

ULTIMATE GUIDE TO PROFITABLE MANUFACTURING

THE MACHINIST



Game Changers

VINOD AGGARWAL, CEO, VECV,
AND PHILIPPE DIVRY, SR. VP, VOLVO GROUP,
EXPLAIN HOW THE JV IS TRANSFORMING
THE INDIAN TRUCK MANUFACTURING BUSINESS

21

Market

Auto comp players use the lean period effectively

24

Plant head of the month

Driven by the pursuit of quality in everything

36

Shopfloor

Kalyani Forge undergoes complete transformation

GW 181 Straight Flute Drill (FOUR IN ONE DRILL) Suitable for Cast Iron & Non Ferrous Material



AS 9100:2009
ISO 9001:2008
ISO 14001:2004
OHSAS 18001:2007



Design:

- H7 Size Hole • Double Margin Drill • Bigger Flute Space
- Better Straightness & Roundness of Hole • Longer Tool Life

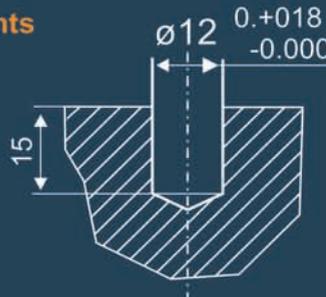
A Good Application: Dowel hole

In a conventional process one would require 4 separate tools
(1) Centering, (2) Drilling, (3) Hole mill, (4) Reaming.

The innovation of four in one drill is that, only one tool is necessary to give H7 tolerance and reaming quality.

Finishing Dowel Holes Process Requirements

Hole Tolerance	: 18 Microns
Hole Depth	: 15 MM
Positional Tolerance	: 20 Microns
Surface Finish	: 1.6 Ra
Straightness	: 5 Microns



Reduction In Cycle time by 60%
By Eliminating the Reaming Operation



Some Applications

- Steering Knuckle • Bearing Cap • Pump Bodies
- Valve Bodies • Cylinder Head/block • Gear Box • Crank Case

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TS 120



AT ATM Series
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ATM 160, AT 160



TMC Series
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TMC 200, TMC 250 (700/1000),
TMC 350 (700/1000/1500),
TMC 500 (1000/2000), TMC 750 (3000)



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PX Series
VMC (3 Axis C Frame)
PX 10, PX 20, PX 30, PX 40,
PX 10 Rapid, PX 20 Rapid



SX Series
VMC (3 Axis Moving Column)
SX 4, SX 6, SX 8, SX 10



VMC Performance Series
VMC (3 Axis C Frame)
VMC 430, VMC 640, VMC 850, VMC 1050,
VMC 1260, VMC 640 APC, VMC 1050 APC



KX/K2X Series
VMC (3 Axis Bridge Type)
K2X 8I, KX 10I, K2X 8, K2X 10,
K2X 20, KX 10, KX 30



NX Series
VMC (3 Axis Double Column)
NX 1810, NX 2215, NX 3215,
NX 3222, NX 4222



EX Series
VMC (3-4-5 Axis Moving Column)
EX 1280, EX 1680, EX 2480



MX Series
VMC (5 Axis Linear)
MX 4



KX Five Series
VMC (5 Axis Bridge Type)
K3X 8 Five, K2X 10 Five



HMC Series
Horizontal Machining Center
HMC 450, HMC 560, HMC 860, HMC 1200,
HMC 1600, HMC 450 - MP PRO,
HMC 560 - MP PRO



MU TECH Series
VMC (5 Axis Milling Machine)
MU TECH 6



TMX Series
Twin Turning & Milling Center
TMX 200



MX Series
VMC (5 Axis Universal Milling
Machine)
MX 8, MX 10, MX 12



VMC Linear Series
VMC (3 & 5 Axis Gantry Type Linear)
VMC 70L, VMC 70L-SX



KX Large Series
VMC (5 Axis Double Column)
KX 50 M, KX 50 L, KX 100, KX 200



KXG Series
VMC (5 Axis Gantry Type Linear)
KXG 45 - 14, KXG 45 - 23,
KXG 60 - 23, KXG 90 - 23

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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")] ("DRHP"). 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.sbicaps.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."

Questioning the acceptable

In the 2002 movie *Equilibrium*, the third World War has devastated the Earth. People now lead a mechanical life in a totalitarian state called Libria. Libria strives on completely suppressing human emotions for the 'common economic and social benefit'. This is achieved by making all citizens take daily injections of Prozium, an emotion-suppressant. Being without emotion becomes the 'acceptable' way of living. However, John Preston, a warrior-priest and himself an enforcement officer, skips a dose and starts questioning the 'acceptable'. Finally, he rebels against the very regime he has been serving and facilitates a change movement that overthrows the despotic state.

While *The Machinist* is far from being a magazine about political or social causes, it certainly does celebrate the spirit of questioning that which is generally labelled as 'acceptable'. The success of industrial revolution and, indeed, that of human evolution has been possible because of this spirit. We have embarked on the journey of re-launching *The Machinist* with this spirit in our hearts. In fact, there were some who told us we can't do it. And here we are. Doing it in style and with substance that matters. Thanks to all of you for being with us in this journey. And thanks also to all those who dared us. Doing and achieving something when others tell you it is not possible is quite gratifying. And we at *The Machinist* cherish this feeling, driven by free enterprise.

I recall what the legendary entrepreneur Richard Branson once told a group of students at the American Museum of Natural History. It was almost symbolic that they were all watching an exhibit titled 'Beyond Planet Earth'. The students were asking him what had inspired him to become what he was. He only smiled at that time. His reply came later when he was posing with them for a photograph. To have a better group snap, he asked the students to cross over a barrier and stand near the model of a spaceship. "I don't think you can go in there. It's not allowed," someone said apprehensively. Branson smiled again and said, "Many times, when someone says you can't do it—that's exactly what you have to do. You have to break some rules. And that's how I became what I am." The students had their answer.



THE SUCCESS OF INDUSTRIAL REVOLUTION AND, INDEED, THAT OF HUMAN EVOLUTION HAS BEEN POSSIBLE BECAUSE OF THE SPIRIT OF FREE ENTERPRISE.

EDITORIAL

Niranjan M

Editor

THE MACHINIST

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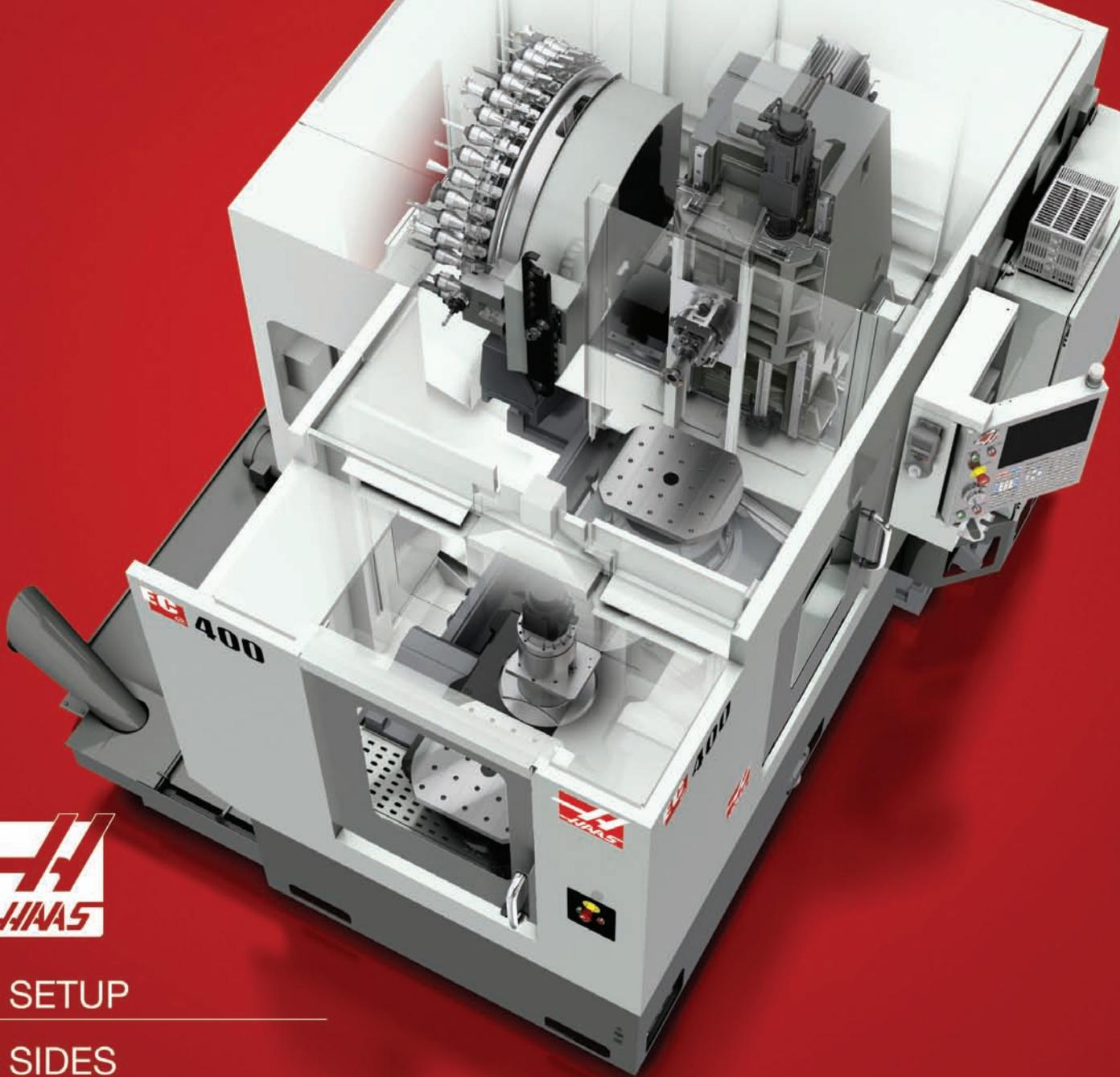
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Lifting success



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Turning Tools



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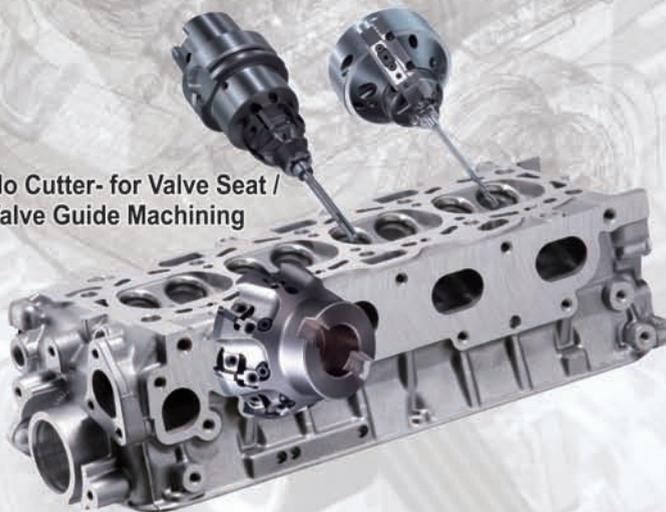
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DRIVING THE FUTURE



NEWS

Green rating for electronics manufacturers in India

The Green Electronics Council has expanded its EPEAT environmental rating system to India, where purchasers spent US\$9.5 billion on computing hardware alone in 2013. The process of qualifying PCs, displays, imaging equipment and televisions for India has already started. India will be the 43rd country in which EPEAT registration and verification services are available.



EPEAT, which stands for 'Electronic Product Environmental Assessment Tool', rates products on a lifecycle basis. The system addresses the elimination of toxic substances, the use of recycled and recyclable materials, product design for recycling, product longevity, energy efficiency, corporate performance and packaging attributes. Manufacturers register in EPEAT on a country-by-country basis.

Signs of recovery; relevant policy interventions are necessary to boost the economy: apex industry body CII

Apex industry body CII has said that there are signs of economic recovery. Commenting on the snap poll results, Chandrajit Banerjee, Director General, CII, said that "The same needs to be built up by way of necessary policy interventions in the next several quarters. Though we expect the election related spending to provide some boost to domestic demand, it should also be supplemented by accelerating the momentum by clearances of held up projects."

The CII CEOs' snap poll conducted at its National Council Meeting predicts GDP in the second half to grow in the range of 4.5-5.0 percent. Economy had expanded by 4.6 per cent in the first-half. However, it is interesting to note that the



survey revealed that the percentage of respondents expecting GDP to grow higher in a range of 5.0-5.5 percent increased sharply from 13 percent in third quarter to 29 per cent in fourth quarter. This clearly means that the economy may have already bottomed out in the previous quarter and recovery process may already be in place.

5+ percent
The range of GDP growth expected by 29 percent respondents in CII CEO's poll for 2014

The survey indicates that there will be a major turnaround in investment activities in the third quarter of the next fiscal. This is not surprising, given the phase of political uncertainty existing in anticipation of elections.

Snippets ■■■

Policy boost for MRO Industry

The Maintenance, Repair and Overhaul (MRO) industry will now be considered as part of the sub-sector of airport in the transport sector infrastructure for the purpose of External Commercial Borrowings (ECBs).



This is in accordance with a policy change announced by RBI recently. As a result, the industry, which is a nascent vertical in India with an annual turnover of about US\$ 800 million, will get a boost. The industry has the potential to achieve an annual growth rate of 10 percent for the next 10 years.

igus announces major initiatives to meet India's growing market

India will be a key growth market for Germany based igus GmbH, the world's leading manufacturer of energy supply systems including cables and all accessory components. igus expects to double its growth in India over the next three years. "We would be look at investing in a new factory in the near future," said Marc Poensgen, Head, International Group Development – Asia, igus GmbH. To mark completion of ten years of its successful India operations, igus announced three key initiatives.

"First, we introduced 145 products and extensions at Imtex Forming. Second, investments to ensure dispatch in 24 hours or on the same day, anywhere in India. Finally, we are helping customers reduce process and development costs significantly by investing in over 22 online tools," Poensgen said. Elaborating on igus technology, Antony P Kurian,



MD, igus (India) said, "Modern energy chains and cables from igus help to design and operate machines that are efficient in terms of energy and costs."

MURATEC Solutions for Sheet Metal Punching

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

MOTORUM

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

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



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



MURATEC Automated Turning Solutions

To meet the Expanding Global Supply Market Requirements, MURATEC has been a global leader in supply of Turning Machines with advanced Automation solutions. It is fully prepared to provide the most appropriate level of Automation solution to meet the growing demand in India for Medium to High Volume Global supply market combined with High-Precision Standards. It also caters to the rapidly increasing volume requirements of the domestic Indian Automobile industry.

Our MW/MS Series Twin and Single spindle automated turning machines and MD series turning centers have *more than 6,000 installations* worldwide. We are proud to say that, "MURATEC MOVES YOUR CAR".

MURATEC machines are available in a wide range of chuck sizes: capacities ranging from 6" to 15" chuck size. These advanced, precision turning machines come with highly reliable, integrated, intelligent CNC 3 axis servo controlled gantry loader for smart, fully automated, flexible workpiece load/unload operations. Integrated Process Solutions like Turning, Drilling, Milling, etc. in single set up are also provided to enhance High precision and High Productivity.

Globally Proven Solutions, Abundant Experience in Automotive Parts Production





KBL install world's largest pump in Mundra UMPP



Kirloskar Brothers Ltd (KBL) has installed the world's largest circulating water pumping system for Tata Power's Mundra UMPP (Ultra Modern Power Plant). KBL's ten concrete volute pump sets circulate 10.5 million litres of water per minute. The layout of the system is designed in such a way that fluctuations in the seawater level due to tidal variation are taken care of. Motors are installed above the high tide level whereas pumps are installed to give enough submergence is available during low tide levels.

Mechvac Group to acquire Israeli firm New Noga Light

Mechvac Fabricators and the Israeli company SDS (Star Defence Systems) Ltd have signed a Letter of Intent. Accordingly, Mechvac will purchase New Noga Light (NNL) shares from SDS, or at the very least, will obtain the transfer of technology of, among others, night vision devices. This acquisition has been done with a view to access the exclusive technologies owned by NNL, which already sells its equipment to the Indian Army.

Raj Chodankar, CMD, Mechvac Fabricators (I) Pvt Ltd said, "This will give Mechvac an upward momentum as all the components required to be integrated in the manufacture of night vision equipments can now be produced and manufactured in-house." Mechvac can now take advantage of the Ministry of Defense's 'Buy Indian' concept.

IndoSpace starts work on Phase II of its logistics park

IndoSpace has started construction of the Phase II of its 1.6 million sq ft industrial and logistics park at Luhari. Phase I was launched in June 2013. The site is located near several large industrial clusters, including IMT Manesar, Daruhara, Bhiwadi, and Bawal industrial areas. The development will include continuous loading docks and dock levellers as well as modern racking. Luhari is one in the series of such parks developed across India. Mott MacDonald is providing architectural, structural and building engineering design services on the project, which is being developed by IndoSpace Development Management Pvt Ltd.

1.6 mln sq ft
Size of the industrial and logistics park coming up at Luhari, near Gurgaon

India offers incentives to Japanese chip manufacturers

India has extended a package of incentives to Japan in order to encourage investment in Electronic System Design and Manufacturing (ESDM) in the country. In a meeting with Japanese business representatives in India, the Union Minister of Commerce and Industry Anand Sharma said: "Government of India has decided to offer a package of incentives to attract domestic and global investments into ESDM sector within Electronic Manufacturing Clusters (EMC) Schemes. In addition, the Government has recently approved the proposal for setting up of two Semi-conductor Wafer Fabrications (FAB) manufacturing facilities in the country."



