MMI MODERN MANUFACTURING INDIA

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The official magazine of Indian Machine Tool Manufacturers' Association

Partnered by:

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**SUSTAINABLE MANUFACTURING**

Building a Sustainable Future

**SPECIAL PURPOSE MACHINES**

Delighting Customers through Effective Communication

**REPORT**

DIEMOULD India 2014



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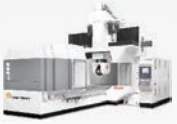

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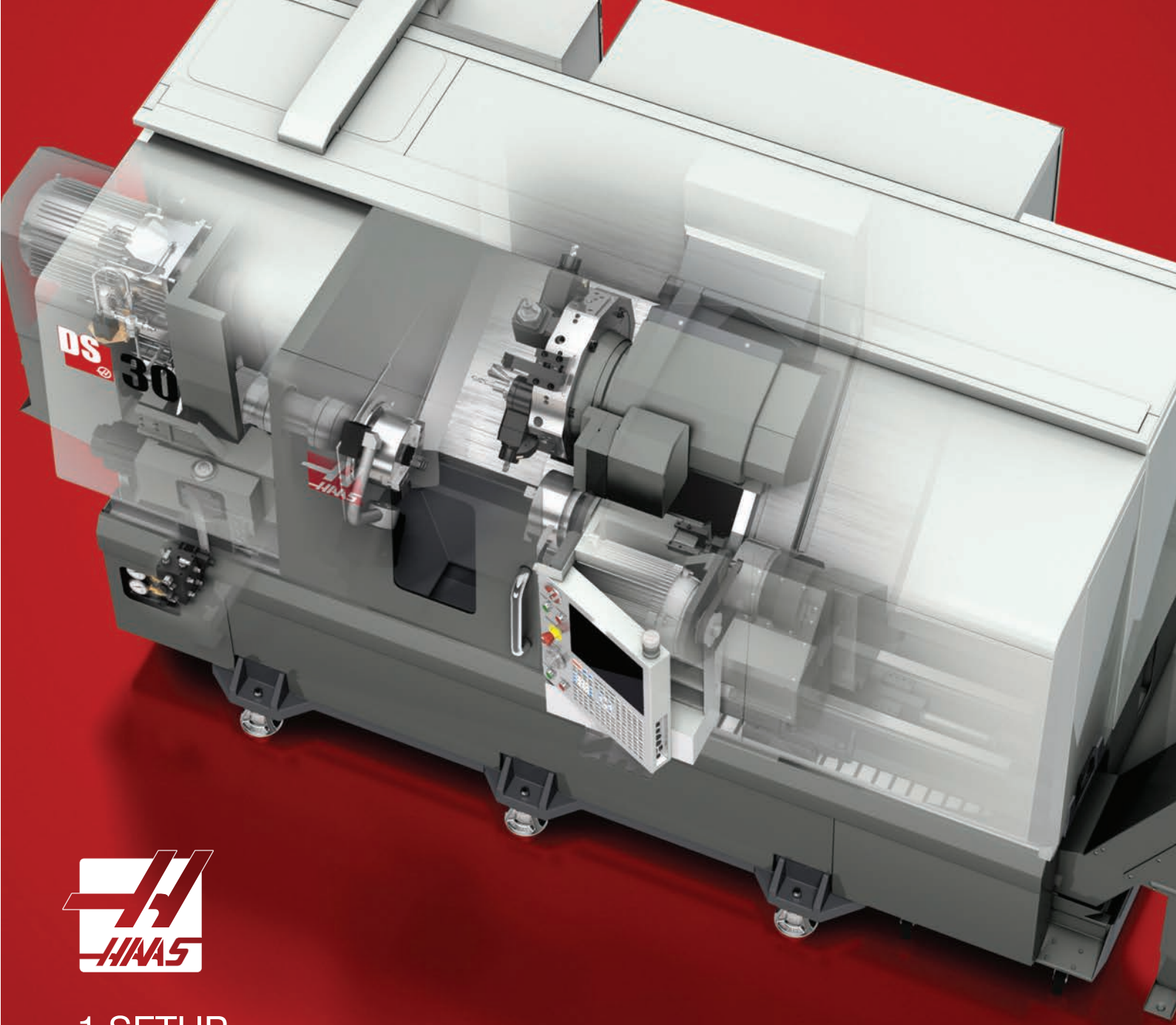
**Companies that are mentioned editorially in this issue**

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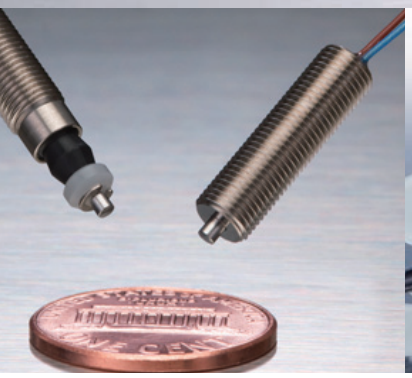
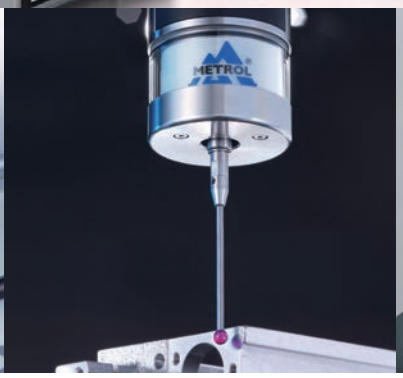
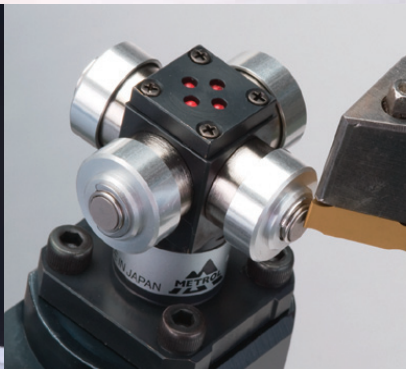


*Position Switches*


*Air Micro Switches*



*Touch Probes*



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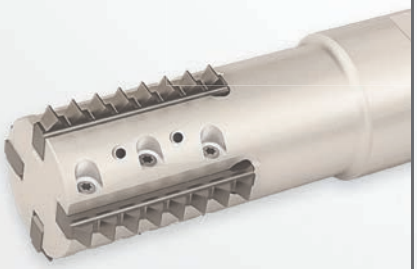

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L Krishnan
President, Indian Machine Tool Manufacturers' Association (IMTMA) and
Managing Director, TaeguTec India Pvt Ltd

# Winning in Turbulent Times

The machine tool fraternity teamed up in Goa in early May this year to look inwards and brainstorm about the emerging prospects in the near and long term; explore ways to ensure growth; and last but not the least network with a mission to forge stronger ties. The presence of visionaries, entrepreneurs, opportunists, pioneers, strategists, family businesses at the 5th Machine Tool Industry Summit organized by the IMTMA and held from May 1-4, 2014, resulted in gaining different perspectives of the industry. All participants voiced their views and ideas through various interactions, strategic sessions and experience-sharing moments.

The machine tool industry is evolving and with it the DNA of the traditional businessmen too is taking shape. The Summit enabled the participants to experience the true grit – the perseverance and will to survive against the tide; realize the significance of early focus on R&D that promises huge long-term benefits; share the joy of success of their counterparts; contemplate over the challenges faced and strategize to overcome those; and network with the industry veterans and leaders to emerge stronger.

The Machine Tool Industry Summits that have been organized over the years had proved very beneficial to one and all in the sector. Each of these Summits has been a milestone and has always looked forward to help the industry to stay on course. If you have missed the recently held Summit, you have a chance to catch up again in 2016.

The industry and IMTMA are making preparations in full swing for the upcoming Productivity Summit to be held in Chennai on August 20 and 21, 2014. We have received numerous entries from participants across the streams vying for the Productivity Championship Awards. My best wishes to all contestants, and even if you have not shared your productivity story this year, there is an opportunity to come and witness it all in Chennai this August.

Enjoy reading.

SORALUCE

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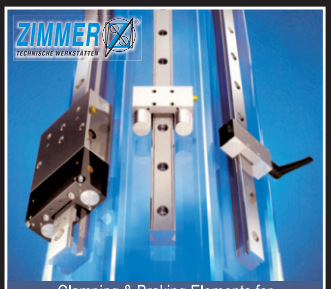

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Soumi Mitra
Editor
Vogel Business Media India
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# Fall Seven Times, Stand Up Eight

With Narendra Modi's landslide win, recently India's political canvass witnessed the most resounding election victory in the last 30 years. Drubbing the Nehru-Gandhi dynasty in a seismic political shift, the nationalist leader and his party earned a mandate for sweeping economic reforms.

According to Morgan Stanley, foreign investors betting on Modi regime have poured more than $16 billion into Indian stocks and bonds in the past six months and presently hold over 22 per cent of Mumbai-listed equities – a stake estimated at almost $280 billion. It is slated that the Indian markets got off to a roaring start, with the Rupee breaking below 59 to the US Dollar, an 11-month high, and the benchmark stock index jumping 6 per cent to a record high before paring its gains. No doubt India's stock markets got immersed in jubilant celebrations.

With the mention of celebrations, it is pertinent to remember that success don't come easy; the road is long, with several hardships and challenges to surmount on the way. It is believed that there are three ways to confront an obstacle – to get around it, over it, or through it. No matter how hard it seems, the longer we persist, the more likely our success will be. Many a time when we want to give up and go back to doing something else, we should keep in mind that success is to see it through to the end, and refuse to settle for anything less than our dream. Because tomorrow belongs to people who prepare for it today!

**"Dripping water hollows out stone, not through force but through persistence."**

In this backdrop, the May MMI issue brings to you interesting end-user stories reflecting the challenges and solutions that the companies arrive at together with persistence and determination. After all, is it not said that dripping water hollows out stone, not through force but through persistence.

Awaiting your valuable feedback, as we always do.

Happy reading!

**SM**

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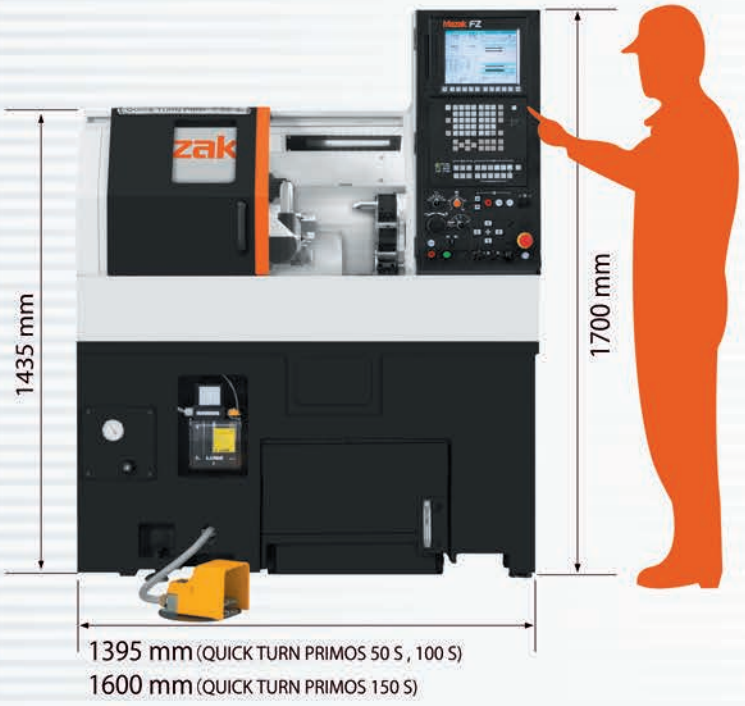


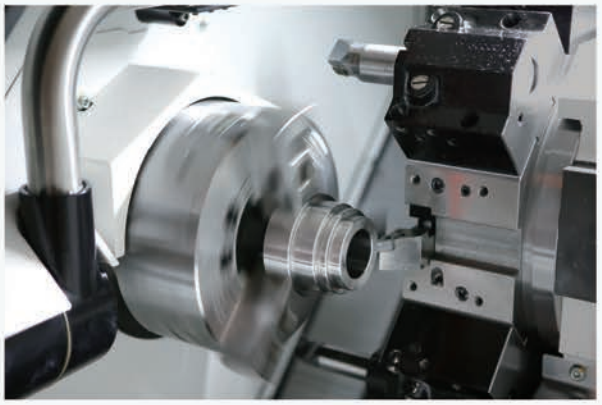

### Example workpieces

**Automotive component**
material/S10C
Size/Φ20mm×40mm

**Automotive component**
material/Stainless
Size/Φ100mm×20mm

**Automotive component**
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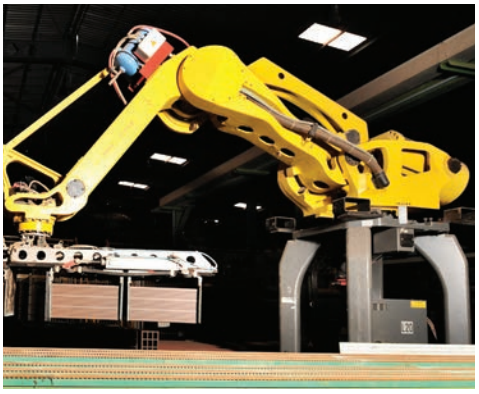

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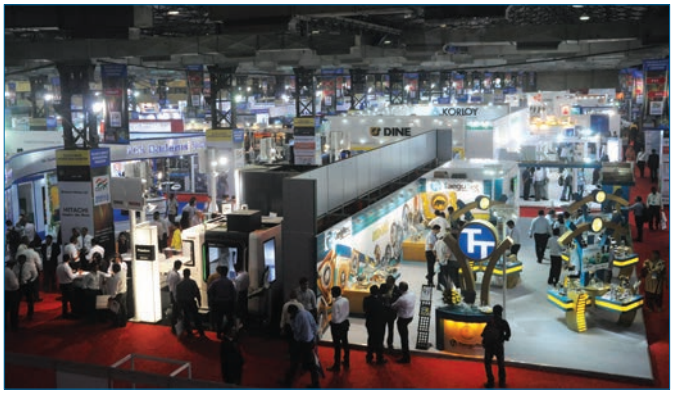
▶ **MANUFACTURING SOFTWARE:** Gun drilling machine design using SolidWorks software 56



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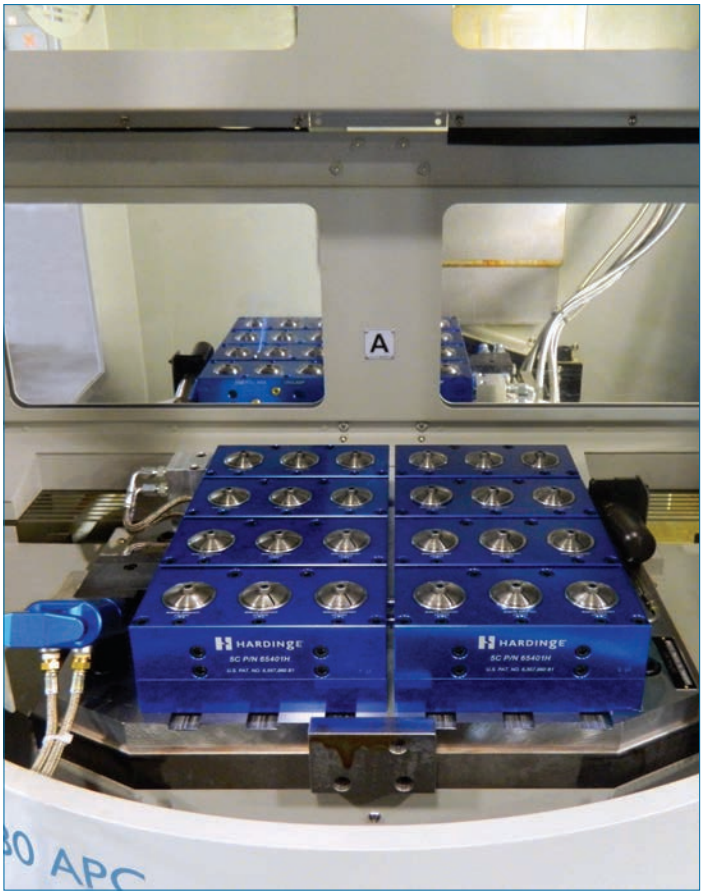

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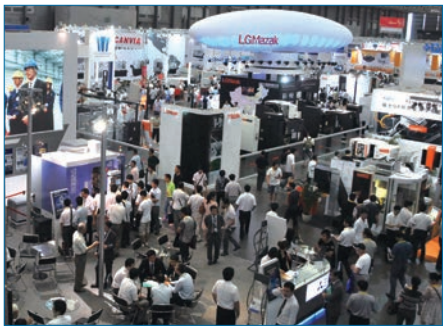

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## REGULAR



### CUTTING TOOLS



### HYDRAULICS



### SPECIAL PURPOSE MACHINES



### MANUFACTURING SOFTWARE



### SUPPLY CHAIN MANAGEMENT



### BEST MANUFACTURING PRACTICES

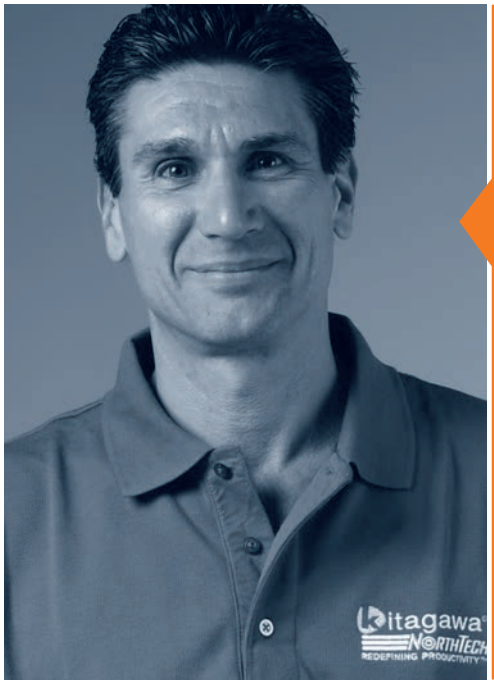


### EVENT REPORT



### EVENT PREVIEW

# COME TOGETHER.



**ROBERT DAVID**
Operations Manager
Kitagawa-NorthTech

**YEARS ATTENDING IMTS**
20

**GOAL FOR IMTS 2014**
I'm all about gathering information – on machines, products, processes, you name it. I believe the more info you can gather, the smarter you will be. There's no better place to do that than IMTS. Coming from a company that's focused on productivity, I have an appreciation for how much can be achieved in a week at IMTS.

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IMTS 2014

**COME TOGETHER.
LEAVE YOUR MARK.**

# Setting Yourself Apart & Truly Playing Your Part!

**"The biggest mistake a company can make when defining its brand is listening to its own needs rather than those of the customers. Constant re-evaluation is a requirement in defining the brand as change is inevitable."**

CEO, Micromatic Machine Tools Pvt Ltd, TK Ramesh

When you go shopping, why do you buy a certain product over one made by its competitors? How have the makers of that product been able to convince you that theirs is the best in the market? Or perhaps how have they convinced you that they are the only ones who can provide a solution to your needs?

## Branding – how and why

A key aspect of branding comes down to being able to set yourself apart from others. The 'brand' is the promise to deliver the same bundle of benefits (products & services) consistently. A good brand will not only deliver the bundle consistently but also deliver the message clearly, confirm your company's credibility, connect to your target prospects emotionally, motivate the buyer and establish user loyalty.

## Ensuring growth

Internally within your company, you need to increase revenues, have the right people working for you, groom talent to grow, eliminate waste in all aspects of your business, and innovate faster than the competition and also ally with the right partners.

Here again, the brand comes into the picture. Human beings are prone to pass judgment or make initial perceptions of everything. This usually determines whether or not one will want to do anything with your company, and hence it is difficult to shake of first impressions let alone bad ones. It is this behavior that influences how existing or potential customers and decision makers choose between alternatives open to them.

To succeed in branding, you must understand the needs and wants of your customers and prospects. You do this by integrating your brand strategies through your company at every point of public contact. The biggest mistake a company can make when defining its brand is listening to its own needs rather than those of the customers. Constant re-evaluation is a requirement in defining the brand as change is inevitable.

Take the example of drinking water. Companies have us believe that municipal water tastes bad and is not purified enough. They have us believe that even though some of the bottled water manufacturing companies are based in India, the water comes shipped from the Swiss Alps, have added minerals or that flavored water is good for you. That's how they have successfully branded themselves.

## Importance of developing a brand

Brand development is the ethos that your company stands for and must be made the foundational piece in your marketing communication. In order to perfect the image and message of your brand you must do the research to determine your target audience and how you want to be seen by that audience. Take for instance, your objective is to position your company as an industry leader. What measures should you take to achieve this? You could perhaps have members of your company speak at trade shows or events, schedule lectures at professional group gatherings within your industry, or write and publish articles in newspapers, magazines or online media.

