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Machine Tools

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AUTOMOTIVE, FARM EQUIPMENT & TWO-WHEELER SECTORS



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"Jyoti CNC Automation Limited is proposing, subject to receipt of requisite approvals, market conditions and other considerations, to make an initial public offer of its equity shares and has filed a [draft red herring prospectus with the Securities and Exchange Board of India (the "SEBI")]. The [DRHP] is available on the website of the SEBI at www.sebi.gov.in as well as on the websites of the Book Running Lead Manager at (www.avendus.com) and (www.sbicap.com). Investors should note that investment in equity shares involves a high degree of risk and for details relating to the same, see the section titled "Risk Factors" of the aforementioned offer document."

Re-engineering the present

About four years ago, even though the Mahindra tractors were doing well in terms of the market numbers, there was a perception that they were lagging in terms of technology. Quality was also not an issue; in fact, it had been the first tractor company to win the Deming Application Prize and the Japan Quality Medal for Total Quality Management excellence. Well, the business was good; Mahindra had become the number one selling tractor in the world. Overwhelming success has a hidden enemy called complacency and many become victim of it. Well not everyone.



The market perception was very unsettling for Dr Pawan Goenka (*he told us*), who had just taken additional charge as the President of the farm equipment sector at that time. Over the next four years, he and his team worked very hard to change that perception. And as a result, not only have they managed to bring huge technological changes in the existing products but are all set to redefine the segment with completely new products that will be launched in about three months from now. "Our new products will completely eliminate any perception of our tractors being behind in technology," he told *The Machinist* at an exclusive interview recently. It is this passion for not becoming complacent no matter what, passion for change, and passion for re-engineering the present to create a new future is what makes leaders like Dr Goenka the true crusaders of Indian manufacturing.

"WE HAVE THE OPPORTUNITY, WE HAVE THE TALENT AND WE ALSO HAVE THE VISION. ALL WE NEED TO DO IS TO IGNITE THE PASSION FOR CHANGE."

Today, India is on the verge of a huge manufacturing transformation. We have the opportunity, we have the talent and we also have the vision. All we need to do is to ignite the passion for change and mould the current predicament into a much better future that we truly deserve.

Niranjan M
Editor

EDITORIAL

THE MACHINIST

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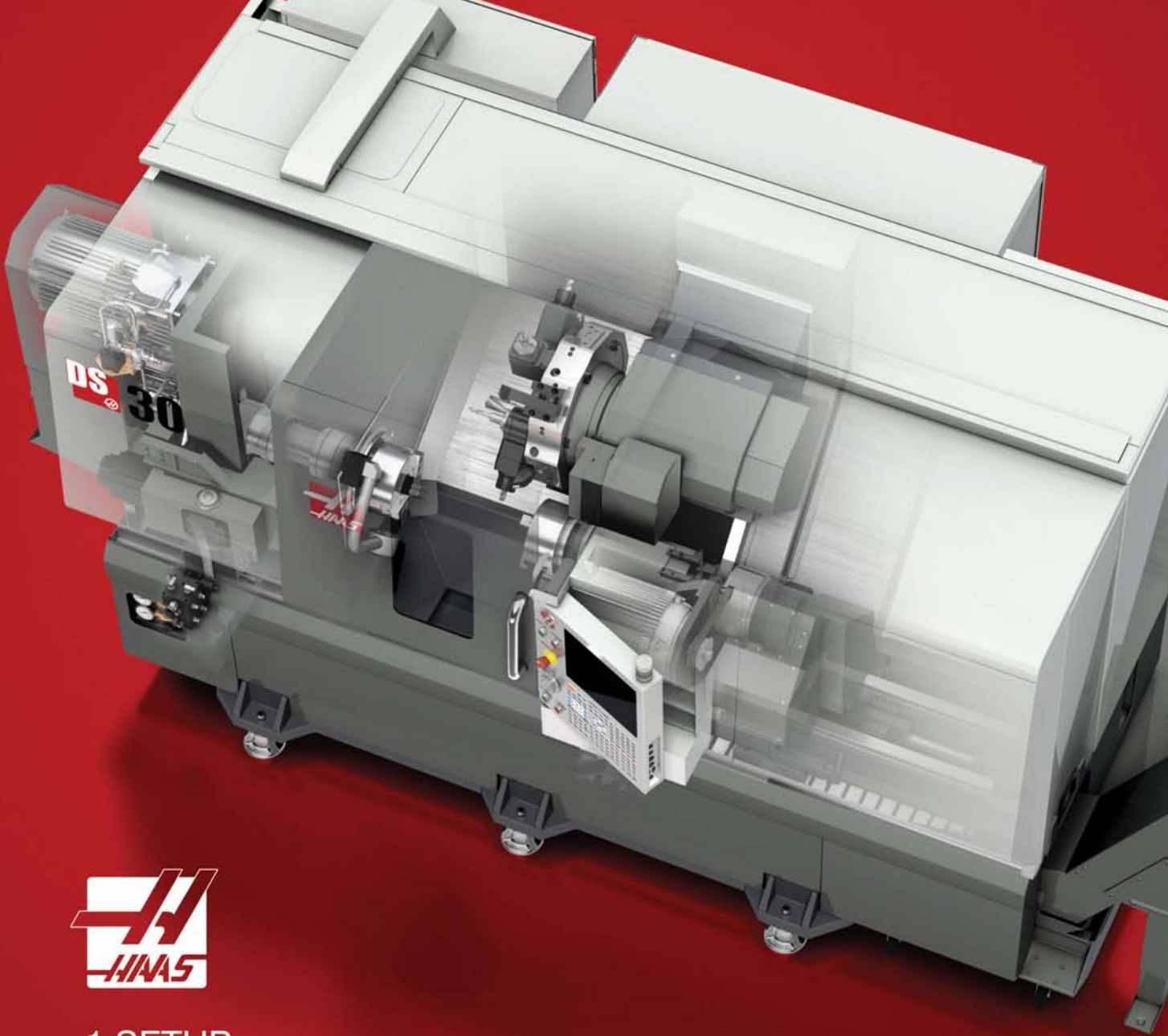
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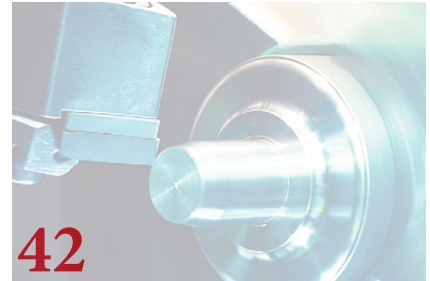
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The Crusader!



Machine Tools
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Ready for the next
phase of growth



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Turning Tools



Solid Carbide Drill for Oil Hole Drilling



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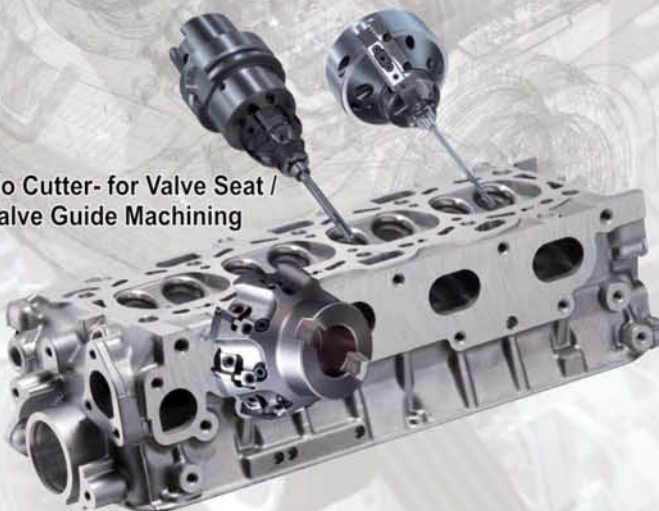
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Honeywell opens its sixth Indian facility

Honeywell has added its sixth manufacturing facility in India with the inauguration of a plant in Vadodara, Gujarat. The plant will manufacture solar water heating systems for its Environmental and Combustion Controls (ECC) business, adding to other manufacturing facilities the business has in Chennai and Dehradun. This business is part of Honeywell Automation India Ltd. The 50,000 sq ft Vadodara facility will manufacture solar water heating (SWH) systems for residential, commercial and industrial applications for the domestic market in India as well as for export to Southeast Asia and North Africa. It will manufacture 10 solar water heater variants of stainless steel and galvanised iron material ranging from 100 to 300 litres per day. "Solar water heating technology is evolving as one of the most energy-efficient methods of heating water. The opening of this facility marks Honeywell's entry into the renewable energy product manufacturing, and



adds to our already broad portfolio of energy focused products and technologies for customers worldwide," said Beth Wozniak, president, Honeywell Environmental and Combustion Controls, who was at Vadodara to officially launch the facility.

Rittal India inaugurates training centre in Bangalore

The inauguration of Rittal Training Centre took place on June 5, 2014 at the Rittal India HQ situated at Doddaballapur, Bangalore. It was done by Chief Guest Hans-Günter Löffler, Deputy Consulate General of Germany in Bangalore (jurisdiction: Kerala and Karnataka) and Helmut Binder, Executive Vice President, International Sales – Rittal GmbH & KG. Herborn. Binder said: "The training centre has been conceived keeping in mind the need for training our customers, channel partners and employees and to keep them updated of the latest innovations from Rittal, product and technical training seminars with high practical



relevance. By undertaking training our customers ensure the optimum usability of the system allowing effective and efficient daily use." The 3,500 sq ft training centre is well equipped with all catalogued products (760 articles) as well as all related accessories and chillers.

Eaton releases its first sustainability report for India

Power management company Eaton has released its first India Sustainability Report in New Delhi. Titled 'Powering Sustainable Growth in India 2013', the report covers the operations owned and managed by Eaton in India for the year 2013 and supplements Eaton's global sustainability report. Sharing an overview of the report, Nitin Chalke, MD – India, Eaton, observed: "This report strives to showcase how, by partnering with varied stakeholders, Eaton in India is offering sustainable customer solutions, ensuring green manufacturing and operations, powering a sustainable workforce and supporting sustainable communities to drive sustainable growth in the country."

Grundfos India to switch from IE1 to IE2 motors as standard from August 1, 2014

Grundfos Pumps India Pvt. Ltd. will be switching from IE1 to IE2 motors as standard from August 1, 2014. To begin with, it will be implemented in the CR range of pumps and will be gradually extended to other

products as well. Grundfos is the first pump company in India to move to these energy efficiency IE2 motors. IE2 motors are highly energy efficient. Using IE2 motors will help reduce the lifecycle cost of the pump and also save

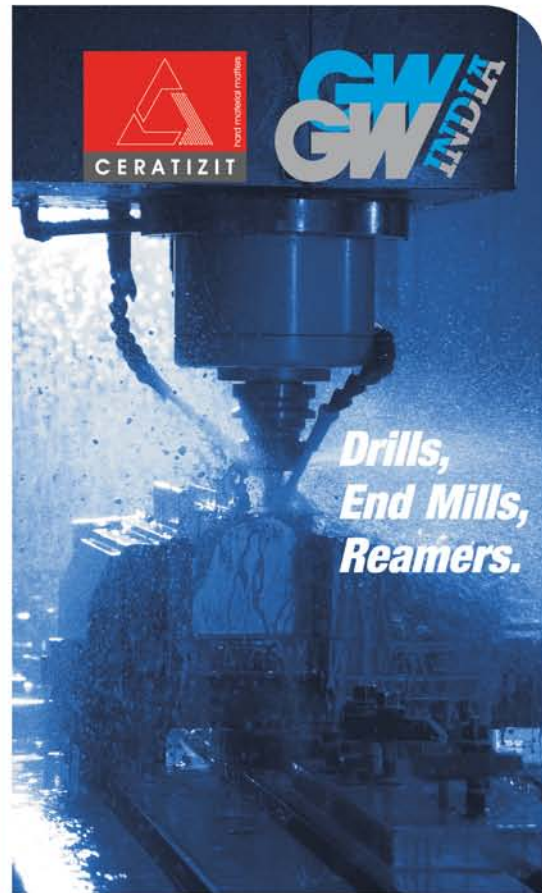
the operational costs. Ranganath NK, MD, Grundfos India, said "There is an increased awareness about the use of energy efficient products and we are confident that this will be well received by our customers."

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Reamers.*

Conventional Process



GW 181 Four-in-one-Drill

One Drill
L X D upto 12
Tolerance H7

Application:

- Cylinder Block / Head
- Pump Bodies
- Valves Bodies
- Autocomponents





Lapp India sets up its first warehouse in Maharashtra

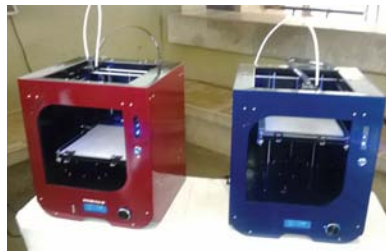
Lapp India has set up a new warehouse recently in Maharashtra. Located strategically in Bhiwandi, a city in the district of Thane, the warehouse which is a part of a shared facility will cater to Maharashtra, Madhya Pradesh, Chattisgarh and Gujarat, among other regions in the country. The warehouse is strategically located in a region that offers exemption from the local taxes otherwise applicable for the entry of any goods delivered into the area. This tax advantage helps Lapp India cater in a cost effective manner to existing and potential customers across neighbouring cities such as Pune, Nashik, Baroda and Ahmedabad. With proximity to the Mumbai Port, the new



warehouse can help Lapp India significantly reduce the duration of any import delivery. With the implementation of SAP, the warehouse will also enable customers to have access to the stock status on a real-time basis. The facility is spread over an area of 5,000 sq ft and currently has a capacity of 200 pallet positions.

J Group Robotics launches 3D Printer, targets manufacturing

J Group Robotics has launched its 3D Printer Vector PLA 3D. The company is only nine months old and is already working with the Indian navy on an engineering project, according to Vishal Jariwala, Founder & Chairman, J Group Robotics. The printer is targeted at a wide range of industries including manufacturing, automotive, aerospace and defence. "3D printing market is at a nascent stage in the India. We see a huge potential and believed that 3D printing industry in the country needs to be streamlined. This printer will revolutionise the dynamics and assist innovations across verticals to be converted into real life tailored made objects. We



are hopeful that this would prove out to be a significant milestone for taking Indian 3D printing industry to greater heights," said Vishal. The 3D printer would read design file using company's software and would lay down successive layers of the material to build the model from a series of cross sections.

Kinetic Group in solar energy JV with Ikaros

Kinetic Group has formed a joint venture Belgium based Ikaros Solar Group, a leading international company operating in the photovoltaic (PV) market. The joint venture is registered under the Indian company's act and will be known as Ikaros Kinetic Solar Private Ltd. The Shareholding



pattern of the JV is Ikaros – 51 percent, Kinetic Group – 25 percent and Intelux India (A pune based company specialized in power electronics) holds 24 percent.

CG Lucy inaugurates its new RMU facility in Nasik

Avantha Group Company CG's joint venture – CG Lucy has inaugurated its new Ring Main Unit (RMU) production facility at Nasik, India. Incorporated in 1994, CG Lucy Switchgear Ltd is a joint venture company between CG and W Lucy & Co Ltd, Oxford, UK. The new facility is part of CG's expansion strategy in the domestic market. CG Lucy has more than doubled its capacity to produce 1,000 RMUs per month.

Cranedge, the service subsidiary of ElectroMech, is now a member of LEEA, UK

Cranedge, the service subsidiary of ElectroMech, offering complete after-sales services to cranes of all brands, has been certified as a member of the Lifting Equipment Engineers Association – LEEA, UK. Cranedge has earned a special reputation for itself through its

rapid response to customer's problems and deployment of perfect solutions. LEEA, a globally established organisation, is recognised as the leading representative body for all the companies involved in the lifting industry worldwide. Tushar Mehendale, Managing

Director, ElectroMech Material Handling Systems, said, "Since we are one of the prominent players in the material handling equipments industry, membership accreditation from a world renowned industry body is an important milestone for Cranedge."

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Calling Africa


Automation 2014 joins hands with the Government of Republic of Rwanda for promoting Indian industries in the African continent

IED Communications Ltd in its continual endeavour of promoting Indian automation industries at global platform has now reached the African frontier. Republic of Rwanda, one of the rapidly growing African countries on the economical and infrastructural levels, has become the partner country for the Automation 2014 show.

In fact, other African developing countries are also in the process of coming on board as bilateral partner countries for the show. Republic of Rwanda will participate in the International Exhibition Automation 2014 in Mumbai as a partner country. So Rwanda and other African Countries will have a strong presence at Automation 2014 with Government representatives as well as business delegations participating. "This is an indication of the growing links with India in the engineering, electrical and projects industries. We are



According to Arokiaswamy, the Republic of Rwanda is an increasingly attractive destination for foreign investments. There is a great opportunity for Indian industries to develop business in that market. It is the most competitive place to do business in East Africa and is ranked third amongst African countries as per the Global Competitive Index Report 2013-2014. In Rwanda, a new Special Economic Zone has been developed and it is now operational. More such zones are planned on the districts level as well. The country has very high labour efficiency and offers an excellent and flexible supply of labour. Its workforce is also demonstrating increasing capacity as well as knowledge-based industry. The Government of Rwanda is a very investor-friendly government committed to the market economy, which is very inspiring for Indian industries and especially for the automation Industry. Indian industries, specifically in the automation segment must grab the huge investment opportunities Rwanda, particularly in sectors such as infrastructure, energy, information & communication technology, mining, manufacturing, real estate & construction, financial services and agriculture.

Automation 2014 in India promises to be the right platform to examine new foundations for progress, to improve existing products and processes. The show will also organise knowledge based technical conferences. In-depth discussions with experts on various subjects like innovations in technology, foundation field-bus technology, safety and security, tank automation and metering will be organised during the exhibition. Businesses looking for sustainable solutions for profitability, optimisation of plans, cleaner and greener operations, and safety and energy efficiency will be heading to Automation 2014, a flagship event of IED Communications. According to the organisers, this is the biggest show in South East Asia for the automation sector and the second biggest show in Asia after IAS Shanghai. The ninth edition of Automation 2014 will be held from October 15 to 18, 2014 at the Bombay Exhibition Centre, in Mumbai - the financial capital of India. 



“The Republic of Rwanda is an increasingly attractive destination for foreign investments. There is a great opportunity for Indian industries to develop business in that market.”

M Arokiaswamy,
Managing Director of IED
Communications Ltd.

proud to serve Indian industries for their economical growth through business development on the platform of Automation 2014,” said M Arokiaswamy, Managing Director of IED Communications Ltd.

Republic of Rwanda is the most rapidly growing economy in East Africa. It is growing at 8 percent average year-on-year GDP growth, with a stable inflation and exchange rate. The country has a very sound macroeconomic management and robust fiscal discipline. It has a clear vision for growth through private investment set out by its President Paul Kagame through Vision 2020. Rwanda is an open market of over 11 million people with a rapidly growing middle class.

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Reaching out

Laser World of Photonics India has started its series of roadshows across India featuring the application of lasers and photonics in various industries

The first road show organised by the Laser World of Photonics India in Mumbai kick-started the series of road shows to be organised in several key industrial and academic cities of India leading up to the final exposition to be held in Bangalore from September 23-25, 2014.

The first road show on 'Importance of Lasers in Metal Forming Industry' and 'Modern advance research in Science using Lasers' took place on June 23, 2014 in Mumbai. India's renowned scientific and industrial experts, including Dr. Lalit Kumar, Managing Director, Laser Science, and Dr LM Kukreja, Head, Laser Materials Processing Division, RRCAT, were present at the roadshow. They are also actively involved with the Laser World of Photonics India.

Laser Application in metal forming: Laser forming has become a viable process for the shaping of metallic components, as a means of rapid prototyping, adjusting and aligning. Metal forming by using laser cladding, cutting, welding & hardening is a highly flexible, rapid and low-volume manufacturing process. The cost of the forming process is greatly reduced because no tools or external forces are involved.

Use of Laser in Scientific Research: The invention of laser has affected the field of scientific research to a very vast extent. Today scientists, lab technicians, engineers, and industrial technicians utilise lasers to perform a wide range of important tasks; as today a variety of customised laser technologies have been developed over the years.


