

A Times Group publication

ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

THE MACHINIST

RNI No 71129/98

Volume 11 Issue 7 • July 2016 • Rs 75

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Railways Manufacturing

On the fast track of growth

Automation & Robotics

A matter of accuracy and consistency



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Catch them young!

Monsoon seems to be gathering a fair bit of momentum across the country. And this augurs well for the economy. The mood is quite upbeat all around. While the industry hasn't started celebrating yet, it seems to have cast away the gloom of the slowdown.

Order books have started smiling and so have the production lines. The cloud of international instability will always be there but the silver linings of domestic growth are equally distinct and shiny. Moreover, newer international markets seem to be creating fresh avenues of export oriented expansion.

With overall positive atmosphere, thrust from the government and an industry raring to go ahead, Indian manufacturing seems to be on the verge of a new chapter of success. And to make this chapter really long, comprehensive and lucid, we need truly good human resources besides the right kind of

“SHOW THEM THAT THEY CAN BRING A CHANGE TO THEIR LIVES BY JOINING THIS INDUSTRY AND THERE NEVER WILL BE DEARTH OF SKILLED WORKERS IN THIS INDUSTRY.”

technology that promotes sustainable growth. Availing such technology will not be a major challenge; the big hurdle is likely to be the people part.

It is not that we do not have enough people. In fact, we have a lot of them and fortunately most of them are quite young. The problem is that not many amongst them would be either willing or qualified (or both) to take Indian manufacturing to the next level. This is something that we all must start addressing on priority basis.

Manufacturing can surely become a cornerstone of the Indian workforce. But we need to completely overhaul our education and vocational training systems to create not just job-ready candidates but also young people who have a passion for making a mark for themselves in this amazing industry. Show them that they can bring a change to their lives and to their society by joining this industry and there never will be dearth of skilled workers for this industry.

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Printed and published by Joji Varghese for and on behalf of owners Worldwide Media Pvt Ltd (CIN:U22120MH2003PTC142239), The Times of India Building, Dr DN Road, Mumbai 400001. Printed at JRD Printpack Private Limited, 78, Resham Bhavan, 7th Floor, Veer Nariman Road, Churchgate, Mumbai - 400 020. Editor: Niranjani Mudholkar. Published for July 2016.

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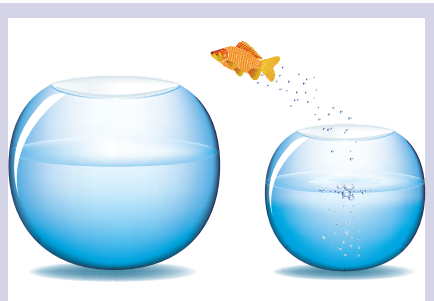
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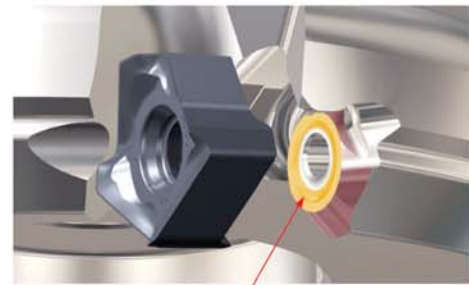


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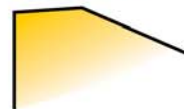
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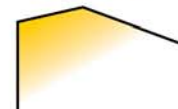
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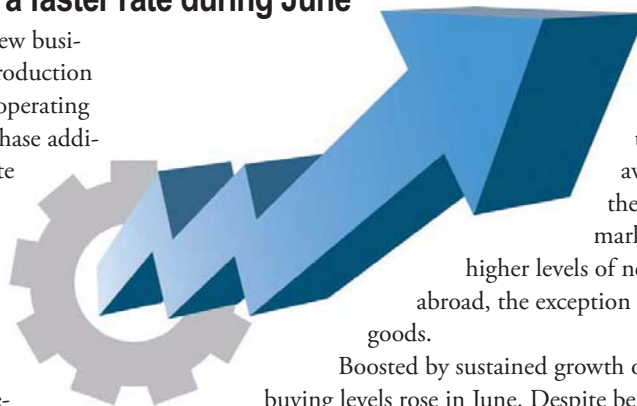


Indian manufacturing grows at a faster rate during June

SUPPORTED BY a stronger increase in new business inflows, Indian manufacturers raised production at a faster rate during June. The favourable operating environment encouraged businesses to purchase additional inputs, but was insufficient to generate jobs. Meanwhile, cost inflation eased, while output charges were broadly unchanged. At 51.7 in June, the seasonally adjusted Nikkei India Manufacturing Purchasing Managers' Index (PMI) – a composite single-figure indicator of manufacturing performance – pointed to a further improvement in the health of the sector. Rising from 50.7 in May, the headline index was at a three-month high.

The main contributing factors to the upward movement in the PMI were stronger rates of growth in new orders and output, both of which reached three-month highs in June. Incoming new work rose across the three broad areas of the manufacturing economy, as did production. The best-performing category was consumer goods.

Offsetting the decline seen in May, the first in 32 months, new export orders increased in June. However, the



rate of expansion was only slight and below the long-run series average. Two of the three monitored market groups recorded higher levels of new business from abroad, the exception being intermediate goods.

Boosted by sustained growth of order books, buying levels rose in June. Despite being slight, the rate of expansion was the quickest in the current six-month sequence of increases. Purchasing activity grew in each of the three sub-sectors, led by consumer goods.

Data implied that the upturn in buying levels placed pressure on the capacity of vendors, as average delivery times lengthened to the greatest extent since April.

June saw input costs increase for the ninth month running, with survey participants reporting higher prices paid for metals, chemicals, plastics, textiles, petrol, food and paper. That said, the rate of inflation eased to the slowest since March, and was moderate overall.

TI Cycles sets up new Bicycle factory in Punjab

TI CYCLES OF INDIA, one of the leading bicycle manufacturers in India and a part of the Murugappa Group, announced the inauguration of its state-of-the-art-bicycle manufacturing factory in Rajpura, Punjab on 9th, June 2016. This facility – a Greenfield project, is set up with the support of the Government of Punjab. This factory has been set up to cater to the growing demand in the North and East Indian markets.

The plant has been built with a capital expenditure of Rs.105 Crores and has the capacity to manufacture 2.50 lakhs cycles per month, with the ability to expand when required. It is a state-of-the-art plant with the most modern bake-on-bake painting technology. The plant will have three modern painting lines with German applicators. This new plant at Rajpura will further enhance the company's ability to bring in innovative new products to cater to changing consumer needs. It

will also help the company to continually improve the quality of its products on par with best in the world.

This plant is an environment-friendly factory with zero-discharge and 100 percent recycling of water. It will soon have a 350kW rooftop mounted solar panel installation to take care of part of the energy needs of the factory. The plant is located at Sandharsi village, Rajpura Tehsil of Patiala District Punjab.

Speaking on the occasion, MM Murugappan, TII Chairman and Murugappa Group Vice Chairman said, "We are very happy to be a part of the industrial activity in Punjab. We already have a factory manufacturing Tubes in Mohali which is running successfully. We are encouraged by the positive industrial climate in Punjab and the support extended by the Government. This plant will cater to the demand of bicycles in the North and Eastern parts of India."

MoU signed for coal quality analysis

CSIR- Centre Institute of Mining and Fuel Research (CSIR-CIMFR) signed a Memorandum of Understanding with Coal Supplying companies and Power Utilities for quality analysis of coal being supplied to power utilities by coal companies. The collaboration will enhance energy efficient use of coal by power sector.

As a part of this MoU, CSIR-CIMFR would make use of its knowledge based support in maintaining the quality of coal at national level for the entire power sector. It is estimated that about 300 mn metric tons of coal samples would be analysed for quality per year. The contract value of the project is around Rs 250 crore per annum at minimum. It is also expected that this project will result in improvement in performance of power plants besides leveraging benefits to the consumer in particular and society as a whole.

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India tops WB's Logistics Performance Index in LMI

INDIA (along with countries like Kenya and China) has improved its position in the World Bank's latest Logistics Performance Index. India is the top performer amongst the 'Lower Middle Income' (LMI) group. The latest edition of the Logistics Performance Index, which is a part of the bi-annual report, Connecting to Compete 2016: Trade Logistics in the Global Economy, ranks 160 countries on their trade logistics performance. For the third time, Germany is the top performer. Syria ranked lowest.

The report, which is based on survey data from more than 1,200 logistics professionals, ranks countries on a number of dimensions of supply chain performance, including infrastructure, quality of service, shipment reliability, and border clearance efficiency.

"Logistics performance both in international trade and domestically is central to countries' economic growth and competitiveness," said Anabel Gonzalez, Senior Director for the

World Bank Group's Trade & Competitiveness Global Practice. "Efficient logistics connects people and firms to markets and opportunities, and helps achieve higher levels of productivity and welfare. Unfortunately, the logistics performance gap between rich and poor countries continues and the convergence trend experienced between 2007 and 2014 has reversed for the least performing countries."

Over the past six years, the world's top-10 performers have remained consistent and include dominant players in the supply chain industry. Low-income economies with the worst performance are often landlocked, small islands, or post-conflict states. However, for the first time in the history of the Connecting to Compete reports, landlocked countries are no longer automatically disadvantaged, as shown by the performances of both Rwanda and Uganda, which benefit from regionally coordinated efforts to improve trade corridors.

India Inc's business confidence up by 7 points

THE RESULTS of FICCI's latest Business Confidence Survey indicate an improvement in the confidence levels of members of India Inc. The Overall Business Confidence Index was seven notches higher at 64.3 in the present round, vis-à-vis the value of 56.7 in the last round. This comes on the back of an improvement noted in both Current Conditions Index and Expectations Index. The proportion of respondents citing a 'moderately to substantially better' performance vis-à-vis last six months noted an increase at all the three levels – economy, industry and firm level. Also, in the current round, participants seemed more positive about the near term prospects.

The Indian economy has moved into a zone of stability with key economic parameters strengthening. The efforts made towards providing a conducive business environment have started yielding results and have improved the overall business sentiment.

Schuler completes takeover of AWEBA Werkzeugbau

SCHULER AG has completed the takeover of German die construction specialist AWEBA. Following approval from the relevant anti-trust authorities, Schuler – the market leader in forming technology – has now closed the acquisition process. As of July 1, 2016, Schuler will thus become the sole owner of AWEBA Werkzeugbau GmbH Aue. The AWEBA Group is one of the world's leading full-service providers of dies and fixtures. Stefan Klebert, CEO, Schuler commented, "AWEBA's outstanding technological expertise in die construction is a perfect fit for our portfolio with major benefits for the customers of both companies. The acquisition and subsequent pooling of resources in die construction will add further momentum to Schuler's growth."

In the past fiscal year 2015, AWEBA generated sales revenue of around € 60 million. The AWEBA Group employs around 600 people, including almost 200 highly skilled engineers and toolmakers. In future, they will work together with Schuler's existing die construction specialists in a single division. Udo Binder, CEO, AWEBA stated, "The previously separate activities of Schuler and AWEBA in the field of die construction complement each other perfectly. There is hardly any overlap. Schuler's global market standing gives



us the platform to present ourselves to customers as a global system supplier within a strong group."

AWEBA currently supplies clients in the automotive and electrical industries, as well as machine and plant manufacturers. Schuler signed the purchase agreement with the previous owners of the company (private and institutional investors) on April 13, subject to approval of the relevant anti-trust authorities.

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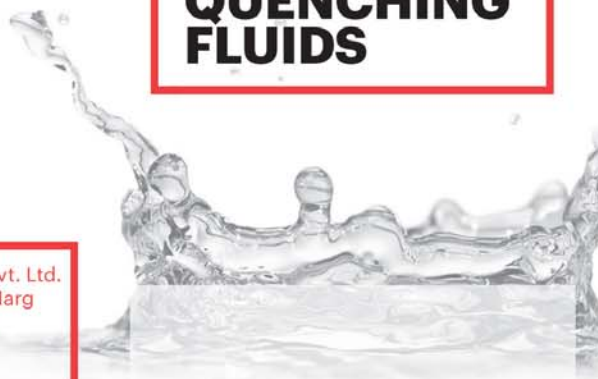


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A list of key events happening between September 2016 to June 2017, both nationally and internationally.

<p>IMTS 2016 September 12-17, 2016, Chicago (US) www.imts.com</p>	<p>InnoTrans 2016 September 20-23, 2016, Berlin, (Germany) www.innotrans.de/en</p>	<p>MINExpo International September 26-28, 2016, Las Vegas (US) www.minexpo.com</p>	<p>Pune Machine Tool Expo 2016 September 29-October 2, 2016 Auto Cluster Exhibition Center, Pune www.mtx.co.in</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 www.bcindia.com</p>	<p>IMTEX 2017 January 26-February 1, 2017, Bangalore www.imtex.in</p>	<p>CONEXPO-CON/AGG March 7-11, 2017 Las Vegas, NV (US) www.conexpoconagg.com</p>
<p>Automotive Engineering Show March 21-23, 2017 New Delhi www.aes-show.com</p>	<p>ACMA Automechanika New Delhi 2017 March 21-24, 2017 New Delhi http://acma-automechanika-newdelhi.in.messefrankfurt.com/newdelhi/en/exhibitors/welcome.html</p>	<p>ProMat 2017 April 3-6, 2017 Chicago, (US) www.promatshow.com</p>	<p>INTEC 2017 June 1-5, 2017 Codissia Trade Fair Complex, Coimbatore www.intec.codissia.com</p>





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Siemens bags an order

Siemens Ltd has won an order worth approximately Rs83 crore from Indian Railways' Diesel Locomotive Works (DLW), Varanasi. The order is to design, supply and install 40 Alternating Current (AC) Traction Systems for dual-cab high horsepower diesel engine locomotives.

"The advent of IGBTs has yielded strong efficiency gains in electric drive technology. The project showcases Siemens' partnership with the Indian Railways as it combines innovation with responsibility to bring together the combined expertise of its teams, that is committed to deliver reliable, safe and efficient technologies," said Tilak Raj Seth, Executive Vice-President and CEO, Mobility Division, Siemens Ltd.

The AC Traction Systems will be produced at Nashik Fac-



tory of Siemens Ltd. The Systems have been developed based on the state-of-the-art Insulated Gate Bipolar Transistors (IGBTs) technology. The principle benefit of IGBTs over Gate Turn-off thyristors (GTOs) is that it reduces the current required, and therefore the heat generated, giving smaller and lighter units.

L&T commences Mumbai Metro Line III project

Mumbai Metro Rail Corporation has announced the commencement of the Mumbai Metro Line 3 project to be executed by Heavy Civil Infrastructure Business of L&T Construction, along with its partner, STEC of China, for a value worth Rs5,273 crore. The scope of the project includes design and construction of underground stations and associated tunnels for Package 1 and Package 7 in Line 3 of Mumbai metro project.

The prestigious EPC project includes underground stations at Cuffe Parade, Vidhan Bhavan, Church Gate, Hutatma Chowk with associated tunnels from Cuffe Parade to CST for Package 1 and underground stations at Marol Naka, MIDC and SEEPZ with associated tunnels from International Airport to SEEPZ for Package 7. The project is scheduled to be completed in 48 months.

"This is a significant win in the heavy civil infrastructure space and we hope that this is a sign for many such projects involving vital infrastructure that are in the offing," said S.N. Subrahmanyam, Deputy Managing Director and President, L&T. "This mandate is truly representative of our expertise in building metros as we are already building some major metro projects in India and Middle East. With the support of our partners, we are confident of delivering as per the requirements of our client," he added.

Air Conditioned coach developed for DEMU train

Indian Railways has developed the first ever air conditioned coach (car) for its DEMU trains. The first ever AC coach has been manufactured at Indian Railways' Chennai based Integral Coach Factory (ICF). Existing 8-coach DEMU train will have two such newly developed AC coaches. ICF has planned to roll out four DEMU train sets each provided with two AC coaches. Further manufacture of these trains will be based on the feedback from users.

These air conditioned coaches are provided with five comfortable reclining cushioned chairs arranged in each row (2*3 config) with total capacity to seat 73 passengers. The interior furnishing of these AC coaches is similar to that of intercity AC express train coaches. All AC coaches are equipped with environment friendly bio-toilets. Indian Railways presently run three type of DEMU trains namely: 6-coach DEMU train with 700 hp, 8-coach DEMU train with 1400 hp and 10-coach DEMU train with 1600 hp.

ContiTech to present new rail solutions

ContiTech plans to showcase bearing elements for rail tracks and trains at InnoTrans in Berlin. The company has developed support-point bearings specially for the bearings of rail tracks in metropolitan areas. Fitted between the sleeper and the rail, they reduce vibrations that occur when vehicles roll over rails in a light rail system as well as the vibrations that would otherwise be transmitted to any surrounding buildings. Even in rail vehicles themselves, bearings from ContiTech reduce oscillations and vibrations.

Spring elements made from rubber and metal can be used as engine and unit bearings in order to dampen impacts from the rail tracks, for example. At the same time, they absorb static loads and engine torque and reduce structure-borne noise.

Along with this, the company will also present its numerous innovations in the sector including sensor technology aims to determine the service life of components, high-performance rail hoses, etc.

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Knorr-Bremse expands rail vehicle systems production in China

Knorr-Bremse has opened an expanded state-of-the-art production plant and testing center for rail vehicle systems in Suzhou, China. The facility will enhance the company's efficiency and strengthen its local competitiveness. It will enable Knorr-Bremse to maintain the high quality of its products and focus fully on the needs of local customers.

The foundation for this substantial enlargement of the rail vehicle production site in Suzhou, China, was laid in December 2014. It increases the site's production capacity and at the same time creates additional space for a growing number of engineers. Various test rigs have been installed, including the first ever fully-equipped inertia dynamometer, the like of which is otherwise only found at Knorr-Bremse's headquarters in Munich.