Bahrain offers opportunities to Indian companies

Bahrain offers huge investment opportunities for Indian companies, according to Essam Abdullah Fakhro, Chairman of the Bahrain Chamber of Commerce & Industry. Stating this in his address at the 'Focus Country Networking Session: Advantage Bahrain' of the CII Partnership Summit, he said that many Indian businesses have already established their footprint in the country. Many of them successfully collaborate with Bahraini companies. Bahrain has the most liberal tax regime in the Gulf and companies established in Bahrain are allowed to have 100 percent foreign ownership. Bahrain has also initiated the avoidance of Double Taxation with 37 countries.

100 percent
Foreign ownership allowed in Bahrain for companies

SKF expands maintenance service network with CMP

Mumbai-based Indo Bearing Traders has earned the status of SKF Certified Maintenance Partner (CMP). It will now provide machine reliability services through the use of information and technology that are proprietary to SKF. It is now able to offer equipment assessments; identifying key condition monitoring data points; data collection and analysis; utilizing SKF Reliability Systems hardware; software and databases; and recommendations for optimizing the performance of plant equipment, offering a corrective action plan designed to improve machinery performance.

Sudhir Rege, Director, Regional Sales and Services, South Asia, SKF said, "CMP is an unique business model in the industry, which provides means for distributors to offer more value added services to customers. CMP utilises the synergy of SKF and the distributor to develop the strongest service offering to end customers."

TAKE THE LEAD

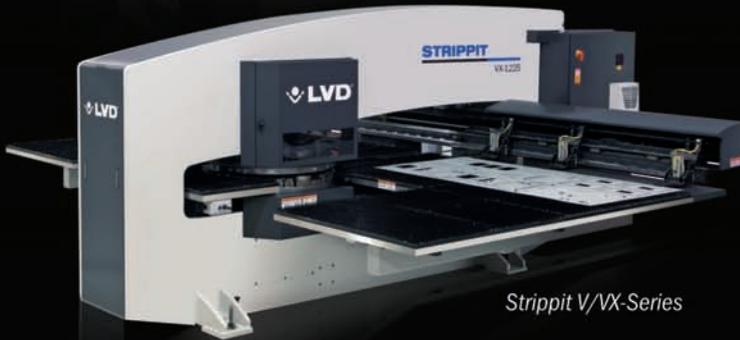
with LVD sheet metalworking technology



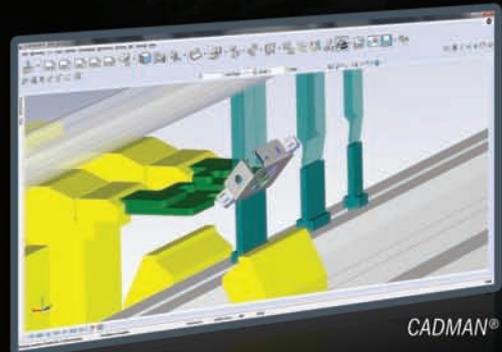
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Overwhelming response to HaasTEC India 2014

The fourth edition of the increasingly popular HaasTEC Open House took place on January 16-19 to widespread acclaim from the event's 1,500 attendees. Visitors from across the State of Maharashtra attended the event held in Navi Mumbai, a rapidly expanding township in western India.

Maharashtra is the most industrialised state in India, contributing an impressive 18 percent of the country's total industrial output. This is one of the main reasons why the local Haas Factory Outlet (HFO), a division of CNC Servicing and Solutions India Pvt Ltd, has recently set up a new HFO facility here. This new HFO facility at Navi Mumbai provided the venue for HaasTEC 2014, where visitors found a wide selection of Haas technology on display, including many innovative yet affordable CNC machines. These included the dual spindle DS-30Y turning centre with Y-axis, and the ever popular DT-1 Drill Tap machine. All the Haas machines on display were under power, underlining the event's theme 'Innovative Demos': *Haas machines cutting parts you haven't seen before.*

Terrence Miranda, MD, Haas India said: "The enthusiastic response and widespread participation of our customers and global partners in the recently concluded HaasTEC show highlights the usefulness and importance of these events in India. They provide a platform to comprehensively showcase the latest trends in CNC machine tools, tooling, CAD/CAM, measurement and workholding solutions."

As with previous HaasTECs, a number of Haas Automation India's industry partners, 14 in total, supported the event. These included Renishaw, a



Rajmal Mehta, Chairman, Parle Elizabeth Tools cutting the ribbon. Terrence Miranda, MD, Haas Automation India is to his right and RK Yadav, GM Sales, CNCSSIPL is to his left.

leading global specialist in metrology. "We feel immensely satisfied having participated at the HaasTEC in Navi Mumbai," says Renishaw's Shreyansh Hippargi. "The entire Haas team put in a lot of effort to ensure that customers and partners were at ease. Congratulations to the entire Haas team and we wish them the best of luck for future HaasTEC events!" Nitin Wakode at Mastercam was equally appreciative. "Technology is a great tool but the people who support it make a difference... Haas have both. HaasTEC was a great show in all aspects," he said.



HaasTec venue

IPTEX and Grindex 2014 to be held in Mumbai

The third edition of the International Gear & Power Transmission Expo will be held during February 27 to March 1, 2014 at the Bombay Exhibition Center, Mumbai. This exclusive exhibition is emerging as one of the most promising platform for the Gears and Power Transmission Equipment industry, to share knowledge and explore business opportunities. IPTEX has been created with the mission to provide a consistent channel of communication to the members of this industry to come together under one roof.



Virgo Communications has introduced Grindex International Expo India's only expo designed exclusively for the grinding technology and Surface

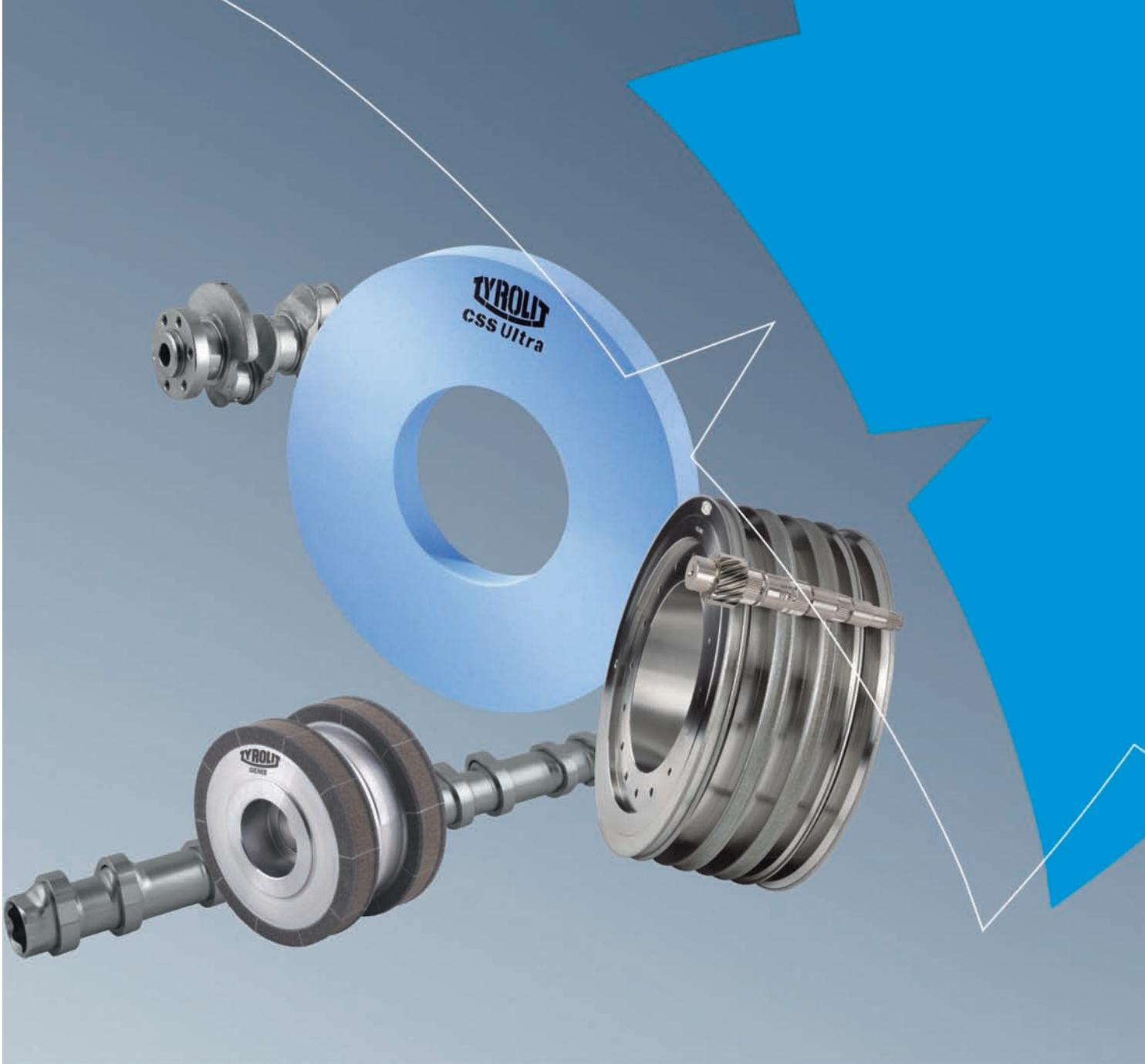
finishing process. Grindex International brings the emerging demand for precision driven applications with international players that will foster sharing of the best ideas and network with peers and potential buyers and market their products, services and capabilities to diverse significant audiences. Over 5000+ Visitors from various user industries will be expected globally.

This event is supported By American Gear Manufacturers Association. AGMA utilizes India opportunity to bring their members to IPTEX and explore the potential market for business expansion. For more information and to register, log on to www.iptexpo.com, www.grindexpo.in

Faurecia opens R&D centre in Bangalore



Faurecia has inaugurated its R&D centre dedicated to Faurecia Emissions Control Technologies. The Centre is designed to accommodate some 200 of India's brightest automotive engineers. Spread over 30,000 sq ft, the centre has a capacity to accommodate up to 360 engineers. Mahmood Ashraf, R&D Head, Bangalore TechCentre said, "This centre is positioned as a strategic asset supporting our global emissions control engineering operations."



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Triggering a new evolution

ET Edge's Manufacturing Summit provided a knowledge-based platform for key leaders to deliberate on India's journey to become the next manufacturing hub

By Niranjan Mudholkar

Based on the theme of 'Gearing up for the next level', the recently held 'Economic Times Manufacturing Summit' assessed and analysed the Indian manufacturing industry. It outlined challenges and trends while discussing possible ways to mitigate risks and future-proof the business profitability against a volatile economy.

The Summit brought together industry barons from diverse sectors as well as senior decision-makers from ministries and industry bodies.

It saw a series of dialogues around issues including 'Where India stands: India's share in world manufacturing', 'Challenges in establishing India as the preferred manufacturing, Destination', 'Redefining Best Practices for Next Gen Manufacturing Excellence', 'Skill Development: Manufacturing driving India's employment scenario', Technical Innovations: Improving capital productivity through next generation Technologies and much more.

The opening keynote was delivered by Dr. Habil Khorakiwala, Chairman & Group CEO, Wockhardt. While appealing to the policy makers to reform policies, taxation regimes and labour laws, Khorakiwala also urged the industry to change its mindset. "The need is to completely re-engineer the industry," he said.

Venkatesh Valluri, Chairman & President, Ingersoll Rand, made an insightful observation during a panel discussion. He said: "Indians are pretty good at process innovation. Now we need to focus on product innovation." Abhishek Somany, JMD, Somany Ceramics, remarked that the 'Made in India' perception will be enhanced if we improve our services.

The first keynote of the post lunch session was a comprehensive and detailed presentation on 'skill development: manufacturing driving India's employment scenario' by Atul Bhatnagar, COO, National Skill Development Council. Bhatnagar emphasised on the need to have more on the job training. He gave his own example to



A panel discussion in progress.

drive the point. "I am a qualified mechanical engineer from the IIT, where I learnt all welding related theories in the classroom. However, I held a welding torch in my hand on a shopfloor only after I took up a job."

Bhatnagar also spoke about redesigning the existing education system to make it more practical at every stage rather than being dependent only on the outcome of the final examinations. "For example, if a student has to leave a four-year programme in its second year then he or she doesn't hold any proper qualification in the market," he said.

The second keynote of the post lunch session saw an inspiring address by Dr. Sanrupt Misra, CEO, Carbon Black Business & Director Group HR, Aditya Birla Group. Misra spoke about 'Made in India: Leveraging on India's essential strength of manpower'. He pointed out how the Aditya Birla Group was able to build itself into the first 'Made in India' global MNC on the back of its manufacturing capabilities driven by its people. "There's no point in pursuing any emotional idea. Manufacturing can become the mainstay only if we are driven by tangible and professional outcomes," he said.

Misra underlined that we are over-occupied by demographics. "We need to move away from number to nature and from age to agility." This – he said – was possible only by changing mindsets of the people involved and by creating a sense of professional pride amongst them. "Re-store and sustain the professional pride and you will see the 'made in India' brand creating wonders at the global level," he said. 



There's no point in pursuing any emotional idea. Manufacturing can become the mainstay only if we are driven by tangible and professional outcomes."

Dr. Sanrupt Misra,
CEO, Carbon Black Business
& Director Group HR, Aditya
Birla Group

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The Indian Gear Market - Current Status & Future Trends
By Dr. Sreeram Srinivasan, President & ED, Shanthi Gears

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Mark your diary

A list of key events happening in the country in this calendar year

Feb 27-March 1

Iptex

Mumbai

<http://www.iptexpo.com/html/index.php>

March 12-16

India Aviation 2014

Hyderabad

<http://www.india-aviation.in/>

April 10-12

WELD India

New Delhi

<http://weldindia.com/>

April 17-20

Die & Mould India International Exhibition

Mumbai

<http://www.diemouldindia.org/>

May 29-31

Automotive Engineering Show

Pune

<http://www.aes-show.com/>

June 6-10

INTEC

Coimbatore

<http://www.intec.codissia.com/>

June 19-23

ACMEE

Chennai

<http://www.acmee.in/>

July 25-28

Amtex

New Delhi

www.amtex2014.com

September 4-6

Himtex 2014

Hyderabad

<http://www.himtex.in/>

September 11 - 13

India Manufacturing Show

Bangalore

<http://www.indiamanufacturingshow.com/>

October 8-10

Laser World of Photonics India

Mumbai

<http://www.world-of-photonics.net/en/laser-india/start>

December 3-6

International Mining and Machinery Exhibition (IMME)

Kolkata

<http://www.immeindia.in/index.aspx>



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CORPORATION
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MP / ML / MH



MPL / MHL



U - Mag Series



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MAG-DRIVE
Country: USA
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TB - Mag Series



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Pump Motors
SP-280P Series



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Pump Series
(Progressive
Cavity)

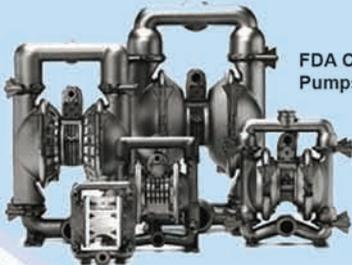



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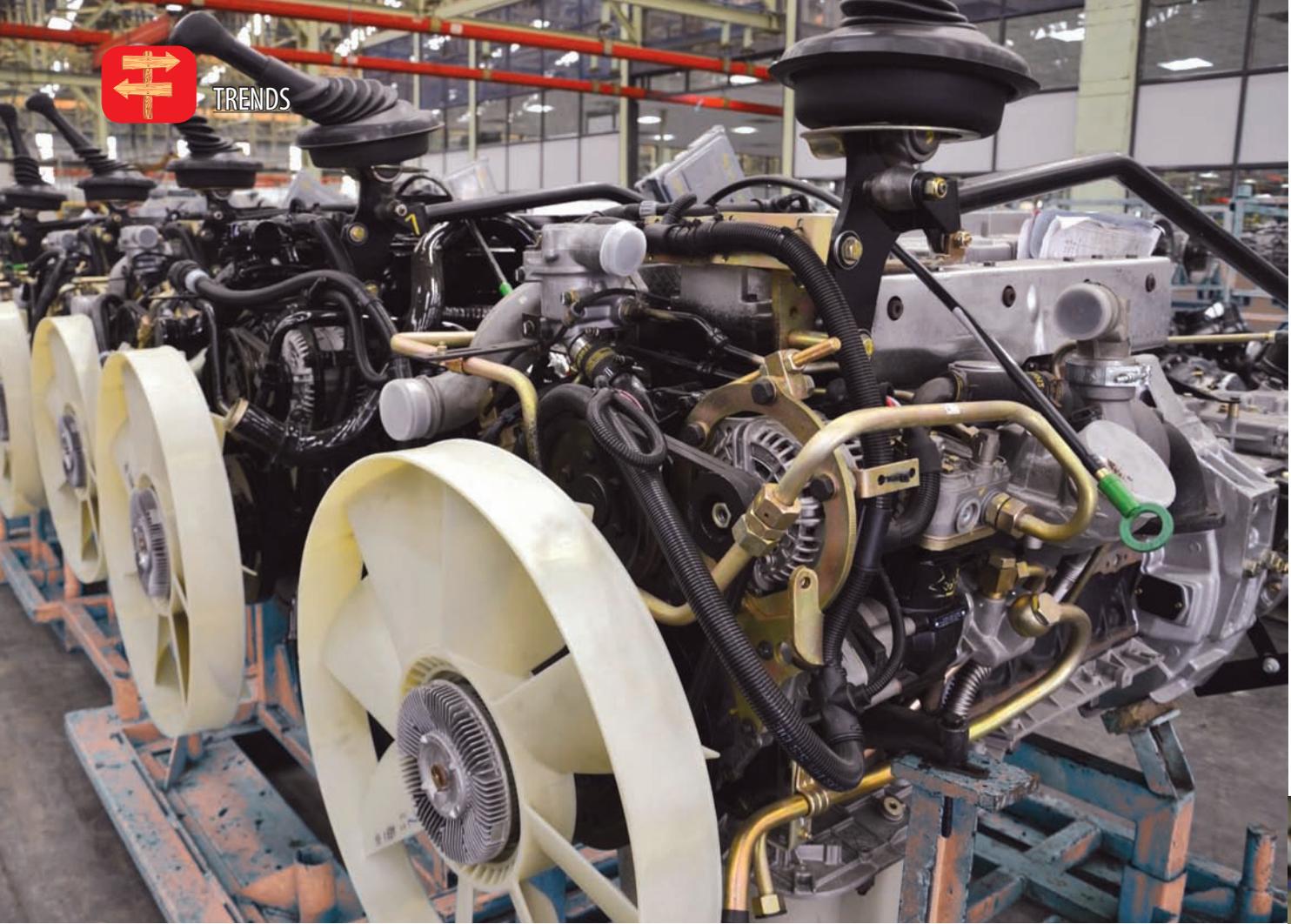
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Survival of the fittest

While the Indian auto component manufacturing sector has been grappling with a prolonged slowdown, the keys for survival and growth are some astute strategic moves and alignment of the organisation.