The second roadshow of this series was held in Surat on June 27, 2014. The roadshow focused on the 'Use of Laser Technology in Jewellery and Textile Industry' and was addressed by Dr. Arvind Patel, Managing Director, Sahajanand Laser Technology. "Surat being the diamond hub of India is always keen to upgrade and adopt the advancements in laser technology which helps them to enhance their manufacturing processes. Surat accounts for about 90 percent of the estimated Rs60,000 crore export of the precious stones from India.



'Laser World of Photonics India' has taken this initiative to demonstrate the diverse use of Lasers and Photonics across different application industries," Dr. Arvind Patel, Managing Director, Sahajanand Laser Technology. He further added; "As leaders in the field of Lasers for the diamond market in Surat, we realise the importance of precision in diamond cutting and shaping with virtually no loss. The need to improve existing technology and process system with more advanced instruments has always been the driving force in the growth of laser application."

The textile industry also uses laser to cut and engrave fabrics. As compared to traditional methods, laser offers several advantages such as fast cutting speed, reduced time consumption, a non-contact cutting and no tool wear. Thus, using this technology would be more efficient and productive if the right method of laser cutting process is used to replace the conventional cutting methods.

Bhupinder Singh, Deputy CEO – MMI India Pvt. Ltd said, "The Laser World of Photonics India roadshow series is our effort to educate and highlight the importance of lasers and photonics across various applications. This technology offers immense precision and offers quick turnaround with minimum investment and less human interference. We hope that the attendees gain maximum information from these sessions."

The strength of lasers includes reduced manufacturing downtime, increased efficiency and accuracy hence increased productivity. This is one of the major reasons that despite uncertainty in the current economic scenario, companies look to invest in research and development in the arena of laser technology. This investment is the foundation for productive operations which will convert into profit in the near future for the concerned business. 



The Laser World of Photonics India roadshow series is our effort to educate and highlight the importance of lasers and photonics across various applications. This technology offers immense precision and offers quick turnaround with minimum investment and less human interference."

Bhupinder Singh,
Deputy CEO, MMI India
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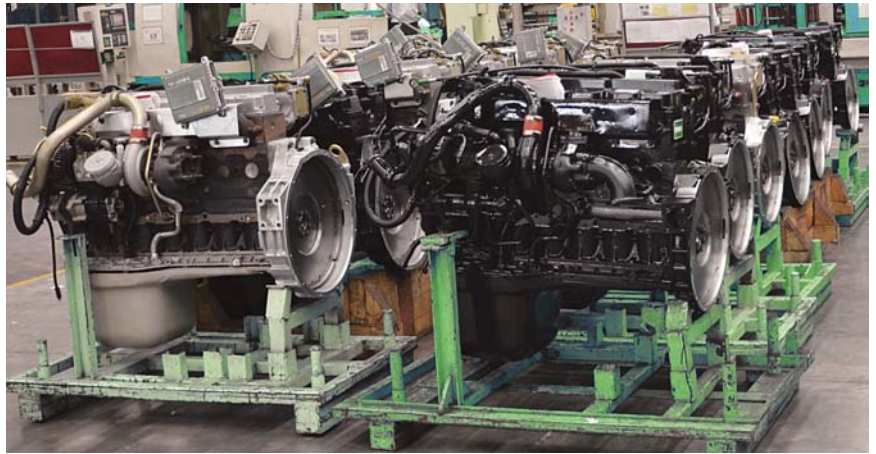
By Shripad Ranade, Prabhakar Tiwari and Hari Iyer

The top of the mind concerns for the executive leadership of any engineering company are product profitability, product mix, make vs. buy decisions and product promotion. These concerns have come into sharper focus in recent times, where the need for differentiation has resulted in high product variety even in fairly standardised engineered products. The starting point for sound decision making is accurate product costing, with knowledge of exact material cost (direct and indirect) as well as conversion cost. Mis-allocation of these costs may lead to the company focusing on the wrong set of products.

With the medium term economic scenario not appearing rosy, and in a cost plus environment where margins are increasingly under pressure, engineering companies can no longer afford not to know their real costs.

The current scenario

Costing systems and methodologies have grown by leaps and bounds over the past few decades. From simple, volume-driven apportioning in low product variety environments in the middle of the 20th century, costing systems have progressively grown in complexity, leading to the development of absorption costing methods, transaction costing methods and finally to activity based and time-driven activity based costing methods. Today, sophisticated ERP costing systems



are available to accurately capture costs, and to reconcile financial statements with cost information.

However, many engineering companies in India still use traditional cost accounting methods – while direct material costs are considered as per historical norms (standard costing) or at actuals (first in first out, weighted average, etc.), all direct and indirect overheads are either apportioned using a common driver (such as machine hours) or are allocated as a fixed percentage of material costs.

The drawback of this method is that it does not take into account resource or activity consumption; hence many costs are mis-allocated, leading to wrong decision making. Additionally, with this method, it is difficult to trace variances and perform a root cause analysis or control costs. An activity based cost model, wherein all costs are allocated as per actual activity consumption, can help minimise this problem.

While the theory behind activity based costing is fairly well known, its implementation and adoption record has been poor because of two reasons. Firstly, it is believed to be difficult and time consuming. All companies may not have the resources or the bandwidth to implement a full-fledged ABC system. Additionally, it requires a significant amount of cross functional effort, whereby finance and costing managers need to understand manufacturing processes in detail. This, in our experience, is difficult to achieve in practice. While activity based costing methods are available in most ERP systems, their implementation is expensive and time consuming. Their maintenance requires an on-site functional expert. Many a time, because of these

A modern mass manufacturing set-up

A leading made-to-stock engineered products company was using a traditional cost model that did not correctly capture activity-wise cost. The managers responsible for costing were burdened with other financial functions – they lacked the bandwidth and resources to use more accurate methods. An activity based costing exercise done with them revealed mis-allocation of up to 50% of product cost for some SKUs.



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hurdles, costing modules are either not implemented, or are implemented but not used properly.

Is there a practical solution?

The good news is that using the principles of activity based costing and relatively simple spread sheet models, accurate product costing can become easy to understand and implement. The first step is to divide all manufacturing processes and support activities into cost centres by grouping similar activities and process steps together. Next, hourly rate may be defined at each cost centre, which is the sum of key cost components like labour, depreciation, electricity; consumables, etc. (see Figure 1).

Products are then divided into product families having similarities in process steps and cycle times, and a routing chart is drawn up showing the time spent by the product family at the cost centres. Cost absorbed at each stage is calculated using cycle times and hourly rates, which are then added to material costs to obtain total cost (see Figure 2). This model may be further sharpened by including setup costs and additional cost drivers for support activities – for instance, number of purchase orders generated may be considered as a cost driver for the procurement department.

It is possible!

An engineered products MNC that the authors have worked

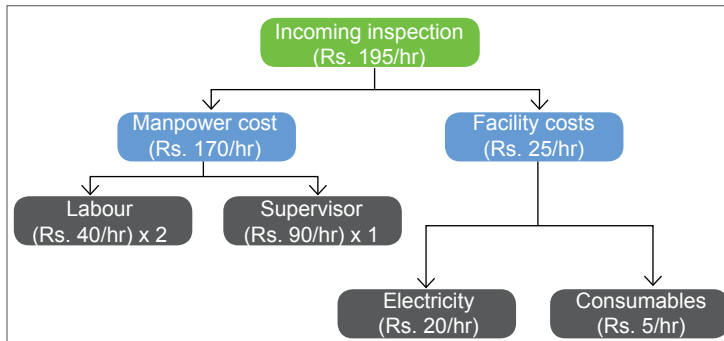


Figure 1: Sample cost breakup for a cost centre

	Process steps →						
	Incoming inspection & storage	Banking	Rough turning	CNC turning	Welding	Painting	Packaging
Product line 1	30	5	15	10	13	8	40
Product line 2	30	5	18	12	20	-	32
Product line 3	30	5	22	14	-	15	50
Product line 4	30	5	25	16	-	-	60

Activity times (secs)

Figure 2: Sample routing chart showing process steps and activity times

*How an MNC turned around

Product rationalisation: The company decided to discontinue one of their product lines since the actual cost was found to be ~40% higher than the price the market supported.


Make vs. buy decision: An earlier decision to outsource part of the manufacturing for key product lines was revealed to be unprofitable, since the company could make it cheaper in house. In one of the product lines, for instance, outsourcing was found to have increased cost by about 34%. As a result, the company is actively considering moving production back in-house.

Pricing: The company revised prices for a number of its key products to bring them in line with actual costs, since pricing strategy for this company was primarily cost-plus.

Promotion: Volume discounting decisions have been influenced by this costing model, since the extent of discount offered will be decided by the product cost.

with had high product variety with more than 400 SKUs. The costing system used was elementary, with raw material costs being captured at actuals and conversion costs being calculated as a fixed proportion of raw material costs. Bandwidth issues hampered costing managers from refining the costing model. An activity based costing exercise with the methodology as mentioned above revealed and corrected a significant extent of mis-allocation of costs. The extent of misallocation was greater than 20 percent for more than half the products. The new approach helped the firm* in multiple ways.

Conclusion

By using this relatively simple method and updating it frequently, companies can more accurately know their product costs. This knowledge is invaluable in deciding which products to carry in the portfolio and which to drop, pricing decisions, make vs. buy decisions and promotion/ volume discounting decisions. By getting these decisions right, companies can add significantly to their bottom-line. 

The authors: Shripad Ranade is Senior Principal, Prabhakar Tiwari is Engagement Manager, and Hari Iyer is Associate Consultant at Tata Strategic Management Group.



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Every single aspect of work – no matter how trivial it may appear – is important to a good leader. As we are driving down to the photoshoot location inside Mahindra Automotive's Kandivali plant, something is bothering Dr Pawan Goenka, Executive Director & President, Automotive, Farm Equipment & Two Wheeler Sectors, Mahindra & Mahindra Ltd. It is the way cars are parked in the allotted space. It wasn't so when he had arrived earlier in the morning. By the time we reached the spot, he had already asked for the person in charge to meet him. The photoshoot itself goes off smoothly. In fact, he is pleased that for the first time, his complete product line has been arranged at a single spot. After the shoot, he goes around with the person he had called to get things sorted out on the parking front. Only then he comes back for the interview.

We are in his office now and he has completely changed gears – exuding certain cheerfulness. And it

The CRUSADER!

Leveraging on its strong focus in manufacturing excellence, the Mahindra Group is redefining its product strategy with a three point agenda of customer delight, first time right and every time right, says Dr Pawan Goenka, Executive Director & President, Automotive, Farm Equipment & Two Wheeler Sectors, Mahindra & Mahindra Ltd

By Niranjan Mudholkar





stays on even after the first question comes about a segment where the AFS (the business group that he oversees within the Mahindra Group) isn't doing so well. The Mahindra Group entered the Indian construction equipment (CE) segment in February 2011 with the launch of its EarthMaster backhoe loader. It's been a little over three years now but Mahindra hasn't been able to grab any remarkable share in this sector. "But the segment itself has been contracting for the last couple of years in India," Dr Goenka points out. "It is in a way reflection of the fact that infrastructure development work is going down in India," he adds. Of course, he is optimistic that with the new government and its focus on infrastructure, the segment should start growing again.

Dr Goenka recognises that his organisation is amongst the many players on the fringes in a segment dominated by one big player. But he is confident about his product. "We set out with it to see if we can develop a ground up product to meet the customers' unmet needs. And we have been reasonably successful in doing that. So the product has done well in terms of how satisfied those who buy it are. True, our overall market performance has been less than expected but I am not perturbed. We have a good value proposition and the product should do well in terms of numbers also." He also understands that to be only in one product segment is not good enough. "We are looking at other options and opportunities to see where else can Mahindra be in the CE segment," he says.

We then move on to another segment; Mahindra has done quite well in this segment – tractors. In FY 2013-14, Mahindra clocked 22 per cent growth with 2,57,270 tractors, the highest by the company. So what is the company doing at the

manufacturing level to maintain this leadership position? Mahindra has seven manufacturing sites dedicated for the farm equipment segment and Dr Goenka is very proud of the latest one at Zaheerabad. "That's the best tractor plant in India and perhaps even in the Asian countries. It is very modern, has all the equipment that anybody has, is very well laid out. In some sense, I consider manufacturing to be the strength for Mahindra tractors," he explains excitedly.

In fact, Dr Goenka's biggest contributions to the Mahindra Group has been the efforts and focus on the quality of manufacturing and processes. Quite early, he introduced BPR – Business Process Re-engineering. And he is happy that the tractor division took a lead in implementing BPR. "We were the first tractor company to get a Japanese quality medal, which we are very proud of and that tradition has continued in having very good manufacturing processes, very good systems, SOPs and of course, focus on quality. The Zaheerabad plant is the essence of the learnings that we have had over the years from our Kandivali plant, Nagpur plant, Udaipur plant, and Mohali plant; all put together," he says.

With less than normal monsoon forecast this year, does he see the tractor market getting affected? "One year of bad rains following a year of very good rains does not necessarily slow down this segment so much," he says, adding that Mahindra is always concerned about the rural segment which gets directly affected by the monsoons. Rural penetration is, in fact, at the heart of the Group's overall strategy. "Even before everybody started looking at the rural segment, Mahindra has been the king of rural. The erstwhile products that we had, the Commander jeeps and the CL500s, were all rural products.

We are looking at other options and opportunities to see where else can Mahindra be in the construction equipment segment."

The product line at the Mahindra Group under Dr Goenka's leadership





"Even before the Crusade initiative, which we launched last year, the sensitivity to quality at the shopfloor level has been very high right from 2003."

They have transported rural India for many years. And today the most popular vehicle in rural segment is the Bolero."

The discussion now obviously veers towards the automotive segment. Dr Goenka uses that as an example to explain

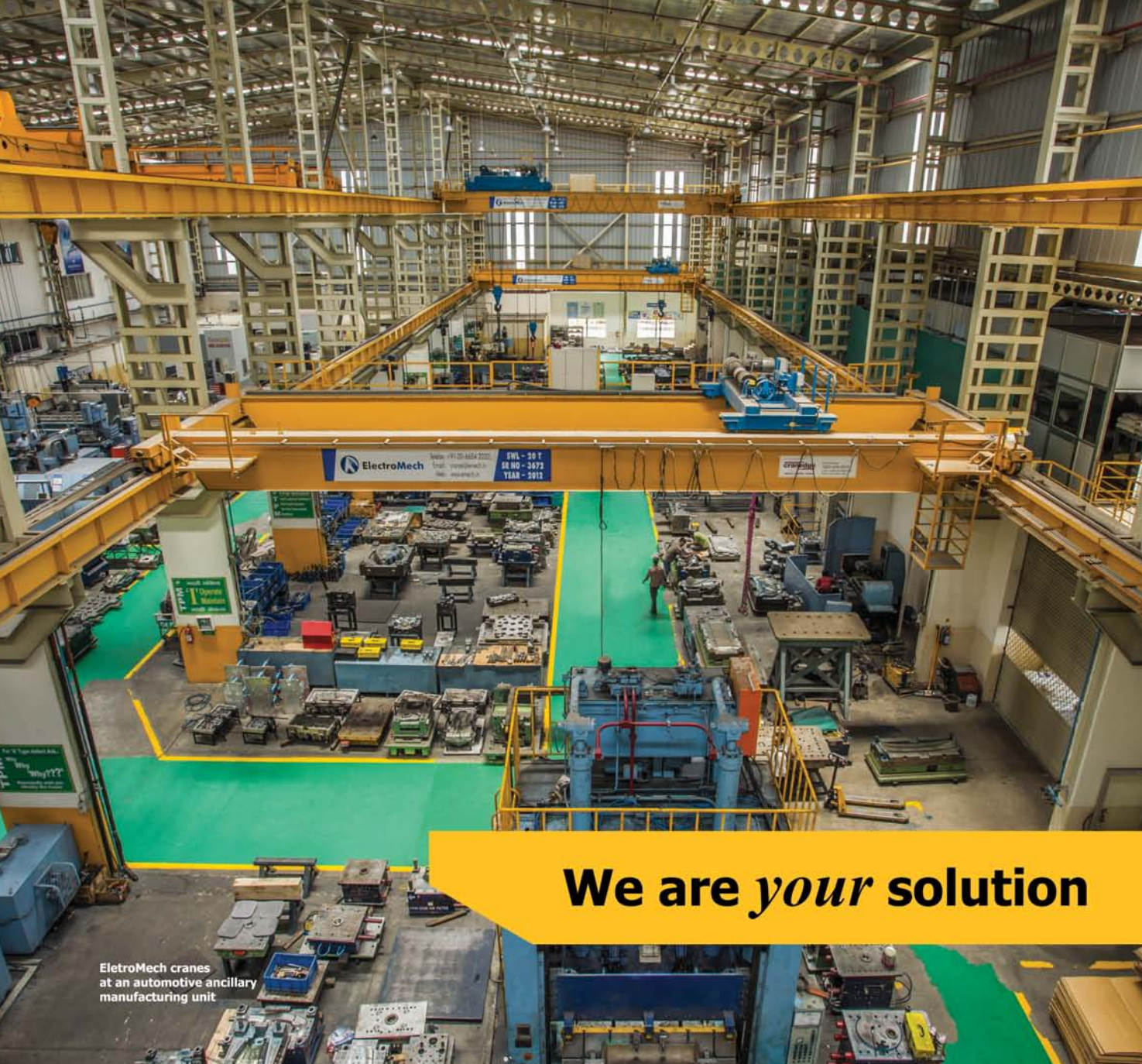
how the Group is now evolving into being a customer centric organisation, a journey that started about 10 years ago. "Around 2003, we were at the bottom of JD Power CSI (Customer Service Index) and SSI (Sales Satisfaction Index). That was almost like a jolt to us. Since then we have worked very hard to change it." While product quality is a very big contributor to it, Dr Goenka points out that the Group is equally focussed on how the customers are treated in terms of the whole experience of buying and getting serviced. "Now we rank amongst the top three but we are nowhere near done."

AFS is now working on an initiative called Crusade. "It is primarily driven by creating delightful customer experience. We do believe that there is room to differentiate ourselves in the auto segment. There is an unfortunate perception that Indian companies do not care for customers. That hurts me because it is not true. Yes, we do have a legacy that we have to get over with. But today we try as hard as anyone else; may be even harder. We have to get to a point where nobody ever says that Indian companies do not care for customers."

Crusade has two parts to it; one is on the product side and the second is on the experience side. On the product side, the aim is to get the product first time right and also getting it every time right. "Once we have launched the product, we should not get into any kind of issues," Dr Goenka explains. A lot of effort is also going in to the R&D side. "This involves the way we design, develop and validate our products. At the plant level, it is about the way we are putting the focus on quality in terms of sourcing as well as the overall operations. We involve our suppliers in this initiative. In fact, we just came back from



Dr Goenka believes the Chakan plant will be a future asset for Mahindra in the automotive business.



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At the plant level, it is about putting the focus on quality in terms of sourcing as well as the overall operations.

a supplier conference where this was the main topic of our conversations. The emphasis is on how consistent quality comes from suppliers because 70 percent of what we put in the vehicle is coming from them.”

All shopfloor employees are working towards making Crusade a big success. “Even before Crusade which we launched last year, the sensitivity to quality at the shopfloor level has been very high right from 2003. You will see displays at the shopfloor reflecting how we are performing against the competitor and how it is very important to us – even as a customer. Yes, as a customer what you will expect from a product is what we need to deliver as a provider of that product to our customers.”

Last year, the Mahindra Group sold 18 percent less in the utility passenger vehicles segment where it actually has been a market leader. Of course, while the general auto market was also down overall, a couple of companies have done well in the compact SUV segment. And it does worry Dr Goenka. “But we are also working on compact SUVs. We will have two compact SUVs that will be launched in the 2015 calendar year. And it is not that we were unprepared for it. Just that the changeover happened about a year too soon. And there is nowhere you can speed up product development. So we will have a little bit of a dip for the time being.”

Having said that, he believes that the traditional segment of SUVs where the Scorpio, the XUV, the Bolero are, Mahindra still remains at the same level of market share. “It is just the new segment (compact SUV) where we do not have good presence. So they are actually two different segments. And once you look at compact SUV as one segment and full size SUV as another segment, we have not lost market share. Yes, the segment has become smaller.” While the Group has tried its hand with the car segment as well, it will not be focusing on it for a while. “Our focus is now on the compact SUV segment because we are the UV player. We are ‘the UV brand’

Dr Goenka’s biggest contributions to the Mahindra Group has been the efforts and focus on the quality of manufacturing and processes. Quite early, he introduced BPR – Business Process Re-engineering.

in India and we need to ensure that we remain at top of the UV segment.”