The investment package of some EUR 13 million includes modern customer training facilities as well as additional parking spaces and a new canteen for the workforce of about 1,200.

Heinz Hermann Thiele, Owner, Knorr-Bremse said, "This factory is part of a far-reaching investment program being carried out by the Knorr-Bremse Group to modernize its global development and production network. Customers stand to benefit from the increased efficiency of these facilities thanks to their greater flexibility and improved delivery capacity.

"Moreover, we want to develop the next generation of braking systems for rail vehicles; systems that take account of future requirements in the local market."

To safeguard its future, since 2010 the Group has invested



At the opening ceremony, © Knorr-Bremse

more than EUR 1.3 billion in the construction and expansion of production and development facilities. The new Development Center at the Munich site e.g., which represents the largest single investment in the company's history, will also be inaugurated in June 2016. In all, Knorr-Bremse invested EUR 90 million in that building.

Knorr-Bremse Systems for Rail Vehicles (Suzhou) Co. Ltd. plays a major role in the company's rail business in China and also operates a branch in Beijing. Established in 2005, it is a major manufacturing facility for braking systems and caters to both domestic and international markets.

The past years have seen Knorr-Bremse Suzhou expand steadily, and the company has made an invaluable contribution to Chinese railway transportation, especially in the high-speed sector. The state-of-the-art assembly lines and large CNC machining section in Suzhou are designed to support the growing market for brake control systems, bogie equipment, air supply, and hydraulics.

HCC-MMS JV awarded a contract worth Rs 2523 crore

Hindustan Construction Company Ltd (HCC) as a lead partner in the joint venture with MMS of Russia, has been awarded Rs2,523 crore contract by the Mumbai Metro Rail Corporation Ltd (MMRCL). The contract is for construction of 4,072 meter corridor of the underground metro line including four underground stations at Chatrapati Shivaji Terminus, Kalbadevi, Girgaon and Grant Road and twin bored tunnels of total length of 3,115 m. The project is to be completed in 55 months.

This is part of the Line 3 of the Mumbai Metro from Colaba to SEEPZ. When completed, the 33.5 km long line with 26 underground and one at-grade station will be the first un-

derground metro line in Mumbai.

Arun Karambelkar, President & CEO- E&C, HCC Ltd. said, "HCC is pioneer in underground construction and has built parts of Kolkata Metro, Delhi Metro and Mumbai Metro – Phase I. With the cumulative experience we are confident of completing the work in an efficient and speedier manner that will benefit millions of Mumbaikars."

HCC has been associated with 6 packages of Delhi Metro totaling 18.14 km of tunnels and 13 underground stations. In Kolkata Metro, HCC has constructed 6.47 km tunnels in 6 packages that include 4 underground stations. And in Mumbai Metro I, the company has built 8 elevated stations.

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Boeing & Mahindra open training centre for IAF

Boeing and Mahindra Defence Systems have formally opened a centre in Gurgaon to provide C-17 training services to the Indian Air Force (IAF). Once fully operational, the new centre will be capable of conducting local and multi-site simulations for added realism and more robust training.

“The centre, in partnership with Mahindra Defence, is another example of the steps we are taking to contribute to the building of a holistic aerospace ecosystem in support of Make in India,” said Pratyush Kumar, President, Boeing India. S P Shukla, Group President, Aerospace & Defence Sector, and Chairman, Mahindra Defence Systems said, “We have credible expertise in this specialised area of operations and training and we believe this joint endeavour will help deliver the objectives of the Government of India and the Indian Air Force of



building capabilities indigenously.”

The C-17 training facility, which is located at the Flight Simulation Technique Centre in Gurgaon, will be a full-service location offering instruction to aircrews that operate the 10 C-17 airlifters that Boeing delivered to India in 2014. The centre features a complete training solution for C-17 pilots and loadmasters with advanced simulation, courseware and computer-based training to practice the complete range of tasks required for military airlift operations and humanitarian missions, along with other scenarios such as aerial refueling and emergency procedures.

Boeing honours Rossell Techsys as Supplier of the Year



Rossell Techsys (Division of Rossell India Ltd) has been recognised as ‘Supplier of the Year – 2015’ in the Pathfinder Category by The Boeing Company. Rossell Techsys was one of 12 companies honoured recently at the Washington State Convention Center, Seattle, for outstanding performance in

working with Boeing. The selection was based on stringent performance criteria for quality performance, delivery performance, cost, environmental initiatives, training and learning initiatives, customer service and technical expertise. Rossell Techsys is also one of only 107 GOLD rated companies, amongst the 13,000-plus active suppliers, to receive the Boeing Performance Excellence Award (BPEA), which rewards consistent performance excellence. Rossell Techsys has consistently achieved a GOLD rating in Quality and Delivery, consistently over two years.

“What they have done is built a company culture that has resulted in 100 percent on time and quality and has met our expectations, especially for a company that has been around two years. It is kind of unheard of to have a company go from start up to ‘Supplier of the Year’ this quickly,” said Phil Ament, Boeing Director – International Supplier Management, Boeing Defence, Space and Security.

“We have made focussed investments in infrastructure, people and processes, to offer best in class manufacturing services, with commitments to be a trusted and reliable partner for Boeing. Receiving this global accolade validates our partnership with Boeing and vindicates the faith and trust that Boeing has put in Rossell Techsys,” said Rishab Gupta, Executive Vice President, Rossell India Ltd.

Rossell Techsys is currently working with Boeing on a number of airborne Military platforms that include the F/A-18, the F-15, the AH-64, the H-47, the KC-46 Tanker and the P-8 platforms.

Norsk Titanium to build world's first aerospace 3D printing plant

Norsk Titanium AS, the world's pioneering supplier of aerospace-grade, additive manufactured, structural titanium components has announced that the State of New York, in partnership with SUNY Polytechnic Institute, has placed an order for an initial lot of 20 of Norsk Titanium's patented MERKE IV Rapid Plasma Deposition (RPD) machines.

The order is in accordance with an approved state budget allocation to facilitate Norsk Titanium's US subsidiary building and operating the world's first industrial-scale metal additive manufacturing plant in New York with the following details:

“Our researchers have spent ten years pioneering the Rapid Plasma Deposition process that is now ready to cut millions of dollars in cost from the world's premier commercial and military aircraft, and with the foresight displayed in other sectors, the State of New York is the ideal place to launch this manufacturing revolution,” said Board John Andersen, Jr., Chairman, Norsk Titanium.

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Addressing growing needs of Indian transportation systems

Bharat Salhotra, Managing Director, Alstom India & South Asia says Alstom has been investing heavily in product design, research and development

By Swati Deshpande

Can you please elaborate on Alstom’s business in the railways and metro sector in India?

Alstom has been present in India for over 100 years. Although we were a late entrant in the transport space, we have now very strong footprints in the country. After its entry in 1990s, Alstom’s Transport business is now fully equipped to offer 100 percent localised, competitive and state-of-the-art products and services to cater to the growing urban and mainline transportation market in India. At Alstom, we have the capability to provide the full gamut of transport systems, notably trains, signaling, infrastructure and integrated solutions and maintenance and modernisation services. In line with Government of India’s ‘Make in India’ programme aimed at making India an export hub, Alstom has been investing heavily in product design, research and development as well as in production units so that it can serve not only the mainline railways and urban metro sector in India, but also rest of the world.

There has been an immense emphasis on the infrastructure in India. How does it boost the sector and hence your business?

India is on the move. It is one of the fastest-growing major economies in the world with over 1.2 billion people engaged

in building a modern nation with a world-class infrastructure. Simultaneously, India is undergoing a dramatic urban transformation with several medium and small towns expanding to large cities and several existing cities growing to mega cities. India already has a largest urban population, but it is expected to grow from the current 330 million to about 590 million by

“This trend of increasing urbanisation, India is witnessing a spiral rise in demand for reliable and efficient transport infrastructure and services.”

2030, an increase of over 260 million in the next 15 years. This would translate into over 68 cities having population of over one million people and 15 cities with over four million people. This trend of increasing urbanisation, India is witnessing a spiral rise in demand for reliable and efficient transport infrastructure and services. This burgeoning local demand combined with progressive economic policies will provide a great impetus to the rail business both in the mainline as well as urban transport sector and help in improving the fluidity in the cities as well as between cities.

Last year Alstom bagged a contract from Lucknow Metro Rail Corporation. Tell us about it.

In September 2015, Alstom was awarded the Lucknow metro contract worth over €150 mn by Lucknow Metro Rail Corporation (LMRC) to provide metro trainsets and a signaling solution for the new metro network of the city. Alstom will sup-

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ply 20 metropolis trainsets, each composed of four metro cars. Each car will be fitted with air conditioning and a passenger information system for a high level of passenger comfort. The company will also provide Urbalis, its Communication Based Train Control (CBTC) solution which controls the movement of the trains, enabling them to run at higher frequencies and speeds in total safety. The signaling system along with the state of the art train sets will enable Lucknow metro to operate with headway of around 100 seconds.

We have recently unveiled the design of Alstom’s Metropolis for Lucknow in the presence of Chief Minister, Akhilesh Yadav and are now looking forward to provide the trains and the signaling solution to the city.

Q Alstom has also delivered trainset to Kochi Metro Rail (KMRL). Can you please elaborate on this project?

For Kochi metro project, Alstom made fresh inroads in several other sub systems that go into making an efficient metro solution. We are supplying not just the trains, but also complete electrification, signalling and telecom. The Kochi trains mark our first ‘Make in India’ initiative with the design of the trains and delivery of the signalling solution being done through our development centres at Bangalore. It is the first time that Alstom is involved in end-to-end manufacturing of the trains at its world-class manufacturing facility at Sricity and the propulsion manufacturing centre at Coimbatore. The company will build 25 trainsets for the elevated metro rail network comprising of 25 km long and 22 stations. The unique design of the Kochi metro, has set a new benchmark in urban mobility in India. The front end features LED lights that are in the shape of elephant’s tusks and several design features have been included to reflect the local cultural context of the state.

Q What new advancements Alstom is bringing to Indian Railways?

In November 2015, Alstom signed a contract with Ministry of Railways to supply Indian Railways with 800 double section freight electric locomotives of 12,000 hp each with its long-term maintenance. Since then, we have been making good progress. A number of steps have taken—signing share-holding agreement between Indian Railways and Alstom, forming a special purpose vehicle and incorporation of a company with 26 percent equity coming from Indian Railways and rest from Alstom. All of this has been done. We have already started fencing of the 275 acre land acquired for the factory by the Indian Railways and will be starting the construction of the factory shortly.

The 100 percent Foreign Direct Investment in the railway sector allowed by the Government has provided a renewed push to the Indian mainline railway sector.

The total contract is worth above €3 billion. This project includes the set-up of a plant at Madhepura (Bihar) and two maintenance depots at Saharanpur (Uttar Pradesh) and Nagpur (Maharashtra). The delivery of the locomotives will spread



“Apart several Indian projects, we are also working on the Sydney metro project.”

between 2018 and 2028. The Prima locomotive for Indian Railways will be 9,000 kW at the wheel rim and will run at a speed up to 120 km/h. This contract positions Alstom as the number one in heavy-haul electric locomotives segment with now over 1,200 double locomotives ordered for the last decade.


Q Alstom won the award for ‘Excellence in ‘Make-in-India’ category. Please briefly tell us about the same.

Alstom won the award for ‘Excellence in ‘Make-in-India’ category at ‘Metro Rail Asia Summit 2016’. The summit is India’s one of the premier forums to address issues related to the further development of metro rail in India.

Q Tell us about state-of-the-art facilities that the company has in India.

Today, Alstom Transport India is nearly 2,000 member family with a footprint spread across four world-class sites in India—Noida, Bangalore, Sri City and Coimbatore. With an engineering excellence centre, R&D centre and global IS&T operations hub in Bangalore, state-of-the-art manufacturing facilities at Coimbatore (production for traction equipment) and Sri City (for Rolling Stock) and several project offices spread across the country.

Q Tell about the international projects that the company’s Indian arm is undertaking

Apart several Indian projects, we are also working on the Sydney metro project. 

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KSB PUMPS APPOINTS RAJEEV JAIN AS NEW MD INDIA

Effective July 1, 2016, Rajeev Jain has taken over as Managing Director at KSB Pumps Ltd—the Indian arm of the German multinational giant—KSB AG. Jain will also assume the portfolios and responsibilities as the Chairman of MIL Controls Ltd (an 100 percent KSB AG.; owned Control Valve manufacturing company in Aluva near Kochi) and will spearhead the Global Design Center—KSB Tech as its Managing Director, located in Pune along with heading KSB Groups' Asia West operations as the Regional Executive Officer. The objective and vision of Jain is not only to consolidate and safeguard the existing strong position of the company, but also to steer, propel and fast track the growth in business of KSB in India with sustained profits in the near future—to an undisputed leadership position in the major segments the company operates in!



GM APPOINTS NEW HEAD FOR GLOBAL MANUFACTURING

General Motors Co. (GM) has announced Alicia Boler-Davis will become Executive Vice President, Global Manufacturing. She succeeds Jim DeLuca, who is retiring after a 37-year career that included key positions in manufacturing, labour relations and quality. The transition will begin immediately. Boler-Davis, Senior VP, Global Connected Customer Experience since November 2014, led GM's connected customer activities, including OnStar and the call centres. In her new role, Boler-Davis will report to GM Chairman and CEO Mary Barra, and will lead 180,000 employees at 171 facilities in 31 countries. She will also have responsibility for labour relations. "With all the change facing our industry in the next several years, Alicia's vast and diverse experience and proven track record for delivering results will help ensure our global manufacturing performance and capabilities are aligned to meet the challenges ahead," said Barra.

ALLCARGO LOGISTICS APPOINTS ADARSH HEGDE AS THE JT. MD

Allcargo Logistics Ltd has elevated Adarsh Hegde as the Joint Managing Director with effect from July 1, 2016. Hegde has been with the company since its inception in 1993 and has played a pivotal role in Allcargo's growth story. His astute business sense and innovative methods have been instrumental in generating exponential growth opportunities for the Container Freight Station as well as to other businesses in India and internationally. As the Joint Managing Director at Allcargo Logistics, Hegde will oversee the business of CFS&ICD, project forwarding & engineering solutions, e-commerce logistics, coastal shipping and contract logistics.



HERO MOTOCORP ROPES IN MALO LE MASSON

Hero MotoCorp Ltd (HMCL) has further augmented its Senior Leadership Team with the appointment of Malo Le Masson as the Head of 'Global Product Planning'. Malo, formerly with Infiniti Premium car Brand (Nissan Motor Company), will spearhead Hero's entire product planning for its global markets, including the domestic market in India. The appointment of Malo, close on the heels of Hero MotoCorp making its Centre of Innovation and Technology (CIT) in Jaipur operational, significantly ramps-up its newly-created function of 'Global Product Planning'. Pawan Munjal, Chairman, MD and CEO, Hero MotoCorp said, "With the appointment of Malo in this core function, we have taken a decisive step towards aligning our future product development to our overall corporate strategy."

JOHN BRUNS IS PRESIDENT BOEING CHINA

The Boeing Company has named company veteran John Bruns President of Boeing China, effective July 1. He will be based in Beijing. As President of Boeing China, Bruns, 51, will serve as Boeing's senior in-country executive and lead company-wide activities. He will be responsible for expanding Boeing's local presence, for managing business partnerships, government affairs, and corporate citizenship.



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On the growth track!

Escorts Railway Products (India) has a clear roadmap of growth for its 2020 plans, says its CEO, Dipankar Ghosh

By Niranjana Mudholkar

Q Escorts' Railway Equipment Division recorded a rise in income for the second successive year with revenues increasing by 11.98 percent to Rs205.4 crore from Rs183.5 crore in the previous fiscal. Where is this growth coming from?

We presently operate in the Railway Component Space for brake systems, couplers and suspension systems besides composite brake blocks & brake pads, for all the different rolling stock segments. The growth is coming from a healthy mix of both conventional products like air brake and electro pneumatic brakes, couplers and the traditional shock absorbers and also new products like axle mounted disc brakes, high end suspension systems and rubber to metal bonded products.

A very focussed strategic approach on continual operational excellence, relentless value engineering has helped us to not only grow very profitably even in our conventional products but also through frugal innovations and targeted localisations even in our new products like high end dampers, axle mounted disc brakes, etc. The growth from new products has

"We have strategically forged relationship with some marquee rail technology majors who are global leaders in their own right, with an impressive lineage and array of supply references."

been around 2.5 to 3X from last two years and we are confident that we will further multiply in this segment.

Q Escorts' ambition is to bring a five-fold rise in the Railway Business' annual revenues to Rs1,000 crore by 2020. What will drive this growth and what is your roadmap to achieve the same?

We have a clear roadmap of our growth for our 2020 plans where the multifold rise is again due to a strategic blend of conventional products, new high end products for Indian Railways and also parallelly for the upcoming Metro segment.

We have invested in selective capex and have also built a very strong R&D team who have significant domain knowledge and also international design experience with some of the best Railway OEMs of the world. The growth would be fuelled by a) In-house product development for the home markets and the Export market of Africa and SE Asia where we already have sufficient know how, b) Foreign collaboration



"The growth from new products has been around 2.5 to 3X from last two years and we are confident that we will further multiply in this segment."

for the new products and new markets where we do not presently meet the eligibility criteria of Government procurement and c) M&A for the select niche products where we would like to diversify to offer complete packaged solution to new customer like Metro Segment and also the upcoming High speed segment.

Q You launched several new products for the metro and Indian Railway segments at the International Railway Equipment Exhibition (IREE) last year. How's been the response to these products?

