS 14000 and OSHA 18000 systems integrated with QMS make safety as focal point in operations.

“We at Cooper Corporation have some of the best safety practices like near miss reporting, rectification of un-safe practices / condition, Daily Safety round, work permit system, Tool Box Talk, LOTO for electrical safety, safety committee round and meetings, safety audits for ensuring effective implementation of safe operation procedure (SOP), Operational Control Procedures (OCP) & Housekeeping, Hazardous and Non-hazardous material and waste segregation, storage and disposal, Pre & post periodical Medical checkup of employees and work place monitoring and control for illumination, noise, dust and fumes. All these help us create a safe working environment for all our employees.”

“I think we can look at it by understanding our role in enhancing the process performance of the manufacturing set-up. OMRON has a considerable in-depth experience to provide the right automation and



“Safety implementation help us in increasing productivity, reduce overhead expenses, avoid any legal obligation and improve overall image of company as safety implementation comes under best business practices among the top industries.”

Nitin P Deshpande,
Corporate Head-HR
& Admin, Cooper
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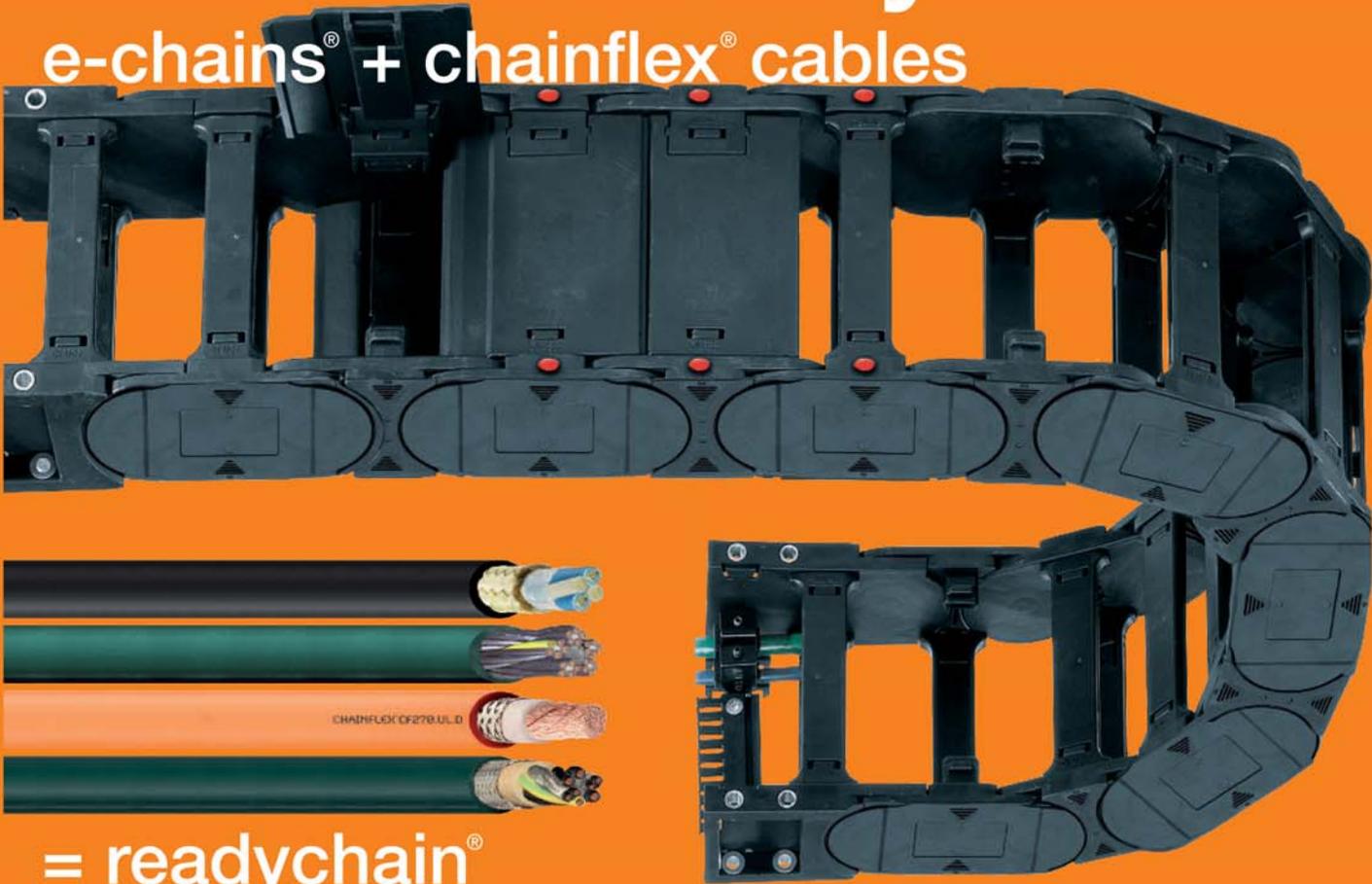
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Automation does provide strong multiple safety levels. Image: Cooper Corporation

control solutions for enhancing process performance which ultimately ensures environmental friendliness as per the slated guidelines and help manufactures achieve better productivity or at least maintain the productivity levels unaffected by the changing regulations and emission norms. Our solutions (especially for Material handling system) provides maintenance and operation control functionality for optimal machine & process performance, precise control to minimize downtime by supplying diagnostics and troubleshooting data,” says Sameer Gandhi, MD, OMRON Automation India.

Roy of TÜV SÜD says that regulatory compliance play a significant role in ensuring safety. It compels business owners to implement effective safety system in workplace and also to keep real time record/statistics of mandatory safety compliance related information for self-monitoring. “The statistics could also be used for external evaluation, if required. More than assuring the authority, this can help the industry to self-assess their performance in relation to occupational health and safety. A useful understanding of pre-defined rules and regulations can help business owners to avoid unnecessary costs and damage to businesses caused by workplace injury, illness and accidents. It will also provide industry a strong foundation to achieve long-term success,” Ghosh says.

“To be a winner in this competitive market, it is important to check product quality at each stage of the process. OMRON extends its

solutions in this field and provides an effective integration of field sensing devices with supervisory control and monitoring that helps reduce downtime and ultimately improves overall productivity & efficiency of the plant,” adds Gandhi.

Safer environment for the operators

According to Ghosh of Tata Technologies, there is no question that shopfloor safety is one of the top priorities in any manufacturing organisation. With an advanced approach to safety and automation, manufacturers and equipment suppliers can significantly reduce the accident rates while achieving higher productivity and reduced down time. With the help of the

latest technology in both software and hardware, automation systems are simulated with all scenarios and probabilities in a virtual environment with a digital human to replicate all the motions, postures and processes, thus ensuring complete safety of the systems and operators in the actual working environment, prior to physical installation and commissioning.

Integrated safety with automation can offer enhanced productivity benefits in many stages of the manufacturing process from equipment design and testing, installation and commissioning, operation and maintenance and modification or decommissioning. All stages may be optimised through perfectly applied safety solutions.

Deshpande of Cooper believes that automation does provide strong multiple safety levels. “Interlocked gates, biometric authorization and mechanical fail-safe safety devices in robotic production lines ensures human safety.”

Gandhi says that production lines which include both fully automated and manual stations have to be based on well thought-out machine safety concepts. The ongoing development of global safety standards and technologies, have made manufacturing safety, a powerful tool to optimise your production environment. “We believe that the implementation of these standards and technologies not only help to reduce injuries, but also



“A useful understanding of pre-defined rules and regulations can help business owners to avoid unnecessary costs and damage to businesses caused by workplace injury, illness and accidents. It will also provide industry a strong foundation to achieve long-term success.”

Bratin Roy,
VP, Industry Services, TÜV
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Production lines which include both fully automated and manual stations have to be based on well thought-out machine safety concepts.

provide major improvements in manufacturing productivity and efficiency. OMRON has well-endowed resources to provide the advice of safety auditing on the production line and execute the complete safety system to ensure safe working environment. We have application specific range of solutions which comply with Safety standards to reduce the risk of injuries and improve productivity,” Gandhi adds.

According to Roy of TÜV SÜD, the biggest benefit of automation is that it saves a worker from continuous and hazardous operation processes of a shopfloor. “Additionally, it is also used to save energy and raw materials and to improve quality, accuracy and precision. There are various types of automation controls like discrete control (a typical on/off control); continuous control that involves sensor use for hazardous process or environment monitoring; sequential control and computer control like inter lock relay or installation of programmable logic controllers (PLCs). Hazardous operations, such as oil refining; the manufacturing of industrial chemicals and pharmaceuticals and all forms of metal working process, which if automated, can improve the work place safety condition of shopfloor significantly,” Roy explains.

Impact on machine safety and performance

Cooper’s Deshpande says that automation eliminates human labour and fatigue-inducing activities and provides speed of production and uniform quality products. It en-

hances overall productivity. Besides the automated systems implement safety measures in its algorithm along with specifically designed safety devices.

“In every safety system design three lifelines are considered and 4th one is Human intervention means if 1st control Fail then 2nd will help and if 2nd will fail 3rd will help and after all 3 control fail then last control with human (operator) should be the last control where he must be trained in operating system effectively, identify and take immediate action in case of all 3 controls failure,” says Deshpande.

Roy of TÜV SÜD believes that industrial automation has brought a different dimension in machine safety and performance of a safety

program at a manufacturing unit. It is imperative to relook and change traditional safety approach and focus more on functional safety aspect which is still not widely practiced in various sectors in India. “Functional safety is the overall safety of system/equipment and other assets that operate, without

any glitches in response to the command given to it. It is an additional step beyond the traditional product safety assessment and tackles our ever increasingly complex world of interoperating technologies and the hazards likely to be caused. There are international standards like IEC 61508, the generic functional safety standard considers the whole lifecycle of electrical, electronic or programmable electronic (E/E/PE) systems and products. Other standards such as i.e. EN ISO 13849-1 are meant for mechanical and pneumatic products. Specific steps must be carried out by manufacturers to ensure the absence of unacceptable risk due to hazards caused by the malfunctioning behaviour of their products and systems. To design safe hardware and software means that product manufacturers should implement specific techniques such as redundancy, diversity, internal self-tests to increase the robustness product against arbitrary and systematic failures. TÜV SÜD offers services that are backed by international recognition and years of experience in functional safety, our multidisciplinary team of experts understands the complex requirements in the field of functional safety and has the experience to support projects from chip de-



“With an advanced approach to safety and automation, manufacturers and equipment suppliers can significantly reduce the accident rates while achieving higher productivity and reduced down time.”

Subhendu Ghosh,
Executive VP-Global
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While the participants come to attend this International Seminar on 20 January 2016 it is a good opportunity to visit IMTEXFORMING 2016 exhibition scheduled at the Bangalore International Exhibition Centre (BIEC) from 21 - 26 January 2016.



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sign to the entire assessment of a plant,” Roy explains.

“During automation of any system / process human error are considered and it will be developing accordingly to safe guard person who is working on system hence automation plays very important role in ensuring safety implementation with 99.99% effectiveness and 0.01% lies with human,” Deshpande of Cooper adds. Ghosh of Tata Technologies points out that old technology forces machines to come to a full stop and be in a “Safe Mode” before model changeover, repair or maintenance work could be performed.

“Because of this downtime, there was always a decline in productivity and to make up for the lost time, supervisors and operators compromised safety by not adhering to proper

use of safety standards. With the new standards and by using technology and automation, not only has the machine performance improved, but the shopfloor has become safer with higher productivity output and reduced environmental impact. A relevant example would be using Offline Robotic Simulation solutions where in the Industrial Robots are simulated offline in a digital environment and the programs are directly downloaded to the robot controllers thus reducing downtime, enhancing operator safety and achieving proper ergonomic solutions,” Ghosh explains.

According to Gandhi of OMRON, the ongoing development of global safety standards and technologies, have made manufacturing safety, a powerful tool to optimise the production environment. The implementation of these standards and technologies not only help to reduce injuries, but also provide major improvements in manufacturing productivity and efficiency.

“An industrial automation brings in the desired impact by never overlooking the need to improve safety standards in a manufacturing set up! For example, we have an application specific product range which complies with Safety standards to reduce the risk of injuries and improve productivity. We have the solutions to enable manufacturers, adapt and develop machines when products and processes change, while maintaining high throughput with no compromise on safety, functionality, or quality. This extends machine life, optimises investment and ensures a long and productive relationship between the manufacturer, the end-user and their customers,” explains Gandhi.

Helping Indian manufacturing sector evolve to the next level



Industrial Automation is an intrinsic driver to make manufactures move up the value chain. Of late, we have been seeing many efforts by the government towards bringing in reforms and policy changes in the manufacturing sector to expand the industrial base; however these will not be able to render a holistic effect till the

time the manufacturers embrace technologies in the automation sphere.

This holds especially true when the country is targeting to increase the share of manufacturing in the GDP by 25% (from the current level of 17%) along with creation of 100 million jobs.

The reforms will help in bringing investment however in order to develop industries to the required level the adoption level of automation needs to be spurred up to bring in significant improvement in all key indicators – productivity, efficiency, safety, quality, speed, etc.

Talking about the Japanese technology in the realm of automation, it is known for its impeccable precision, quality and above all integration characteristics. To elaborate it further, I would like to give an insight into OMRON’s total solutions approach. Apart from covering the requirements of quality and precision, our forte is to provide a fully integrated platform synergising logic, motion, safety, robotics, vision, information, visualization and networking to suit innumerable applications. The highly innovative and accurate Sysmac platform provides complete machine control through ‘one’ controller i.e. NJ Series, ‘one’ connection i.e. Ether CAT and ‘one’ software i.e. Sysmac, thus making it robust and exclusive ‘ONE Automation’ platform enabling optimum utilization of the manufacturing setup.

By Sameer Gandhi, MD, OMRON Automation India

Improve safety on shopfloors

Ghosh of Tata Technologies says that automation plays a vital role in improving safety on shopfloor by introducing various control and safety devices. Digital Manufacturing techniques using latest technology ensure safety by simulating activities and are analyzed before actual physical commissioning.

Deshpande of Cooper believes that industrial automation provides safety interlocking. He provides an example from the Cooper shopfloor. “The safety gates using PILZ type dynamically condition monitoring emergency devices and magnetic locking arrangements, IR beam detectors, light barriers well engineered with automation system provides strong safety features on the shopfloor. If we take example of interlocking installation on machine where critical operation are carried out like grinding, cutting or parts moving with high RPM such operation is dangerous as due to speed of rotation and intensity of impact When we install safety guard to prevent accident, in case of removal of the guards by production or maintenance crew and operator trying to run the machine, the safety interlocking provided with solenoid valve along with limit switch will not allow the machine to run as it stops electrical power to moving parts immediately. Hence automation in process operation like Interlock system ensures safe operation and elimination of human error.” 



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A knowledge based hub!

The Machinist caught up with **Maximilian Brandl** – President, EPLAN Software & Services, **Dr. Carsten Metelmann** – International Sales Director Asia, Russia, CIS & Baltic, and **Umesh Pai** – Country Head, India, to know how EPLAN is enabling efficient engineering.

A strong focus on efficiency and competitiveness will be required for taking the ‘Make in India’ campaign to its desired results. “And that is exactly what we help our customers achieve,” said Maximilian Brandl – President, EPLAN Software & Services, who was in India recently. “We enable Indian manufacturers to get into ‘Make in India’ quicker,” adds Umesh Pai – Country Head – India for EPLAN.

EPLAN facilitates companies to streamline their engineering processes. “Our focus is on the continuous processes along the value chain and for this continuous process, you need data. Our inter-faces to ERP, PDM and PLM systems ensure end-to-end availability of product data,” says Brandl.

EPLAN has a useful and collaborative platform called ‘Data Portal’. “The EPLAN Data Portal provides online access to valuable device data from numerous component manufacturers. This data can then be dragged and dropped into the EPLAN documentation. All products anchored to the EPLAN Platform can access this service. Simply adding the components available to the project reduces configuration work and increases the quality of the machine and system documentation,” explains Brandl.

“The time saved at the beginning of the project planning has an effect along all the stages up to commissioning: The representation of a device in various system plans is always based on a uniform source, so that schematics can be read and interpreted much more quickly,”

adds Dr. Carsten Metelmann – International Sales Director Asia, Russia, CIS & Baltic.

At present, there are 114 suppliers on this portal and while some of them are Indian, most are global. “Yes, we do have plans to get more Indian suppliers on board,” shares Pai, adding that more than 1,000 users in India are already using the platform, which has been built like a knowledge based industry Hub.

Through the Data Portal, component manufacturers get closer to their customers when they make their device data available in EPLAN format. “Customers can rapidly choose a device without tediously going through bulky catalogues. Since EPLAN also creates them on request, component manufacturers receive exactly the support that they require. So they can use the IT infrastructure of the EPLAN Data Portal and always present their data in the best possible format,” shares Brandl. EPLAN users with a software service agreement can use the EPLAN Data Portal free of charge. A defined format is used by all the vendors and this brings standardisation. “To compete, you need to have the right tools. Our intention is to provide the right tools to Indian companies so that they can compete globally. And it is structured in a manner that even SMEs can use it to their advantage,” adds Pai.