Once you've determined your objectives, the next step is to build and develop your brand strategy by listing out how, when, and what you are going to do to accomplish and meet those brand objectives. Also, you need to define how you are adding value and nullifying the competition.

Most importantly, you need to keep revisiting your brand and making sure that it is reflecting the mission and goals of your company. Brand revision and recreation can either add life to your business or destroy it. Hence, it is very necessary to manage the process well and continuously. MMI

The views expressed by the author are personal and he can be contacted at rameshtkr@gmail.com



**DNM 400Ⅱ / 500Ⅱ / 650Ⅱ**

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# MAKING THE RIGHT MOVE?

Confused about safety levels or which automated processes to use? Have a read on technology solutions that could be applicable to you.

**As the procurement head for an oil company, I have already taken care of the basic instrumentation and process control system for setting up a tank farm to store petro-product. The HAZOP has also been conducted as per IEC 61511 standard. I am yet to procure additional instrumentation and decide on a safety system as defined in the Safety Requirement Specification. Please tell me what is meant by Safety Integrity Level (SIL) and is it applicable for a process or for system components?**

**Ahmedabad, Gujarat**

SIL is defined as a relative level of risk reduction provided by a safety function and is a measure of its performance. It is determined after a risk assessment analysis of a hazardous process. There are 4 SIL levels defined as per the standards IEC 61508 (functional safety of electrical/electronic/programmable electronic safety-related systems) and IEC 61511 (safety instrumented systems for the process industry sector). The SIL level is defined by the probability of failure on demand (PFD) in years or probability of failure per hour (PFH) depending on whether the process is on demand or continuous demand, respectively. The SIL level specifies the amount of mitigation needed to reduce the risk to acceptable levels.

The entire control loop must be taken into account and defined by a Safety Instrumented Function (SIF). The SIF with a specified SIL level has to be incorporated into the Safety Instrumented System (SIS) that comprises sensors, input signal modules, logic solver, output signal modules and final control elements (valves, switching devices, etc.). Thereafter, all the SIS design, operation and maintenance choices must be verified against the target SIL. This ensures that the SIS can mitigate the assigned process risk and bring the process to a safe state when safe operating conditions have been transgressed.

**The HAZOP for the terminal station of our plant has been conducted as per IEC 61511 standard. The SIL level is assigned for each SIF and the Safety Requirement Specification is ready. I am looking into the selection of a SIS for the terminal. However, one of the vendors informed me that only QMR CPUs are qualified and certified for my process. Is it necessary for a logic solver (CPU) to be classified as DMR/QMR/TMR or is the certification of a SIS to a SIL level independent of any specific technology?**

**MK Jadhav, Maharashtra**

It is not necessary for a CPU of a safety system to be incorporated with DMR/QMR/TMR technologies. There are various technologies in the market that have the capability to achieve a particular SIL level regardless of the technology involved. The requirement of a logic solver to achieve a particular SIL level depends on various factors such as safe failure fraction (SFF), hardware fault tolerance (HFT), probability of failure on demand (PFD) in years/probability of failure per hour (PFH) and proof test interval (PI). A major factor among these is the SFF, which is influenced majorly by the undetected diagnostic failures in a CPU/processor for logic solvers. SFF and HFT are inter-related to one another as per IEC 61508. Higher the SIL requirement with lower SFF, higher the requirement of an HFT for a logic solver and hence results in voting systems with dual/triple/quad architectures.

Over the years, technologies like flexible modular redundancy (FMR) in which the CPU through inherently built-in high diagnostics is able to achieve a high SIL level with no hardware voting. It also provides high diagnostic ability in IO modules, whereby flexible configurations independent of CPU are possible. This has proved to provide better availability levels than conventional dual, triple or quad systems and also allow multiple faults to be tolerated in the SIS without any degradation in SIL levels.

**We are an OEM catering to low-end special purpose machines. We need cost-effective automation controller with excellent functions and features. We also expect pan India service for the same since our machines are available all over India.**

**M Kulkarni, Pune**

There are few PLC brands, which can offer you such controllers. However, you need to check based on your requirements (performance) and input costs (price for the same) as well as ability of supplier to offer pan India service for the same. Such controllers provide Ethernet connection onboard, multi-axes control with easy to configure simple position control algorithm through high frequency outputs, in-built PID loops and auto tuners. Few leading players in the market offer a wide choice of selection of optimum controller based on one's requirements in a cost-effective manner.

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All responses mentioned above are provided by Siemens Ltd and are based on the information/data shared by the addressee; no liability whatsoever will be accepted for any consequences thereof.

You need any information or face any challenges, feel free to write to the below address:
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# Setting Sails for Higher Exports

The years spanning 2005 to 2010 witnessed a CAGR of 25 per cent in terms of exports as well as production rates recorded by the machine tool industry in India. The current Five-year Plan estimates the same growth for the period 2012-17. However, it is time to recalibrate strategies as the economy is growing merely by five per cent and the machine tool industry needs a 'power boost' to regain its glorious growth era. Identifying the biggest challenges on their radars, machine tool companies join hands with IMTMA to come up with probable solutions.

The manufacturing sector needs to grow at 2-4 per cent higher rate than the GDP if it is to be termed as the engine of growth for the economy. A working group for the Twelfth Five-year Plan estimated that the capital goods and machine tools sectors need to grow by at least 17-19 per cent for the period 2012-17. Sub-sectors such as machine tools, plastic machinery, dies/molds & tools, earthmoving & mining equipment, heavy electrical & power plant equipment, metallurgical, textile and process plant machinery and light engineering goods have been included in the working group of capital goods and engineering sector. The capital goods sector is extremely crucial for the development of the country's economy for the following two important reasons:

- It is considered as a strategic sector and development of domestic capabilities is essential from a national self-reliance and security perspective
- It has multiplier effect and has a bearing on the growth of the user industries as it provides critical input, i.e., machinery and equipment to the remaining sectors covered under the manufacturing activity.

## Indian exports

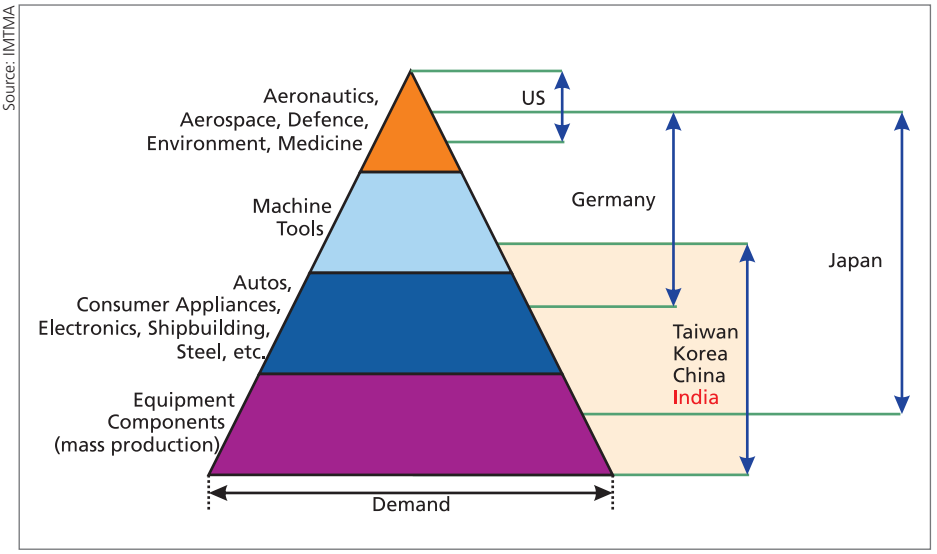
The capital goods industry contributes 12 per cent to the total manufacturing activity (which is about 15 per cent of the GDP). The share of Indian export is not at par with the global levels ranging from 0.1 to 0.6 per cent across sub-sectors. There is a tremendous scope for increasing exports.

Indian exports are currently targeted at two broad groups of countries, not grouped due to proximity but by the virtue of technical advancements. Both these groups pose challenges of varied nature. The first group comprises advanced countries that have high expectations in terms of technical specifications such as high quality, reliability, productivity, etc. This group includes European countries and the US. Many Indian exporters feel that their products are not up to the mark to cater to these regions' expectations. As a result, much progress needs to be made in terms of technology upgradation and production of the latest machines to reach a significant figure on the export charts.

The stiff quality norms, requirement of CE certification, 60hz compatibility, UL certification for all the components of the machine make this market more challenging. Indian companies do not yet make components with such specifications. Hence, they have to import the same under a high risk of adding cumulative cost of these components to the finished machine tool.

The second group of countries the Indian companies are exporting to include China, Korea, North Africa, Middle East, etc. The challenge here is to break the 'me too' syndrome as there is stiff competition from Japan, Taiwan and Korea. Speaking on the issue, Executive Head, Global Purchase – Jyoti CNC Automation, Rajkot, Suyog Gupta said, "Indian companies do not have their presence felt in these markets and a fresh start has to be made if a company desires to be recognized as a potential supplier, which takes time. Often the local dealers would not recognize the brand unless the company is present in

Source: IMTMA




Source: IMTMA

**India stands with Taiwan, China, Korea at the bottom of the pyramid when it comes to capital goods production**

the region for 3-4 years."

### Areas of improvement

In a different perspective, it is observed that Indian exporters focus to make timely delivery of products. This mindset may act as a deal breaker for future contracts. Countries sourcing from India, especially Europeans have to be pleased by following the agreed timelines if an exporter wishes to be in their good books.

It has also been noticed that Indian companies often do not display the latest technologies in the foreign markets, which keeps them away from grabbing attention of new customers. Some companies have already shown results by being represented in major trade shows and consistently displaying their top of the line, innovative technologies. "Jyoti has been able to make inroads into Germany as it has religiously been participating in shows like EMO since 2003. It is now that the company is being recognized as having the knowhow and product range," shared Gupta who is working towards making the company a net exporter from being a net importer in world trade. He aims at increasing the company's export quotient to 20 per cent in the overall Indian exports and is eying the markets in South East Asia, China, Abudhabi, Dubai along with Europe and US.

High cost of participating in trade shows outside India and a higher cost of maintaining an office or a showroom are the biggest challenges that a company might face when entering foreign markets. As pointed out by several smaller companies exporting machine tools and related items: "If solutions are available to Indian companies wherein they can rent in spaces being maintained by the government and the cost can be shared by companies wishing to be present in such markets for long durations without bothering about administration issues or local hassles, it would boost confidence in companies from SME segment."

### Facts and figures

- Major countries where Indian machine tools are exported include China, Germany, Italy, Turkey, Middle East, etc.
- Unique selling points (USPs) of India's machine tool exports - cost-effective, high quality, reliable and customized manufacturing solutions
- Major export potential segments – machining centers, grinding centers, SPMs, metal forming machines, GPMs, machine tool accessories & cutting tools, and tooling systems

### Government initiatives

Similar exercises are taken up by governments and trade bodies as initiatives to provide impetus to facilitate exports. Tech centers and representative offices in China, India, Poland and Mexico are maintained wherein the business development department also assists the members in trade missions and international trade shows. In such instances, windows of opportunities are opened, and sales and contacts made on a level that might be impossible for individual companies to establish on their own. To enhance growth of capital goods from India, EEPC can set up showrooms abroad where Indian companies can rent space to exhibit and promote their products. The establishment and administrative responsibility of the showrooms can be with EEPC thus relieving exporting companies from this burden. IMTMA sees this as a long term strategy to increase exports from India. IMTMA's export development cell invites members to contact for more details regarding the export development program. MMI

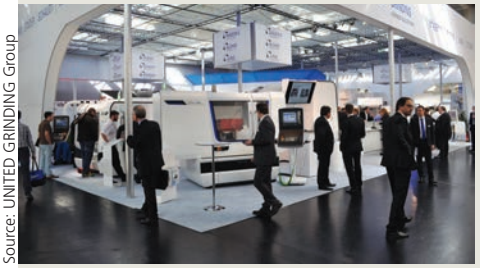
# EIB Loans to IREDA and IIFCL granted with Government of India Guarantee

**Luxembourg** – The European Investment Bank (EIB) has signed two guarantee agreements with the Government of India for two loans that will contribute to mitigation of climate change in India. They were signed by Director-Operations (Asia and Latin America), Francisco de Paula Coelho and Joint Secretary of Department of Economic Affairs, Ministry of Finance, Rajesh Khullar. The EIB considers this a major milestone and is looking forward to enhance the EIB's lending activities and intensifying the financial cooperation with India.

The Bank signed a long-term loan of €200 million with the Indian Renewable Energy Development Agency (IREDA) to help finance projects in the renewable energy and energy-efficiency sector in the country. Also, another Framework Loan of €200 million was signed with the India Infrastructure Finance Company Ltd (IIFCL) supporting projects in the field of climate change mitigation. These two Framework Loans guaranteed by the Republic of India will support the EU-India Strategic Partnership in the area of climate change, fostering the development of renewable energy and the efficient use of energy.


Source: EIB

**The loans will increase economic growth and development in India**



Source: UNITED GRINDING Group

**UNITED GRINDING Group's booth at GrindTec 2014**

# UNITED GRINDING Group Continues its Success at GrindTec 2014

**Messe Augsburg, Germany** – UNITED GRINDING Group impressed visitors at GrindTec 2014, continuing the success it achieved at EMO 2013. With its largest exhibition stand to date, measuring 600 m², five companies of the UNITED GRINDING Group presented a total of 18 machines with innovative new designs at the trade fair for grinding technology in Augsburg.

Among the twelve tool grinding machines from Walter and EWAG, the Helitronic Power Diamond amazed visitors with the Diamond-Plus option for variable process speed. Also, the four cylindrical grinding machines, including the newest and smallest S11 from Studer, demonstrated the combination of compact design with Swiss precision.

And with two surface and profile grinding machines, the brands Blohm and Jung substantiated their claim to high performance and the highest level of profile accuracy, i.e., with the new J600.

# ACMEE 2014 to open New Avenues for Machine Tool Sector

Source: AIEMA

**"With world leaders in the field of machine tools participating, ACMEE 2014 has potential to act as the best market place for sourcing the latest and the best in machine tools."**

**Chairman, ACMEE 2014, S Chandrasekaran**

**Chennai** – ACMEE 2014, the 11th International Machine Tools Exhibition, is slated to be held at the Chennai Trade Centre, Chennai from June 19-23, 2014. Organized by the Ambattur Industrial Estate Manufacturers Association (AIEMA), it is a leading trade show on manufacturing technology. The event will feature CNC machines, CNC and PLC controls, CAD/CAM systems, special purpose machines, cutting tools and accessories, hydraulics/pneumatics, low-cost automation, motors, machine tools, material handling systems, power tools, testing and measuring equipment, industrial robots, energy-saving solutions, etc.

The exhibition will bring to the fore the latest trends and innovative technologies in the machine tool industry that can contribute enormously towards the growth of this manufacturing fraternity. It will also provide appropriate solutions to those seeking specific products.

Highlighting its importance, Chairman, ACMEE 2014, S Chandrasekaran, noted, "With world leaders in the field of machine tools participating, ACMEE 2014 has potential to act as the best market place for sourcing the latest and the best in machine tools." Moreover, there will be technical seminars held for knowledge sharing. The show will witness participation from 25 countries, and will represent two country pavilions from Korea and Taiwan.

AIEMA was formed in 1963 to cater to the needs of the micro, medium and small-scale enterprises situated in the Ambattur Industrial Estate. More than 2,000 manufacturing units – offering a wide range of products and services, auto components, industrial machinery, electrical machinery, machine tools, molds and dies, and welding equipment among others – are functioning in the estate. As the main representative body of the units in the estate, AIEMA has completed 50 years of service to the cause of the industry.

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# Mitsubishi Electric India starts CNC Manufacturing Facility

**Pune** – Mitsubishi Electric India (MEI) announced the indigenous sub-assembly of CNC at its manufacturing facility in Pune. The newly built facility was inaugurated by Executive Officer, Group President, Mitsubishi Electric Corporation, Hideyuki Ohkubo.

This expansion supports MEI's strategy of establishing manufacturing and marketing units close to customers, thus reducing delivery lead time. With an eye on rapid deliveries, low inventory cost for customers and the aim to accommodate last moment changes in delivery scope, Mitsubishi CNC has started assembly manufacturing that would help all Indian machine tool builders.

The objective of this manufacturing facility is to enable MEI to produce parts of CNCs and assemble them with the same evaluation process, quality standards and assurance as offered by Mitsubishi Electric Corporation, Nagoya Works, Japan. With this new set-up, Mitsubishi CNC is all geared to target the Indian market in an aggressive way, and thereby enhancing Mitsubishi Electric's commitment towards the Indian economy.

Source: Mitsubishi Electric India

**Mitsubishi Electric India's new CNC manufacturing facility in Pune**


Source: Haas Automation

**The 150,000th CNC machine tool from Haas Automation**

# Haas Marks the Milestone of Supplying its 150,000th Machine

**Zaventem, Belgium** – Haas Automation recently celebrated building and supplying its 150,000th CNC machine tool: the DS-30SSY dual spindle turning center with Y-axis. At a special handing-over ceremony, Managing Director, Haas Automation-Europe, Alain Reynvoet attended the Manufacturing and Automation Expo 2014, Stockholm, to meet the owners of Swedish company Claesson Engineering—a general, precision engineering business—to present them with a commemorative plate to mark the occasion of their purchase of this very special machine tool.

"Installation of the 150,000th machine is a signal event for Haas Automation," said Reynvoet. "The fact that it has been bought by a European company – in the relatively high-cost region of Scandinavia – is further proof that our new generation of products, combining value, performance, reliability and support are the right ones for any market, however tough the trading conditions," he added.

# German Vendors Fill Need Gap in Mexico

**Frankfurt am Main** – León and Mexico City were the two venues for the VDW's 2014 technology symposia in the high-growth market of Mexico. From March 26, 2014 to April 1, 2014, 23 German machine tool manufacturers showcased their products and solutions for the Mexican automotive industry and its component suppliers, the mechanical engineering sector, the aviation industry, metalworking plants and other customer groupings.

VDW and the German Chamber of Foreign Trade predict continually high growth potential for the Mexican market. "Our symposium came along at the right time for demonstrating the performance capabilities of our sector a second time after 2009, and to position ourselves with quality against our competitors," averred Manager-General Affairs, VDW - German Machine Tool Builders' Association, Klaus-Peter Kuhnmünch.

Executive Director, German-Mexican Chamber of Foreign Trade, Johannes Hauser added, "Apart from the VDW, no one has organized a bilateral symposium of their own on such a large and detailed scale as the German machine tool industry in León and Mexico City." In all, the symposium welcomed around 280 customers at the two venues, all of whom were keen to see the products on offer.

Source: VDW

**Manager-General Affairs, VDW - German Machine Tool Builders' Association, Klaus-Peter Kuhnmünch talking to the press**

# Bengaluru to host ALUCAST 2014

**Pune** – ALUCAST 2014 will take place from December 4–6, 2014, and will be held at the Bangalore International Exhibition Centre (BIEC), Bengaluru. Organized by The Aluminium Casters' Association of India, the event will be one of India's most active industry forums that connect the industry members. President, ALUCAST, Prasan Firodia is upbeat about the scope and future of the Indian die-casting industry.

He added, "India is being increasingly seen both as a manufacturing and sourcing hub for automotive giants. There is an enormous growth potential for the domestic market and opportunities galore for international companies looking at India. As an association, we strive to provide a global forum for Indian casting producers on matters of common concern and interest. With the upcoming edition of ALUCAST and our association with NürnbergMesse, we hope to achieve this."

Sonia Prashar, Managing Director, NürnbergMesse India, delighted with the possibilities, observed "We are glad to be associated with ALUCAST India 2014. The spectrum of products and services to be exhibited by the participating companies and institutions will be supplemented with additional information and networking opportunities at the conference – a perfect combination."

Source: ALUCAST

**President, ALUCAST, Prasan Firodia**

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# Machine Tool Design Programmes from IMTMA

**IMTMA Design Institute :** IMTMA has taken a positive initiative in providing state of the art facilities and industrial expertise to establish a high-end Design Institute for the cause of moulding fresh engineers into specialized machine tool designers. IMTMA Design Institute training programmes are structured very systematically to provide the participants an in-depth knowledge in the subject of machine tool design and an orientation of the entire Machine Tool Industry. This is complimented by hands-on group projects that emphasize the development of practical design skills of the candidates. The well researched curriculum is endorsed and taught by subject matter experts making it the only course of its kind in India.