And is he happy with the way the SsangYong brand has been accepted in India? “While the initial response was very good, it has slowed down a little bit and I am not quite happy with it. The product itself is very good but not selling enough. It is a new brand and launching a new brand takes a lot of

effort. Moreover, we have only one product and that does not help. So we have to see if we can justify launching some more products and then put more weight behind the brand and then take it up.”

The Group is also looking at acquiring a marquee brand which will make it more global. The name doing the rounds is obviously Saab. The aspiration is to move up on the brand scale. “Yes, we would like to have a marquee brand in our

Manufacturing plants under Dr Goenka

	Sector	Number of plants	Locations
	Automotive	6	Kandivali (Mumbai), Nashik, Zaheerabad, Chakan, Igatpuri Engine plant, Haridwar
	Trucks & Buses	1	Chakan
	Electric Vehicles	1	Bengaluru
	Tractors	7	Zaheerabad, Jaipur, Kandivali (Mumbai), Rudrapur, Nagpur, Mohali – two Swaraj plants
	Two Wheelers	1	Pithampur
	Construction Equipment	1	Chakan
Total	Six	17	13



"Yes, we would like to have a marquee brand in our group, but we are in no hurry. We are looking at the right opportunity; importantly, it has to make business sense."

group, but we are in no hurry. We are looking at the right opportunity; importantly, it has to make business sense. Of course, we have to look beyond what others may see. If we are convinced that the brand that may be, let's say sort of, on

the backburner, but if we see that we can revive the brand by doing something over a certain period of time then we could get into it. But we clearly have to see a business plan that will make financial sense for us to acquire it."

Moving to the trucks segment, Mahindra had planned to invest Rs200 crore to strengthen the product line last August. It is very much happening on two lines. One is to strengthen the existing product line and second is to fill the gaps. "We had this truck at the photoshoot – the 25 tonnes to 40 tonnes. It is a very good truck but not selling enough. In that case, we do not need to do anything in terms of changing the design but we are launching intermediate products; like we are working on a 37 tonner. We are also looking at constantly improving fuel efficiency, meeting new emission norms and reducing weight of the vehicle." The second part is the gaps. "First, we do not have a product from 9 tonnes to 16 tonnes. So we have started work on that product and it will take three years to get it ready. One has to look at how this product will be different and why will the customer buy it. Second is our LCV range, which is kind of dated in the sense that there are many newer LCVs. So we will be bringing a steep change in that segment." He also identifies not having full size buses as a big gap but adds that for the time being, he will not focus on that.

The Mahindra two wheeler segment has been growing steadily. Dr Goenka says it's the product and its positioning that's working well. "Mahindra has a certain brand DNA. It is rugged, go anywhere, adventure kind of thing and not just mobility. The customer must see the same brand DNA in the two wheeler also." So the positioning was changed from being



All shopfloor employees are working towards making Crusade a big success.



Mahindra is working to bring a steep change in its LCVs, which Dr Goenka believes need a revamping.

a good commuter bike to a fun, not premium, but a fun adventure kind of bike. “We put in 4 to 5 features in the Centuro that were first time in the segment. None of the leaders had them and that became the real attraction. Same thing we are going to continue with the scooter that will be launched during the year.” The two wheeler segment has a well equipped R&D centre in Pune and Dr Goenka believes that to be a hidden strength. He aspires to have a couple of more products like Centuro to be successful. “Then we can say that we have arrived in this business.”


Globally, the Mahindra Group aspires to be amongst the top 50 admired brand over the next 7 to 8 years. And Dr Goenka is well aware that AFS will have to play a key role in achieving that aspiration. “It is very important to focus on the word ‘admirable’, it is in a way connected to the Mahindra Rise philosophy. Therefore it is equally important how we grow a brand in all markets. We need to replicate the same things that we are doing in India in all the markets that we are in. For that to happen, we need to get to a critical mass of business before we can start building brand.” He cites the example of how the brand has progressed in the US in the tractor segment.

By now he has almost covered all the aspects of the different businesses he looks after, with equal passion and positivity. So I ask him, what the most challenging part of his job is. The answer is quick. “Maintaining balance between businesses as small as only about Rs20 crore and as large as Rs30,000 crore. In terms of the entire AFS P&L, what the 20 crore business does should make no difference even if it makes 100 percent profit or 100 percent loss. But then, that business is our future growth and therefore to keep this proportionate focus is

one challenging part. He believes this works very well in the Mahindra philosophy of management where the senior most management, starting from Anand Mahindra, gives higher focus on new upcoming businesses.

It has been a whirlwind of journey just speaking to him for about an hour. I wonder how it must have been for him being part of all the action for 20 years now. Of course, the two decades haven’t been without regrets. That he couldn’t make his mark in certain market segments is clearly on top of his mind. “We did not have enough conviction in aggressively coming

to those segments where others came in and did very well. We lost out our opportunity,” he says matter-of-factly. And the highlights? “The first and the biggest one has to be the Scorpio which I was the project leader for. That product, all believe, was a turning point for Mahindra in terms of its brand and in terms of respect in the market.”

Second thing that he is very proud of is the Chakan plant. “It was a very big decision to invest money in Chakan at a time when the auto industry was slowing down in 2008-2009. For us to stay with that decision in that time period and invest that money was very good. From the process of selecting where the plants should be setup to negotiating with the government on the incentive package and from working with the team to the development of the layout, my involvement was very high. I think that plant will be a future asset for Mahindra in the automotive business.” Then he identifies the Group’s foray into the agri business and the SsangYong acquisition as the other two highlights. “Finally, it’s the power train division. That again probably will become a future growth engine,” he says, subtly connecting the past, the present and the future. 

Mahindras had planned to invest Rs200 crore to strengthen the product line last August. It is very much happening on two lines. One is to strengthen the existing the product line and the second is to fill the gaps.

Safety in DNA

The Aditya Birla Chemicals Business has adopted safety as a key performance parameter to drive its business sustainably with operational excellence.

Today, every manufacturing business needs to incorporate safe work practices in its operations. It is all the more critical if the business is into handling of chemicals, some of which are hazardous and toxic in nature. That's why the Aditya Birla Chemicals Business has adopted safety as a key performance parameter to drive its business sustainably with operational excellence. In fact, it has incorporated safety in its organisational DNA across all the 14 manufacturing locations globally.

To adopt the global best practices and to meet norms specific to chemicals hazard, the Aditya Birla Chemicals Business collaborated with DuPont Sustainable Solutions (DSS) - the knowledge consulting arm of DuPont. It initiated the journey about three years ago with Work Place Safety (WPS), wherein the at-risk behaviours are addressed to improve work practices to establish better operational discipline. The Business also extended its engagement to include Process Safety Management (PSM). With PSM, the manufacturing processes are routed through a 13-element wheel to address their risks both qualitatively and quantitatively as well as through driving control mechanisms to mitigate safety issues.

The WPS engagement at units identified focus areas. This included framing of the ten high risk standards and rolling them out for gap identification and support for strengthening the infrastructures to meet the standard requirements. The ten high risk standards encompass personal protection, work@height, materials handling, job safety analysis, permit to work, lock out tag out, hot work, scaffoldings, incident investigation and

Some of the key facts:

- Improvements in safety observation by all sections and reporting to tab the non-compliances.
- Reduction in the number of first aid cases at Indian Rayon plant at Veraval, Gujarat.
- Conducting process hazard analysis for key processes to adopt engineering controls so that any eventuality due to technical flaws gets minimised.
- Improvement in material handlings, energy isolation system.
- 100% enforcement of permit to work system across all areas.
- Reporting and investigation of incidents to correct the system.



Use of scaffolding at site



“In our business a lot of emphasis is given to Safety, it is an integral part of our culture.”


Lalit Naik,
Business Head, Aditya Birla Chemicals

excavation. The Business also developed standard capability to train employees as well as all other stakeholders.

To drive WPS, Aditya Birla Chemicals Business formed six different sub-committees to cover Safety Rules & Procedures, Safety Observation & Audit, Incident Investigation, Capability Development & Communication, Safety in Transport & Distribution, and Contractor Safety Management with each unit led by a senior management team.

Similarly for PSM, the Business created one sub-committee per unit which works closely for developing process safety practices like technology, process hazard analysis, pre-start up safety review, emergency response and management of change. Each unit has an Apex Committee with its Unit Head as the Chairman to run the initiatives. The effectiveness of the engagement is first monitored through the Safety Observation (SO) Process and finally by trained first party and second party auditors during the auditing processes. The Business leadership (led by the Business Head) provides guidance and support through the Steering Committee.

Earlier safety was considered as the safety department's sole responsibility. Now it is part of the DNA of each and every individual in the Business, be it on the shop floor (technical or non-technical), in the administration department or at the corporate office. Importantly, employees are driven by safety whether they are working or at off work.

“With a journey of about three years with DuPont Sustainable Solutions, we have reached a stage where safety is imbibed in the DNA of the entire team. We have put the process in place to ensure continuity of use of safe work practices in a sustainable manner,” says Lalit Naik, Business Head, Aditya Birla Chemicals. He believes that it's a journey and it should continue with the aim of making every workplace in the Business, a zero-incidents workplace. 

Daimler India exports Fuso trucks Indonesia



Daimler India Commercial Vehicles Pvt. Ltd (DICV), along with Mitsubishi Fuso Truck and Bus Corporation, Japan (a Daimler Company), has started shipping its DICV-made Fuso trucks to Indonesia. Fuso is the market leader in Indonesia with a market share of 45.4 percent and in the light-duty truck segment (5-8 tons GVW) served by the Colt Diesel, the company continues to prove its leadership position with a market share of 53.1 percent in (Jan-Dec) 2013. The company has sold over 280,000 units in Indonesia across light-medium and heavy duty segments. Rigorous testing has been assessed under the most strenuous driving conditions to ensure maximum reliability of the trucks. The new Fuso trucks are sold in Kenya, Sri Lanka, Zambia, Tanzania, Zimbabwe, Bangladesh, and Brunei, and are now on their way to Indonesia.

A new business model creates synergies by bundling the strengths of the Japan-based Mitsubishi Fuso Truck and Bus Corp. and DICV under the umbrella of Daimler Trucks Asia.

Aequs lays foundation for new plant in Belgaum

Aequs has recently laid the foundation for a new automotive components plant at its 250 acre SEZ in Belgaum. The new automotive plant will add machining capacity of over 100,000 hours annually and will support the company's rapid expansion plans in the US and Europe markets this year. Aequs aims to increase its revenues from the automotive business to US\$ 30 million by 2020 and is scouting to establish joint ventures to add to its capabilities in this vertical.

The new plant, which is expected to be operational from March 2015, will manufacture engine and transmission parts, sub-assemblies and assemblies. "Most leading auto manufacturers of the world outsource their component manufacturing to India and by 2020, India's exports from this industry are expected to reach US\$40 billion, from the current US\$12 billion. With the new plant and our continued expansion plans in this vertical, we are looking to garner significant share of this market opportunity", said Aravind Melligeri, Chairman and CEO, Aequs.

"The JV approach to manufacturing will enable us to offer top quality ancillaries and sub-assemblies to global customers at a very competitive price as we can access the latest world-class technologies through our collaborations", Melligeri added. Aequs's automotive customers include global majors such as Bosch, Jacobs Vehicle Systems and Bosch Rexroth.

Continental Automotive Brake Systems India relocates to new plant in Gurgaon

Continental Automotive Brake Systems (India) Pvt. Ltd, a subsidiary of the international automotive supplier Continental, has relocated its Hydraulic Brake Systems (HBS) plant to a new production facility in Gurgaon. The plant's new 7000 sq m production facility is capable of producing around 1.5 million calipers, boosters and drum brakes, to cater to increasing demand from OEMs. The facility also houses enhanced R & D test lab and has over 200 employees.

Continental Automotive Brake Systems India began as a joint venture with Rico in 2008. It went on to become a fully owned subsidiary of Continental in 2012, delivering actuation, caliper and drum brakes to all major OEMs in India. Continental is supporting global OEMs as well as domestic OEMs with its production locations in India. The

company has now commenced direct export to South Africa and Eastern Europe and indirect export through its established customer base, to Europe and the ASEAN region. With its core processes involving machining and assembly of parts, the HBS plant has launched a localisation program for the in-house assembly of drum brake shoes. Further capacity and programs will be added to meet the demands of global and local OEMs.

Murali Srinivasan, MD, Continental Automotive Brake Systems (India) Pvt. Ltd said, "The new plant will allow us to grow in step with our customers. The new production facility allows us a higher degree of flexibility and vertical integration, and clearly demonstrates commitment towards our international customer base."

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PCL partners with Emag to introduce assembled camshafts technology



Precision Camshafts Ltd (PCL) has announced a strategic alliance with Emag Germany to acquire the widely proven and accepted Assembled Camshaft technology. This technology uses the 'Force Free Heat Shrink' - a process which Emag has patented. The improved cost competitive process developed through this alliance between PCL and Emag Germany will be the first for any Indian component manufacturer.

PCL will have exclusive rights to this new technology worldwide. This PCL - Emag alliance will further strengthen the market leadership of both entities in the coming years and will further help in developing next generation camshafts. Assembled Camshafts are used predominately by OEMs in Europe and now China and some developed countries, have increased strength of material and are lighter in comparison to conventional camshafts, both of which help in improving fuel efficiency and reducing emission.

Speaking on the occasion Yatin Shah, Chairman and Managing Director, Precision Camshafts Limited said, "PCL, through the acquisition of this technology will be a complete solution provider for camshafts manufactured by different technologies" Dr. Andreas Mootz, Managing Director, Emag Automation, Germany, said, "Using PCL's technological prowess and best practices in the manufacturing process, our products and technology will not only help meet the new demands of our global customers but our synergies will be leveraged from time to time to meet the growing demands of the automotive industry in the future."

A focused export oriented manufacturer, PCL supplies 85 percent of its camshafts to the global automotive industry. At present PCL has a major share of the Indian market and about eight percent of the international market in the camshaft segment.

Polymers composites to redefine mobility: Industry body ACMA

To address the usage of advanced, high performance composites used in making vehicles lighter, safer and more fuel-efficient in synch with the existing global standards, the Auto Components Manufacturers Association of India (ACMA) organised a National Conference on Polymer Composites & New Age Materials. Ambuj Sharma, Additional Secretary, Ministry of Heavy Industries and Public Enterprises said, "Polymer Composites today have found ways to move beyond, what may be termed as 'traditional applications', in the automotive industry. Such materials are not only finding usage in the conventional interiors and exteriors of the vehicle but are also being considered ideal for a range of specialty applications. However, he added, there is an immediate need for the industry to seize business opportunities both in the domestic market and those available overseas. Further, the industry must proactively scale-up operations, invest in R&D and further up-grade technology matching the existing global standards."

The Indian composite industry is pegged at Rs 15,000 crore and is expected to grow at 15 per cent per annum over the next four years. Given its array of applications polymers composites are increasingly being explored for newer applications to make vehicles lighter and fuel efficient.

Force is the title sponsor of RFC India



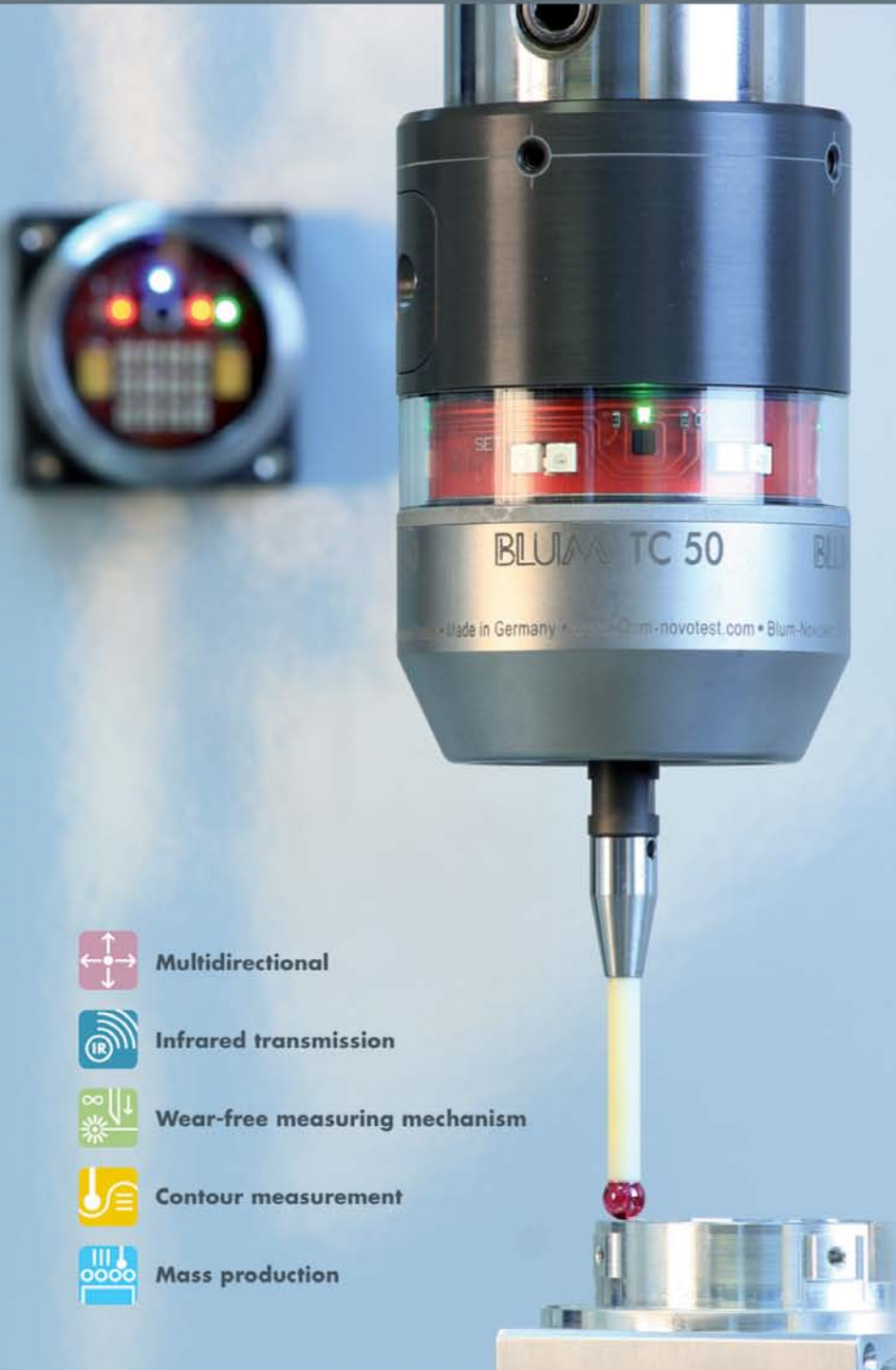
Pune-based Force Motors Ltd will be the Title Sponsor of Rainforest Challenge in India, titled 'Force Gurkha RFC India 2014'. Force Motors will promote its Extreme Off-Roader Vehicle; Force Gurkha with the title sponsorship of this event. The event will take place in the forests of southern Goa from August 8 to 14, 2014. The first edition of this mega motorsport event is expected to be the biggest congregation of extreme off-roading enthusiasts in India.

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In appreciation of the critical role played by Plant Heads in the success of manufacturing organisations, The Machinist has started a section called 'Plant Head of the Month'. We will be featuring some illustrious plant heads in this section giving preference to the ones whose plants have accomplished noteworthy milestones recently.

The *SPECIALIST*

What started as an internal support system is now developing into full fledged business unit enhancing the country's capabilities in the heavy engineering segment, says **Ravi Sarin**, Chief Executive Officer, Essar Heavy Engineering Services.

By Niranjan Mudholkar

Evolution is a key to success in any business and the story of Essar Heavy Engineering Services (EHES) is an excellent example. Established in 2005, as Essar Projects India Ltd's 'engineered to order' heavy fabrication facility in Hazira to support its projects, EHES has transformed itself into one of the top five finest heavy engineering companies in the country today. In fact, EHES is amongst the elite group of companies not just in India but also globally to have specialised competency both in terms of capacity as well as capabilities. And the man who has played a big role in making this happen is Ravi Sarin, Chief Executive



“ We focused on two things: speed and getting things right first time. We had to achieve in a few years what others had done in decades.”