“We are now growing our presence in India considering the fact that we expect growth rates of 40 percent in India. Up to now, we were part of Rittal in India and we are in the process of establishing an independent entity,” shares Brandl. 



“Up to now, we were part of Rittal in India and now we are in the process of establishing an independent entity.”

Maximilian Brandl



“The time saved at the beginning of the project planning has an effect along all the stages up to commissioning.”

Dr. Carsten Metelmann



“To compete, you need to have the right tools. Our intention is to provide the right tools to Indian companies so that they compete globally.”

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Logistics of future!

Logistics employees at Audi will no longer have to fetch the required goods from the material shelves. Instead, the goods will come to them fully automatically on driverless transport systems.

The process of commissioning the other way around: Since December 17, 2015, logistics employees at Audi will no longer have to fetch the required goods from the material shelves. Instead, the goods will come to them fully automatically on driverless transport systems (DTS). Audi is thus the world's first automobile manufacturer to implement such a DTS-based goods-to-person concept. The company is currently testing the new method with the commissioning of driver's manuals at the Audi plant in Ingolstadt.

"Autonomous goods conveyance is another pioneering development towards the factory of the future. By means of intelligent connectivity, we achieve additional efficiency and flexibility, while easing the work of our employees," stated Axel Bley, Head of Logistics

“
Autonomous goods conveyance is another pioneering development towards the factory of the future. By means of intelligent connectivity, we achieve additional efficiency and flexibility, while easing the work of our employees.”

Axel Bley,
Head of Logistics Concept Development

Concept Development. The Audi employees describe the new warehouse as a “supermarket of the future,” because the system knows at all times which parts the commissioners need and provides them with exactly the right goods at the right time.

The functionality of the “supermarket of the future” is efficient, ergonomic and convenient: Driverless transport systems, so-called carries, bring the goods to the commissioners fully autonomously. To do so, they drive under the shelves, lift them up and transport them automatically to a central picking station. There, symbols on a monitor show the employees which goods they have to put into which place. Unlike the previous person-to-goods commissioning, a DTS does not need wide lanes and picking bays, so the shelves can be positioned much closer together. That reduces space requirements by



Driverless transport systems supply parts autonomously

25 percent.

A fleet-management system coordinates the carries so that they always arrive at the commissioners' workplaces punctually. This means that the employees never have to wait for their goods – a shelf change at the picking station takes just four seconds. The robots receive the order to bring a shelf for commissioning by Wi-Fi. When in motion, they orient themselves by means of QR codes on the floor, which are read by a camera installed under the DTS. The autonomous transport systems move in a separate area from where the employees work.

Thanks to the new supermarket concept, the commissioners' workplaces are much more ergonomic than before. The goods-to-person principle eliminates not only

long working times in the picking bays, but also long walking distances and the pushing of heavily loaded material carts. Another advantage of the supermarket of the future is its versatility: If components change or new ones are added, this can be quickly integrated. "All the shelves are mobile, so where they are located is no longer important," said Bley. "With the increasing number of parts, it is enormously important that we can react flexibly."

The autonomous transport systems are equipped with eight rechargeable batteries with a running time of approximately seven hours. When their charge status has fallen to 40 percent, they automatically return to their charging stations. There, they are recharged for two hours via induction plates in the floor, and then automatically return to work in the transporting shelves. When charged, the robots accelerate to a speed of 3.6 kilometers per hour, irrespective of the weight of the material carried. They can transport a maximum of 600 kilograms.

The commissioning of the owner's manuals for the Audi A3 models is the first task for which the new supermarket concept is being tested. Next year, additional commissioning stations at Audi will take over the goods-to-person principle. 

Source: Audi



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Year of Reinforcement

Modernisation of Armed Forces and making up critical deficiency of weapons and equipment by developing requisite capacities and infrastructure through the Make-in-India initiative were the buzz words in India's Defence Ministry for the year 2015. The Machinist presents some highlights.

Ensuring the highest standard of operational preparedness to meet present and emerging challenges through modernisation of Armed Forces and making up critical deficiency of weapons and equipment by developing requisite capacities and infrastructure through the Make-in-India initiative were the buzz words in the Defence Ministry for the year 2015.

The year also saw progress in Ex-Servicemen Welfare and rapid digitisation in the defence sector to fulfil the Prime Minister's call of Digital India. During the year as part of Defence diplomacy, India engaged with its neighbours and far eastern countries through bilateral talks, ship visits and bilateral as well as trilateral war exercises. However, the Make-in-India concept clearly dominated acquisition plans so as to make its defence infrastructure strong and robust. To expedite capacity building as well as offensive capabilities of the Armed Forces, the Defence Acquisition Council (DAC) the apex body of the Ministry of Defence in matters of acquisitions cleared different critical and high end defence procurement proposals to the tune of more than Rs. 2 lakh crore in the year 2015.

Indian Army

The Army continues to transform and

modernise in order to upgrade into a lethal agile, versatile and networked force capable of operating across the spectrum of conflict. The aim is to make the 'Force' capable and prepared to meet the complex and uncertain challenges of the 21st century war fighting. While modernising the force, the guiding factor remains the Indian Army Vision – "Ensure capability enhancement and operational effectiveness of the Army to meet all contemporary and emerging challenges."

In the quest for Capability Development, the Army remains cognizant of the fact that no country can realise its aspirations of becoming a significant power, unless it is able to harness and source its military capability needs indigenously. Accordingly, in line with the vision of 'Make in India' due endeavour is being made to ensure that the bulk of the capital procurement is realized through indigenous sources.

Enhancement of FDI limit

For speedy indigenisation the Government has increased the foreign Direct Investment (FDI) limit from 26% to 49% through approval route in August 2014. Above 49%, the proposal may be considered on case to case basis.

Defence products list for the purpose of industrial licensing has been substantively shortened and notified.

Government has notified a Defence Exports Strategy for faster clearance for export of defence items.

Interactions with industry intensified through DRDO and Department of Defence Production.

As part of its Artillery modernisation programme, the Defence Acquisition Council (DAC) cleared the Army's proposal to buy 145 BAE's M777 Ultra-Light howitzers at a cost of Rs 2,900 crore. This deal would be through Foreign Military sales but the spares, maintenance and ammunition will be procured through Indian Systems.

Akash Weapon System was inducted into the Indian Army on May 05, 2015. It is an indigenously developed supersonic short range surface-to-air missile system

File photo of successful flight test of Akash Surface to Air Missile System at the Integrated Test Range (ITR), Chandipur.





File photo of the three services aircrafts flying over the foreign fighter jets during the rehearsals for an Aero India show in Bengaluru

“As part of the Indian Army’s indigenization effort, the Army has issued an EoI for the Futuristic Infantry Combat Vehicle (FICV) project to 10 public and private Indian companies under the ‘Make in India’ initiative of the Prime Minister.”

with the capability to engage a wide variety of aerial threats like aircraft, helicopters and UAVs upto a maximum range of 25 kms and upto an altitude of 20 kms. The system is capable of simultaneously engaging multiple targets and is capable of providing comprehensive short range missile cover to vulnerable assets in the field force of the Army. With 96 per cent indigenous content, the state-of-the-art weapon system is a glowing manifestation of the Prime Minister’s ‘Make-in-India’ initiative.

As part of the Indian Army’s indigenization effort, the Army has issued an EoI for the Futuristic Infantry Combat Vehicle (FICV) project to 10 public and private Indian companies under the ‘Make in India’ initiative of the Prime Minister.

An important ‘Make’ projects Tactical Communication System (TCS) which aims at providing communication to forces deployed on the battlefield in a network centric environment and the Battlefield Management System (BMS) which will provide commanders at the tactical level with updated situational awareness, geo spatial data and intercommunication at the fighting formation level.

The ongoing ‘Buy Indian’ procurement proposals include Advanced Light Helicopter, Medium Range Surface to Air missile system, BrahMos missile system, Pinaka multiple barrel rocket system, Infantry Combat vehicle BMP 2/2K, MBT Arjun, Modular Bridge System, Ballistic Helmets and Bullet Proof Jackets.

The ongoing ‘Buy & Make Indian’ procurement proposal include the Mounted Gun System (MGS) for the Artillery, Air Defence Guns as successor to the existing L/70 and Zu-23 guns for the Army Air Defence, Light Armoured Vehicle Multipurpose Vehicle (LAM-V) for the mechanised forces and mine ploughs for the T-90 tanks.

Indian Navy

To enhance its Blue Water capability, the Indian Navy opted to strengthen its submarine arm for which Request for Proposal (RFP) to acquire six more conventional submarines under Project 75(I) was cleared by the DAC. The project will cost around Rs.80,000 crore. Under this programme six conventional submarines are planned to be built in India with foreign collaboration.

To augment the Navy’s offensive capabilities, government has decided to procure twelve Mine Counter Measures Vessels (MCMVs) for which Accord of Necessities (AoN) has been issued and has nominated Goa Shipyard Limited to process the case with TOT from abroad.

Government has taken decision to induct 16 Multi-Role Helicopters (MRH) for the Navy, which will go a long way in mitigating gaps in Air Anti-Submarine Warfare capability. Apart from this initiative, it has also given a go ahead for the Major Refit/Mid Life Upgradation (MR/MLU) of Kamov 28 helicopters.

The first ship of Project-15B Guided Missile Destroyer, christened INS Visakhapatnam was launched on April 20, 2015 at Mazagon Dock Limited, Mumbai.

Under Project-28, INS Kavaratti, the fourth in the series of Anti-Submarine Warfare Corvette was launched at GRSE, Kolkata by the Minister of State for Defence on 19 May 2015. These four ships of Project 28 have been designed indigenously by the Directorate of Naval design, New Delhi and bear testimony to the acclaimed legacy of naval designers.

To provide a boost to the coastal defence capability of the Navy three follow-on Water Jet Fast Attack Craft namely INS Tarmugli, INS Tilanchang and INS Tihayu were launched by the Vice Chief of Naval Staff at a function at Garden Reach Shipbuilders and Engineers Ltd, Kolkata on 30 June 2015.

Three Intermediate Support Vessels (ISVs) were commissioned into the Indian Navy as T-48, T-49 and T-50 on September 29, 2015 in consonance with the ‘Make in India’ initiative. 14 of the ISVs were built indigenously by M/s SHM Shipcare, Thane while four were built by M/s ADSB and five by M/s Rodman Polyships.

The indigenously designed and constructed Project 15A (Kolkata Class) Stealth Guided Missile Destroyer INS Kochi was commissioned by the Defence Minister on September 30, 2015 at Naval Dockyard, Mumbai. The ship can be truly classified as a ‘Network of Networks’ as it is equipped with sophisticated digital networks, such as Asynchronous Transfer Mode based Integrated Ship Data Network (AISDN), Combat Management System (CMS), Automatic Power Manage-



ment System (APMS) and Auxiliary Control System (ACS).

The Indian Navy received a major fillip with the induction of eight Boeing P-8I Long Range Maritime Reconnaissance and Anti-Submarine Warfare aircraft at Naval Air Station Rajali, Arakkonam, Tamil Nadu (the first aircraft arrived in May 2013 and last in mid-2015).

The Road Ahead: With the release on 20 July 2015, of the Indian Naval Indigenisation Plan (INIP): 2015-2030, the Navy has given unmistakable notice of its firm intent to establish itself as a true Builder's Navy, with attendant spinoffs enabling India to be a net provider of security in her maritime neighbourhood, by building capacity and enhancing capability of her regional friends and partners. Further, it is aware of the serious shortfalls in terms of both Indian R & D and Indian manufacturing, as the five drivers of the INIP, viz. (1) a lack of credible R&D in military sciences and technologies; (2) inadequate amalgamation between R&D and the manufacturing sector; (3) the absence of an integrated approach amongst users, designers and manufacturers; (4) commercial unviability due to a lack of economies of scale approach; and (5) the effect of technology-denial regimes, clearly reflect the Navy's clarity of perception in charting the course ahead.

Indian Air Force

The Indian Air Force (IAF) has been modernising its inventory as per its long-term perspective plan. The focus is on "Make in India" to give impetus to indigenous development and manufacturing, including participation of private sector in defence manufacturing. Modernisation process involves new inductions, as well as upgradation of the existing weapon platforms and support systems as a part of the capability build up.

The on-going modernisation plan spans the entire spectrum of IAF's capability including fighters, transport aircraft, helicopters, combat support assets and air defence network.

Some DRDO contributions

DRDO's technological strength is exemplified by the development, production and acceptance of Indigenous Weapon Locating Radar (WLR) Swathi. Swathi is a highly mobile Radar system designed for automatic first round location of weapons firing projectile type rounds, it operates with a fence detection mode of operation, ensuring fast detection and tracking of shells, mortars and rockets.

In order to promote 'Make in India' programme, DRDO has brought out comprehensive guidelines for Transfer of Technology (ToT) for private and public industries engaged in Indigenous production and commercialization of Defence technology spin-off for societal usage. DRDO has facilitated 75 Licensing agreements for Transfer of Technology (LATOT) to 57 industries under Make in India program.

Net centricity, cyber security and ensuring enhanced visibility of entire battle space for seamless operations are part of this capability build up. To maximise the operational potential, IAF is also creating modern and efficient operational and technical infrastructure.

LCA: Light combat aircraft Tejas is designed and developed by Aeronautical Development Agency (ADA), Bangalore. The Initial Operational Clearance (IOC) of LCA was achieved in December 2013. The first series production aircraft in IOC configuration was handed over to IAF in January 2015.

Mirage-2000 Upgrade: IAF contracted for the upgrade of Mirage 2000 aircraft to advance standards of improved radar,

"The Indian Air Force (IAF) has been modernising its inventory as per its long-term perspective plan. The focus is on "Make in India" to give impetus to indigenous development and manufacturing, including participation of private sector in defence manufacturing."

avionics, electronic suite, weapons and a modern generation glass cockpit. On March 25, 2015, first upgraded aircraft was handed over to the IAF. The induction of the aircraft has added the much needed teeth to Air power and keeps the IAF ahead of its adversaries. This multirole fighter aircraft has achieved enhanced operational life. A Mirage 2000 carried out a landing on the Yamuna Expressway to showcase its operational capability, characterized by flexibility and speed of response.

MiG-29 Upgrade: The series upgrade of MiG-29 aircraft is currently underway at Base Repair Depot.

Rafale Aircraft: The Government has decided to procure 36 Rafale aircraft through Inter Governmental agreement between the Indian and French Governments.

Air Defence Network

Air Defence Radars To strengthen the existing air defence radar cover over Indian airspace, variety of new sensors are being inducted in IAF. Recent inductions include the following- **MPR:** Medium Power Radars from Israel have been inducted. These radars have replaced legacy radars of 80s' technology.

LLTR: To fill the low level radar gaps along the border, new Low Level Transportable Radars (LLTRs) are being inducted in IAF from M/s Thales, France with transfer of technology. M/s BEL will produce few of these state of the art radars in India. These radars are mobile and can be deployed anywhere as per operational requirements.

LLLWR: Low Level Light Weight Radars (LLLWRs) are being inducted to provide electronic eye to our Mobile Observation Flights (MOF). These radars scan for low level aerial threats and provide extended early warning. 

Source: Ministry of Defence, Government of India



THE ULTIMATE GUIDE TO PROFITABLE MANUFACTURING
MACHINIST

Rajkot

Special 2016

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“The future is bright!”

Considering the fact that machine tools are the basic need of all manufacturing activities, **Dinesh Khambhayata**, President, Rajkot Machine Tools Manufacturers Association (MTMA), feels that the industry’s future is very good as he sees the overall market scenario improving soon.

By Niranjan Mudholkar

Q How would you describe the market scenario with regards to buyers of the machine tools industry? Do you see the situation changing in the near future?

As of today, indigenous and globally market situations are slow in almost all the commodities and we machine tools builders are also passing through a recession period. Machine tools products are basically capital goods items and they get the first impact of recession. Mostly, during such circumstances work of new project as well as modernising of existing units are kept on hold. Machine tools are the basic need of all manufacturing activities and hence the future of machine tools industry is bright, and we are surely expecting improvement in the scenario in the near future.

“We do not consider Bangalore industries as a competition. Our focus is towards the potential for development in Rajkot.”

Q What is the industry doing to deal with the situation?

Under the prevailing situation, pressures from production side are comparatively low and this provides better opportunities for development of new products and upgrading existing products.

Q The collective turnover of Rajkot machine tools industry was estimated around Rs1,400 crore a few years back. How will the present market scenario impact the industry’s turnover for the current financial year?

The current situation of recession will definitely have an adverse impact on the collective turnover of Rajkot Machine tools industries. There may be a chance to have a stand still situation instead of growth.

Q The Bangalore cluster is the market leader when it comes to CNC Machine Tools. Does the Rajkot cluster view this as a competition and is it doing anything to improve its position?