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- **RAPID [6 WEEKS] Schedule : 10th November 2014**
  **FEE :** IMTMA MEMBERS: INR 35,000 | OTHER COMPANIES: INR 40,000 | INDIVIDUALS: INR 25,000| (+ 12.36% Service tax)
- **ELECTRONICS [2 WEEKS] Schedule : 9th February 2015**

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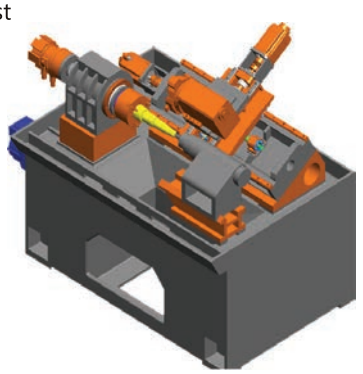

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# Outpacing the Competition

The 2014 World Machine Tool Output and Consumption Survey shows that the US machine tool market has outpaced the rest of the world during two of the last three years and is forecasted to grow faster in 2014.

As an indicator of the health of manufacturing in a country, a growing market for machine tools is a positive sign. For this reason, the prediction that US consumption of machine tools will grow 15 per cent in 2014 is heartening. This level of investment is clear evidence that American manufacturing is undergoing a resurgence.

Let's start looking at the numbers, as reported in the 2014 World Machine Tool Output and Consumption Survey.

In general, there has been a recent turnaround in world machine tool consumption. After growing in 2010 and 2011, world machine tool consumption has contracted for two consecutive years. This rate of contraction in world consumption was slightly faster in 2013 (-7.8 per cent) than it was in 2012 (-6.1 per cent).

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Modern Machine Shop
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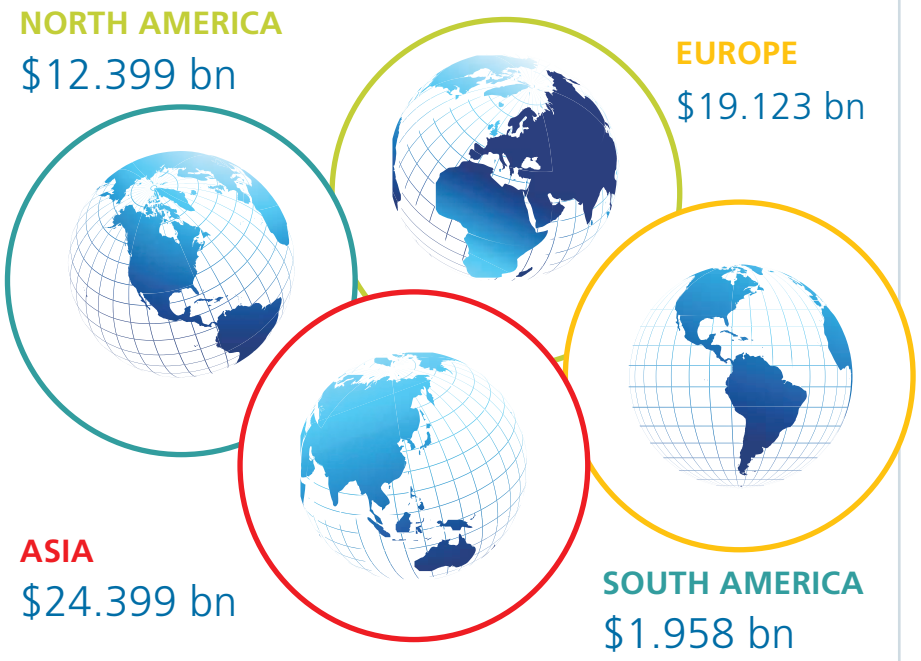
However, based on several leading indicators, the world machine tool consumption has been forecast to grow by 6.2 per cent in 2014 to about $58,300 million (refer Chart 1). When calculating region and world totals, the top 25 consuming or producing countries from that year are taken into consideration. So, for example, total world consumption in 2002 is from a different set of countries than the total world consumption in 2010. This provides a reasonable approximation because the top 25 consuming or producing countries account for roughly 95 per cent of all consumption and production.

This year's data on production, exports and imports was collected from 27 countries, which consume and produce virtually all of the world's machine tools. Consumption is calculated by adding imports to and subtracting exports from production. The data typically is reported in local currencies and then converted to US Dollars. After converting to US Dollars, all of the data in the 2014 survey was also inflation-adjusted using the Bureau of Labor Statistics' Producer Price Index for capital equipment to provide a better historical comparison.

Unlike the rest of the world, consumption and production in China includes a significant portion of non-CNC machines. Therefore, to provide an apples-to-apples comparison, the consumption and production totals from China have been adjusted for all years to remove the non-CNC part of the machine tool market.

## 2014 FORECASTED CONSUMPTION




### WHY THE INCREASE?

The primary reason that consumption will increase in 2014 is money supply growth. All top 25 consuming countries experienced an increase in money supply in 2013, with the US growing second fastest.

Source: mmsonline.com

### Leading indicators point toward growth in 2014

The 2014 forecast was created using the three most important leading indicators of machine tool consumption—money supply, capacity utilization and industrial (or manufacturing) production. For most countries, all three of these data points are available; however, for a few countries capacity utilization is not calculated.

Of these three indicators, money supply is the most important. No matter the country, the money supply rarely contracts. So, it was no surprise that in 2013 the money supply grew in every one of the top 25 consuming countries. But, in 11 of those countries, the money supply was growing at a double-digit rate. (The US ranked second with a 22.9 per cent increase in its money supply in 2013.)

Further, in 16 of the countries, the money supply was growing at an accelerating rate. It is this accelerating growth that is indicating stronger machine tool consumption for 2014. After money supply, capacity utilization is the next most important leading indicator. Twenty-one of the top twenty-five consuming countries report capacity utilization (excluding China, Russia, Taiwan and India), and it grew in just four of them in 2013.

But, in the remaining 17 countries, the rate of change was moving in a direction that indicates growth in machine tool consumption this year.

Industrial production is also an important leading indicator for machine tool consumption, although it has the weakest link to consumption of the three. For 2014, it is providing more of a mixed signal than either money supply or capacity utilization. In 11 of the top 25 consuming countries, production is growing, and in the remaining 14, the rate of change in production is moving in a direction that indicates stronger machine tool sales this year.

### World consumption highlights

In 2013, the top five consuming countries remained the same, although their order did change in case of some. Despite contracting the last two years, China remains the world's largest machine tool market. Having grown two of the last three years, the US has narrowed the gap with China but remains the second-largest market. China eclipsed the US as the No. 1 consumer in 2009, and the US lost more ground in 2010, ending that year just 45.9 per cent the size of the Chinese market. Since 2010 though, the US has gained ground on China every year. In 2014, because the US is expected to grow by 15 per cent while China is likely to remain relatively flat, the size of the US market will be 81.4 per cent of the Chinese market.

While the top two positions remained unchanged, there was movement among the other three top consumer positions. In last year's survey, Germany was the fourth-largest consumer of machine tools, but Germany's consumption grew 8.4 per cent in 2013, bumping it up to the position of

## WORLD MACHINE TOOL PRODUCTION & CONSUMPTION


**Chart 1: It compares historic world machine tool consumption and production in real Dollars. Note that production is almost always higher than consumption. Basically, this gap is the amount of inventory held by machine tool builders. Careful study of the chart shows that faster the industry is growing or contracting, greater the amount of inventory that is held by builders.**

Source: mmsonline.com

## WORLD MACHINE TOOL PRODUCTION & CONSUMPTION

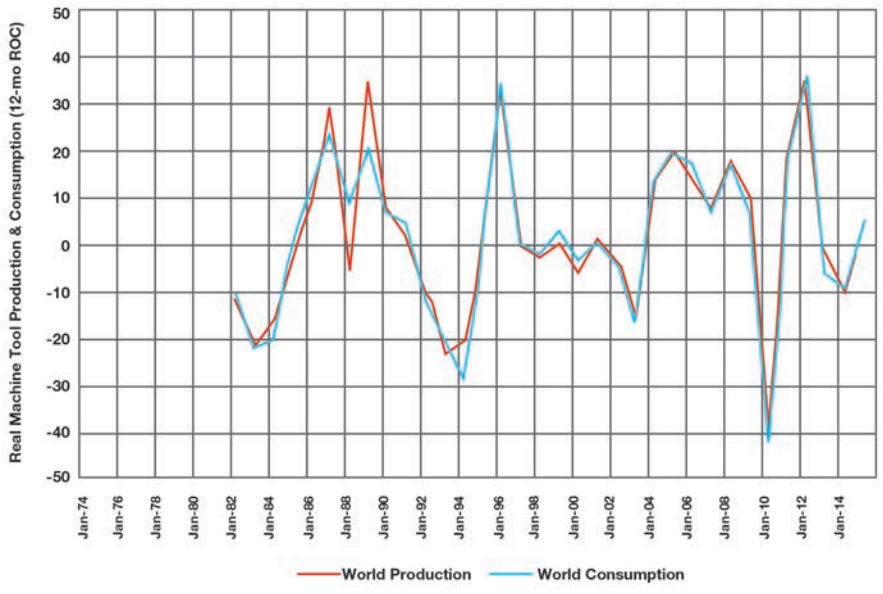



**Chart 2: Typically, the rates of change in consumption and production are almost identical. However, in 2012, world production contracted at a slower rate than consumption, which led to falling machine prices in 2013. In 2013, supply and demand came into a better balance, resulting in firmer prices of machine tools by the end of 2013.**

Source: mmsonline.com

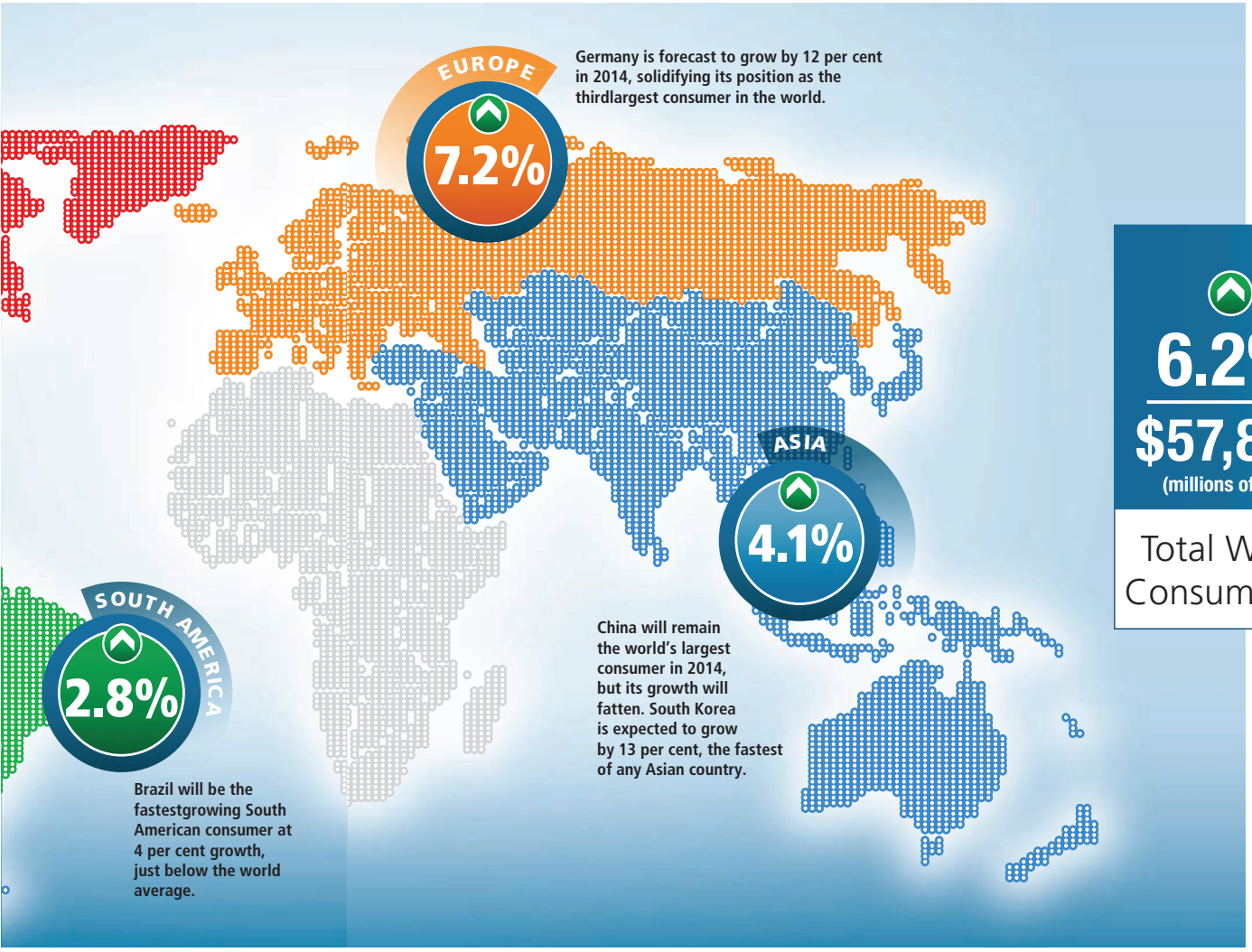

third-largest consumer of machine tools in the world. Germany is likely to grow by 12 per cent in 2014, retaining its No. 3 position.

Even though its consumption was relatively flat in 2013, South Korea also moved up one spot in this year's survey to No. 4, and it is expected to grow by 13 per cent in 2014.

With both Germany and South Korea moving up one position, Japan fell from third to the fifth-largest machine tool consumer in 2013. This is a further drop from its No. 2 position in 2011. Since then, Japan's consumption has fallen by almost 45 per cent. In 2013, its consumption was less than $5 billion (in real Dollars) for just the second time since 2003. This year, however, Japan is likely to grow by 6 per cent, or about the world average.

Although it is still not among the top five markets for machine tool consumption, Mexico made the largest jump in the 2013 rankings to No. 6. According to the 2013 survey, Mexico was the tenth-largest consumer with $1,361 million in 2012. This year's survey includes revised data for 2012 and shows that Mexico consumed $2,246 million of machine tools in 2013. The consumption forecast in Mexico indicates a slight decline of 8 per cent to $2,077 million. Yet even with that decline, 2014 would be the third year in a row that Mexico consumed more than $2,000 million worth of machine tools.

Of all the top 25 consuming countries, India fell the furthest in the 2013 rankings, dropping from sixth to eleventh in the world.




Source: mmsonline.com

Consumption in India has fallen from $2,627 million in 2011 to $1,441 million in 2013, or 45 per cent, and it is predicted that it will continue to contract in 2014, but the rate of contraction will be slower.

## World production highlights

It is very unusual for the rates of change in production and consumption to be substantially different from each other (refer Chart 2). Just like world machine tool consumption, worldwide the production fell for the second year in a row in 2013.

The contraction in production was significantly slower than the contraction in consumption in 2012, but it fell at a slightly faster rate than consumption in 2013. In 2012, world production fell by 1.8 per cent, and this significantly slower contraction in production resulted in overproduction of machine tools in 2012. This in turn caused machine tool prices to fall rather significantly in 2013.

In 2013, however, supply and demand came into a better balance. Because production fell at a slightly faster rate than consumption last year, by the end of 2013, machine tool prices, at least in the US, were improving from what they were a year earlier.

Going by the machine tool consumption forecast mentioned here, builders will need to produce $73,735 million of machine tools for the rate of growth in production to match the rate of growth in consumption, which it has historically done.

While the top five machine tool producers remained the same in 2013 as the year before, only China holds the exact same position in the rankings at No. 3. Its production has contracted at a moderate rate each of the last two years.

Germany was once again the world's largest machine tool producer, returning to the No. 1 spot for the first time since 2009. Production in Germany increased about 5 per cent in 2013 from 2012.

Japan fell from the top position, which it had held for the last three years. Production in Japan peaked in 2011 at $18,484 million, but it had fallen all the way to $12,326 million by 2013, a decline of roughly 33 per cent.

In 2012, Italy held down the No. 5 spot, but it moved up to the position of fourth-largest producer in the world in 2013. Production in Italy has been relatively unchanged the last three years.

South Korea fell one spot to No. 5 last year. Like Italy, South Korea's production has been relatively stable the last three years, and for the first time in the country's history, it has produced more than $5,000 million of machine tools for three consecutive years.

In addition to the consumption and production data, the 2014 World Machine Tool Output and Consumption Survey contains export and import data for each of the 27 reporting countries. MMI

# Forming a New Technology Roadmap

An international exhibition dedicated to the metal forming machine tool industry and related technologies, LAMIERA is all about innovation, sustainability, successful business partnerships and many more. During the 17th edition of the event held at Bologna, Italy, from May 14-17, 2014, President, UCIMU-SISTEMI PER PRODURRE, Luigi Galdabini offers insights into how it serves as a single point of reference to all operators in the manufacturing industry as a whole.

**How is the Italian metal forming machine tool industry currently faring, especially with regard to the export-import scenario?**

**Luigi Galdabini:** In 2013, Italy produced forming machine tools worth €1,962 million, recording a 7.9 per cent decrease when compared to 2012. Despite the decline, Italy consolidated its leading position in the sector, ranking third among international manufacturers after China and Germany, but ahead of Japan, Korea and the US.

According to the 2013 final estimates, Italian exports of metal forming machines decreased by 7.4 per cent as against the previous year. However, exports comprise a huge share of the machines manufactured, amounting to 66.5 per cent of the total production. Curving and bending machines followed by presses are exported on a large scale.

The main outlet markets for the sector include the US, marking an 11 per cent increase compared to 2012, followed by China (12.5 per cent). The percentage of exports in the metal forming sector (of the total machine tools and production systems) has been estimated at 40.9 per cent.

The exports to Turkey and Mexico witnessed a rise at 13.6 per cent and 4.8 per cent respectively. However, on the downside there was a decline in sales to Germany (-19.8 per cent), Russia (-24.5 per cent), Brazil (-24.4 per cent), India (-20 per cent), France (-20.3 per cent) and Poland (-29 per cent). Refer Table 1.

The import figures touched € 111 million. The sector generated a positive trade balance for a value of € 1,194 million, equal to almost half of the total machine tool trade balance.

**With Italy ranking third among international metal forming machine tool manufacturers, how does a show like LAMIERA aid in boosting the industry prospects?**

**Galdabini:** Considering the fact that Italy is the second-largest consumer market in Europe, it is an ideal destination for hosting a show like LAMIERA, which is one of the most qualified exhibitions dedicated to the metal forming machine tool industry and the technologies developed for the processing of sheet metal.

The trade show has always been a point of reference for the end-users encompassing a wide range of sectors right from general mechanics to metallurgy; machine tools to automotive; household appliances to building; and food and packaging sectors to energy and aerospace, among others. The conferences and technical sessions conducted concurrently

**"Globally, the companies are keen to invest in solutions that ensure the best machine performance to consumption ratio." - Luigi Galdabini**

along with the event play a humungous role in encouraging knowledge exchange.

**Please touch upon the key highlights of the 17th edition of the exhibition?**

**Galdabini:** Organized by CEU-CENTRO ESPOSIZIONI UCIMU, the biennial event is promoted by UCIMU-SISTEMI PER PRODURRE, the association of Italian manufacturers of machine tools, robots and automation systems. About 370 companies, with 40 per cent overseas representation, displayed a large spectrum of products spanning over an area of 35,000 sq mt at the 2014 edition of LAMIERA. The products showcased included machines related to sheet metal forming; welding; cutting and oxy cutting; bar, tube and profile processing; presses, shearing and punching; treatment and finishing; components and accessories, etc.

Together with the Italian exhibitors, the event witnessed manufacturers from Germany, UK, Spain, USA, Switzerland, The Netherlands, Austria, France, Turkey, Belgium, Ireland, Australia, China, Denmark, Finland, Japan, Greece, Monaco, Romania and Taiwan.

Russia was the country of honor and the event aimed at opening up new avenues of cooperation between the two nations by exploring new partnership opportunities among Italian and Russian companies. Delegations from Brazil, India, the US and Turkey, which are among the main markets preferring the 'Made in Italy' brand, also marked their presence at the show.

**In what way LAMIERA helped promote sustainable innovation?**

**Galdabini:** Sustainability, achieved through the development of systems capable of rationally exploiting resources and minimizing the utilization of energy, raw materials and other scarce means, is nowadays a determining factor in the purchasing decisions in all the segments of the manufacturing sector. Globally, the companies are keen to invest in solutions that ensure the best machine performance to consumption ratio.

Towards promoting sustainability, LAMBDA SOSTENIBILITÀ was a key attraction of this edition, dedicating a special area to showcase the commitment of the sector towards eco-compatible production. Through this space, research centers, universities, enterprises and start-ups could compare opportunities and ways of manufacturing machineries, production systems and connected technologies capable of fulfilling social, environmental and economic sustainability requirements.

The 500-sq mt of exhibition space allocated to LAMBDA focused on three areas:

**Sustainable Innovation:** It was dedicated to the new technologies in the sector and enabled research centers, universities, European projects and start-ups to present solutions, management methods and systems ready for industrial use. Some of the participants in this area included Associazione Tecnica dell'Automobile - ATA (Technical Automobile Association), CNA Innovanet, Centro Ricerche Fiat - CRF (Fiat Research Centre), Fraunhofer IWU, IAM-Polo Automotive, Quadratum, Safen Fluid & Mechanical Engineering, Siri – the Italian Association of Robotics and Automation, STANIMUC, University of Bologna, etc.