Although we have been working along with Indian Railways for the last 50 years but with this IREE last Oct'15 participation we have seen a considerable traction and interest from all the stakeholders of the Indian Railways and even from different Railway Suppliers, Railways OEMs and Railway Production Units about our product portfolio.

We could launch our new products, capture the mind share of all the key decision makers, thought leaders from the very senior management of Indian Railways and Metro Authorities. We have evoked lot of interest from Private Wagon builders for our newly approved bogie mounted brake systems

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(BMBS) for the freight wagons, Rubber to Metal bonded products while the same from the Metro authorities and Indian Railways for Automatic Door Systems, Dampers, and MRVC type Electro Pneumatic Brake systems. The IREE platform has given us immense visibility which is great boost to our brand image for our Export markets like Egypt, Malaysia, Thailand, Sri Lanka, Iran, Bangladesh and even China.

Particularly some of new products like Axle Mounted Disc Brakes for the LHB Alstom coaches, different high end dampers for locomotives and the Automatic Doors system for Metro segment have evoked a very positive response from the different Metro Car builders and we are soon expecting some orders for these products.

Q You have also entered into technology partnerships with companies in Germany, Korea and Australia. Tell us more about in terms of the nature of collaboration and how this will benefit Escorts and railways in India.

At Escorts our foundational ethos have been to bring the world's best to India at Indian prices and take the India's best to the world.

For the last two to three years, we have strategically forged relationship with some marquee rail technology majors who are global leaders in their own right, with an impressive lineage and array of supply references across Europe and SE Asia, Japan and South Korea.

These technology partnerships have been entered in view to give local solutions to the customer in India, some of the collaboration has been made with a view to establish future JV after reaching certain volume and local content per year.

Interestingly all our Technology partners are so impressed with Escorts with our low cost supplier ecosystem and frugal engineering competence that almost all of them are exploring future buy back options from us even for their home markets.

The Technology tie-ups will not only help in Technology rub off effects for our in house R&D to improve our domain knowledge and strengthen our core competence and knowhow of the products and services but also help us offer products to the Railways and Metros at a significantly lower cost and save the national exchequer some precious foreign exchange.

Q Currently, how does your order book look and what kind of projects are you executing?

Currently, I can say we are in a very comfortable position in terms of order booking, 2-3 years back we had a very low order backlog and due to that we faced many challenges in achieving our targets, but with our constant and effective monitoring of tenders and a focussed pricing strategy besides the operational excellence we could built in ,we have now been able to build up an order backlog position of almost around Rs100 crore in a quarter which is a pretty good run rate for the current year, we are now focusing to take it up further. I am confident that, it will go up in coming quarters as and when we will have more products lined up and also will sign more long term con-

Escorts Railway Products

Locations:
One Plant in Faridabad

Manufacturing Area:
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Production Capacity:
80,000 units per annum

Products Manufactured:
Brake Systems, Couplers, Suspension Systems, Composite Material, Vestibules, etc.

These technology partnerships have been entered in view to give local solutions to the customer in India, some of the collaboration has been made with a view to establish future JV after reaching certain volume and local content per year.

tract thereby making our business more secured.

Q You have been at the helm for about three and half years now. How's been the journey for you so far? How have you leveraged on your experience with the Railways?

I would say it has been a very engaging and exciting journey so far where now we are challenging the best of the Railway MNCs in their product domain and winning consistently. I remember when I joined the Indian Railways as a young All India Service Officer way back in the 90s , I used to be awestruck with the technical knowledge and product design capability of these same MNCs but today with the Escorts platform we are winning and creating value for the country against these same MNCs.

With our strong in house R&D and our global Technology collaborations we are confident to offer products which are superior, with more features and as are per the latest International safety and operational standards compared to the present available products in the markets from these MNCs and at a lesser price.

My experience with Railways has been a definite help as most of the senior management of Indian railways and also many Metro Authorities and Railway Production units has been either my colleagues or my seniors. This has helped me to easily connect with the prospective customer and understand their issues and problems and offer them a realistic and effective solution. With all these positive vibes from our customer and our continuous, deliberate attempt to push our technology domain barriers, and an effort to create a world class tech ecosystem we are becoming hungrier and becoming more confident to mine a new future in line with inherent entrepreneurial spirit of Escorts.



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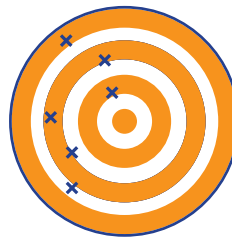
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High Accuracy
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Low Accuracy
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Being accurately precise

Automation can be an answer to those who are looking for increase in productivity, accuracy and consistency.

By Swati Deshpande

Automation offers numerous advantages. Most importantly, it helps eliminate human error, achieving high accuracy and consistency. Explaining this with an example, Ganesha Prabhu, General Manager-Factory Automation, Pepperl +Fuchs (India) Pvt Ltd said, “Some simple examples of automation in our day to day life are ATMs, cash counting machines, etc.” If this work is to be carried out manually, it may not achieve the same accuracy each time.

Man vs automation

In the industrial world, accuracy and repeatability are the key areas where a humans can make an error resulting into lower productivity. Elaborating on the same, Mahesh J. Bhargale, General Manager – Manufacturing, Racold Thermo said, “In manual process, precision and accuracy depends on operators’ skill that varies from operator to operator. Many times accuracy and precision cannot be achieved consistently due to operator’s fatigue. Automation gives consistent output that attains unmatched accuracy & precision.” Extending the thought further with an example, he said, “We use welding robots and SPMs to achieve these factors. This has reduced the welding re-work drastically as well as helped us improve the productivity by five times.”

In order to achieve desired consistency & repeatability, the automated system should be designed properly with right quality of raw materials with other required parameters. “Repeatability is the key benefit of automation. In order to get desired results regularly, periodic maintenance of the machinery is very important,” Bhargale added.

High precision or consistency automatically leads towards lesser defective products. “Once the user sets the right material input along with right parameters setting, you will get ‘near to zero’ defects,” continued Bhargale.

“Indian customers do not want cheap automation. Instead, they look for value for money solutions.”

Ganesha Prabhu, General Manager-Factory Automation, Pepperl +Fuchs (India) Pvt Ltd

Automation combining with right use of processes and technology, can also achieve Government of India’s ‘zero defect, zero effect’ motto. Explaining this further Bhargale said, “In order to avoid sludge generation in the chemical treatment, along with automation, what one needs is an eco-friendly approach. Nanotechnology of pre-treatment instead of a conventional chemical pre-treatment and use of solar heater or heat pump for heating chemicals/water for process can be most common eco-friendly choice for the said process.”

Is it expensive?

The Indian market is cost sensitive and automation obviously is an investment, which Indian mindset may hesitate to do.

Speaking on it, Prabhu mentioned, “Indian customers do not want cheap automation. Instead, they look for value for money solutions. They evaluate automation solutions based on initial investment, its ease of maintenance including after sales support, increase in productivity and what competitive edge the system will offer”

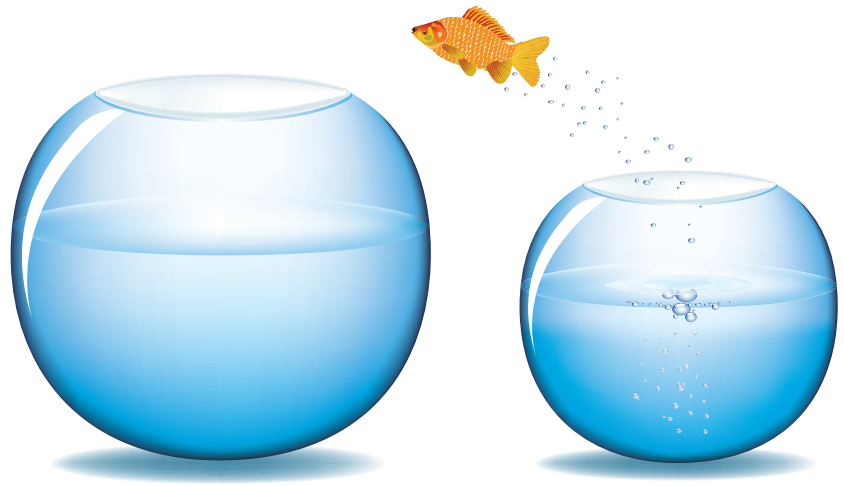
Adding a different dimension to the discussion, Bhargale said, “Expenditure can be evaluated based on investment returns ratio (IRR).

One has to calculate the payback period to make any decision. Any investment with payback period less than two years is considered as good investment in our company.” However that should not be the only criterion for decision making. “Sometimes in a special case, we also consider the intangible benefits to go ahead with investments, which are more than two years payback period,” he concluded.

“Repeatability is the key benefit of automation.”

Mahesh J. Bhargale, General Manager – Manufacturing, Racold Thermo

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Having an ambition to keep learning and growing is great; in fact, it is necessary. Engaging, one has to realise that higher you go; bigger would be your canvas. And to be successful at that level, you have to adapt various skills apart from your core skills, this can not be done overnight. Therefore, a journey towards career growth should be a conscious and systematic effort. Just like a systematic investment plan (SIP) that you opt for growing your money, a professional needs a planned approach towards career development. And it will prepare you to be noticed for bigger opportunities. That is the way, you move up on your responsibilities as well.

Dream big, reach higher

If one has to achieve greater heights in career, it is important to have a vision and a right plan to achieve the same. Thus, the first step towards growth is to set the vision and your aspirations. For example, a youngster aspiring to be a global professional who wants to go places should know at least one foreign language, besides having the right domain expertise and experience.

Identify weaknesses

Recognising your shortcomings is one of the first steps to overcome them. This will help an individual to increase competency levels transforming him/her into a better professional. Let's say, you are a great engineer who also understands the business quite well but are weak in communication skills. Then, you need to start by accepting it and then work towards strengthening the same. Slowly, you will have learnt the art of getting heard and reaching out at all levels.

Staying updated

As the environment, surroundings and technologies change, so should we. Adapting to new situations and learning new skills

will help one stay updated. In fact, it will actually let you stay a step ahead. Remember, knowledge is always useful. What would be the right time to learn how to use a parachute? Well, it's definitely not when you are up in the air! The best time to learn it is when you are on the ground. So when the time comes, you are just ready to use your skills. Similarly, you can learn new skills and stay updated with advanced technologies much before you actually need them so that you are ready to use them when the right time comes. Sounds challenging? Well, it is! How else will you truly 'grow' otherwise? It is quite akin to running on the treadmill, where your balance and fitness can be maintained only by running continuously.

Being curious

Manufacturing professionals are almost always engrossed in their work. While it is surely good to carry out duties assigned to you with dedication, it would be equally worthwhile

to be open-minded to other tasks and assignments that may be beyond your 'core' job. Just try doing that and you would be surprised to see how it opens new doors of growth opportunities for you.

Being curious about other skills can help you widen your knowledge base and broaden your horizons both professionally and personally. Additionally, it will give you a great level of professional satisfaction. Go ahead and simply do it. After all, you owe it to yourself and your organisation! In our Group, we stroke individual's desire to learn and grow, and have varied processes in place. 🎯

If one has to achieve greater heights in career, it is important to have a vision and a right plan to achieve the same. Thus, the first step towards growth is to set the vision and then work towards your aspirations.

Dr Raju Mistry,

Group Head - Talent Staffing, Aditya Birla Group





Automation is the future!

Human-robot collaboration is an inevitable catalyst in the manufacturing ecosystem.

By Pradeep David



For economic growth of a country, a strong manufacturing industry coupled with maximum productivity is a must, which boosts economic developments and helps develop allied industries that support manufacturing. However, in today's globalised and highly competitive world, the manufacturing industry has to keep reinventing itself to reduce costs by implementing better technology, processes, improving productivity and quality. The production in industries like automobile & electrical assembly and food & packaging, comprises of several processes that require accuracy and precision. A need has risen, for faster output and delivery of these products in the most efficient manner especially as the industry witnesses a rise in product demand and production cost and the lowering of market prices.


The United Nations Industrial Development Organisation (UNIDO) published the Yearbook, which states that in India, the Manufacturing Value Added (MVA) grew by 7.6 percent in 2015 compared to the previous year, which means that production in India has been on a rise and will only continue to do so. As productivity needs to increase, there has been a shift in focus to making the processes more time saving while ensuring consistent quality in output. Thus, organisations have resorted to taking the aid of collaborative robots or co-bots to ensure that the procedures are safe and completed with finesse. Hence, there is a shift from man-made products to collaborative robots or co-bots assisted ones as the aim is now to reduce or eliminate routine, manual and clerical tasks.

In a human-machine study conducted by MIT researchers at a BMW factory, it was shown that teams comprising of humans and robots were around 85 percent more productive than teams made of either humans or robots working individually. Also, the cooperative process reduced human idle

time by virtue of its pace-setting ability. They are also a more affordable option with minimum chances of any injury to the person, who is working alongside them.

Today, most plant floors have become 'smart', doing more than their basic sensing, measurement and actuating roles. The concepts of accuracy and repeatability have gained momentum because companies are realising the need to sustain manufacturing efforts without compromising on quality and efficiency. For industries that deal with processing, assembly, inspection or material handling, in some cases accomplishing more than one of these operations in the same system, repeatability is more important than accuracy. Many companies are now incorporating new robotic technologies like collaborative robots to speed up production.

BMW automated the laborious task of applying door sealant on cars before the door casings are attached and moved workers to less strenuous and more interesting tasks by employing collaborative robotics in to their daily processes. Employees were able to work in close proximity to the robot without any safety guarding. This eased the physical burden for older workers as well as ergonomics for difficult manufacturing processes.

Companies in India need to understand that adopting these technologies will also guarantee that more businesses will shift their bases to a country that has already incorporated such technologies, also meaning that there will be a loss of business for countries that don't. Barclays Equity Research analysts estimates that the collaborative robots market will grow to \$3.1bn by 2020 and \$12bn by 2025 which means more companies are accepting the need to equip themselves with better technology. Co-bot is an inevitable catalyst in the manufacturing ecosystem of tomorrow. 



"There is a shift from man-made products to collaborative robots or co-bots assisted ones as the aim is now to reduce or eliminate routine, manual and clerical tasks."

The author is General Manager, India at Universal Robots

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Indian economy to play an instrumental role in sustaining the global growth

Tomohiko Okada, Managing Director, Toshiba India Pvt Ltd (TIPL) says , infrastructure growth in India is pivotal and requires a major overhaul to meet the exponentially increasing domestic demand.

By Swati Deshpande

Q Can you please elaborate on Toshiba's business in the railways and metro sector in India?

Toshiba has vast experience of delivering various projects in the space of mainline railways and MRTS application worldwide. We are well poised to replicate that success story in India as well.

Currently, Toshiba is engaged in developing and delivering state-of-the-art technology systems and solutions for railway and metro sector in the country through our business partners. In the metro business, we are delivering HVAC system for DMRC rolling stock (RS10) project and our state-of-the-art technology propulsion system for a Kolkata Metro PJ owned by Indian Railways. Similarly, for mainline railways, we are developing propulsion equipment for a technology up-gradation project of Chittaran-

“Transportation system, especially railways, forms an essential element of the infrastructure in most of the countries, and also in India. It is all the more important to leverage Indian Railways' potential to meet the global sentiment and stimulate its own growth significantly.”

jan Locomotive Works (CLW) for their three phase 6,000 HP electric locomotives.

Q There has been an immense emphasis on the infrastructure in India since couple of years. How does it boost the sector and hence, ultimately your business?

Indian economy is projected not only to grow domestically but also to play an instrumental role in sustaining the global growth in the times ahead; and that calls for a robust infrastructure to sustain such amplitude of economic growth. Otherwise too, infrastructure growth in India is pivotal and requires a major overhaul to meet the exponentially increasing domestic demand.

Transportation system, especially railways, forms an essential element of the infrastructure in most of the countries, and also in India. It is

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Toshiba will establish a new production facility for electrical equipment for railway systems in Hyderabad. Production is planned to start in April 2017, and will be expanded to match demand.

all the more important to leverage Indian Railways' potential to meet the global sentiment and stimulate its own growth significantly.

The current government is taking necessary steps in that direction by expediting on projects like dedicated freight corridors, high speed rail projects, new metro systems in cities having population of more than three million., which are going to throw up new business opportunities for companies like Toshiba that are investing in building skills and facilities in India to serve the market.

Q What are the various projects in the sector of railways and metros the company is working on currently in India?

Besides the ones under delivery like DMRC, Kolkata Metro and CLW/IR PJ, we are also pursuing many other opportunities coming up in the space of mainline railways and metros sector. Just to name a few Western Dedicated Freight Corridors (WDFC), procurement of semi high speed train sets, Ahmedabad Metro and Mumbai Metro are the projects, which holds potential for us and we are currently focusing on.

Q The company works closely with Indian Railways. Can you please tell us about some projects that the company has recently undertaken?

Indian Railways' initiatives like capacity building and modernisation are going to generate additional requirement for new age technology solution. We would like to offer our cutting-edge technology and reliable product to cater to this additional demand of Indian Railways.

With Railways Ministry's focus on bringing new age technology on their rolling stock, we believe Toshiba would have many opportunities on its way in Indian market.

Currently, we are working on technology up gradation project of Indian Railways for CLW on their 6,000 HP electric locomotive, which is a recurring requirement on annual basis depending on the production plan of CLW for that kind of locomotives. Besides that, we are also working with a car builder to supply our state-of-the-art technology product for new trains being procured by Indian Railways for Metro Railways Kolkata.


Q Please tell us about the state-of-the-art factories that the company has in India for manufacturing rail systems.