Geographically, Bangalore has got advantages of CMTI. Moreover, a number of pioneer units have existed in Bangalore since long back because of which the necessary ancillary industries and infrastructure have also been quite well developed in Bangalore. Of course, now Rajkot is also on the same path and many units have forayed into

manufacturing of CNC machines. Also, the hard working nature and sincerity of Rajkot SMEs will be advantageous. So, we are very much sure that the future of Rajkot Machine Tools industries is bright.

We do not consider Bangalore industries as a competition. Our focus is towards the potential for development in Rajkot. Production of conventional machines is comparatively difficult due to more number of components. Of course, Rajkot already has established infrastructure and has also achieved good name and fame in the field of conventional machines. Similarly in the field of CNC machine manufacturing, we will do our level best. We see lots of potential in our region for the entry level new CNC machine manufacturing units.

Q Is Rajkot MTMA running any campaigns or initiatives for creating awareness of latest technology trends among the machine tools manufacturers in the Rajkot cluster?

We prepare our yearly calendar for seminars and training program for our members and prepare the ground for our members for participation in the regional exhibitions.

Q Considering the fact that most of your members are SMEs, what is MTMA doing to help them



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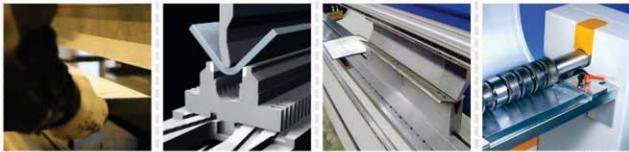
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“If we have to grab a good share in the exports markets then we have to work hard for getting orders from these markets and also have to prove that our products are better in quality, technology, delivery, and price compared to other global players.”

become more competitive?

Yes, majority of our members are SMEs. Problems of SME units are quite different compared to the large units as the SMEs lack infrastructure and technology. We are addressing these problems by the way of organising various seminars on the subjects which are directly related to SMEs. We are also encouraging them to participate in various exhibitions with their products and also giving them the opportunity to get feedback from the current market.

Exhibitions play a vital role in providing platform to meet existing and potential customers. It gives an opportunity to display products and knowhow with regards to technology trends. Just as we encourage our

members to participate in exhibitions, we also organise exhibitions in Rajkot. Our members are also show keen interest in actively participating in these seminars and exhibitions.

We also hope that the overall situation will improve in the coming days.

Q Do the reduced prices of imported machines hurt the business of the Rajkot cluster in a big way since many customers prefer to buy these machines? What needs to be done to tackle this problem? How is MTMA helping?

Due to devaluation of our currency, the effect of cheap priced imported machines in international currency is now diluted up to some extent. If we consider the market of low cost machines and conventional machines produced in Rajkot, business is not hurting in big way. Customers are now focusing more on performance and life of machines as well as on better after sale service. Also, our efforts are to create awareness among our members to focus on customer's expectation to cope with market demands.

Q Last time you mentioned that Rajkot MTMA has 270 plus registered members. Has there been

“Customers are now focusing more on performance and life of machines as well as on better after sale service. Also, our efforts are to create awareness among our members to focus on customer's expectation to cope with market demands.”

any change in this number in the last three months?

During the last three months, three new members have been added in our association. If we are looking at the size and numbers of machine tools manufacturers units in Rajkot, we are proud that approximately more than 70 percent units are now members of our association.

Q The next major show organised by Rajkot MTMA will be the Rajkot Machine Tools Show 2016. How is the preparation happening on that front? How big do you expect it to be in terms of exhibition space, number of exhibitors and number of visitors?

The Rajkot Machine Tools Show (RMTS) 2016 will be organised during November 2016 and we have announced about this sixth edition of RMTS during the exhibitors' meet of Engimach 2015 in Gandhinagar. So RMTS 2016 will be the sixth edition of this successful exhibition for machine tools in Rajkot. We are expecting very big participation in this show from all over India. Today, Rajkot is considered as one of the biggest machine tools and engineering hub in India and exhibitors will get a market for their products through this show.

Q Anything else that you would like to add?

The 'Make in India' campaign will definitely provide a boost to the manufacturing sector of India. As per the present statics of consumption v/s manufacturing of machine tools across India, there is a lot of potential for these industries. Indian machines have now created good reputation in the global markets. Of course, if we have to grab a good share in the exports markets then we have to work hard for getting orders from these markets and also have to prove that our products are better in quality, technology, delivery, and price compared to other global players. 

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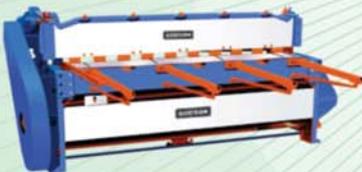
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A modern industrial hub

In the near future, Rajkot will become number one in terms of technology, innovations as well as turnover, says **Tejas Dudakiya**, CEO, Dowel Machinery Pvt. Ltd.

By Niranjan Mudholkar

Q What is your assessment of Rajkot's evolution as an important industrial city particularly in the last decade or so?

Rajkot has been known as the 'City of Diesel Engine' for more than a decade. At present, Rajkot comes first in the conventional machine tools manufacturing and it comes a close second to Bangalore in CNC machine tools manufacturing. No wonder, it is proudly known as the key hub of the machine tool manufacturing sector of India.

Rajkot is one of the fastest developing cities in India. It is a central part of the Saurashtra region and is very well connected by good quality roads and train connectivity with other cities of Gujarat. Rajkot is mainly connected with Mumbai as well as the Kandla Port. In fact, it is very close to the Kandla port which has become one of the best well equipped ports of India and which provides good facilities for exporting finished products from Rajkot. Of course, Rajkot is also connected with other ports like Mundra and Pipavav.

Rajkot is an industrial city having a variety of industries working very satisfactorily. Most of Rajkot's industries are SSI units and have developed through sheer hard work, skill and own resources.

Q How does Rajkot fare when it comes to key industry requirements like availability of skilled workers, power supply, water supply, infrastructure, connectivity and policies?

Skilled workers are biggest problem

faced by mostly industries of Rajkot but now it has shown a remarkable contribution for skilled employee in each sector. At present, 14 engineering colleges, well equipped ITI, CMTI and NSIC Training Centre are established in the city providing the best people for the right jobs. Currently, there is no any issue or problem regarding power supply. Water supply is another big problem for Rajkot but now it will be solved soon due to the Narmada Canal Project.

Q Which key manufacturing sectors present in Rajkot?

Major manufacturing sectors present in the Rajkot are Machine Tools, Diesel Engine & Components, C.I. Casting, Auto Components, Bearings and Bearing Ancillaries, Forging, Centrifugal and submersible pumps, Electric motors, Textile components, Investment Casting, Kitchen Appliances, Furniture and Furniture Hardware, Watch Cases, Agriculture Equipments, Die & Mould, Jig & Fixtures, Air Compressor, Food product & Food processing, Gold smith and Jewelleries, Nail & Fasteners, Gear Manufacturing, Building hardware, Plastic machineries and items, Fasteners etc.

Q Tell us about your association with Rajkot?

Our Company was established in 1981 with the motto to manufacture and supply quality hydraulic press and application selling machines. At that time very few machine tools companies



were emerging in Gujarat. So we used to be the pioneer player in this sector. More than 4000 machines of ours are today operational in India as well as abroad to total customer satisfaction.

Q How do you compare Rajkot with some other key regions?

Rajkot is always ready to accept new technology and it has been proved to be the pioneer in Indian machine tools industry. At present, most entrepreneurs in Rajkot are young. So while the earlier stage Rajkot was just like any other traditional Industry, now with emerging education and skills, it is becoming a modern industrial hub. In the near future, Rajkot will become number one in terms of technology, innovations as well as turnover.

Q Anything else?

Rajkot has huge scope to innovate and manufacture machineries which are still imported. Young entrepreneurs of Rajkot have the capability and strength to innovate and manufacture such products. For that purpose, we have to go for advanced technology, automation and good pay scales. 



Rangilu Rajkot!

It is the inherent nature of the people of Rajkot to take the plunge into entrepreneurship and commerce. And that is what makes this colourful region one of India's fastest growing industrial hubs.

By Swati Tarafdar

Rajkot, the fourth largest city of Gujarat, occupies the heartland of the Saurashtra region and the Kathiawar peninsula. It is undoubtedly a darling of the manufacturing industry, not only in India, but for various overseas companies too. Interestingly, while it is the 35th-largest urban agglomeration in India, and despite being a heavily industrialised area, it bagged the ninth position for being the cleanest in the country. According to a survey conducted by a global think tank on urban affairs, the City Mayors Foundation, Rajkot is the 22nd-fastest-growing city in the world, and the sixth in line in India.



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One of the casting units in Rajkot

Historical background from the industrial perspective

Between April 15, 1948 and October 31, 1956, Rajkot was the capital of the state of Saurashtra. In 1956, it was merged with the Bombay State, only to be reincorporated into Gujarat later in 1960. Today, Rajkot forms the central, and a high premium, industrial area in the Saurashtra-Kutch region.

Since decades, Rajkot has remained the leading producer of submersible pumps and diesel engines, which are still manufactured in the city, marketed throughout the country, and exported to the rest of the world.

“Rajkot has remained the hub for manufacturing and industrial development since the last 70 years,” says Parag Tejura, President of the Saurashtra Vepari Udyog Mahamandali (SVUM), a young and energetic association of entrepreneurs striving for their own multi-faceted development. He adds proudly, “Rajkot manufactured many necessary metal and engineering items of which diesel pumps and forging items created a name for themselves. Today, the medium and small scale industries have so multiplied and diversified that Rajkot delivers to almost every industrial manufac-

turer in India. Especially, in the automobile industry, every single manufacturer worldwide uses spares and components manufactured in Rajkot.”

“Shapar and Veraval came together and combined their resources to jointly develop the area for the manufacturing industry. It hosts some important large scale and medium scale manufacturing units including that of M & M and employs about 2-2.5 lakh wage earners.”

Anilbhai P. Bhoraniya,
Vice President, Shapar
Veraval Industrial
Association

Explains Ankit Kakadiya, Manager, Shree Gopal Forge and Member of the Rajkot Engineering Association (REA), “Till the 1980s, diesel engines were the most famous engineering products that came from Rajkot. It had a market all over India. The manufacturers started diversifying around the same time as they noticed that the diesel pumps could be tweaked around and put to use for various other purposes, such as for irrigation, to pump out water from the wells, in hydro – to produce electricity, and so on.”

Locational and comparative advantages in Rajkot

Located on the banks of the Aji and Nyari rivers, Rajkot is situated 245 km away from Gandhinagar, the state’s capital. Figuratively, this seems to have distanced this city of extremely talented craftsmen from the state’s political ironwill, affecting the city’s ease of doing business. From Mumbai, through which most of its international business still

happens, Rajkot is 683 kilometre away by road.

The city has a huge potential for export and import businesses owing to the proximity of the Gulf of Kutch in the north, which hosts the all-weather port of Navlakhi on one end and the port of Mandavi on the other. The Gulf also has one major port, the Kandla, which enables international ferrying.

Rajkot has its own airport that provides air connectivity with Mumbai and Delhi. However, travelling to any other major cities of the country, or offshore, has to be via Mumbai.

The Alang shipyards that recycle almost half of the world's salvaged ships are located 50 kilometres southeast of Bhavnagar, on the Gulf of Khambat. It offers a tremendous advantage for metal and engineering products manufacturers in the region by providing scrap metal ingredients at very effective costs.

Infrastructure and connectivity

Infrastructure is something most of the Rajkot residents and manufacturers are quite depressed about. It's only very recently that the city got its double freighted railway tracks, connecting it to Surendranagar, a neighbouring manufacturing region. The airport is a small one and provides connectivity to Mumbai at a very high cost. It is with great difficulty and after mammoth efforts, a flight to Delhi has been started. It is not cost effective inform the leaders of the industrial associations.

The Vice President of the Rajkot Chamber of Commerce and Industry (RCCI), Shivilalbai L Patel says, "If we travel to Delhi or Mumbai from Ahmedabad, the ticket costs something around Rs 3000, but from Rajkot, Jet Airways exercises a monopoly and charges anything between Rs 8,000 – 15,000."

The highways are nothing much to talk about but the major problems around roads lie within the city – even the industrial estates are not fortunate enough to tackle this problem effectively.

Industrial estates

Gujarat Industrial Development Corporation (GIDC) was set up in 1962 to accelerate industrialisation in the state. It began by identifying locations for industrial development and creating necessary infrastructure in these areas. This led to the formation of industrial estates. The intention was to provide facilities such as roads, drainage, electricity, water supply, factory sheds, and other infrastructural amenities etc in a way that manufacturers can straightaway focus on their work at hand. "The first industrial estate in India, Umakant Pandit Undyog Nagar, came up in Rajkot, in September 1955," says Tejura, and it became a huge success.

Industrial estates played a particularly positive role in developing the industrial activity and prosperity in the country per se. Yet, for Rajkot, government supported industrial estates haven't been such a nice experience. "Government initia-

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tives, be it in providing land for manufacturing, water for industrial purposes, or supportive policies for the manufacturers, have been dismal. Industrial estates are a failure when it comes to the government owned ones. The privately managed ones gets things done but suffer due to lack of infrastructure – roads, drinking water, etc. The villages in which some of the largest estates are located don't have Nagar Pallikas but Gram Panchayats, reducing their budget allocation for development. There is absolute lack of political will and the bureaucracy makes it worse, when it comes to infrastructure in Rajkot," says Patel.

Anilbhai P. Bhoraniya, Vice President, Shapar Veraval Industrial Association, one of the largest in the region, explains that Shapar and Veraval came together and combined their resources to jointly develop the area for the manufacturing industry. It hosts some important large scale and medium scale manufacturing units including that of Mahindra & Mahindra and employs about 2-2.5 lakh wage earners.

"We recently got permission and financial support for con-



"It's high time the auto industries should set up shops here. We give them every component. The completed automobiles should run out from here. And this goes for the big names in several other industries."

Parag Tejura,
President of the
Saurashtra Vepari Udyog
Mahamandali (SVUM)

structing an over bridge across the highway dividing Shapar and Veraval. This is estimated to cost around Rs 40 crore and was long due to remove the bottleneck created by traffic issues and lack of proper roads. We are now working to solve drinking water issues, to install our own fire brigade station, and a government supported pharmacy for the people employed in



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the estate,” informs Bhoraniya.

Mohit Dobaria of Accurate Technocast Pvt Ltd, which is a medium scale auto component manufacturing unit in the Shapar Veraval Industrial Estate considers himself fortunate to have his unit here. “Drinking water is a major problem in these areas but we get a lot of support from the association in solving imminent problems that creep up during the daily running of business. We don’t have to worry about power and electricity, skilled workers are easily available, and there’s camaraderie among the same industry manufacturers that helps us tackle any short term problem. It is so convenient to have your unit located in one of these estates, why would anyone want to have it outside, and be all on your own,” he opines.

Industrial estates were conceived to promote small-scale industries by providing infrastructure and other amenities, by improving operational efficiency through common facilities and knowledge accumulation, and through collective interest of entrepreneurs on the same interest area. In Rajkot, all these and more have been provided by private industrial players, rather than by government initiatives.

Availability of workers and skilled labourers

It is the inherent nature of the Rangila Rajkotians to take the plunge into entrepreneurship and commerce. “Working for others is not in our blood,” says Kakadiya. “This makes it difficult to find daily wagers from around the place, although the

Keeping it clean

In the Union Government’s Cleanliness Index for Class I cities, which was based on a survey of cities with a population of one lakh and above and in which the cities were awarded scores based on their performances in a set of output-related, process-related, and outcome related indicators, Rajkot managed to bag 56.118 points out of a total of 100. The survey was based on 2009-10 figures and Rajkot achieved the feat despite its heavily industrialised locales.

rural neighbourhood does supply some”.

The workforce for these industrial cores actually comes from UP and Bihar, people who migrate for work, he explains. “When the government started the 90-day employment for all policy, it made life a little easier for us to get ready labour, but the issue remained that by the time they got trained, they were ready to leave. After the 90 days engagement, they’ll prefer to go back to their villages to take care of their crops and household. For us, the demand and supply of labour becomes hard to match,” says Kakadiya.

Over the last few years, manufacturers have moved to advanced machineries that are less labour intensive. The CNC machines need one operator while the lathe machines needed four. Although the CNC machine operator demands four



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times the salary of the lathe machine operators, they are also willing to work the extra hours during times of high demand, enabling an amiable solution to sickening labour unavailability.

More than numbers, the leaders of the industrial associations are worried about the potential of the workers. "There is an acute need of training and education among the people here. There are over a 1000 units manufacturing auto components here in Rajkot and they export their products to big companies but our colleges do not have a single curriculum running on automobile engineering. The same goes for ceramic engineering, leather and textile industry faced courses, and so on." It is imperative that the educational institutions in Rajkot are motivated to start industry facing courses to educate and train the young force looking forward to join the family business.