**Blue Philosophy in LAMIERA:** It was dedicated to the introduction of (already developed) technologies and processes centered on eco-compatibility from companies taking part at the event and which are awarded with the UCIMU Blue Philosophy seal. This seal is awarded to UCIMU associate member companies capable of meeting certain quality criteria, including the rational exploitation of resources and minimum use of energy and raw materials for manufacturing purposes.

**Comparing Ideas:** This area inspired knowledge transfer and debates on the most interesting and current topics related to the sector, comparing the ideas of enterprises with that of the research and training sectors.

**What have been the latest additions at the show?**

**Galdabini:** A major new attraction of the show was the BLECH ITALY, an area dedicated to the steel, metal alloys and non-ferrous materials manufacturing chain. Through this initiative, the exhibition aimed at moving beyond the limits of machine tools to also cover materials that are used and processed by them, with the objective of providing an even more complete and exhaustive exhibition itinerary for those who consider LAMIERA as a tool to define their investment plans in machinery and production technologies. MMI

**PERSONAL**

"Through the BLECH ITALY initiative, the exhibition aimed at moving beyond the limits of machine tools to also cover materials that are used by them to provide an exhaustive exhibition itinerary for those who consider LAMIERA as a tool to define their investment plans in machinery and production technologies."

Luigi Galdabini

**Table 1: Italian Exports of Metal Forming Machine Tools**

| | Countries | 2013 | Variation on 2012 | Percentage |
|---|---|---|---|---|
| 1. | United States | 133.6 | 11.0% | 10.2% |
| 2. | China | 117.3 | 12.5% | 9.0% |
| 3. | Germany | 115.8 | -19.8% | 8.9% |
| 4. | Russia | 76.7 | -24.5% | 5.9% |
| 5. | Brazil | 62.9 | -24.4% | 4.8% |
| 6. | Turkey | 58.4 | 13.6% | 4.5% |
| 7. | India | 52.3 | -20.0% | 4.0% |
| 8. | France | 51.8 | -20.3% | 4.0% |
| 9. | Poland | 39.8 | -29.0% | 3.1% |
| 10. | Mexico | 29.9 | 4.8% | 2.3% |
| | **Total Export** | **1,304.2** | **-7.4%** | **100.0%** |

Source: Centro Studi & Cultura di Impresa UCIMU-SISTEMI PER PRODURRE

**Data in million Euros**

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# Value-added Services Hold the Key to Success

Though Mitsubishi has entered the Indian market recently, it has captured the customers' attention due to its unique offerings. General Manager, Mitsubishi CNC Business - India, Takahide Yoneda gives insights into the Indian CNC market scenario and the technologies offered by the company to meet the industry requirements.

### How is the CNC market faring in India?

The economic growth that India has been registering consistently over the last few years has had a favorable impact on the machine tool market in the country. The consumption and production of machine tools have doubled in the last ten years. Simultaneously, there has been an increase in the number of imported machines. Hence, we believe that the Indian market has huge potential. The peculiarity of the market is its price sensitivity, which will continue to remain so in the coming years.

Source: Mitsubishi Electric

**General Manager**
**Mitsubishi CNC Business - India**
**Takahide Yoneda**

Mitsubishi Electric Corporation entered the Indian CNC market in 2012 through its 100 per cent subsidiary - Mitsubishi Electric India Pvt Ltd. Though relatively new in the category, the company's CNC division has changed the machine tools sector, machining and manufacturing with its advanced technologies and solutions. True to its mission statement, 'Best Partner for Your Success', Mitsubishi CNC aims to act as the best partner to its clients by supplying advanced technologies, optimum solutions and solid support. With its long stint in the global market, it has huge scope to leverage on the potential in the Indian market. As a leading CNC provider, it provides optimum technologies and support for users taking a step forward to ensure a highly successful future. In order to increase our market share in India significantly and expand the CNC business, we continue to invest in this market.

To reach the pinnacle of success, it is essential for companies to upgrade their systems for improving production efficiency and product quality. However, today, we see companies that are still attempting to establish their market shares by incorporating the latest technology in order to increase brand value. Mitsubishi supports its customers with advanced technologies, which enable reduction in cycle time and high accuracy in cutting operations.

### What value-added services does the company offer to its clients?

The advantage of choosing Mitsubishi CNC is that we offer optimum solutions to customers. For example, along with the CNC solutions, we can also customize and offer factory automation products such as PLCs, VFDs, LVS, robots, etc,. Additionally, software solution from our partner venders improves efficiency.



What is more important is customer service that we offer before and after the sales. Our company guarantees lifetime support related to the solution that the customer has purchased. Mitsubishi CNC has to its credit more than 100 centers offering customer support in the world. This year, the company plans to expand its business network in India to 14 and increase support staff.

**We are very focused on:**

- Service support for end-users
- Technical support for machine tool

Source: Mitsubishi Electric

## CNC solutions from Mitsubishi

builders (MTB), machine dealers, end-users

- Training at local centers

Currently, the Indian MTB has 30 per cent share in the domestic market. This share is slated to increase against that of the imported machines. The Indian MTB is likely to witness more growth than its counterparts in other countries once the market situation changes. This will expand business opportunities and give a boost to exports.

The huge potential as a result of rising domestic demand will spur mass production. Therefore, Mitsubishi Electric is all set to add value to the growing market of the future.

**Apart from strong customer support, what innovative technologies do Mitsubishi offer?**

We offer various technologies such as:

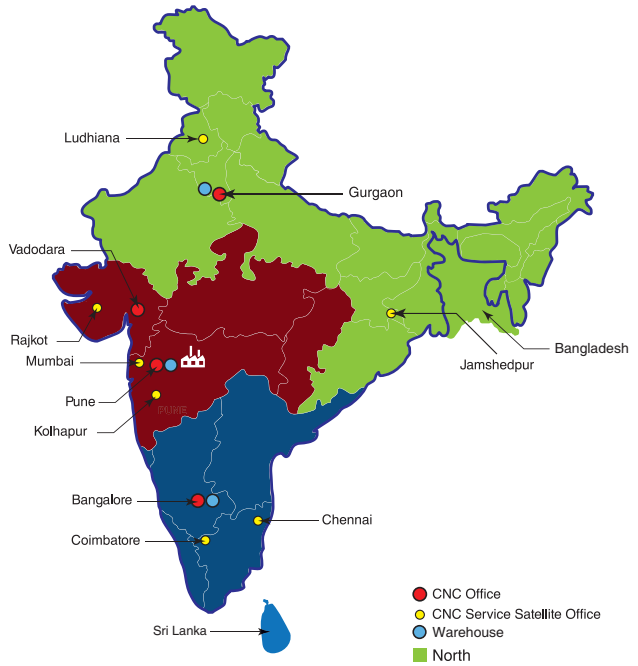
**Super Smooth Surface (SSS):** This provides a smooth finish without deviation for diemold machining. It is mainly built for high precision cutting and reducing cycle time. SSS enables judging the part program paths, which reduces unnecessary deceleration, even when fine steps in the program exist. Hence, machining time can be shortened by 5-30 per cent. SSS control also ensures high machining stability and quality with virtually no effects resulting from cutting shape or speed.

**Optimum Machine Response Direct Drive (OMR-DD):** A high speed, error-compensation function is used for controlling the spindle and servo motor, enabling accurate tapping. This achieves high speed drill and tap reducing cycle time. By compensating for the deflection between the motor-end and machine-end, the part shape at a high speed and acceleration rate can be compensated for. The optimal shape can be obtained at a low feed rate. It also compensates for the outward expansion of the shape at high feed rates.

**Multi-axis Control:** With multi-axis control, it is possible to control multiple axis, multiple programs, which help to build multifunctional machine. Furthermore, it is also possible to reduce the cycle time in turning. As a result, it helps in reducing the number of machines.

**iQ Platform CNC:** iQ Platform stands for integrated Q improved Quality/intelligent and Quick innovation and Quest. Mitsubishi iQ Platform-compatible CNC C70 offers the maximum scale TCO reduction effects to manufacturing sites by taking advantage of MELSEC's great convenience. High performance controllers enable optimization of diverse production processes on the shop floor.

Source: Mitsubishi Electric




Mitsubishi's CNC service and sales network

# Leading the Way through Cutting-edge Technologies

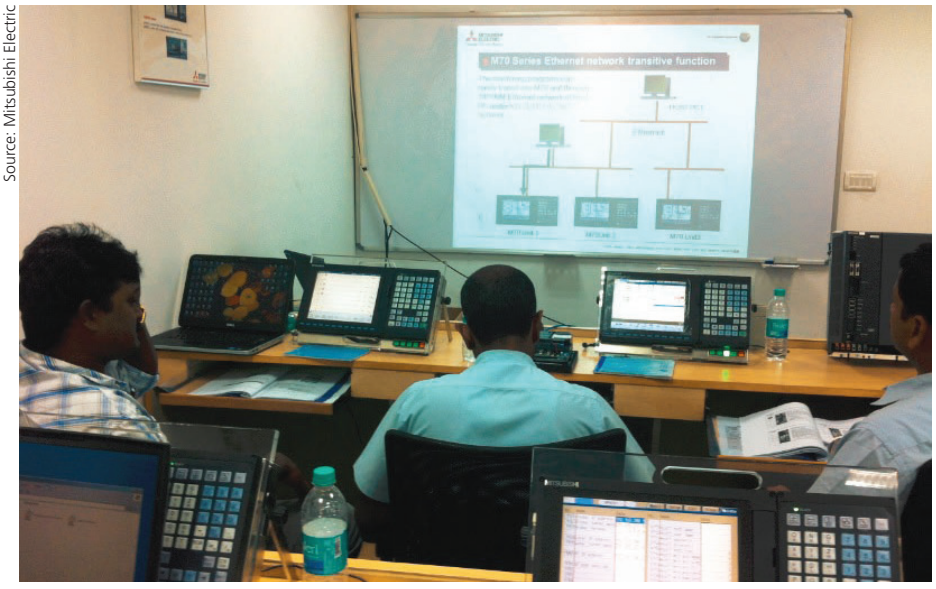
Thanks to its latest technology offerings, Mitsubishi Electric is making its mark in the CNC market. However, it is not just the technology prowess that enables the company to scale new heights; other factors such as imparting adequate training and providing support to customers play an equally important role in paving the path for a successful future.

Today, Japan-based Mitsubishi Electric is a global leader in the field of electric and electronic equipment for residential, commercial and industrial use. It offers a range of complete solutions for factory automation and industrial products, residential, commercial and industrial air conditioning, video and imaging products and provision for technical and marketing support for power semiconductors, photovoltaic modules, transportation, power systems, etc. Along with these, CNC has been an important part of Mitsubishi's business.

The company forayed into the CNC business in 1956 by establishing a research and development center. In 1961, the company developed a machine with transistor-based interpolating functions. Since then, the company has witnessed a succession of various benchmarking technologies, for instance, the world's first lathe-use NC with interactive automatic programming. Also, Mitsubishi was the first company to develop CNC machine that incorporated 32-bit CPU; and later it was updated with 64-bit model. Simultaneously, the company grew its CNC business by introducing varied functions such as network compatibility, iQ platform, etc.

Mitsubishi CNCs create new values in cooperation with users. Today, the company has emerged as a total factory automation manufacturer and through the advanced machining control, it contributes towards high accuracy and productivity. Mitsubishi Electric Corporation entered the Indian CNC market in 2012 with the establishment of Mitsubishi Electric India Pvt Ltd.

Source: Mitsubishi Electric




**Mitsubishi conducts various training programs for customers**

## Value-added services

In addition to the cutting-edge technologies, it has spurred various value-additions such as prompt responses, solid technologies and user-friendly support systems. Also, it concentrates on improving after-sales service quality for users in the world so that they again opt for Mitsubishi CNCs. In order to provide prompt response and continuous support, the company has offices at various locations including Bengaluru, Gurgaon, Pune and Vadodara.

## Training

The company's CNC department offers a wide range of training programs to all its customers through its dedicated training centers in Bengaluru, Pune, Vadodara, Chennai and Gurgaon. The training team imparts comprehensive training on system interface, operation, application, maintenance, etc., as per the yearly calendar, as well as customized training both at centers and on-site. There is specialized training module for specific dealers and also maintenance training module on customized CNC controls.

The course objectives range from effective utilization of resources to enhance productivity, and reduce machine downtime and machine development time.

**The courses are aimed at:**

- Technical consulting for problem solving
- Training for installations and commissioning
- Constant technical upgradation

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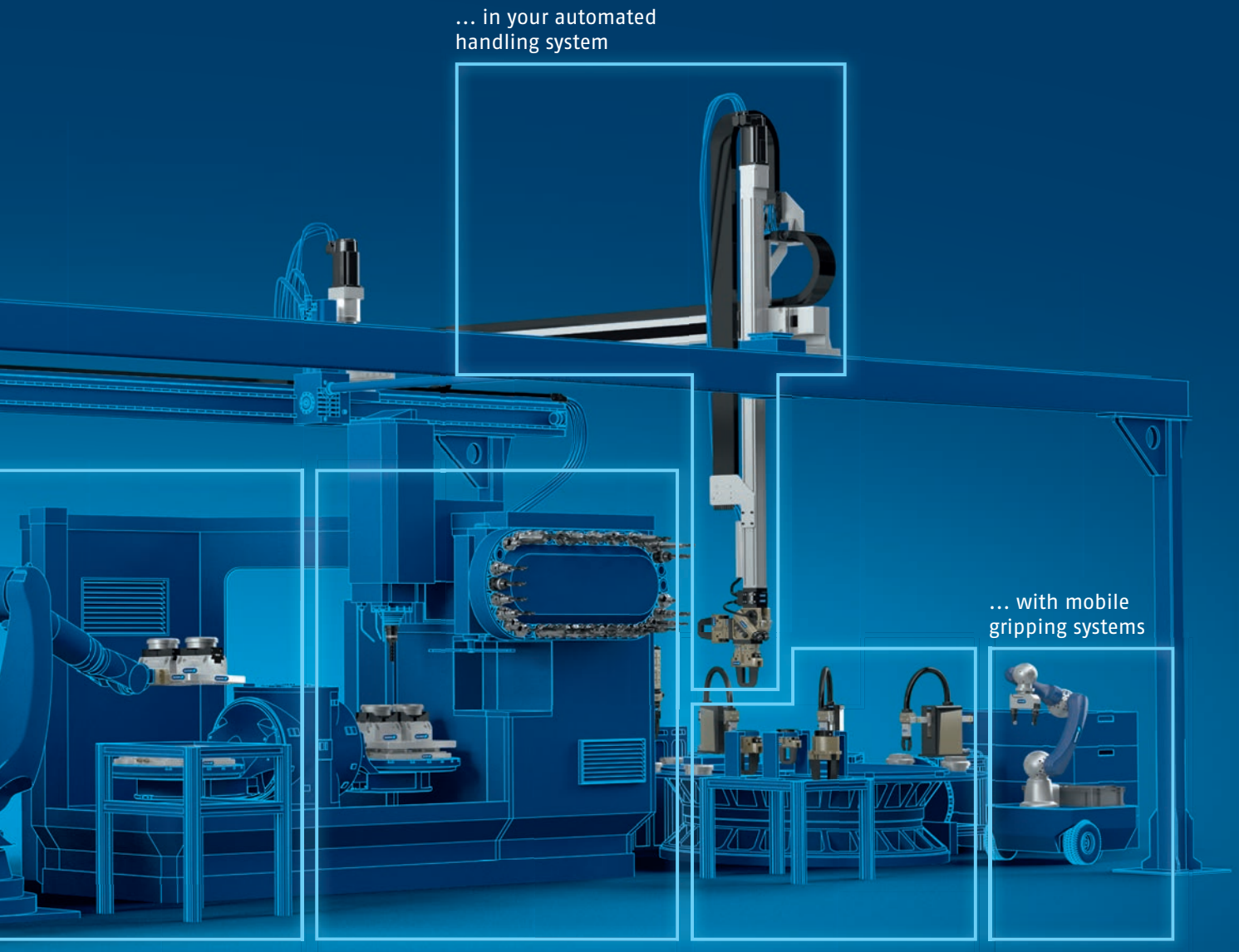


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# Building a Sustainable Future

Sustainability is of essence in any field and across any sector. The time has come to make end-products and the processes employed for manufacturing these eco-friendly. Here's an overview of how one company has not only made its processes sustainable but also increased sustainability for its end-users in the industry.

Keeping in line with sustainable manufacturing, Wienerberger, a global company, has opened a fully automated manufacturing unit in India for the manufacture of its clay perforated bricks. This innovative product, Thermobrick, has especially been developed for the changing climate assisting in keeping the indoors comfortable and pleasant. The brick provides the best thermal insulation by using thermal resistant material as an infill in the brick.

Nedra Pereira
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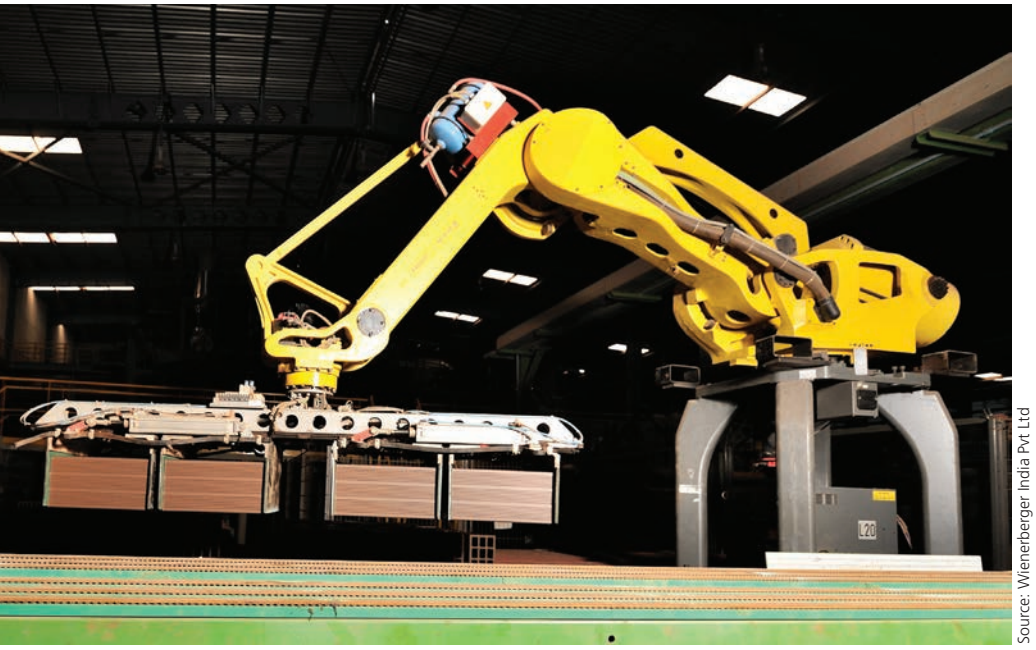
Usually, when the wall gets heated from outside, it transmits heat to its inner layers making the indoor climate hot and uncomfortable. However, in the case of Thermobrick, the heat is restricted outside by the insulating layer and is assisted to keep it at bay largely by the product design itself, thus restricting the passage of heat to the indoors and keeping it cooler and comfortable. Furthermore, it has a transmittance value (U) of 0.6 W/m²K. This indicates that the brick transfers extremely low heat. These bricks have been used widely within the industrial sector in the building of warehouses and facilities.



Source: Wienerberger India Pvt Ltd

**Robots loading and unloading bricks to form pallets**

## Need for automation

The company has also pioneered the concept of automation in the field of brick manufacturing. "We strongly believe that adaptation and developing of automation and robotics is very important for a logical, market-oriented and competitive construction industry of tomorrow," confirms Managing Director, Wienerberger India Pvt Ltd, Monnanda Appaiah.

Brick making is a traditional sector in India and other developing countries. Based on the fact that 100,000 kilns produce about 200 billion bricks every year, the estimated market size of the brick industry is €17.5 billion. Managing Director, VDMA India, Rajesh Nath avers, "In India and other countries in South Asia, mainly solid hand molded bricks are produced using traditional firing technologies like Bull's Trench Kilns (BTKs) and clamps. However, advanced firing technologies like Tunnel kilns, Hoffman and Vertical shaft brick kilns are used primarily in the other parts of the world."

In the last 60 years, a variety of factors resulted in radical changes in the global brick industry. In contrast to this, the situation in developing countries like India, in terms of both brick making technology and the organization of the work, showed no major changes in recent decades.