Ravi Sarin

Chief Executive Officer, Essar Heavy Engineering Services



The EHES shopfloor is well equipped with machining capabilities

Officer, Essar Heavy Engineering Services. Sarin, who has been with the Essar Group for more than 22 years, is quick to underline the vision and support of the Group's Chairman Shashi Ruia. "EHES is Mr Ruia's brainchild who had conceptualised a state-of-the-art heavy engineering facility. Fabrication is a heavy investment industry and with management support, EHES was able to develop this facility by acquiring machinery and experienced engineers and managers within a short span of five years as compared to 30-40 years of similar fabrication facilities in India. All critical CNC and testing machines have been imported and infrastructure has been developed by Essar itself including the civil and mechanical works, plant structures and also EOT and gantry cranes. The journey, of course, has been very challenging."

After it started off as a support team to Essar Projects, over the years, EHES developed the skill and technology to carry out highly critical and niche segment jobs. Sarin knew that he was competing with players who have been in the business for decades. "So we focused on two things: speed and getting



Sarin with a colleague on his inspection round at the shopfloor

things right first time. We had to achieve in a few years what others had done in decades," Sarin told *The Machinist* during its recent visit to the facility in Hazira. For example, Sarin learnt and implemented very early in the business' journey that it needs to have separate plants and storage facilities for carbon steel and stainless steel. "It was during an early project that we came to know of this requirement and we immediately implemented it. It was a bit challenging initially but we knew that this would benefit us in the long run and it definitely has."

Welding capabilities

Materials: Carbon Steel, Alloy Steel, Stainless Steel, Alloy 28, Alloy 20, Inconel, Cupro Nickel, Hastelloy, Duplex, Titanium and others.

Processes: SMAW, SAW, GTAW, MIG, FCAW, ESSC, Tube # Tube sheet, Overlays

Plant statistics

Date when manufacturing started: 2006

Total plant area: 315,000 sq m

Products manufactured:

Pressure vessels, columns, reactors & heat exchangers for sectors like fertilizers, refineries, petrochemicals and oil & gas.

Steel and power plant, material handling equipment & machinery

Modular, skids & technological structures

Capacity:

Equipment – 15,000 mt/annum +

Modular / Technological / Offshore – 15,000 mt/annum

Number of employees: 180 approximately

Investments made so far: Rs500 crore

Recent milestones achieved: **Winning critical and prestigious orders from multi nationals – for domestic and exports – and delivering world class, high quality products within required delivery schedule**

Current order book size: Rs385 crore

Percentage of third party projects in above: **85 percent of orders/ projects**

Manufacturing principle followed: WCM

Key machines used: **CNC plate cutting, plate bending and forming machines, welding machines, CNC machines for drilling, boring, milling, etc.**

Testing facilities: **Well equipped lab with destructive & NDT machines and instruments**





PLANT HEAD OF THE MONTH

Today, EHES has the capacity to manufacture heavy equipment for the fertilizer, refinery, petrochemicals, power, steel, port handling, and several other allied industries. EHES manufactures and fabricates a wide range of engineered-to-order heavy equipment such as pressure vessels, reactors, vacuum vessels, cranes and steel plant equipment. It had the experience of fabricating various types of equipment for its own projects in the initial years till 2012. For example, EHES played a major role in the expansion of Essar's Vadinar refinery and the 10-million Essar Steel plant at Hazira. It has also worked with Essar Steel at Minnesota, USA and in Paradip.

"During this period, EHES gained experience and also established systems and certifications such as ASME U, U2, S & R Stamps, ISO9001, OHSAS18001, ISO14001, IBR, CCOE, etc. Apart from this, we established the required approvals with about 100 renowned Indian and global companies," Sarin said. And it is not wonder that presently, EHES is executing 85 percent of jobs for external customers in India and abroad secured through reputed



A testing equipment at the lab

Design capabilities

Eight design engineers and about 20 persons in design team. Capable of providing complete engineering solutions for thermal design of heat exchangers and mechanical design of PV & HE, Also able to release manufacturing drawings in Auto Cad 2010 for shop.

Softwares used by design team

HTRI	Thermal Design of Heat Exchangers
PV Elite, Codecal, Microprotol	Mechanical Design of PV & HE
Auto Cad 2010	Detailed Engineering

“Basically I am an engineer and have worked on the shopfloor for most of my life. However, board meetings have their own advantages which provide great value addition and insight. I personally enjoy both.”

multinational companies. These jobs include the capability of working with metals like titanium, low alloy steel and hastelloy in addition to various stainless steel and non-ferrous materials. "Typically, a regular job takes about 3 months to 6 months to be completed by EHES while a big job takes about 9 months to 12 months. It depends on the criticality of the job." In the fabrication industry, welding is the most critical activity. EHES invested heavily in welding engineering for qualified, trained and experienced engineers, infrastructure, machinery, for developing procedures, systems as well as qualifications for various types of materials and welding processes.

Besides the two well equipped covered bays for heavy fabrication, EHES also has seven outdoor bays. It has recently

Transporting massive jobs like this is relatively easy due to a convenient water front access



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EHES draws its strength from its welding capabilities with different materials and processes



A new blasting and painting shell has been erected to protect products from rain and moisture

erected a new blasting and painting shell to ensure that its products stay protected from rain and moisture. EHES enjoys the strategic advantage of a convenient waterfront

Most challenging projects undertaken by EHES so far

Quench tower for EOL – SS316L – 360MT – 7M DIA x 80M LONG

2500TPH Bucket wheel reclaimer for Essar Paradeep
2 ¼ CR. 1 MO reactor of 130mm thickness without any repair

Secondary reformers for Kribhco involving shop and site works including refractory work under supervision & inspection of KBR, PDIL, HSB and KRIBHCO

“The above projects have been challenging mainly in terms of metallurgy, size, and technology used in manufacturing above equipment. There are only limited manufacturers who are qualified for such hi-tech jobs,” says Sarin.

access and also has its own port for sea transport. So transporting big jobs is relatively hassle free for EHSE as compared to other engineering companies.

And all this has been achieved without compromising on safety, the most important hygiene factor in any manufacturing facility. “In fact, our focus on safety has been a big contributor to our success. I can safely say that we have been successful because we have given safety the utmost priority,” Sarin says. And the tour of the facility confirms this. “Our safety performance is among the best in the industry with LTI free 27.47 million man-hours and 1,529 Safe Days (as on June 19, 2014). We have had zero accident rate since April 1, 2010. We have won also won a couple of awards for safety and have been certified by both ‘The British Safety Council’ and the ‘Gujarat Safety Council and

Machining infrastructure

CNC Horizontal Milling & Boring – Skoda

CNC Universal Drilling, Milling & Boring Machine – Zayer

CNC Milling & Boring – Zayer

Vertical Turning Lathe – Blansko

CNC Vertical Machining Centre – Chevalier

CNC Plano Miller – Zayer

CNC Horizontal Boring – Juaristi

CNC Lathe – Grutzpe

Milling Machine – BFW

Plus, conventional lathes, radial drilling machines, universal drilling machine, band saw machine, CNC pipe bending machine and high thick plate grinding.

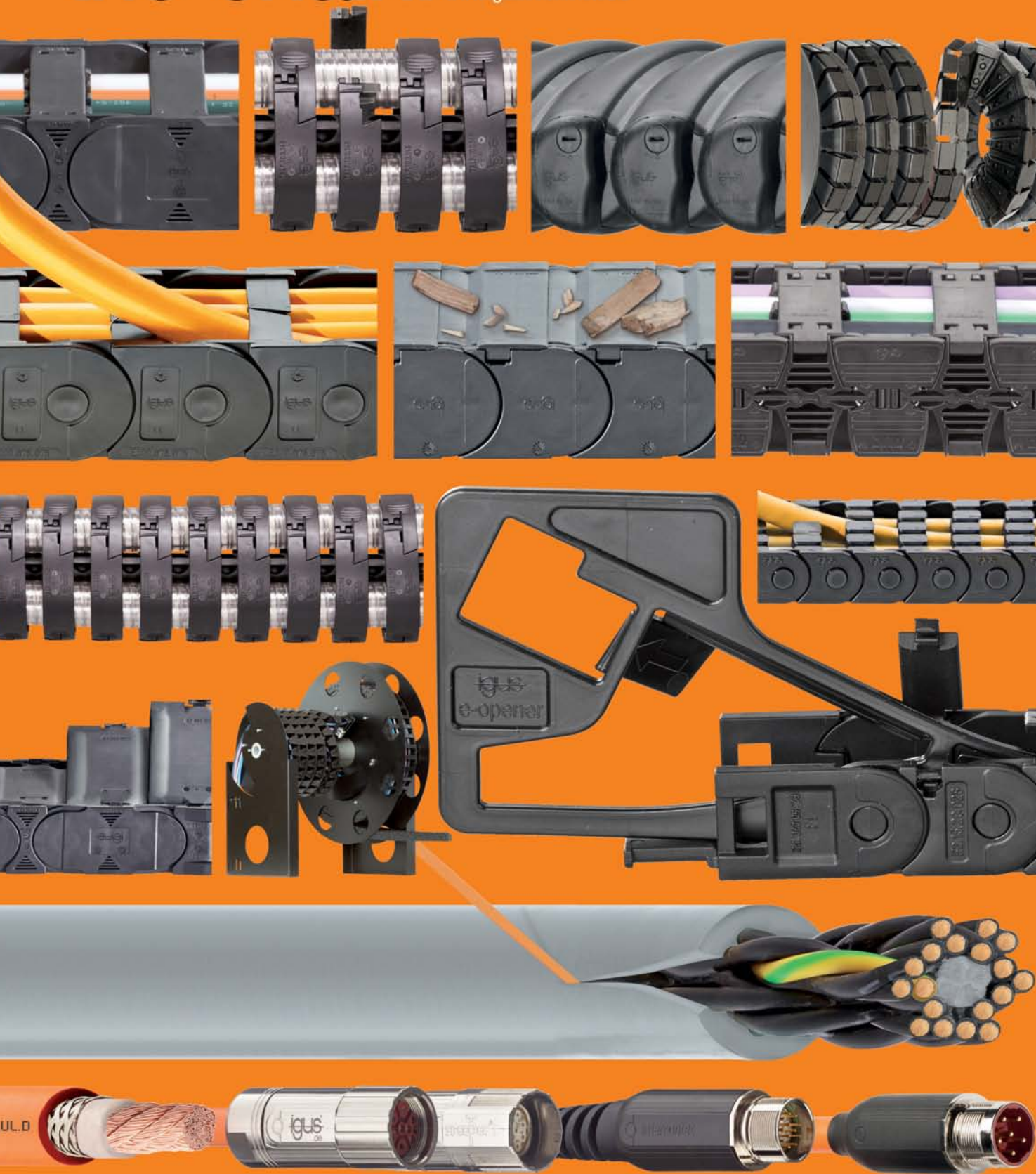
Directorate of Industrial Safety & Health - Gujarat State’.”

As a reflection of the dynamic nature of the business, Sarin today has to straddle between the board room and the shopfloor. So what does he enjoy more? “Basically I am an engineer and have worked on the shopfloor for most of my life. However, board meetings have their own advantages which provide great value addition and insight. I personally enjoy both.”

EHES is present in a very niche segment and it has also been growing. Obviously, this is not possible without highly skilled workers. Sarin explains that Hazira is a rich industrial belt in Surat with some of the most experienced and qualified workers in the fabrication industry. “Essar has established this fabrication facility considering this aspect. Moreover, we have a policy for conducting regular training programs for soft skills as well as technical skills on a regular basis. We recruit experienced and qualified engineers as per the requirement of various functions of the organisation. Apart from this, we encourage employees and trainees recruited for on-the-job training.”

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Mark your diary

A list of key events happening between July 2014 to February 2015, both nationally and internationally

Amtex

July 25-28, New Delhi
www.amtex2014.com

Automation 2014

October 15-18, Mumbai
<http://www.iedcommunications.com/index.php>

Machine Tool Expo 2015

August 24-27, Ahmedabad
www.mtx.co.in

KnowledgeExpo

November 20-22, New Delhi
www.ciiknowledgexpo.in/Default.aspx

Himtex 2014

September 4-6, Hyderabad
www.himtex.in/

International Mining and Machinery Exhibition (IMME)

December 3-6, Kolkata
<http://www.immeindia.in/index.aspx>

International Manufacturing Technology Show

September 8-13, Chicago
www.imts.com/

Imtex 2015

January 22-28, 2015, Bangalore
<http://www.imtex.in/>

India Manufacturing Show

September 11-13, Bangalore
www.indiamanufacturingshow.com/

SPS Automation India 2015

February 5-7, 2015, Ahmedabad
www.spsautomation-india.in

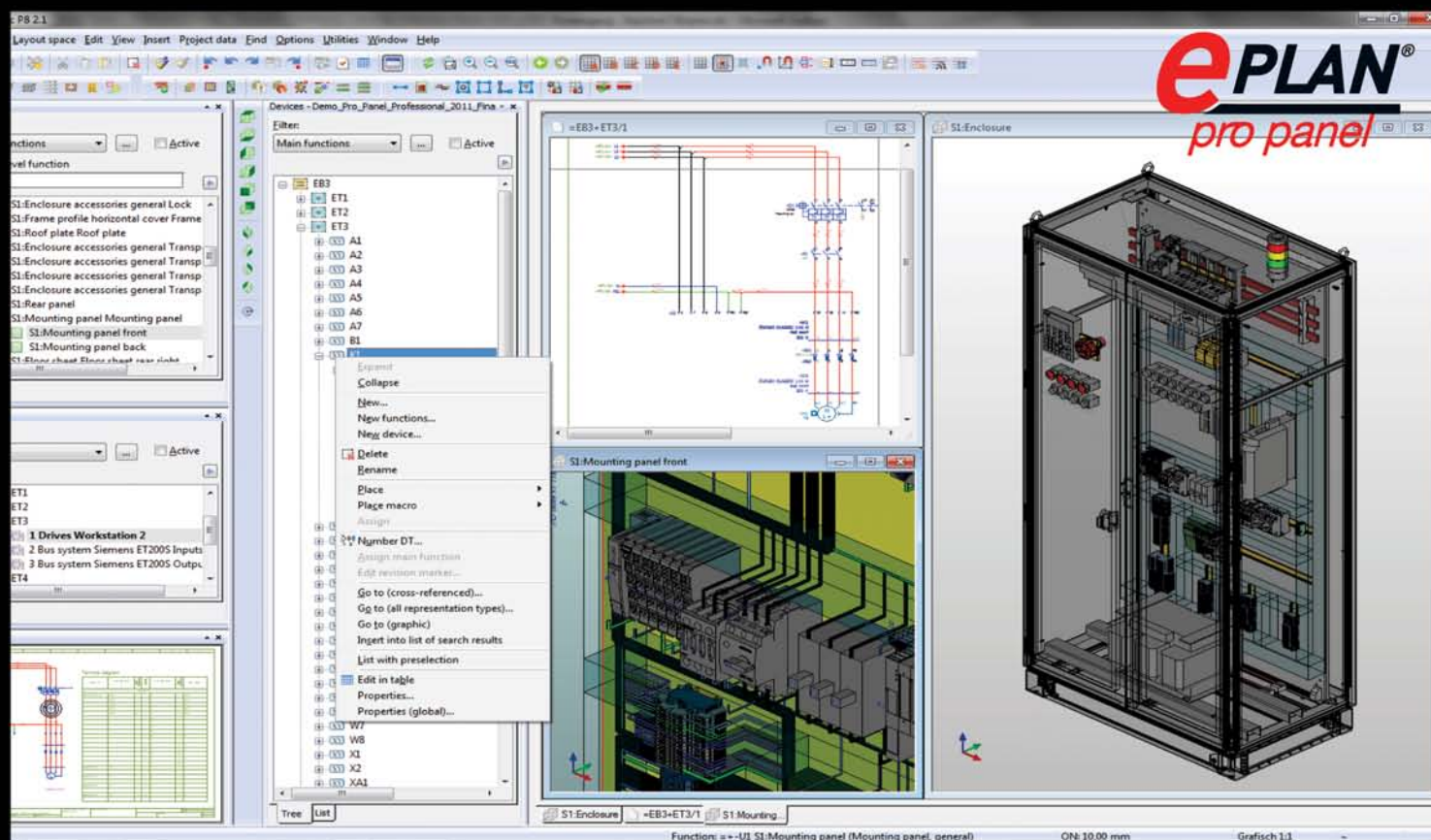
Laser World of Photonics India

September 23-25, Bangalore
<http://www.world-of-photonics.net/en/laser-india/start>

India Automation Technology Fair

February 26-28, 2015, Mumbai
www.iatf.in





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It has been six months since we re-launched 'The Machinist' in a completely new avatar. And we are happy to share that the all new Machinist is getting excellent response from its readers. We present a snapshot of the feedback, which shows both the profile of our readers as well as the wide reach of the magazine...

Reach out to us:

Cell phone: +91 9819531819

Email: niranjan.mudholkar@wmm.co.in

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<http://in.linkedin.com/pub/the-machinist-magazine/99/a2/566>

Coming soon: www.themachinist.in

The knowledge content is very good in the magazine; definitely it makes oneself aware with various activities going through industry and improvement in work area.

Prasad Shirodkar, AGM (M/c Engg),
Maruti Suzuki India, Gurgaon

The Machinist is a good read. It is informative and current. I have been sharing the magazine with my colleagues and they too have found it useful.

Omkar S. Rao, AGM,
Larsen & Toubro Ltd, Precision Machining Centre, Coimbatore

I think this is most informative magazine. The editorial preface teaches me about qualities of successful businessmen and their practices. Also with this, we were aware about current improvements as well as new trends in manufacturing.

Vaibhav Godbole, Officer (Tool Engg),
Tata Motors Ltd, (CTED), Pimpri, Pune

The Machinist is very informative and helpful in attaining the latest knowledge

AP Singh, Chief Manager - Manufacturing Plant 1,
Escorts Ltd, (Agri Machinery Group), Faridabad

The Machinist is very informative and it helps us know about latest happenings in the manufacturing industry.

Shivraj Mane, Manager Application,
Yamazaki Mazak India Pvt Ltd, Sanaswadi, Pune

LETTERS to the EDITOR



The Machinist Magazine is quite useful to know latest manufacturing processes / technology thereby remain in competition.

P. Wadhvani, Head - Product & Supplier Quality Assurance,
Eicher Trucks and Buses, VE Commercial Vehicles Ltd, Pithampur

Magazine is truly very informative and useful for us.

Abhijit Habu, AGM Purchase,
JCB India Ltd, Pune



The Machinist contains useful information about current good practices and ongoing trends in industry. This really helps to analyze and improve on our current procedures and practices. We like this magazine and share information to concerned person.

Really this is good gesture started by you and we are really thankful to all your team for their efforts to focus on technological inventions in the industry.

Deepak Kajale, Machine Components Division-II,
Bharat Forge Limited, Mundhwa

One word -- Excellent

Sandeep Sharma, Dy. Manager,
Camshaft & GB Case machining, Shop-VIII, Engine BU, Ashok Leyland, Pantnagar



SUPER SUGGESTIONS



I find The Machinist very useful, especially for information about latest machining practices done at different location. It's also got information

about latest machines tools and tooling. I hope one day it will reach at par of American machinist. From my side I will suggest that interviews of experienced shop floor professional should be included.

Harsh Parikh, Manufacturing Engineer,

L&T Power, Hazira

Information on some of the on-going industrial developments and benefits got out of them are quite useful in paving the way for new technology acquisitions. We will show interest in multi-tasking machines with in-process gauging and handling automation that are needed for machined components particularly. We have looked at other areas like precision grinding, assembly conveyors, welding automation, AVSRS etc. to have highest efficiencies in processing, assembly, testing, packing and despatch.

D. Subramaniam, Senior Manager-Technical, Texmo Industries-Motor Division, Coimbatore

The Machinist is very useful to upgrade our knowledge.