"The manufacturers started diversifying around the 1980s as they noticed that the diesel pumps could be tweaked around and put to use for various other purposes, such as for irrigation, to pump out water from the wells, in hydro – to produce electricity, and so on."

Ankit Kakadiya,
Manager, Shree Gopal Forge
and Member of the Rajkot
Engineering Association (REA)

The People – Rajkot's greatest resource

Despite all the infrastructural problems around the town, and more than any other resource possessed by the region, it's the human resources of Rajkot that yields gold. The people of Saurashtra and Rajkot region are known for their hard work, honesty, and talent in workmanship. According to the

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2011 census, the urban area of Rajkot has a total population of 1,286,678 and the average literacy rate is 87.80 %, which is higher than the national average (82.20%).

Patel exclaims that Rajkot is like mini-China; every single item that any industry needs is manufactured here. People in this region are extremely hardworking and have a knack towards craftsmanship. Although the general education among the people here is only till the 11 or 12th grade, innovation is more rampant in this part of the country, and even goes unnoticed.

Tejura echoes the mood. "Show us any new piece of engineering, and we will make it in less than 10 days," he says exuberantly. Yet these small and middle class manufacturers do not get the reward they deserve for their talents because of their lack of education, awareness, and government support. To show an example, Tejura speaks of the three wheeled tractor innovated by a small time agricultural equipment manufacturer, which is being used in the farms in the state for the last ten years with great success. "While normal tractors would cost you anything above Rs 5 lakhs, this three wheeled tractors cost less than Rs one lakh; yet the government is not awarding it the due registration as a tractor because traditionally tractors have four wheels. Hence,

Manufacturing Sectors in Rajkot

Gems and Jewellery
Diesel Engines
Foundry
Plastic Industries
Machine Tools
Automotive Parts
Textile Printing
Submersible Pump
Watch Parts
Silk Embroidery
Kitchenware
Ceramic Industries
Ball Bearing
Agriculture Equipment
Handicraft
Ginning and Pressing

this product is still not in the market and the innovator cannot have any kind of recognition. Instead of coming forward and promoting this kind of technology and innovation and help develop the core sectors in the country, the government is sitting on the files and the paper works for the last ten years", he adds.

Speaking to several proprietors of the small and medium sized manufacturing units in the region makes one thing clear – they are concerned about the work – the quality and the quantity of it, the orders they receive, the process of production and delivery. The fringe aspects of marketing, or promoting their products, advertising and creating brand values, streamlining processes of production and management, and even for that matter, crafting wise pricing policies are often neglected.

"The people here are too honest. They live by their words and the quality of their works. This is one reason we are trusted all over the world", claims Patel. Look at this from a different angle, and you will see how the same manufacturers get exploited, says Tejura. He cites an example when he asked one of the traditional jewellery manufacturers cite double the price to a foreign client, who felt the deal was still so very cheap. "This is true of all the industries in Rajkot.



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Smarter process management can further reduce the manufacturing cost and there is so much scope to export and cater to a wider market, to earn a better price for the products," he says.

Skill development and getting smarter

Tejura and his team, through SVUM, helps entrepreneurs and manufacturers open up to the day's competition with the adoption of smart technological processes, appropriate management philosophies, knowledge in marketing and financial management, and more. "We do not want to depend on government actions and their sloth bureau-



"We don't have to worry about power and electricity, skilled workers are easily available, and there's camaraderie among the same industry manufacturers that helps us tackle any short term problem. It is so convenient to have your unit located in one of these estates."

Mohit Dobaria of Accurate Technocast Pvt Ltd

"Rajkot is like mini-China; every single item that any industry needs is manufactured here. People in this region are extremely hardworking and have a knack towards craftsmanship. Although the general education among the people here is only till the 11 or 12th grade, innovation is more rampant in this part of the country, and even goes unnoticed."

cratic ways. We go to the roots, reach the local people and teach them how to adopt good and efficient practices for a smart business. Most manufacturers here push their relatives to do the money counting. We convince them to employ professionals and enjoy the benefits. We teach them how we can use the ports to export our products directly to foreign countries and not accept the traders' rates," Tejura says.

Once again, this is an area Patel agrees to Tejura promptly, saying "Whatever the manufacturers here have achieved, they have achieved by virtue of their hardwork and skill. The government has given us zero support when it comes to policies and infrastructure. The manufactures get around and solve their own problems and scale heights before the government gets to consider our requests."

Key industry sectors present

According to the District Industrial Profile of Rajkot district, created by the Government of India's Ministry of MSME, there are 20, 431 registered MSME units in the district of Rajkot alone. It is India's 2nd largest solar water heater and auto-parts manufacturer. Manufacturing of engineering products occupies a large part of the industrial activity. This includes manufacturing of agro machineries, machine tools, machineries for food processing and packaging industry, textile equipment, and so on. Foundry and forging industries producing dyes, cast, and other equipment take a prominent position as it has some of the largest CNC machine and auto parts manu-

facturers and about 500 foundry units.

The Gujarat Industrial Development Corporation (GIDC) and Gujarat State Financial Corporation (GSFC) support and encourage the heavy and small scale industries in the region. Diesel engines, pumps, bearings, kitchenware, watch components, automobile components, and the forging and casting industries form the strong base of the medium and small scale industries.

Some of India's leading snacks manufacturers also come from Rajkot.

Some of the prominent industries are:

Construction Industry Equipment: One of the most important indicators of a developing nation is its well developed infrastructure, which translates to roads, flyovers, bridges, buildings, houses, dams, tunnels and more. Rajkot delivers high quality construction machinery to the country's fast growing construction industry.

Imitation Jewellery: The market for imitation jewellery has emerged as one of the rapidly growing business segments of the Saurashtra-Kutch, accelerated by their low cost, innovative designs, and opening up of new markets, and scope for exports. In its latest report "India Imitation Jewellery Market Outlook 2018," RNCOS suggests that the imitation jewellery market in India is anticipated to grow at a Compound Annual Growth Rate (CAGR) of around 20% during 2014-2018.

Pharmacy and medical equipments: From Rajkot, formula based drugs are exported to Asian and African countries, such as in Philippines, Sri Lanka, Thailand, Nigeria, Kenya, and Ghana. Bulk drugs are also being exported for EU and US. Rajkot is also well known for orthopedic equipment and supplies like Rehabilitation Products and Aids. Manufacturers of hospital scrubs and linens, medical furniture and disposables, Autoclave and sterilizers, physiotherapy and dental equipment in the region have great potential.

Engineering products: Principal engineering products manufacturers in Rajkot mainly deal in diesel engines and pumps. There are about 375 functional manufacturing units in the

concentrated area that has a cumulative turn over of Rs 200 crores. It earns something around Rs. 40 crores through exports and the cluster of industries employs 7500 skilled labourers.

Foundry: The group of industries in the foundry area manufactures grey iron castings for oil engines, automobiles, textiles, machine tools, pumps, valves, as well as graded casting. Around 20000 workers are engaged in 505 functional units in the cluster with a turnover of Rs 2700 crore. The value of exports stands at 350 crores.

Automobile parts: Connecting rods, pistons, crank shafts, cam shafts, liners, sleeves, air cooled block, spares and more are manufactured in around 303 auto component manufacturing units in Rajkot. The turnover is at 750 crores, with value of export recording Rs 400 crores. Approximately 9500 wage earners are employed here.

Pump sets: Submersible and centrifugal pump sets are manufactured in around 161 units that collectively has a turnover of Rs. 300 crore. Value of exports stands at Rs. 55 crores and around 4700 people are employed.

Service Industries: Rajkot also has a prominent service sector and the potential and scope of development in this sector is fast improving. Retail trade and small businesses, transport operators, laundry and dry cleaning, repairing of electronic gadgets and automobiles, computer based services and hard-

ware maintenance are the notable ones.

Future Prospects and Conclusion

Rajkot is a name extremely esteemed and trusted among the manufacturing industries of the world. The government needs to take note – set aside their political differences and channel more resources here. The entrepreneurs though are not waiting for that to happen. They are carving out their own destinies. What they need, as support, is from their own fraternity. Says Tejura, “It’s high time the auto industries should set up shops here. We give them every component. The completed automobiles should run out from here. And this goes for the big names in several other industries.” He also informs that Rajkot has a huge scope to develop the textile industry. The readymade garments industry can have a big boost in the region. The Coconut Development Board has joined hands with the locals and has started coconut farming in the 1600 kilometer long coastal area. This will lead to the development of coir production, and relevant industries, as well as production of toiletries and cosmetics, which already occupies a good spot.

The current trend of industrial growth is towards the engineering and auto ancillary sector. Exports in the area of machine tools, CNC machines, agro products, and ceramic products can easily be pumped up. 

The author is a Vijayawada based freelance writer.



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The All-rounder

Earlier, Rajkot was known only as the Diesel Engine City. But now Rajkot city has made a name in other sectors also, says **Shailesh Kawa**, Managing Director, Kawa Press Systems Pvt. Ltd.

By Niranjan Mudholkar

Q What is your assessment of Rajkot's evolution as an important industrial city particularly in the last decade or so? How important is Rajkot's Contribution in making the State of Gujarat a major manufacturing destination for India?

Earlier, Rajkot was known only as the Diesel Engine City. But now Rajkot city has made a name in other sectors also. These include machine tools, bearing manufacturing, plastics & hardware, auto parts, etc.

Q How does Rajkot fare when it comes to key industry requirements like availability of skilled workers, power supply, water supply, infrastructure, connectivity and policies?

Lack of skilled workers was one of the major issues faced by Rajkot City

With emerging education systems and awareness amongst young entrepreneurs for management skills, they prove to be better industrialists.

earlier. But since the last decade, it has shown a remarkable contribution for skilled employees in each sector. Today, there are more than 12 engineering colleges which provide a good work force to our industries. The key issue faced today is the land price for establishing any new units. The Government has also not established any new GIDC for ten years.

Q Which are the key manufacturing sectors in Rajkot?

Major manufacturing sectors present in the Rajkot are bearing manufacturer, plastic manufacturer, casting foundry, forging parts, machine tools manufacturers, auto parts components, etc.

Q Tell us about your association with Rajkot?

Our Company has been established since 1970, the time when very few machine tools companies were emerging in Gujarat. So we used to be the pioneer player in this sector. So far, we have provided more than 30,000 machines across India and also overseas.

Q With regards to your industry specifically, how do you compare Rajkot with some of the other key regions?

Rajkot has proved to be the pioneer in Indian machine tools industry.

In this era, Rajkot Machine Tools Industry should become a competitor against developed countries like China. For that purpose we have to go for advance technology, automation and good pay scale.

Earlier stage, it was just like any other traditional industry. But nowadays with emerging education systems and awareness amongst young entrepreneurs for management skills, they prove to be better industrialists. So now we can say that Rajkot will become the Number One player in terms of technology and innovations as well as turnover very soon.

Q Anything else?
Basically Rajkot Machine Tools Industry is limited for few products like lathe machine, power press machine, drill machine, etc. In this era, it should become a competitor against developed countries like China. For that purpose we have to go for advance technology, automation and good pay scale. 



Emerging Hub

Rajkot is one of the most developing industrial sectors of India, says **Paras I. Vaghela**, Director Sales, Godson Bending Systems

Q What is your assessment of Rajkot's evolution as an important industrial city?

Rajkot is an emerging hub not only for machine tools but also for automobiles, kitchenware, bearings, food products, and designer hardware industries. Rajkot is one of the most developing industrial sectors of India, producing 50 percent of the total need of machine tools.

Q How does Rajkot fare when it comes to key industry requirements?

Rajkot is now out coming from the skilled worker scarcity problems. There is significant development and change in infrastructure as well. The main

drawback for Rajkot is the high price of Land/property, which discourages people from establishing new projects.

Q Key sectors in Rajkot?

Machine tools, foundry, submersible pumps, cements, agriculture products, bearings, electric motors, food products, kitchenware, decorative hardware, etc

Q Tell us about your association with Rajkot?

Our association with Rajkot is more than 50 years old. Established in 1979, Godson started manufacturing power shearing machines in Rajkot & Gujarat after Godrej in India. Godson is now one of the largest manufacturers of plate bending machines and section

bending machines in India with more than 1600 installations across world.

Q How do you compare Rajkot with some other key regions?

Rajkot is yet to become competitive and advanced. While it is a manufacturing hub for conventional machine tools, there are few manufacturers including Godson, who manufacture quality and advanced technological machines to compete with foreign suppliers.

Q Anything else?

Besides special Govt. polices, MNCs and PSUs are required to establish the original Rajkot value in the international market. 

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Land of business guts!

Without any MNC or large scale companies, MSMEs of Rajkot have contributed a lion's share in making Gujarat a major manufacturing destination for India and abroad as well, says **Ramesh Vora**, CMD, Robin Precision Products.

By Niranjan Mudholkar

Q What is your assessment of Rajkot's evolution as an important industrial city particularly in the last decade or so?

Since last 50 years, Rajkot is known as an industrial city. When agriculture was totally dependent on rainfall and electricity was not available, diesel engine was the only source to pump out water from wells. This need of the time encouraged Rajkot to produce Diesel Engines, Water Pump Sets and allied industries like foundry, forging, machine tools, etc. Such industries were started by hard-working and talented people of Rajkot. Entrepreneurial talent and business guts are in the blood of its people.

When liberalisation and globalisation started in early 90s, major auto giants came to India. At that time, comparatively better quality

"Day by day, improving technology, cheaper labour, skilled manpower and 'kotha sooz' of the local people made Rajkot an important industrial city of Gujarat."

at very attractive price made Rajkot famous for auto-parts production. Day by day, improving technology, cheaper labour, skilled manpower and 'kotha sooz' of the local people made Rajkot an important industrial city of Gujarat. Thus, without any MNC or large scale companies, MSMEs of Rajkot have contributed a lion's share in making Gujarat a major manufacturing destination for India and abroad as well.

Q How does Rajkot fare when it comes to key industry requirements?

As Rajkot is situated at the centre of Saurashtra region of Gujarat, it cannot expect the same locational as well as infrastructural advantages that the Golden Corridor (Vapi to Vadodara) enjoys. So far key industry requirements are concerned, industrial policy of the State Government is encouraging and consistent power supply is ensured. But in the area of skilled manpower, water supply, infrastructure and connectivity – Rajkot is lagging behind. Though Rajkot is a peaceful and worth living city, it has locational disadvantages. No international airport, no air-connectivity except with Mumbai and Delhi. Water supply is poor and inconsistent, skilled manpower is not enough and infrastructure is not satisfactory. Such lack of facilities prevents highly skilled professionals to

come and settle in Rajkot.

Q Which are the key manufacturing sectors present in Rajkot?

Almost all kinds of engineering sectors are present in Rajkot. Agro sector (submersible pump, PVC pipe & cable, mini tractor, diesel engine), Auto sector (auto-parts, bearings), Machine Tools, Investment Casting, Forging, Kitchenware, Silver & Gold Jewellery, etc. are key manufacturing sectors present in Rajkot. Real Estate has also played vital role in the growth of Rajkot.

Q Tell us about your association with Rajkot?

Since last 35 years, I am associated with Rajkot. I pursued BE Mech. in 1979 and joined a cutting tool manufacturing company as a partner. In 1983, I started my own HSS Metal Cutting Tools manufacturing unit – Standard Tools. Initially it was a period of struggling and learning for me. At that time, I was jack of all trades – admin, production, sales & mktg. Gradually, I was able to stand on my own feet. During the course, I tried my hands with textile machinery spindles and parts manufacturing. Simultaneously, I remained socially connected with Lions Club, Kutch-Sau. Productivity Council (KSPC), District Vigilance Committee, Telephone Advisory Committee,

GIDC Lodhika Indl. Assn. (GLIA), etc. Recently, I have been nominated as Advisory Member of IIIC (Industry Institute Interaction Cell) in Saurashtra University. Today, we are into manufacturing of all types of Solid carbide Cutting Tools, CNC Toolings and have recently started Precision Industrial Gears.

“Performance related feedback from Rajkot based customers help us to improve our product quality. So, we are quite happy with Rajkot city without any regrets.”

Q How do you compare Rajkot with some of the other key regions?

Let me tell you, our Company is a pioneer in Gujarat in manufacturing of Solid Carbide Tools. For a small scale industry like us, situated at Rajkot, to penetrate the market with the new brand – BLOOD® against all odds, was a hard nut to crack. Since we were the first player in this segment, no experienced and skilled manpower/ professionals were available in Rajkot. We had to hire them from Bangalore, Pune, Kolkata, etc. offering higher salaries and attractive packages. In such circumstances, Rajkot is not the right place for manufacturing Solid Carbide Tools compared to other regions like Bangalore, Mumbai, Pune, etc.

But each scale – large or small



has its own merits and demerits. Family-held SSI is very flexible to meet customers' requirement of Special Toolings in small batch quantity. Also, here decision making is fast resulting in shortest possible delivery time. This is not possible in case of large scale industries. Secondly, Rajkot city itself is a big consumer of our tools. Performance related feedback from Rajkot based customers help us to improve our product quality. So, we are quite happy with Rajkot city without any regrets. 