In our endeavour to expand our commitment to India and establish it as an export hub, we structured a new division



"In our endeavour to expand our commitment to India and establish it as an export hub, we structured a new division in Toshiba Transmission & Distribution Systems (India) Pvt. Ltd. (TTDI) to create a new state-of-art production facility for manufacturing electrical equipment for railway systems."

in Toshiba Transmission & Distribution Systems (India) Pvt. Ltd. (TTDI) to create a new state-of-art production facility for manufacturing electrical equipment for railway systems.

The new unit will manufacture power conversion systems and train control systems that provide overall operation management. Production is planned to start in April 2017, and will be expanded to match demand. TTDI expects the plant to have over 100 employees by 2020. New manufacturing base in India makes it possible to lower our production cost and to meet our "Make in India" initiatives. It also helps us in expanding our business by structuring commercial network in local market. We will grow the new manufacturing base with investments FOR THE NEXT INDIA. 

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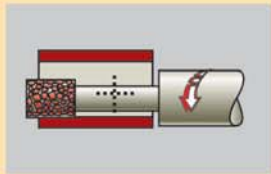


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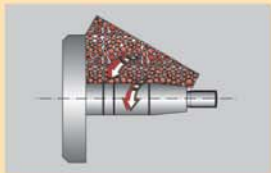


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Machining Motors

For engineers, who run CNC machines round the clock, and who want to sleep soundly at night, reliability and dependable support are essential.

Based in Dettingen, near Stuttgart, Germany, DIETZ-motoren is a privately owned business that has spent almost 100 years perfecting electric motors and radial fans used in niche industry sectors, such as food production, textiles, specialist machinery, etc.

None of the company's products are made in great volume; some of the manufacturing processes, such as winding, are in fact, still done by hand. However, DIETZ manages to produce around 150,000 motors and fans of various sizes and power outputs every year, most of which are shipped to customers overseas.

The company's finishing and assembly buildings are busy, but light and relatively quiet, and are dotted with small tress and plants, which give a peaceful, natural feel. The adjacent machine shop, on the other hand, is noisy and, by comparison, frenetic. On most days, it is open and running round the clock. This is just one of the company's two factory sites. The other is in the Swabian Jura, the low, snowy mountain range of the state of Baden-Württemberg.

The Dettingen site, with the bigger of the two machine shops, is home to six of the company's eight Haas CNC machine tools as well as Haas SL-30 and ST-30 turning centres and a Haas Mini Mill, there's a Haas VF-5 and two Haas VM-3s, which do most of the higher-volume machining.

"The VM-3 was our first Haas machine," says Chief Engineer, Dieter Irsiegler. "We needed a flexible vertical machining centre with good power and high spindle speed.

"We have a large and varied product range, so we also needed the optional 40-station tool changer. The table on the VM-3, which has T-slots in X and Y, allows us very quickly and easily to create fixtures for our parts," he added.

Between them, the VF-5 and the VM-3 can be called upon to machine any part from a database of 400 different programmes, to tolerances of 0.02 mm. All the Haas machines work between 16 and 24 hours a day, depending upon demand, and each of them is equipped with a Haas HRT310 CNC rotary table.

"They are very reliable machines," adds Irsiegler. "It doesn't matter how many hours they work, they always keep tolerance. The VF-5 is actually ten years old, so it has made a lot of parts in its life so far."



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Chief Engineer,
Dieter Irsiegler

After the company had bought its two Haas vertical machining centres, it also invested in a Haas SL-30 turning centre, which, like the other Haas workhorses, runs 24-hour shifts. It is used to machine high-tolerance surfaces on flanges.

"The Haas CNC is another feature of all the Haas machines that gives us greater flexibility. The control is very easy to use, and it's essentially the same on all Haas machines, so we're able to move operators between machines – whether vertical mill or lathe – when we need to." Again, according to Eng. Irsiegler, the Haas SL-30 has proven to be 100-percent reliable.

"Reliability and service are very important," he reiterates. "We have no back-up, so if a machine were to break down, we'd need it fixed and up-and-running straight

away. The local Haas Factory Outlet is very efficient, and they give us good and prompt support."

For engineers like Dieter Irsiegler, who run CNC machines round the clock, and who want to sleep soundly at night, reliability and dependable support are essential. Unlike finishing and assembly areas, machine shops are very noisy places. They need to stay that way. 

Source: Haas CNC



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Simply *'Two'* Good!

As the luxury car market in India matures, Rohit Suri, President, Jaguar Land Rover India, believes the synergy between two iconic brands – Jaguar & Land Rover – will prove to be a decisive advantage

By Niranjana Mudholkar



The luxury car market in India has been steadily evolving over the last one decade or so. The segment has been primarily dominated by the three marquee German brands. In fact, the top three positions have been consistently bagged by one of these three players for a long time.

And while two or three other players have been there for some time, vying for the fourth spot, the entry of Jaguar Land Rover (JLR) in the June of 2009 signalled the arrival of the fourth strong player in the top segment. It's been seven years since then and JLR has firmly established itself in the fourth spot. The Machinist recently caught up with Rohit Suri, President, Jaguar Land Rover India, to understand how the company's fortunes have been shaping up since then.

The journey

It is only befitting that the iconic brand's corporate office is located at an iconic address in Mumbai—Ceejay House at Worli. It's probably the most expensive commercial real estate space in Mumbai but for Rohit Suri, the emphasis is more on its 'iconic' value. At 8.30 am, it's a bit early by Mumbai standards but for Suri it is quite usual. Growing business has been keeping him busy and he prefers to start early to get more out of his each day.

We start with a refreshing cup of tea and an equally refreshing smile from Suri; after all, the Jan-March quarter has seen a 45 percent growth for JLR. "Overall, it's been a really exciting journey for JLR in India since we launched in 2009," he says. Suri points out that JLR was not present in India at all before the Tatas took over in 2008. "But since the time we have launched, we have received overwhelming response to our products. It's been fantastic. We have grown multiple times almost every year."

Suri says that although JLR has been a late entrant in this market, it has been able to achieve a good market position. "Today, our market share is approximately around 9 percent in the luxury car segment. So from that perspective, we are really happy with the growth. We have grown almost 15 times of what we were when we started. This whole growth story has been absolutely amazing."

Reasons for growth

"First of all, it is the iconic nature of these brands," Suri remarks. He believes that these brands are absolutely the best of the bests. According to him, the fact that the Tatas own it has been a very big plus. "Secondly, we have gone about it in a very structured manner. So we did not appoint dealers in hurry. We made sure that we had appropriate showrooms with

JLR India sales numbers

Year	Units sold
2013	2913
2014	2857
2015	Not disclosed
2016 (Jan-Mar 2016 - Q1)	1000+

The Top Three* in 2015

Brand	Units sold
Mercedes-Benz India	13,502
Audi	11,192
BMW (including MINI)	6,890

*Indian luxury car segment. Source: Official company figures

proper infrastructure from where these cars are sold. This is supported by a world class after sales infrastructure. From the very beginning, we have focussed on aspects like parts availability, parts distribution and so on. Plus, all our workshops were set up with world class equipment standardised by us."

Also, almost immediately after it launched in India, JLR started a training academy in Pune with expert trainers, who are constantly training its people in the network. "So this focus on making sure that the brands were well supported as far as the customer was concerned has helped us immensely."

Standing of the two brands

Interestingly, within its current portfolio in India the two brands Jaguar and Land Rover are split approximately fifty-fifty. "So it's a balanced portfolio. All our dealerships are dual branded dealerships; so they will have both brands with them. If you compare this with our other markets worldwide then



Jaguar Land Rover India Parts Distribution Centre



you will see that many places have single brand dealerships. But in India, they have been together while maintaining their individual brand identities,” Suri shares.

He further adds that in India, while both brands have their own set of fans and followers, people buying these cars are buyers for both the brands. “They buy these cars for the iconic nature of these brands. For example, a person who owns a sedan would also like to own a SUV. Of course, that is the primary trend though there are few people who would buy individual brands.” Suri also believes that that more and more people are coming to buy these kind of cars. “People are now exposed to what’s happening globally; they are well read and well travelled. Plus, they also have the aspirations to have the best. This is another reason for us to be happy,” he reasons.

Distinct advantage

Something that distinctly separates JLR from its competitors is the fact that it has not one but two brands—one for sedans and one for SUVs. “From my point of view, we got a little variety. We have got two iconic brands to offer to our customers and both have their distinct characters. Going forward, this is going to be a huge advantage to us. As the market matures, it will be easier to segment the buyers into buyers of sedans and SUVs. At that point of time, this will be great advantage for us,” Suri believes.

Also, what further helps JLR is that there is great synergy between the two brands. Both add to each other. Both are iconic. One rubs off on the other. “So that is one advantage that we have over the Germans. For them to differentiate between the sedans and the SUVs is not going to be as easy as it

“Today, our market share is approximately around 9 percent in the luxury car segment. So from that perspective, we are really happy with the growth. We have grown almost 15 times of what we were when we started.”



will be for us,” Suri remarks.

On the manufacturing side

At present, Jaguar Land Rover in India is manufacturing five models at its plant in Pune (Maharashtra). This includes the Range Rover Evoque, Land Rover Discovery Sport, Jaguar XE, Jaguar XF and the Jaguar XJ. “In terms of local content, we have a team, which is working to see how we can continuously add to our local sourcing. That drive is absolutely on since day one. Although I cannot put an exact figure to that, it is suffice to say that it is a focus for us because it also helps us overall in driving down the costs,” Suri shares but somehow there seems to be a bit of reluctance in terms of sharing more information on the manufacturing front on his part.

Regular launches

Another reason why JLR India is doing relatively well is that it has been launching new models consistently. Suri says that it will continue to do so. “This is one of the other great things about this great company. The company has seen a total turnaround after the Tatas have taken over. For the last few years, it has been declaring healthy profits. These profits are being channelled into re-investments and therefore we are seeing a lot of new products almost on a continuous basis from our plants in UK. That has surely helped us grow in the Indian market. Because the company is doing well, it is investing back into developing new products on a regular basis and it is very exciting.”



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Government play

What does Suri think about the Government’s decision to jump directly from Bharat stage IV emission norms for petrol and diesel to Bharat stage VI norms by April 1, 2020? He does not seem to be much worried. “Being a global player and having presence in different markets around the world with advanced regulatory norms in terms of emission, JLR would be able to deal with this pretty well. It will not take us time to adapt to any changes as far as emission norms are concerned.”

And how about the Delhi Diesel engine ban? “Yes, the diesel ban definitely impacted us because it came suddenly and NCR happens to be a good market for us constituting almost 20 percent of our sales portfolio. Fortunately, we already had petrol products in our portfolio so we could deal with it. For example, we had Jaguar XE which was launched in petrol only and for Jaguar XJ we already had a petrol variant. So we could immediately substitute diesel models with petrol models. In a sense, we were already planning for this—not specifically for the ban but because we were seeing some change towards petrol with the gap between diesel and petrol prices getting closed over the last 2-3 years. That’s why we already had cars with petrol variants. We have also introduced a petrol variant of the recently launched Discover Sport. So we are quickly trying to adapt ourselves because it does impact us.”

Non-core activities? Not really!


Back in the UK, JLR has launched an ‘innovation’ startup venture InMotion that builds apps and on-demand services

to address and overpower digital era’s travel and transport challenges. JLR is also looking to launch smartphones and accessories by early 2017 through a tie-up with the Bullitt Group to develop a bespoke smartphone and range of accessories. What is the significance of this seemingly non-core activities? “You will have to really wait a while for these to materialise. But I would say that these are linked to our core business. We believe these activities are going help our core business.”

In terms of the digital venture, Suri argues that nowadays, a digital revolution is taking place and cars have to be more and more digital savvy as we go along. “As much as it is possible and feasible in the digital arena, it will get linked to cars also. It is an initiative in that direction. It is still in a stage of infancy so you have to wait and see how it evolves in the final stage. But the intention is to service the requirements of our car customers,” he adds.

Vision for JLR India

Suri wants JLR India to acquire the highest share in the luxury car segment in India. “That is my vision and we are very much driving towards that direction by setting up a very solid foundation for our two brands. Everything we do is guided by the ‘customer first’ approach. It’s not an easy job but I think the focus itself makes sure that we drive towards that in a very diligent manner. We are already seeing the results of this and we know that we are pretty well placed.”

Of course, Suri is well aware that the luxury car segment is very small when you look at the overall Indian car industry. It’s just about 1.2 percent of the overall car market in India. “In mature markets, this is in the range of four percent to five percent. So there is a lot of headroom. We need to see some good, healthy economic growth to see that this segment also grows. We are watching very intently as to how the overall Indian economy grows going forward. So far, the last 2-3 years haven’t been as per expectations. The start of this year has been good. Hopefully, things are turning around and if that happens it will be really good for us,” he adds on a positive note. 



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Volkswagen India starts production of the all-new Ameo

Volkswagen India has rolled out the very first Volkswagen Ameo from its Pune Plant in Chakan. After its world premiere at the Delhi Motor Show earlier this year in February, the Volkswagen Ameo starts its series production recently. Volkswagen India will rapidly ramp-up the production of Ameo to build up enough inventory before market introduction. Blue Silk in colour, the first Ameo to roll-out of the plant comes with a 1.2-litre 3-cylinder MPI engine and marks yet another milestone in Volkswagen India's growing portfolio in the country. With this addition, the company has successfully reinforced its commitment to India where it has already invested close to Rs5,720 crore (approximately €825 Million*) since its establishment in 2007. The Volkswagen Ameo is a car designed and developed specially for the Indian market. Speaking on the occasion, Devendra Fadnavis, Chief Minister of Maha-



ashtra said, "This roll-out means a lot to us as it explains to the world what 'Make in India' actually means." Commenting on this major development, Dr. Andreas Lauer, President and MD, Volkswagen India Pvt. Ltd., said, "Due to the expected high demand for the Ameo, we have recently added a third shift to support the extra production volumes at our plant. We are committed to ensuring that our customers get their Ameo as soon as possible."

Force Motors opens engine plant for Mercedes-Benz at Chakan, Pune



Force Motors' new plant at Chakan was recently inaugurated by Maharashtra Chief Minister Devendra Fadnavis. The Force Motors Chakan plant is spread over 130,000 sq ft with eight lines that produce and test up to 14 engine variants. This includes the 4 cylinder gasoline and diesel engines, 6 cylinder V-type gasoline and diesel engines, powering the complete range of Cars and SUVs made by Mercedes Benz India. It employs around 200 people and works in two shifts. The new plant has a current annual capacity of 20,000 engines and 20,000 front and rear axles. This capacity can be further enhanced, should there be a requirement from Mercedes Benz India. This project was conceptualised in June 2015 and the first engines rolled out in February 2016. Made with an investment of Rs100 crore this plant is a part of the Rs700 crore investments pledged by Force Motors over the next two years, across its value chain for multiple products / business verticals. Speaking on the occasion, Prasan Firodia, MD, Force Motors, said, "This new plant will help Force Motors be more flexible in terms of the production capacity demands and will enable us to continue to produce engines and axles to the exacting standards expected by Mercedes-Benz globally."

JBM Group's renewable energy initiative appreciated by Govt. of India

JBM Group has received a certificate of appreciation from Union Ministry of New and Renewable Energy for generating and using solar power at its plant at Manesar (Gurgaon), Haryana. The certificate was given by New and Renewable Energy Minister Piyush Goyal at an event recently. The Manesar plant of JBM that manufactures auto components for 2 wheelers had commissioned a 250 KV rooftop solar thermal power plant in 2014. It is being captively used for generating hot water which is in turn utilised for the surface treatment process in the paint shop at the plant. The steam generated from the solar plant boils 10,000 litres of water per day, reducing the dependence on traditional sources of energy like LPG and diesel.

Nishant Arya, Executive Director, JBM Group said, "Renewables hold an important position in our business plans. We are utilising renewable energy to reduce costs as well as create a new revenue stream."





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Mercedes sells 6,597 units in Jan-June 2016 period

Mercedes-Benz India registered a sale of 6,597 units in the January to June 2016 period registering a flat year-on-year growth (January to June 2015: 6,659 units). Roland Folger, Managing Director & CEO, Mercedes-Benz India, commented “We are quite satisfied with our overall sales performance in the first six months of the year, despite facing market challenges throughout the first half year. This further strengthens the fact that luxury car buyers overwhelmingly prefer Mercedes-Benz. The sales growth would have been much higher and in double digit had we not lost sales in the important Delhi NCR and Kerala markets.” Folger further added, “The second half of the year promises to be extremely exciting, as there is a pent-up demand for our products and we are hoping for a positive decision. We will witness some of the most fascinating product introductions including the ones without a predecessor, rolling-out some industry benchmark service initiatives, further expand our network into new markets, as well as some key growth announcement for Mercedes-Benz. We are keenly looking forward to a long-term policy roadmap for the auto industry, which is a key contributor to India’s GDP and ‘Make in India’ campaign.”



McLaren-Honda, NTT announce three year partnership



performance to support its Formula 1 race team. The McLaren team celebrates its 50th anniversary on the Formula 1 grid this year and this partnership will underpin its new IT strategy which has a focus on cloud, mobility and people centric services. Ron Dennis, Chairman and CEO, McLaren Technology Group that includes the McLaren-Honda team said, "I am delighted to welcome NTT Communications to the roster of McLaren-Honda's high-technology and premium brands. NTT has a long association with technology that goes all the way back to the introduction of the telegraph in Japan. Given McLaren's long association with innovation; it is only fitting that we should join forces with such an established and well-respected leader in enterprise communications technology who well understands our own drive for relentless technical development.