By Shripad Ranade

The Indian economy has slowed over the last few quarters. The GDP growth rate for the first half of the current financial year i.e. April to September 2013 is estimated at 4.8 percent. Industrial production has been severely impacted during this period and the IIP has contracted by about 0.2 percent in the April-November 2013 period over the previous year. It was expected that GDP growth may be slightly higher in the remainder of the year.

Factors such as easing of tensions in the Persian Gulf, a stabilising exchange rate, improved foreign exchange reserves and reduced current account deficit, would have supported this improvement. However, consumer inflation remains



“Addressing the rapidly shifting opportunity requires access to technology, which cannot be easily developed in-house. Beyond investing in product design and development, suppliers have to actively seek collaborations.”



stubbornly high, and the outcome of the recent assembly elections and upcoming general elections, as also the impact of the US Federal Reserve's tapering of bond buying, create uncertainties at least for the next 18 to 24 months. For the full financial year 2013-14, India's GDP growth is unlikely to be above five percent.

Slowdown in Motown

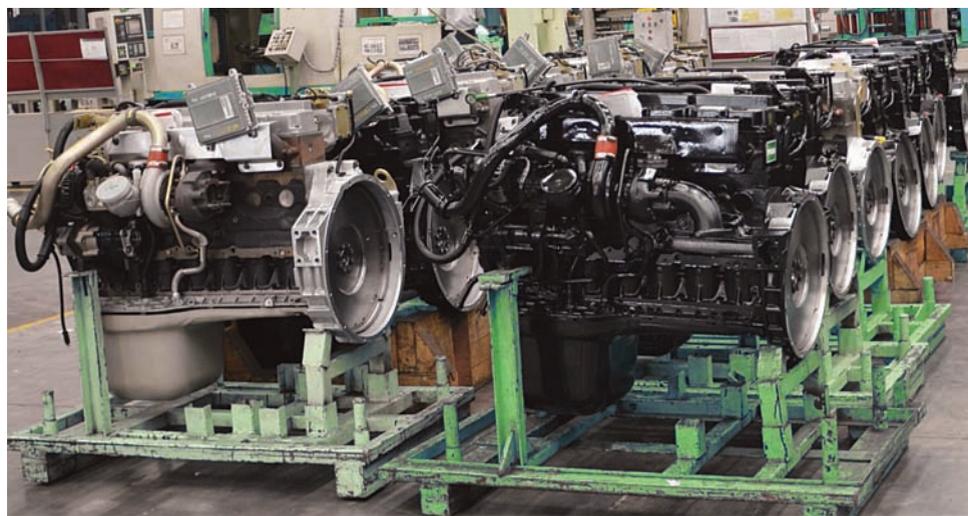
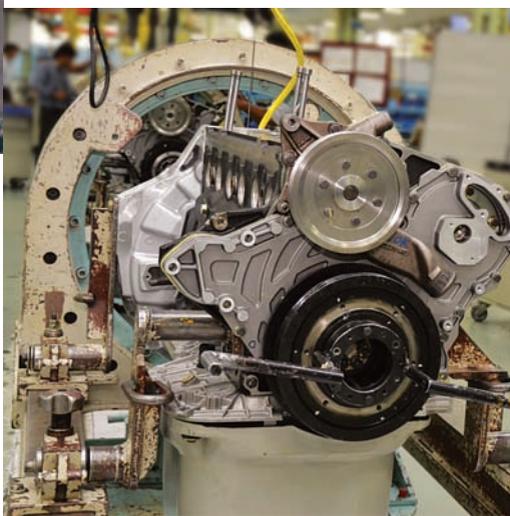
The Indian automotive industry has been badly hit by the economic slowdown. Domestic sales of almost all vehicle classes grew at higher than ten percent annually between FY09 and FY12 but have been sharply impacted over the last two years. From April to December 2013, 2.3 million passenger and commercial vehicles were sold, nine percent lower than the same period last year. Of these, medium and heavy goods trucks saw the worst dip, of almost 30 percent, impacted by lower economic activity and high interest rates. Utility vehicles had done well in the summer, but volumes dropped later and the period's sales are four percent lower than last year. From the point of view of auto component manufacturers, the bright spot has been slightly better vehicle export volumes,

While there are several challenges present, a combination of carefully planned actions can help a supplier to survive the downturn and position it well to participate in the long term success of the Indian automotive industry.

Diversifying the risks

Several suppliers are overly dependent on a single OEM or Tier-1 supplier as customer, or a single product line or sales channel. In such cases, declining market share of that OEM has a direct, severe impact on the SME. The solution lies in selecting viable new business opportunities which can be addressed immediately, and with minimal additional investments. Immediate options are a push into aftermarket and retail sales, increasing exports, and developing non-

“Several suppliers also suffer from a shortage of managerial talent, hindering scale up to multiple manufacturing locations, addressing sophisticated customers, or developing additional product lines.”



Addressing the rapidly shifting opportunity requires access to new technology.

and a five percent rise in two-wheeler sales to 11 million, helped by a 20 percent rise in scooter sales.

Effect on suppliers

The slowdown has led to widespread shrinkage of order positions for component manufacturers, and resulted in underutilised capacities, margin pressures and locked-in working capital. Smaller enterprises have been impacted further, due to additional factors such as over-dependence on a single customer who has started seeking alternative suppliers, entry of overseas suppliers, difficulty in accessing IP required to design and deliver newer subsystems and use newer technology, scarcity of skilled workers, managerial talent, and access to funds.

automotive customers for applications which require only minor tweaks to existing processes and products, e.g. castings and sheet metal for off-road equipment.

Chasing OEM priorities

Established OEMs increasingly court alternative suppliers to reduce cost, while OEMs entering India bring in suppliers capable of meeting their requirements where Indian suppliers lack scale, product range or technology. To align with changing procurement priorities, operational excellence programs for higher reliability and lower effective cost, as well as entering multiple products lines, will help the supplier to support the OEM's interest of localising parts sourced from East Asia.



Emerging trends

Consumer preferences are changing rapidly, creating demand for new subsystems such as dashboard telematics, intelligent braking, and on-going trends such as light-weighting, which render obsolete some existing investments in older technologies and products. Addressing this rapidly shifting opportunity requires access to technology or process IP, which cannot easily be developed in-house. Beyond investing in product design and prototype development, suppliers have to actively seek collaborations (e.g. for infotainment and safety component design).

Competitiveness

India's auto component sector has high competitive intensity, and profit margins have been eroding steadily. Scale is difficult to achieve because of the product variety created by increasing vehicle variants. Some of the strategic levers mentioned earlier such as aftermarket sales, product diversification, development of process knowledge, and inorganic growth, will help in gaining such an edge. In addition, excellence in manufacturing and logistics and participating in strategic sourcing of key inputs such as steel can provide gains.

To align with changing procurement priorities, operational excellence programs for higher reliability and lower effective cost, as well as entering multiple products lines, will help support the OEM's interest of localising."

Accessing funds

Cost of capital and access to funds is a challenge due to low cash flow and valuations. Private equity and consolidation are helpful in some cases. Cost structure and delivery performance are impacted by infrastructure issues such as power shortage and high logistics cost. Internal operational excellence initiatives, alternative power sources, and exploring end-to-end logistics partners can help.

People readiness

Despite lower industrial activity, there exists a long term problem of low availability of skilled technical personnel, partly stemming from inadequate skilling at ITIs. Despite attrition issues, investment in further training is a good initiative. The large scale incidence of temporary and contractual employment in the automotive and component sector creates high employee turnover and has recently led to deterioration in the industrial relations climate. More proactive employee engagement, management of grievances and a relook at the extent of contractual employment is necessary. Even as OEMs relook at their approach, suppliers can proactively re-align their own practices where possible. Several component suppliers also suffer from a shortage of managerial talent, hindering scale up to multiple manufacturing locations, addressing sophisticated customers, or developing additional product lines. A focus on creating the right structure, augmenting the leadership team, and nurturing talent, will create readiness to handle growth.

Emerging trends	Challenges for suppliers
• More vehicle variants	• Increasing complexity
• Shorter product life	• Managing lifecycle costs
• Changing regulations (emissions and safety)	• Conformance to both Indian and export requirements (e.g. ABS)
• Rapid technology shifts	• Access to technology and rising R&D cost
• Cars are getting intelligent	• Increasing proportion of electrical & electronics and software in vehicle value
• Growing OEM exports	• Latest features and safety requirements
• Supplier managed Quality	• Upgrade skills and processes
• Delivery performance	• Overcome inferior logistics infrastructure
• Non-linear cost-down	• Material & process redevelopment

Emerging automotive trends create challenges for component manufacturers

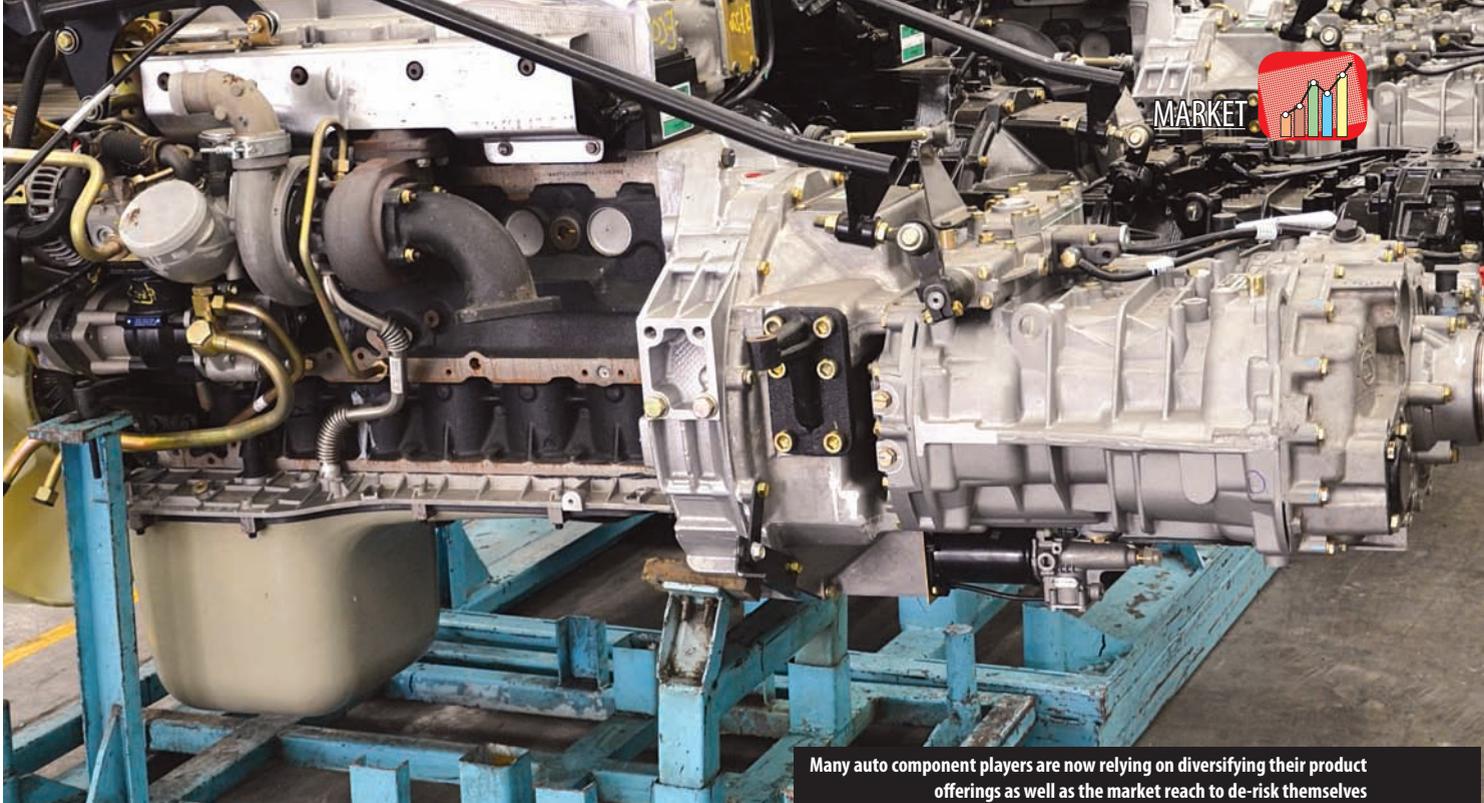


Product diversification and development of process knowledge will help in gaining an edge

Way ahead

The long term growth prospects for the Indian auto component sector are bright, but weathering the current slowdown is a challenge for auto component suppliers. There are also on-going challenges due to lack of scale and lack of access to talent, capital, technology, and infrastructure. A combination of carefully planned strategic moves and organisational initiatives will be the key for surviving the downturn and participating in the long term success of the Indian auto component manufacturing industry. 

The author is Senior Principal with Tata Strategic Management Group



Many auto component players are now relying on diversifying their product offerings as well as the market reach to de-risk themselves

Ready to re-ignite

Although auto component players have gone through tough times, they have used the lean period to prepare for future

By Niranjan Mudholkar

Reflecting the dismal performance of the automotive industry, the auto component manufacturing sector too has had a bad year. All players, small and big, have been impacted by the recession. As Piyush Munot, MD, ZF India says, “The economic slowdown and resulting downtrend of the automotive industry has been quite a trying phase for the entire industry. For ZF, the OEM side of the business hasn’t grown as per expectation.”

Anshul Goel, MD, Duroshox, too says that the slowdown has affected his firm’s current domestic business. Additionally the company has deferred introduction of new technologies. “Duroshox is a niche player in the field of industrial suspensions. The slowdown has impacted the introduction of new technologies in this area.”

Dealing with it

Of course, despite the challenges, they aren’t giving up at all. “Like the OEs, we still have faith in the long-term growth prospects of the Indian market and we are gearing up to meet the next uptrend by investing in a Greenfield plant. The Aftermarket side of the business has been an outperformer and ZF Services is systematically increasing its product and

service offerings based on the market requirement,” says Munot. Goel too says that Duroshox has made up for the significant drop in domestic sales by increasing its focus on exports, where the company has seen some growth.

ZF India has been continuously reviewing its processes to optimise the cost levels within the organisation. “An immediate measure has been the tightening of our inventory by realigning the production planning according to the customers’ product strategy. We are also in the process of increasing localisation while maintaining the global ZF quality standards for some of our product offerings in order to remain competitive,” says Munot. Goel says that while looking at new markets, Duroshox has continued its focus on operational efficiency which is also leading to substantial benefits.

PJM Khan, GM Business Development & Performance



“

Like the OEMs, we still have faith in the long-term growth prospects of the Indian market and we are gearing up to meet the next uptrend by investing in a Greenfield plant.”

Piyush Munot,
MD, ZF India



Cooper engine assembly line: Focussed on value engineering to maintain its competitive edge

Support, Cooper Corporation Pvt Ltd says that the change situation is favouring his organisation because of product superiority and comparative advantage. “We have changed our approach towards customer requirements by accepting the demands positively and delivering to the satisfaction of end users.”

Has any organisation utilised the downturn to improve operations with the aim of bouncing back quicker when things get better in the market? “I think this is a constant process. We constantly review our performance in terms of productivity, quality, cost, delivery, safety, morale etc,” Goel says. During the last slowdown at the end of 2008, Duroshox had utilised the idle resources in implementing SAP. “The impact of slowdown has been moderate this time due to the diversity in our marketplace and we have continued our efforts on continual improvement as usual.”

While Cooper hasn't suffered any direct losses due to the recession, Khan does recognise that once the market bounces back, his firm will do better. “We are always on up gradient to climb new heights. When the market gets better, we are sure we will capture the share further.”

Quality and innovation

And how has the recession impacted these companies' focus on quality and innovation? Munot says: “ZF has never comprised and will never comprise on quality be it any

situation. Innovation is a part of our DNA and we continue to invest in developing local engineering team and utilise synergies with products designed for the Asian customers. Our flexible production system allows us to optimise production for both the domestic and the export market; we have been able to face the slowdown successfully.”

Goel, in fact, believes that any slowdown should enhance an organisation's focus on innovation, quality enhancement and product development. “This has also been the case with Duroshox. We are working extensively on new concepts, products and technologies that will be key to maintain growth momentum in the future.”