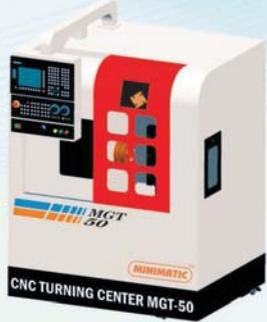
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Enemies at the gates!

The fact is that growth is coming to the manufacturing sector. But this round of growth won't be decided on volumes and prices; according to manufacturing CEOs, it will be fought – and won – on the battle ground of innovation.

By Doug Gates

If you aren't worried about your organisation's ability to compete, you probably should be. The fact is that – irrespective of the market disruptions of the summer – growth is coming to the manufacturing sector. But this round of growth won't be decided on volumes and prices; according to manufacturing CEOs, it will be fought – and won – on the battle ground of innovation. Is your organisation making the right investments to win in this constantly-changing competitive environment?

Growth and competition

Notwithstanding the gloomy manufacturing data out of China this summer, most manufacturers believe they are entering into a new era of growth. According to KPMG International's Global CEO Survey, 62 percent of manufacturing CEOs reported increased confidence in their organisation's growth potential over the next three years. More than two-thirds also said they were bullish on the global economy.

Yet most recognise that they will need to compete fiercely to secure sustainable and profitable growth; every market, every customer and every dollar will be closely contested. Indeed, 70 percent of manufacturing

CEOs voiced some level of concern about their competitors' ability to steal away market-share. More than a third of those respondents admitted being extremely concerned about the level of competition they expect to face in the near future.

Innovation becomes an imperative

What's really worrying manufacturing CEOs, however, is the possibility that they may be losing the innovation race – that their competitors may be innovating faster, more efficiently or more effectively than they are. Almost two-thirds of the manufacturing CEOs in our survey said they were concerned

that their products and services may not be relevant three years from now. Almost three-quarters said they were worried that their organisation wasn't doing enough to keep current with new technologies.

There are certainly plenty of examples of manufacturing organisations that failed to recognise a new opportunity until it was too late. Some of the large aerospace OEMs were caught off-guard by the success of the 'garage' drone market; many PC manufacturers missed the opportunity to adapt to (and possibly dominate) mobile; the bottom-line impact of car-sharing schemes has surprised many auto manufacturers. Technology is

"Manufacturing CEOs know they need to drive innovation in order to win in the new competitive environment; what they don't know is whether they are innovating faster and better than their competitors."



Top priorities for Manufacturing CEOs over the next 3 years

- 35% Fostering innovation
- 33% Developing new growth strategies
- 29% Stronger Client focus
- 29% Reducing cost structure
- 28% Greater speed-to-market.

What is worrying manufacturing executives?

- 75% New entrants disrupting the business model
- 73% Keeping current with new technologies
- 70% Competitors' ability to take business away
- 65% Product/service relevance 3 years from now.

evolving rapidly. Those that are not able to keep pace will quickly be left behind.

Not surprisingly, manufacturing CEOs are now keenly focused on innovation. In fact, on the list of strategic priorities for the next three years, 'fostering innovation' was cited most frequently as a top priority, followed closely by 'developing new growth strategies'. And almost half of all manufacturing respondents said they planned to devote 'significant' capital towards new product development over the next three years.

A broader understanding of innovation

The fact that innovation is moving up the agenda and gaining increased investment is a strong signal that manufacturers are starting to act on their fears. But it will take more than increased capital and enthusiastic leadership to create innovative manufacturers. It will also require CEOs and their management teams to think more holistically and with a longer term view about innovation.

When we work with manufacturing CEOs, we often break down 'innovation' into three main areas: product innovation, manufacturing innovation and business model innovation. Most CEOs intrinsically understand the need for product innovation. If customer demand isn't driving product innovation, the need to compete for sales almost certainly is.

Many manufacturing CEOs are also fairly aware of the need to innovate in their manufacturing process. As our Global Manufacturing Outlook 2015 clearly illustrated, manufacturers are increasingly adopting advanced manufacturing techniques and piloting new manufacturing technologies (everything from 3D printing and nanotechnology through to robotics and predictive analytics) in order to gain a competi-

"The fact is that traditional business models are coming under increasing pressure as new and more nimble competitors take advantage of their agility to create and dominate new market segments and sales channels."



On the list of strategic priorities for the next three years, 'fostering innovation' was cited most frequently as a top priority.

tive edge. Many are already reaping improvements in speed, cost and productivity as a result.

Probably the most difficult type of innovation for manufacturing CEOs, however, will be in catalysing business model innovation. The fact is that traditional business models are coming under increasing pressure as new and more nimble competitors take advantage of their agility to create and dominate new market segments and sales channels. Most CEOs know they can't stand still and survive, yet few know how to move ahead or where to place their bets. New opportunities abound for those CEOs who can push their organisations to take a fresh, non-traditional view of markets, products and services.

Taking the right steps

Yes, there will be challenges. And creating a sustainable approach to innovation will take time, experience and practice. But our experience working with leading manufacturers suggests that there are often five key areas that the more innovative manufacturers recognise as being fundamental to success.

1 Running at multiple speeds: While most capital investment plans tend to span 5-year periods, technology is evolving at a much more rapid pace. Leading manufacturers are finding the right balance between long-term planning and creating the flexibility to adopt, develop and adapt new technologies as they emerge. For companies to thrive in this new environment, they must solve what we call in our recent publication "the clockspeed dilemma". This means having to manage separate production cycles that operate at different paces: the IT hardware and software develop-

ment cycle and the traditional auto manufacturer's innovation cycle. Only if they work out how to best synchronise their speed of innovation to the digitalized world, will they be able to keep pace with, or even surpass, those competitors that will no longer be strangers to the industry in future.

2 Recognising the inflection point: Most innovation happens in small, incremental steps. And so it's easy to miss



the point where an emerging trend becomes a breakthrough technology. That is why manufacturing CEOs are now striving to figure out how to stay on top of developments – both in their immediate peer group and in other industry sectors – and how to assess and monitor threats and opportunities as they emerge.

3 *Creating an innovative culture:* Innovation shouldn't be isolated to a research lab or the IT team. Top innovators know that it must be woven into the fabric of the organisation – from the manufacturing floor to the boardroom. Instilling a culture of innovation means encouraging employees to try new things (and – if necessary – fail and try again), a concept that is largely foreign to manufacturing DNA.

4 *Adapting the business model:* Whether to defend against a new competitor, respond to a growing customer demand or to take advantage of emerging trends, leading manufacturers are already adapting their existing business models and creating new ones. Many are now focusing on overcoming the challenges related to managing, maintaining and optimising multiple business models simultaneously without disrupting the core business.

5 *Having a long-term vision:* Nobody knows exactly how technology will evolve over the next 10 years. But leading manufacturers and their executive teams are, none-the-less, developing a clear vision of how their innovation investments align to their long-term business objectives. And they are clearly articulating that vision to employees, suppliers, customer and shareholders to drive real competitive advantage from their innovation investments.

The transformation story

The manufacturing world is getting more complex every day. Companies are changing their business models. Their products are becoming more global in nature. Demographic shifts are driving demand in new markets in sharp contrast to stagnation or decline in mature markets. The sharing of data and information by suppliers and customers is making enormous differences in managing supply and demand more quickly and accurately.

We are seeing good examples of where data can be used effectively and also seeing examples of the best companies managing their global visibility on forecasts and profitability in a new way. Integrated business planning is an imperative not an option to running businesses globally, giving business leaders strong insights into all of their regions and products.

“When it comes to portfolio shaping most companies are challenging their profitability and long-term positioning for each of their business units or products, and taking action.”

The future-forward companies are already starting to manage their global forecasts across all geographies, tastes, and preferences using real-time virtual ‘control towers.’ Visibility across their own enterprises and deep into their supply chain will be critical for new product introductions or major project-based business events, making sure all of the parts and materials are coming in on time and on budget.

When it comes to portfolio shaping most companies are challenging their profitability and long-term positioning for each of their business units or products, and taking action. They can't drive profitability only with cost take-outs anymore; instead they are focusing on their core businesses or reinventing themselves altogether. There is plenty of rationale for portfolio shaping: (i) generating a war chest for other transformational agenda items, (ii) laser-focusing on profitability by business segment, (iii) addressing new market opportunities and (iv) ‘re-branding’ as a different company.

Companies are also looking at the impact of the sharing economy and Internet of Things (IoT) and asking themselves where the boundaries should be, where should they play? An example from the Automotive Sector: some automakers are well down the path of reshaping their portfolios so that they are not limited to the ‘OEM’ moniker, but instead view themselves as ‘Mobility companies,’ engaging in vehicle sharing, parking, and valet services in addition to traditional auto manufacturing. A notable example of this is GM's recent investment in Lyft, the global ride-hailing competitor to Uber.

Fully leveraging IoT will affect nearly every facet of a company's business from strategies that redefine markets, products and services to ecosystems that support enhanced visibility, control and collaboration with partners and suppliers. However, IoT is not without its challenges. It is causing risk and data protection issues that had not existed before, or at least not to this scale. In this changing face of technology, cybersecurity risk, legal risk, and privacy risk are all inflated when connecting with partners, suppliers and customers more closely. It also takes considerable investment and a commitment to a long and broad view of market opportunities – sometimes it is an investment that companies may not be willing to make. 



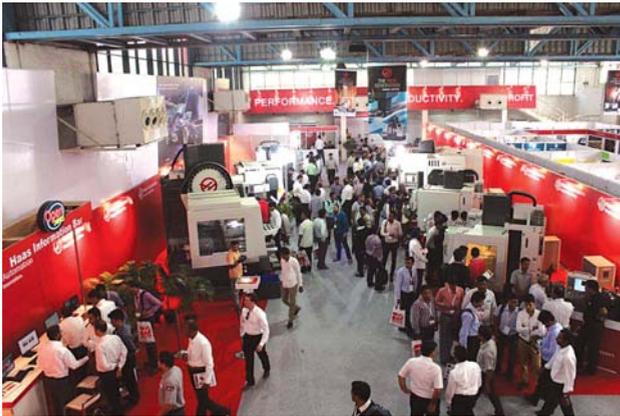
About the author

Doug has over 35 years of experience both in consulting and industry positions. He is currently the Global Chairman of KPMG's Industrial Manufacturing Industry Sector which includes Aerospace & Defense, Engineering & Industrial Products, Metals and Conglomerates. In addition, Doug leads KPMG's Global Aerospace & Defense practice.



Performance, Productivity, Profit'

The latest edition of the popular HaasTec show held at Auto Cluster Exhibition grounds in Chinchwad was an action packed event with live demos.



HaasTecs are synonymous with CNC machining technology showcasing the very best and latest in technology for milling, turning, measuring and more helping CNC machine shops the world over become improve performance, productivity and profit !!!

The recently concluded HaasTec Pune from December 9-12, 2015, was a grand event managed by the local Haas Factory Outlet (HFO) – A Division of CNC Servicing & Solutions (A Phillipscorp Group Company). "Pune is home to a large number of industries, the most popular ones being Automotive and General Engineering, therefore it was a perfect fit to host this year's HaasTec here," said Nikhil Modi, Marketing Coordinator for the local HFO.

With over 3000 attendees over four days, this latest edition of the popular HaasTec show held at Auto Cluster Exhibition grounds in Chinchwad was an action packed event with live demos on the eight Haas machines on display. Visitors from Kolhapur, Aurangabad, Nasik, Mumbai and of course Pune and adjoining areas came in large numbers with 3096 attendees from over 1600 companies directly or indirectly connected with CNC machining, according to company officials. "On behalf of the Haas team, I would like to thank all our customers and partners who attended our HaasTec in huge numbers proving once again that the focused format of the HaasTec shows provide the best value in terms of sharing knowledge, ideas and best practices for the CNC machine shop fraternity," said Terrence Miranda, Managing Director, Haas Factory Outlet Mumbai. HaasTec

"The focused format of the HaasTec shows provide the best value in terms of sharing knowledge, ideas and best practices for the CNC machine shop fraternity."

Terrence Miranda,
Managing Director, Haas
Factory Outlet Mumbai.

included machine demonstrations, extensive technical tours displaying a Haas VF-2 showcased in an open condition and live floor presentations of various productivity options such as through spindle coolant, probing systems and the new bar-feeder, all for the benefit of its customers to truly see what makes Haas unique. The UMC-750 Universal 5 axis Machining Centre, the large, powerful VF-7/50 and the compact, flexible ST-10Y, Y Axis turning center stole the show featuring some aggressive cutting parameters and innovative machining strategies. A full range of Haas spindles and rotary products on display and a Haas Info Bar completed the round up.

With 15 exhibitors displaying their latest products and technical experts in attendance from major Tooling, Workholding, Accessories, CAD/CAM, Measurement and Probing manufacturers the Pune HaasTec truly lived to its theme: 'Performance, Productivity, Profit'.

Customers visiting the event were able to discuss their queries with experts from Haas Automation Inc USA - Chris McHugh – Business Manager & Ernesto Flores – Product Specialist. HaasTec Pune 2015 received rave reviews from visitors and exhibitor vendor partners alike. The Delcam spokesperson had this to say: "The event is unique in the sense that our customers

and prospects get to see solutions here, rather than just products". The Renishaw spokesperson described the event as, "A great platform to display our technology." The feedback from the event was extremely positive and this naturally poses an even greater challenge for the Haas team already planning the next HaasTec in Bangalore in February 2016, as the bar has been set very high indeed. 



The strong and silent type!

In an industry where making a lot of noise is expected, some companies make a living by keeping very quiet.

The motorsport and high-performance car sectors are dominated by well-known, high-profile organisations, some of which have been around for as long as the automobile itself. However, in an industry where making a lot of noise is expected, some companies make a living by keeping very quiet – such as Italian wheel manufacturer and loyal Haas customer, 2Elle.

Even if you're a big fan of high-performance cars and motorsport, chances are you have never heard of wheel manufacturer and Haas customer 2Elle Engineering, based a stone's throw from Venice, Italy.

"Our customers are big name companies," says 2Elle founder and owner Luigi Lucaora. "For example: BMW, Mercedes, Audi, German tuning house Brabus, and several race teams in different categories, from F1 to Paris Dakar. But, you



First and foremost, we develop new materials, new technology – such as hybrids, and lighter, stronger wheel designs for the fastest cars in the world."

Luigi Lucaora,
2Elle founder and owner



Haas customer 2Elle Engineering is based in Italy and supplies high performance wheels for motor companies involved in F1 to Paris Dakar

won't see the 'two L' name on any of our products. We like to keep our brand below the radar, so we can work for all the big marques without compromise. We supply some of the best high-performance wheels in the world, and almost no one except the customer knows they come from here."

Lucaora is at pains to stress that despite its low profile, 2Elle is much more than a busy CNC machine shop. "I spent eighteen years as an engineer in the industry," he says, "so first and foremost, we develop new materials, new technology – such as hybrids, and lighter, stronger wheel designs for the fastest cars in the world."

Before the company moved to its current premises in 2008, 2Elle didn't make anything in-house. "We only did the engineering, development, and quality control," explains Lucaora. "We subcontracted machining for two years, and then, when we invested in our first CNC machine tools, we decided immediately to start up with Haas CNC machines. Our subcontractor already used them and we'd heard many good things. We bought three Haas CNC lathes – two ST 40s, an ST-30, and a Haas vertical machining center, a VM-6."

So, choice of machine tools aside, how does a company like 2Elle – an engineering start-up in a very competitive global niche – get a foothold and thrive in the midst of one of the most severe financial and economic crises in history?

"It was one particular order that really kick-started the company," Lucaora reveals. "An important German tuning



company offered me a large contract if I promised to meet certain delivery criteria. I went to the bank with their letter of intent, and that was enough of a business plan for them to lend us the money to move to this new factory. Since then, we have grown at least twenty percent each year. Last year, we managed forty percent! In just seven years, we've come from nothing to a turnover of around five million Euros!"

The 2Elle factory may appear cavernous, but the empty space soon will be filled, as deliveries of blank wheels arrive from the company's forging supplier in the U.S. "We receive three or four shipping containers every month. In total, we currently produce between 1000 and 1200 finished units a month."

When it comes to developing new designs and new materials, Lucaora's technical background and experience enables the company to compete with the very best wheel manufac-



2Elle currently produce between 1000 and 1200 finished units a month

turers. "We do a lot of laboratory tests and comparison tests," he says. "We also look at how much the tyre and wheel can be distressed when we do finite element analysis, and we also fit tyres to the wheels and do practical tests to understand better how the wheel will behave in real-life."



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CASE STUDY

The company's Haas VM-6 operates for at least two and a half shifts a day, mostly manned. "During the day, we load the machine with just one wheel at a time," says Lucaora. "But, at 10 p.m., we load two wheels and set the machine working overnight, 'til 4 a.m. The next shift comes in and unloads the parts at 6 a.m."