McLaren-Honda and NTT Communications Corporation have announced the start of a three-year technology partnership. Under the agreement NTT Communications becomes a Technology Partner to McLaren-Honda. Over the course of the partnership, NTT Communications will provide network, cloud, data connectivity and other innovations to meet McLaren's need for an IT communications platform that delivers optimum performance

Visteon completes acquisition of AllGo Systems

Visteon Corporation has announced the completion of its acquisition of AllGo Embedded Systems Pvt. Ltd., an India-based leading supplier of embedded multimedia and smartphone connectivity software solutions to the global automotive industry. The business acquired from AllGo supports Visteon's global vehicle cockpit electronics business and enables Visteon to offer a highly integrated solution to automakers that includes multimedia software and codecs, and smartphone connectivity features. The transaction includes AllGo's technology assets and automotive business and approximately 140 employees – mostly software engineers based in India, supported by sales offices in the U.S., Europe and Asia. “The acquisition creates a new global multimedia and smartphone connectivity supplier benefiting from AllGo's entrepreneurial approach and Visteon's global scale,” said K. Srinivasan, Director and CEO, AllGo Systems.

Bridge-type CMMs





Tata Technologies opens new 8,700 sq ft technical lab

Global engineering services provider, Tata Technologies has announced the expansion of its Engineering Research and Development Centre, Axia—VAVE Centre of Excellence, at the company's Hinjewadi campus. The 8,700 sq ft facility will provide Tata Technologies' clients with end-to-end product development capabilities including product innovation, value engineering, cost engineering and teardown and benchmarking services.

The facility will support multiple full-vehicle and machine development programs currently underway at Tata Technologies. Such initiatives call for a larger physical space wherein equipment can be dismantled, studied, and compared with the competition to pinpoint areas for design improvement and cost optimisation. The new Engineering Research and Development Centre is equipped with the latest tools, software and machinery and can be used to perform benchmarking studies



for up to four passenger vehicles, two off-road vehicles or two trucks at a time. Tata Technologies also plans to use the facility for small prototype builds and robotics training. Warren Harris, MD and CEO, Tata Technologies said, "Axia – Vave Centre of Excellence is a response to the growing global demand for frugal engineering services."

Honda starts second assembly line at Gujarat scooter plant

Honda Motorcycle & Scooter India Pvt. Ltd. (HMSI) has inaugurated the second assembly line of its landmark fourth manufacturing plant at Vithalapur (Mandal taluka, Ahmedabad district) in the western state of Gujarat.

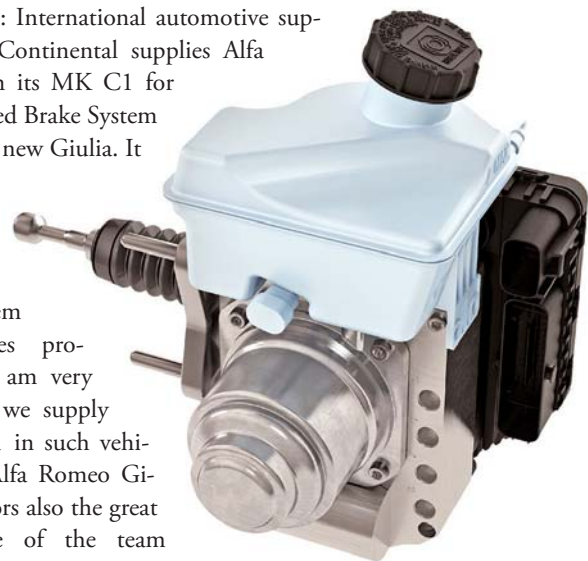


Adding an additional 6 lakh units annual production capacity, the fourth plant's total capacity has now reached 1.2 million units annually. The newly inaugurated assembly line is an exclusively for making scooters assembly will produce India's largest selling two-wheeler Activa. This expansion increases HMSI's total annual production capacity to 5.8 million units, including 1.6 million units at first plant (Haryana), 1.2 million units at second plant (Rajasthan), 1.8 million units at third plant (Karnataka) and another 1.2 million units at the fourth plant (Gujarat).

With its fourth plant, Honda two wheelers is giving a big boost to economic development in Gujarat. Honda and its 23 vendors have together invested close to Rs2,200 crore and generated nearly 9,000 new employment opportunities in the state. Of this, Honda's fourth plant is directly employing close to 3,000 Associates and has entailed a total investment of Rs1,100 crore.

Continental's MK C1 debuts in new Alfa Romeo Giulia

Faster braking and short braking distances: International automotive supplier Continental supplies Alfa Romeo with its MK C1 for the Integrated Brake System (IBS) of the new Giulia. It is worldwide the first time that the brake system enters series production. "I am very proud that we supply our MK C1 in such vehicle as the Alfa Romeo Giulia. It honors also the great performance of the team that helped to develop and to realize the series production of this innovative brake system," says Felix Bietenbeck, Head of Continental's business unit Vehicle Dynamics. "The MK C1 offers great braking force for safety systems and short braking distances help prevent accidents and reduce accident severity." Continental has developed the MK C1 electronic brake system, which is more dynamic, lighter and more compact than conventional brake systems. The new integrated system also reduces pedal vibrations and the driver always feels the same force-path characteristics in the pedal, thus, providing a high level of comfort.



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Haas Demo Days at IMT Manesar successfully concluded

1,100 visitors witness the latest technology presented by Haas

More than 700 customers visited the recent Haas Demo Day held at IMT Manesar, Haas Factory Outlet (HFO)—a division of CNC Servicing and Solutions. A ribbon cutting ceremony, facility tours and live cutting demonstrations were among the highlights of a highly successful event at this auto hub in north India. “To attract over 1,100 people underlines the growing importance that this high tech, engineering-driven city gives to adopting the latest CNC technology,” states Terrence Miranda, Managing Director, HFO Mumbai. “It also reinforces how Haas solutions offer an unmatched combination of technology and affordability, which are so crucial in today’s competitive environment.” Manesar is a rapidly expanding Auto hub located around 30 kms Southwest of New Delhi. Less than 2 km away is plant of Maruti Suzuki Udyog, where around 5,000 people are employed. The automotive, steelmaking, automation and power generation sectors are also well represented in the area. All this made for a well-attended



series of Manesar Demo Days 2016. The event opened with a high profile ribbon cutting ceremony. Hideo Yoshioka, Managing Director, Munjal Kiriu formally inaugurated the event. Following photos, the crowd left the red carpet and headed inside to witness live cutting demonstrations on two of the company’s best-selling CNC machine tools: A Haas VF-2 CNC vertical machining centre and a Haas ST-35 CNC turning centre. Like all Haas CNC machines, the VF-2 and the ST-35 are built at the company’s one and only factory in California, US.

Bigger & Better: PhillipsCNC Open House 2016 – Manesar

The company displays state-of-the-art machines from its global bouquet of brands



The second PhillipsCNC Open House concluded on June 24, 2016 at Phillips CNC Technical Center in Manesar. The multi-brand Open House was inaugurated by Managing Director of Munjal Kiriu, Hideo Yoshioka.

In India Phillips Corporation through its subsidiary CNC Servicing and Solutions India Pvt Ltd represents industry leading global brands such as Haas, Hermle, SHW, Zeiss, Sunnen, Tsugami, Maple, Kent, etc in India. The ‘PhillipsCNC Open House’ in India—the first of its kind event was hosted at the Phillips CNC Technical Center in IMT Manesar from June 22-24, 2016. The event registered footfall of approximately 1100 visitors coming from 700 companies over three days.

The Machines on display were: Kent KGS-510 AHD precision surface grinder, Tsugami M08J CNC lathe, Tsugami B0205 sliding head turning center, Maple Taiwan ME- 850 vertical machining center, Zeiss SF&G machine, Zeiss Contourcord, Zeiss Rondcom, Pinacho Smart Conventional 200 x 750 and Pinacho Smart Turning 225 x 1500.

This event showcased the latest technologies in milling, turning, honing, grinding and measuring with experts on hand to provide solutions helping manufacturers enhance their quality and productivity.

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July 2016

MAC



Inauguration of ACMEE 2016



Showcasing technological prowess

ACMEE 2016, which took place in Chennai, provided exhibitors a platform to showcase their latest advancements and a forum to network with clientele.

By Pushendra Shukla

ACMEE 2016, 12th international machine tools exhibition, one of the leading exhibitions on machine tools took place at Chennai Trade Centre, Chennai, during 16–20 June, 2016. The event was organised by Ambattur Industrial Estate Manufacturers Association (AIEMA) and National Small Industries Corporation (NSIC). The exhibitors displayed their technological prowess in the segments of CNC machines, CNC & PLC controls, CAD/CAM systems, cutting tools & accessories, special purpose machines, pneumatics, hydraulics, industrial robotics, instrumentation, low cost automation, machinery & machine tools, welding, material handling systems, energy saving solutions, sheet metal press, laser cutting, cleaning systems, cold forging machines, co-

ordinate measuring machines, control devices, power tools, system consultancy, testing & measurement equipment, etc. The participants came from around 40 countries.

For the inauguration ceremony dignitaries in the industry including Hitoshi Kono, EVP & Deputy Managing Director, Isuzu Motors India Pvt Ltd; Riuji Kawashima, Deputy Managing Director, India Yamaha Motor Pvt Ltd; Hidehiro Ishiura Director General, Japan External Trade Organization (JETRO); Yoshiaki Inayama Managing Director, Toshiba JSW Power Systems Pvt Ltd; Eiji Hagitani, Managing Director, MMC Hardmetal India Pvt Ltd; Satish Sadasivan; Managing Director, SCHUNK Intec India Pvt Ltd, P Ramadas, Managing Director, ACE Manufacturing Systems Ltd and V Sridharan, Zonal General Manager, SIDBI were present.

AMS sells 1000 machines; aims for higher growth

The customer centric approach has made Ace Manufacturing Systems Ltd (AMS) popular among corporate as well as small and medium scale enterprises.

Ace Micromatic Services is one of the most preferred names in the automotive industry. Its products are used to produce numerous critical parts of passenger vehicles, commercial vehicles, two wheelers, three wheelers, farm equipment, etc. The company is also a single source supplier of machines to many Indian OEMs and large size component manufacturers.

P Ramadas, Managing Director, AMS, a doyen in the industry who from day one stood by work ethics and principles has made AMS the largest machine tool manufacturer in the country with over 1000 machines sold last year.

While speaking about the company and business, Ramdas said, “Apart from the automotive industry, our machining centres also find applications in the die & mould making industry to manufacture plastic moulds, large press applications, etc. Moreover, one of the growing markets in India is the aerospace component manufacturing, where investments in Indian machining centres are on the rise. Another small but growing market for AMS is the medical and the dental equipment manufacturing. Many of AMS’ high accuracy machines find applications in this industry. The company also caters to the needs of the engineering industry including power &

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energy sector, oil & gas equipment manufacturing, pumps, motors & hydraulic systems, defence and other government sectors.”

AMS clocked a turnover of Rs356 crore last year and currently holds 19 percent market share in the Indian market. “Incidentally, we have no collaborations be it in the technology or at the product marketing front from day one,” Ramadas commented.

On his steadfast belief of ethical and honest working he says, “It is our belief and culture that we are to remain honest and work dutifully. All our employees are inculcated with the same belief. We go a step ahead and every morning all our em-

ployees practise meditation before they start work. This leads to concentration and focus on their job front.”

Ramadas is also holds the post of Vice President of Indian Machine Tool Manufacturers’ Association (IMTMA). Speaking as leader and veteran in the industry, Ramadas said, “We have to make India as the biggest machine tool industry country in the world in the next 10 years. From the beginning of the industrial revolution, every other country including US and Japan and now China has taken this slot. It is now India’s turn. India needs investments to be made in the field of research and development and job employment. With that, India is poised to be the world leader.”

Customers first is a mantra of success for BFW

Technology is the strength of the company and makes it a market leader, says **Ravi Raghavan**, CEO & Managing Director, BFW.

Bharat Fritz Werner Ltd, popularly known as BFW, is a flagship company of the Kolkatta based Kothari Group. BFW was incorporated in 1961 in collaboration with Fritz Werner Werkzeugmaschinen GmbH of West Germany.

BFW has a wide product range with over 200 special variants and more than 30,000 machines installed across the world. It is acknowledged both for its product quality and environment conservation efforts. It is one of the rare private sector machine tool companies in India to have completed 50 years of operation.

“Being the market leaders in this industry is a challenge and we have been in this industry since 1961. BFW is consist-



ent only because of the technology that’s been our strength. As newer technology develops, we embrace it wholeheartedly and put it into our machines. Our customers today are far more aware of the latest and we have to keep abreast of the same,” said Ravi Raghavan, CEO & Managing Director, BFW.

“What the customer needs is much more important so we prefer to be in constant touch with them, knowing their needs help us to understand them better.”

Speaking about the even, Raghavan said, “We are present in ACMEE to showcase our products for the automobile and Auto component manufacturers who are widely spread out in and around Chennai.”

DMTG enters India directly under own brand; new centre on the anvil in Chennai

R Vaidhyanathan, Head Operations, DMTG says that the company plans to expand its wings in India.

Founded in 1948, Dalian Machine Tool Group (DMTG) has developed a number of machine tool solutions throughout its history and has been a true pioneer for this industry in China. During past 60 years, the company has provided more than 500,000 machine tools and 600 automatic production lines for the automotive industry, wind power, oil drilling, rail transportation, engineering machinery and other key industries.

DMTG’s products have been sold to more than 100 countries and regions worldwide through its international distribution and service network, connecting several thousand sales agents as well as a number of storage centers to provide global service.

“In India, though DMTG has been present for the past seven odd years through dis-



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tributors, only in the recent past, the company has entered into the country on its own. Eyeing the potential market that India offers across all industries, the plan is to open up a training and technical centre in Chennai and then expand all over in a phased manner,” said Vaidhyathan, Head Operations, DMTG.

For the first time, the company is participating in the exhibition under its own-DMTG banner. The excitement of its



maiden participation could be seen as the number of inquiries was encouraging.

DP Technology is looking for expanding its presence in India

Mohamed Maitheen, Manager- Application, DP technology says that through ACMEE, the company is seeking new distributors.

US based DP Technology is a developer and supplier of computer-aided manufacturing (CAM) software for a full range of machine tool applications. ESPRIT, DP Technology’s flagship product, is a powerful, high-performance, full-spectrum programming system for milling, turning, wire EDM, and multi-tasking machine tools.

“At DP Technology, we love what we do and our success is mirrored by the thousands of customers who have

expanded their manufacturing capabilities with ESPRIT. In India, we have two active resellers based out of Chennai and Ahmedabad. We are identifying resellers in the NCR and Maharashtra regions as we are expanding our network,” said Mohamed Maitheen, Manager- Application, DP Technology.

Answering for their presence at ACMEE, he said, “We are using this platform to showcase our product and also look at distributors who can be a part of our business.”



Fagor Automation launches CNC 8060 at ACMEE for India Centric Customers

Fagor Control Systems Pvt Ltd believes in providing quality product and with superior after sales services at affordable cost.

Fagor Automation is a part of the Mondragon Corporation (MC)-the largest cooperative group in the world, having 260 group companies and present in all five continents and with an annual turnover of €11,875 mn with around 75,000 people around the globe.

Mondragon Corporation is present in more than 37 countries: With 125 production plants, corporate subsidiaries and commercial presence in all five continents. More than 71 percent of its revenue comes from international sales.

It is a company with great experience in the development and manufacturing of products for machine automation and control, showing our presence globally for last 35 years. Fagor Automation opened its first Indian branch office in 2008 in Bangalore, followed by Pune, New Delhi and Rajkot.

“Fagor Automation in India strongly believe in providing our customers quality product with superior after sales services at affordable cost. The company has a clear advantage as we offer a complete solution supplying, drives, motors, feedback devices, etc. together with our CNCs. Customers are glad to source everything from a single supplier,” said spokesperson

from Fagor Automation, Spain.

“The company bets strongly on globalization but with a local approach, thus the customer can be sure that he will find a solution tailored to his real needs. Chennai is for known as Detroit of India, with manufacturing plants of all major automobile companies, It’s a market where we can find Tier-1,2 & 3 manufacturers,” said Rakesh C Patel, Sales Manager CNC & Feedback Systems – India Operation, Fagor Control Sytems Pvt Ltd.

“We are constantly focusing in the growing Chennai market, and have been successful on our way. It’s very important to be a part in such big gathering happening in Chennai. Also, we have been participating in ACMEE since 2010. We meet all our existing clients and new clients in here and looks out to be a great opportunity for us,” he added.

“We have launched CNC 8060, for Indian Market in ACMEE-2016. Dual channel option, multi axis box drive, collision control, dynamic machining controls are some of the features available in this new launch. This launch would be a turning point for Fagor in India,” Patel said.



Forbes takes Make in India seriously

Ravi Prem, Chief Operating Officer, Forbes & Company Ltd says that the company works closely with its customers.

Forbes & Company Ltd is one of the oldest companies that is still in business. The company traces its origin to 1767 and is now a part of the Shapoorji Pallonji Group. It began its journey with the manufacturing of spring lock washers and expanded its capabilities to manufacture a range of precision cutting tools under the brand name of Bradma and Totem.

Speaking at the occasion of ACMEE 2016, Ravi Prem, Chief Operating Officer, Forbes & Company said, "We are very much associated with the auto industry. Bradma and Totem are well known brands. Today, we are upgrading and introducing new products which are unique and innovative."

"We are not only manufacturing products but working

closely with our customers to understand their requirements and provide solutions to their shopfloor issues. This is a strategy, which we have adopted to enable and push the Make in India concept," he added.

Forbes has over 32 percent market share today and intends to gain more by participating in exhibitions of stature. ACMEE is one of them where they are regulars and obviously Chennai is a key market for the company in terms of business and brand building. "Our new products in a few segments which we had not ventured into will be launched under the brand name of Totem. Totem enjoys a brand name not only in India but even internationally, so we intend to bank on this brand heavily," Prem concluded.

MMC Hardmetal plans unit to manufacture tools in India

Prashant Sardeshmukh, Director, MMC Hardmetal reveals the company's plans in India for coming years.