Khan says the recession has not at all impacted the quality of Cooper's products. “Quality is our prime focus. Our philosophy of providing quality and environment friendly products to our customers will not get diluted under any market condition. Introducing

improved technology products in the market is part of our innovation and we always try to strive for this.”

Layoffs?

Was there a need to reduce employee strength for anyone?

Munot feels that employee reduction is the last step for any organisation to resort to cutting costs. “At ZF, we have been able to avert such a situation even in the face of a persistent slowdown by doing a 360 degree audit of our existing business practices and operational activities and placing each area under a scanner to check how we can optimise our productivity and costs while retaining our talent.”

Duroshox too hasn't reduced employee strength. “However, any anxiety and uncertainty in the marketplace leads you to constantly review and enhance your performance management system. We have made organizational changes in the last one year and believe we are better structured today than what we have been in the past.”

Khan says Cooper does not believe in the concept of reducing the employee strength to cut down the cost. “On the contrary our employee strength has been increased to meet the new goals. We consider our employees as our esteemed assets and we don't want to lose our core strength. We have a blend of experienced and fresher head count, which is well synchronised to get optimum results in the business.”



We are enhancing the product range to make the products suitable for new applications to cater to the requirements of different customer segments and markets.”

PJM Khan,

GM Business Development & Performance Support, Cooper Corporation Pvt Ltd



Tighten inventory by realigning the production planning according to the customers' product strategy

Diversification

Many auto component players are now relying on diversifying their product offerings as well as the market reach to de-risk themselves from the recessionary trends. “Yes, we have expanded our presence in the commercial vehicle segment with our chassis parts. In the passenger car segment, we will be offering clutches and we will also continue to watch the demand for transit mixers and soil compactors and decide to localise them when the time is right,” Munot of ZF says.

Goel believes that his company currently addresses a wide marketplace. “The end applications include trucking, commercial vehicles, construction equipment, agricultural equipment, industrial equipment, two-wheelers and automotive. I believe the diversity sometimes allows us to have some predict-

ability in sales and make up for significant downturn in one segment through increased sales in another.”

The company changed course from being just a supplier of shock absorbers to two-wheelers. “Today we work in all of the segments that I have mentioned. We took some active steps in diversifying our marketplace in the slowdown cycles that occurred in the past.”

Khan says that Cooper always believes in product improvements through innovation. “As a result we are

Key lessons from recession

Start to do scenario planning: For example, ask yourself what happens if interest rates change by another three percent or if there is a new regulation that changes the sales scenario in a particular segment. It is important to understand how different scenarios will affect your business.

Maintain financial discipline during good times: Businesses that hold some assets in cash always survive better in a downturn.

Monitor cash flows: This is essential during a downturn. We make sure that we monitor debtors very closely.

Employee reduction: This is a sensitive matter and a company must be prudent about any cost cutting measures related to employees during a slowdown. We must have a lot of communication during such a process, be very fair and ensure that we are only cutting the fat and not muscle.

Form a risk assessment group in the company: We are currently working on formulating an independent risk management committee in the company. We may also outsource this activity.

By Anshul Goel, MD, Duroshox



“Any anxiety and uncertainty in the marketplace leads to constantly review. We have made organisational changes in the last one year and we are better structured today than in the past.”

Anshul Goel, MD, Duroshox

enhancing the product range to make the products suitable for new applications to cater to the requirements of different customer segments and markets.”

Learnings

Khan says that quality products will help companies survive slowdown as there is always a place in the market for superior products. “Of course, manufacturers need to utilise their resources effectively so as to optimise resources and keep the costs down. At the same time, there is need for value engineering to create cost effective products. And most importantly, no matter what, organisations should never put a stop to improvements and always strive for excellence.

Munot of ZF says that the cycles of the industry have become shorter. “So while we continue to invest in the long term success in India we have to focus on the short to medium term measures as well.”



In appreciation of the critical role played by Plant Heads in the success of manufacturing organisations, The Machinist is starting a new 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.



“Most people love their comfort zone, follow traditional practices and resist any change. However, since change is inevitable, we have to adopt it willingly to fuel growth and remain competitive in the market.”

Sunil Katare,
Plant Head, KEPL

Pumping GLORY

In tune with the changing world and business models, a manufacturing organisation needs to transform its plant operations as well, says **Sunil Katare**, Head, Plant Operations, Kirloskar Ebara Pumps Ltd

Manufacturing organisations are continually in quest of new methods to stay relevant and successful in an increasingly competitive market. Productivity improvement is a vital factor in this endeavour. Recognising this, the Poona Divisional Productivity Council (PDPC), a progressive nodal agency, organises a contest with the objective of promoting productivity and quality. Through this competition, PDPC provides a platform for companies to identify and reward the best practices implemented by them towards productivity improvement.

It is noteworthy that at the seventh Productivity Improvement Case Competition-2013 conducted by the PDPC, Pune-headquartered Kirloskar Ebara Pumps Ltd (KEPL), a sister concern of Kirloskar Brothers Ltd (KBL), bagged the Gold and Silver trophies for two different case studies.

The event, which witnessed 46 entries, effectively displayed how teams at different levels in a company worked towards productivity improvement successfully. KEPL won the Gold trophy for its presentation on 'Improvement in Casting Quality through Method Study at Vendor's End (Foundry)' and a Silver trophy for presenting on 'Productivity Improvement through Process Change'. In fact, KEPL also won the Gold trophy from the Quality Circle Forum of India (QCFI), Pune Chapter, for its case study on quality improvements and enhancement of work processes and productivity. It is in this context that 'The Machinist' decided to speak with Sunil Katare, who heads the plant operations at KEPL. "Productivity and quality enhancement are constant endeavours at KEPL and we take great pride in our dedicated team that works towards its implementation. The platform also gives

Key focus areas

With competition becoming more intense and complex, KEPL is bringing improvements across key operational areas. These include:

- Process approaches
- Understanding customer requirements accurately and meeting them with the best practices
- Quality in everything
- Lean philosophy across the organisation
- Corrective action & Preventive action (CAPA) on non-conformity.



KEPL has quality checks at every process level on its shop floor. The hold points are decided depending upon the criticality of the process.

us great learning through practices and initiatives of peers, and we look forward to continue our participation in the years to come,” said Katare, who is also the plant head at Kirloskarvadi, KBL’s flagship facility.

Quality is everything

Since the recent achievements have been on the quality front, we ask him about the system which his organisation follows to ensure quality. “True to its value statement ‘Quality is Everything’, KEPL’s quality culture has been shaped consciously within the organisation. We follow QMS ISO: 9001-2008, and various superior approaches, policies and processes that lead to exceptional quality achievement. Health, Safety and Environment are part of our quality reflections and KEPL has obtained EMS 14001 and OHSAS 18001.

Understanding the customer requirements, statutory & regulatory requirements, applicable codes & standards, and aligning all the processes to meet these requirements, is the key. At KEPL, processes are continually refined based on feedback from various stakeholders including customers, Quality Circle Forum, Kaizen, Statistical Analysis and Corrective Action/ Preventive Action Methodology (CA/ PA), etc.”

So what made KEPL choose these systems? “KEPL is a customer centric organisation and is known for reliability. Quality in products, processes, services, documentation

About KEPL



Kirloskar Ebara Pumps Ltd (KEPL) was established as a joint venture between Kirloskar Brothers Ltd (KBL), India and Ebara Corporation, Japan. In 25 years of operations, KEPL has developed and manufactured pumps as per API 610, steam turbines as per API 611/ 612 and turbo generator sets. KEPL has recently started international operations with good success.

and people are part of our deliberated efforts and is a key to excel. Quality systems are helping us differentiate as a reliable organisation. The first API centrifugal pump manufactured by KEPL in 1988-89 and supplied to Bharat Petroleum Corporation Ltd’s Mumbai refinery is still working satisfactorily.”

KEPL has quality checks at every process level on its shop floor. The hold points are decided depending upon the criticality of the process and are communicated through the ‘Inspection & Test Plan’ against each item under manufacturing. There are few hold points from customer end at various stages of manufacturing and a few internal hold points including at the vendor end.



There are few hold points from customer end at various stages of manufacturing.

*** MOST (A technique used by KEPL)**

MOST is an acronym for Maynard Operation Sequence Technique, a predetermined motion time system that is used to set the standard time in which a worker should perform a task. The technique, developed by HB Maynard and Company, Inc (US), has been successfully implemented by a various industries like aerospace, automotive, electronics and so on across the globe. While everybody accepts that work measurements are fundamental to business management, organisations usually struggle to maintain the measurement system due to the cumbersome process. The MOST technique simplifies the work measurement system making it easy to be implemented and maintained. MOST breaks down a task into individual motion elements, and each is assigned a numerical time value. Standard time is arrived at by adding up the time values of all the motion elements together and also considering allowances, if any.

People involvement

Of course, any organisation’s plan is good as the involvement of its people in making it happen. Little wonder that KEPL is engaging its employees in terms of training and actual operations in ensuring quality. Training needs are identified by respective heads of departments for their team members. “The training is arranged through internal and external faculties on identified areas to improve our employee skills. Employees are involved through Cross-Functional Teams (CFTs) in preparation of Standard Operating Procedure (SOP), analysis, review, counter-measures, refining of SOP through P-D-C-A Cycle or CA/ PA, Quality Circles, Benchmarking, sharing

of best practices, etc. This is at all levels from workers to staff to senior management,” Katare informs.

During recessions, quality tends to take a backseat for some companies. How does KEPL deal with this? “At KEPL, we are able to avert the trend and effect of recession,” says Katare with confidence. And how does he manage this feat? “During all times, KEPL is focused on employee engagement, process improvements, trainings in advanced techniques like Lean and MOST*. We encourage our employees to participate in various contests like QCFI, PDPC, CII Kaizen events, etc. For us, quality is time-less and can never take a back-seat. It is the back-bone of our differentiator ‘Reliability’.”

Challenges

And what are the key challenges faced by Katare as the plant head, on the shopfloor as well as off it? And how is he overcoming them? “The prime challenge is the mindset while adopting changes in the form of reforms. Most people love their comfort zone, follow traditional practices and resist any change. However, since change is inevitable, we have to adopt it willingly to fuel growth and remain competitive in the market. We have a unique positioning in the marketplace as a manufacturer of highly reliable products which comes from reliable processes and people. We constantly work on the employee engagement and empowerment.”

Katare also believes that the ‘Plant Head’ has evolved over the last decade or so. “Yes, the role of a Plant Head has advanced significantly from the early days. Keeping the staff motivated, maintaining positive energy, customer centricity, HSE initiatives, cultivating culture of excellence, etc. have become a necessity. With the changing world and business models in most of the industries, a manufacturing organisation needs to transform its plant operations as well.”

Of course, before signing off, Katare rightfully acknowledges the part played by supply chain partners. He understands that the success of an organisation is much dependent on its supply chain and trust between the firm and its vendors. “They play a major role in the end-to-end process. We treat our vendors & suppliers as our partners, and everything is done in common interest. The processes at partners are designed to support to our main processes. Partners are evaluated periodically for Quality, Cost, Delivery, Safety and Environment. Our partners are thoughtfully chosen and always rate high on these criteria.” 

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"In 2013 we have outperformed the industry, which saw a sharp de-growth of 25 percent. We have not only gained market share but have also been earning operating profits even in the downturn scenario."

Vinod Aggarwal,
CEO, VECV

"In combining the expertise of the two Groups, our Indian experts have come up with some fantastic, cost-effective solutions. And we are now going to re-import some of these solutions to other Volvo Group plants globally."

Philippe Divry,
Sr. VP, India Joint Ventures,
Volvo Group



Game *changers*

The Eicher Group and the Volvo Group are together aiming to transform the Indian truck manufacturing business. **Vinod Aggarwal**, CEO, VECV, and **Philippe Divry**, Sr. VP, India Joint Ventures, Volvo Group, explain how

By Niranjan Mudholkar



The last two years have been quite tough for the Indian commercial vehicle (CV) industry. Yet, Vinod Aggarwal, Chief Executive Officer, VE Commercial Vehicles Ltd (VECV), a 50:50 joint venture between Eicher Motors and Volvo Group, says, these two years have actually been quite exciting for his company. Coming from a person known for his no-nonsense approach to things, you know that the statement holds solid ground. These two years, VECV has actually been working on plan to completely change Indian truck manufacturing and in the process challenge the duopoly in the CV market.

But first things first. Any good business plan requires the fundamentals to be strong. Obviously, VECV isn't immune to the market conditions. So how has the company managed to implement a

Extensive testing has been done not only in the labs and on the Volvo Group's torture track, but also with some of its customers in real world conditions.

robust strategy based on complete overhauling of the existing system during a slowdown? Aggarwal smiles, he is ready with the answer. "If you look at our financial performance, we are doing relatively much better than rest of the industry. Although our sales (40,550 units) for Eicher Trucks and Buses (ETB) have declined by about 16 percent in 2013 we have outperformed the industry, which saw a sharp de-growth of 25 percent. We have not only gained market share but have also been earning operating profits even in the downturn scenario. So, we have been in a good position to successfully implement our business strategies on the ground as we continue to improve our performance vis-à-vis the market conditions." (Of course, he doesn't forget to mention that Volvo Trucks, although small in volumes, has grown by 22 percent selling 700 units in 2013).

The plan has seen fruition in the form of launching of what VECV calls the Pro Series, a completely new range of trucks and buses in the 5 to 49 ton segment. Now it's the turn of Philippe Divry, Senior Vice President, Trucks Joint Venture India, Volvo Group, to get into the conversation. "Actually, you have to go back more than two years to understand the genesis of this launch. The Volvo Group and Eicher have been working for more than five years now to develop new solutions for India. In the Indian CV industry,

Manufacturing capabilities

Your editor has visited Pithampur to see first-hand VECV's manufacturing facility. The plant's machine shop has 17 horizontal machining centers and special purpose machines for critical operations like crank bore, cam bore, piston bore and joint face finish machining. The transmission assembly section has hydraulic press for pressing of bearings and a sound proof enclosure for checking abnormal noise in the transmission units. The plant also has robotic welding facilities for main body and under body welding. A pre-delivery automated inspection facility checks the speed and brake related parameters, turning angle as well as wheel alignment issues before delivery of the final product.

As a part of the product development process, VECV has a fully equipped vehicle and engine development centre with fatigue lab, complete virtual vehicle integration capability, different simulations, in-house competence for electrics and electronics integration, a complete bus structure and interior trim design capabilities.

VECV blends Volvo's technological excellence with Eicher's frugal engineering expertise



fuel-efficiency is a major cost driver, and in this area, the Volvo Group's technology and Eicher's competence in frugal engineering have been very complementary," he explains. Divry believes the joint venture has created a strong foundation in the last five years for future growth and success by modernising the product range, the manufacturing footprint, and the ways of working throughout the company. "And as Vinod mentioned, our financials are very robust; we are a debt free company."

According to Divry, the mammoth product development initiative for the Pro series range involved an investment of three million hours of engineering



Various in-line process checks ensure that no product moves ahead unless it is absolutely right

Ripple effect

Starting with a single location in Pithampur, VECV has now spread to seven industrial locations in Pithampur, Baggad and Dewas. Over the last five years, the Company has invested over Rs1,900 crore in the State of Madhya Pradesh (MP) in these facilities.

The setting up of the VECV plants has led to the mushrooming of the auto component industry in the region which has grown to a sizeable number now. This has created around 60 supplier and ancillary units around Indore/Pithampur. The large industrial base created by VECV along with its ancillaries has helped to provide direct and indirect employment to over 45,000 persons in the state. VECV is all set to deliver many more products from its manufacturing bases in Madhya Pradesh and in turn will not only contribute to the growth of the Indian CV sector but also towards the growth of the region in the coming years.

effort, 7.7 million km of testing and 50,000 hours of engine development. "The new range will deliver higher profitability over vehicle's lifecycle, leading to real productivity improvements through best-in-class fuel efficiency, good driver comfort, better drivability and higher up-time," he says. The Eicher Pro series range has undergone very stringent and gruelling test protocols to ensure superior up-time. Extensive testing has been done not only in the labs and on the Volvo Group's torture track, but also with some of its customers in real world conditions. "Indeed, the last five and half years have been a great success story in terms of joint ventures," adds Aggarwal. "As a result, the entire new range is a result of synergistic work between the two entities."

Aggarwal says that the VECV has incorporated a lot of Volvo technology as well as Volvo processes. "Whether it is the cabin, the engine or the use of technology in terms



The modern plant in Pithampur has access to top notch manufacturing processes



“
It is for the first time that a global manufacturer like Volvo has started the production of its advanced engines in India, not in Europe or US. Right from the start, we intend this to be a global hub for engines.”

Philippe Divry

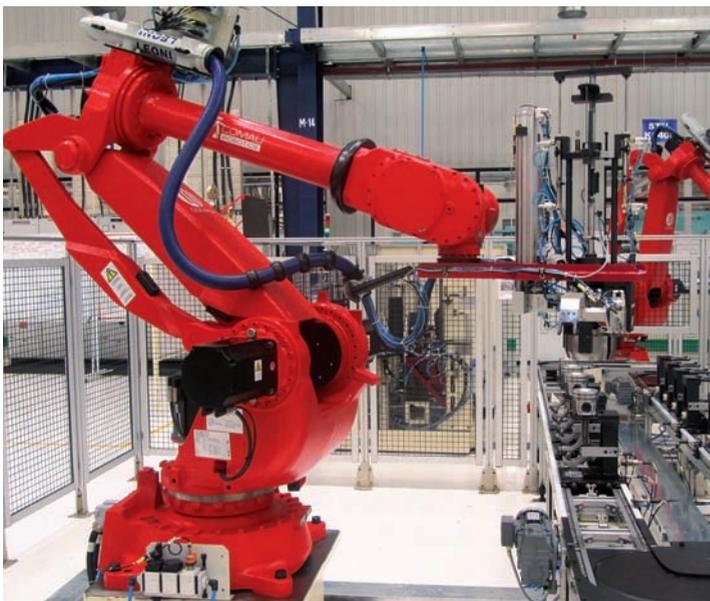
Every product undergoes stringent and gruelling test protocols

of EMS and telematics, we are bringing the best of European trucking standards to India. The modern plant in Pithampur has access to top notch manufacturing processes, which includes cab weld shop with robotic welding, CED paint shop, integrated testing facilities, 100 percent hot test facility for engines, and a lean and scalable manufacturing set up.”