The Haas VM-6 is a 40-taper mould-making machine with 12,000-rpm spindle and travels of 1626 x 813 x 762 mm. The Haas-built 12,000-rpm inline direct-drive spindle, combined with the Haas high-speed control with full look-ahead, provides the accuracy and fine surface finishes mould makers and other high-precision industries demand.

"The shapes we're machining are similar to moulds, so the VM-6's high-speed spindle and feeds are perfect," says Lucaora. "The table is T-slotted in X and Y, which makes it easy to secure our parts. We're also buying a smaller Haas VM-3 mould-making machine, for some new hybrid wheel projects we're working on. These wheels will be made using alloy hubs coupled to carbon fibre rims, so the engineering and machining challenges will be interesting."

With his growing fleet, Lucaora has also noticed a few other advantages that come with investing in Haas CNC machine tools. "The machines are very easy for the operators to programme and use," he says. "This is important. They have to work on different machines, so they need to be comfortable with the control."

"Not only are the Haas machines easy to use, but we have also noticed that, in comparison with other machines – and we have several types in our factory – the service and support



2Elle work to develop new materials, new technology – such as hybrids, and lighter, stronger wheel designs for the fastest cars in the world

"The machines are very easy for the operators to programme and use," he says. "This is important. They have to work on different machines, so they need to be comfortable with the control."

are far superior. The Haas Factory Outlet in Milan, operated by Celeada, supplies the machines, and both the commercial and also the technical service are extremely quick and efficient. I can't afford for any of the machines to stop for any reason. We have a full order book for the next year, so if I stop one or two machines for a month, it is a nightmare!"

Lucaora makes regular trips to the company's forgings supplier, in the U.S. "I was there on a visit when it was Haas' 30-year anniversary celebration," he says, "so I dropped by the factory and had a guided tour of the facility. I was very impressed with the company's organisation and quality. They use hundreds of their own machines to make new Haas machines, in a very high-volume production environment."

If your plan is to supply the world's best high-performance automotive companies, knowing your CNC machine tools are up to the job is essential. "I think the fact that Haas use their own machines says a lot about their belief in the product." 



The company's Haas VM-6 operates for at least two and a half shifts a day, mostly manned

Source: Haas

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In Fantastic Form!

South & South East Asia's leading Metal Forming Machine Tool Exhibition 'IMTEX FORMING 2016 & Tooltech 2016' presented by IMTMA is all set to create new standards

The Indian Machine Tool Manufacturers' Association (IMTMA) is organising its flagship IMTEX FORMING 2016 exhibition at the Bangalore International Exhibition Centre (BIEC) from 21 to 26 January 2016 in Bangalore. Tooltech 2016, a concurrent event of dies & moulds, forming tools, machine tool accessories, metrology and CAD/CAM will be held simultaneously.

IMTEX FORMING 2016 & Tooltech 2016 will be a significant exhibition for South East Asia with the presence of leading national and international manufacturing firms from the metal forming sector. IMTEX FORMING is expected to be a greatly expanded fair which would feature all aspects of forming technologies, predominantly sheet metal form-



gies displayed this time around at IMTEX FORMING include servo presses, hydroforming, plasma cutting, high power fibre laser cutting, profile bending machines, robotic welding and service, and welding technologies."

Concurring with the President's statement, V. Anbu, Director General, IMTMA said, "World class technology and knowledge sharing will be on display at IMTEX FORMING 2016. By participating in the show, exhibitors will gain an insight on the latest technological requirements and get an opportunity to cement business relationships. This will be made possible by the high level delegations that are expected to visit from key private and public sector undertakings. The event will help policymakers to prepare a roadmap for the industry and enable them to take informed decisions."

"The new technologies displayed this time around at IMTEX FORMING include servo presses, hydroforming, plasma cutting, high power fibre laser cutting, profile bending machines, robotic welding and service, and welding technologies."

P.G. Jadeja,
President, IMTMA.

"World class technology and knowledge sharing will be on display at IMTEX FORMING 2016. By participating in the show, exhibitors will gain an insight on the latest technological requirements and get an opportunity to cement business relationships."

V. Anbu,
Director General, IMTMA

ing. This exclusive business-to-business event will attract Indian and foreign exhibitors who would offer a range of technologically innovative manufacturing and engineering products and applications. Trade delegations comprising of decision makers from industries such as aerospace, automobiles, capital goods, defence, electrical and electronics, railways, telecom equipment, white and brown goods, and many more are expected to visit the show in the span of 6 days to witness the technology solutions and innovations. The delegates will find solutions for their manufacturing activities at IMTEX FORMING 2016 which are vital for them to keep up with quality, productivity and competition.

Sharing his views on the technology display at IMTEX FORMING 2016, P.G. Jadeja, President, IMTMA said, "The new technolo-

Key Highlights

Over 400 exhibitors participating from 23 countries including India.

Group participation from four countries: China, Germany, Japan and Taiwan.

Display of over 500 live machines.

Display of high power fibre laser cutting machines.

Exhibition net space covering about 30,000 sq m in three halls.

Expected visitor footfall of about 50,000.

For the first time, Japan is participating with a country pavilion. IMTMA is expecting large number of delegates from a range of manufacturing sectors both public and private to attend the exhibition. We see that the visitor turnout would be phenomenal leading to a higher business generation.

As in earlier years added attractions will form part of the show. These include: International Seminar on Forming Technology (a seminar on the latest research and trends in forming technology) one day prior to IMTEX FORMING on 20 January 2016, i2 Pavilion (Industry – Institution Pavilion, a forum for academic and research and development institutions to showcase their activities in manufacturing and engineering fields), and Connect (a programme for imparting knowledge on the machine tool industry for young engineers). 

An eye opener for new technology

The best of companies come to demonstrate their latest tech accomplishments at Imtex, says **Siddhu Jolad**, Director, Radcam Technologies Pvt Ltd

What are your expectations from Imtex Forming 2016?

IMTEX has always been an eye opener for new technology from Indian companies. The best of companies come here to demonstrate their latest tech accomplishments. With a fair amount of international presence, IMTEX makes it even more exciting as you can readily compare both of them. We have been part of IMTEX forming for long now and we expect a good number of quality crowd turnout this time as well.



lot of good work happening around in last few years in terms of laser technology and robotic usage. I can't wait to see what Germans and Chinese companies are going to showcase.

What will be the highlight of your participation at Imtex Forming 2016?

We are showcasing Radan software's new release of 2016 in the show. Radan software has grown over the years be it accepting raster images to make drawings or accepting latest file formats from other platforms. A dedicated version is now available for 64 bit installation. Radbend now supports automatic tool changer in CNC press brakes. Radan has always been pioneer to run CNC punching, laser and plasma machines since 1976. Today its rich history of four decades makes it more experienced and customer input based than any other in the market. Radan was earlier limited only to 2D cutting but over the past few years as the trend was changing Radan shifted its focus to multi axis lasers and tube cutting lasers.

Will positive sentiments get reflected at the show?

If not reflected in IMTEX then where? This is the biggest show in India for forming and it has to happen here if all it is happening.

What kind of technology trends can we expect?

Indian customer has always been very demanding and diversified over the last two decades. There has been quite a

DOUBLE COLUMN, 3 AXES CNC PLANO MILLER

- Table: 6m x 1.5m
- Admit Between Columns: 2m
- X Axis Stroke: 6.2m
- Y Axis Stroke: 2m
- Z Axis Stroke: 1m
- Spindle Power: 18kW
- Positional Accuracy: +/- 10Microns/300mm
- Siemens Sinumerik 828D CNC System
- Screw type chip conveyors on either side with belt type chip conveyor, integrated with coolant & filtration system
- Rigid box type ram head for U drilling upto Ø50 mm, in combination with high pressure, thru coolant system, apart from milling, boring, facing operations



HAND OPERATED, FLANGE RE-SURFACER

- All aluminium body weight: 7kgs
- Self centering jaws to clamp ID
- Clamping range: dia 1" to 6"
- Facing range: 1" to 12"
- 2 gear boxes - for coarse & fine finish feed
- Hand powered rotary movement to the arm, which also translates into cross feed
- Smooth, friction-free movement through bearings, LM guides & optional ball screws
- Fire hazard-free • No power required • Ideal for Inflammable industries like refineries, oil tankers, heat exchangers, Ship building
- Simple to maintain & operate, highly affordable.



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OUR OTHER PRODUCTS: Metal Cutting SPMs, Automated Welding Solution, In-situ Flange Facers, Plano Milling Conversion Kit, Tool Post Grinder, Belt Polishing Attachment For Lathe & VTL, Right Angle Attachment, Universal Milling Head, Automatic Back Spot Facing Tool, Counter Bore Tool, Hole Deburring Tool

Technology Shift

The metal forming sector will witness the technology shifts and high growth in the next five years with the small and unorganised sector importing standalone machines and large/OEM buyers opting for new technologies, says **Swapnil Apte**, General Manager- Sales & Admin, Danobat Grupo Machine Tools (I) Pvt. Ltd.

What are your expectations from Imtex Forming 2016?

The metal forming sector will witness the technology shifts and high growth in the next five years with the small and unorganised sector importing standalone machines and large/OEM buyers opting for new technologies such as machines equipped with auto loading unloading and combination machines to avoid shifting of components from one application to another without losing time, accuracy and consistency at higher productivity level. We would like to reach all segments with exposure to our high class automated solutions.

Do you see the positive market sentiments getting reflected at the show?

There are several sectors which have an impact on growth in the demand for metal forming machinery which needs to be targeted with proper attention and for that we take this opportunity to showcase our sheet metal forming machines in Indian Market and look forward to introduce our technology at International platform through the exhibition organised by IMTMA named as 'Forming Machine Tools Show- IMTEX2016'. During the show we will have presence of foreign experts for direct interaction with user industry for turnkey solutions.

What kind of technological trends can we expect at this Imtex Forming?

DANOBATGROUP is showcasing a wide range of machines in sheet metal processing technology. Apart from stand alone machines such as Fiber Laser Cutting Machines, Turret Punch Presses, Automatic Panel Benders, Automatic coil feeder laser blanking machines, Punch + Shear Combination technology, Punch + Laser Combination Technology and automated lines; we are introducing a new laser cutting machine based on automatic coil feeder laser blanking system as well as ad-hoc customised solutions for various manufacturing needs.



"Our aim is to reach maximum target sector from user industry under one platform of IMTEX. We do not want only to showcase our product range, but also inform to user industry about local presence and services available through Indian team on world class products."

Our aim is to reach maximum target sector from user industry under one platform of IMTEX. We do not want only to showcase our product range, but also inform to user industry about local presence and services available through Indian team on world class products.

What will be the highlight of your participation at Imtex Forming 2016? Are you going to launch any new product at Imtex Forming?

IMTEX is an international platform for all manufacturers to present their world class products, technologies and also the best opportunity for direct interaction with actual users, customers. Our intention is to support important growing sectors in India such as furniture Industry, doors & windows, electrical control panels, sound proof enclosures for

generators, agricultural machinery, consumer durables, silos manufacturers etc. and service them with world class quality products and world class after sales service and grow with the Industry.

By taking this opportunity, we are introducing a new laser cutting machine based on automatic coil feeder laser blanking system.

The DANOBAT Sheet Metal division expands its fiber laser cutting product line through the introduction of coil fed systems, whose primary goal is to achieve significant savings in the materials to be processed and an increase in productivity as a result of reduced machine downtimes. DANOBAT remains committed to developing unique and innovative solutions in order to meet its customer's specific needs. A flexible fiber laser cutting system, auto coil feeder instead of single sheet supply, has been developed.

This highly productive machine takes full advantage of all the benefits offered by fiber laser cutting technology (efficiency, speed, versatility, minimal maintenance, etc.), as well as the benefits arising from the use of metal coils (up to 15% savings in materials cost and improved

sheet utilisation).

Product

Customisation: The system is comprised of a sheet feeding line and a perfectly integrated laser cutting module that work together for continuous operation. The feeding line is equipped with an uncoiler which unrolls the coil, a straightener which removes the sheet's contours and internal stresses, and a looping pit which stores the straightened material for processing. The laser consists of a fiber laser generator and a cutting head which moves in sync with the sheet to obtain the desired geometries. The exit of the cut pieces can be automated using different systems—robots, stackers, etc. depending on the customer's needs.



- 01. Coil loading car
- 02. Uncoiler
- 03. Straightener-leveller
- 04. Laser cutting unit
- 05. Unloading position

15%
Savings in material cost and improved sheet utilisation

dimension of technology exchange and transfer through collaborations? What is your opinion?

Exhibitions like IMTEX have an open forum to discuss latest market trends, customer needs, product demands and also, to demonstrate world class latest technologies which ensures high productivity with minimum consumption and obviously & very importantly- 'the correct product price' due to competition.

Besides being buyer-seller platforms, key trade shows like Imtex Forming have also acquired a new

MURATEC Solutions for Sheet Metal Punching

Muratec, world's first manufacturer of servo driven ram turret punch press introduces leading innovation in sheet metal industry MOTORUM 3048TG. MOTORUM series does more than to achieve high reliability and high speed processing. This machine enhances overall productivity through process integration of bending, forming, tapping and other processes, together with reduction of time needed to set-up and program.

MOTORUM

MOTORUM series punch presses are available in various models to meet diversified needs of sheet metal industry. These machines are worldwide popular for its design features, rigidity, high speed productivity, environment friendly design features of minimum power consumption, low noise and high profitability to customers. Motorum series machines have more than 1,350 installations worldwide. MURATEC the leading name in automation is fully prepared to offer sheet metal automation solutions to meet the growing production demands in India.

Muratec Ball Screw Press Brake BB4013 is driven by AC servo motor & ball screw mechanism.

The New 300kN Solution Latest Technology from the Inventor of the Electric Turret Punch Press



Ball Screw Press Brake
BB 4013

○ 6 Axis Machine



CNC Servo Motor Driven Ram Turret Punch Press
M3048 TG

- High Accuracy
- High Speed
- Machine with Twin Ball Screw



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MACHINE TOOLS DIVISION
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Eminent exhibition

Beyond the conversions, which is by it means a crucial goal for any of the exhibitor; we are aiming to harness this very platform to provide our visitors with firsthand experience from our laser systems, says **Maulik Patel**, Executive Director, Sahajanand Laser Technology Limited.

What are your expectations from Imtex Forming 2016?

IMTEX is considered to be one of the most eminent exhibitions in metal forming industry. It extends opportunities in abundance, as it captures a huge attention in machine tools and technology community. So what we are looking forward is to make a difference in the mind of visitors. Beyond the conversions, which is by it means a crucial goal for any of the exhibitor; we are aiming to harness this very platform to provide our visitors with firsthand experience from our laser systems. We believe that it's the experience which creates an image; hence it will be desired to have sufficient assistance from IMTEX while the exhibition is going on. When we talk about the visitors, it spans in great diversity; they are from many states of India as well as from overseas, thus IMTEX enable us to manifest our best in line laser machines to the relevant and meaningful mass. This way we can pass on our image which eventually turns out to be vital while equating potential partnerships.

Do you see the positive market sentiments getting reflected at the show?

The show brings immense zeal in the metal forming community each time when it is about to inaugurate. The metal forming sector includes diverse industries and therefore exhibition has always been an access point of knowledge from where the community members can learn about latest technology and the practices. Now getting back to the sentiments of the market, regarding the show, it is absolutely positive. The manufacturers like us use to get on the toes since couple of months ago from the judgment day. All we really want is to get presented well in front of visitors. IMTEX is more like an opportunity to make an image rather than just improving figures. Being an Indian company, we aim to communicate about our self achieved inventiveness and how we have channelized that trait into the betterment



"Being an Indian company, we aim to communicate about our self achieved inventiveness and how we have channelized that trait into the betterment of the industry."

of the industry.

What kind of technological trends can we expect at this Imtex Forming?

IMTEX forming holds the remarkable importance in the metal forming sector and each year it turns out to be one of the biggest gathering of the people connected with technological sectors. That reflects the phenomenal potentiality for any company deals with metal forming tools and systems. So, at this exhibition, many of them tend to schedule to launch the latest offerings and if that is not the case, at least they prepare to portray their best offerings to utilize this opportunity optimally.

What will be the highlight of your participation at Imtex Forming 2016? Are you going to launch any new product at Imtex Forming? Please share a write-up

(150 words) and a high-res image with us.

The IMTEX exhibition has always been an incredible platform for us to showcase our innovative laser solutions to the public. We tend to unveil new laser machines each year we participate in IMTEX exhibition and the momentum is going to remain intact this very year as well. For this time, we have emphasized on segment oriented enhancement and try to deliver integration with cutting edge system and latest features at each level. To be specific, material handling and storage solutions are being added keeping sheet metal industry in account. To enhance the productivity and reducing human efforts are some elements we have focused more for latest laser systems. Our aim is to extend our offering, to get into various categories which can be suitable to larger clientele base. On the other hand, high caliber machines are made even flexible to operate in any sort of set up. To name the machine, AxiFiber laser system we are about to introduce in IMTEX 2016, the machine boosts large format laser marking facility. Ultimately, what we have endeavored for this year is, to extend something which was



Sahajanand's production facility

long due desired from the laser machine user around the globe. We have determined to enhance those aspects, and marched into that direction. Thus, we are looking forward to meet the expectation of laser machine users.