MMC Hardmetal is a 100 percent subsidiary of Mitsubishi Materials Corporation Japan. MMC Hardmetal India offers sales and services of metal cutting tools in India and provides total solutions to its customers. In the country, the company is the fifth largest supplier in terms of cutting tools with over 150 crore turnover. Incidentally, Mitsubishi globally is one of the oldest cutting tool suppliers.

In India MMC Hardmetal commenced operations in 1998 as a representative company and in 2006 operations in India started. This year as the company celebrates 10 years in the country, it is a milestone achievement for



it. "Plans are afoot to have a manufacturing unit in India and two cities have been identified. A decision on this will be taken by the management later," said Prashant Sardeshmukh, Director, MMC Hardmetal.

"The proposed unit will manufacture steel products and special tools in India and thus, satisfy the Make in India campaign too," he added.

On their presence in ACMEE, he said, "Chennai is one of the important markets for us. Last year we decided to go in a big way because we projected that 'Make in India' campaign will show its effect by this year. Even though it has not shown its effect fully, there are minor improvements that can be seen."

OSG launches a new drill at ACMEE

The company flaunts 'Made in India' products

OSG India, a 100 percent subsidiary of OSG Japan having a presence in India since 2005 and three manufacturing plants across India, has launched a new product under the banner of 'Make in India'. The newly introduced flat drill is especially developed for the Indian market considering sensitivities of the manufacturing sector in India.

The company caters to all the auto manufacturing companies including two wheelers. "We have launched a new product at ACMEE called the ADF. This is called the flat drill, which is used to drill the curved, inclined surface and the drill gives you very good performance because





of the new coating, called the EGS coating. We are also showcasing moon ball machine, which is more suitable for forging companies. It is noteworthy to add here is not only this machine is made in India but also R&D behind it was carried out in the country,” said Anup Kumar Das, Director, OSG (India) Pvt Ltd. Elaborating on the company’s participation in ACMEE, he said, “We prefer exhibitions such as ACMEE as Chennai and its surrounding areas has a very high potential to promote our product and also a good opportunity to have one to one discussion with the customers and give them a solution.” Furthermore, Das added that, “A higher plateau of innovation brought out by the company in last five years has



yielded over 750 new product lines (32,347 items) and 116 patents by OSG worldwide, which we are sure is a tall order. Apart from capital investments, we invest heavily in products and research.

SCHUNK has 65 percent market share in the gripping system

Satish Sadasivan, Managing Director, SCHUNK India is enthused by the response received at the trade fair.

Germany based SCHUNK, founded in 1945 is run by the third generation with more than 2,500 employees in eight plants and 30 subsidiaries as well as distribution partners in more than 50 countries. SCHUNK offers 11,000 standard components. Today, SCHUNK offers the world’s largest range of clamping technology and gripping systems with more than 2,550 SCHUNK grippers.



Present in India for the past 16 years, SCHUNK India has gradually gained an envious market share both in precision and clamping and in gripping systems.

Speaking to the Machinist, Satish Sadasivan, Managing Director, SCHUNK India, commented “A product which has

a label of Made in Germany has more value. In India, we have a design and service centre facility with a robust warehouse that ensures an approximate Rs 10 crore worth of valued parts are stocked. These are replenished every 45 days, so we ensure we have immediate stocks of every part needed on an immediate basis. This is very vital for our customers.”

Speaking on the market share that the company is currently enjoying, he said, “We are holding 45 percent of the market share in the precision and clamping market and 65 percent in the gripping system.”

SCHUNK which is an active participant and lead sponsor of ACMEE shows was very enthused by the response received at the trade fair.

Tsugami eyes top slot in India

Jayanth Vaidyanathan, Tsugami Precision Engineering India Pvt Ltd says that the company has launched two models for India markets.

Tsugami Precision Engineering India Pvt Ltd, a subsidiary of Tsugami Precision Japan started their manufacturing at Orgadam, Chennai in the year 2013, The integrated manufacturing facility incorporates the very latest in technology combined with the best practices of Japanese manufacture. The other two plants of Tsugami are located in Japan and China.

“We are one of the world’s largest producers of machines with an annual capacity of over 10,000 machines. We want to grow in India and be seen as the top machine tool company in a five year time frame,” said Jayant Vaidyanathan, Tsugami

Precision Engineering India Pvt Ltd, at the ACMEE show.

Incidentally, Tsugami has launched two new models of their popular machines at this show. These machines are ‘Made in India’ especially for Indian manufacturing industry. Emphasizing on the quality of their machines, he said, “We are moving from a manpower driving industry to an automated industry with lesser manpower. All our machines are automated to a large extent and require less manpower control.”

“The response at ACMEE has been good with some serious first time customers enquiring about our products in great detail which makes us pleased,” he concluded



UCAM looks forward to expand



Indradev Babu,
Managing Director,
UCAM Pvt Ltd says the
new factory can help
the company to save
time and money

UCAM specialises into manufacturing of precision CNC Rotary Tables, index tables and pallet changing solutions for machine tool applications. The products are known for their quality, reliability and performance in challenging and high demanding applications in various industries such as automobile, aerospace, power generation, medical & orthopaedic implants, oil & gas exploration, pumps & valves, general engineering, etc.

“UCAM has a very strong R&D team that has enabled the company to be a market leader in the country. All our products manufactured are Made In India, which we are very proud of. Our core product is rotary table. Though it is small equipment, is pretty complex in design and manufacturing. The expectation of the customer is very high and it is also very critical for the customers need. Our customers are very insecure about the performance of this product which can affect production,” said Indradev Babu, Managing Director, UCAM Pvt Ltd. He further added, “This has resulted in UCAM being the only producer of the rotary table in the country apart from imports from Japan and Taiwan, which are unable to compete in the Indian markets. Having said this, the competition continues to increase so we are aggressively trying to convince customers on one side and on the other side we are continuously working on improving the product technology and quality.”

Speaking about the new factory Babu mentioned, “Our new state-of-the-art, greenfield factory, in near Bangalore will enable us to deliver products at the shortest possible time resulting in saving money, space and time.”

WIKUS aims at increasing market share in India

Mukund P Bharadwaj, Managing Director & CEO, WIKUS India Pvt Ltd says that looking at the projected growth in the country, WIKUS has decided to have a plant in India

WIKUS India, a subsidiary of the Germany based WIKUS started its operations in India a year back after it bought over the operations and business from the Indian distributor. Today, WIKUS is re-establishing itself once again. WIKUS India’s plant is based out of Pune and is enjoying being in the Top five saw cutting tool companies in India.

Speaking on the taking over of the business & operations from the erstwhile distributor, Mukund P Bharadwaj, Managing Director & CEO, WIKUS India Pvt Ltd said, “The parent company decided to take over from the Indian distributor and establish as a subsidiary as the markets grew and the expectations from India drastically increased. The ‘Make in India’ campaign also pushed them to a large extent to take this step.”

It is obvious that a makeover takes time and WIKUS India is undergoing through that. Bharadwaj commented, “We might take another nine months to consolidate and then we shall look at increasing our market presence by employee our own personnel and increasing our distributor network. We aim to be in the top two slot at least in the next five years”.

On their presence at ACMEE, he said, “We are participating more to build our brand image and spread awareness about WIKUS’ presence in the country. Also, the fact that we are now directly in India with our plant in Pune reaffirms customers about products and aftersales service from the company. Furthermore, ACMEE provides us the right platform to get in touch with distributors who would be interested to look at our products”.

Wohlhaupter launches new product at ACMEE

P. S. Shivakumar, Sr. Regional Manager (South), Wohlhaupter says the new product has received

Germany based Wohlhaupter is a renowned name throughout the world as a manufacturer of modular tooling systems, boring and facing heads, clamping tools, standard tools and customized solutions for machining centers and mill turns. Participating at the ACMEE show, P.S. Shivakumar, Sr. Regional Manager (South), Wohlhaupter spoke about the new product that has been launched at the show, which is a first of its kind not only in India but worldwide too.





EVENT

Our new boring product has a special feature that enables the analog tool to be converted into a digital tool. This latest innovation is called Veribo and it is useful in the automobile, energy, aerospace, agricultural, engineering equipment, etc.”

Speaking about the response that the tool is receiving, Shivakumar mentioned, “We are getting a positive response. Customers have shown their interest in our product, especially, customers who want to switch from analog to digital are impressed by the innovation. This is an excellent product that we want to distribute in the Indian market. With this we have a vision that the Indian manufacturing industry is



technologically at par with European manufacturing giants,” he concluded.

Gandhi Automations launches auto door for pharma companies

The company aims at taking ‘Made in India’ products to the global market

Gujarat based Gandhi Automation manufacturers and exporters of entrance automation systems and loading bay equipment since 1996. The company has recently launched its auto door for pharma industry after extensive research and development. The product aptly named Clean Room Reset ensures that whenever someone hits the doors accidentally in a pharmaceutical establishment, the doors resets itself automatically. This feature eliminates the risk of traditional doors where it gets thrown open or getting stuck while closing.

Speaking on the same, Samir Gandhi,



Director, Gandhi Automations Pvt Ltd said, “Our new product has been developed recently. We have been promoting this product in all major exhibitions.”

Gandhi Automation notched a turnover of Rs105 crore last year and is expecting a 25 per cent growth in the next financial year and 50 per cent in the year after that. “We are aiming for these numbers as we are expanding our exports to US, Europe, Asia and SAARC Countries. Incidentally, countries such as Sri Lanka, Myanmar, North Africa and Middle East will also be targeted in the coming years. Our current exports are over 10 percent today,” Gandhi informed.



Partex Markings invests in brand building & distributors to gain market share

Magesh Ramadoss, Managing Director, Partex says the company plans to expand its presence in India.

Sweden based Partex is renowned across the world as a supplier of marking systems in different materials, such as plastic, foil and stainless steel. The systems include various types of ferrule printing machines, cable markers, wire markers, terminal block markers and heat shrink tubes. The company came into India in 2012 and now eyeing on expanding business.

“Seeing the success of Partex, the group is convinced to invest more and the first step towards that is to establish its brand name and appoint more distributors. The plan is to increase from the current 50 to 200 in a span of two years,” said Magesh Ramadoss, Managing Director, Partex.

“The easiest way of creating brand name is to participate in exhibitions and ACMEE is one of the most important in this regard for us in South India,” he said.

On the ‘Make in India’ concept, Ramadoss admitted that there are plans to set up a manufacturing plant in the future and export to other countries also. He defended the move to set up a unit in Bangalore as many well-known Sweden based companies such as Volvo are located in and around the city and it is easier to build a rapport quickly.



Tungaloy India aims to double turnover in five years

Jay Shah, MD, Tungaloy India hopes to participate more in trade fairs such as ACMEE

Tungaloy, since 1929 is one of the world's leading manufacturers of carbide cutting tools, friction materials, wear resistant items, and civil engineering products. Headquartered in Japan, Tungaloy provides products to customers all over the world in automobile, construction, aerospace, medical, power generation, infrastructure, and heavy industries.

In India, Tungaloy was formed as a subsidiary in 2010.

Tungaloy India in its first year created history of a sort by billing a turnover of Rs9 crore. In a span of six years, it has appointed 102 distributors and touched upon a turnover of Rs105 crore.

"This is perhaps one of the most successful subsidiaries of Tungaloy Japan," said Jay Shah, Managing Director, Tungaloy India.

Answering the query on manufacturing in India as the next step, he said, "We are a marketing subsidiary for Japan. Talks are on with them to establish a plant but we do not know when it will materialised."

Tungaloy India enjoys a seven percent market share in India their aim is to double the sales in the next five years.

Expressing satisfaction over the quality of the crowd in ACMEE, Tungaloy India hopes to participate more in these kind of exhibitions in the near future.

S&T Engineers (P) Ltd launches new machines at ACMEE 2016

D. Shanmugasundaram, Managing Director, S & T Engineers (P) Ltd says that the company has partnered with Taiwanese company to manufacture machines in India. This initiative is in line with Make in India.

With the motto of 'making technology affordable', S&T Engineers (P) Ltd, a Coimbatore based company, was engaged in sourcing and offering machine tools & accessories from the global producers for the last 19 years. Now taking a major leap, the company has joined hands with Taiwanese producer to manufacture machines in India. Elaborating on this latest developments, D. Shanmugasundaram, Managing Director, S & T Engineers (P) Ltd, said, "In June 2015, we had launched the STM range of machining centers, a co-production joint venture with Manford Machinery Ltd, Taiwan. This step is aligned with the 'Make in India' Initiative. Though this was the first foray into manufacturing activity for S&T group, our customers across India have shown excellent support and confidence in us. We are thrilled with this gesture."

He further informed that in the first year itself, the company manufactured and delivered 100 VL series vertical machining centers. The VL series vertical machining centers were targeted towards the die & mould industry. "These machines have proved beyond doubt that they represent value for money making our motto now read as 'making technology more affordable'. Emboldened by this response, we and our principals have decided to launch the production series of machines in this ACMEE show." These machines, following the same characteristic seen in the VL series have in additional advanced features such as powerful cutting, faster cycle times and economic running costs." Furthermore, they feature verti-



cal spindle as well as horizontal and double column configuration along with drill/tap configuration. Also, with automatic pallet changers for reduced handling time, which will enhance productivity in production applications.

Taking the occasion of ACMEE 2016 the first of the production series machine model VP 610 APC was launched on 16 June 2016. A ribbon cutting and symbolic starting of the machine was done in the hands of S. Ramesh, Sr. General Manager, Sundaram Fasteners Ltd, a TVS Group company.

"These state-of-the-art machines are being produced by our principals in Taiwan and now are made available in India through the co-production venture of STM," noted Shanmugasundaram. Speaking on the future plans of the company he said that the company is planning for big expansion in injection molding machines manufacturing with a joint venture partner.

The writer is Chennai based freelancer



Extend the frontier of milling efficiency

The use of Extended Flute Cutters is common across a range heavy duty operations in manufacturing sectors including general engineering, railway, aerospace and die & mould industries.

Indexable extended flute (sometimes referred to as 'long edge', 'porcupine' and even 'porky') cutters are universally regarded as an ideal tool for high performance rough milling, when a machining allowance per pass is significant. When dealing with milling deep shoulders, cavities and pockets or wide edges (edging), the application of Indexable milling cutters ensures impressive results. The use of Extended Flute Cutters is common across a range heavy duty operations in manufacturing sectors including general engineering, railway, aerospace and die & mould industries. The ever increasing demand to continuously improve productivity has prompted the further development of 'porcupines' to enable the required efficiencies to be realised. Throughout the past decade, ISCAR, one of the world's leading manufacturers of cutting tools, has introduced many ingenious extended flute cutters innovations.

Chip splitting

Extended flute cutters are placed under significant loading when they remove a large material layer and their work in such heavy cutting conditions is characterised by high cutting forces, considerable power consumption and substantial heat generation. Intensive material removal requires the use of a cutter with a chip gullet of considerable volume to ensure effective chip evacuation. This decreases the number of the cutter's flutes (effective teeth), reducing its productivity. In addition, large cutting forces acting cyclically induce serious vibration problems. When using indexable inserts that have a chip splitting action, it is possible to solve the above difficulties.

Inserts featuring chip splitters have a geometry that enables the division of a wide chip into small segments. As a result, cutting forces and power consumption are reduced, vibration is stabilised and thermal problems are eased.

ISCAR provides a wide choice of chip splitting extended flute cutters that offer different design properties. The HELITANG T490 milling family features tools carrying double-sided tangentially clamped inserts (Fig.1). The inserts

feature a geometry that enables the division of a wide chip into small segments. As a result, cutting forces and power consumption are reduced, vibration is stabilised and thermal problems are eased.



Figure 1

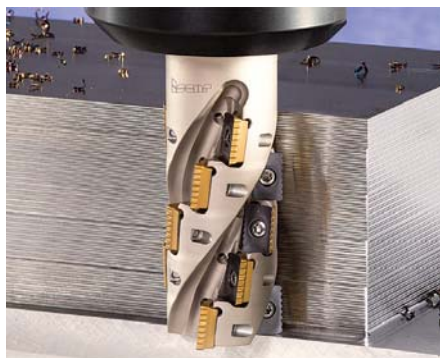


Figure 2

have four indexable serrated, wavy cutting edges to provide efficient machining with a chip splitting (even chip crushing) action. For optimal chip crushing, it is recommended that users mount the inserts in alternative edge configurations on adjacent flutes of the tool. However, even if the inserts are mounted randomly, the tool will continue to mill effectively.

Tangential clamping creates two important advantages within the tool design. It enables effective use of the inserts cross-section to enable it to resist heavy loads. Also, this approach ensures strength and rigidity of the tool body. Through the combination of the chip splitting action and the above advantages, the HELITANG T490 tools guarantee powerful performance.

The MILLSHRED P290 family of extended flute cutters adheres to the more common concept of clamping inserts radially. Under equal conditions, radial clamping may demonstrate less strength related properties when compared to tangential clamping, however, radial clamping makes it possible to increase the chip gullets volume and in doing so, significantly improves chip evacuation. The main distinctive feature of this family is the serrated cutting edge of the inserts, that not only split wide chips, but chops or shreds them (Fig.2). Unlike many chip splitting inserts that are currently available, the P290 one-sided inserts with two indexable serrated cutting edges, do not require special instructions for mounting in the MILLSHRED extended flute cutters, and are simply secured in any pocket. This operator-friendly feature simplifies tool assembly and eliminates errors in insert indexing that may cause tool destruction.