"Of the total bricks produced globally, the share of Asia is over 87 per cent. The total estimated production of bricks

**"Of the total bricks produced globally, the share of Asia is over 87 per cent. The total estimated production of bricks globally is about 1,500 billion bricks per year."**

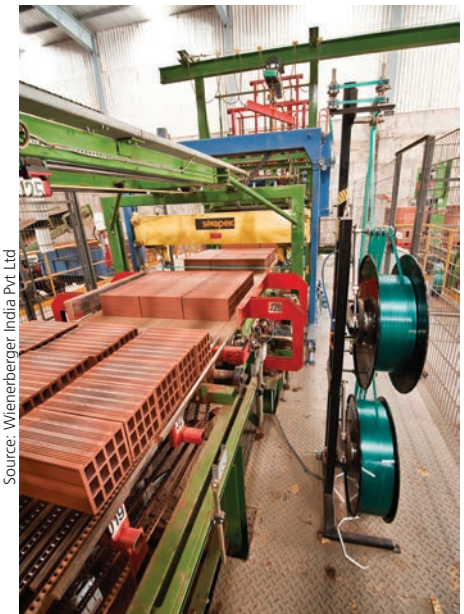
**Managing Director, VDMA India, Rajesh Nath**

globally is about 1,500 billion bricks per year. Indian brick industry is the second largest producer of bricks in the world next to China. Where India produces 200 billion bricks per year, the count in China is 5 times about 1,000 billion bricks per year," corroborates Nath.

For India to continue to make this a profitable industry, it needs to incorporate automation and robotics in its manufacturing processes to increase sustainability. Apart from this, urbanization around the country is leading to growing demand for infrastructural units. There is a need for speed to produce building materials like bricks, tiles, etc., at par with the growing demand to meet the requirements of residential and commercial spaces. In this scenario, applications and activities of robotics and automation in the construction fraternity have been playing a crucial role in optimizing equipment operations, improving safety at work sites, enhancing perception of workspace and most importantly, ensuring quality environment for building occupants.

The future of construction and infrastructure, however, lies in energy efficiency, reliability and affordability. Automation and robotics has offered various other industries the means to increase all these factors.

**Automated brick cutting at the Wienerberger India facility**



Source: Wienerberger India Pvt Ltd

## Manufacturing automated

Wienerberger India believes that the use of industrial robots helps to achieve the perfect workplace environment along with increased productivity. The state-of-the-art robotics used in the production unit is based on German technology. With a capacity of 120,000 tons or 100 million brick units per annum, it is the biggest unit of its kind in South East Asia. The production is environment friendly, and runs 365 days a year irrespective of weather conditions. This has been achieved because of advancement in automation and robotics and their adaption at the manufacturing plant.

The brick manufacturing unit primarily uses the M-410Ib series of FANUC Robotics' latest-generation palletizing industrial robots that load and unload parts, boxes or other items to or form pallets, automatically. Currently, the unit has six robots of the same kind, and total brick handling process is done by these robots. These are being used for green brick, dry brick and for fired brick handling, and communicate through the Siemens S7-300 PLC, a modular universal controller, via 'Profibus'.

## Sustainability—the next step

Speaking on how automation is necessary along with sustainable manufacturing and goods, Appaiah asserts, "We view sustainability as an integral part of our business and an important factor for Wienerberger's success. For these reasons, we have firmly anchored sustainability in our corporate strategy. A house made of Wienerberger building materials is an investment for coming generations. The core of our sustainability strategy is the long service life of our products. At the same time, we implement measures to reduce the environmental impact of our production processes. Our activities are focused not only on reducing energy consumption, but also on improving our ecological footprint by using fewer raw materials and increasing the use of recycled products."

**"Adaptation and developing of automation and robotics is very important for a logical, market-oriented and competitive construction industry of tomorrow."**

**Managing Director, Wienerberger India Pvt Ltd, Monnanda Appaiah**

Right from procuring raw materials to the production methodology and the products that are offered, everything is bound by principles of sustainability.

Some of the initiatives in this respect include:

- Desilting of clay tanks
- Use of locally available products
- Use of waste products from other industries
- Efficient use of biomass and other environment-friendly fuels in manufacturing

Apart from these, the firm continuously recycles heat and energy in the production process and systematically adopts various conservation projects in its plant on a regular basis.

The company's commitment to sustainability is reflected in the continuous improvement of its production processes. A central engineering department for bricks is working, above all, on projects to reduce energy consumption. Drying and firing comprise a significant amount of the energy requirements for our production and many assignments therefore concentrate on optimization in this area. Other focal points of our research include resource conservation in production and the responsible processing of raw materials. MMI

# Electric Dreams Come True

Tesla Motors was founded in 2003 by a group of Silicon Valley engineers who wanted to help reduce global dependence on petroleum-based transportation. Read on to find out how the company reinvented the electric car with help from Autodesk software.

Once upon a time, the electric car was missing and presumed dead. A documentary film was even made detailing the technology's demise while lamenting its passing. Fortunately, however, the rumors were vastly exaggerated.

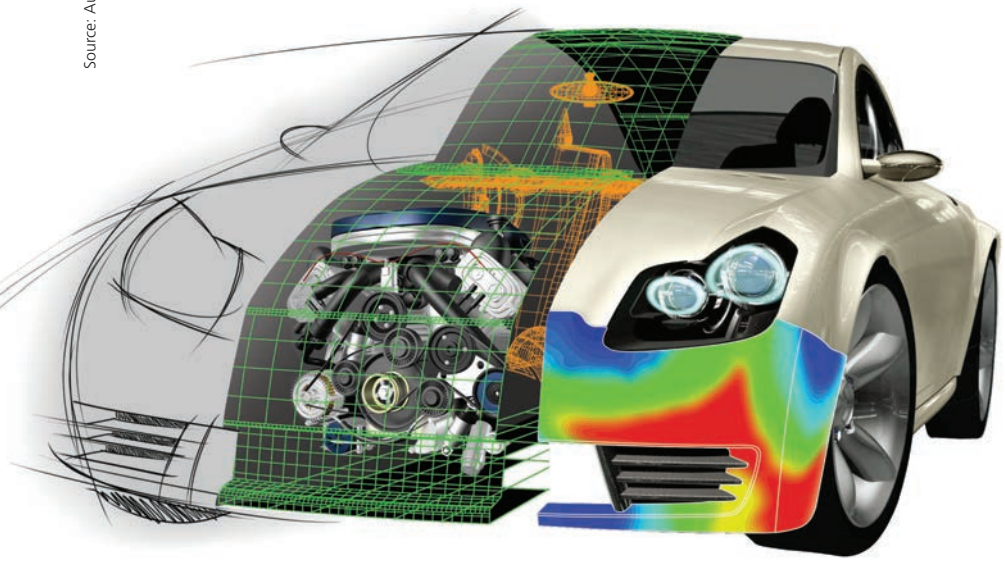
While all manner of more environmentally conscious vehicles have been produced and discussed in recent years—from popular gas-electric hybrids to hydrogen fuel cells to biodiesel—the resulting vehicles have typically lacked the speed, styling, and storage space necessary to attract significant number of customers. While hybrid technologies improve the efficiency of the internal combustion engine, they tend to compromise performance for efficiency and sustainability.

That all changes with Tesla Motors, which is using Autodesk Alias Surface software to turn heads and change minds. First prototyped in 2006, the Tesla Roadster is the world's first electric supercar. It hits 60 mph in under four seconds, travels up to 245 miles on a single charge, and does it all without any tailpipe emissions, and with far less noise and vibration than traditional cars.

Tesla Motors' vision, however, goes far beyond a need for clean speed. With the more functional and affordable Tesla Model S sedan, the company is intent on nothing less than moving the world to electric transportation. While gasoline-powered cars rely on a single, dwindling resource and grow increasingly inefficient as they age, electric cars promise to grow more efficient as the years pass, especially as more sustainable methods of powering the grid are developed.

Powered by more than 7,000 lithium-ion batteries, the Model S sheds such standard equipment as the internal combustion engine, exhaust pipes, thermal shielding against engine heat and catalytic converters. The resulting extra space provides room for five adults together with two children, or a surfboard, a 50-inch television, and a mountain bike.

Source: Autodesk Inc



Source: Autodesk Inc

**A composite image demonstrating digital prototyping workflow progression from left to right: sketching, engineering (3D), simulation, surfacing, and marketing.**

## The challenge

"The Model S is really about creating a beautiful, efficient product with no compromises," explains Chief Designer, Tesla Motors, Franz von Holzhausen. "This is not a slower, less attractive car that compensates by being better for the environment. The Model S is a desirable-looking, supremely functional and a fast sedan. It also happens to be the greenest car on the planet," he adds.

The benefits of electric vehicles are many. The most obvious is that electricity trumps oil in almost every way imaginable. It can be generated in a variety of ways, including hydroelectric dams, wind farms and solar arrays. What's more, the driveshaft, exhaust pipes, and other bulky equipment running along the bottom of the car—all of which

make for more noise and vibration, and reduced stiffness—are replaced by rechargeable lithium-ion batteries. The quiet, yet high-performance comfort of the Model S is derived in part from its perfectly flat bottom. And just for good measure, the batteries that power the car are bolted into a 9-inch box on the floor of the car, making it stiffer still.

Of course, the most revolutionary ideas can often be the most difficult to design, and Tesla designers soon found that they would have to strike a balance between beautiful, yet familiar styling and industry-changing, yet recognizable technology.

"With the Roadster, we had pretty much proven that the technology could work," says Engineering Tools Manager, Tesla Motors, Paul Lomangino. "People typically thought of electric cars as slow and unattractive. What we had to do was change that perception. We wanted people to be confident that this electric car would be fast, enjoyable and functional, and would take away problems rather than create new ones. At the same time, we didn't want to overwhelm them with too many changes. The Model S is meant to be fun and exciting, but it is also meant to broaden the audience through increased functionality and lower pricing," he states.

The result is a lean, powerful car that is also fun for—and can accommodate—the whole family. "We intentionally maintained a lot of the traditional automotive shape and cues in our exterior design," declares von Holzhausen. "It was crucial to establish the positive qualities of the design while building customer confidence, and we had to do it quickly," he adds.

Source: Autodesk Inc

**Photorealistic rendering of non-branded concept car interior using Autodesk software**

## The solution

The company's design and engineering process was significantly streamlined through the use of Alias Surface: "Autodesk Alias Surface software is the best automotive design tool, bar none. There is simply no other tool that comes close to Alias for visualization, rendering, surfacing, or just drawing. I use Alias to draft lines rather than using pen and paper, and also to replace the traditional tape drawings," affirms von Holzhausen.

The team uses a combination of rapid prototypes designed in Alias and computer numerical controlled (CNC) milled clay models to perfect designs.

"Many of our best Alias modelers are guys who used to be clay modelers. We do an iterative process in which we create models in Alias, and then mill the data in clay and finetune it by hand. We'll then scan the clay model and bring it back into Alias for more polish, and mill it again. Alias is great for visualization and rapid prototyping, and it is as close as you can get to a physical prototype. Alias has streamlined our efforts and made getting to 3D incredibly quick," he states.

"Autodesk Alias Surface helped our team deliver incredibly high-quality designs in very short time," Lomangino agrees. "Having people who are experienced with such proven software meant we could meet extremely aggressive timelines," he asserts.

## The results

While the exterior of the Model S is designed to attract discerning drivers, the interior prepares them for a new driving experience. At the car's focal center is a state-of-the-art, 17-inch touch screen, placing all of the car's functions, except steering and acceleration, at the driver's fingertips.

"As much as we wanted to show off our revolutionary power train, we also wanted to give the car awesome technological prowess," avers von Holzhausen. "We started thinking about an interactive, updatable, continually relevant interface, much like the smart phones and laptops we all now use. With this large screen, drivers can extend the relevancy of their ownership experience by changing features and apps in the car. Go to the Tesla app store and download a new skin, and your car is fresh again," he further adds.

Just as the Model S promises to take the sleek styling and high performance of the Roadster to a broader audience, there is no doubt that Tesla has plans for more varied and affordable electric cars. As customers grow more comfortable with the concept of uncompromising electric transportation, increasingly efficient and avant-garde design options will be integrated, all with the help of Autodesk software. The company is currently incorporating Autodesk Showcase visualization software into its pipeline.

Von Holzhausen is very bullish on the future and concludes on a positive note, "This is really a whole new experience for drivers. We're confident that after just a few minutes in the Model S, drivers will be wondering why all cars aren't electric and, more than that, why their cars don't have a 17-inch touch screen. We couldn't have done all that without the help from Autodesk software." MMI

**Autodesk Alias Surface helped our team deliver incredibly high-quality designs in very short time. Having people who are experienced with such proven software meant we could meet aggressive timelines.**

**Engineering Tools Manager, Tesla Motors, Paul Lomangino**

**Autodesk Alias Surface software is the best automotive design tool, bar none. There is simply no other tool that comes close to Alias for visualization, rendering, surfacing, or just drawing.**

**Chief Designer, Tesla Motors, Franz von Holzhausen**

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# Cleaning House to Protect the Shop from Graphite Dust

Dust, a common household word, can be defined as a finely powdered substance of various matters often suspended in the air. However, the graphite dust can have harmful impact on the human health. Here is an overview of how to deal with graphite dust.

The particles generated from the graphite machining process are very fine and have a tendency to remain airborne. However, unlike common household dust, graphite dust has characteristics that must be taken into consideration.

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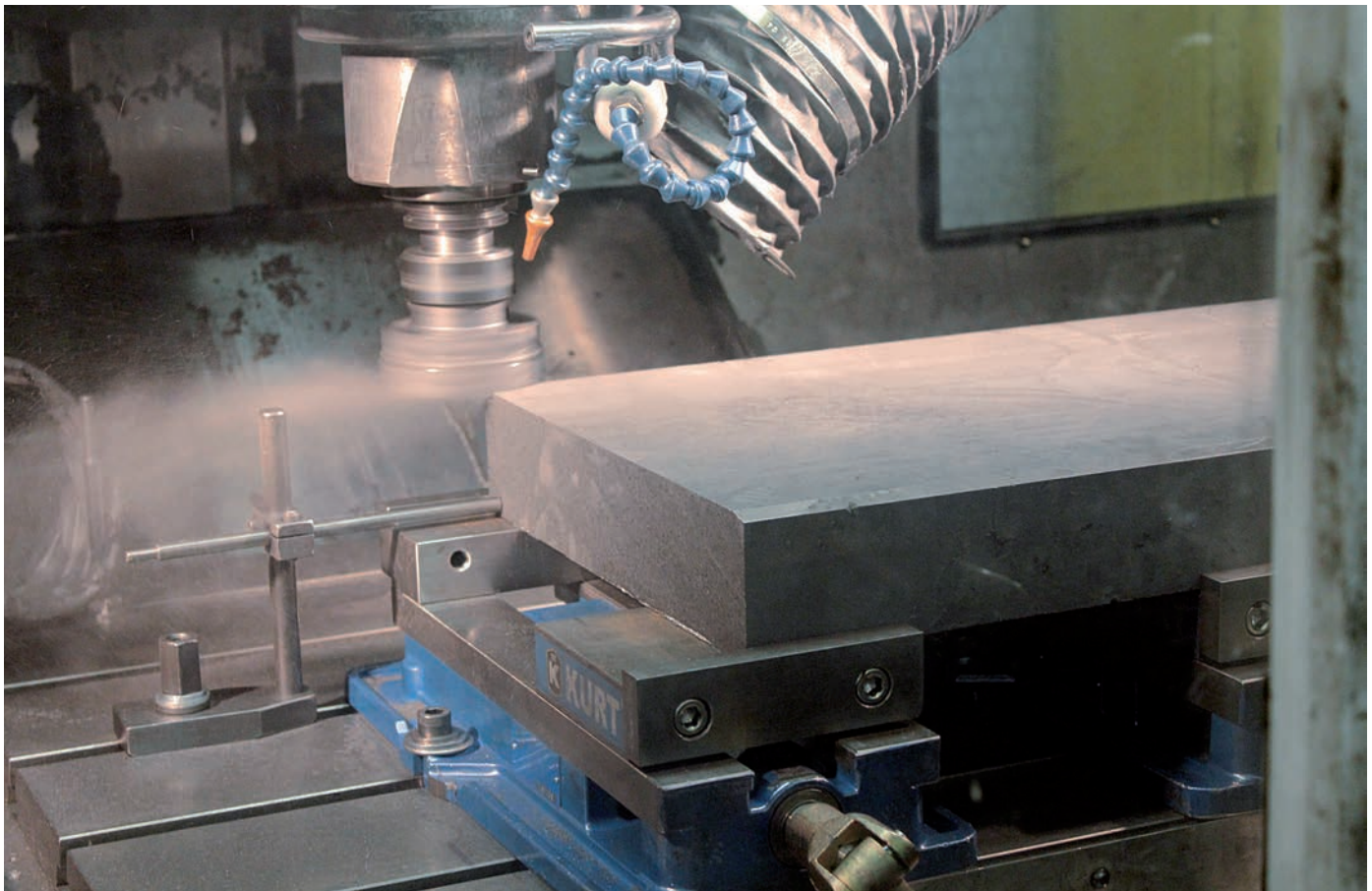
## Hazard or nuisance?

Perhaps, the most common concern when dealing with graphite dust would be if it is considered as a hazard to the human body. To answer this, we must first understand that there are two types of graphite – natural and synthetic. The graphite used to fabricate EDM electrodes and thereby produce machining dust is synthetic graphite, which is considered to be a biologically inert material and produce dust classified as a nuisance instead of a hazard. Since the most common isotope in graphite is carbon, the human body does not recognize this as a foreign substance and will not attempt to reject it. The human body is primarily carbon and is compatible with the inert carbon in synthetic graphite.

While every measure should be taken to capture dust at the source, this is virtually impossible and some amount will surely escape into the surrounding atmosphere. Due to the miniscule size of the dust particles, these may not be visible to

**The dust created during graphite electrode machining can cause a range of problems to both equipment and workers**




Source: Poco Graphite

the human eye. Graphite dust can cause irritation to the eyes, possibly leading to stinging, watering and redness. Contact with this dust can be abrasive and mildly annoying to the skin, but absorption is unlikely.

## Always check the paperwork

There is always some form of health concern associated with any type of overexposure and a nuisance dust is no different. For this reason, exposure guidelines for graphite dust have been determined and identified in the Material Safety Data Sheet (MSDS), also known as safety data sheets (SDS) in Europe. As identified by the American Conference of Governmental Industrial Hygienists (ACGIH), the exposure guideline for time-weighted average (TWA) for graphite dust over an eight-hour period is 10 mg/m$^3$ total. At this concentration, the graphite dust would be thick enough to hinder visibility. Having a concentration of this magnitude in a manufacturing environment is unlikely, especially if some type of dust collection system is in use. Excessive exposure to graphite dust over extended periods of time can cause a chronic and more serious condition known as Graphitosis, which is a form of pneumoconiosis. This condition arises when inhaled particles of graphite are retained in the lungs and bronchi.

Special caution should be taken when dealing with graphite impregnated with other materials such as copper or tungsten. It is essential to follow health and safety guidelines for the material that has been impregnated into the graphite.

## Dust collection

Apart from the need to capture machining dust to maintain a clean shop environment and protect employees, another critical need for dust collection is to prevent the graphite particles from entering into electrical housings, control panels and switch boxes. By nature, synthetic graphite is electrically conductive and could create a myriad of problems if allowed to accumulate in areas that have a tendency to 'short out' when in contact with foreign conductive materials.

There are primarily two methods for controlling graphite dust during the electrode fabrication process. The first method is to use high air velocity with a dust collector. High-speed machining centers designed for machining graphite come already equipped with a dust collection system that evacuates the dust with a powerful vacuum. However, conventional machining centers such as mills, band saws or grinders must be equipped with a type of secondary collection system. Portable units are ideal for shops that only do a limited amount of graphite machining since the unit can be moved from one machine to another as needed.

### Explosibility Potential Test Results

| Test Conditions: | Test Conditions: | Particle Size Distribution |
|---|---|---|
| 20 liter sphere | 20 liter sphere | |
| 2 - 5 kJ chemical igniters | 4 – 100 J electric matches | 26.0% less than 45 micron |
| Rebound nozzle dust dispersion system | Rebound nozzle dust dispersion system | 34.2% less than 75 micron |
| | | 70.1% less than 125 micron |
| Pmax = 6.2 bar | Pmax = 0.0 bar | 93.0% less than 250 micron |
| (dP/dt)max = 136 bar/s | (dP/dt)max = 0 bar/s | 98.5% less than 500 micron |
| Kst = 37 m*bar/s | Kst = 0 m*bar/s | |
| Duration of combustion = 52 ms | Duration of combustion = 0 ms | |
| Moisture content tested = 2.40% | Moisture content tested = 2.40% | Overall rating: Hard-to-ignite |
| Weight % <75 micron = 34.70% | Weight % <75 micron = 34.70% | |
| Bulk density = 43.7 lb/ft$^3$ | Bulk density = 43.7 lb/ft$^3$ | |

Source: Poco Graphite

**Results of Poco Graphite tests on graphite dust generated from on-site machining operations**

## Leave solution on the shelf

Contrary to common belief, an 'off the shelf' shop vacuum system is not adequate for graphite dust as the filtering system is generally not suited to collect the fine particles of graphite. To be efficient, a portable vacuum system must have a High-Efficiency Particulate Air (HEPA) filter that satisfies certain US governmental standards of efficiency. To be qualified as a HEPA filter by government standards, it must be capable of removing 99.97 per cent of all particulate matter in excess of 0.3 microns (in Europe, these filters are classified under EN 1822:2009).