The new paint shop was inaugurated in November 2012. “This paint shop offers superior paint finish and delivers quality much superior to what we see in

contemporary trucks in India. The top coat paint finish will be superior in terms of gloss, distinctness of image and corrosion resistance,” says Aggarwal. Even UV protection will be two times more than the existing paint quality. The paint shop has an initial capacity of 72,000 units scalable to 100,000 units per annum. The plant has a new BIW line operated by robots. All lines have been re-laid to increase the efficiencies and capacities. “Various in-line process checks have been implemented to ensure that no product moves ahead unless it is

Three million
The numbers of hours
of engineering effort in
creating the Pro Series. It
also required 7.7 million km
of testing and 50,000 hours
of engine development.



Hundred percent automation for critical operations



This paint shop offers superior paint finish compared to conventional paint shops



The plant also has robotic welding facilities for main body and under body welding

absolutely right. So the culture of ‘first time right’ has been implemented. Aggarwal also points out that the shopfloor uses a good blend of automation and manual operations to derive maximum operational efficiency and product quality. “We have fungible capacity, so we can produce any model

The engine plant

Commemorating successful completion of five years of partnership between Volvo Group and Eicher Motors in July 2013, VECV started commercial production at its technologically advanced engine manufacturing plant in India. The plant located at Pithampur, Madhya Pradesh, with an initial capacity of 25,000 units per annum in Phase 1 at an investment of Rs375 crore. The capacity will increase step by step to 100,000 units per annum as per the market requirements with an additional investment of around Rs125 crore. According to Aggarwal, VECV has substantially enhanced its engineering design capabilities as well with a strong focus on R&D. “We are designing all our engines at Pithampur,” he says.

The engine facility will be a global hub for meeting the medium-duty automotive engine requirements of Volvo Group globally for five- and eight-litre engines. The Euro 6-compliant diesel base engines will be supplied to Volvo Group plant in Venissieux, France where these engines will be assembled for the Volvo Group Euro 6 requirements. The same platform will be adapted to Euro 3 and 4 engine (BS3/BS4) technologies to meet the Eicher requirements in the new Pro range and other Volvo Group requirements for this type of engines in Asia.

“We have fungible capacity, so we can produce any model on the line. While the current capacity is at 5,000 per month, we can jack it up to more than 7,500 per month very quickly.”
Vinod Aggarwal

on the line. While the current capacity is at 5,000 per month, we can jack it up to more than 7,500 per month very quickly depending on the market demand. In fact, we are at a take-off stage now. When the market starts growing, we would be in an advantages position to improve our standing,” he says.

Besides its technological proficiency, the Volvo Group also brings process expertise to the table in this JV. “I call it soft technology. Moreover, we also bring know-how in terms

of developing new products and validation in terms of quality.” Divry says. He also draws attention to the fact that the Volvo Group has stationed a team of Japanese quality experts at the Pithampur plant. “Coming from various Volvo Group plants around the world, this team’s highly experienced members have been working very closely with the local team for the last five years. Our local team has been very enthusiastically learning from the Japanese team and has now adopted a lot of quality norms to suit the local requirements in terms of manufacturing quality and efficiency.”

Reiterating the ‘very good exchange of knowledge between the Volvo Group and Eicher’, Divry points out that the Volvo Group’s world-class technology has been adapted



The modern paint shop has an initial capacity of 72,000 units scalable to 100,000 units per annum.

to the Indian conditions to make it relevant. “This is where our Indian experts have come up with some fantastic, cost-effective solutions. And these have been so effective that we are now going to re-import some of these solutions to other Volvo Group plants globally. These will in fact become Volvo Group standards.” Divry is also proud to note that it is for the first time that a global manufacturer like Volvo has started the production of its advanced engines in India, not in Europe or US. “Right from the start, we intend this to be a global hub for engines,” he adds.

Divry further shares that the Eicher brand is now considered as the fifth brand in the competitive portfolio of Volvo Group brands. Volvo has a multi-brand strategy with each brand having a well identified role in the market. “The Eicher brand is an integral part of the Volvo Group’s strategy to expand in Asia and other growth markets. With the launch of the Pro series of trucks by Eicher, our strategy in Asia gets further strengthened,” he says.

Having a launched a superior range of products, VECV will now gradually phase out its existing products. “Everything will be done in a planned manner. We will introduce the new series in phases. We are introducing two models in February-

March (Pro 1000 and Pro 3000) and will introduce a few more by June. Also, while we have been strong in the India-like markets in South Asia, we will now also be exploring other markets where the Volvo brand is strong.” 



High on aluminium



The Aditya Birla Science and Technology Company (ABSTC) works closely with the Hindalco Innovation Centre on several fronts such as alumina production, aluminium smelting and downstream processing of aluminium. Not surprisingly, Hindalco aluminium business is today one of the most profitable aluminium businesses globally.

Hindalco Industries Ltd is a leading global non-ferrous metals player, with interests in aluminium and copper. It is one of the largest producers of primary aluminium and copper in Asia.

An integrated business model with significant access to captive resources & dominant presence across the aluminium value chain has made Hindalco aluminium business one of the most profitable aluminium businesses globally. While its domestic competitors are more focused on upstream or primary metal capacity expansions, Hindalco has been consciously expanding its Value Added Products (VAP) capacities. Currently, 46 percent of Hindalco's aluminium product portfolio comprises VAPs, i.e. Flat Rolled Products (FRPs) and extrusions.

Within the next two years, Hindalco's primary metal capacity is expected to grow to almost 1.5 million TPA. With captive access to bauxite and energy, Hindalco will further enhance its cost competitiveness. Various market and product development initiatives will catapult Hindalco to a dominant position in India and in the emerging markets, the prominent consumption hubs of the aluminium going forward.

Hindalco's new plants boast of the best available technology. The research and development activities are led by the Hindalco Innovation Centre (HIC) along with unit wise R&D centres and departments, in collaboration with the Aditya Birla Centre for Science & Technology (ABSTC) and external institutes with focus on strengthening long-term competencies through proprietary technology, intellectual property, and development of new products and applications. Hindalco Innovation Centres at Belgaum and Taloja have earned national



Satish Pai, CEO - Aluminium Business, India Hindalco Industries Ltd

“We are deeply engaged in implementing best practices and latest processes obtained from worldwide developments in this field. High calibre manufacturing professionals are a key to making this all come together.”

and international recognition, including the National Award for R&D efforts and Indian Patents.

Alumina

Alumina is not only an essential input for aluminium but also finds several applications in hosts of industries such as refractory, paints, ceramics, water purifiers to name a few. Hindalco is one of the pioneers in specialty alumina technology that processes hydrates to get alumina with requisite qualities and parameters. With this technology Hindalco today stands amongst top global producers of specialty alumina. Hindalco is in the process of doubling its alumina capacity from 1.5 mln tonnes to 3.0 mln tonnes over next year through commissioning of a new alumina refinery with world class Alcan technology. With one of the best quality bauxite available and tight supply



Technology Platforms

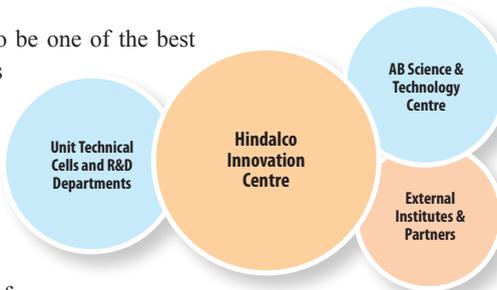
As the corporate research and development centre for the Aditya Birla Group, ABSTC supports the broad diversity of the Group's businesses through multi-disciplinary teams of expert scientists and engineers who lead fundamental and applied research projects. In this edition, we look at Aluminium Research.

QUICK FACTS

- The world's largest aluminium rolling company with foot prints in 11 countries.
- One of the most profitable aluminium operations globally
- Biggest producer of primary aluminium in Asia
- Consolidated turnover of US\$ 14 billion
- Present across the aluminium value chain... From mines to consumer products
- Market driver for aluminium in India Well recognised & accepted brands ... Freshwrap, Superwrap (foils), Everlast (roofing sheets), Eternia (windows)

chain logistics this refinery is expected to be one of the best globally in terms of process efficiencies and cost of production.

Hindalco's Belgaum Research centre works extensively on application based research methodologies, with enhancing productivity, reducing energy consumption and managing environmental impact being some of the focus areas. The research strategy involves application of advance science, technology and engineering platforms comprising of fundamental process analysis, computational fluid dynamics, process modelling and simulation, process control, process development and laboratory experiments.



Aluminium smelting

Hindalco is on the verge of enhancing its aluminium capacity by over 100 percent to 1.4 mln tonnes with the commissioning two world class smelter projects. These projects use AP 36 technology; one of the most modern aluminium smelting technologies in the world supplied by Aluminium Pechiney. With these technologies labour intensity will come down by

HIC Mission	
New Products	Cost Reduction
Process/Performance Improvement	Production Efficiency
Cycle Time Reduction	Environmental Protection



1/6th, while power consumption shall decline by over 1000 units/tonne thus improving Hindalco's cost competitiveness further. Hindalco has been at the forefront of productivity optimisation through process innovation and operational excellence.

Even before the ongoing commissioning and ramp up of these new plants with most modern technology, Hindalco has sustained its dominant position as most profitable and cost competitive aluminium producer for over 50 years. This reflects the core focus on the process enhancement & productivity improvement through in house efforts initiated and supported by our technological centres. The research activity focus is on improving productivity by increasing amperage, current efficiency and reducing specific energy consumption of the

aluminium smelters.

R&D teams at Hindalco's Renukoot and Hirakud smelters have initiated a number of projects that have helped the company in maintaining its low cost producer position. With expertise in pot design and control, ABSTC is focusing on increasing productivity by advanced modelling and advanced process control, with a long-term focus on building higher amperage pots. In association with the aluminium business, ABSTC is involved in developing new technologies such as drained cathode cells, inert anodes and vertical electrode cells.

Downstream processing

One of the cornerstones of Hindalco's long term strategy has been its focus on downstream products. Customer centricity is the essence of this strategy. The R&D efforts in this area are focused towards new product introductions in line with customer expectations, improving the quality and life of the existing products through constant research and bringing in developed world products to the emerging market in a calibrated manner through adaptive innovations.

ABSTC is working to develop new metallic and non-metallic materials that meet higher performance standards and specifications. The team is working on improving understanding of processing-structure property relationships and using this knowledge to develop newer materials. An experimental setup has been developed to replicate some of the common industrial processes at the laboratory scale, in order to study mechanical properties and correlate these to various process parameters. Structural characterisation is undertaken at various scales to get a better understanding of the process and the product, and to identify opportunities for further optimisation.



Change on the **ANVIL**

Despite the difficult market conditions, Kalyani Forge is going through a long-term focussed transformation process well led by **Viraj G Kalyani**, its Executive Director

By Niranjan Mudholkar

Being India's one of oldest and well respected manufacturers of precision forged and machined components is a good reputation to start with. Of course, changing times require organisational restructuring and that is exactly what Kalyani Forge Ltd is on to. And it helps to have a really young mind driving this transformation. Of course, Viraj Kalyani is equally banking on the legacy of his grandfather (Neelkanth Kalyani, the founder of the organisation) while bringing to the table his new age thought process.

Viraj has his fundamentals well in place. When he joined Kalyani Forge in 2012, he worked on the shopfloor to get a first-hand experience of what was happening on the ground. This involved continuous interactions with customers as well as employees. A sound and relevant educational background also helped. Viraj has graduated from the Jerome Fisher Program in Management and Technology at the University of Pennsylvania and also has done a four-year dual-degree program with a Bachelor of Science in Economic (Wharton



“ We have broken down walls both literally and symbolically to make our company more open; so that there is free flow of information.”

School) and a Bachelor of Science in Engineering (School of Engineering and Applied Science).

Having understood the system thoroughly, Viraj then started the process of change in 2013 by introducing the Kalyani Operating System (KOS). KOS borrows complementing best practices from various manufacturing





Co-ordinate Measuring Machine for checking critical machining dimensions.



Spectrometer for checking the chemical composition.

methodologies and adopts them to suit Kalyani's conditions. Viraj has also been taking help from Japanese consultants to ensure a smooth re-design of the processes. "I call KOS the Kalyani way of doing things. We have a long history wherein thousands of individuals have worked here and with that comes a lot of learning and experience. For an organisation that has lived so long, it is important to build a system that continuously improves and adapts to the changing customer needs," he says. Viraj also has been relying on the guidance of Rohini Kalyani, the organisation's CMD and his mother. The lady, having single-handedly built the organisation for the last 13 years (a rare feat for a woman in Indian manufacturing), has been supporting Viraj's forward thinking approach.

Through KOS, Viraj has started standardising and streamlining the manufacturing process. "The idea is to improve the process in its entirety and keep enhancing it continually. For example, earlier we followed the traditional

batch system whereas today we have shifted to the Lean system with a strong emphasis on waste reduction. Importantly, we are now orienting the organisation more towards the customers." It is noteworthy that from the 30-day inventory of earlier days, Kalyani Forge now keeps an inventory of ten days only. Another key change happening at Kalyani is the cultural shift. From being a very conservative establishment, it is now changing into a modern and transparent organisation that's open to new ideas. "We have broken down walls both literally and symbolically to make our company more open;

“ We are gradually lowering dependence on auto sector and diversifying exposure to other lucrative sectors such as construction, engineering, energy, agriculture and mining etc.”



PAD machining lines which includes CNCs, VMCs & SPMs.



so that there is free flow of information.” People engagement is another factor that Viraj is focussing on as part of the transformation process. Kalyani Forge is now empowering its frontline employees to enable them to take decisions.

“Communications is the key. People need to understand why you are doing things. We are encouraging our people to challenge status quo and come up with fresh ideas.” Part of this initiative is the flattening of the organisational structure. From the earlier fifteen rigid titles, the company now has only five well-defined functional roles. “Moreover, we are communicating to our employees that we need to become customer centric. In the coming years, our engagement and level of service with customers is only going to increase. In fact, we have restructured our organisation in such a way that every employee is connected to the customer. We also put a great emphasis on integrity internally as well as while working with all our stakeholders,” Viraj adds.

Viraj is well aware that he operating in a low margin business where he cannot pass on the rising input cost to his customers. “The component manufacturing industry faces a lot of pressure, especially in the current economic climate. There is intense pressure on price and input costs are also rising. These challenges are given.” So he is leveraging his



Fully machined, Angular & Straight Fracture Split Connecting Rods: KFL was a pioneer in fracture split technology in India.

Current product portfolio	Technology
Engine Parts	Hot Forging
Chassis Systems	Cold & Warm Forging
Turbo Charger Parts	Precision Machining
Transmission Parts	Design Engineering & Tool Room
Front & Rear Axle Parts	Heat Treatment
Steering Parts	Surface Finishing
Non Auto Parts	

Fact sheet

Total number of employees:
1,000 plus (including temporary workforce)
 Company turnover in 2013: **Rs 260 crore**
 Current capacity: **25,000 TPA**
 Capacity after a new facility is operational:
40,000-45,000 TPA by 2018



Dedicated machine lines for various customers.

organisation’s technical (and versatile) capabilities to keep the costs down. The company’s technical capabilities include hot, warm and cold forgings as well as precision machining. With 3 TS 16949 certified facilities in Pune, India, Kalyani Forge is ideally located near raw material sources as well as the seaport of Mumbai. It has also developed superior quality forgings through continuous improvement in quality control systems, technology upgradation and creating a congenial work atmosphere for betterment and growth of employees.

“While we are making the most of our organisations’ experience and deep technical expertise gathered over three decades, we are also enhancing it further. Kalyani Forge today provides design-to-launch capabilities which are critical for its customer’s success. We are in fact developing a dedicated R&D cell. We have been able to develop highly critical and complex geometries of components for our clients. If a customer, existing or new, comes with a challenging proposition, we are ready to take it. We have developed parts which customers could not get from anywhere else.”

Kalyani Forge’s customer base primarily includes global leaders in the automotive sector but it does cater to many clients in the non automotive segments. “We are gradually lowering dependence on auto sector and diversifying exposure to other lucrative sectors such as construction, engineering, energy, agriculture and mining etc. We are seeing a growing order book as well as enquiries from these areas. At the same time, as we foster innovation, we have had a number of new product introductions this year for new and existing clients. We are also increasing our value addition of product and service to our customers.” 

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Grand comeback!

The Auto Expo 2014 has certainly brought life back to the industry in style

By Niranjan Mudholkar

What a spirited fight back this has been from one of India's favourite manufacturing sectors – the automotive industry. Yes, the policy issues and infrastructure woes remain. Yet, it seems the industry has shrugged off the negativity and come up with a fitting response in the form of fabulous technologies and amazing products. Seventy new vehicles including 26 global unveilings and 1,100 exhibitors have truly made the Auto

Expo 2014 a mega motor show that has in a way announced the beginning of the much needed revival. And full credit to the industry. As Vikram Kirloskar, President, SIAM, said, the industry is optimistic and had been working very hard to produce better products to boost sales. Of course, he didn't forget the mention that the auto industry is the locomotive of growth for the Indian economy. Your editor was present at the India Expo Mart in Greater Noida to witness some of the stunning launches. Presenting some glimpses.