Figure 3

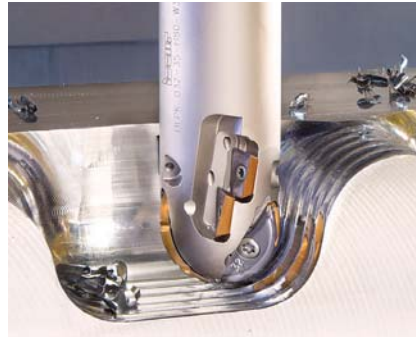


Figure 4

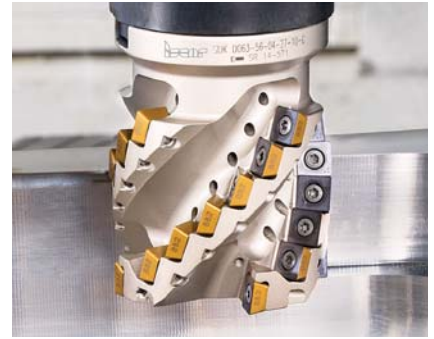


Figure 5

Not only a square shoulder

The majority of extended flute milling tools have 90° cutting edge angles and are designed to machine straight edges and square shoulders or slots. Although various manufacturing processes require productive roughing for inclined or 3-D surfaces, in these cases the extended flute can be an excellent means of achieving improved efficiency. Following demands from global industry, ISCAR further expanded the popular HELITANG T490 family by introducing an entire choice of tapered tools with cutting edge angles from 22.5° to 75° (Fig.3). This extensive range of high quality tools is capable of covering many heavy-duty machining applications.


The DROPMILL 3 extended flute ball nose endmills (Fig.4) were designed specifically for efficient profile and shoulder milling, mainly within the die & mould industry. These endmills carry straight-edge inserts that enable machining beyond the spherical (ball nose) cutting edge, which is generated by teardrop inserts. The design of the latter successfully adopted the chip splitting approach. Both of the different cutting geometries, one with a chip splitter and another with a chip shredder, are available for the teardrop inserts.

The milling of titanium and high temperature alloys places very specific requirements on extended flute cutters. In these cases, the presence of internal channels that deliver a sufficient coolant supply, directly through the body of a cutter, are absolutely necessary. Milling with high-pressure coolant (HPC) supply, or with cryogenic coolant have their own distinctive requirements that should be taken into consideration when designing cutters. These demands result in the availability of

various special, tailor-made, tools. However, even standard families of extended flute cutters are suitable for milling the difficult-to-cut materials associated with the aerospace industry. Nevertheless, families of indexable porcupines (Fig. 5), which were specifically created for the effective milling of these challenging materials are available.

An indexable long edge mill is generally thought to be a tool for mainly rough, and possibly in some cases, semi-finish machining. At the same time, the extended flute may be a good solution, even for finish operations. In particular, the use of HELITANG FIN LNK (Fig.6) cutters provides an efficient way to reach the required accuracy and surface finish specification when dealing with deep shoulders.

Modern production developments have seen the introduction of multitasking and turn mill machines that use both rotating and non-rotating tools. The polygonal tapered adaptation in accordance with ISO 26623, ensures the high strength and rigid mounting of a tool into the machine spindle, as well as high accuracy and positional repeatability when the tool is replaced by the machine's automatic tool changer (ATC). Hence, the demands of the tools with the ISO 26623 shanks, including extended flute cutters, will grow. ISCAR offers the porcupines from the most popular families as an ideal answer to the requirements of ISO 26623 adaptations (Fig. 7).

To summarise this brief overview, it may be noted that the variety of extended flute cutters differ in their types and design configurations and have strong performance potential if applied in the right intelligent way, consequently extending the frontier of indexable milling efficiency. 

Source: ISCAR

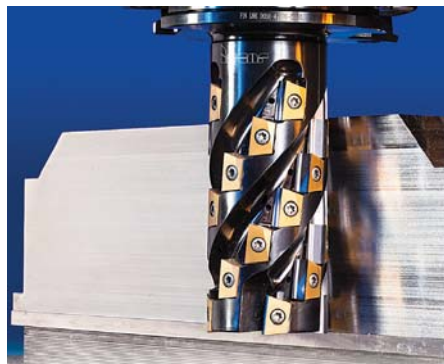


Figure 6



Figure 7



Managing multiple compressor systems

Learn more about how to utilising controls to improve efficiency, stabilize pressure and increase component reliability

By Chad Larrabee

An unmanaged control scheme for a bank of compressors is a recipe for unnecessary consumption of power as well as increased or unplanned maintenance. Controlling compressors with only their on-board controllers can cause one or more of the following problems:

- Too many compressors are running.
- The wrong combination of compressors are running.
- Pressure is higher than it needs to be.

How does this occur? A look at signals, differentials and setpoints is the first step to understanding the complexity of a system operated only by on-board controllers. Consider the one line diagram for a given system in fig 1.

Each compressor has its own pressure signal located at the discharge of the compressor and before the air treatment equipment (filters and dryer). To ensure each compressor is 'aligned' from a control perspective, each pressure transducer would need to be perfectly calibrated with each other.

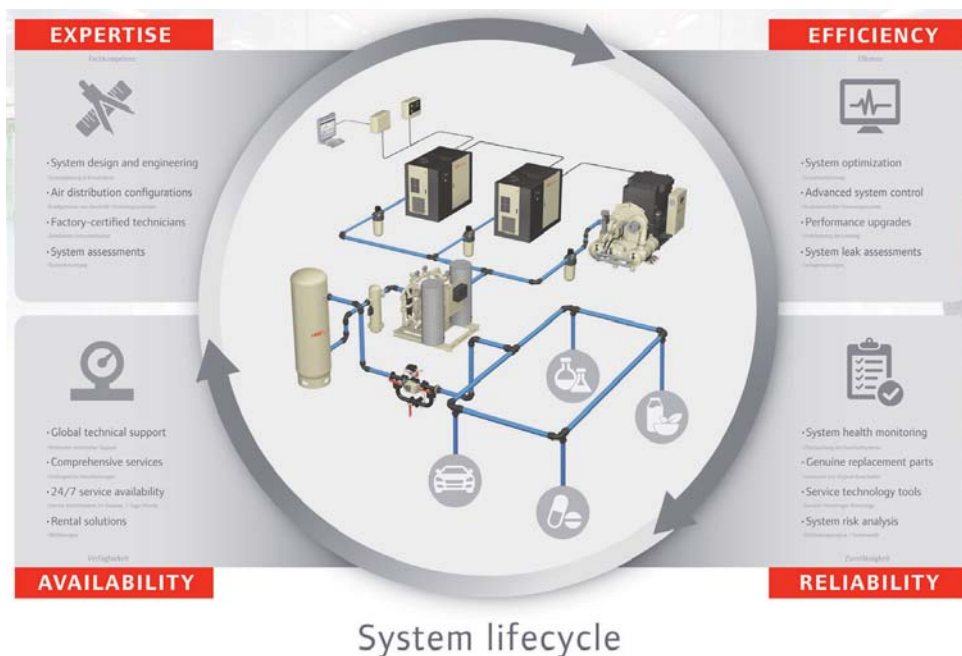
Also, influencing the control scheme is the amount of differential pressure (or pressure drop) measured between the discharge of the compressors (signal location) and the receiver tank downstream of the air treatment equipment. Unless all of the air treatment equipment and associated piping have exactly the same pressure drop, the control of the compressors will

not be aligned. Unfortunately, this is almost never the case due to different characteristics of air treatment equipment, field piping configurations and maintenance intervals. With mismatched differentials and signals, too many compressors are running, wasting energy and increasing maintenance intervals needlessly.

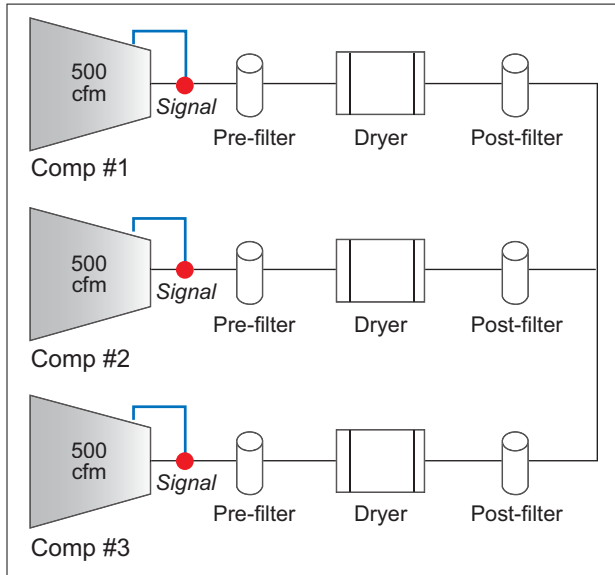
Finally, the control of the compressors is influenced by the setpoints for the compressor control. If the compressor is fixed-speed, it will be controlled by an inlet valve usually in a load/unload control mode, meaning the valve is 100 percent open or 100 percent closed. Typically, the setpoints for the load point and unload point are 10 psi apart. If the compressor is controlled by the speed of the motor, using a variable speed drive, the 'setpoints' become a 'target pressure.' With multiple compressors in local control, the setpoints are cascaded over a wide range, causing the first compressors to operate at elevated pressure to maintain the setpoint cascade control scheme.

Cascade control schemes increase power consumption in

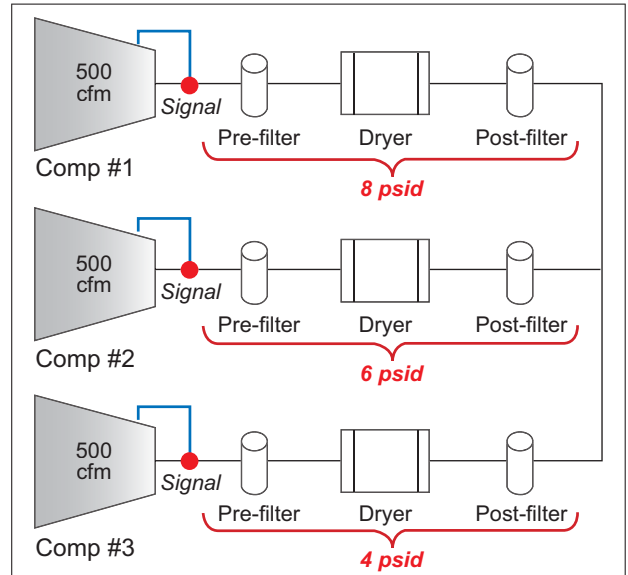
Unless all of the air treatment equipment and associated piping have exactly the same pressure drop, the control of the compressors will not be aligned.



a system due to the elevated pressure. In the example above, the last compressor to start is set at the plant's minimum allowable pressure, 90 psig, however, the first compressor to turn on and consequently the last one to turn off with reducing demand is set to load at 115 psig and unload at 125 psig. In low demand situations, the system can be running at 25-35 psig above the minimum required pressure. This would generate about 15 percent more energy consumption at the compressor than is required for the demand. Ad-



A three-compressor system with filtration and dryers with signal location for each compressor (to simplify, receiver tank and distribution system not shown). Fig 1.



The differential pressure for each series of air treatment is shown Fig 2

ditionally, unregulated demand in the plant is now consuming more cubic feet per minute (CFM) at the elevated pressure level increasing waste. Elevated pressure wastes energy and creates artificial demand in the system.

System control

How can you align the signals, differentials and setpoints to eliminate waste and elevated pressure? A system controller will act like a conductor of the symphony, directing compressors to respond to one common signal, one common pressure band and accommodate differentials. A system controller with the right algorithms and logic will dynamically match compressed air supply with compressed air demand and operate only the compressors required to provide a more energy-efficient combination. In the past, multiple compressor systems were controlled using a rudimentary sequencer focused on balancing the use of the compressors for equal run hours. While the sequencer had a common signal and pressure band, it did not have the intelligence to account for rate of change or size of compressor. As a result, even with sequencing, compressors may run needlessly or in the wrong combination.

A smart, system controller builds in intelligence accounting for rated capacity of each compressor as well as purposeful delays and iterative checkpoints to insure it is responding to what is happening in the system. In addition to dynamically matching supply with demand, increased functionality is built into some system controllers to ensure improved efficiency and fewer compressors running. An example is anti-cycling control. Suppose the pressure signal is dropping at a certain rate based on a system demand event calling for more air. As the pressure decreases back at the signal location, the controller may load another compressor to meet the demand, however the pressure signal continues to decrease. This can happen due

A smart, system controller builds in intelligence accounting for rated capacity of each compressor as well as purposeful delays and iterative checkpoints to insure it is responding to what is happening in the system.

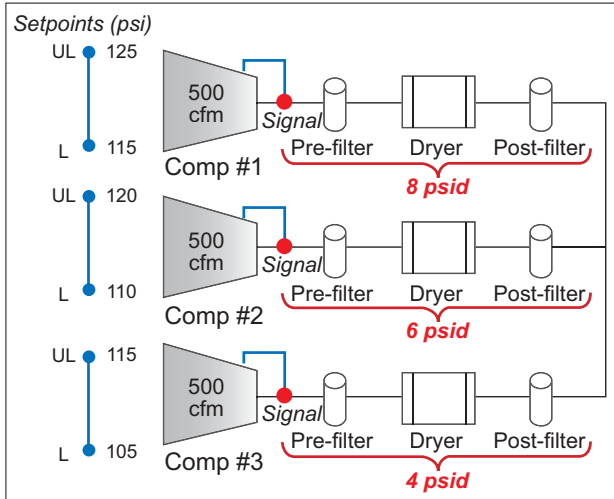
to the start permissive on the compressor, which is the time it takes a compressor to start and deliver air at rated pressure. A sequencer would have already turned a second compressor on and maybe a third within the first additional compressor's start permissive. Then the extra compressors would run and cycle needlessly until they meet their run timer permissive and shut down. With a system controller, the intelligence accounts for the rate of pressure drop indicating how large the event was and if it is continuing. If another compressor is not necessary, the controller allows the start permissive to complete and pressure signal to rise again without jeopardizing the minimum required pressure.

System pre-fill is another differentiated control scheme supported by some system controllers. Prefill provides an energy-efficient method of increasing pressure to normal operating levels upon system start. This feature avoids the potential for all compressors to inefficiently start and load in an attempt to quickly get the system pressure up to normal levels.

Additionally, system standby mode offers the ability to keep compressors "offline" to minimize losses due to system leaks in pressurized systems that are idle during non-productive periods.

Communication

Effective system controls can be applied to any brand of



The setpoints are now shown with a 10 psi delta at the controller, but the effective differential is reduced with the pressure drop across the air treatment equipment. Fig 3

compressor and linked for monitoring and control with many existing Distributed Control Systems (DCS). Many manufacturers develop and supply their own monitoring and graphical user interface to visualize what is happening in the system with data trends reported as needed. Additionally, remote web-based control is usually available with this type of system.

Remote Communications

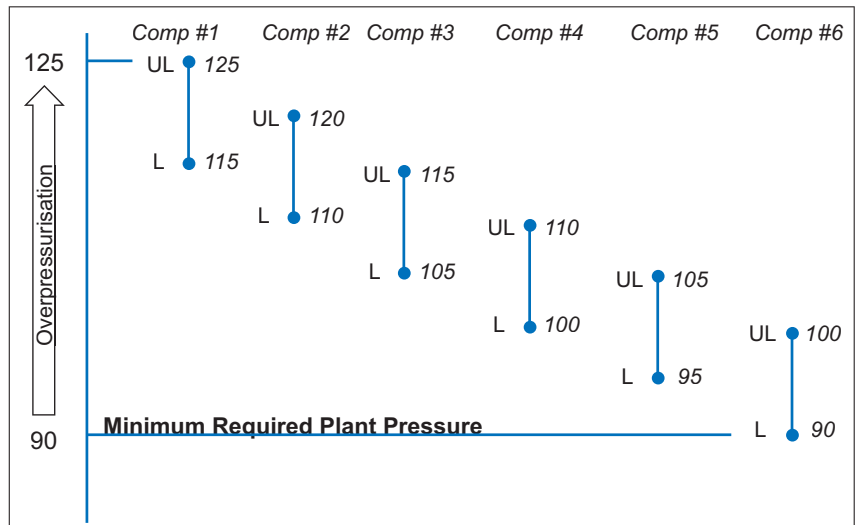
Remote communications have multiple benefits. Consider an air compressor with no remote connectivity generating an alert or tripping on alarm during a lower production shift where seasoned maintenance staff members are not available. The plant production would be at risk as the plant personnel must now react to the interruption in compressed air supply. Depending on the degree of documented procedures, valuable production time could be lost while an emergency service is located and a service provider is contacted and dispatched. And consider the reaction of the senior maintenance manager if he or she is contacted during his or her personal time. Now consider the same scenario but with a mobile alert notification built into the control system where the alarm immediately notifies the service provider. The service provider can quickly assess the situation remotely reviewing the operating parameters, the nature of the shutdown and even restart the compressor if such permissions are given. The speed and quality of response increases dramatically.

This is a real scenario and it highlights the many solutions remote connectivity provides:

- 1) Information and monitoring
- 2) Alerts and notifications
- 3) Diagnostics
- 4) Full remote control

In addition to accessing the system status for performance and health monitoring, the remote solution would also offer the ability to assess key operating parameters and trends with graphical capabilities, indicating potential failures early. Therefore, maintenance can be planned and the likelihood of an untimely alert or trip is reduced.

The reporting function of controllers can also be programmed to send e-mails daily with critical operating parameters to key personnel or the service provider. In the past, traditional maintenance managers have hung a clipboard on the compressor with a pencil or pen attached. Each hour, maintenance personnel were required to scroll through the local controller screen and record the operating parameters on the clipboard. The sheets are collected daily and promptly



The setpoints for a six-compressor system are shown with system pressure as much as 35 psi over the required pressure.

stored in a place no one can ever find when needed. Consider accessing that record automatically every hour, or at any interval the user desires, and recording it to a PDF document that can be e-mailed and/or stored electronically for easy retrieval.