Besides being buyer-seller platforms, key trade shows like Imtex Forming have also acquired a new dimension of technology exchange and transfer through collaborations? What is your opinion?

Exhibitions organised for mere sale purpose have become the matter of past. Nowadays, when we consider technology exhibitions, they weigh significant amount of responsibilities;

the responsibility to the participants, to the visitors and ultimately to the industry itself. People have realized the amazing outcomes of the platform, if it is harnessed accordingly. Nowadays, exhibitions like IMTEX have gone beyond the numbers and extend essential esthetics like awareness and education. It strengthens the industry in terms of spreading awareness across the globe and gathering the interest of the people. It enhance the practice inside the industry through the consistent education being shared in those events which assists many entrepreneurs to opt for more refined practices which directly influence their businesses.



Freewheels- oneway clutches / Holdbacks:

Transmit power in one direction only. Used as Overrunning, Indexing (feeding) backstopping clutch. Holdback having centrifugal lift off sprags are used where shaft runs at high speed.



Keyless Transmission Elements:

Shaft - hub has no keyway, minimising notch effect, most suitable for shaft hub connection. Wear free, perfect alignment, easily adjustable & economical.



Applicable
all over
Industries

Cam followers:



Tensioner Nuts & Bolts:

A simple mechanical element, economical comparatively to other way bolting and reusable – that offers a much better quality bolted joints / connections.



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sales@nmtgindia.com
Website : www.nmtgindia.com

Focus on technology



What are your expectations from Imtex Forming 2016?

As we all know, the Imtex exhibition is well known for the Indian Metal Forming industry. We have been in the same field since the last 20 years. The core value of the exhibition brings the gut feeling of key relations like JVs, technological sync and so on. Of course, what we are most hopeful is the valued customer data base and footfalls to enhance the industry.

Do you see the positive market sentiments getting reflected at the show?

Yes, of course as the Indian Economy and Government are opening the wings for every industry and every entrepreneur is excited to grab the opportunity. At the same time, there is also good scope of work in the international market. We feel the Indian industry is taking its steps towards world class products and at the show we are experiencing the same through live products and showcases.

What kind of technology trends can we expect at this Imtex Forming?

As it is a technical and technological exhibition, we are expecting latest trends in metal forming. We are looking forward to listen to international experts sharing their knowledge at the seminars on forming technologies. We also wish to see more and more live machines in action to get to know about new products, technology innovations and manufacturing solutions from across the continents.

What will be highlight of your participation at Imtex Forming 2016?

We will be putting up a CNC Plasma Cutting Machine and a CNC Press Brake. CNC Plasma Cutting Machine is a basic and essential need for profile cutting and mass production. In the conventional methods, lot of manpower was involved for

The platform which Imtex provides is an international platform for real time buyers and sellers with focus on technology performance, says **Jagdish Panchal**, Managing Director, Jekson Machinery Pvt. Ltd.

multiple operations. However, with this machine, accurate cutting can be obtained with less power consumption. For the steel industry, marking and cutting is also possible with the same machine.

CNC Press Brake is the heart of the sheet metal industry, which is used for folding and bending of the steel plates. Being an advanced technological machinery manufacturer, we produce this machine in a manner to get accurate bending with automated calculation of bending force and the desired spring back of the material. The Advanced controller contains its own library to create its programme data and at the same time we can see the same graphically. We welcome the participants and entrepreneurs to our booth to experience the same technology.

Are you Planning to make any specific company announcements at Imtex Forming 2016 (Partnerships, Appointments, tech centre, Expansions, JVs, Mergers & Acquisition, etc.,)? Please share the same with our readers.

We are going to introduce our highly accurate CNC Plasma technology and high pressure forming machine which are usually concentrated for Bending, Forming, Profile Cutting and moulding of the object at desired angular mode and also by seeing the offline calibration with different material.

We are also going to introduce automatic material utilisation software, which is useful for profile cutting and multiple job execution from a single profile according to BOM.

Besides being buyer-seller platforms, key trade shows like Imtex Forming have also acquired a new dimension of technology exchange and transfer through collaborations? What is your opinion?

The platform which Imtex provides is an international platform for real time buyers and sellers with focus on technology performance. We would also like to see some more world class exhibitions like Imtex being organized for technology collaboration and win-win merger and mass production MoUs, which will help many entrepreneurs grow speedily and also help to increase the economic growth of the nation.

Expectations are limitless!

Market views are most vital for any industry to grow; perhaps exhibitions are indeed the right place to understand it better, says **Muralidhar D**, Country Head – Lantek India

What are your expectations?

Lantek always makes its focus on trade fairs as a part of our strategy to consolidate and strengthen our leadership in the world market. IMTEX 2016 is significant for us to exhibit with our continuous presence. We expect good enquiries.



technological advancements in Cutting, Turret Punching, 5-Axis cutting and Integrated Management Solutions. We are also launching Lantek Masterlink solutions for small-time integration needs in Indian Sub-continent.

Do you see the positive market sentiments getting reflected at the show?

Market views are most vital for any industry to grow; perhaps exhibitions are indeed the right place to understand it better. Apparently I believe we will encounter some serious buyers. These exhibitions are the right platform to showcase our solutions and promote business.

Are you planning to make any specific company announcements at Imtex Forming 2016?

We see many of our European, American and Asian OEMs presence in IMTEX 2016. We had launched our new technical centers in New Delhi and Pune, to individually cater the needs of our local customers. Besides being buyer-seller platforms, have key trade shows like Imtex Forming also acquired a new dimension of technology exchange and transfer through collaborations? With international events of this type, expectations are limitless. Lantek not only confirms how solid the company is but also is making constant efforts to showcase our developments and innovation.

What will be the highlight of your participation at Imtex Forming 2016?

We demonstrate Lantek products and solutions with new

We Cover the Largest Range in Tapping Attachments Ranging from M2 to M200

CNC
Tap Chucks QCLK



Heavy Duty
Non Reversible
Taping Attachment



Tap Adaptors
QA-QASB



Non Reversible
Taping Attachment
QCSFL



Universal
Quick Change
Adaptors



HSK & VDI
Tooling



Polygon Tapers



CNC Tool
Holders



HR HRF Reversible
Taping Attachments



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Web : www.imiftoolsindia.com

Platform to exchange ideas and knowledge

Subramanya. K, Head - Marketing & Communications, Kabelschlepp India Pvt Ltd., is hoping for active participation from the visitors to encourage local manufacturers to produce quality products at this year's show.

What are your expectations from Imtex Forming 2016?

As a manufacturing company we are waiting for the feel good factor generated from the "Make in India" concept to be materialized into actions. These may include:

- Focus on Infrastructure development and maintenance of the existing ones.
- Announcement of reduction in taxes, reduced interest on borrowings, Sops and Incentives for local manufacturers.
- Attracting more local Investors
- More steps to encourage Training, R&D and Technological upgradation to compete with the global players and to produce quality goods of global standards.



"It is also a platform to exchange ideas and knowledge, a showcase to display new products, a conference to discuss current affairs, a place of study and also a common place where the who's who of various businesses are getting together."

The recent trends which are expected to be promoted in a bigger way are - implementation of SCADA (supervisory control and data acquisition), a system that operates with coded signals over communication channels so as to provide control of remote equipment (using typically one communication channel per remote station). This system will enhance the flexibility for integration of Data from Machines and ERP systems for analysis and decision making.

- 3D printing, also known as additive manufacturing (AM), refers to various processes used to synthesise a three-dimensional object. This will make the process of developing a prototype/model very quick and accurate and precise to the

specified dimension.

Do you see the positive market sentiments getting reflected at the show?

We can foresee and hope that the current positive sentiments are definitely going to reflect at the show, in the form of:

- more participation from local Small and Medium manufacturing Industries
- active participation from the visitors to encourage local manufacturers to produce quality products.

What kind of technological trends can we expect at this Imtex Forming?

EasyTrax	UNIFLEX Advanced	TKA Series
Extremely quick cable installation  ■ Very fast cable installation by simply drawing the cables into the carrier ■ Very high cavity utilization due to innovative forward flexing crossbar design ■ Reinforced sideband for added strength ■ Extensive long unsupported lengths ■ Very quiet – integrated noise dampening system ■ Allows for high travel speeds	Light, quiet all-rounder for wide range of applications  ■ Noise-optimized for quiet operation ■ Designs with inward or outward opening or non-opening crossbars available ■ Crossbars fast and easy to open due to ball joint hinge mechanism ■ Dividers movable or fixed in place ■ Long unsupported lengths ■ Various cavity partitioning options for the cables	Chip-tight right to the end  ■ Excellent cable protection also in the connection area ■ Chips and dirt resistant due to smooth surfaces ■ Extensive unsupported length ■ High torsional rigidity ■ Good inside to outer width ratio ■ TKA55: IP54 tested and attested (TÜV NORD)

nextgen carriers

What will be the highlight of your participation?

We have been participating in Imtex Forming as well as Machine Tool exhibitions from past several years and every year. We have plans to promote our USP "Customised" supply of Cable Drag Chains/Cable carriers with new variants of Uniflex Advanced and QuickTrack / EasyTrack and TKA Series chains.

We manufacture Telescopic Covers along with other Guideway protective systems like Way wipers, Link Apron covers and have plans to promote them in a bigger way compared to the previous years.

Besides being buyer-seller platforms, have key trade shows like Imtex Forming also acquired a new dimension of technology exchange and collaborations?

Yes, it is true. Nowadays, exhibitions are not only meant for buyer-seller interactions. It is also a platform to exchange ideas and knowledge, a showcase to display new products, a conference to discuss current affairs, a place of study and also a common place where the who's who of various businesses are getting together.

High expectations!

We are expecting a good positive movement in the industry and also a very high enquiry level, says **MK Narasinga Rao**, MD, LVD- Strippit India Pvt. Ltd.

What are your expectations from Imtex Forming 2016?

Our expectations are very high. We are expecting a good positive movement in the industry and also a very high enquiry level.

Do you see the positive sentiments getting reflected at the show?

Based on 2016-2017 IMTEX, yes we are hoping to live for the next two years and getting good business clients out of it.

What will be highlight of your participation?

Yes, our new product LYNX. The Lynx is a cost efficient fiber laser that provides dynamic, accurate thin sheet processing of traditional sheet metal materials with the added versatility to efficiently process metals such as copper and brass. The ideal machine to enter the world of fiber lasers! We will also be showing the PPEC Series, a comprehensive line of mid-range precision hydraulic press brakes with machines from 35 tons



in bend lengths up to 6100 mm working length. The PPEC combines a rugged, simple design and easy-to-use features in a value-minded machine. At Imtex LVD will demonstrate a PPEC-5 135 ton/3m. The compact, high-speed electric press brake Dyna-Press is perfect for bending small parts. Rapid acceleration and deceleration of the electrical servo-driven ram delivers bending speeds up to 25 mm per second.

The Dyna-Press series is available with 12 and 24 ton of bending force and a working length of 835 mm and 1250 mm. The 24 ton model will be present at Imtex.

Besides being buyer-seller platforms, have key trade shows like Imtex Forming also acquired a new dimension of technology exchange and collaborations?

Yes, of course, it is a very good platform for technology. We can meet many new people and share as well as gain good knowledge besides building new relationships as well.

FILMATIC TYPE HYDRODYNAMIC SPINDLE

Available Size

16x6
16x8
20x10
24x12
24x20

HIGH PRECISION & RELIABLE CENTRELESS GRINDING MACHINE



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In-Situ, Hand Driven, Portable Flange Facer

Shenoy Engg. Pvt. Ltd., a Bangalore based SPM & in-situ machine manufacturers, has designed and manufactured, hand-held, portable flange facers, which are also known popularly as refacing tools. These flange facers are mainly used in for generating smooth or serrated finish on the flange butting surfaces. Easy to

carry, compact in size, light in weight, simple to operate, these flange re-surfacers are affordable and, except for human power, it does not need any source of power like electricity, pneumatic, hydraulic etc. In other words, this product is fire hazard-free and most ideally suited for flange resurfacing operations in petroleum, chemical refineries.

While designing the product, conscious efforts were put in to keep its weight about 7 kgs. Extensive use of aluminium in the structurals made it possible to contain the weight of the flange facer.

This flange facer has a facing range from Ø25 mm to Ø 310mm (Ø 1” to Ø 12”) and has a clamping range of



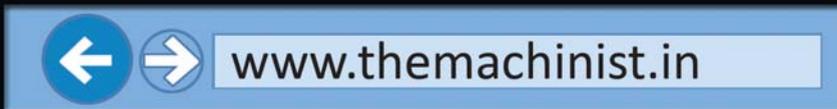
Ø 1” to Ø 6”. The main components of this facer, like arm, housing, is cast from Aluminium to make it light. Sliding surface is made of LM guides and blocks to provide utmost frictionless smooth movement, keeping in mind the operator’s fatigue. The tool is moved over the LM guides through a leadscrew-box nut arrangement,

coupled with a worm reduction gear box for the mechanical advantage. The input of the worm reduction gear box has a knob which can be rotated. The box nut is made of phosphorus bronze which creates less friction against the lead screw while rotating. The arm on which the slide unit is mounted is connected to rotatable housing.

For more details, contact: Shenoy Engg. Pvt. Ltd.;
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 Website: www.shenoyengineering.com;
 Product Link: <http://www.shenoyengineering.com/asthra>;
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Platform for the latest and best!

There is a very serious hope that the customers will start investing in new technologies after coming to the exhibition, says **A V Srinivasan**, CEO, Meiban Engineering

What are your expectations from Imtex Forming 2016?

We expect an increase in number of enquiries and to see some kind of upturn in the infrastructure sector.

Do you see positive sentiments getting reflected at the show?

This is precisely why we are in the exhibition. There is a very serious hope that the customers will start investing in new technologies after coming here.

What kind of technological trends can we expect?

While in general, there will be a trend towards Lean technologies, we are focusing on the reduction in running cost, green technologies, increase in productivity and consistent throughput, which will result in Lean systems.



What will be the highlight of your participation?

We will be displaying our award winning Motorum series Punching machine with 30-ton capability Motorum-3048TG which comes with twin ball screws and an All electric Ball screw driven 6-axis Press brake BB 4013. Both machines are servo motor driven and are maintenance free.

Have key trade shows like Imtex Forming have also acquired a new dimension of technology exchange and transfer through collaborations? What is your opinion?

Yes, I think so. When an exhibition like IMTEX happens, there is a scale and expectation from customers. The exhibitors also bring in their latest and best to satisfy the customer requirements.

We Never Cut Quality

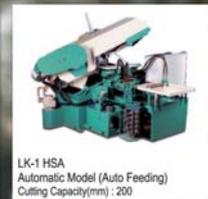
Manufacturing Of Horizontal Bandsaw Machine



MANUALLY OPERATED
Cutting Capacity(mm) :
205 / 250 / 315 / 350 / 400 / 450



Miter Cutting Bandsaw
for Metal Sections Cutting
Cutting Capacity(mm) : 240/310/421/530/650



LK-1 HSA
Automatic Model (Auto Feeding)
Cutting Capacity(mm) : 200



Semi Automatic (DC)
Cutting Capacity (mm) : 1101 / 1251 / 1100x1500



AUTOMATIC (DCA)
Cutting Capacity (mm) : 240 / 310 / 421

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January 2016

MAC



New Grinding Steady Rest with fine adjustment of the grinding center line – SRG

The new SRG grinding steady rest series is used to support shaft type work pieces on grinding machines. The integrated adjusting mechanism allows a micrometer fine adjustment of the horizontal and vertical axis. Retractable steady rest arms allow for auto load of the work pieces. The SRG grinding steady rest is suitable for follow-down grinding and has a high rigidity to support against aggressive feeds and speeds. The compressed air system protects the steady rest against the penetration of dust and coolant. The SRG grinding steady comes with stroke monitoring of the end positions for maximum process safety.



SRG Grinding Steady Rest

The SRG grinding steady rest is suitable for follow-down grinding and has a high rigidity to support against aggressive feeds and speeds. The compressed air system protects the steady rest against the penetration of dust and coolant.

For more details, contact: SMW AUTOBLOK WORKHOLDING (P) LTD; Phone: 02137-616974; Fax: 02137-616972; Email: info@smwautoblok.in; Website: <http://www.smwautoblok.in>

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Special Program for Micro Cutting

No matter where tool holders are used: mold making, dental technology, medical technology, clock- and jewelry industry – the number of high-precision applications in the field of micro cutting has enormously increased in the past few years. Since conventional clamping systems most often reach their limits, SCHUNK, the competence leader of clamping technology and gripping system has enlarged its precision tool holder program for micro cutting. New interfaces and a higher degree of standardization will help the user increase process reliability and efficiency of demanding precision applications.