Fiat Group India

Fiat Group Automobiles India, the fully owned subsidiary of Fiat Chrysler Automobiles, unveiled Fiat Avventura, (global debut in India), Abarth 500 and the New Fiat Linea. Nagesh Basavanhalli, President and MD, Fiat Chrysler Automobiles India Operations, said, "The introduction of new products for the Indian market is in line with our long term strategy, which puts us in a strong position to penetrate the market. We are proud to present Avventura CUV (Contemporary Urban Vehicle) first to the Indian market. We are also proud to announce the launch of the Abarth brand in India – our racing-performance lineage brand and showcase the Abarth 500 – the flagship product of the Abarth brand worldwide."

Toyota Kirloskar Motors

Toyota Kirloskar Motor unveiled some really interesting cars. These included its first ever crossover - the new Etios Cross. This crossover is expected to add to a strong customer base of over two lakh for the company. Toyota also unveiled the all new Corolla Altis, which is the 11th Generation model in the series. Naomi Ishii, Managing Director, Toyota Kirloskar Motor said, "Toyota Corolla has grown to become a true global car. Not only across the world, but also in India the Corolla Altis has constantly been a leader in its class. The 11th generation Corolla Altis has been designed to keep up with times and add more value to the car. Launched in India in 2003, the Corolla Altis is the highest selling C sedan."





Ford India

Through the display of its exciting vehicles, Ford India illustrated how it is solidifying its position in the Indian market. Alongside the global unveiling of the Ford Figo Concept, which is aimed at redefining customer expectations in the B segment, Ford showcased its 2014 line-up of the latest models to be available for India, including the new Ford Fiesta. Ford's commitment to India was clearly shown in the two headline vehicles on its stand.

India as a hub

Ford is supporting the expanding Indian and global market for small cars with a similarly rapid expansion of its manufacturing presence. Ford has invested US\$ one billion to establish a new integrated manufacturing facility in Sanand, Gujarat to complement its facility in Chennai, positioning India as a major global hub for the production of small cars.

The new facility will more than double Ford India's annual capacity to 440,000 vehicles and 610,000 engines, helping to drive Ford's most aggressive industrial expansion in half a century. "We're building the factories of the future in India and across the Asia Pacific region to set the stage for turbocharged



Highlights

Ford Figo Concept and new Ford Fiesta show how the automaker is bringing the best of its global capabilities to Indian consumers with accessible and attainable vehicles

- ✓ Ford Figo Concept and new Ford Fiesta represent two complementary visions for the B segment
- ✓ Ford continues to implement its largest industrial expansion in 50 years in Asia Pacific, with Sanand facility set to open in 2015
- ✓ India remains a crucial part of Ford's global expansion strategy, both as a consumer market and as a global manufacturing hub for small vehicles
- ✓ Ford display highlights smart technologies, including multi-award-winning 1.0-litre EcoBoost engine and SYNC connectivity, with interactive, fun and engaging displays.

growth in the coming years," said Dave Schoch, president, Ford Asia Pacific. "We see India as a pillar of our company's growth in Asia Pacific, which as a region will account for nearly 50 percent of global vehicle sales by 2020. As we prepare to launch 23 vehicles globally in 2014 – the most in more than a century – we see huge opportunity in India, both as a market and as centre of excellence of manufacturing."

"The lasting investments we are making in Chennai and Sanand represent investments in our communities, suppliers and local workforces," said Ford India President Nigel Harris.

Hyundai Motor India Ltd (HMIL)

Hyundai India, the country's largest exporter and the second-largest car manufacturer unveiled its highly anticipated compact sedan 'Xcent'. The global unveil marks Hyundai's entry into the compact sedan segment in the Indian auto industry. Speaking at the launch, BS Seo, Managing Director & CEO, HMIL said, "The Xcent is a world-class product developed for the Indian market. We at HMIL are proud to launch the modern family sedan in India." The Hyundai Xcent has been developed with a focus on the Indian driving needs and lifestyles. The car inherits Hyundai signature mature 'Fluidic design' and style theme to meet the Indian customer aspirations. The car is a true expression of Hyundai's 'Modern-Premium' brand philosophy. HMIL also launched the third Generation Santa Fe. The new Santa Fe embodies the 'Storm Edge design philosophy' derived from Hyundai's Fluidic design philosophy which captures the strong and dynamic images created by nature during the formation of



a storm. Featuring sophisticated and refined lines which are in harmony with its bold and voluminous surfaces, the Santa Fe presents a more masculine appearance.



Jaguar Land Rover

debut were the Jaguar C-X17 crossover concept and the D-Type inspired Project 7 concept car.

The company used the Auto Expo to confirm that Jaguar's flagship model, the XJ, would become the third model to be made at the firm's local manufacturing facility in Pune, following the introduction of the Land Rover Freelander 2 in 2011 and Jaguar XF in 2013. Jaguar Land Rover, now in its sixth year of Tata Motors Ltd ownership, delivered its best ever full year global sales performance in 2013, retailing 425,006 vehicles – a 19 per cent increase over the previous year. "India continues to be an important and dynamic market for Jaguar Land Rover with year on year sales growth. We aim to enhance the potential of the Indian market by growing our dealer network by 25 per cent this year

and will now manufacture our flagship model, the Jaguar XJ, in Pune," said Dr Ralf Speth, CEO, Jaguar Land Rover.

Jaguar Land Rover's new Indian product range included the latest Land Rover Discovery and the Range Rover Evoque with 9-speed transmission. Also making their much anticipated Indian

Mercedes-Benz India

Pursuing its road map of '2014 Year of Excellence', Mercedes-Benz India unveiled three fascinating new products, the CLA 45 AMG, the M-Guard and the European production model of GLA. "We are thrilled to bring the actual production model of the GLA, the most awaited compact luxury SUV in the Indian market. All efforts are now concentrated on introducing this SUV in the Indian market at the earliest," said Eberhard Kern, MD & CEO, Mercedes-Benz India. Ola Källenius, Member of the Divisional Board, Mercedes-Benz Cars responsible for Marketing & Sales: "We believe in the potential of India as one of Daimler's key emerging markets. With our global Mercedes-Benz 2020 growth strategy we have clearly formulated our ambitions in the automotive luxury



segment and the Indian market will contribute to our goals." With the CLA 45 AMG, Mercedes-AMG launched a unique new compact performance car, which has all the typical DNA of AMG.

Mahindra

Mahindra showcased advanced mobility solutions at the expo. The exhibits included the most diverse portfolio across product categories showcasing 'Accessible Technology' ranging from SUVs and future ready electric mobility solutions to its commercial vehicle portfolio and exciting new motorcycles from Mahindra Two Wheelers. Accessible technology showcase included a cross section of an XUV500 Hybrid with a transparent acrylic body to showcase the Hybrid Technology capability of Mahindra, as well as the all new autoSHIFT transmission in the Quanto. SsangYong range of vehicles highlighted world class technology through the all new Rodius MPV, LIV-1 Concept and Rexton with the new 2.0-litre e_XDi engine. Mahindra Reva highlighted future ready mobility solutions with the next generation electric sports car, fast charging technologies for the e2o and the electric Verito and Maxximo.

Maruti Suzuki

Maruti Suzuki unveiled its Concept CIAZ and Global SX4 S-CROSS. The Company expressed its preparedness for the future with two distinct offerings positioned for different segments and will help Maruti Suzuki gain foothold in new segments. The stunning models positioned on the centre stage give a glimpse of Maruti Suzuki's plans to foray in new and distinct segments to retain its leadership position in the Indian market.



Tata Motors

Tata Motors showcased an extensive range of 18 stunning vehicles and concepts to demonstrate its product strategy for Horizonext. It unveiled an exciting new premium hatchback, the Bolt and a dynamic and stunning, sub 4-metre compact sedan, the Zest. On the commercial vehicle side, the company unveiled the Prima CX 1618.T, setting design standards for the Medium Commercial Vehicles, the Ultra 614 with a narrow cab for better manoeuvrability and the LPS 4923 LA – the first tractor in India with a lift axle, offering better driveability, longer axle-life and lesser wear and tear. Tata Motors also showcased concept vehicles and future technologies for passenger as well as commercial vehicles. The Design Concept NEXON, a modern youthful compact SUV, illustrated the new Tata Motors design language and intelligent new-generation HMI. While the ConnectNext Concept car articulated the future of connectivity with its advanced interiors that seamlessly helps connect with professional and personal networks.

Ravi Pisharody, Executive Director, Commercial Vehicles, Tata Motors, said, "We are now taking our Horizonext strategy ahead, reinforcing our product focus to introducing commercial vehicles that bring the global styling aesthetic matched with enhanced comfort and productivity, push the performance envelope and finally, continue with the long-term commitment towards clean fuel alternatives." Ranjit Yadav, President, Passenger Vehicles, Tata Motors, said, "While DesigNext introduces beauty-in-motion with the sculpted dynamism of our cars, DriveNext is the new



Highlights

- ✓ DesigNext, DriveNext and ConnectNext as three strategic pillars for Passenger Vehicles
- ✓ DesigNext, PerformanceNext and FuelNext as the three Commercial Vehicles strategic pillars
- ✓ Unveils the Zest and the Bolt for introduction in 2014 plus Design Concept NEXON and the ConnectNext Concept car in passenger vehicles
- ✓ Unveils exciting commercial vehicles - the Prima CX 1618.T, the Ultra 614 and the LPS 4923 LA.



approach to performance, showcased by our next-generation REVOTRON series of petrol engines and the F-Tronic technology with class-defining Automatic Manual Transmission (AMT). ConnectNext is a paradigm shift in Human Machine Interface, offering industry-leading technology in how your car connects with the world."



Volkswagen
Das

Volkswagen India

The biggest attraction at the Auto Expo from Volkswagen was the SUV concept Taigun in the Asian version. The concept gives a fair idea of what the future products for India would be based upon. "Driven by 'Innovation', the concept Taigun showcases aspects of design, packaging, technology, engineering and efficiency. In addition to the concept Taigun, there were five different versions of the versatile Polo – Polo Highline, Polo GT, Cross Polo, Polo R Cup race car and Polo R WRC car. These versions highlight various mobility possibilities that can be achieved with the Polo," said Mahesh Kodumudi, President and MD, Volkswagen India Pvt Ltd, Head - Volkswagen Group Sales India Pvt Ltd.



Stepping closer to customer

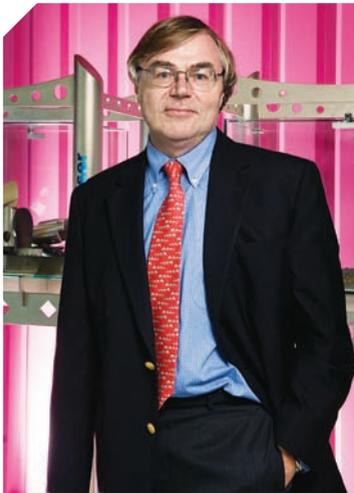
The LVD Group inaugurated its technology centre in India to coincide with Imtex Forming 2014. The Machinist caught up with **Jean-Pierre Lefebvre**, President, Strippit, Inc (part of the LVD group) and **MK Narasinga Rao**, MD, LVD-Strippit India to know more

By **Niranjan Mudholkar**

Jean-Pierre Lefebvre, President, Strippit, Inc, follows the Indian economy very closely. And why not? India is a significant market for LVD, the Group he represents. He certainly senses a positivity building up around the way things are changing in the recent times in this country. That's also the reason why LVD is taking its commitment to the Indian customers to a new level by starting a technology centre in Bangalore. Lefebvre is particularly happy to note that someone like Raghuram Rajan is heading the Reserve Bank of India. "He is a very smart economist. He knows exactly what to do in a situation like this. Bring a few more of those minds and things can change very fast," he remarks. MK Narasinga Rao, MD, LVD-Strippit India Pvt Ltd, agrees. "Rajan is indeed very watchful and sensible. We believe his actions will have a positive impact on the economy."

The strategy at the technology centre is to demonstrate to the customers, ideally on their components, all the three core processes that LVD specialises in: laser cutting, punching and bending. Plus the software that integrates all the three processes.

Both Lefebvre and Narasinga Rao believe doing the right things at the right time will have the desired result, whether it is a business or an economy. "That is exactly what we intend to do for our customers with this tech centre," they say, in unison. The Bangalore Technology centre is actually part of LVD's plan to establish its sales and service subsidiaries in 15 major markets around the world. "It's part of a corporate plan to have presence in all important markets. We decided to start with India, Korea and Brazil. So in the last three years we have opened subsidiaries in these countries," Lefebvre says, adding that next, LVD will be going to Mexico, Taiwan and Russia. Lefebvre is aware that despite the current lull, the long-term prospects in India remain strong.



“We can help Indian companies focus more on productivity and quality than being just low cost manufacturers. In the context of globalisation, we can help them understand how productivity is important, no matter how high or how low the cost might be.”

Jean-Pierre Lefebvre,
President, Strippit, Inc.



At any given time, there will be machinery worth EUR 1.5 million to EUR 2 million at the LVD Technology Centre in Bangalore

So what does LVD bring to the table for Indian manufacturers, usually known for their low cost capabilities? "We can help Indian companies focus more on productivity and quality than being just low cost manufacturers. In the context of globalisation, we can help them understand how productivity is important no matter how high or how low the cost might be," Lefebvre says. He drives the point further by saying that a company cannot have high productivity if it produces poor quality. "If you don't train your people then you cannot expect quality



Intuitive user interface

The user interface with the machine is very important. "And we do recognise that the more experienced workers who had better understanding of the machine operations are now retiring; the newer generation of operators is more IT savvy. Understanding this, LVD has invested in the control interface technology to make it much more relevant for today's operators," says Lefebvre. "We have introduced machines with easy to operate interface that allows the worker to handle the operations much more intuitively. These machines have a graphical icon driven control interface."

With this tech centre, customers can experience multiple machines in one place.

and if you do not invest in good equipment then again you cannot expect quality. It is equally important to determine where you want to go as a manufacturer. Decide what your goal is," he says, almost philosophically. So through its various resources, the LVD technology centre will help customers choose the right machine for their requirements. "Customer satisfaction depends on the customer being happy with the choice of the machine. Our endeavour is to ensure that they get the right model, the right tooling and the right features," Lefebvre says.

Of course, having a good machine is one thing and to be able to use it correctly is another. "Absolutely right," says Narasinga Rao. "The tech centre will address this aspect as well. One of its key objectives will be to impart application knowledge to the customers. Customers are finding it very difficult to train the operators on their own shopfloors. So they can now bring their shopfloor people to train them at the tech centre."

LVD is investing substantially at this centre in terms of the machinery. "At any given time, you may find between EUR 1.5 million to EUR 2 million worth of machinery in the tech centre," Lefebvre informs. Narasinga Rao adds that the technology centre will showcase the LVD Groups' entire range of machines. "Earlier, we used to take some of our machines to our customers. But that becomes very challenging in terms of time and logistics. So with this tech centre, we have made it easier for our customers to come and experience multiple machines in one place."

Lefebvre points out that LVD specialises in laser cutting, punching and bending, the three key processes in fabrication. Plus we have the software that integrates all the three processes. "The strategy at all our technology centres around the world is to demonstrate to our customers', ideally on their components, all the three core processes. So our tech centre has a laser cutting machine, a punching machine, a bending machine and the software. This approach is called integrated sheet metal working and it is comprehensively demonstrated at the tech centre," he says.

A key objective of the technology centre is to address the challenges and concerns faced by the customer at the application level. "Secondly, there are many trial and error operations that the customer cannot do at the shopfloor. Such operations can be done at our tech centre. Basically, we are trying to become a competence partner to our customers," Narasinga Rao adds.

While the year 2013 hasn't been memorable for the LVD group in India, Narasinga Rao says that things are changing now. "Since October 2013, we have certainly seen change in the sentiments in Indian market. Indian customers are coming to terms with the global realities. They are cautious but they have started investing. We expect a revival in the Indian manufacturing in 2014 and beyond. The growth will be primarily driven by the huge infrastructure projects that the country is undertaking and LVD is all geared up for it," he says. 



There are many trial and error operations that the customer cannot do at the shopfloor. Such operations can be done at our tech centre. Basically, we are trying to become a competence partner to our customers."

MK Narasinga Rao,
MD, LVD-Strippit India
Pvt Ltd



Lifting success

Pune based ElectroMech has not only managed to maintain its top line but has also improved its bottom lines. Tushar Mehendale, its MD, explains how.

By Niranjan Mudholkar

While most Indian SMEs have been adversely impacted by the slowdown, Pune based ElectroMech has been sailing through the challenging times with flying colours. “Not only have we managed to maintain our top line but have also improved our bottom lines by revamping the processes and making operations leaner,” says Tushar Mehendale, Managing Director, ElectroMech, which is a leading manufacturer of industrial cranes. Of course, he does mention that on account of the infamous ‘policy paralysis’ the growth of the capital goods industry has been affected in the country. “The last two years were particularly painful in terms of new business,” he adds.

Of course, he is not new to challenges. ElectroMech was actually started by his father many years back along with a few technocrat friends. But it was a very small scale firm with no significant presence in a bad market. Things were only getting worse when Tushar had returned with a degree from the US. But he took charge of things; studied the market and started filling the gaps by providing quality products.



“Higher accountability and higher ownership lead to greater employee participation in the system and this leads to an overall pride that the employee feels for his / her own work.”