G. Selvam, Sr Manager - Shop 5, Unit planning,
Ashok Leyland, Ennore



The magazine is very informative and not only helps to keep ourselves updated on the recent developments and new features but also on our suppliers who are in this industry.

PS Gambhir, DGM, Materials Procurement,
Eicher Trucks and Buses, VE Commercial
Vehicles Ltd, Pithampur

I find this magazine very relevant in terms of exposing us to new technologies and future trends.

PK Choudhary, General Manager,
TML Drivelines Ltd – Axle, Tata Motors, Jamshedpur

The Machinist is very informative – I share it with others; the quality of presentation is excellent. The subject matter covered is quite wide.

Joseph Thomas, VE commercial Vehicles, Pithampur

I am very much satisfied with The Machinist. It keeps me updated about new technology.

Rohit Nagar, Asst. Manager – Tooling,
Rothe Erde India Pvt. Ltd, Igatpuri, Nasik

I have really enjoyed going through The Machinist magazine, although I have received only one issue so far. Would be looking forward to the next issue.

Gautam Kumar, Manager,
TML Drivelines Ltd - Axle, Tata Motors, Jamshedpur.

The Machinist updates us on the recent development and happenings for improving ourselves.

J. Asokakumar, GM, Ashok Leyland Ltd, Ennore

This is a very good magazine for the new generation world of technology and helps the technocrats to understand and share their view and ideas.

Shajikumar AM, Manager (MMD), BrahMos Aerospace, Trivandrum

The Machinist is a valuable information sharing source. Automotive Industry needs such expert inputs in one magazine which can open new ways of thinking.

GK Chawla, Chief Manager - Plant 1,
Escorts Ltd, (Agri Machinery Group), Faridabad



MACHINE TOOLS

MACHINE TOOLS SPECIAL

The machine tools sector serves as the mother industry for manufacturing activities. With sparks of revival flying all around, there is a new hope in Indian manufacturing. And machine tools players – both Indian as well as international – are all gearing up to support and enhance the new growth. *The Machinist* interacted with some of the key leaders in this segment to get an insightful overview.

By Niranjan Mudholkar



← Ravi Raghavan, CEO
BFW



← PG Jadeja, MD
Jyoti CNC Automation Ltd



← Sreekanteswar S, President – India
United Grinding Group AG



← AV Srinivasan, CEO,
Meiban Engineering
Technologies Pvt Ltd



← TK Ramesh, CEO
Micromatic Machine Tools
Pvt Ltd



← S Ravishankar, Dy. Managing director
Yamazaki Mazak India Pvt Ltd

Names of the companies appear in alphabetical order

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- Ravi Raghavan, CEO, BFW

"We are coming much closer to customers than we have been so far."

Prior to taking charge at BFW, you have been a customer of the machine tool industry. So how are you leveraging that experience from the other side as a machine tool builder now?

BFW has been well ensconced in the Indian machine tool industry for decades. The company has the pulse of the customer, which is the secret behind its successful track record. Almost all BFW special purpose machines and many of its standard catalogue products are supplied only after intense customer interaction.

Having said that, let me add that as a customer I know that everything cannot be expressed in words in formal buyer-sell-



“Lean, flexible and frugal organisations are more capable of overstretching and serving more customers in a better manner. Customer orientation, excellence in execution, product integrity, etc., are some more avenues worth devoting attention.”



Virat: A travelling column vertical machining centre

er meetings. Even when the application is broadly described, some parts remain implied or understated. It is not practicable for a capital equipment buyer to describe threadbare the aspirations, the expectations and the apprehensions behind the purchase. It is also not possible for a buyer to describe beforehand the repercussions if the performance does not match expectations; and the rewards if it works out to be better than expected. I am sharing these with my team, sensitising it to decipher concealed signals and to develop empathy. BFW is coming much closer to customers than it has been so far.

Good companies always evolve with the vision that new leadership brings. So what are some of changes that you have been bringing at BFW since you joined in September 2013?

I am trying to make it easy for BFW customers to communicate with us, buy the machines, get them serviced, and have the requirements attended to in a professional manner. As you know, sometimes otherwise very good machines are not sufficiently productive. I am trying to ensure that the good products do not just remain good, but also prove to be productive for the customer. I am interested in providing value to the customer, a high MTBF, a low MTTR, and things like that. I strongly feel that the Indian machine tool industry has abundant talent, which needs to be cultivated and raised to the leadership role. Lean, flexible and frugal organisations are



more capable of overstretching and serving more customers in a better manner. Customer orientation, excellence in execution, product integrity, etc., are some more avenues worth devoting attention.

Do you see any gap between imported machines and Indian machines? What are the challenges that you face in this context when dealing with customers? How are you overcoming the same?

All imported machines cannot be categorised as a single entity, neither can all machines made in India be branded as one. Machines manufactured by different manufacturers here or overseas have distinct characteristics. Rather than comparing machines based on their country of origin, let us compare machines on a universally applicable scale. Meeting ISO standards, mean time taken to repair, mean time between failures, operator comfort, maintainability, susceptibility to draw unplanned resources, aesthetics, cost of ownership, productivity, versatility, durability, etc., can be some important factors in the direction. Gaps on each of these are huge between products manufactured by different manufacturers within the same country. BFW customers are knowledgeable, going by merits or demerits of the proposal rather than the country of origin. Moreover, BFW has a subsidiary in Germany, matic Maschinenbau GmbH. We are therefore able to cater to a wide range of requirements, without facing constraints about the machine being Indian or imported.

Indian buyers of machine tools have definitely become more demanding and price sensitive. But have they evolved in terms of factors like understanding of technology, value propositions and lifecycle cost? How are you facilitating the customers in this regard?

Barring a negligible number of job shop owners, whose requirements may not demand their being abreast of the latest in technology, machine tool users are quite knowledgeable about the technology and the underlying concepts. Many users visit international expositions and participate in machine tool events. In fact, some leading machine tool users have been benefitting the machine tool industry by analysing the value delivered versus the value desired, the strong points, the areas to be strengthened, and their wish list! Our role is more about inform-



The entrance to the BFW facility

ing customers on how to extract the maximum from the machine for the longest period in a consistent manner.

The year 2013 hasn't been a great year for Indian manufacturing and obviously for the machine tool industry as well. But there is definitely positivity in the air now. Do you see the situation changing drastically with a new government at the centre? How has BFW coped with the recessionary trends and what learnings are you taking forward from the challenging times?

As you have correctly said, the signs are positive. We expect improvement, and are prepared for it. If the improvement is drastic, so it be! However, let us understand that in present times we cannot remain insulated from the rest of the world. A change in Government, policy and work culture is fine; but

good improvement on a sustained basis would depend upon global issues. In any case, VUCA (vulnerability, uncertainty, complexity and ambiguity) are part and parcel of business. Whether there is a boom in business or a lull, BFW is committed to meet its obligations.

Have you launched any new product recently or are planning to do so? Tell us about it?

BFW is working not only on introducing some world leading products, we are also bringing in marked improvements in the product and service line. These will be market launched in about six months at the IMTEX 2015 exhibition.

Any plans of expansion?

BFW is expanding its product range. The company has adequate infrastructure and capacity to cater to market needs in the coming years.



Machines manufactured by different manufacturers here or overseas have distinct characteristics. Rather than comparing machines based on their country of origin, let us compare machines on a universally applicable scale."



- PG Jadeja, MD, Jyoti CNC Automation Ltd

"We have charted our path to be one of the Top 10 global machine tool manufacturers by 2020."

The Indian machine tool industry clocked Rs 11,300 crore in FY 13 and IMTMA envisages growing the industry to Rs 23,000 crore by 2020. Where do you see this growth coming from? What role will major indigenous players like Jyoti CNC have in this growth?

We are entering into new Bull Run across the industry spectrum. Machine tool being one of the mother industries of manufacturing will witness a new buying cycle and investment initiatives from all other industries. Again, the formation of the stable government and instant signals to the manufacturing seems to be highly optimistic. We believe that the growing demand of machine tools presents a significant opportunity for us.

3,123 sq m

Size of Jyoti's R&D centre established to design and develop technologically advanced machines to cater to sophisticated aerospace, automobile and defence applications.

IMTMA in its vision document and perspective plan expects machine tool consumption will reach Rs293 billion in 2020. The key user industries such as defence, aerospace, automobiles, auto components and power sector are set to fuel the growth of Indian machine tool industry. We intend

to leverage our technological expertise, design capability and integrated operations to offer quality products in a cost efficient manner to Indian industries which are currently meeting their requirement through imports.

As a business strategy, you have had a big focus on the exports market. How are you doing on that front? Has addressing different market needs helped Jyoti evolve more in terms of technological innovations?

We have charted our path to be one of the Top 10 global machine tool manufacturers by 2020 and thus have focused to penetrate in international markets. Jyoti-Huron has its strong sales and service network in Europe, Canada, USA, Turkey, Iran, South Africa, Argentina and Australia.

Catering the machine tool requirements along with customised solution to these international markets have considerably helped and motivated us to be more competitive in terms of bringing more and more technological innovations, quality, reliability and productivity in our machines.

We have been able to increase exports by selling entry level machines in European market by using well established sales network of Huron across Europe after the strategic acquisition. Again we intend to continue to harness the synergies between our Indian and International operations to consolidate our position as an international player in the machine tool industry.

Continuing from the above question, tell us about your R&D activities?

"Innovate to Perish" is the mantra we truly believe in. We have developed a well versed and a versatile R&D centre (spread across 3,123 sq m) to keep us up with the international trends towards the automation and manufacturing excellence. This R&D centre is dedicated to an ancient design genius Leonardo Da' Vinci who designed the first lathe machine in early of 16th Century.

The exclusive R&D centre is been established to design and develop technologically advanced world class machines for the better quality, reliability and productivity to cater to sophisticated aerospace, automobile and defence applications



"We are entering into new Bull Run across the industry spectrum. Machine tool being one of the mother industries of manufacturing will witness a new buying cycle and investment initiatives from all other industries."

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where high level of accuracies and reliabilities are inevitable.

R&D activities here are conducted through a young team of 87 technocrat professionals facilitated by latest softwares, and assembly/testing and calibration equipments from world renowned manufacturers.

If I am not wrong, this is the Silver Jubilee year for Jyoti. What do you think have been the three major highlights of this journey?

Jyoti was established in 1989. The journey so far has achieved many important milestones. The three major ones are; Establishment of all the major backward integrations like foundry, sheet-metal, paintshop, sub-assemblies is one of the major milestones of our journey, which made us the only machine tool manufacturer in India producing all the major components under single roof.

Secondly, development of state of art exclusive Research and Development Centre has added a feather on our cap. And last but not the least acquisition of a French Machine Tool giant, Huron Graffenstaden SAS in 2007; with the acquisition of Huron today we are in a position to offer the entire range of turning and milling solutions to customers who are currently importing a significant part of their high-end machine requirements.

Do you think you have been successful in accomplishing the vision of building the company into 'A Temple of Technology'? Why?

Yes, Jyoti is truly regarded as 'A Temple of Technology' as today it is a prime industry supplier that designs and manufactures machines for industrial use. Innovation is the daily buzz word for each of our team members. Jyoti has a team of design engineers who are dedicated to continually re-engineer our machines providing high speed and high accuracy which are compatible to facilitate wide range of application requirements of our customers. The uncompromised thrust in design and development has led Jyoti to explore and serve new engineering segments - the VMC-70 Linear and SECT - are the first of its kind in India. Today we have in total 30 products in 84 different variants offered to the industry.



SXG 3

Have you launched any new product recently or are planning to do so? Tell us about it?

We design and develop innovative products each year. Last year we have launched two new Heavy Duty Turn Mill Centres and a High Speed Vertical Machining Centre for Graphite Machining. This year we will be adding VTLs and some of the sophisticated high end multi axis machines to our product basket.

Any plans of expansion?

Today Jyoti as well Huron are fully equipped with world class manufacturing facilities with a plant capacity of manufacturing 2,500 machines per year. In order to achieve our growth strategy and accomplishing our vision of becoming a top ten machine tool company by 2020, we will undertake capacity expansion and modernisation program from 2,500 machines per year to 4,000 machines per year in near future. In terms of geographical penetration we are further expanding our reach by selling our products in countries such as China and other Far Eastern nations.



Catering to the international markets have considerably helped and motivated us to be more competitive in terms of bringing more and more technological innovations, quality, reliability and productivity in our machines."

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Building the MSME... Driving the Economy



- Sreekanteswar S, President – India, United Grinding Group AG

“We are bringing a mix of Indian technology solutions with global inputs.”

How has been the Indian manufacturing industry evolving in terms of its approach to using machine tools in the recent times, particularly with regards to the customer segments that you cater to?

India is a unique market; there are companies which aspire to be the best in the class, and we can proudly say that we are the only country to have received the most number of Deming awards, outside of Japan. At the same time, our manufacturers are striving to be the low cost producer in the world. This puts tremendous pressure on our manufacturers to produce the highest quality possible at the lowest possible cost. One of the key ingredients to achieve this is the availability of world class solutions at a competitive price in India. Korber Schleifring India with its group of well renowned and highly reliable grinding machine manufacturers is supporting this cause by providing competitive grinding solutions with high productivity and reliability. Backed by advanced technological inputs from our global brands and localised Indian support for application development and after sales service support our cus-



“We are bringing in the latest technology at a reasonable cost to the Indian manufacturers. The thrust is to develop local alternatives to the sub systems around the basic machine.”



Ewag laser line ultra ewag

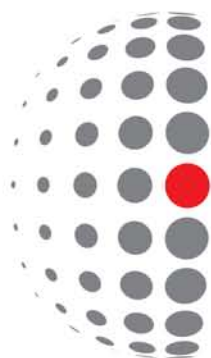
tomers are in a position to use our high precision grinding machine to optimum extent. The high reliability of our products ensures that our manufacturers are able to get consistently high precision components which ultimately leads to better product quality and finally to better customer satisfaction.

What has been your focus on – providing standard solutions or providing customised solutions?

The manufacturing technology is becoming more and more advanced as well as complicated and at the same time the user industry is becoming more focussed towards their core competencies. This is leading to machine tool manufacturers to provide complete customised solutions to the user industries. Tooling up solutions including simple automation is becoming a common trend in today's highly competitive and rapidly changing market. The end-user is interested in his production taking off in the shortest possible time so that he can meet his customers' fast changing demands. He is not interested in creating the knowhow in-house, but will rather want machine tool manufacturers to provide him with globally proven solutions customised to his requirement. Our long association with the user industries worldwide give us, at Korber Schleifring India, the advantage of being able to meet this pressing need of our Indian customers.

Do you look at introducing India specific products? Please share some examples.

We are bringing a mix of Indian technology solutions with global inputs. Through this combination, we are bringing in



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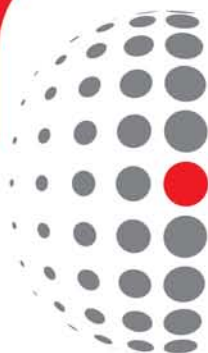
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the latest technology at a reasonable cost to the Indian manufacturers. The thrust is to develop local alternatives to the sub systems around the basic machine. Also, by providing local application and service support, we are making Indian manufacturing highly cost competitive. With this, we are able to provide Indian manufacturing high end technological solutions at an affordable price.

Also, certain products are being developed looking into the needs of Asian Markets including India. For example our EcoGrind which is a cylindrical grinding machine from Fritz Studer Ag, is developed keeping our markets in focus. We also have Walter Helitronic Essential for the regrinding and manufacturing of round tools. Both these products provide the high accuracy and reliability similar to other high end products from our Basket. We only have, customised it to meet the specific requirements of our manufacturers and removed the frills from the product to make it more competitive.

Having technology centers to familiarise customers with the latest developments and to provide training is becoming norm in the machine tool industry. Tell us what you are doing on this front.

We have setup our full fledge technology centre in Peenya, Bangalore during April 2013. Since then we have been supporting our valued customers in India by conducting trials and setting up processes, Application development and Training on the Machines. In fact we are the first Global Grinding machine manufacturers to establish the Demo Centre in India. Our customers are able to experience the same support in India, which otherwise, they would have to travel to Europe at a huge cost and also with lots of paperwork for getting visa and exporting the components. We have also added measuring capabilities at our demo centre so that we can assure the customers at our technology centre itself, that the product and process that we are offering to the customer will meet his quality requirements. Customers go back with the full confidence that the solution provided to him will yield his desired results.

Tell us about your after sales support network

We have a strong after sales support team at our technology centre in Bangalore. Our engineers are well trained at our group companies and are in a position to handle the most complicated situations in their field of work. We ensure that our engineers are sent for training at least for a duration of 4 to 6 weeks every year to



SCHAUDT CrankGrind

get trained on the latest offerings from our group companies, thus they are well acquainted with the latest technology and products. In case of serious and repeated issues, we also have the support from the technical teams located in the brand companies, who logon remotely and are able to provide expert advice and also suggest if any additional activities are required to ascertain the root cause of repeated issues. We are providing our customers with a wide range of service including, Break-down maintenance, Preventive maintenance & Annual Maintenance Contracts and for certain products we also provide re-conditioning services. Our team is also well equipped to check and correct the geometric alignments of the critical units of our products. Over the last three years, the requirement for European engineers to visit India for Commissioning and Servicing of machines has drastically reduced to just one-off cases.

Have you launched any new product / technology recently or are planning to do so? Tell us about it?

New Technology and product development is a continuous program at our organisation. Recently we concluded our Grinding Symposium, wherein we had exhibited the latest developments in different technology areas and which got excellent appreciation from customers all over the world. There were many new products launched during the Symposium, to name a few, the S141 universal internal cylindrical grinding machine, the new CrankGrind from Schaudt, the Ewag Laser Line Ultra.

Any plans of expanding your reach further in the Indian market?

Growth is a constant activity, and we are also expanding our activities on a continuous basis to meet the needs of the Indian manufacturing segment. We have already taken a big step by establishing a full fledge technology centre in India. As our market grows, we will take necessary steps to cater to its ever demanding requirements.



We have already taken a big step by establishing a full fledge technology centre in India. As our market grows, we will take necessary steps to cater to its ever demanding requirements."

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- AV Srinivasan, CEO, Meiban Engineering Technologies Pvt Ltd

We have filled in the gaps in various capacities to provide the most suitable machines

How has been the Indian manufacturing industry evolving in terms of its approach to using machine tools in the recent times, particularly with regards to the customer segments that you cater to?

The manufacturing industrial segment we service is related to automotive turned parts. On the sheet metal side, it is the infrastructure related industries. Basic CNC technology is well assimilated in India. We see more of process integration; users looking at consistency in quality, semi or fully automated production and cost effective manufacturing solutions so that they can compete and supply their products worldwide.

What has been your focus on – providing standard solutions or providing customised solutions?

Our focus is to offer fully automated 24x7 solutions suiting to customer needs. To put it better, standard machines with customised solutions to suit our customers' products.

Do you look at introducing India specific products?

Muratec machines are used worldwide and we are having plans to indigenise the engineering part of the turn key solu-



tions we offer and are planning to incorporate some of the parts which can be procured locally.

Having technology centers to familiarise customers with the latest developments and to provide training is becoming norm in the machine tool industry. Tell us what you are doing on this front.

I agree. We have our Tech centre Located in Bangalore, where we have Muratec Twin spindle Chucker type CNC

Turning machine with Gantry loader and a CNC Servo turret Punching machine. Our tech centre is used for demonstration to prove the capability of the machines, for show casing our technology, pre-sales and after sales training etc. Our factory trained service engineers can also train the customers on preventive maintenance in-house.

Tell us about your after sales support network

After sales service is a key to success and we place a great importance on the quality of support we can give our customers. We have a good team of factory trained engineers. All these engineers are sent to Murata Japan for periodical training and are trained on service, application and all related areas of customer support. All installation, training, warranty support are completely taken care from our Indian operations.

Have you launched any new product / technology recently or are planning to do so?

Yes, on the sheet metal side we have launched machines with newly revamped user friendly CNCs and a higher tonnage and faster machine; on the metal cutting side, we have filled in the gaps in various capacities to provide the most suitable machines for our end users.

Any plans of expanding your reach further in the Indian market?

Yes, most certainly. As said earlier, we are focussing on having the local capability in offering our customers with turnkey solutions. We are also planning to add service centres to support customers regionally.