SCHUNK developed and patented their TRIBOS polygonal clamping technology which was specifically

made for micro cutting. At a true-running and repeat accuracy of less than 0.003 mm at an actual clamping length of 2.5 x D, and a balancing grade of G 2.5 at 25.000 rpm, the HSC-compatible tool holders of the TRIBOS family measure up to highest standards. They are suitable for every tool shank of h6 quality, and depending on the type, they were tested at up to 205.000 rpm. Since the mountings have no moving parts, they are mechanically sound, and therefore clamping is almost maintenance and wear-free. Even after several thousand clamping cycles no material fatigue occurs. This is a decisive advantage towards other clamping technologies, where the true-running accuracy diminishes in the course of time. Since a hydraulic clamping device is used, tool change with the TRIBOS can be done in a few seconds.

High performance for 5-axis machining

“With the special program for micro cutting SCHUNK has responded to the strongly increasing demand“, said Heinold Kostner, Head of Product and Portfolio Management Clamping Technology at SCHUNK in Lauffen. “Many users have recognized that the high absolute accuracy, dynamics, and the excellent rigidity and damping values of TRIBOS help to achieve best surface qualities and long tool lives. It is our aim to enlarge our standard program in one single step as far as possible so that most of these enquiries are covered right from the start.”

And the results tell its own story: The TRIBOS-Mini which has been designed for rapid micro applications, will be soon available for the trend-setting high-speed spindle interface HSK-E 20. The newly standardized interface achieves an excellent precision at high speeds, which many steep taper interfaces cannot keep up with. Moreover, its special requirement is lower than of the HSK-E 25 interface. Particularly for highly



In the field of dental technology the TRIBOS polygonal technology is used for milling zircon at maximum precision.

efficient 5-axis machining, SCHUNK offers the robust TRIBOS-RM version with an extended L1 dimension of 78 mm. The overlong high performer is versatile in use: in addition to direct clamping, it is also suitable for clamping smaller shank diameters. In this case they are combined with the standardized intermediate sleeves GZB-S. In order to ensure precise machining in areas which are difficult to access, the mounting can be also combined with the standardized tool extension TRIBOS-SVL Mini. In the first step, the universal 5-axis expert is available for interfaces HSK-A 32, HSK-A40, HSK-E 32 and HSK-E 40, and they have a shank diameter of 12 mm.

Further interfaces

Beside the two new products, SCHUNK has enlarged its program so that, many former special solutions are now standard products. Therefore they can be ordered faster and more efficiently. TRIBOS-Mini with \varnothing 1 mm, 1.5 mm, 2 mm, 3 mm, 4 mm, 6 mm and 1/8” will be standardized, as well as the robust TRIBOS-RM with \varnothing 3 mm, 4 mm, 6 mm, 8 mm, 10 mm, 12 mm and 1/8”. In addition to the available interfaces HSK-A 25, -A 32, -A 40, -E 25, -E 32, -E 40 both mountings will be also offered for HSK-E 20, HSK-F 32, BT 30, and SK 30 in the future. In the field of dental technology it is important that no chips or grinding dust seep into the mounting or spindle. For this purpose, SCHUNK will continue to offer high-precision mountings in a sealed version. The SCHUNK program also includes handy and cost-efficient clamping devices, which quickly allow a process reliable tool change.

For more details, contact: Satish Sadasivan; Schunk Intec India Private Limited; Phone: 080-40538999; Fax: 080-40538998; Email: info@in.schunk.com; Web: www.in.schunk.com



Safe retraction without loops

Retraction system for e-chains on industrial robots enables guiding of supply hoses for rivets and screws

The motion plastics specialist igus has developed a lightweight and cost-effective concept for the automatic retraction of energy chains allowing further advances in robotics. Besides carrying energy, data and media cables, industrial robots nowadays also frequently carry supply hoses for rivets or screws. The new triflex RSE system prevents looping of the energy chain, allowing these materials to be safely supplied to the end of the robot arm.

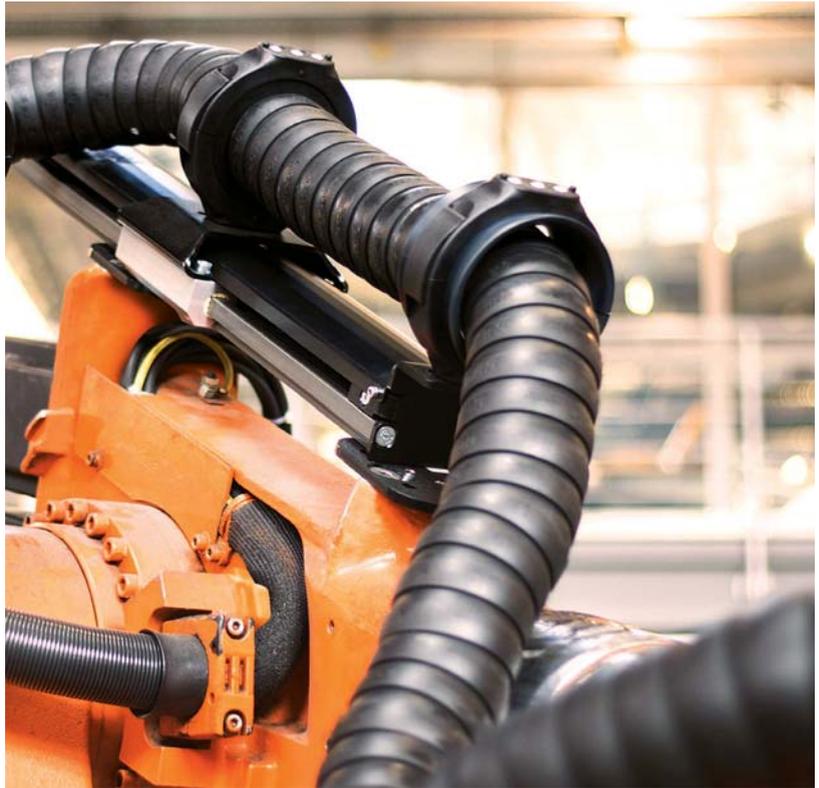
The triflex R series has been designed by igus specifically for highly dynamic industrial robotic applications and as a multi-axis energy chain it can move in all directions in space. The universal triflex chains made from high-performance plastics work in even the most demanding industrial environments, are easy to install and can quickly be filled with cables from the outside. They also have high tensile and torsion strength. "However, since nowadays it is not only just electrical and pneumatic cables that are conducted on the robot, but also often supply hoses for bolts, rivets or screws, tight bends or hanging loops can sometimes cause problems," says Jörg Ottersbach, industry manager for robotics at igus.

"Any reduction in the minimum allowable bend radius of the supply hoses can lead to a fault, reducing the efficiency of the process. In the worst case a rivet or a screw gets stuck in the supply hose, which then leads to a plant standstill." With its linear retraction of the e-chain, the triflex RSE retraction system offers an efficient and cost-effective solution that requires no curve, spring rods or deflecting rollers.

Sleek design with direct control on the robot

The extremely light system is based on the proven lubrication and maintenance free drylin linear guide from igus, where a moving carriage transports the chain on a retraction distance of up to 600 millimetres. Elastic cords pull back the extended chain automatically. Thus the looping of the energy chain is prevented. In this way the service life can be significantly increased.

The self-guiding retraction system is designed for the enclosed or snap open triflex chain versions TRC, TRE and TRCF in sizes from 60 to 125 millimetres in diameter. They



The lightweight and affordable triflex RSE retraction system is based on a lubrication and maintenance free drylin linear guide from igus. A moving carriage transports the chain, elastic cords keep it under tension and retract it automatically. (Source: igus GmbH)

With its linear retraction of the e-chain, the triflex RSE retraction system offers an efficient and cost-effective solution that requires no curve, spring rods or deflecting rollers.

are retained by means of a mounting bracket and a glide-through bracket on the system, which in turn can be easily fitted to a variety of robot types. Since the triflex RSE directly guides and controls the e-chain on the robot and no other deflections are needed, the required length of the cable and chain is reduced. For this reason triflex RSE is not only space-saving and light, but is also a cost-effective solution.

More details, contact: Harish Booshan, Product Manager, E-ChainSystems® & ReadyChains®, igus (India) Private Limited, Phone : +91-80-49127880 (Direct); Email: Harish@igus.in; Website: www.igus.in



Tough centring points expand the range of applications

The results of the latest efforts of the KOMET GROUP are a choice of two new centring points for the KOMET KUB Centron® Powerline core bit drill which, with its multiple cutting edges, enables high feed rates and, as a result, short production times.

The points that have been available until now are standard carbide points, which can be used universally. However, for machining certain materials that require, for example, low cutting speeds, or for unstable situations such as working on lathes, where there is a certain degree of axial misalignment, tougher cutting tool materials offer a number of advantages.

This is why drilling specialists at KOMET® have come up with a second centring point which, with its special ground section and coating, is optimised for use with stainless steels. The substrate consists of carbide that has predominantly been used for the purpose of wear protection in the past, and is much tougher than the carbide grade originally used. This makes the new centring point suitable for working situations in which vibrations and minor impacts are likely to occur, as well as for materials that are difficult to machine and require



The centring point of the KOMET KUB Centron® Powerline is available for various materials and machining situations.

Picture: KOMET Group

cutting speeds of between 30 and 80 m/min. For large tool diameters where the centring point is subjected to even lower cutting speeds (between 10 and 30 m/min), the KOMET GROUP offers a third centring point, which is made from HSS. The centring point is a crucial element of the KOMET KUB Centron® Powerline. It guides the tool precisely along the drilling axis, ensuring dimensional accuracy, straightness and outstanding process reliability at drilling depths of up to 9xD. The core bit has two or, depending on the diameter, more than two Quatron indexable inserts, which provide a high level of stability and optimal chip evacuation.

The cutting distribution on each side allows short chips to be produced even when using materials that are extremely difficult to machine. The four cutting edges per indexable insert, various substrates and coatings and tailored topographies for excellent chip control, soft cutting action, etc. allow for a long tool life and help make machining cost effective.

For more details: KOMET Precision Tools India Pvt Ltd,
Email: info.in@kometgroup.com; website: www.kometgroup.com

Wohlhaupter GmbH introduces its latest tool-“Primebore”.

The Primebore boring head covers a range of diameter 3-208mm. Continuing the tradition of providing high quality boring tools the Primebore tool has the same accurate size setting of 2 microns on diameter. Its serrated design ensures the insert holder clamping is strong. Balancing is done at 12000rpm for faster and vibration free boring. Grinding & lapping of inside and outside body results in 3 microns repeatability in the adaptor connection. Thru coolant design further helps in productive results. For inventory management at customer end the Primebore head comes in a kit as well which comes with all accessories to cover a boring diameter range of 6-128mm. This kit is in form of a box having the Primebore head, insert holders for various diameters, keys and complimentary



inserts. Each head comes with a quality certificate which testifies the Wohlhaupter quality wherein its quality engineer puts his signature with tool batch number. Backed up by experience in boring technology since 1929 Wohlhaupter can provide its customers a hassle free productive boring. It covers the largest boring range in the world from 0.4-3255mm with the help of analog & digital boring tools, all repairable in its India head office in Delhi.

For more details: Khurram Iqbal, Asst. Manager- Application & Business Development, Wohlhaupter India Private Limited;
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Website: www.wohlhaupter.com



Complete System Competence for Maximum Productivity

Combining technology, machine tool, automation and peripherals in holistically coordinated 360° solutions for your production systems.

Flexible automation guaranteeing process reliability is an elementary factor of success for a universally digitalised production world. With this in mind DMG MORI Systems already offers its customers the possibilities and competences to produce successfully here and now. And this performance commitment applies to every segment of automation technology: to machine-integrated automation as well as standard automation and on to include flexible manufacturing cells and comprehensive turnkey production lines.

The future is automatic

In the age of “Industry 4.0” the automation of manufacturing processes is gaining dynamically in importance. At the same time the merging of virtual and real production worlds demands an integral communication capability of machines, systems and components.

360° system competence

DMG MORI Systems meets this challenge of the future actively by offering a holistic range of services from a single source for technology, machine tool and automation solutions. This diverse service offer is based on the unique experience of DMG MORI in the sector of technology design and automation that is bundled within DMG MORI Systems GmbH.

Added to this is the engineering expertise and strong partner structure that together with its experience enable DMG MORI Systems to configure and implement ideally aligned systems for every customer and every requirement. And it achieves this for a diverse range of workpieces, from a small precision part to tool moulds, and for a multitude of different lot sizes from single parts right through to serial production with automation solutions that range from standard to turnkey. The range is organised in four segments: 1. Machine-integrated



Highlights

An efficient combination of technology, machines, automation and peripherals

- Planning, simulation and implementation of turnkey solutions
- Core competences: control system conception, tool design, clamping conception, machine tool and automation
- Top machines for serial production
- Top project management = a contact person for all questions
- Strong partner for the integration of peripherals and tools

automation, 2. Standard automation, 3. Flexible manufacturing cells, and 4. Production lines.

Process reliability with maximum productivity in the turnkey sector

The interaction of different disciplines from technology, machine, automation and peripherals make turnkey projects the supreme disciple of automation and system technology. In addition to its wide range of products in the field of machine tools DMG MORI also offers proven expertise here in all fields – in the engineering of technological applications as well as in material flow and the required peripherals.

This consistent integration is in turn the basis for a high level of cost-efficiency, as Silvio Krüger, General Manager of DMG MORI Systems GmbH, explains: “The convincing features of the production lines include low unit costs, outstanding machining performance, a high system availability of over 95% and high output. They achieve the shortest cycle times and offer impressive flexibility where workpieces are concerned.” Parallel manufacturing processes are also possible and flexible programming leaves considerable scope in the production process.

Reliability and process stability are ensured by the use of advanced and proven technologies and products on the one hand and the global presence of DMG MORI on the other. “As a supplier for the globally organised automotive industry its goes without saying that we draw on our worldwide service network and a specially setup top-level support team to help customers quickly whenever the need arises”, stresses Silvio Krüger, calling our attention to the new Technology and Competence Center in Wernau near Stuttgart.

For more information: <http://in.dmgmori.com/>



Unions for CNC Machining Centers

DEUBLIN Company announces SpindleShield™ technology for use with the most sophisticated CNC machines. DEUBLIN coolant unions with SpindleShield™ employ a unique patent-pending electronic leak detection system that detects coolant problems and allows for rapid machine shutdown.

Machining centers with through-coolant spindles require coolant unions to deliver coolant at high pressures through the cutting tool at the cutting surface. For dry running cycles or machining operations with multi-media such as air, MQL or coolant, DEUBLIN offers coolant unions with patented Pop-Off™ and patent-pending AutoSense™, a technology that separates the seals in the absence of coolant and allow indefinite dry run or multi-media capabilities. During each cycle from one mode to the other, a minute amount of coolant spills out, which must be collected and drained. Excessive leakage, if not detected, may leak past the spindle seals and eventually contaminate



SpindleShield coolant unions

“During each cycle from one mode to the other, a minute amount of coolant spills out, which must be collected and drained. Excessive leakage, if not detected, may leak past the spindle seals and eventually contaminate and damage the spindle bearings.”

and damage the spindle bearings.

DEUBLIN introduces SpindleShield™, an industry first and revolutionary new technology for CNC machining centers. SpindleShield™ protects the spindle and prevents replacement of spindle bearings by allowing rapid, automatic shutdown of machines. The combination of remote diagnostics and a positive leak detection system virtually eliminate unnecessary preventative maintenance and costly spindle repair. This technology can be easily integrated into any standard system bus. DEUBLIN is the leading manufacturer of precision rotating unions for water, steam, air, hydraulic, vacuum, coolant and hot oil service.

For more details, contact: *Rahul Dutta, Product Manager - Deublin MACO, Maco Corporation (India) Pvt. Ltd. Phone: +91-33-30294103; Mobile: +919331840626; Email: rdutta@macocorporation.com; Website: www.rotatingunion.in, www.macocorporation.com*

Industrial Gears



SPIRO GEARS, an ISO 9001:2008 Certified Company has been in the field of manufacturing spiral bevel, straight bevel, spur and helical gears, sprockets, spline shafts etc., for

various applications like Power Tools Industries, Printing & Textile Machinery, Automobile Industry, geared motors and machine tools etc. The Company manufactures from small micron gears to medium range of gears ranging from 0.3 module to 6 module. Spiral bevel gears up to 110 dia and 1.5 module can be manufactured in house. Spur and helical gears are manufactured and supplied in hobbed / shaved and ground conditions.

The company has precise and well maintained manufacturing and inspection equipment to cater to all its range of gears. The Company manufactures and supplies fully finished gears as per customer's requirement and specification and also undertakes job work like Gear Hobbing / Gear Shaving and CNC Gear Grinding.

For Further Information Contact: *SPIRO GEARS; Phone: 080-28370604; Mobile: 09845383632; Email: info@spirogears.com; Website: www.spirogears.com*

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