And it paid off. So from a small company engaged in supplying cranes to local customers doing an annual turnover of Rs3.25 crore with around 70 people, today ElectroMech generates a decent revenue of more than Rs200 crore and employs more than 500 people.

Focus on quality

How did this happen? A big focus on quality, says Tushar. And this needs proper planning and huge efforts. “At ElectroMech we have implemented a lean manufacturing system that ensures that during handover from one component of the values stream to another, the handover is complete in all respects and meets the specified requirements,” he says. Basically, a lot of emphasis is placed on self certification by the respective process owners. In case of any issues that arise due to incomplete or improper work, the root cause analysis is done in a systematic manner and the system is tweaked to ensure that the incident will not repeat again.

Indian SMEs have been the worst hit during the recession. And yet, they continue to drive the economy through their contribution to the manufacturing sector. In this section, we will speak to SME entrepreneurs who are carving a niche for themselves in a competitive market. We start off with Tushar Mehendale of ElectroMech.



This way the quality system runs in a self correcting mode and ensures continuous improvement. “Higher accountability and higher ownership lead to greater employee participation in the system and this leads to an overall pride that the employee feels for his / her own work. This way quality becomes personal for the respective employee and greater levels of quality are thus achieved.”

So how many quality checks does the ElectroMech shopfloor have? “Each process has different requirements for quality checks. We have well defined quality plans for each process and depending on the process either the process owner or the quality inspector carries out checks as per these quality plans.” To make this happen requires complete engagement of the employees in the actual operations.

“The self correcting system that we have put in place throws up a lot of instances where we realise we need to ramp up on the capabilities of our resources – men as well as machine. When it comes to upgrading the employees’ knowledge, during periodical management reviews we analyse the problem areas and then provide training to enhance the employee’s knowledge of the process,” shares Tushar. These reviews are done together with the process owners, the

Going green

ElectroMech also endeavours to be a responsible corporate citizen that cares for the environment. “Our plant uses state-of-the-art facilities for shot blasting and painting of cranes, with adequate care taken for extraction of paint fumes and circulation of fresh air to ensure well being of the workers. Only lead free paints are used and discharge from the paint booth is properly treated in our in-house sewage treatment facility before being released for in-house use for gardening purposes,” Tushar shares.

Paint sludge is also recovered from this discharge and disposed as per international ‘hazardous waste’ norms. The factory and welding process have received the ‘Approval of Welding’ certificate from leading classification society Germanischer Lloyd (GL), Hamburg, Germany. “This was instrumental for our contract with Cargotec, our client in the shipping industry.”

ElectroMech is also ISO 9001:2008 certified, with UKAS accreditation. We are now in the process of putting our systems in place for Environmental Health and Safety (EHS) and Occupational Health and Safety (OHS) certificate.”



Unique lay-out

The outstanding feature of the factory at Pirangut (see below) is the way it is laid out. The layout lends itself to have a process flow for material within the factory. The first three bays of the factory act as stores and the last bay acts as a fabrication and finally the dispatch area. One might think that this is the standard way of manufacturing, but in the crane industry such an organised plant (which is available mostly in European countries) will not be seen anywhere else in India.

A typical crane is a rather large product, thus, is difficult to handle and cannot be put on a conventional assembly line. Rather, the product has to be accommodated in a place where all components are available and accordingly assembled on the products at that particular location.

respective departmental heads and the top management. Hence everyone gets involved in determining the course of corrective action so that the quality issues can be eliminated.

Capabilities

The ElectroMech plant at Pirangut near Pune is one of the largest manufacturing facilities in the country for industrial cranes. Spread over 20 acres of land, it has a manufacturing area of 23,000 sq m. “We have implemented a piece flow process within our plant that enables us to have a capacity to manufacture easily in excess of 1500 cranes. This year we will be manufacturing in excess of 700 cranes and thus can claim to be the largest manufacturer of cranes in terms of volumes. Our semi-automated stacker crane system in the stores enables us to store all components in a systematic palletised manner and enables quick retrieval.

The plant is equipped with state of the art CNC Plasma cutting machines with an innovative vertical plate storage system that enables fast and precise cutting of steel used in fabrication of the cranes. We have semi automated welding systems that ensure a consistent and top class welding quality. We can also boast of one of the largest paint booth in the industry having a length of 50m and a width of 8m. This is a

down draft type paint booth that allows us to paint multiple crane components at the same time. Our dispatch area is also unique and is serviced by a giant 42m span single girder gantry crane with a SWL of 20t that speeds up the dispatch process.”

Collaborations

Another reason for ElectroMech’s success has been the way it has leveraged on tie-ups and collaborations to boost its growth. Collaborations provide easy access to advanced technology as well as widen your market, and Tushar knows it.

“ElectroMech as a policy always believes in offering to its customers the best value product. As a result of this, we have always aimed to tie up with the best in class companies across the globe. For example, when it comes to standardized workshop duty cranes, we have ABUS of Germany as our partner. We have supplied thousands of cranes through this partnership over the past 8 years. We have also tied up with Stahl from Germany for their EX range of products used in hazardous areas like chemical plants, refineries, etc.

Recently, ElectroMech has also gone in for an equity joint venture with Zoomlion of China for exclusively manufacturing tower cranes for the South Asian market. “Zoomlion is the world’s largest manufacturer of tower cranes and enjoys a leadership position when it comes to its wide product range and technical capabilities. We are proud of having such pedigree partners with us,” Tushar adds.

During recessions, quality tends to take a backseat for some companies. How does ElectroMech deal with this? “Quality is not linked to recession at all. Any reputed and credible company cannot afford to play around with the quality of its products at any point of time as this will have long term repercussions. A poor product from a reputed company can create havoc with the company’s image and its future business prospects. Hence if a company compromises

on its product quality and specification in a slow economic cycle, it will come to haunt it back when the economy picks up and the company can potentially lose business. Hence our philosophy is simple – prices can be negotiable but quality is not negotiable,” he emphasises. 

23,000 sq m
Size of the manufacturing space on ElectroMech’s facility spread over 20 acres in Pirangut, near Pune.





Peristaltic pumps are easy to clean and maintain.

The peristaltic pump is here!

Let's look at a few application examples that illustrate some specific advantages of peristaltic pumps like easing operational and maintenance issues.

By Beth Dumey and Jaime Robles

In real-world conditions, pumps can be challenging. Some do not handle particulates, some are difficult to use with high-viscosity materials, others have valves that stick and seals that fail—all common complaints for everyday pump users. Others have maintenance issues such as cleaning and replacing parts that result in costly downtime.

While one solution may not fit all pump applications, comparing the type of pump in use to a peristaltic pump is a

good place to start. A peristaltic pump works by an alternating pattern of squeezing and releasing flexible tubing to move fluid through the pump. As a roller passes over the tubing, it is first occluded (squeezed), then released.

The progression of this squeezed area forces fluid to move in front of the roller. The tubing behind the rollers recovers its shape, creates a vacuum, and draws fluid in behind it. As the roller moves faster, vacuum pockets are created more quickly and the fluid moving through the system picks up speed. The rollers act as check valves to prevent siphoning or loss of prime. Let's look at some application examples that illustrate some specific advantages of peristaltic pumps.

Chemical processing applications

International company HEL specialises in process safety and development and provides pre-pilot scale chemical reactors and systems to the pharmaceutical, fine chemical, petrochemical industries, and academia.

“The wide variety of the pump's tubing formulations includes chemically compatible tubing that meets EP, USP, FDA, 3A and NSF approvals. Replacing the tubing is very easy and quick, simplifying clean-down processes and avoiding cross contamination.”

Colin Heathfield,

Cole-Parmer Technical Sales Manager and fluid handling specialist.

HEL's project team prepared three automated reactor systems for a process chemistry application in which their client required phase separation. The client needed an automated system and HEL project leaders turned to Cole-Parmer for help in outfitting the system with the correct pumping technology.

Chemical reactor systems require a pump system that can deliver an accurate volume of fluid while maintaining purity. Cole-Parmer recommended its peristaltic pump for this application as it offers high accuracy. Additionally, the only wetted part is the pump's tubing, ensuring high purity.

“The wide variety of the pump's tubing formulations includes chemically compatible tubing that meets EP, USP, FDA, 3A and NSF approvals. Replacing the tubing is very easy and quick, simplifying clean-down processes and avoiding cross contamination,” explains Colin Heathfield, Cole-Parmer Technical Sales Manager and fluid handling specialist.

The drives are available in analogue, digital, or command protocol control options, enabling easy integration into HEL's ELS control software. Each HEL application requires a customised approach, as well as good understanding of the



What a peristaltic pump can do?

Particulate handling: Peristaltic pumps can handle undissolved solids and dirty fluids containing particulates. For manufacturing and industrial applications, they can pump wastewater, suspended solids, harsh chemicals, and more.

High viscosities: The design of peristaltic pumps makes them suitable for abrasive and/or viscous fluids such as lubricants, slurries, paints, liquid waste, and more.

Maintenance of sterility: Because the fluid that is pumped does not come in contact with the internal pump parts, the fluid is not contaminated and the parts remain clog-free. Simply using sterilised tubing and other fluid path components will maintain fluid sterility.

Chemical compatibility: The composition of the tubing used in the pump is the key factor in chemical compatibility. Hundreds of tubing options are available and free databases (such as ColeParmer.com/Chemical-Resistance) allow users to compare tubing materials to assess their compatibility with a chosen chemical.

Ability to run dry: Pumps gases, liquids, or mixed phases without damaging the pump.

Ease of use: Most peristaltic pumps can be installed within minutes. Their interfaces are easy to use and those with digital displays can be read from across an average-sized room. Some have reversible motors to purge tubing and some have remote control capabilities.

Reduced maintenance: With no seals, valves, or glands, these pumps are easier to maintain. Tubing is easy to replace with few or no tools needed; simply switch the old tubing with new tubing. Some tubing is formulated for longer life, which further reduces costs. Actual tubing life depends on pump speed and pressure, tubing material, chemical compatibility, and the abrasiveness of the media being pumped.

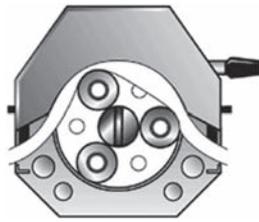


Diagram showing the working of peristaltic pump.

customer’s requirements. In this case, after discussing the options with a Cole-Parmer technical expert, HEL selected a precision standard pump system with a pump head ideally suited for metering, feed, and transfer applications together with the bio tubing.

“We rely on Cole-Parmer’s knowledge of pumping technologies and liquid measurement to complement our automated reactor system expertise. I can be sure that the right solution will be specified for my client’s application,” comments Dr Jasbir Singh, Managing Director, HEL. “This is particularly important to us because most of our customers

require a degree of customisation and we need to be able to respond with appropriate and cost-effective solutions.”

Lab applications

A research laboratory needs to pump dilute sulphuric acid and a copper sulphate solution 24 hours a day for five days in a row. Technicians need to re-circulate these two chemicals at 60°C for a cell lab. Plus, they need to be able to vary the flow rate with a maximum flow of 15 LPM at 15 psi.

Initially, a flexible impeller pump might make sense for its durability, material handling flexibility, and positive displacement features. Yet the flexible impeller pump can’t handle higher pressures at higher flow rates well. Variable flow control is difficult, as is finding chemically compatible internal pump parts. The pump is hard to clean and it cannot run dry.

When compared to a peristaltic pump, the flexible impeller pump is less favourable. The peristaltic pump handles higher pressures at higher flow rates. Variable-speed pump drives make it easy to control flow. Once again, chemically compatible tubing is available, and the pump can run dry.

Handling viscous materials

A manufacturer needs to pump 100 percent glycerol from a 55-gallon drum into six smaller containers. Once these six containers are filled with glycerol, the chemical is used to lubricate needles for the manufacturer’s process.

A solenoid diaphragm pump may seem like a valid choice as a typical metering pump, but it does not work well with high viscosities. The flow of this pump would be significantly reduced due to the 1400-cp viscosity of glycerol. The solenoid diaphragm pump is also difficult to clean and has numerous replacement parts including diaphragms and internal valves. Finally, the check valves may stick, rendering the pump inoperable.

Instead, the peristaltic pump handles high viscosities well and would improve the manufacturer’s flow rate. Because the



An example of Masterflex line of peristaltic pumps for a variety of markets – from lab applications to manufacturing.



The new Masterflex precision modular drives. These peristaltic pump drives allow users to position the motor and controller.

Benefits of the pump

Simple to integrate with control software – choice of analogue, digital or command protocol control

Easy tubing changes – minimise downtime between batches

Wide range of compliant tubes and fittings

No cross contamination – product quality maintained

Low shear/good with abrasive particles – can pump shear sensitive media

Handling of solids – stable flow rates without the risk of clogging.

fluid in a peristaltic pump does not come in contact with internal pump parts—it only contacts the tubing—the pump remains clean and free of residue. Tubing is easily replaced, reducing overall maintenance time, and the pump has excellent self-priming capabilities.

Handling aggressive chemical and solvents

A rubber manufacturer needs to dispense one-ml doses of methyl ethyl ketone (MEK) as a primer in the first step of the vulcanisation process (treating rubber to give it certain properties). The manufacturer needs a pump that is easy to operate.

The tendency may be to get a piston pump for its relative accuracy when pumping small volumes. In this case, though, a piston pump makes it difficult to regulate the one-ml doses. The chemical compatibility of the internal parts in the piston pump is challenging and the pump head and valves are hard to clean. Finally, the piston pump can't run dry. A peristaltic pump would be a better choice. Its controls are simple to operate, satisfying one of the key requirements

of the manufacturer. Tubing formulations are available that are chemically compatible with MEK. The tubing is easy to change and cleaning the pump is also simple, reducing labour for operators. The pump has no service kits or valves to maintain. Peristaltic pumps can run dry to prime.

Manufacturers can choose from an array of pump options, from gear pumps to drum pumps to air-operated double diaphragm pumps to centrifugal pumps, and more. Yet, when discerning between these options, the deciding factor should be functionality that complements, not impedes, the production process. When weighing precision, versatility, and ease of use, a peristaltic pump often performs best.

Common applications

Common applications which use peristaltic pumps include plating chemicals, manufacturing adhesives for cement, dispensing glue emulsions, handling dyes in fabric manufacturing, monitoring pulp quality, transferring fluids between tanks, feeding etching chemicals for plate processors, developing caustic detergents, and many more.

When is a peristaltic pump not the answer?

With the pulsating nature of the peristaltic pump, applications that require a consistently smooth flow may be better served by a centrifugal or gear pump. In many cases, though, peristaltic pumps provide significant advantages that enhance production. 

Beth Dumey is Senior Marketing Communications Specialist and Jaime Robles is Manager, Customer Experience for Cole-Parmer, a leading global source of laboratory and industrial fluid handling products, instrumentation, equipment, and supplies since 1955.

Images Courtesy: Cole-Parmer



The enabler

Imtex Forming 2014, the internationally acclaimed exhibition showcasing the exhaustive range of forming technologies in all engineering applications, concluded successfully in Bangalore recently

By Niranjan Mudholkar



Ribbon cutting at the Inauguration of IMTEX Forming & Tooltech 2014

The Indian Machine Tool Manufacturer's Association (IMTMA) successfully concluded the 2014 edition of Imtex Forming and Tooltech recently in Bangalore. The

six-day forming exhibition, which started from January 23 at Bangalore International Exhibition Centre featured over 440 exhibitors and 500 machine tools spread over an exhibition area of 30,000 sq m. The participation other than India came from 24 countries including four group participations

Rs2,800 crore
Value of total business enquiries

from China, Germany, Czech Republic and Taiwan. The show was visited by up to 40,000 visitors during the six days at BIEC.

Talking about the industry, Vikram Kirloskar, President, Society of Indian Automobile Manufacturers (SIAM) said,

“The machine tool industry plays an important and impartial role, catering to the need of both, small and large automakers alike. Forming the backbone of many major sectors of industrial activity in India, in the traditional manufacturing context, the machine tools industry in India has played and

Key highlights

Key delegations such as Automotive Component Manufacturers Association (ACMA), Bharat Heavy Electricals (BHEL), Bharat Electronics Limited, COFMOW, Indian Railways, ISRO, NAL, GTTC, Government Tool Room & Training Centre, Ordnance Factory Board Nagpur & Hyderabad, Hindustan Aeronautical Ltd (HAL) and National Aerospace Lab visited the show in the span of six days.

Comprehensive offering for industries such as aerospace, automobiles, auto component, defence, capital goods, electrical & electronics, earth moving & construction, food processing and dairy equipment, railways, infrastructure, oil & gas equipment, pharma equipment, space & nuclear and telecom among others.

Exhibitors included key companies like: Electro-pneumatics & Hydraulics, Hindustan Hydraulics, ISGEC, Ashok Manufacturing, Bystronic, LVD-Strippit, Salvagnini Italia, Murata Machinery, Yamazaki Mazak and many others.





Quick chat with V Anbu, Director General, IMTMA

During its visit to Imtex Forming 2014, The Machinist caught with IMTMA's Director General at his office at the BIEC. He said that IMTMA has brought the Imtex brand to a level where an ecosystem has been created by the two most important constituents, the exhibitors and the visitors. "With more than 450 active members from both public and private sectors, IMTMA plays a key role in the growth and development of the machine tool industry which forms the base for all manufacturing activities."

The Association has evolved itself to look beyond, to focus on issues of productivity, quality, technology, new product development, design, customer satisfaction, etc. for enhancing competitiveness of the industry in both domestic and overseas markets.