“We are having plans to indigenise the engineering part of the turn key solutions we offer and are planning to incorporate some of the parts which can be procured locally.”

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- TK Ramesh, CEO, Micromatic Machine Tools Pvt Ltd

"We are looking at the world as one global market."

With the domestic market slowing down, you have increased your attention to exports. In fact, you have been striving to establish the Indian machine tools brand in the overseas market. What is the business strategy behind this and how are you taking this to the next level?

From the world market perspective, the Indian machine tools industry is extremely small. And this boils down to questions of capacity and having a good domestic market. We at the Ace Micromatic Group have consciously endeavoured to increase the capacity over the last seven to eight years at a rate much faster than the average rate in the market.

Secondly, we need to understand that every country has a certain brand image globally when it comes to different industries. Unlike the software industry, the machine tool industry still has a lot of distance to cover. Let's not even talk about Japan and Germany; even Taiwan made machines are imme-

diately recognised globally and accepted. But when it comes to India made machines, there is a lot of talk about trials and proofs. We need to change this perception. And unless and until, we project the image of the industry as a whole, we will not be able to change it. As an industry, we need to work towards brand building. I am working towards this objective both in my individual capacity (through Micromatic) as well as through the Indian Machine Tool Manufacturers' Association's (IMTMA) Export Development Cell.

Providing training through Ace Micromatic Technology Centre has also been a key focus area for you. Tell us more about this.

The Ace Micromatic Technology Centre (AMTC) happened about 4-5 years back when we were talking to our customers and trying to understand the reasons for downtime of machines. And we realised that the major reason has been the unavailability of sufficient number of good operators. Particularly in the SME sector, there is a lot of problem due to lack of trained manpower and this directly affects productivity of the company. Today, with the boom in the services sector, it is difficult to attract the youth to the manufacturing industry. Moreover, there are not enough training avenues available in this segment as well.

So we decided to address this gap as a CSR activity. Accordingly, we donated two machines and two trainers, and started an operator training programme in Bangalore in batches of 20-22. We accepted 10 or 10+2 people for this course, taught them the basics of maths and trigonometry and made them go through what we call Micromatic LPM (Learn Practice Master). We exposed them to the entire ecosystem of the machines. Moreover, these trainees were sent to the actual shopfloor environ to make them understand the real job situations. As a result, people who successfully completed this course were immediately absorbed by many companies.

After the pilot project was successful, we replicated it in other regions like Chennai, Pune and so on. The course content was also made available in regional languages. Different courses and levels were introduced to make the programme more industry oriented and contemporary. Today, 4,500 operators are gainfully employed through this programme. We are happy that we have given the semi-educated youth an opportunity to scale up in life. Another interesting aspect of this programme is that about 17-18 of these operators have taken a bigger leap and have become entrepreneurs by setting up their own small businesses.

We have now also partnered with ITIs and Polytechnic in-



“We are also seeing a trend towards automation. Manufacturers now want faster, more precise and more automated machines so that they can optimally utilise the available resources.”

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stitutes. Moreover, we continue to improvise and upgrade the courses. Trained operators can even come back and further enhance their skills.

Another important aspect of the AMTC is exhibitions and networking events that we conduct for customers in collaboration with associated sectors. These events are quite useful as they bring out a lot of good suggestions and solutions. Typically, we have about 70 percent of existing customers and 30 percent of potential customers.

You have recently also diversified into the foundry business. What is the business logic behind this move and how are you leveraging this new capability?

The whole initiative started with our strategy to have backward integration in terms of castings. Earlier, we were sourcing 100 percent of our castings requirement but with the foundry we are able to meet close to 40 percent of our requirement in-house. We believe this will also help us boost our export capabilities. Of course, we have just started so we will take a stock of things as we progress further. But we certainly would like to make this a separate business for us going ahead.

Indian customers are known to be extremely price sensitive. Has there been any evolution in their approach with regards to the technology and performance of the machines?

Well, customers all over the world are price sensitive but Indian buyers are perhaps a shade more. But I must say that from the machine tools industry perspective, customers are now maturing. There is a lot of change in terms of understanding of technology, machine performance and overall productivity. Even today, more than 70 percent of machines are imported so people are surely aware and are looking at higher technology.

We are also seeing a trend towards automation. India is no longer a low cost manufacturing hub; labour is becoming costly. Manufacturers now want faster, more precise and more automated machines so that they can optimally utilise the available resources. So the evolution is happening but it will still take time to spread. But that is what will separate the good companies from the not-so-good companies.

Do you see the domestic market bouncing back in the near future? What will be the driving factors for machine tool buyers in India?

Yes, absolutely, the domestic market will bounce back. FY 14-



S Jobber LM 500

15 will be 10 percent to 15 percent better than the previous year and FY 15-16 and FY 16-17 will be definitely much better. I see the metal working industry growing 20 percent to 25 percent in these two years. Compared to China, India has always attracted better white-collar manufacturing jobs due to our country's focus on R&D. This advantage will surely grow in the coming years. At the same time, India will also build capacities. Of course, the new government, which looks decisive in nature, must focus on infrastructure development. That itself will be a multiplying factor and will provide a big boost to manufacturing. So I am extremely bullish and I see India becoming a manufacturing hub with a lot of metal working happening here.

Have you launched any new product recently or are planning to do so? Tell us about it?

Our twin vertical spindle machining centre has been a big hit with customers as it offers the advantage of buying two machines in just one unit. We will be looking at launching a range of machines in this category. Similarly, we will be looking at launching a couple of revamped models of our bestsellers at the IMTEX 2015.

Any plans of expansion?

Certainly. Currently our capacity is about 5,000 machines per year and we are already selling 3,000 of these including about 700 for exports. We see this going up substantially. In fact, we are looking at the world as one global market and accordingly, we are looking at ramping up our capacity to 7,000 machines by 2017 and 10,000 machines by 2020.

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- S Ravishankar, Dy. Managing director, Yamazaki Mazak India Pvt Ltd

"We have strengthened our engineering capabilities to offer complete solutions."

With a highly diversified product range catering to a wide range of sectors, you have positioned yourself as a partner in innovation. What role are you playing in facilitating the evolution of Indian manufacturing industry?

If we observe the last two years of Indian Industry, when the local demand was low, exports held fort and went on to move steadily due to revival of manufacturing in US and growth in Europe. Manufacturing for exports requires meeting the stringent quality norms of the foreign buyers. The product quality and supply reliability get greatly enhanced when the high precision and high power machines are engaged for manufacturing. Mazak has been a globally established player in high precision and high power, intelligent machines and therefore is able to cater to the requirements of evolving manufacturing industry.



“As the customers invest in expensive high precision machines, productivity from these machines has to be ensured. Customers today look at investing additionally in special tooling, fixturing and automation to drastically cut the non-productive time.”

What are some of the technological trends that are driven by customer demands and how are you addressing the same?

As the customers invest in expensive high precision machines, productivity from these machines has to be ensured. Customers today look at investing additionally in special tooling, fixturing and automation to drastically cut the non-productive time. Mazak India has over the years strengthened its engineering capabilities to offer complete solution including, tooling, fixtures and automation. With Mazak Tailored Complete Solutions, Customers can get the assurance of enhanced productivity.

How are you leveraging your technology centre to help your customers?

Mazak India set up its world class technology centre to serve its customers better. The technology centre has showcased close to 13 machines of wide range so that customer is able to look and get the feel of the machines before.

Service support like, on-line service support, huge stock of spare parts, spindle repair facility, ensure the customer machines are maintained with highest possible machine up-time.

Periodic training on machine operations, programming and Maintenance are conducted by highly experienced skilled professionals at the training centre equipped with simulators. Customer parts manufacturing is established at our turnkey cell equipped with latest metrology equipment like CMM, roundness tester, contour graph etc.

Open-House is a forum to share the latest developments and regular open house events are organised at the auditorium, together with our partners like cutting tool manufacturers, work holding devices manufacturers, coolant and measuring device manufacturers.

SMEs form a major portion of Indian manufacturing sector. However, their buying power is limited. Are you reaching out to these customers? If yes, then how?

SMEs form the backbone of the manufacturing. As mentioned earlier, the quality requirement gets enhanced with the high precision machines. Considering this requirement in the developing nations, Mazak continues to develop new models which are suitable for the component production lines. These models are positioned and priced to make them economically viable and affordable.

Last year's slowdown has had varying impacts on different organisations. How did Yamazaki Mazak India utilise this

period to prepare for the next phase of growth?

Mazak manufactures wide variety of CNC machines. These wide variety of machines cater to several industry sectors like automotive, aerospace, oil & gas, power etc. Last year's slowdown had mainly affected the commercial vehicle sector and the related industries. Other sectors and exports continued to perform. Mazak India has been catering to these other sectors as well and hence the effect of slow down has been marginal.

Have you launched any new product recently or are planning to do so? Tell us about it?

Yamazaki Mazak exhibited 22 new CNC metal cutting and laser processing machines on its stand at EMO 2013, all designed to help manufacturers 'make [it] better'.

The new machines demonstrate Mazak's viability to help customers obtain the best in speed, precision and performance from their machines and automation systems. The new machines represent the latest technology manufactured in seven different Mazak manufacturing plants across the world, all offering improved productivity, efficiency and ergonomics.

In the multi-tasking zone, we had four new Variaxis models, including the new VARIAXIS i-700 T which is equipped with a turning function provided by the machine's high rigidity tilting table construction which utilises an A-axis drive unit equipped with roller gear cam and C-axis drive unit with direct drive motor. The C-axis enables turning with the table at the 0-degree or 90-degree position. The Integrex e-1250V/8II is the latest addition to the Integrex e-V series of machines. In the horizontal machining centre zone, two new machines have been specifically designed to offer machine tool users exceptional levels of productivity and accuracy. Alongside is the new Horizontal Center Nexus 4000-III, complete with new compact 6 Pallet-Changer system.

In the vertical machining centre zone, Mazak will showcase the latest variant of its phenomenally successful VTC 800 series, the VTC 800/30SDR. In the turning zone, there is the Quick Turn Nexus 350-II MSY. Then there are two laser cutting machines,



QUICK_TURN_PRIMUS_150S

the Optiplex 3015 Fiber II and the 3D Fabri Gear 220II. Quick Turn Smart 250M fitted with Mazak's Robo Smart Cell system, which is designed to provide a high productivity and flexible work-piece handling solution for the Quick Turn Smart, Quick Turn Nexus and Vertical CenterER Smart range of turning and machining centres.

In November last year Mazak introduced the three new variants of Quick Turn Primos model CNC Turning centers ideally suited for automotive and auto component manufacturing. With compact size, small foot print, designed for easy maintenance and equipped with Fanuc Control, make it Ideal for both Line production and small batch production. These machines productivity can further enhanced with either Gantry loading system or Quick Loading system.

Any plans of expansion?

At present Mazak India's focus is to meet customer requirement and provide best support to the customers' machines.

“Mazak India set up its world class technology centre to serve its customers better. The technology centre has showcased close to 13 machines of wide range so that customer is able to look and get the feel of the machines before.”



Disruptive innovation

Technological disruption does not and cannot happen in isolation. It is about understanding consumers, finding patterns and then radically changing them.

By Rakesh Pandey

The word '*jugaad*' (a colloquial Hindi word for innovatively solving complex problems) is not alien to us anymore. A lot of innovation has happened in India pushing boundaries and eking out the best with limited resources. Take for example the radical innovation by Tata Motors. The Nano has revolutionised automobile manufacturing and distribution.

Market disruption happens when you move from customer wants to customer needs. Here is an interesting example of the origin of shampoo sachets in India. The concept of bottled shampoos was not an affordable solution for the low/mid-income class in India. This sparked an idea by CK Ranganathan, the Chairman and Managing Director of Cavinkare. He introduced the brand 'Chik' shampoo in a sachet, priced at Rs1. People liked this concept and soon the sales of the shampoo doubled in two years.

To realise how to manufacture need, innovation should be at the forefront. The top management drowns itself with trying to understand customer wants, facilitating them, expanding in geographies, cutting losses, and fending off competition. Who's doing the disruptive thinking? So, strip

out of the routine work, pause, think, debate, deliberate and discuss. Only with time and persistence will ideas strike.

The India story

Technological disruption does not and cannot happen in isolation. It is about understanding consumers, finding patterns and then radically changing them. It is a paradoxical thought process. To create the unknown, you realise and understand what is known, then you go bonkers and manufacture something that is unnecessary, but a must have of the future.

Take for example, something as simple as plastic. Today, it is ubiquitous. Plastic's presence is invaluable and we come to contact with it every day. There was a time when people never saw the need for it.

The Indian manufacturing sector has suffered a massive slump. Despite the stagnation in this period, the Indian government had come up with several policies. As part of India's National Manufacturing Policy (NMP), the country is seeking to boost the sector's growth in the next decade by ramping up its share in the GDP to 25 percent from the current 15-16 percent.

India has a number of factors working for it. With growing costs in China, India's superior currency competitiveness, cheap labour, and demographic advantage, India is poised to capitalise on this sector. Capital expenditure is set to spike in the coming years as companies increasingly focus on India's labour intensive and skill power. China's domination as the global workforce of the world is waning and India's thrust is one to watch out for.



“To create the unknown, you realise and understand what is known, then you go bonkers and manufacture something that is unnecessary, but a must have of the future.”



Challenges: Let's face it

Every business needs an 'innovation' centre where brainstorming sessions on new ideas, new methods to use technology are taking place. Now, information is on the move, accessible always, anywhere, and anytime. If companies are not ahead of the curve, then they are trying to battle the transformation. Before you stutter and realise that you are catching up to a trend, there is a seismic shift to what is relevant.

Indian companies still face a challenge in implementing emerging technologies and the questions they often face are whether they want to replicate or adapt, compete alone, collaborate or co-create, accept the market changes, or wait, watch and then adopt.


The other challenge is to explain to management how as a company, you want to take a chunk of the revenue, tear away from every analytical tool indicating profits in a market, argue against customer wants, and invest in something that you do not know exists. Sounds easy? No! Well, that's the whole point of garnering a disruptive market - it is yours and for it to be that unique, you will have to invest and innovate.

Though adoption of technology is slow and the integration between IT and manufacturing has been sketchy, things are changing. Increasingly, companies are realising the long term potential of technological advancements. Investing in technology helps in mass customisation, a feature that ensures process efficiency rather than mere mass production. As com-

panies move towards an inclusive model that caters to specific markets, customisation of products is being sought after and technology empowers and enables this process. Therefore, it is imperative for technology and manufacturing to integrate and work seamlessly, to ensure that the supply meets demand.

The way ahead

In-house expertise should have the business acumen and come with a technology mindset. They should be ready to co-create the solution with service providers to ensure optimal RoI on disruptive deployments. CIO will start playing a much bigger and strategic role. Many CIOs recognise that their role now is less about operations and more about customer and business outcomes. Still, many CIOs struggle with three competencies central to running today's digital enterprise: enabling agile business operations, driving product and process innovation, and boosting customer engagement.

To sum it up, I would like to mention a line from the book - Jugaad Innovation: Think Frugal, be Flexible, Generate Breakthrough Growth - "Jugaad innovation is becoming increasingly active in the West, where it complements the structured approach to innovation to deliver the agility, speed and efficiency that is so crucial in today's complex economic environment." Well, does Jugaad still sound alien? 

The author is Global BU Head - Manufacturing Vertical, Xchanging



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Enabling Connected Enterprises

In the new era the lines have blurred between the manufacturer and the end consumer.

By Suchitra Bose

Today as a society we want to manage more from one device. We want the Smart phone to become smarter, the new materials used for the phone or an exterior of an automobile to be lighter, our homes and office buildings to be more energy efficient and the light bulb to glow brighter. The way we use material and products is changing faster than we can imagine and all of this leads to technology transformation in Hi-tech manufacturing.

Taking a closer look into the Hi-tech manufacturing industry, it suggests that all the basic dimensions of manufacturing are changing: material, labour, equipment. Metals have been replaced by composite materials. Lean techniques and increased automation require operators and engineers to acquire skills in data analytics. Sustainability initiatives, cost competitiveness, globalisation of products and localisation of design have led to creation of new equipment and methods. Additive manufacturing (or 3D manufacturing) allows to design and prototype a wide array of products.

The changes in the industry have created a new paradigm for collaboration and sustainability which has made the Hi-tech industry a leader in creating 'Connected Enterprise'; in the new era of manufacturing the lines have blurred between the

manufacturer and the end consumer. Emerging information technology models like Crowdsourcing have created the feedback loop from the end consumer to the manufacturer, enabling to create the next generation of 'cool' product, which incorporates the end consumer approved features. And, on the other hand, global climate change and consumer advocacy group has made environmental and social sustainability a major priority among Hi-tech manufacturers. Initiatives like reducing the carbon footprint, recycling of products, creation of energy efficient manufacturing plants have contributed to environmental sustainability. Social sustainability measures are creating smarter cities; hybrid and electric cars are helping improve living conditions.

At the same time, digitisation is driving the speed of transformation. It has led to an increased need of processing power, bandwidth and storage capacity. Connecting the controllers and devices used on the manufacturing floor to the application layer and trying to create a capability of sending the key insights to customer will produce unprecedented amount of data. The trend will require higher amount of bandwidth and capacity to enable the flow of information between decision makers and the end user. For example, an irregularity on a manufacturing line sends a signal to the operator, allowing him to remotely monitor the device and the line. The examples are from two different industry verticals but illustrate how connected enterprises are being extended the external consumer.

Convergence of new technologies that securely connect devices and sensors to internal and external enterprise systems, also known as 'Internet of Things', is creating a platform for connected enterprise. The plant shop floor systems, devices and sensors integrated to enterprise systems can bring greater productivity, better utilisation of assets, and improved decision-making to Hi-tech manufacturers.

The enablers of connected enterprise are the disruptive technologies like big data, cloud, social, analytics and mobility.



“Convergence of new technologies that securely connect devices and sensors to internal and external enterprise systems, also known as 'Internet of Things', is creating a platform for connected enterprise.”




Big Data: The connected enterprise will produce massive amounts of structured and unstructured data in real time. Harnessing the power of data into insights will require analytics. Let's take an example of component manufacturer, who has 30 manufacturing sites globally. The highly automated sites will be able to produce shop floor data, which can be connected to the enterprise level. The enormous volumes of data generated and shared across intelligent devices and systems can now be analysed, and the untapped value extracted to serve the business. This enables companies to provide better products and services enabling new business models and enriched consumer experiences. Finally, with data being generated, real time, around the clock, knowing when to react to which data is necessary to obtain a true competitive advantage. The right way of merging unstructured and structured content is also becoming a competitive advantage for businesses.

Cloud: Cloud computing offers a platform to collect, store and retrieve data from physical device, machines and enterprise layer. This technology enables to create applications, Analytics and storage. Hi-tech manufacturers are using cloud computing for enterprise applications but are still reluctant to use it to gather information across manufacturing sites, as they are not sure about security and regulations. Most of the Hi-tech manufacturers have expensive assets in global manufacturing sites; one quick application on cloud can be asset management.

Mobility: The use of rugged tablets and hand held devices in manufacturing has been prevalent for more than a decade but the data was always contained within the four walls of plants. Mobility has created new ways of extending the manufacturing data to operators and supervisors in new platforms like smart phones and ipad. Extending information to mobile devices presents Plant operators, supervisors and managers to manage and control their physical infrastructure, equipment's, systems and applications remotely. This can increase visibility and efficiency for hi-tech manufacturers. Proactive maintenance, remote monitoring and plant level dashboards are examples of applications which can be extended to mobile devices.

Social Platform: Social technologies like Crowdsourcing can increase collaboration and allow designers and engineers to bring the next cool product in the market. On the other hand the use of social technologies raises concern regarding compliance and patent issues.

In summary, Hi-tech manufacturers should use new technologies to improve business performance and extract more value from existing hardware and software investments. Many organisations can also enhance cross-functional and cross-organisational collaboration, in addition to creating new customer-focused products and services to seize opportunities in an always changing, increasingly interconnected world. 

The author is General Manager & Senior Vice President, UST-Global



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The future of condition monitoring

Most in-service bearing failures result from misuse, neglect, lubrication problems or operating conditions that were not foreseen when the machine was designed.