The best system for shops heavily engaged in graphite machining is a fixed unit with sufficient vacuum to draw the dust from the machine through the duct work and into a collection bin. The recommended speed for capturing dust at the machining center is a minimum air velocity of 500 ft/min (15.24 m/min). Once the dust enters into the duct work, there should be a minimum air velocity of 2,000 ft/min (609.6 m/min) in order to prevent the dust from settling out of the air stream prior to entering the collection bin. Air velocity is determined by the amount of graphite dust in the air and relates to the rate of material removed at each machine. A recommended US source of information for designing dust collection systems is 'Industrial Ventilation: A Manual of Recommended Practice by the American Conference of Governmental Industrial Hygienists'.

Another method for dust control is to use a 'wet' system to saturate the area around the cutter part with a liquid to prevent dust from entering into the surrounding atmosphere. The dust comes in contact with the fluid being used and is flushed away to a collection unit. While this can be an effective way of dust control, one must keep in mind the ability of the fluid to 'wick' or be absorbed into the electrode material being machined. If this occurs, then the fluid must be removed prior to the electrode being placed in the EDM or it could contaminate the dielectric oil. In a wet style dust collection system, a water-based solution should be used as this fluid does not wick into the graphite as easily as an oil-based solution. Regardless of the type of solution used, the electrode material should be allowed to dry sufficiently prior to EDM. In order to expedite this process, the material can be placed in a convection oven for approximately one hour at a temperature slightly exceeding the vaporization point of the solution. In no case should the oven temperature exceed 400$^0$ F (204.4$^0$ C) as this causes the material to oxidize and erode away. Also, compressed air should never be

used to dry off an electrode as the air pressure only serves to force the fluid into the structure of the electrode.

## Explosiveness of graphite dust

Dust explosions in manufacturing plants over the past decade have certainly gained media attention as these tragic events resulted in loss of life and property. The devastation of these events also caught the attention of the US Occupational Safety and Health Administration (OSHA). In 2008, it issued OSHA Directive CPL 03-00-008, which states, "This directive contains policies and procedures for inspecting workplaces that create or handle combustible dusts. In some circumstances, these dusts may cause a deflagration, other fires, or an explosion." As a result of this directive, facilities that generate dust through a number of processes, including machining graphite should conduct an assessment of their practices to determine the potential of a dust explosion and develop practices to lessen the probability of such incidences. The primary objective of this assessment is to identify if dust particles are combustible and in concentrations sufficient to ignite.

'Combustible dust' in the US is, 'Any finely divided solid material that is 420 microns or smaller in diameter (material passing a US No. 40 Standard Sieve) and presents a fire or explosion hazard when dispersed and ignited in air.' The elements of fire include fuel, oxygen and ignition. A dust fire or deflagration occurs when sufficient concentrations of fine particulates are suspended in air and then exposed to a source of ignition such as a spark or welding igniter. This ultimately results in the igniting or combustion of the dust.

With regard to a dust explosion, there are two additional factors. These are dispersion and confinement. If the dust is dispersed in sufficient volume or a dust fire is in a confined area, then the potential of this developing into an explosion is significantly increased. Controlling any one of these elements will essentially eliminate the potential of a dust explosion. To overcome the potential of a graphite dust explosion, the industry has primarily relied on controlling the element of fuel by removing dust at the source through effective vacuum systems. However, this does not minimize the need to address each element and determine practices to mitigate its contribution to an explosion.

In order to increase its effectiveness in controlling the dust and reducing the potential for a fire or explosion, all dust control equipment involved in handling graphite dust should have explosion relief vents, an explosion suppression system or an oxygen deficient environment. Having adequate general ventilation is the first step and should be sufficient to also limit the employee exposure to airborne contaminants such as graphite dust particles.

## Explosibility testing

Poco Graphite has conducted tests of graphite dust generated from on-site machining operations. The testing results (refer table) provide an indication of the limits for the graphite dust generated. However, variability in conditions means each shop needs to perform the testing for its specific conditions for correct data to make a valid assessment of their activities.

The results of this testing indicate that the graphite dust used in these tests are hard to ignite even with low moisture content and high concentration levels where 98.5 per cent of the particles are less than 500 µm in size. To reiterate, combustible dust is defined as a solid particle being 420 µm or smaller that can be ignited. In a shop environment, at the concentration levels of these tests the graphite dust would most likely be thick enough to hinder visibility. Therefore, the bottom line is that the potential of experiencing a graphite fire or explosion is minimal with good ventilation and sufficient dust collection as well as effective cleaning and maintenance programs.

In some cases, more information can be provided by manufacturers. One possible source for information on combustibility is the MSDS for the material. Hazard statements should be contained in each MSDS that identify if the material is combustible in its present form or a future transformed form. The MSDS should also identify exposure controls limits. MSDS can be acquired from graphite suppliers.

## Conclusion

Dust is an ever present condition in a manufacturing environment generated by myriad processes that include production equipment, material handling and machining. The creation of this dust does not inevitably lead to safety and health risks if accumulation levels are kept within limits through effective housekeeping and dust collection practices. However, when excess amount of dust is allowed to accumulate and then introduced to an ignition source, the results can be catastrophic.

Although the Poco tests have shown graphite dust is hard to ignite, one still has to take responsibility of continual improvements in dealing with the material. In the present times, practices meant to improve the ability to identify an explosion risk have emerged. Such practices include use of safety monitoring equipment, improved dust collection systems and an effective safety program that offers good housekeeping practices and an efficient preventive maintenance program. Dust fires or explosions cannot be completely eliminated, but these practices significantly reduce their likelihood. Being aware of the elements for a dust fire or explosion, knowing the explosive potential of graphite dust and the resources for more information enable identification of potential risks and help eliminate them. MMI

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# High Speed Machining now Possible on Ordinary Machines

Some of the processes in the manufacturing arena call for high speed machining. However, it is not always viable to invest in high speed machines. In order to solve this dilemma, TaeguTec India has introduced the Typhoon system that enables high speed machining on ordinary machines.

High speed machining is a direction used to finish several components and molds and dies. Typically, a small amount of material is removed during the machining process owing to high spindle speeds, giving excellent surface finish of the parts. Compared to conventional cutting, high speed machining enables to increase efficiency, accuracy and quality of workpieces, while at the same time, to decrease costs and machining time.

High speed machining can mainly be envisaged in all industry sectors where small diameter finishing applications like endmilling, drilling, chamfering, engraving are done inefficiently due to limitations of machine RPM. Some of these include:

- Industry that deals with machining aluminum to produce automotive components, small computer parts or medical devices. This industry needs fast metal removal because of multiple machining operations.
- The aircraft industry involves machining of long aluminum parts, often with thin walls.
- The die and mold industry, which requires dealing with finishing of hard materials. In this category, it is important to machine with high speed and ensure high accuracy.
- Automotive components having small dia – drilling, threading, 'O' ring machining, chamfering.

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## Limitations of high speed machining

Despite several advantages, it has limited use in the industry due to the following constraints:

- Such machines cost significantly higher, sometimes as much as several times that of low speed machines.
- Typically, in component machining, the operation involves sizing and then finishing. In case of high speed machining, one needs to segregate bulk of metal removal to ensure that expensive machines are not over-loaded. Due to these constraints, high speed machi-

Source: TaeguTec India


**The Typhoon system enables high speed machining on standard CNC machines**

### ADVANTAGES AT A GLANCE

- Up to 40,000 rpm achievable
- Optimizing small diameter cutting tool use
- Excellent cooling effect and chip evacuation
- Superb surface quality due to minimum tool run-out and optimal cutting conditions
- Dramatic machining time reduction

ning has gained only limited traction.

## Innovation

In order to avoid high cost and such other limitations of the high speed machines, TaeguTec has recently launched the Typhoon system, which enables high speed machining on standard CNC machines.

Thanks to this revolutionary technology, one can use the spindle coolant facility on modern machines to drive a high speed spindle for finishing operations. This opens up big possibilities of using high-speed finishing on several existing good, low-medium spindle speed and high rigidity machines.

The Typhoon system uses the existing machine's coolant supply, reaching rotation speeds of up to 40,000 rpm (units achieve specified rpm at a pressure of 20 bar and 12 lpm flow rate generally) while the main machine spindle remains idle.

The Typhoon upgrades existing machines, providing improved performance, faster machining, better surface quality, and extended tool life without using the main machine spindle.

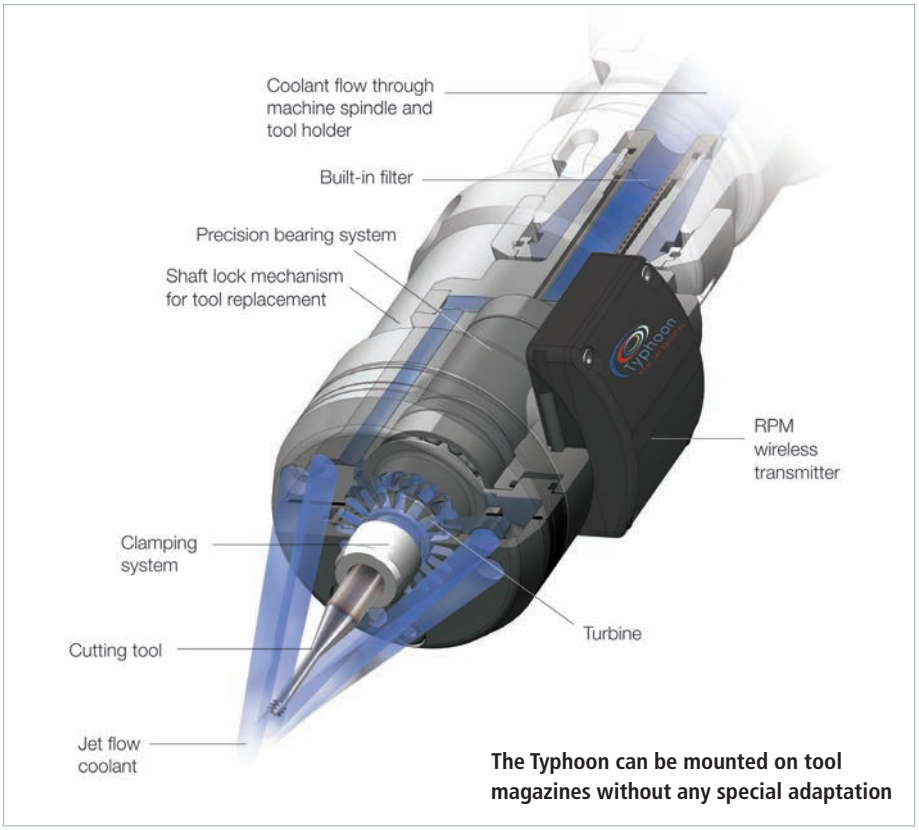
Thus, it is possible to combine roughing applications using regular tools at regular parameters and low diameter finishing applications at high RPMs using Typhoon system on the existing machine. The Typhoon can be mounted on tool magazines without any special adaptation. This improves the flexibility and efficiency of the existing machine to a great extent.

Due to its compact size and light weight, the Typhoon is compatible with a wide range of machine types and can be mounted on most machining centers, turning centers and turn mill machines.

## Applications

The Typhoon system serves the growing demand for finishing and semi-finishing operations on a wide range of processed materials in industries such as the die and mold, automotive, aerospace, medical and others; it is also ideal for milling, drilling, engraving, chamfering (deburring), thread milling, and G-grinding applications.

The new spindle is available in three variants, each covering a range of diameters and speeds for a wide range of materials and cutting tools. The Typhoon can be supplied either as right-hand or left-hand rotation direction and supports cutting tools up to 3.5 mm diameter, with shank diameter up to 6.0 mm.




Source: TaeguTec India

**The Typhoon can be mounted on tool magazines without any special adaptation**

## Advantages

The Typhoon is equipped with an on-line speed display system, monitoring the actual cutting tool rotation speed during machining. Other advantages of the system include:

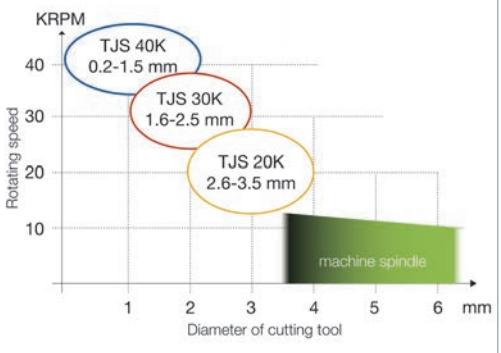
- 2.4 GHz radio frequency transmission
- Direct wireless rotational speed monitoring up to 5 meter range
- Data reading of all the Typhoon units being used on the same machine

Additionally, the new spindle requires a standard coolant supply through the machine spindle with a minimum pressure of 20 bar. The Typhoon can be gripped by the automatic tool changer and stored in the CNC tool magazine as a regular tool.

## Conclusion

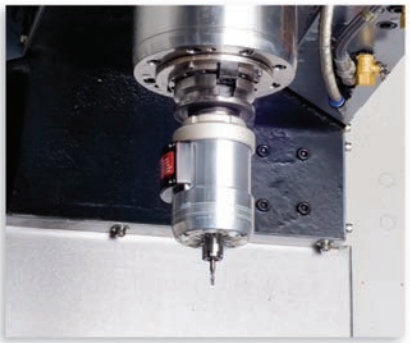
Since it fits on most of the machines, one can save on expense of buying new high speed machine. Moreover, this system extends cutting tool life; saves power by reducing main machine spindle usage; provides increased machine availability; and eliminates the need for additional machines or expensive modifications.

The new coolant-driven spindles are a unique patent-pending line of high speed machining spindles, recommended when high RPM is required on standard CNC machines. MMI




Source: TaeguTec India

**Machining conditions for cutting speeds of 180 m/min in steel**



Source: TaeguTec India

**The system can be mounted on most milling centers and turn mill machines**

POWERED BY Modern Machine Shop
GARDNER BUSINESS MEDIA, USA

# Collet Blocks: Hydraulic or Pneumatic?

Collet blocks play a pivotal role in several machining applications. These are either hydraulically or pneumatically actuated. A better understanding of both for selecting the right method can make a huge difference in meeting the application requirements.

Collet-style workholding devices, such as collet blocks, offer a number of benefits. Collets automatically center workpieces, an action that reduces set-up time by making their center points known locations. Unlike standard vises or three-jaw chucks that provide minimal points of contact with a part, collets provide equal gripping pressure around a part's entire circumference. Expanding collet systems are also available to enable internal gripping of thin wall parts or delicate materials that might otherwise become distorted, if other workholding methods are employed.

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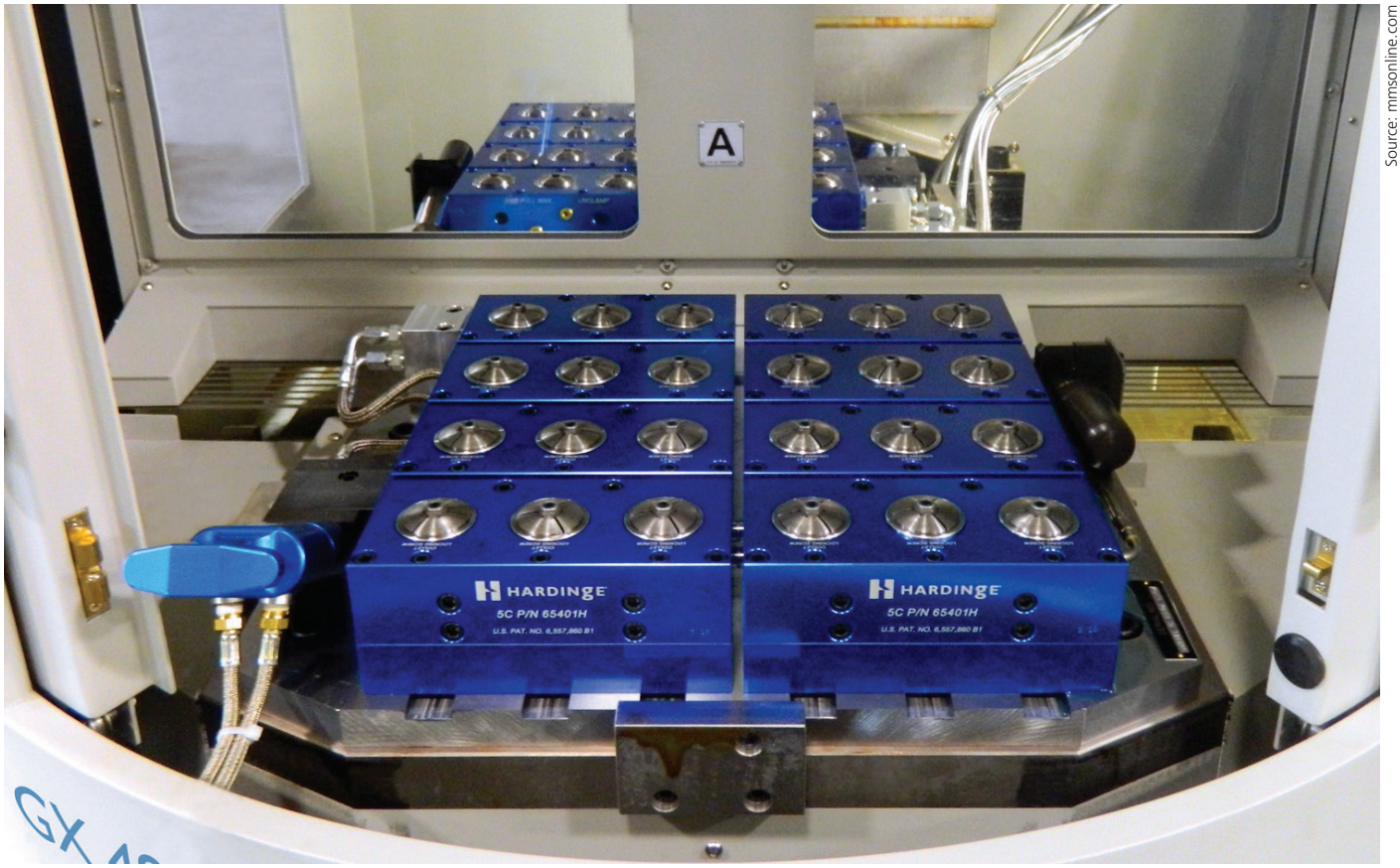
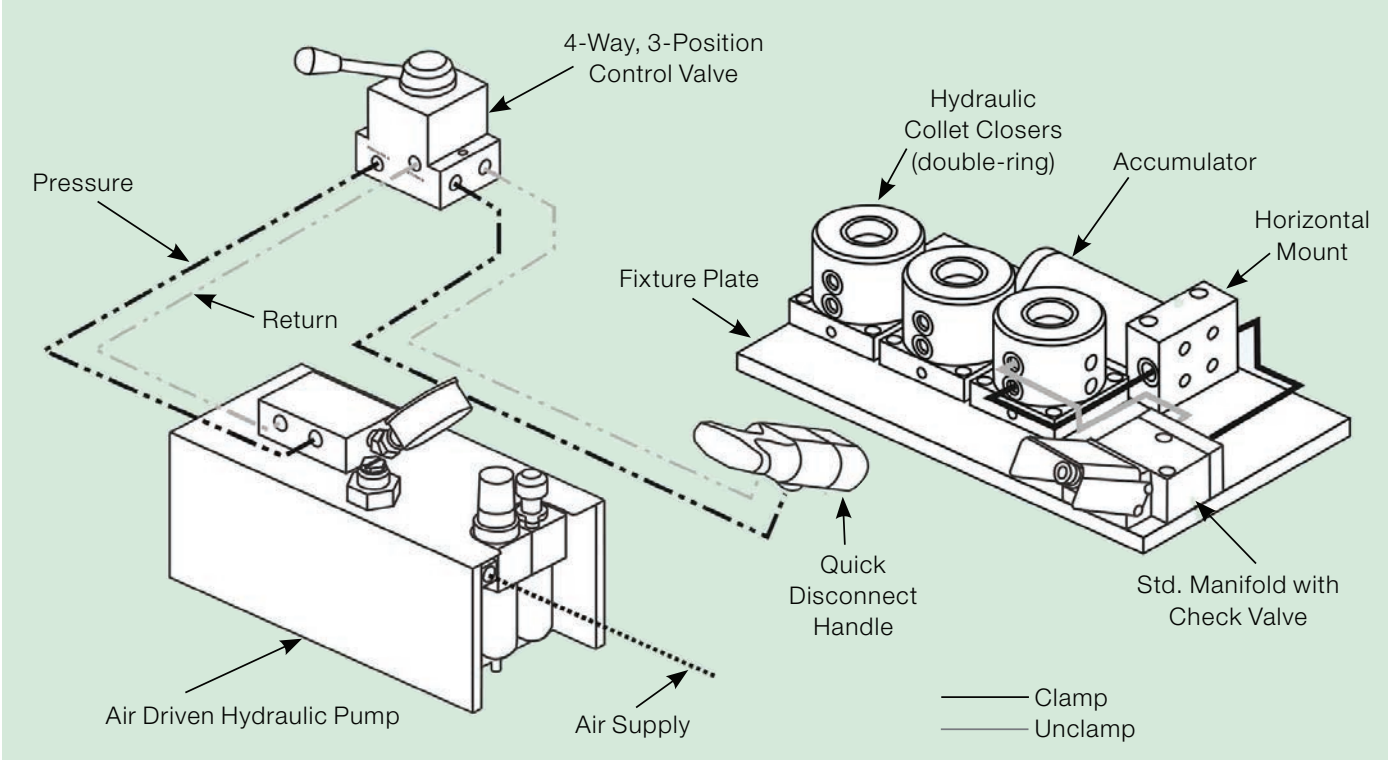
Grouping collet blocks together can enable equipment such as vertical machining centers (VMCs), horizontal machining centers (HMCs) and jig grinders to machine multiple workpieces unattended over long stretches of time. Collet blocks can be oriented horizontally or vertically and can be installed on workholding devices including tombstones, angled fixture plates and rotary trunnion tables. Hardinge, a




Source: mmsonline.com

**Grouping collet blocks together enables machine tools to machine multiple workpieces unattended over long stretches of time. They can be configured in a number of ways, including on tombstones and trunnion tables.**




Source: mmsonline.com

**This schematic shows an example of a hydraulic system with quick disconnect capability. The optional quick disconnect system enables offline preloading of collet blocks with workpieces.**

leading manufacturer of machine tools and workholding equipment in the US, offers several collet block models that use standard-sized collets commonly found in many shops, as well as hex-, square- and custom-shaped collets that can hold various non-round workpieces.