IMTMA today organises the Imtex and Tooltech brand exhibitions, where both Indian and overseas manufacturers showcase their metalworking machines, equipment and tools. Speaking about the various advantages of these exhibitions, Anbu said that Indian companies today also look at exhibitions as a forum to showcase their best and look at developing partnerships. "These exhibitions also give them the scope to scale up both in terms of capacities as well as capabilities. Moreover, there is an opportunity to acquire or jointly develop new technologies. Future growth will happen only through these means. International trade exhibitions like Imtex Forming offer Indian companies a robust platform to negotiate their own growth and maturity curves. It saves them time and money without compromising on the quality of opportunities," he said.

Anbu also pointed out that the ecosystem also takes care of many satellite factors. "For example, the Academia pavilion at Imtex Forming 2014. This year we had 25 institutions displaying their projects and research work. Plus there is the Jagruti youth programme, which mentors young talent."

"The next twenty years belong to Indian manufacturing; we are going to witness tremendous growth. And exhibitions like the Imtex and Tooltech will play big parts in enabling the Indian manufacturing industry evolve to the next level. I think that's role that all of us at IMTMA have: that of being facilitators for Indian manufacturing."

will continue to play a key role in enhancing competitiveness and enabling development of quality and excellence in the output of the manufacturing industry and of the Indian economy as a whole."

The exhibition showcases contemporary technologies and new product developments of the entire forming sector within the metalworking industry. "It is a manifestation of cost-effective alternatives to conventional metalworking solutions. The biggest challenge for the Indian manufacturing industry is to keep up with 'technology changes' in several sectors. Machine tool as an enabling industry needs to continuously innovate, upgrade and invest on technology - which in turn



“The machine tools industry in India has played and will continue to play a key role in enhancing competitiveness and enabling development of quality and excellence in the output of the

manufacturing industry and of the Indian economy as a whole.”

Vikram Kirloskar, President, SIAM



The show displayed solutions that enable press shops form parts faster

leads to specific solutions for several sectors," said Jamshyd N Godrej, Chairman, Exhibitions, IMTMA.

"We are in the middle of the 12th Five year plan, a comprehensive and visionary roadmap for the entire nation. The manufacturing industry continues its hard work with the vision of achieving 25 percent shares in overall GDP by the year 2025 from the current 15.2 percent. It also envisages a manufacturing growth of two to four per cent over that of the GDP growth. The third key aspiration for the manufacturing sector is to generate a hundred million jobs by the year 2025," said L Krishnan, President, IMTMA. 



2D laser unit

Equipped with solid-state laser, a newly launched 2D laser unit also cuts nonferrous metals in addition to aluminium, stainless steel and mild steel

Easy to operate, with compact dimensions, and gentle on the budget. That describes the new TruLaser 1030 fibre, which features the high Trumpf quality the market has come to expect. Displayed and in action for the first time in India at Imtex Forming 2014.

The 2D laser unit is equipped with a TruDisk 2001 solid-state laser, expanding the range of applications for the TruLaser Series 1000, made by Trumpf. In

addition to aluminium, stainless steel and mild steel, this new unit also cuts nonferrous metals. Furthermore, it lets shops make a debut in laser welding at reasonable expense. Like the CO₂ version from the series, the TruLaser 1030 fibre is intended especially for businesses with little or no experience in laser cutting. But its modest investment level also makes it suitable as a complementary machine for experienced job shops – used for prototype construction, for instance.

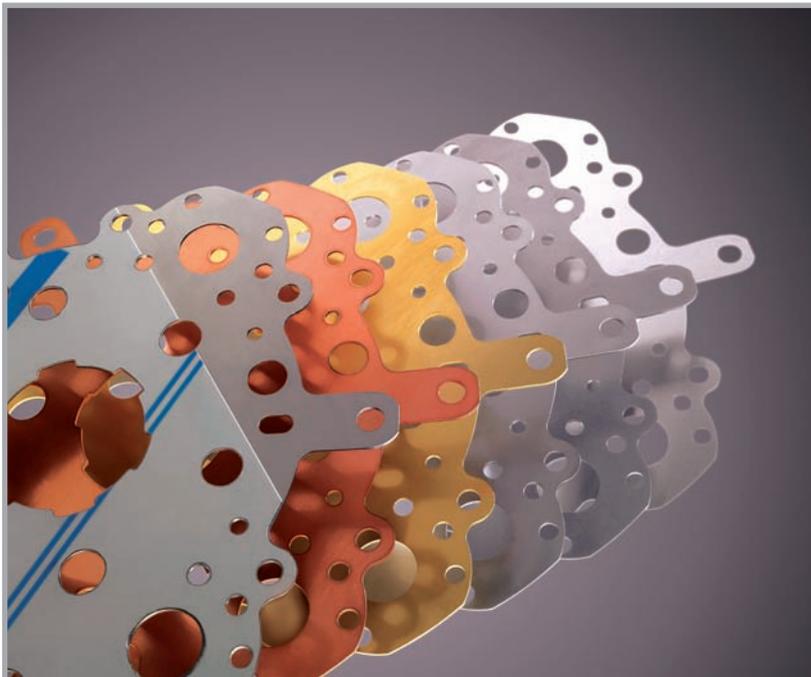
Thanks to the solid-state laser, the TruLaser 1030 fibre shows its strengths in the variety of materials it can work and its capability to process thin sheet metal. It can cut copper



Easy to operate, small in size, and gentle on the budget – that is the new TruLaser 1030 fibre, which embodies all the high quality for which Trumpf is famous. Courtesy: Trumpf India.

up to three millimeters thick or brass up to two millimeters thick. Mild steel, stainless steel and aluminium can be cut at gauges of twelve, six and five millimeters, respectively. The laser, a highly flexible tool, can cut virtually every contour. The TruDisk laser offers additional advantages with its low energy costs and its capacity for integration into a network. In the LaserNetwork, for instance, a welding unit can use the laser beam when the TruLaser 1030 fibre is not actively cutting. That makes for affordable entry into the world of laser welding. Several machines can use the same beam source and act together optimising its utilisation.

The TruLaser 1030 fibre was intended to be just as compact as it is easy to use. TRUMPF attached great importance to that. The machine is intuitive in its operation and both cutting programs and repeat production can be nested in just a few steps, right at the machine. The single cutting head strategy has also been implemented. The universal cutting head automatically adjusts the beam as needed to cut metal of any thickness up to the maximum gauge. The unit's footprint is very small and the laser can be set up near the machine as required. That means the system will fit in even the smallest shop. In addition, the TruLaser 1030 fiber is quickly installed and will be cutting its first part in a very brief period of time.



The TruLaser 1030 fibre cuts not only aluminium, stainless steel and mild steel, but copper and brass, as well. Trumpf India.

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Servo mechanical presses

Electropneumatics & Hydraulics launched three types of servo mechanical presses at Imtex Forming. Servo mechanical presses are the answer to today's requirement of flexibility and productivity in manufacturing. They combine the speed and reliability of eccentric drive mechanical presses and the flexibility of hydraulic presses with innovative electric servo technology. The high torque, low-rpm servo motors connected to the eccentric gear train replaces the flywheel, clutch and brake. Some of its salient features include ability to perform different operations by programmable motion profiles/sequences; Programmable slide stroke, tonnage, speed and slide reversal at any position; Can be connected to sheet feed lines or transfer systems for continuous production; Quieter, cleaner working environment; Productivity gains up to 60 percent, depending on the application; Energy savings possible, depending on operating cycle and Range from 25T up to 1250T, with or without cushion.

60T C-Frame Servo Mechanical Press

- Slide forward capacity:** 60T (at 4 mm above BDC)
- Slide drive:** AC servo motor (through gear box and eccentric link)
- Slide stroke (fixed):** 120 mm
- Throat:** 250 mm
- Shut height (from bolster top):** 300 mm (SDAU)
- Slide adjustment (motorised):** 70 mm
- Slide size:** 500 (LR) x 400 (FB) mm
- Strokes per minute (no load):** 40
- Bolster size:** 900 (LR) x 500 (FB) mm
- Cushion (optional):** Pneumatic, 3.5 T (at air pressure 7 kg/cm2)
- CNC system:** Electropneumatics make CNC with MMI (7.1" color LCD touch screen monitor); Online graphical display of slide position, profile and utilized motor torque.



Energy Saving Solution for Hydraulic Presses

Conventional hydraulic presses consume large amounts of energy. Their low efficiency results in significant energy wastage. However, today, there is an innovative energy-saving solution for hydraulic presses that can cut energy costs up to 60 percent.

A servo hydraulic pump combined with an AC servo motor can provide this energy-saving. The internal gear servo pump provides variable volume flows with a highly dynamic response and lower energy requirements.

Electropneumatics & Hydraulics (India) Private Limited, Pune offers its wide range of Hydraulic presses with servo driven pump systems. Almost all types of metal forming presses in different tonnages can employ this newer technology for an optimized output.



Productivity Gains

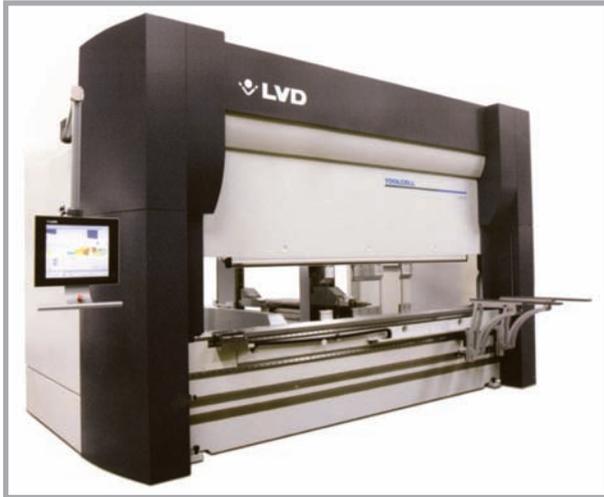
- Significant energy savings- 30 to 60%
- Optimised programmable cycle as per need gives user flexibility
- Closed-loop speed, force and position control for superlative part quality
- Smaller hydraulic system, less oil, less maintenance, cleaner environment
- Much less heat generation, hence oil volume, heat exchangers drastically reduced
- Significantly quieter in operation

Contact information:

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Unique bending technology



LVD's ToolCell makes bending easier and more productive for any application using revolutionary bending automation technology that minimises setups, is fast, easy to use and highly reliable.

ToolCell is a press brake with an integrated automated tool changing system. Storage of a library of top and bottom tooling is housed within a 'tooling stadium' located behind the machine's backgauge unit. An innovative gripper design built into the machine's backgauge finger allows the backgauge to serve as the tool changer mechanism.

The ToolCell automatically changes the top and bottom tooling as required for the job. Tools are all held within the machine, significantly minimising tool changeover time and improving bending productivity.

ToolCell features LVD's patented Easy-Form Laser in process angle monitoring and correction technology ensuring first part, good part accuracy. LVD's latest generation 19" touch screen control, Touch-B, features intuitive graphical icons used to control all parameters of the machine for fast and efficient operation.

ToolCell is available initially in a 135 tonnes by 3060mm configuration with additional models of 170 or 220 tonnes bending force and 3060 or 4080mm bend length configuration to follow.

Certain machine options are configurable at the time of order, including stroke, open height, front supports and sheet following units.

Key features

- Minimises productivity – Using ToolCell optimises throughput by reducing unproductive time.
- Precise set-up for every job – No fine adjustment of tool stations for bending.
- All tools held within the machine – Two complete lengths of self-seating top tooling (punches) and five complete lengths of bottom tooling (Vee dies) held within the machine.

Fast, Flexible Processing

LVD's Electra FL fibre laser cutting system is fast and flexible, offering high speed thin sheet processing, low operating cost and the ability to cut a wide range of ferrous and non-ferrous materials.

Increased beam absorption of the solid-state fibre laser light by the material delivers processing speeds up to twice as fast as a CO2 laser source. Electra FL is easy to use and operate featuring LVD's touch screen control and user interface, Touch-L. A 19" touch screen and graphical user interface efficiently and effortlessly guide the user through all

necessary man-machine interactions. Touch-L also has a part programming and nesting feature to import parts directly to the control, apply cutting technology and nest sheets at the machine. Electra FL maximises uptime with an integrated shuttle table system or modular automation options which include a compact material warehousing tower (CT-L) inclusive of integrated load/unload system.

Key features

- High speed cutting in thin sheet metals
- 30 percent wall plug efficiency for low operating costs
- Multi kW high efficiency fibre laser source for dynamic processing
- Maintenance-free laser source
- No laser gas required for laser beam generation
- Simple beam path delivery
- Intuitive LVD Touch-L 19" touch screen control system
- Integrated shuttle table system
- Automation compatible.



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Rotary modules/drives: Compact powerhouses with integrated intelligence

On the basis of our experience with the first PowerCube generation, which has been successfully used in laboratory, research, and industry applications, Schunk has further developed the modules of the second PowerCube generation, placing greater focus on heavy-duty use in industry. With the PR 2, PDU 2 and PSM 2 high-performance rotary modules, Schunk, the competence leader for clamping technology and gripping systems, has expanded its mechatronic program with three especially compact drives with compact performance. All regulating



The next generation of PowerCubes: The PR 2, PDU 2 and PSM 2 intelligent mechatronic modules will convince you with maximum performance and minimum space requirements. The regulating and power electronics are completely integrated.

and power electronics have also been fully integrated into the new modules. This saves the need for an external controller, minimizes the cabling necessary and reduces susceptibility to errors.

Fast and simple commissioning: Equipped with standardized plug connections, the modules can be quickly and easily connected. Control can be provided via Profibus (up to 12 Mbit/s) or CAN-Bus (up to 1 Mbit/s). For commissioning and parameterisation via PC with the Schunk Motion Tool, the modules have a USB device connection. Addressing is done manually via an easily configurable rotary encoding switch. Initial module movements can be realised manually via a DIP switch. The status of each module can be seen on an LED display. Due to Harmonic Drive gears, the PR 2, which was designed as a rotary module, and the PDU

2, conceived as a linear axis drive, achieve very high torques of between 16 Nm and 184 Nm, depending on the size. For fast movement of small masses, the direct-driven PSM 2 can be used. At a torque of up to 0.7 Nm, the compact module achieves speeds of up to 4,800 rpm. Position, speed and torque can be individually controlled on all three modules. An increment encoder ensures high positioning and repeat accuracy. Positions approached can be reliably secured via an integrated holding brake. Two digital inputs have been provided for the evaluation of sensor signals.

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Next generation of compressor coolant technology

Ingersoll Rand has recently Ultra EL, a high-performance lubricant incorporating the latest performance-additive technologies. According to the company, the lubricant will provide various performance benefits when compared to other fluids available in the marketplace today. Ingersoll Rand claims Ultra EL is a high-performance compressor coolant based on a blend of PAG and POE base stocks and incorporates the latest performance additive Technology. This includes longevity and service life of 16,000 hours as well

as superior wear protection. The new generation of coolant technology for rotary screw air compressors is developed extensively over a period of three years during which every possible aspect was subjected to rigorous laboratory analysis, controlled compressor endurance tests, and field trials. The main goal of the development work was to produce a product that would last up to 16,000 hours in a rotary screw air compressor, twice the expected life of similar products available in the marketplace today.



New Ceramic Grade for Dry, High-speed Cast Iron Turning

Dry machining issues such as the inability to cut dry at higher speeds and the changeover cost continue to plague many a machine shop. In response, TaeguTec has unveiled a brand new ceramic insert turning line that has excellent oxidation resistance, high chemical stability as well as temperature resistance that extends tool life under high cutting speed conditions.

The AW120 ceramic grade inserts' economical characteristics and ability to increase productivity are facilitated by its design that is ideal for finishing, semi-finishing and roughing applications on cast iron under high cutting speed conditions.

More specifically, the AW120 was adapted as an optimal tool for the machining



“ More specifically, the AW120 was adapted as an optimal tool for the machining of cylinder liners where high cutting speeds under dry conditions are the norm.

of cylinder liners where high cutting speeds under dry conditions are the norm.

Once balanced with TaeguTec's cost reduction technology and advanced metal cutting strategies, manufacturers can hope to combine productivity of high-speed machining with the benefits of dry machining.

A cut above – and deeper – than the rest

TaeguTec recently expanded its highly successful head changeable Drill Rush line with a 12xD drill range for deeper hole drilling from a diameter of 12.0 mm-22.9 mm.

The polished flutes and twisted coolant channel enables smooth chip evacuation and improved chip control due to the widened chip gullet design. The 12xD holder characterized by high stiffness guarantees stable performance without deviation

or chattering during machining. Furthermore, the 12xD expansion offers higher productivity for deep hole drilling applications without the need for pecking cycles. The result? Accurate holes – repeatedly and economically!

To promote machining convenience in hole making applications, the new 12xD body can be accentuated with TaeguTec's recently released chamfering rings which drill and chamfer in a single operation in order to minimize cycle times as well as inventory and tooling cost for improved cost effectiveness.

The TaeguTec chamfering rings use two TT9080 specially treated, multilayered, physical vapor deposition coated CRNG



inserts on either side which can machine any type of alloy.

TaeguTec also supplies special plugs with an internal thread for coolant connections used on lathes that can be pressed into the cavity on the back end of the shank.

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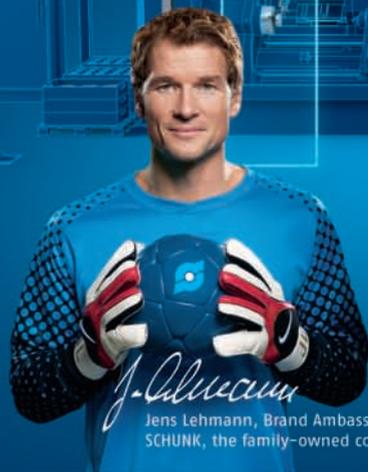
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