By Donald Howieson

Our Insight technology programme is a new paradigm in condition monitoring focused on measuring parameters that detect damaging operating conditions rather than incipient failure. A key development enabling this approach is the use of a wireless sensor package, integrated into the bearing to record critical parameters that enable a customer to plan intervention to prevent rather than predict bearing failure.

This technology innovation is the culmination of more than 100 years of bearing applications and 30 years of experience in condition monitoring. We take a Life Cycle Management approach to our technology platforms and industry knowledge and combine them to work with customers, understanding their needs and demands.

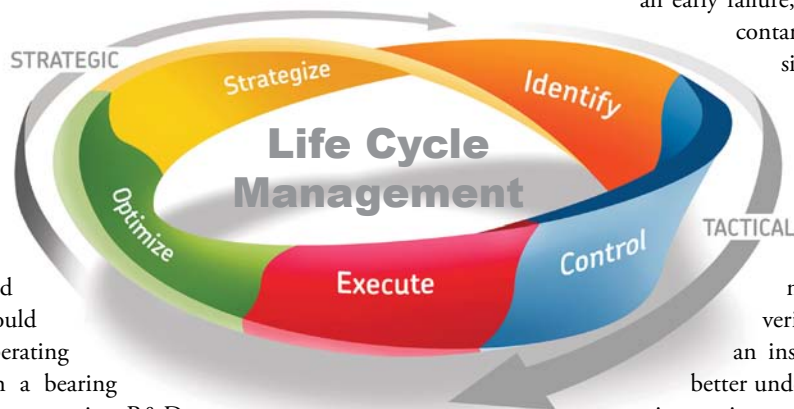
It was out of this approach that we became interested in developing an integrated, self-powered sensor package that could communicate the operating environment to which a bearing is subjected. Following extensive R&D work, including miniaturisation, solving power generation challenges and developing unique packaging of sensors and electronics, the Insight programme made its official debut during Hannover Messe, Germany, in 2013. With this technology condition monitoring becomes autonomous: It powers itself, and it talks to the Internet. That enables it to be deployed in applications that were never before possible.

The project was born out of the fact that very few bearings fail in service as a result of normal operating conditions. Indeed, most in-service failures result from misuse, neglect, lubrication problems or operating conditions that were not foreseen when the machine was designed or the bearing specified. Our engineers wondered what would be the outcome if a bearing could detect its operating environment – such as the actual loads it is being asked to carry, the quality of the lubrication, the temperature and so on – and make that information available through the Internet to the plant

operator and/or the machine manufacturer. If operating conditions can be monitored, damaging operating conditions can be identified and corrected to make sure that expensive and disruptive failures are avoided, reducing the total cost of ownership and extending the life of the asset.

Traditional condition monitoring looks for early signs of failure by measuring vibration levels. A bearing starts to produce vibration signals when the first small fragments of steel spall off the raceway surface of the rings or the rolling elements. By the time such damage is detectable, it is likely that the end of life of the bearing is getting close – it is too late.

The Insight programme uses bearing-embedded sensors to monitor the critical parameters that are likely to lead to an early failure, for example lubricant contamination or excessive loads or temperatures. By proactively eliminating such anomalies, the failure can be avoided. The same technology can be used in a more positive way: By verifying the integrity of an installation and giving a better understanding of the operating environment, a machine may be updated to extend its life or power rating beyond the initial design.



Combining technology

The Insight programme puts together the technology that can monitor the actual conditions experienced by bearings in a particular application. Embedded sensors measure loads, lubrication conditions, speed, vibration and temperature using power harvested from the application environment.

Our algorithms and diagnostics interpret this data in terms of the severity of the conditions, or how far the operating conditions are departing from their original design condition. It can also identify excessive loads, duty excursions, lubricant contamination and lubrication problems so that modifications can be made to the operating conditions to avoid damage before it occurs. This package of sensors and algorithms has been named 'Insight' because that is what it



provides – an insight into the operating conditions.

Intelligent wireless communication technology packaged inside the bearing enables it to communicate within environments where traditional Wi-Fi cannot operate. Bearings enabled with the Insight programme create smart networks, communicating through one another and via a wireless gateway to send information relevant to their condition for analysis. The gateway can be local to the machine or local to the plant. System information is either made available to the customer for analysis using our @ptitude or sent via our cloud to our Remote Diagnostic Centres. From here, dashboards and reports can be made available to the plant operator, the machine manufacturer, SKF or any other authorised person with Internet access. Real-time condition monitoring data is accessible to everyone involved. The Insight programme gives customers more control over planning their machinery maintenance and optimising their machinery operations.

By combining integrated technologies with associated asset diagnostic and bearing health services, information relating to actual operating conditions is sent to cloud servers for remote diagnostics, enabling an understanding of the risk of future damage and failure.

Prior to the Insight programme, condition monitoring techniques could only monitor damage after it had occurred. Now, by sensing directly on the bearing, we can identify the risk of failure before the first microscopic damage has occurred, and with this information customers can take remedial action to avoid the cause of possible damage to the bearing – adding lubricant, mitigating transient overloads, etc. the Insight programme makes it possible to measure the loads the bearing actually experiences rather than what it was designed for. This valuable information can be routed back into the design phase to improve both the system and bearing design.

Improving accessibility

One of the purposes of the Insight technology is to make condition monitoring more widely applicable and accessible, particularly in applications where it has been considered impossible or impractical. This is one reason why the technology has been tested in challenging industries such as wind power, railways and steel manufacturing.

Wind farms can be remote and difficult to access. We are working with customers to integrate Our Insight programme technology and develop a smart bearing for wind turbine monitoring.

This technology can wirelessly communicate dynamic bearing information



to provide loads and lubrication operating conditions within its true operating environment. The cost of changing a wind turbine main bearing in an offshore application can be sufficient to undermine the business case for building the turbine in the first place. Therefore it makes business sense to record loads and lubrication conditions in service and take action to eliminate damaging conditions. It also may allow the turbine to be operated outside its design envelope when load and lubrication conditions are favourable. It is often the case that the most life-consuming operations will be conditions not included in the original design brief.




“With this technology condition monitoring becomes autonomous: It powers itself, and it talks to the Internet. That enables it to be deployed in applications that were never before possible.”

Within the railway industry we are integrating smart components and providing wheel end bearing monitoring solutions. Powered by the rotation of the bearing, these solutions can wirelessly communicate the bearing condition. In this application, the Insight programme provides a highly cost-effective means of collecting condition monitoring data, where the risk of failure for each bearing can be determined throughout its service life, allowing optimised maintenance planning and scheduling.

Similarly in the demanding and hostile environment found in the steel industry, we have developed a smart bearing solution that can monitor and communicate wirelessly the key parameters used to control and optimise the steel manufacturing process. It has successfully monitored the condition and operating environment of bearings in a continuous caster using embedded self-powered wireless sensors.

Conclusion

The focus of our technology development today is to reduce the environmental impact of an asset during its life cycle, both in its own and its customers' operations. The Insight technology will make condition monitoring more widely applicable, especially in applications where it was previously impossible or impractical. Maintenance can be scheduled before conventional condition monitoring picks up the early signs of a developing failure. Above all, by acting proactively to eliminate damaging conditions, failures can be eliminated rather than detected. 

The author is Business Manager, SKF (UK) Ltd, Livingston, Scotland



Growing Stronger

Eplan celebrates its 30th anniversary this year, seeks greater expansion

More than 40,000 customers, over 100,000 installations in more than 50 countries and over 700 employees – these are the signs of success for the company which began as a three-person shop in 1984. “Our market for CAE solutions is the world,” states Maximilian Brandl, President of Eplan. He adds: “Eplan is excellently positioned as a global company and I see huge opportunities in view of growth markets around the world.” Eplan, the market leader for CAE solutions, is already present in more than 50 countries. Greater expansion is planned for growth markets in the US, China, India and Japan. Timely investments in the area of consulting have ensured the continual growth of the solutions business. Professional Services, including consulting, implementation and support, now make up a substantial portion of Eplan’s revenues. And the bar for growth has been set quite high; Eplan is aiming



“Eplan is excellently positioned as a global company and I see huge opportunities in view of growth markets around the world.”


Maximilian Brandl,
President, Eplan

for substantial double-digit growth in 2014 as well – and the creation of more than 100 additional jobs.

Clear commitment

The Friedhelm Loh Group, the group of companies to which Eplan belongs, is also making massive investments in software and engineering. Cideon, a SAP system integrator and Autodesk Reseller with about 500 employees, joined the group in September 2013. “Mechanical and electrical engineering are merging into mechatronics,” says Friedhelm Loh, owner of the Friedhelm Loh Group and goes on to explain the group’s vision. “As a rule, Industry 4.0 scenarios require many elements; from software to interfaces on through to automation.” Friedhelm Loh first invested in Eplan back in 1986 (when it was still known as Wiechers & Partner) because he recognised an opportunity early on. Today he is specifically steering the Friedhelm Loh Group in the direction of optimised value chains: “Our customers expect potential improvements and savings from us, and that’s something we can achieve with Industry 4.0. In this context, the strong service network of Eplan, Cideon, Rittal and Kiesling is an excellent foundation for increasing our customers’ added value.”

Innovation upon innovation

What began in 1984 by substituting paper and ink with a PC and software has continued to develop: Eplan was and remains a trendsetter for optimising engineering processes. With Eplan Engineering Center and the automatic configuration of machine documentation based on modular design, Eplan’s experts have launched pioneering technology. And with the seamless Eplan Platform, customers in machine and plant engineering, in the automotive and transport sectors, in mechanics and automation and even in medical and energy technology also benefit from the increased efficiency of product development processes brought by standardised procedures, automated processes and continuous workflows. 



“Our customers expect potential improvements and savings from us, and that’s something we can achieve with Industry 4.0.”

Friedhelm Loh,
Owner and CEO,
Friedhelm Loh Group



Eplan collects data from adjacent systems and disciplines, processes it and passes it on. The high degree of transparency and standardised interfaces of the Eplan platform enhance efficient communication with other systems.



Extrude hone for surface finishing

Proprietary technologies such as TEM (thermal energy machining) are solving increasingly complex finishing challenges faced by manufacturers around the world.

Manufacturers and quality professionals in such industries as automotive, aerospace, energy, medical, and others requiring high-precision components know that removing particle left at intersected holes and ensuring no micro contamination is a quality challenge that cannot be overlooked. Customised complex valves, gears, pinions, and thousands of components can be machined in seconds but can take minutes to get finish completely. Production bottlenecks, increased costs, and longer time to market are among the results.

Kennametal Extrude Hone provides precision surface solutions for component of uncompromising quality. Proprietary technologies such as TEM (thermal energy machining) are solving increasingly complex finishing challenges faced by manufacturers around the world.

Delphi-TVS is a joint venture between Delphi Corp. (Troy, Michigan USA) and TV Sundaram Iyengar & Sons (Kancheepuram, India). Delphi is the largest automotive supplier in the world and Delphi-TVS is the largest automotive systems manufacturer in India.

“Being a global company, we have a great responsibility to maintain world-class quality standards in our products,” says TN Umasankar, head of the Delphi-TVS manufacturing engineering department. “We manufacture diesel fuel injection parts – high-volume components. The main issue is burr removal on cross-sectional holes from previous machining operations.”

Delphi-TVS faced many issues: High component volumes approaching a million per year made hand-deburring unaffordable and the high-precision nature of diesel fuel injectors made TEM solution a necessity.

After much investigation, the company chose Kennametal Extrude Hone’s TEM solution. A pressurised mixture of a combustible gas and oxygen is injected at 5 to 10 atmospheres of pressure into a containment chamber sized both by the amount of material to be

removed and the volume of parts in the chamber. An ignition system ignites the gas mixture, releasing heat energy from the oxidation of fuel in a 20-millisecond, high-speed energy wave. With their raised surface areas and thin cross-section features, even internal burrs and flashings burn away instantly. Because the gas mixture engulfs the entire workpiece, all internal and




We manufacture diesel fuel injection parts – high-volume components. The main issue is burr removal on cross-sectional holes from previous machining operations.”

TN Umasankar, Head of the Delphi-TVS Manufacturing Engineering Department

external surfaces are exposed to the rapid oxidation. Internal cross-drilled holes and intersecting edges that are difficult or impossible to reach are instantly processed.

“There have been hundreds of installations and continued refinement of our TEM equipment and process,” says Bruno Boutantin, global marketing manager at Kennametal Extrude Hone. “One factor remains constant: TEM is a rapid, low-cost, high-production process that can process a million or more parts per year by a single machine.”

“The TEM process is particularly appropriate for high-volume applications where conventional deburring departments struggle to keep pace,” Umasankar agrees. “It instantaneously cleanup a large number of intersecting holes, threads and hard-to-reach areas in a flash, literally in 20 milliseconds. Its ability to fire multiple components at the same time increases its capacity and cost-effectiveness enormously. Any other process, including high-pressure water jet, will not provide this value.” In India, Kennametal

Extrude Hone is an integral part of Kennametal India Ltd. Situated in Bangalore, the Kennametal Extrude Hone Technical Center is well-equipped to support every customer need. 





Global vision

A leading manufacturer of tablet tooling, tablet press, tool polishing and blister change parts has carved a niche for itself by making optimum use of advanced technology

Parle Elizabeth Tools Pvt Ltd has carved a niche for itself in the manufacturing sector with its commitment and dedication besides making the optimum use of advanced technology. Based in Vasai near Mumbai, Parle Elizabeth is a leading manufacturer of tablet tooling, tablet press, tool polishing and blister change parts for the pharmaceutical sector.

The company today successfully manufactures tablet punches and dies. While the punches are mainly of two types - D with bigger die and B with smaller die - the tablet presses determine sizes of the punches. A tablet press is a mechanical device that compresses powder into tablets of uniform size and weight. A press can be used to manufacture tablets of a wide variety of materials and to form a tablet; the granulated material must be metered into a cavity formed by two punches and a die.

The company also manufactures blister changing parts that help put tablets into wrappers. The two types of blister changing parts - Alu-PVC and Alu-Alu - are made based on the drawing. The Haas machining centres used by the company to manufacture blister changing parts and tablet tooling has helped the Vasai-based unit pose a stiff challenge to its competitors.

Vision

“The vision of our Chairman, Rajmal Mehta and the Managing



“We strive to create monopoly in the market through excellent product, dedicated service and prompt delivery since maximum customer satisfaction is what matters to us the most.”

Rajmal Mehta, Chairman,
Parle Elizabeth Tools Pvt Ltd

director, Mahendra Mehta was to tap the global market and be leaders. In order to convert that vision to reality, we wanted to buy machines that could deliver precision and repeatability thus enabling us to compete with other global players,” says Snehal Surti, General Manager (operations), Parle Elizabeth Tools Pvt Ltd. But the journey for Parle Elizabeth Tools Pvt. Ltd was not always that easy and comfortable. The company commenced production in the year 1974 with the help of a conventional lathe machine. One of the primary problems with traditional lathes was that it required significant manpower. Additionally, due to the fact that the work was performed by hand, accuracy could not be guaranteed from the production of one part to another. They also lacked high end technology



The company wanted machines that deliver precision and repeatability

and competing on a global platform with a conventional lathe was rather tough.

"The conventional machine was able to give us the results but the consistency and volume was something that we were not able to achieve. Besides this certain teething problems such as transformation of engineering processes, skilled labour to operate the machines, programmes to run the machines, appropriate cutting tools, environment conditions, and machine application options were yet to be addressed," Surti adds.

He further explains that the journey was not very easy since the challenges before the team were not only to introduce the latest technology backed by experienced manpower but also to stabilise and balance the output with other conventional machines. "The demand from the market was on the rise and it was open for those who could support this demand with quality supplies backed with shorter lead time," he says.

The company thus eventually decided to invest in a CNC machine in 2001 and purchased its first Haas vertical machining centre (VMC) in order to do so. Since then, the company has never felt the need to look towards an alternative machine tool builder. As of date the company owns nine Haas VMCs and five Haas turning centres "The people not only helped us in explaining the technology, but also provided us with application support much better than any of their competitors," says Surti.

According to Surti, a cost effective solution along with speed was the need of the hour and Haas lived up to all of our expectations. "We manufacture parts that require accuracy and repeatability. In fact, repeatability is emphasised more on our kind of parts than accuracy. When we decided to purchase a CNC machine, it was like a black box to us. It was not only a complicated matter for us but for many in the industry. One of the aspects that we were concerned about was the after-sales service of the machines. Indian brands were yet to establish and we were looking for a cost effective solution to our problems and thus turned to Haas." Surti further adds that the most important thing about Haas machines is their structural rigidity and adequate power output at the spindle. "Even at 60-80% continuous loading, the machines never make abnormal sound and vibration."

Explaining the work process, Surti says that the company's product moves at 54 different work stations and the consistency depends on the skill of the operator. Each process has to be balanced well in order to get the batch ready as per our requirement while maintaining the overall lead time. "It was difficult to balance the capacity earlier, but now with the help of Haas machines the output has been consistent and is



The product moves at 54 different work stations

well balanced, thus making the planning and expansion projects easy to handle no matter how big the volume is," he states. Surti appreciates the support from Haas stressing on the excellent service back-up that Haas Factory Outlet-CNCSSIPL has continuously been providing Parle Elizabeth with. "The approach of Terrence Miranda, the Managing Director, was service-based which suited our requirement since we are known among our customers for after-sales services. Their maintenance support is also unique. Besides, the Haas application engineers worked with us on the machine, tools, fixtures and CAM software that helped us reduce our cycle time. As a result, our productivity increased by 25-45 percent."

Echoing similar feelings, Rajmal Mehta, Chairman, Parle Elizabeth, says,

"We always wanted to be a step ahead of others. We strive to create monopoly in the market through excellent products, dedicated service and prompt delivery since maximum




“We manufacture parts that require accuracy and repeatability. In fact, repeatability is emphasised more on our kind of parts than accuracy.”

Snehal Surti, GM, (Operations)

customer satisfaction is what matters the most to us. We can't reach the top without these values. Achieving our goal is one thing, but adhering to these values is the reason why we are able to maintain our position at the top."

Other than the service support mechanism, the local Haas Factory Outlet- CNC SSIPL, has been Instrumental in providing excellent spare part support and guidance to Parle Elizabeth which has helped the Vasai-based company carve a niche for itself in the global market.

"We believe that our journey with Haas has just begun. Our management's vision is to achieve the leadership position universally by focusing on maintaining quality, committed delivery, cost effective products, innovation and continual improvement. Alignment of the team supported by technology is helping us reduce the gap rapidly in our quest to attain the leadership position. Our journey with Haas so far has been very good. Haas and Parle Elizabeth have been partners in growth, and this will continue further too," concludes Surti. 



High performance and high speed machining



KX 50

A range of High Performance 5-Axis Double Column Machining Centre for machining of complex parts & 3D contouring with large job envelope with accuracy & precision in roughing & finishing operation, KX FIVE Series is equipped with 2-Axis Fork Type Head with allows high speed cutting, federates, acceleration with minimal jerk. Both the rotary axis in head have direct driven high torque motors designed specially with in-house facilities to synchronize with all linear axis movements for overall excellent results. Machines can be equipped with several types of spindle in adequacy with the type of application with HSM (High Speed Machining) concept.



K2X10 FIVE

The HSM (High Speed Machining) concept, KX FIVE Series Machine enabling operations in 5 simultaneous axis, from r=roughing to finishing, of all types of complex work pieces. These fixed portal type 5-Axis machines combine high dynamics & accuracy to obtain high surface finish even during machining of complex contours & profiles. The table is equipped with TRIM technology inclined at 45° plane allowing a tilting from -30° to +180° with a rotational speed of 50 rpm & 0.001° incremental measuring. Machine is available with palletization device with variety of options in spindle according to application.

For more information, visit www.jyoti.co.in/

Intelligent tool holder management

On the way to 'Industry 4.0', or the dawn of the fourth industrial revolution, SCHUNK the competence leader for clamping technology and gripping systems is setting another milestone: Numerous SCHUNK precision tool holders can be marked with an individual data matrix code now, which allows an intelligent tool holder management. Regardless of whether it is done manually by smart phone, or fully automated with a machine tool scanner, every tool holder can be reliably identified with the help of a code, and together with the corresponding data base system, they can be exactly assigned. Within the framework of intelligent manufacturing processes, it is possible to generate a precise history together with the data from the superior cloud, with sites of operation, used tools, service life, and machining parameters. According to the individual systematic arrangement of documents, the data matrix code can be individually defined. In contrast to the glued on RFID tags, which require the re-balancing of the tool holders, and under unfavorable conditions these tags might get lost, the data matrix code however, is permanent and has no influence on the balancing quality. The individual marking can be done at every TENDO hydraulic expansion tool holder (except



Tool holder marking for the smart factory: with a data matrix code, SCHUNK tool holders can be clearly identified and assigned.