The question is which style of collet blocks – hydraulically or pneumatically actuated – is the most appropriate for a given machining application?

## Getting it right

Even though pneumatically actuated collet blocks provide lower clamping force than hydraulic units, many shops prefer pneumatic collet blocks because compressed air is often readily available; these are easy to connect and do not require complex plumbing schemes. In fact, a small, individual air compressor will do the job, although filtered air is recommended.

A simple pneumatic arrangement consists of a subplate onto which the collet blocks mount, and control valve(s) for part clamping/unclamping. Depending on application requirements, a single air valve can be used to clamp and unclamp all parts simultaneously or multiple valves can be installed to independently control individual collet blocks or rows of blocks. Select Hardinge collet block models enable users to internally plumb units together using connector bushings. Models that do not use connector bushings must be plumbed externally.

Hydraulically actuated collet blocks require a hydraulic source, but provide higher clamping forces needed for heavy rotation, tapping, threading or off-center machining work. Hardinge offers an inexpensive, air-over-hydraulic pump with accessories for shops that do not have a hydraulic source at the machine. A single two-position, four-way control valve can be used to clamp/unclamp all parts simultaneously. It is also possible to configure multiple valves to control each block or row independently. The control valve mounts on the subplate near the collet blocks and is plumbed to a hydraulic pump located outside the machine.

## Hydraulic advantage

An optional quick disconnect system is available for hydraulically actuated collet blocks. This option enables easy preloading of collet blocks with workpieces. Using a quick disconnect handle with a standard collet block manifold facilitates quick set-ups because the collet block subplate and pump assemblies are preset and ready to install as needed. However, the collets in a collet block will not maintain their clamped or unclamped position when removed from the manifold unless a check valve is installed in the manifold. In addition, a three-position, four-way control valve mounted outside the machine is required when using the manifold with a check valve to maintain the clamped or unclamped positions with the hydraulic power source disconnected from the subplate. An accumulator is also recommended because it provides a backup reservoir to maintain system pressure if a leak should occur. Accumulators are available in vertical or horizontal mount versions and can be installed on the collet block subplate. MMI

# Delighting Customers through Effective Communication

Established machine tool builders in India are vying to get a share of the traditionally overlooked market pie by introducing new products, adopting fresh strategies, and refreshing their approach. Customers are being won through innovative solutions. Here's a look at how Bharat Fritz Werner Ltd offered Kirloskar Ferrous Industries Ltd and its end-customer a successful special purpose production line through effective communication and its vast reservoir of project engineering experience.

Kirloskar Ferrous Industries Ltd (KFIL) is the flagship company of the Kirloskar Group. It was incorporated in 1991 with the objective of catering to the requirement of high quality pig iron and intricate, thin walled grey iron castings to the emerging tractor, auto, engine and other related segments. The company always keeps its end-customers' needs at the forefront, and this invariably sowed the seed for a new invention, a path-breaking industrial concept.

The company was keen to develop a world-class high volume source for cast iron cylinder head and cylinder block. Achieving the Cp value on all drawing dimensions within the defined takt timeframe was the prerequisite. General Manager, KFIL Machine Shop, SM Joshi said, "We drew the RFQ with machine specifications and some predefined parameters. Selecting a supplier capable of delivering machines with such stringent requirements posed a real-life challenge to us and our end-customer's manufacturing engineering team."

## Finding the optimum solution

The manufacturing team from and KFIL began with conducting a survey to find the best machine tool supplier for the intended purchase of five special purpose machines (SPMs) for the manufacture of cylinder blocks and four SPMs for the manufacture of cylinder heads.

The RFQ was given to shortlisted suppliers. Detailed discussions with the prospective design teams ensued to understand the configuration, and the parts used on key assemblies such as spindle, table, feed drive, fixture, etc.

The concept suggested by Bharat Fritz Werner Ltd (BFW) was found most suitable. BFW, one of the flagship companies of the Kothari Group, is well known for manufacturing SPMs and bringing out customized solutions for its end-customers. On receiving the RFQ, BFW having previously supplied machines

**Cylinder block manufactured using special purpose machines**

Source: BFW

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**"Teamwork is the key to the success of most projects. Both sides understood each other. The requirement was meticulously mapped, and the production line concept was jointly evolved to address the needs of quality, productivity, and maintainability."**

**Head, Special Machines Division, BFW, Praful Shende**

for similar purposes and having extensive experience in the matter was confident of delivering a suitable solution. Head, Special Machines Division, BFW, Praful Shende stated, "Rather than being just an ordinary supplier, we were in a position to effectively play the role of a solution provider with single source responsibility for machines, manufacturing processes, and inter-machine transfer of components."

The solution given by BFW was completely scrutinized on several parameters such as design quality, manufacturing prowess, service and spare parts support, infrastructure, network, etc., before being accepted. In addition to the audit, numerous multi-tier discussions took place between KFIL, the end-customer and BFW before the final decision to take on the given solution was made.

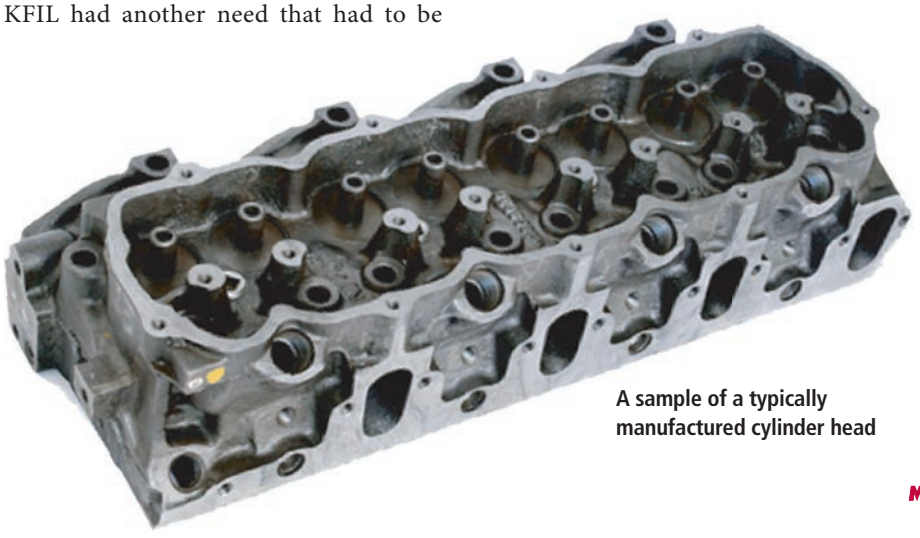
Along with the prerequisites being met, KFIL had another need that had to be fulfilled—the deadline. In order to meet the agreed timeline for installation and commission, BFW's service and application teams worked round-the-clock.

## Manufacturing process

The project involved the setting up of two manufacturing lines; one consisting of five SPMs for the cylinder block, and the other comprising four SPMs for the cylinder head. Components in cast serve as an input to these lines. Specific combinations of milling, drilling, tapping, and boring are conducted on different faces of these components on different SPMs, each configured specifically for the required quality and takt time. A conveyor system complete with necessary turnaround devices ensured smooth transferring in-between machines and orientation of component to suit each particular machine. The line is optimally manned with each operator looking after multiple machines.

## Post installation

The prerequisite of the production line matching all Cp value requirements for each drawing parameter has been met with the BFW machines. The benefit of the cooperation between the companies has become obvious. The desired output in accordance with the designed cycle time is being achieved. The production line is being optimally utilized through setting machine parameters. Owing to this, minimum loading-unloading time is being achieved. The chip evacuation is efficient. The tool setting time has been saved through addition of online tool setting devices. "Apart from meeting all basic requirements, BFW has positioned itself as a cost-effective machine tool supplier conforming to the desired quality parameters. Even our end-customer was very appreciative about BFW's ability to honor the delivery schedule, owing to which the timeline of the project remained protected," proclaimed Joshi.



Source: BFW

**A sample of a typically manufactured cylinder head**

**"We have not faced any delivery or quality related hiccups since the machines were commissioned. BFW is promptly serving all our needs to avoid stoppages, howsoever, minor in nature."**

**General Manager, KFIL Machine Shop, SM Joshi**

However, all parties agree that communication was key in achieving the task of the special purpose production line.

Post installation too, BFW has helped its customer with all queries related to the manufacturing line. "We have not faced any delivery or quality related hiccups since the machines were commissioned. BFW is promptly serving all our needs to avoid stoppages, howsoever, minor in nature," affirmed Joshi.

## Customer appreciation

The hard work of both these companies brought about mutual appreciation. Shende confirmed, "Seamless teamwork is the key to the success of most projects. We found KFIL to be an excellent team player. Both sides understood each other. The rest was easy. The requirement was meticulously mapped, and the production line concept was jointly evolved to address the needs of quality, productivity and maintainability. A detailed schedule was worked out, protecting the rather tight project deadlines desired by the end-customer."

The lines are successfully churning out the machined components, which KFIL is supplying to its end-customer. In order to recognize BFW's contribution, KFIL honored the company with an award —the Best Supplier Award. MMI

# 3D Design Software Helps Increase Overall Efficiency

Innovation in design has come a long way. From designing on paper to now on the computer, its journey is commendable. 3D design software has helped many companies achieve more than just efficiency in its processes. Here's a look at Precihole Machine Tools' experience with design software and solutions offered by Dassault Systèmes SolidWorks.

For over two decades, Precihole Machine Tools Pvt Ltd has been providing deep-hole drilling and hole finishing solutions worldwide. Initially started as a small job shop, Precihole Machine Tools now operates in three verticals: deep-hole drilling machine tools, deep-hole drilling services and precision component manufacturing.

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To date, the company has manufactured more than 400 different special purpose machines (SPM) for testing, metal cutting and assembly apart from the standard deep-hole drilling machines.

## Challenges with design

Design & Development Manager, Precihole Machine Tools Pvt Ltd, Azhar Ahmed Ayaz Qazi averred, "Developing customized machinery requires a lot of engineering expertise as the machine has to work right from the start. The prototype is your final product. It also requires more time to be spent at the conceptual and design stage in order to ensure that the final product works as predicted."

### Precihole Machine Tools

**Challenge**

- Overdesigning of products
- Small design errors going unnoticed
- Reworking of parts

**Solution**

- SolidWorks 3D CAD Software and products

**Benefits**

- Reduced overall design time by 60 per cent
- Reduced number of errors by 30 per cent
- Reduced prototyping costs by 60 per cent
- Design optimization and modularization of machines

Source: Precihole Machine Tools

**Gun drilling machine design using SolidWorks software**

In order to achieve this, tools that help in better visualizing the design, verifying the mechanisms and authenticating the design considerations are required. Prior to the implementation of 3D design software, the company used to work on 2D drawing software for creating complex machinery consisting of more than 3,000 parts. Qazi affirmed, "Design was majorly based on experience of the designer and this usually meant that the product ended up being overdesigned. Further, there will be small design errors that go unnoticed and which finally lead to reworking of parts. Also, identifying interferences and collisions was left for the designer to imagine and rectify."

The company approached Addonix Technologies, a Value Added Reseller (VAR) of Dassault Systèmes SolidWorks for a solution. Dassault Systèmes Professional Channel (SolidWorks) drives its business

**"SolidWorks has helped us eliminate our design errors by almost 30 per cent as compared to what we found before implementing SolidWorks. Even our prototyping costs were reduced by 50 per cent. And the overall design time has reduced by 60 per cent."**

**Design & Development Manager, Precihole Machine Tools Pvt Ltd, Azhar Ahmed Ayaz Qazi**

**"SolidWorks has complete toolset to overcome any business challenges that customers might face whether it is to design, validate, publish or manage CAD data. SolidWorks solutions work together in allowing potential customers to make their products better, faster, and at a lower cost."**

**Director, Addonix Technologies, Samir Panshikar**

through its Value Added Resellers. Speaking on how VARs help end-users make right decisions according to their requirements Sales Director – SolidWorks India, Dassault Systèmes, PM Ravikumar asserted, "We invest significant time and resources to assist our VAR community with programs like technical and sales training & workshops, certification, boot camps, new product launch roadmap, annual conferences and kick offs. We do this so that our VARs can meet the customers' expectations and requirements in the market. We address the entire product development and engineering process to help designers design without limits. All our VAR AEs are SolidWorks certified and offer support to our customers."

## 3D software – a handy solution

Once the company moved to a SolidWorks 3D parametric modeling environment, all the previously faced issues were practically eliminated. Using SolidWorks, the company was able to build custom tooling suiting various components, which are then added to the standard deep-hole drilling machine, ensuring that its customer got a complete solution for his component.

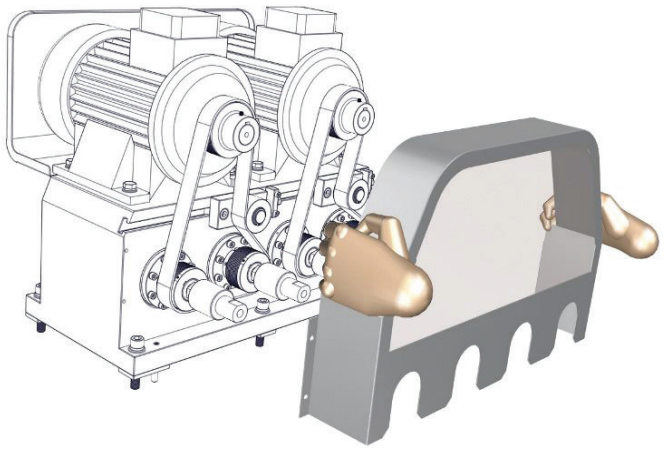
Apart from this, SolidWorks also has a vast configurable library of standard parts which is essential for machine design. It is easy to drag and drop fasteners, O rings, circlips, etc., that quickly snap onto the specified part, making the design process faster and easy. "The Product Design division is the heart of any engineering company. Customers designing a new part have to release it into production and ensure that it is fully validated which in itself is a long process. There is a growing realization among customers that if they can reuse design data that is already proven, then one can save an enormous amount of time and reduce cost using SolidWorks 3D CAD/CAE tools," said Director, Addonix Technologies, Samir Panshikar.

Agreeing with Panshikar, Qazi stated, "Quantitatively, Dassault Systèmes SolidWorks has helped us eliminate our design errors by almost 30 per cent as compared to what we found before implementing the software. Even our prototyping costs were reduced by 50 per cent. And the overall design time has reduced by 60 per cent."

Another product that was implemented in the company's design department is SolidWorks simulation. This product helps in designing critical load bearing machine parts optimally through results obtained from various analyses available in the simulation.

Qazi mentioned, "Especially in case of creating special purpose machines such kind of verification at the design stage ensures the product will function correctly the first time itself. This reduces a lot of time spent in correcting design errors during the testing stage. Working in the same SolidWorks window and getting results is a big bonus that SolidWorks simulation offers. Updating the model based on finite element analysis results and then running analysis over it for verification is real quick. The interface is very simple for any designer to understand and is equally effective for producing output. Overall we have achieved a lot of time saving, thanks to simulation which has in turn reduced the time to launch new product or refine existing models."

Source: Precihole Machine Tools



**A visual of how operating instructions appear in SolidWorks Composer**

## Not just for design

For every machine manufactured there is a requirement of a machine manual to be made. Usually this occurs after the machine has been designed. SolidWorks helps out even in this perspective. SolidWorks Composer aids in creating machine manuals, allowing for a visual take rather than just simple text for clear understanding of the machine's working. Because of the associativity between SolidWorks CAD data and SolidWorks Composer, all changes can get updated immediately. Hence, the manuals can be concurrently created with

**"About 90 per cent of enhancements come through the mode of 'listening to our customers' and the remaining 10 per cent of the enhancements come from our R&D that is responsible for creating new technology functionalities."**

**Sales Director – SolidWorks India, Dassault Systèmes, PM Ravikumar**

the designing stage itself. "We create simple operating instructions using series of step by step images or by generating animations that run through the process. We are able to generate these 3D animations in-house where earlier we used to spend a lot of time as well as money getting it outsourced," quipped Qazi.

SolidWorks Composer also helps in creating 3D animations. "Machine animation showing various assemblies and explaining the working of the machine has been a very useful tool for prospective clients. We also create animations to convey machine concepts to our customers to get their design approval. This adds up in competing for sales internationally," added Qazi.

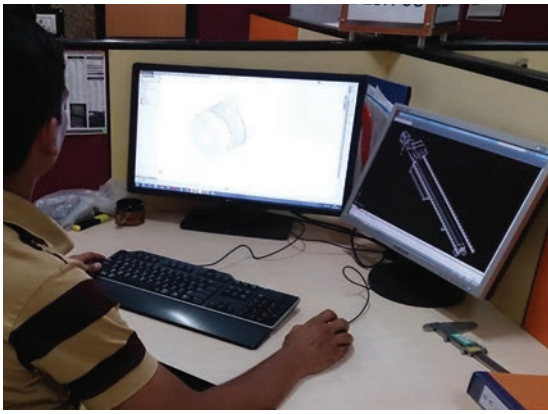
## Designing on a large scale

Designing multiple products also builds up a lot of data for archiving. As the company's design data was on a server and accessed by multiple designers at one time, issues were being faced on the time taken to open and save the stored data of parts and machine assemblies. There were also instances wherein data was mistakenly moved into another folder or deleted and then it had to be restored from the backup or created all over again.

Looking at these issues, Addonix Technologies suggested the company to use the Enterprise Product Data Management (EPDM) solution offered by SolidWorks.

On implementing the EPDM solution, the company saw various benefits including ease of access to ongoing designs; data is easily organized and searchable; users are updated with revision status of a work-in-progress part, etc.

Panshikar informed, "The good thing about Dassault Systèmes SolidWorks is that it has the best in class software solutions to transform innovations to business success. SolidWorks has complete toolset to overcome any business challenges that customers might face whether it is to design, validate, publish or manage CAD data. SolidWorks solutions work together in allowing potential customers to make their products better, faster, and at a lower cost. Precihole Machine Tools was using 2D software and now they fully migrated to SolidWorks and further implemented SolidWorks Composer, SolidWorks simulation and our Enterprise PDM solution."