For planned maintenance, a maintenance scheduler should also be specified. Reminders and planners are possible so no maintenance is missed creating confidence in uptime and reliability of the equipment.

Controls continue to advance with the increased focus on improved productivity and sustainability. Perhaps a call to your vendor may be in order to improve your operating system to maximize reliability and efficiency.

The Author is Director of Services Marketing in North America for Ingersoll Rand's Compressed Air & Gas business unit.



Confluence of business and technology

The Asian Machine Tool Exhibition (AMTEX) 2016 concluded successfully at New Delhi's Pragati Maidan recently.

The AMTEX 2016, 11th edition of the international machine tools exhibition, lived up to the industry's expectations by delivering a robust platform for business and technology exchange. According to the organiser, a quality crowd of 38,000 professionals visited the exhibition which saw participation from more than 400 exhibitors showcasing a wide array of machine tools, machineries and allied products. Besides participation by major India players, global companies from China, Germany, Japan, Korea, Singapore, Taiwan and Turkey were present at this event between July 8-11, 2016.

Industry experts estimate India to stand 14th in the production and 10th in the consumption of machine tools in the world. Cyril Pereira, Managing Director, Reed Triune Exhibitions Pvt. Ltd. said, "AMTEX 2016 acts as a seamless platform for exhibitors bringing business opportunities, world-class technologies and enthusiastic participants from across the globe to present new technologies, to enhance productivity and to produce/manufacture and invest in India. One platform to bring all the relevant sectors and high-end technologies of the industry like aerospace, automobiles, defense, electrical and electronics, material handling, etc. The forecast of the global machine-tool market projects a 5.5 percent annual



AMTEX plays a vital role by-

- Providing an opportunity to showcase the latest technological innovations and trends in the machine tool sector.
- Showcasing major projects of 'Make in India'.
- It creates a platform for knowledge sharing and networking through Conference Programme and Live Product Demos.
- It helps in conversion of business by supporting the exhibitor and visitors to fix meetings during the exhibition.

Cyril Pereira, Managing Director, Reed Triune Exhibitions

growth rate through 2019, driven particularly by expanding demand in China and other developing nations. India is perhaps all set to expand its reach to the global market to become a key player in the global machine tools industry."

Growth in exports

Avinash Sharma, Div. Head – Honing Stone, Solar Diamond Tools (India) Pvt. Ltd., says his company is a good example of 'Make in India'.

☑ Tell us about your company.

Solar Diamond Tools is a Mumbai based company with its factory in Ambarnath near Kalyan. It was started in the year 1982 for manufacturing diamond dressers. Diamond dressers are widely used in the machine tool industry for grinding applications in the engineering industry. Today, we offer six different product ranges.

☑ How was the last financial year for you?

It was okay; we grew by about five percent. Although many sectors like the automotive industry were down last year, we did pretty well since we are catering to a wide range of industries. We are also exporting. In the first quarter of this financial

year, we have done record sales.

☑ Where has this growth come from?

It has come primarily from exports. We are exporting to many markets like US, UK, Europe, Sri Lanka, Vietnam, Thailand and Pakistan. I would say our company is a good example of 'Make in India'. We have been regularly participating in overseas exhibition.

☑ Your outlook for the remaining three quarters?

We did fantastic in the first quarter so we hope to maintain the momentum and the enthusiasm.



Great expectations!

Sreekanteswar S, GM, Market Development & Strategy, Micromatic Machine Tools Pvt. Ltd., says the signals have been very positive in the first quarter and then this would be one of the best years for machine tool industry.

Q How's been the response at the show and what kind of visitors do you primarily see here?

The response has been good. We get people from different sectors but Delhi being an automotive hub, most of the visitors are from the auto sector. You could say about 60 percent visitors are from the auto industry.

Q Anything special for AMTEX 2016?

Yes, we have unveiled one new product at this show. It is called the Jobber 400 H, a new version of the Jobber and it has been launched for the first time through this show. Also, this machine comes with 'Machine Connect' a software that gives visibility of the machine as well as the production parameters on a laptop or a PC connected on LAN through the machine. It provides all the machine related data like number of hours it has worked, number of downtime hours and so on. All this



data is captured on the PC or laptop. This software is provided free of cost with the machine.

The second new machine we have displayed at this show is the Sliding Head Automat (SHA). This is the first time we have brought this machine to Northern India. We have already showcased it in the southern markets like Chennai. But the machine makes its debut in the Northern market through this show. This is used for medical devices and for high precision screws. Primarily it is used for small components in high volume. It's a good machine.

Other than that, we are also displaying our standard vertical machine for die moulding as well as a grinding machine.

Q How's been the first quarter for you?

I would say that the first quarter has been really excellent. The order booking for the first quarter for both ACE and AMS has exceeded last year by more than 15 percent. If the trend continues then we may even beat the best year for machine tool industry—the year 2011-12. The signals have been very positive in the first quarter and if it continues in the next quarter and the rest of the year than this would be one of the best years for machine tool industry.

Enabling Industry 4.0

Ajey Phatak, Marketing Manager, Beckhoff Automation Pvt. Ltd., says machine to machine communication is the key to Industry 4.0.

Q What key technologies are you presenting at this show?

We are presenting a PC based CNC machine controller, which is open to any machine builder to develop his own CNC controller. There is no restriction on the number of axes, number of I/Os or visualisation. You can create your own visualisation and software tools. We are also showing how this technology is open and interoperable with multiple devices. EtherCat is our base but openness is our key. With this we can talk with other machines. Machine to machine communication is the key to Industry 4.0.

Q What is the message to the industry?

The message we are trying to convey is that all machine data should be compared together and given to the MES to take the right decision. That will lead to increased profitability. So we are trying to show CNC solutions, technology solutions



of communication and automation protocol, how safety can be integrated into the same control system, how you can do Industry 4.0 data acquisition and analytics and so on.

Q Anything else which is new at this show?

Yes, there are also some new things like the mechatronic system called XTS. XTS is actually an extended transport system which is developed for handling products at very high speed. This system can be used for mass production as well as for small components. The mover in this system is magnetic and moves on a track. It works with EtherCat, which gives it speed, deterministic control and flexibility to take the product in the required path in the production line. It is also available in a modular format. So you can use it as per the length required. This can also help companies manufacture customised products in the same production line.

A new trend!

Mayank Patolawala, Director, Mitsuba Systems (I) P. Ltd., says a lot of people want to procure machines that are made in India for manufacturing in India.

Q Briefly tell us about your company.

Mitsuba Systems has been operational since 1979. It makes powder coating equipment completely in India. While the name may be sounding Japanese, it is a fully Indian company. In fact, every component is sourced locally. Mitsuba has various trademarks and four patents worldwide. We are a pioneer in powder coating in India and one amongst the top four technologically advanced companies globally.

Q What are the key customer segments for you?

We have customers across the segments like automobiles, commercial vehicles, consumer durables and many more. We also have aluminium profiling and we are probably the biggest specialist in rebar and pipe coating.

Q How's been the business for you in the recent times?



It is going very well for us. Actually the construction industry is looking up because of 'Make in India' and the thrust on infrastructure development and that is where the rebars and pipes are going to be used. In fact, a lot of people want to get into this business now. That's a good sign and slowly things are looking up. Moreover, a lot of people want to procure machines that are made in India for manufacturing in India. That's another good trend.

Q How's been the response at this show?

The first day was a bit dull but it started picking up from the second day. We generally get good response at this show and that's reason we keep participating regularly.

Q Anything special for this product?

We have introduced the most advanced digital machine where you operate the machine from a digital screen. That's a first in powder coating.

A new dimension to AM!

Sanjay Sangam, National Sales Manager, Renishaw Metrology Systems Limited, says his organisation is working with customers to make additive manufacturing (AM) technology available locally.

Q What are you displaying at this show?

We have some interesting solutions here. We are showing 5-axis solution for CMM and we have shopfloor gauging systems. We also have a machine tool with our probing systems to show people how they can get benefitted by adopting this solution and how they can make their machining process more robust. At this show, we have also introduced a new CMM software called Modus 2. It is an enhanced version of our earlier software Modus. We are also talking about additive manufacturing here. While we do not have a machine displayed, we are talking about a new software called QuantAM that is under development currently.

Q How's been the last financial year?

We work on the July-June financial year. We have registered over 30 percent growth over the previous year. The last quarter has been extremely good and it has helped us deliver good growth. We have a good sales pipeline and we are very positive about the current financial year.

Q Where's this growth coming from?

We mainly serve the automotive industry; 70 percent of our business comes from there. We also serve other sectors including aerospace, defence, general engineering and so on.

Q You have recently inaugurated the 'Additive Manufacturing Solutions Center' in Pune. Tell us about it.

The idea is to make technology available locally. Additive manufacturing (AM) technology is still in infancy stage and we believe that we need to involve and engage customers in this. We felt that just presentations and machine displays will not be enough. People need to experience the technology to understand it better. So this facility houses our machines and it also has all the peripheral equipment required. This is open to anyone interested to invest in this technology. We can engage with them and take them through every stage helping them to learn and adopt it. We are lowering the barrier for customers to adopt this technology. Currently, ours is the only such facility available in India.



Amalgamation!

Ryosuke Nishioka, Tooling Division Manager, Yamazen Machinery & Tools India Pvt. Ltd., says his company's focus is more on providing solutions rather than just a product.

Q Tell us about your organisation.

While Yamazen is a 70-year old organisation, we started India operations in 2000 and established a private limited company in 2006. We provide almost all necessary factory equipment, such as machine tools, tool holders, industrial equipment, etc., primarily to the 2- and 4-wheeler manufacturers. Our focus is more on providing solutions rather than just a product. It's an amalgamation of not only the machines but also all the accessories. We also provide engineering solutions from installation, application, to after sales service and spare parts as a partner with our customer for new product development or



production improvement. We offer a clear picture to the customers in terms of productivity, efficiency and performance.

Q What are the other industry segments that you cater to?
Besides the automotive sector, we are also catering to the general engineering segments.

Q How's been the last one year for you in terms of business?

It's been good. The margin of growth over the previous year has been about 3.5 percent. The last quarter too has been nice but since we deal with Japanese products, the situation surrounding the Yen (Japanese currency) has impacted us.

Q Your outlook for the ongoing fiscal?
It depends to a great extent on the yen.



Expanding the pie!

While consolidating its position in the EDM segment, Electronica India Ltd. is foraying into the machine tool segment with VMCs, **Satish Ranade**, its Sr. VP.

Q Tell us about your company.

We have been in the market since 1972. Till 2008 it was part of the Electronica Group and in 2013 it was taken over by the Kolkata based HM Poddar Group. We are basically manufacturers of EDM and wire EDMs. We have also introduced vertical machining centers (VMC) under the Arjun brand name and will slowly get into the entire machine tool segment. Of course, we continue to be the leaders in EDM and

wire EDMs in India with 60 percent market share in a Rs150 crore market.

Q How's been the business?

The last financial year was very good. We have grown by 26 percent more than previous year. This year has started well; the first quarter has been quite encouraging. Overall, we hope to do better than last year. We are confident of touching the Rs90 crore mark with the EDM business and hope to add another Rs10 crore with the other line of business.

Q Which industry are you targeting with your Arjun VMCs?

We are looking at the Die and Mould industry as that is where our strength lies. Once we settle in this industry then we will definitely go for production items as well.

Q Will you be expanding this range?

We have launched Arjun 650 and we will also be launching 500 and 850 in this calendar year itself. At IMTEX, we will be launching the big machines starting with 1100.

Q Your outlook for the industry's performance this year?

As far as my company is concerned, it will be a good, steady growth. But overall, this year should give a good boost to the machine tool sector especially because of this 'Make in India' campaign. Everybody is trying to put in money and after two years we will start seeing the results. The euphoria is already here. And this year I am sure there will be a lot of investments in the MSME industries.



Grippers with all-round high quality

SCHUNK's new grippers, PGN-plus-Electric is to set new standards in mechatronic handling

With the new PGN-plus SCHUNK has further raised the standards for pneumatically operated universal grippers. At the same time the competence leader for clamping technology and gripping systems has packed the high-performance features of its pneumatic flagship in the new SCHUNK PGN-plus-Electric to set new standards in mechatronic handling. Both variants are permanently maintenance-free under normal, clean operating conditions – a first in gripping technology.

Make time-proven technology even better – this motto also served as the basis for development of the next generation of SCHUNK's mega-selling gripper. Three features characterise the new SCHUNK PGN-plus. Firstly, improved multi-tooth guidance: increasing the supporting dimension between the six load-bearing shoulders of the patented multi-tooth guidance allows higher moments, and therefore the use of longer fingers. Secondly, continuous lubricant pock-



With the mechatronic universal gripper the change from pneumatic to electric components is especially easy: not only does it have the same screw connection pattern as its pneumatic counterpart – the 24V gripper is also controlled by means of convenient digital I/O.

ets in the multi-tooth guide contour ensure permanent lubrication and maintenance-free operation of the gripper under normal, clean operating conditions. Thirdly, the drive piston in the new SCHUNK PGN-plus has a larger surface area, which increases the gripping force and enables handling of heavier workpieces. Initially, the new benchmark gripper will be available in sizes 50 to 125. Expansion to include all existing PGN-plus sizes is planned.

Free choice: pneumatic or electric

The SCHUNK PGN-plus-Electric transfers the powerful features of its pneumatic universal gripper to the world of

mechatronic gripping system components. Like the gripper it is modelled on, it features modified multi-tooth guidance for absorbing higher moments, continuous lubricant pockets in the guide contour and a proven wedge hook kinematics with high surface coverage in all stroke positions. The mechatronic universal gripper is driven by a brushless DC servomotor. With the mechatronic universal gripper the change from pneumatic to electric components is especially easy: not only does it have the same screw connection pattern as its pneumatic counterpart – the 24V gripper is also controlled by means of convenient digital I/O. Also, an additional M8 standard connection allows monitoring of up to two gripping positions. The required control and power electronics are already completely integrated in the compact module, so that no extra space is needed in the control cabinet. The gripping force of the SCHUNK PGN-plus-Electric is adjustable in four stages. The gripper will initially be available in size 80. Other sizes are planned.

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New ceramic grades for high temperature alloy machining

TaeguTec's TC3020 and TC3030 grades are made for machining difficult-to-cut materials such as Inconel and titanium

The demand for cutting tools to increase productivity and cut cost of machining high temperature alloys is ever increasing. TaeguTec has thus launched two new SiAlON ceramic grades—TC3020 and TC3030—that offer superior performance on these fronts.

Both the TC3020 and TC3030 ceramic grades are suitable for high temperature alloy machining where difficult-to-cut materials such as Inconel and titanium are used. These ceramic grades are characterised by their excellent toughness and anti-chipping capabilities making them the best choice for both interrupted and continuous machining.

The new grades are available for insert lines in turning, milling and grooving applications.

The TC3020 is ideal for high temperature alloy machining and runs in the same conditions as the whisker ceramic grade. Its superior wear resistance is due to its high stability while it offers better flank and notch wear resistance compared to the competitor's similar grade. Furthermore, it has excellent high temperature strength and fracture toughness.

The other new offering, the TC3030, is also created to



handle high temperature alloys with the difference being that the grade's extreme toughness enables it more for higher feed and heavier depth of cut machining and is suitable for scaling and roughing applications while offering excellent thermal shock resistance and thermal conductivity.

By combining silicon nitride and aluminium oxide, TaeguTec's SiAlON grade offers incredible chemical stability in order to reduce notch wear in demanding operations and has the capability to run at 4-6 times the speed of conventional carbide inserts.

While performing a continuous grooving operation on an engine casing made from Inconel 718, the TC3020 grade's productivity increased by 40 percent over the competitor's similar ceramic grade.

For an engine casing made from the same Inconel 718 with external interrupted turning and interrupted grooving operations, TaeguTec's TC3030 increased tool life by 23 percent and 56 percent respectively.

For more info, visit: <http://www.taegutec-india.com/>

Safe guidance for variable radii

Recently, igus presented the first carriage for linear guides with different radii. The adaptable carriage can thus, go into a curve from a straight line and is therefore suitable for a variety of applications in industry ranging from furniture to stage equipment.

Based on the proven drylin BW linear plain bearings, igus presented curved rails for linear guides for the first time a year ago. Thereby igus addressed the users' demands for more and more customised requirements and perfect space utilisation. Application examples here are in the control cabins of construction and agricultural machinery. The advantages of drylin linear guides are ease of



installation and maintenance-free use because the bearings do not have to be lubricated. This year igus goes one step further and offers the first carriage for linear guides with different radii on a rail. The carriage is adaptive, whereby it is possible, for example, to move from a straight line into a curve. "Entirely new possibilities open up especially in applications such as in office

equipment or stage machinery," explains Stefan Niermann, Head of drylin linear and drive technology division, igus.

Customised solutions for maximum freedom

To compensate for the rail spacing, a pivoting spherical ball made of abrasion-resistant iglidur plastic is used in the new drylin carriage. Thus, the carriage can move on

flat rails as well as on concave or convex curved rails. Just as the carriage for a fixed radius, the new version is also available with manual clamping, whereby the carriage can be fixed at any position. Users can order their custom curved aluminium rails with corresponding carriages from igus.

For more details, visit www.igus.in



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



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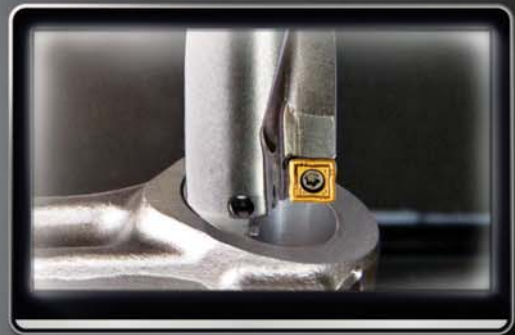


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