TENDO E compact), and at every TRIBOS polygonal toolholder without any additional charge.

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Probing benefits

New ultra-compact radio transmission touch probes bring probing benefits to a wider range of CNC machine tools

Renishaw has introduced new touch probe systems that use its unique frequency hopping spread spectrum (FHSS) probe signal radio transmission technology to allow automated job set-up and in-process measurement on all sizes of CNC machine tools. The new ultra-compact RMP40 probe is especially suited to multi-axis and mill-turn applications, whilst its variant, the RLP40 touch probe, is specifically designed for more hostile turning environments. A transmission only module RMP40M is also being introduced.

The range of radio-based inspection probes already includes the RMP60 touch probe, and the high accuracy RMP600 probe with Renishaw's patented Rengage 3D strain gauge technology.



routines or changes to tiny switches.

Radio transmission module

Sharing many features in common with the RMP40 touch probe, the RLP40 is a radio transmission inspection probe system for lathes, whilst the RMP40M is a radio transmission module that incorporates an industry-standard M16 adaptor for use with Renishaw's proven LP2 family of lathe probes.

Although it incorporates all of the key features and benefits of the RMP40, the RLP40 touch probe has been specially packaged to withstand the extreme environments more typical of lathes and turning centres. Like all Renishaw probes it is sealed to IPX8, but is further protected by a user-serviceable eyelid that prevents

FHSS technology

Measuring just 40 mm in diameter and 50 mm long, the RMP40 probe system pairs the compactness of OMP40 optical transmission probe system with the robustness and versatility of the unique FHSS radio transmission. This combination means that the RMP40 is suited for use on all sizes of machine tools, particularly multi-axis and mill-turn applications in which line-of-sight between the inspection probe and its interface cannot always be maintained.

The RMP40's FHSS radio transmission is the same unique yet tried-and-trusted system used by Renishaw's existing RMP60 and RMP600 probes in thousands of applications worldwide. It pairs with the standard Radio Machine Interface (RMI) and utilises the 2.4GHz frequency band, allowing it to be 'worldwide legal' so that machine tool builders and users can specify and operate the same types of probes wherever they are located. It also delivers unrivalled levels of robustness and flexibility through frequency diversity, whereby the probe and its interface continually hop from one transmission channel to another. This eliminates 'dead spots' within the working environment and allows the system to avoid radio interference, both of which are common problems for other fixed-channel and non-hopping radio transmission inspection probes.

The RMP40 touch probe incorporates Renishaw's patented Trigger Logic set-up and mode selection menus. This allows users to quickly and easily configure their probe systems to their own specific requirements, without tricky disassembly

"It pairs with the standard Radio Machine Interface and utilises the 2.4GHz frequency band, allowing it to be 'worldwide legal' so that machine tool builders and users can specify and operate the same types of probes wherever they are located."

high velocity swarf and chips from causing damage.

The RMP40M module also gives all the benefits of the RMP40 system, allowing the flexibility of its FHSS radio transmission system to be applied to those situations in which the LP2 family of touch probes, adaptors and options are necessary.

Trusted tools

Both the RMP40 and RLP40 probe systems are versatile additions to Renishaw's family of inspection probes, and can be retrofitted to existing installations. They are also backed by a trusted worldwide network of service, support and applications expertise.

Renishaw's range of tool setting probes, inspection probes and probe software caters for the complete cross-section of machine tool probing applications, from the setting of tools and workpieces through to process control and complex On-Machine Verification tasks, whether on simple milling machine or a complex multi-axis machine tool. For further information visit www.renishaw.com/mtp



Versatile construction kit for robotics

At this year's Automatica in Munich, igus presented its innovations, which move robots reliably and extend their service lives. The products on show range from 3D energy chains to retract systems or specially developed cables for robot applications - igus presented products that give customers the ability to configure optimised, low-cost solutions for their applications. Using the appropriate tools from igus, these can be configured quickly and easily.

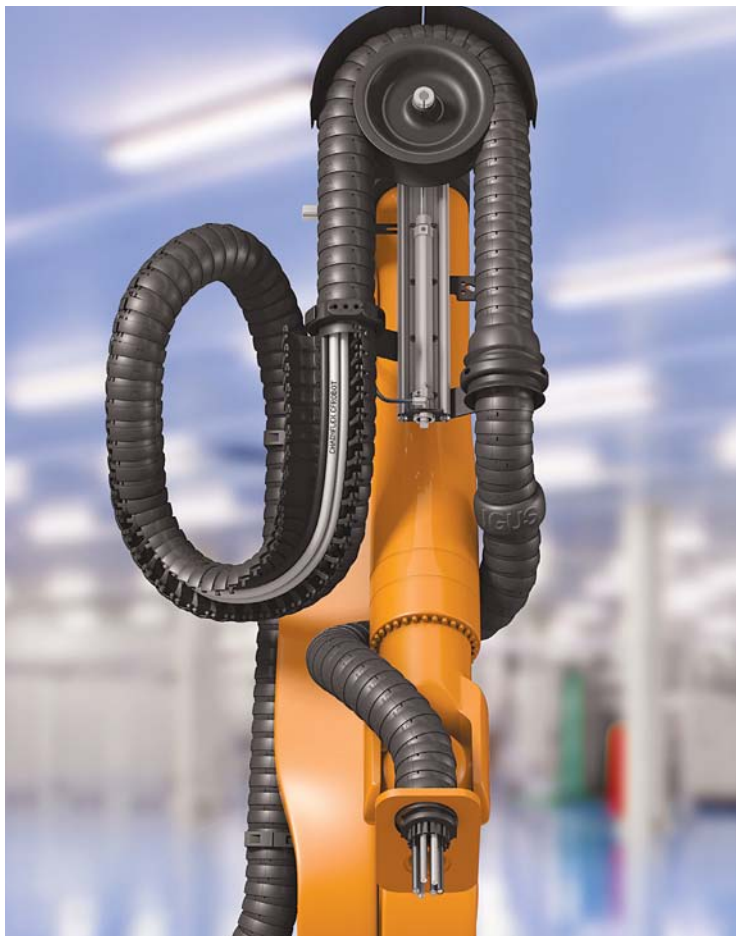
The products included the triflex TRCF energy chain designed specifically for multi-axis systems. This three-dimensional chain consists of a completely enclosed system. The unique feature of this robot chain is that it can be quickly opened and filled at the same time, with the flip-open mechanism enabling chainlinks to be opened quickly and easily with a screw driver. This approach allows even large filling diameters to be inserted in record time; therefore triflex TRCF is suited for applications with dirt and chip exposure. triflex TRCF 85 is now available as a new version with a nominal diameter of 85 millimetres and - as is customary for 3D robot chains from igus - with defined minimum bending radii and torsion stop dogs. This guides and protects hoses and cables reliably in the interior. A rugged stop dog system also ensures high strength. triflex TRCF can be shortened and extended as needed. Accessories, such as mounting brackets and protectors are also available.

Compact triflex RSE retract system

The compact triflex RSE retract system is yet another novelty shown at Automatica 2014. At a total weight of only 1.8 kilogrammes, an overall length of 44 millimetres, and a maximum retract travel of 500 millimetres, the cost-effective module is ideally suited for smaller robots. The system reliably guides the 3D energy chain, while also preventing the formation of loops.

Complete range for 3D applications

The CFROBOT cables from igus put the finishing touches on the construction kit principle for the robotic industry. The cable product range for difficult robotic applications ranges from hybrid and control cables to bus, data, and fibre-optic cables, creating a comprehensive assortment optimised for use in 3D energy chains with respect to the cable design. For cores, braided elements and shields are constantly exposed to significantly changing stresses in torsion applications. For this purpose, highly wear-resistant and halogen-free PUR or TPE jackets protect the torsion-optimised braiding



igus supplies various products for the robotics industry, which customers can ideally configure and assemble based on the construction kit principle.

(Source: igus GmbH)

elements against potential damage. The specialised designs guarantee that even fibre-optic cables work reliably in torsion applications. This was proven in tests with 27 million torsion movements. Deliveries are available starting at one metre without minimum order quantity or cutting charges.

Quick online configuration

igus not only sells products optimised for the robotics industry, but also provides online tools, such as 'QuickRobot', which is used to configure the entire equipment for 79 robot types immediately. By indicating the robot manufacturer and the type series, the complete matching equipment for up to a maximum of six axis is displayed within seconds. Ranging from large welding robots to small handling robots, this tool is capable of designing a wide range of applications.

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Shoulder milling applications

TaeguTec's 6 corner double-sided 6NGU line has delivered remarkable results in shoulder milling applications. Designed to provide an economical solution with its positive helical cutting edge that reduces cutting force and vibration, while offering an excellent surface

Highlights

- 6 Cutting edges. Very economical!
- Cutters (Face Mills) are available in Diameters 50 to 125 mm.
- 90 deg approach. Suitable for face milling & square shoulder. True 90 deg achievable!
- Helical cutting edge for smooth cutting and less rigid setups!
- 06 mm thickness gives strong cutting edge suitable for higher feed rates.
- Suitable for up to 5 mm DoC.
- Consumes less power than conventional 4 cutting edge shoulder milling inserts!
- Applicable for Cast Iron, Steel and Stainless Steel components with suitable grades.



finish, the Mill2Rush line has repeatedly exceeded productivity expectations. While the 6NGU 06 and 09 insert sizes have delivered more than satisfactory results in shoulder milling applications at higher parameters, the all-new WNGX 08 is here to complement the existing range. WNGX 08 is a double sided insert most suited for shoulder milling applications at lower to moderate cutting parameters. What's more... it consumes less power than any other conventional 4-cutting edge positive shoulder milling inserts!

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New internal cylindrical grinding machine

With a world innovation, the S141 universal internal cylindrical grinding machine, STUDER is advancing into a new market segment, namely that of long work pieces. The S141 is the ideal machine for grinding spindle shafts, spindle housings, rotor shafts or axes. Many work pieces are in the areas of machine tools, drive elements, aerospace and tool making. Short work pieces with an overhung grinding spindle, but primarily long work pieces up to 1300 mm with an additional steady-rest are the speciality of the completely newly developed S141. The maximum internal grinding length is 250 mm while the external length is 150 mm. The swing diameter above the table is 400 mm, the maximum work piece weight is 250 kg. These are truly impressive statistics for the latest development from the Thun grinding specialists.



Internal grinding of tapers on long spindles.

Technical details

All axes are equipped with linear drives

- The StuderGuide guide way system ensures fast, high-precision axis movements
- Automatic swiveling of the work piece table for axis-parallel grinding of cones / tapers
- The perfect dressing strategy for every application, with up to two dressing stations
- Grinding software developed by grinding specialists for demanding users
- Granitan machine bed with outstanding damping characteristics
- Grinding spindle turret with direct drive, up to four grinding spindles, including a maximum of two external grinding spindles
- Grinding mandrel length up to 265 mm
- Integrated axial/radial measuring probe for length positioning and process support
- Consistent implementation of BlueCompetence

With the S141 STUDER brings a state-of-the-art internal cylindrical grinding machine to the market, which thoroughly impresses with its technical features and the proverbial STUDER precision.

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Mounting layouts at the push of a button

Standardisation, re-utilisation and automation are gaining importance in control cabinet build.

The coupling of EEC One and Eplan Pro Panel shortens development times and leaves room for innovations. Starting with Version 2.4, EEC One automatically generates mounting panel layouts. EEC One enables the automatic generation of electrical or fluid power schematics based on standardised macros and components. Eplan

is now expanding this technology to also include control cabinet engineering: mounting panel layouts will soon also be automatically generated. Standardisation and automation produce significant gains in efficiency. At the same time, the degree of re-utilisation increases substantially. At the Hannover Messe, users are getting a first glimpse of the software, which will be available beginning in autumn 2014 with the new Eplan Platform 2.4. Eplan Pro Panel, the 3D solution for virtual control cabinet and switchgear construction, is an elementary component of the Eplan Platform. In the shared component database, data is available for Eplan Pro Panel and is thus also accessible in EEC One. For instance, the 3D macros required, as well as the preassembled standard layouts for mounting plates, will from version 2.4 also be utilised in EEC

One. Mounting plate configuration is specified via variables or values. Subsequently, the components are assigned to the appropriate mounting rails and precisely positioned using placement options with predefined spacing.

Reduced effort, better quality

The generation of new 3D mounting layouts in EEC One is based on selecting the component macros as well as on specification of placement rules and references for each layout. Everything is completely automated and happens at the push of a button. The components are placed on the mounting rails in their assigned positions. "This automation reduces the effort of, on the one hand, positioning components

This coupling has generated new potentials of standardisation, re-utilisation and, ultimately, automation. This results in reduced time-to-market and more freedom to take on new projects and develop new innovations.

manually and at the same time increases the control cabinet's quality and improves documentation," says Thomas Weichsel, Product Manager for Eplan. Transcription errors or the use of outdated schematics are strictly avoided. The complete mounting layout is bored, milled and wired virtually and then integrated into the manufacturing process via Eplan

Pro Panel Professional. Examples include the coupling of machinery for the mechanical processing of control cabinet components, fully automatic machines for conductor assemblies or automated wiring of equipment. With additional options – for instance, the Eplan Pro Panel Copper



With the coupling of EEC One and Eplan Pro Panel Professional, mounting layouts can be generated automatically.

expansion module for the design of individual copper rails and flexible power distributors – preconfigured and automatically generated layouts can be expanded and tailored to specific orders.

In conclusion

Eplan continues to increase efficiency in engineering processes with this timesaving automated method of operation. The coupling of EEC One and Eplan Pro Panel Professional has generated new potentials of standardisation, re-utilisation and, ultimately, automation. This results in reduced time-to-market and more freedom to take on new projects and develop new innovations.



Precision honing redefined

Wendt launches the latest addition to its family of honing machines

Wendt (India) Ltd has carved a reliable niche for its super abrasive products, in the engineering industry, setting bench marks in quality and performance. Having set the standards with its ever growing range of super abrasives, Wendt some years ago forayed into manufacturing special purpose grinding machines for specific applications in the engineering industry. These grinding machines not only matched the requirements of the user industries but also became successful examples of import substitutes.

Continuing their endeavour to offer world class machines, Wendt entered into a technical collaboration with Delapena, world leader in honing technology to offer Indian industries world class Honing Machines. These machines have already redefined the quality and performance standards of honing in India.

Recently, on June 2, 2014, Wendt launched the latest addition to its family of honing machines – the CNC Vertical Honing Machine E3500S – in the presence of the Chief Guest, Dr. TS Shivashankar, VP Operations, Indo-MIM and Guest of Honour, PS Suresh, Dy. General Manager (TE & D), Hindustan Aeronautics Ltd. A host of customers from the user industries too graced the launch.

This addition to the Wendt family of honing machines is clearly keeping in mind the precision honing need of various components manufactured for mass and batch production application. E3500S is a versatile machine with tool expansion and stroking speeds through servo drive with Siemens control



Systems. This machine has a stroke of 500mm with diameter ranging from 3 mm to 25mm with rotary indexing table and in process gauging as optional.

Tapping into its vast experience and technological strengths, Wendt also offers customised tooling and tailor made diamond / CBN abrasive honing stones for specific applications

Senior executives of companies like Bosch, Delphi, Ashok Leyland, TVS, Musashi, Indo-MIM, Rane TRW, HAL, VST Tillers and so on, who attended the launch, showed keen interest in the CNC Vertical Honing Machine E3500S. According to Wendt, the state of the art and yet economically priced machine, will be a valuable asset to the honing facility of customers across the globe.



Officials at the launch of the new machine

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Applications

- Hydraulic Spool Valve Body
- Con Rods
- Gears
- Fuel Injection Parts
- Turbo Housings
- Sleeves etc and many more.

Salient features

- CNC Siemens Control System.
- Adjustable tool expansion & stroking speeds through servo drive.
- Variable spindle speed.
- Reduced cycle time.



Double Variable Helix EndMills

Super Viper Endmills are high performance endmills, which can work at much higher cutting parameter and there by achieve high material removal. They are capable of working at higher cutting parameters because they are strong. Any tool to be strong in operations needs to have very less positive rake. But when we design a tool with least positive rake it consumes more power and leads to vibrations sometimes. So to make a tools which consumes low power, does not lead to vibrations and still it needs to be strong, then we need to balance on rake angle.



In endmills the helix generates the rake angle. Hence helix plays a very important role. Hence the helix is designed in such a way that it works smooth and offers high strength to a tool. When we design a tool with high helix, we need to sacrifice on

Advantages

- Increased metal removal due to high chip load.
- Reduced cycle time due to high cutting parameters.
- Better surface finish at high speed.
- Ideal for stainless steel, Titanium, Inconel and high temperature alloys.
- Ideal for dry and wet machining process.

its strength. This is the reason a variable helix comes into the picture. These endmills enhances the performance and work on very difficult to machine materials. The Super Viper design is the next generation Viper Endmills. Unequal flute spacing results into non resonance zone which gives no chatter at all. The finish is exceptionally better.

Contact: cobra@cobracarbide.com

Flexible Cables For Motion

Tsubaki Kabelschlepp – the inventor of the cable carrier introduces the highly flexible TRAXLINE cables for drag chain application in class 6 in Indian market. The cable ranges meet the highest quality standards in order to ensure availability for systems and installations. With this range, the company offers



a selection of cables which are cost-effective, flexible and extremely durable cables in power, control, system and data in shielded and unshielded versions. A key factor for these cables is their tested and proven operational reliability, which meets all applicable standards and directives, inclusive of VDE, CE, UL, CSA approvals and ROHS Compliant. According to the

company, competent, objective-driven systems consultation and global on-site service are both part of an on-going commitment to the technical and commercial optimisation of the customers' applications. Hundreds of cable types, stored constantly in its cable warehouse, secure a fast availability.

Orders are delivered according to customer requirements; no minimum quantities are required. Each length is without extra cutting costs.

For Further Information, Kabelschlepp India Pvt. Ltd, Tel. 080-41158997; Fax 080-41158998; E-Mail: india@kabelschlepp.in; www.kabelschlepp.de

Parting-off blade

With the new highly rigid 150.10 Jet blade, Seco further expands the heat removal capabilities of its Jetstream Tooling Duo technology. The two coolant jets directed to optimal positions in the cutting zone enable users to achieve longer tool life, increased productivity and higher cutting speeds in parting-off operations that involve superalloys and stainless steels.

Made of HSS and incorporating rigidly clamped inserts, the patented 150.10 Jet blade highly reduces lateral cutting forces and secures straight section surfaces. The Jetstream Tooling Duo technology involves two outlets, one above and one below the insert, to direct coolant straight to the cutting zone for quick and effective heat removal. At high coolant pressures, the combination of high velocity, pressure, flow and direction provides a better cooling option over flooding the tool as well as ensures proper chip formation and evacuation. The 150.10 Jet blade comes in two different sizes and widths. It can be combined with a broad range of grades and chipbreaker options.



For more information, www.secotools.com/150_10; Email: seco.india@secotools.com

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TRIBOS-SVL
Tool extension

3 μ run-out accuracy

TRIBOS-S
Polygonal clamping technology

up to **85,000** rpm

TRIBOS-R
Polygonal clamping technology

60 % better vibration damping



J. Lehmann
Jens Lehmann, German goalkeeper legend,
brand ambassador of SCHUNK,
the family-owned company, since 2012



Your machine center.
It's time to use your machine's full potential.

www.in.schunk.com/machine-potential

Superior Clamping and Gripping

SCHUNK 

Are standard
catalogue products

Limiting Your Performance?

Many a time, a standard catalogue product limits your machining process and solutions. Trust TaeguTec to meticulously engineer and establish hi-performance Tailor-Made solutions for your demanding applications.



Our proficient Design and Application team is waiting for your call.

Your Partner In Cost Reduction.



Die & Mould



Wind Power



Shipbuilding



Railway



Miniature



Aerospace



Power Generation



Automotive



General

Always.