Source: Precihole Machine Tools

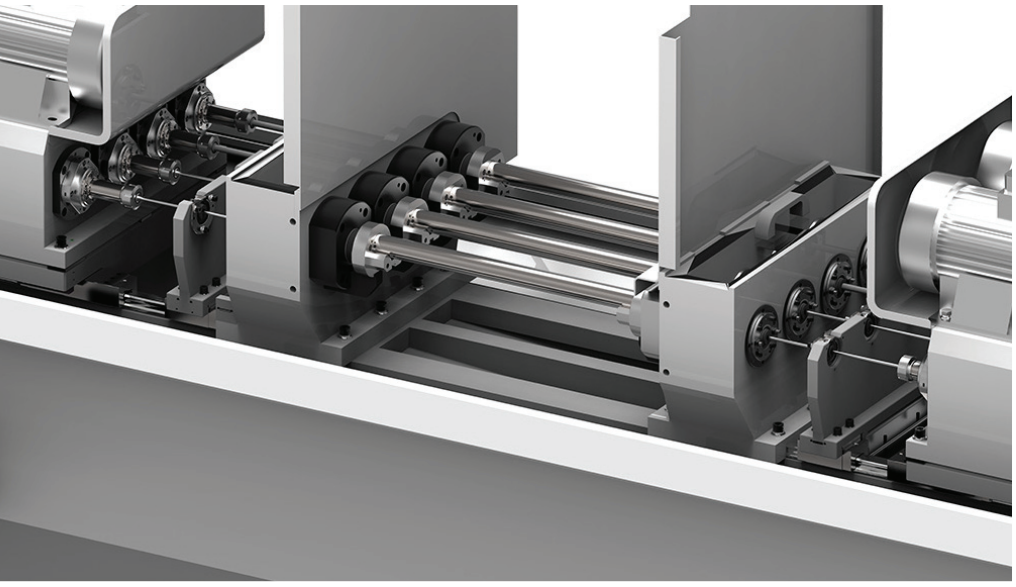
**Engineer designing a part using SolidWorks software**

Adding to why SolidWorks facilitates better designing, Ravikumar revealed, "Dassault Systèmes SolidWorks releases a new version of the software every September, which usually has 200+ enhancements. Over 90 per cent of these enhancements are customer driven or requested by customers. We have a dedicated team called 'product definition team' which decides what goes into the next version of the software. This team visits our customer sites, observes the usage of software and has detailed discussions on the enhancements that customers look forward to."

## Future forward

Precihole Machine Tools has since come a long way. The company has ventured into two new businesses and formed two companies — Precihole Sports Pvt Ltd and Solidaire Composites Pvt Ltd. At Precihole Sports, precision target shooting air rifles and accessories are being developed and it has already become a premium brand with the Indian shooting fraternity. Solidaire Composites is venturing into a very niche and upcoming technology wherein it develops polyurethane and polyurethane composites products for various applications like interiors, automotive parts, etc. The range of SolidWorks products the company uses has helped in its journey to design and manufacture at a faster pace.

Taking it forward, Qazi is also a User Group leader in the SolidWorks User Group community. There are more than 200 SolidWorks User Group communities worldwide, under the aegis of which users meet every month to share tips and insights and, share experiences which can facilitate the design community's growth to the next level. MMI



Source: Precihole Machine Tools

**Four spindle gun drilling SPM manufactured by Precihole**

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# Adding Value to Supply Chain Management

Supply chain is one of the important aspects of the manufacturing industry and should be addressed accordingly. A successful solution helps the manufacturer stay ahead and anticipate consumers' needs well in advance. It also allows manufacturers to dynamically adapt segmented business strategies with evolving insights about their customers.

Supply chain encompasses every aspect from sourcing, manufacturing to distribution and all the way up to the final delivery of products or services to customers. Moreover, the modern supply chain has complex interdependencies as it transcends national boundaries. As the power base continues to shift towards customers, companies are increasingly looking at revamping their supply chain to provide better customer satisfaction, thereby using supply chain as a strategic lever.

Source: JDA Software Group

## The Indian scenario

Multinationals that entered into India for leveraging the cost arbitrage quickly learnt that they need to finetune global best practices with local flavor to make it work. The broad manufacturing challenges in India range from poor physical infrastructure, limited distribution channels, fragmented supplier base to lack of transparent regulations.

In the last millennium, many Indian companies were experiencing serious supply chain management (SCM) issues, especially due to lack of conceptual framework and basic knowledge of SCM amongst business professionals. These manufacturers mostly had a vertically integrated supply chain, where they distributed products to the stockists and dealers, who in turn provided those to the local stores, which finally reached the final consumer in a B2C environment. The initial investment was in enterprise resource planning (ERP) kind of systems, trying to digitize the transactions, mainly driven by the electronic data interchange (EDI) and the Internet boom. It replaced mailed documents, phone calls and faxes.

Companies would block the production lines to make what they think is important for the market and tackle things as and when they surfaced. It was primarily a build to stock (BTS) kind of manufacturing model where they produced the goods based on their expertise and then pushed it out hoping that it would satisfy the customer needs.

The distribution strategy revolved around moving products from plant or factory to warehouse via the distribution centers, which were owned and controlled by the manufacturer. The benefits included improvements in staff efficiency, reduced communication time lags between entities with minimal errors and reduced costs.

Source: JDA Software Group

**Supply chain solutions help the customers in various aspects such as maximizing the throughput of production lines, reducing transportation costs and managing appropriate supplier material requirements**

## Evolution

With time, some companies moved up the supply chain maturity by creating specialized functional excellence. Each department still worked in silos, but made sure that what was given to them was managed by independent process management. The driving force behind these were techniques like Kanban and total preventive maintenance (TPM). In

Source: JDA Software Group

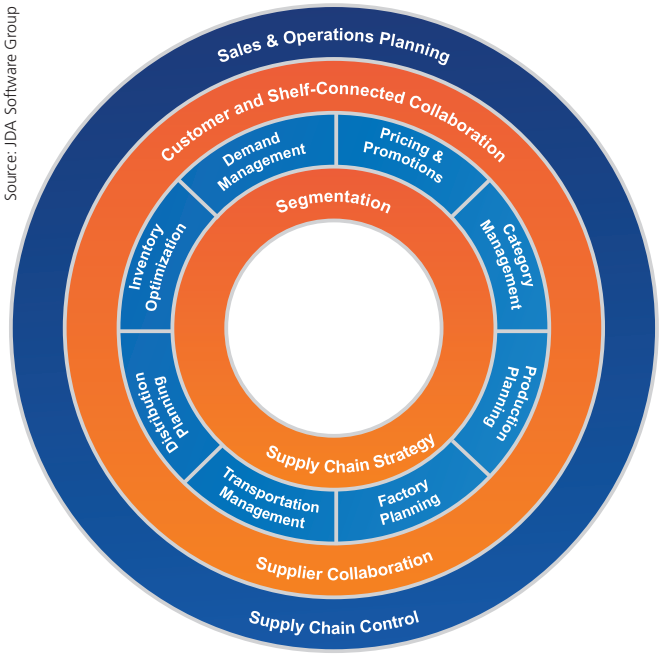



**Fig 1: JDA Manufacturing Solution**

this stage, manufacturers focused on cost reduction by integrating and consolidating business process infrastructure. Customers approached supply chain solution companies like JDA Software for point solutions ranging from maximizing the throughput of production lines, reducing transportation costs and managing appropriate supplier material requirements.

Slowly, the leaders were acknowledging SCM as the backbone for running effective and efficient operations. They splintered their traditional supply chains into smaller and flexible ones to reach the last mile of the large and diverse Indian rural market.

At its core, a good supply chain solution enables a manufacturer to develop deep understanding of customers and consumers and map them into segments of value expectations for products, services, prices and lead times (refer Fig 1). Manufacturers can then design segmented supply chain strategies and cost-to-serve approaches to drive profitable one-on-one relationships with their customers.

## Reliable solutions

The solutions offered by JDA Software include pre-packaged templates that translate high level business strategies and tactics into end-to-end configuration of supply chain processes such as demand management, pricing and promotions, category management, production and factory management, transportation and logistics management, distribution management and inventory optimization. The company's best-of-breed optimization technology drives maximum efficiencies through optimized use of resources across the buy, make, move, store, deliver and return supply chain.

Manufacturers can collaborate with their customers and gain insights to buying behavior of the end-customer. Similarly, manufacturers can collaborate with their suppliers to synchronize across the execution in the value chain. JDA solutions also enable high-velocity, customer-centric, risk-aware, synchronized planning and execution so that manufacturers can seize control, increase business agility and drive profitable growth. MMI

# Leveraging the Power of Innovation

Supporting the drive to innovate is one of the core aims of the UNIDO-ICAMT project for technology upgradation and productivity enhancement in the Indian machine tool industry. Towards this end, UNIDO-ICAMT assisted Precitec Precision Machineries (P) Ltd to identify key areas of innovation in market orientation, addressing space constraints, marketing, technological advancements and product portfolio development, which enabled the company to reap huge benefits.

Established in 1978 at Peenya Industrial Area, Bengaluru, Precitec Precision Machineries (P) Ltd is a leading manufacturer of large-size heavy duty machine tools for applications in infrastructure (particularly power generation, railways, heavy commercial vehicles, construction machinery and aerospace) in India. It also has expertise in offering CNC machine tools for machining composite materials. An ISO 9001-2008 certified company with two manufacturing units in Bengaluru, Precitec started its business by offering free-standing special purpose machines (SPMs) for a line, especially in select automobile components. Over the years, it has manufactured CNC machining systems for large-size machining, such as plate edge milling machines, multi-axis CNC machines like 7-axis milling and boring machines. Since its inception, the company has developed more than 800 SPMs and has established a reputation for its competency in design and development of large-size SPMs, particularly in situ machine tools.

Source: United Nations Industrial Development Organization (UNIDO)

With the able support of the International Centre for the Advancement of Manufacturing Technology (ICAMT), an international technology centre of the United Nations Industrial Development Organization (UNIDO), the company was successful in spearheading the development of innovative technologies. UNIDO-ICAMT assisted Precitec in deciding and conceptualizing the product portfolio. As a result, the business has been divided into three distinct verticals comprising SPMs; in-situ machining systems; and standard equipment consisting of CNC vertical turning centers and boring machines. This has enabled the company to focus better on each area and expand its product lines of CNC vertical turning centers, horizontal boring machines and floor-type boring machines.


Source: Precitec Precision Machineries (P) Ltd

**Rotamill developed by Precitec Precision Machineries (P) Ltd**

## Quest for innovation

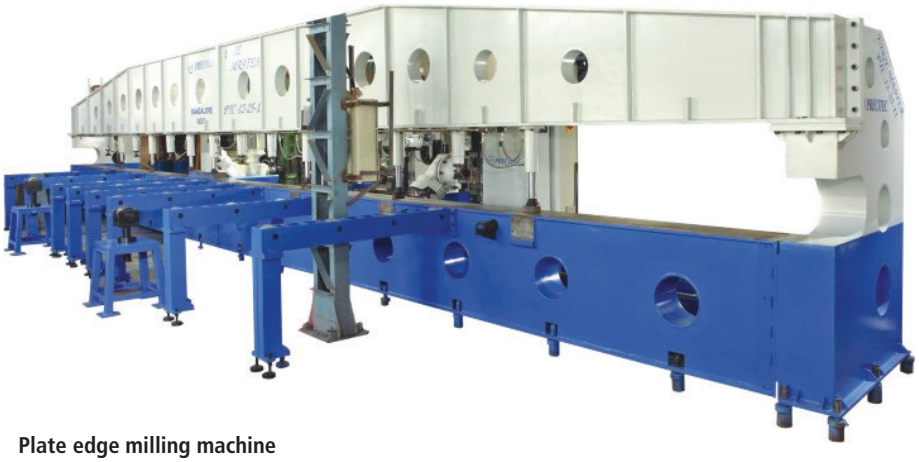
Precitec's interest in bringing about technological innovations to meet the needs of the heavy machining sector led UNIDO-ICAMT to suggest its participation in technology missions to leading international machine tool exhibitions. The visit to the China International Machine Tool Exhibition and EMO–Machine Tool World Exposition in 2011, in particular, gave the company an opportunity to witness the latest products and technologies in the large machining sector. It observed heavy machine tool technology trends and manufacturing inputs during plant visits to renowned machine tool companies. These along with inputs on heavy

machining components, component sourcing undertaken at EMO and appropriate product configuration exposure helped Precitec in developing the Rotamill.

## New product development

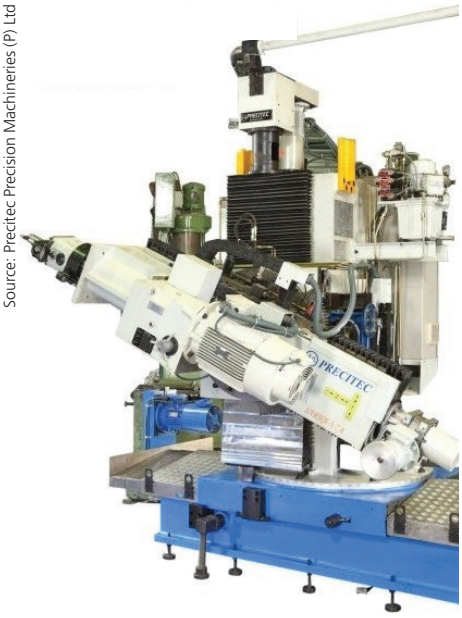
The Rotamill is a portable in-situ machining system used for machining heavy components and large-sized flanges and shells (5-10 meters in diameter) which are required in equipment for power generation, processing industry, etc., at site without having to move the heavy components. After machining, this system is disassembled and stored in special huge containers ready for transportation to the next site.

Precitec also participated in the Advanced Programme on Integrated Product Development conducted at Steinbeis Transfer Centre, Stuttgart, Germany. The two-week course imparted a design methodology that uses inputs from all areas of product development including prototype manufacture (design, marketing, customer services, manufacturing, engineering, etc,.) simultaneously in order to design a product right the very first time. Through this method, designs do not have to be repeatedly revised. Trial and error is avoided and the product configuration is integrated with the market need, along with ease of manufacturing, optimum engineering and improved quality control and reliability. This methodology assures significant reduction in lead time for the development and commercialization of a product, thus reducing cost. The company benefited from the training in the areas of development of SPMs and new products, and have integrated the lessons learnt in the systems and processes adopted by it. The Integrated Product Development system developed due to this integration has been fully adopted by it in the development of 5-axis CNC horizontal machines, 110 mm dia. boring spindle, a series of vertical turning mills from 500 mm table dia. up to 2 meter table dia. and other SPMs involving state-of-the-art technology inputs.



Source: Precitec Precision Machineries (P) Ltd

Plate edge milling machine



Source: Precitec Precision Machineries (P) Ltd

Shilpi 7-axis in-situ machine

## Eliminating constraints

Research and development alone cannot sustain innovation. The impediments to growth have to be eliminated for enabling companies such as Precitec to develop products. It had to address the lack of space that impeded the assembly of heavy duty SPMs on its shop floor. As a consequence of the UNIDO-ICAMT intervention, the company rented an additional 6,000 sq ft space, which was rebuilt with material handling facilities including roof heightening, thereby making it suitable for heavy machine tool production. The initiative has resulted in more than doubling the assembly capacity in addition to enhancing production shop facilities.

UNIDO-ICAMT also supported Precitec in the area of marketing by identifying a suitable marketing consultant in Kolkata and expanding its marketing potential with key customers such as SAIL, TELCO, Coalfields and the naval dockyards.

## Outcomes

Prior to the UNIDO-ICAMT project, Precitec's annual turnover was ₹65 million in 2009-10. UNIDO-ICAMT completed the diagnostic study/gap assessment by May 2011 and interventions at the unit started concurrently. After undertaking strategic measures, the company could increase its turnover to ₹90 million in 2011-12. Following the various interventions, such as plant expansion, product rationalization and focused product line differentiation, design methodologies and international exposure, it achieved a turnover of ₹85 million in 2012-13. However, due to the slowdown in major user-industries such as automobiles, industrial machinery and infrastructure, there has been a decline in the turnover during the financial year 2013-14, which was estimated at ₹66 million.

## The future

Precitec Precision Machineries is keen to maintain its strong niche in the market as a manufacturer of SPMs, in-situ machining systems for infrastructure and power generation, state-of-the-art vertical turning mills having a wide range of capacities, floor-type boring machines, and multi-axis horizontal boring machines. In order to ensure this, the company is investing in training of its engineers and technicians. It has established a training center, which offers an 18-month apprenticeship program for young matriculates from rural areas to provide them a vocation and make them industry ready. This shows the company's keenness in fulfilling its corporate social responsibility. UNIDO-ICAMT has undertaken an Intellectual Property audit at Precitec, which will be utilized to protect its IP more efficiently. MMI

Indian Machine Tool
Manufacturers' Association

# ANNOUNCING

## DELHI
## MACHINE TOOL EXPO 2015

**20 - 23 Aug 2015**
Pragati Maidan, New Delhi
India

## AHMEDABAD
## MACHINE TOOL EXPO 2015

**24 - 27 Sep 2015**
Mahatma Mandir, Gandhinagar
India

**Delivered by the organiser of IMTEX®**

Organiser:

Indian Machine Tool Manufacturers' Association

**Tel: +91 80 6624 6600, Email: info@mtx.co.in**

## EVENT CALENDAR

| Event Name | Contact | Date & Venue |
|---|---|---|
| **Automotive Engineering Show** | Sameer Khedkar<br>sameer.khedkar@india.messefrankfurt.com<br>www.aes-show.com | May 29-31, 2014<br>Auto Cluster Exhibition Centre, Chinchwad, Pune, India |
| **INTEC 2014** | Tel: +91(422) 2222396<br>intec@codissia.com<br>www. intec.codissia.com | June 6-10, 2014<br>Codissia Trade Fair Complex, Coimbatore, India |
| **CIMES 2014** | Macy Yao<br>macy.yao@reedhuayin.com.cn<br>www.chinaexhibition.com | June 18-22, 2014<br>New China International Exhibition Center, Beijing, China |
| **ACMEE 2014** | Subram Raghavan<br>Tel: +91(44) 26258619<br>info@acmee.in<br>www.acmee.in | June 19-23, 2014<br>Chennai Trade Centre, Chennai, India |
| **EMTE – EASTPO 2014** | Sooraj Dhawan<br>sales@emte-eastpo.com<br>www.emte-eastpo.com | July 14-17, 2014<br>Shanghai New Intl Expo Center, Shanghai, China |
| **AMTEX 2014** | Cyril Pereira<br>Tel: +91(080) 43307474<br>cyril@triuneexhibitors.com<br>www.triuneexhibitors.com | July 25-28, 2014<br>Pragati Maidan, New Delhi, India |
| **HIMTEX 2014** | John Sudheer<br>Tel: +91 9989998209<br>js@hitex.co.in<br>www.himtex.in | September 4-6, 2014<br>HITEX Exhibition Center,<br>Hyderabad, India |
| **IMTS 2014** | Whitney Brown<br>wbrown@AMTonline.org<br>www.imts.com | September 8-13, 2014<br>McCormick Place, Chicago, Illinois, US |
| **EuroBLECH 2014** | Tel: +44 (1727) 814400<br>info@euroblech.com<br>www.euroblech.com | October 21-25, 2014<br>Hannover, Germany |
| **Hand Tools/ Fastener Expo** | V B Sudeep<br>sudeep@itei.in<br>www.iihtexpo.com | November 7-9, 2014<br>Chennai Trade Centre, Chennai, India |
| **IMTEX 2015** | Balasubramanian Pillai<br>bala@imtma.in<br>www.imtex.in | January 22-28, 2015<br>BIEC, Bengaluru, India |
| **Northwest Machine Tool Expo** | Tel: +1 (800) 547-7377<br>info@cygnus.com<br>machinetoolexpos.com | April 1-2, 2015<br>Oregon Convention Center, Portland, US |

**To suggest an event, please send details to kruti.bharadva@vogel.de**

# DIEMOULD India 2014: Shaping the Future of Manufacturing

Achieving engineering excellence through innovation is the way forward to establish India as a global manufacturing hub. With a view to inspire innovations and showcase the latest developments in the arena of dies and molds – the vital manufacturing components – the 9th edition of Die & Mould India International Exhibition was held from April 17-20, 2014, at the Bombay Exhibition Centre, Mumbai. A report…

Hailed as India's largest international die and mold show, DIEMOULD India (DMI) 2014 – organized by the Tool and Gauge Manufacturers Association- India (TAGMA-India) – brought to the limelight the mindset of the die and mold industry towards adopting state-of-the-art technology and ensuring world-class production.

Marcilin Madathil
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The exhibitors exceeding 230 (national - 211 and international - 33) and the sheer number of visitors touching the figures of around 21,522 echoed this sentiment strongly.

## A grand opening

The exhibition witnessed a power-packed start and was inaugurated by the 11th President of India, a renowned scientist, author and profound thinker and the Chief Guest of the show, Dr APJ Abdul Kalam. Other luminaries present at the inaugural ceremony as Guests of Honor included Officer-In-Charge & National Programme Officer, UNIDO – International Centre for Advancement of Manufacturing Technology (ICAMT), Deepak Ballani; and Director (TR), Office of the Development Commissioner (MSME), RK Rai, along with the highly esteemed members of TAGMA – Founder President and Executive Council Member, TAGMA, N Reguraj; President, TAGMA, SC Kalyanpur; and Executive Director, TAGMA, PN Surendranath. The mechanized inauguration highlighted the keenness of the die and mold sector to experience and adopt innovative products, concepts and technologies.

Source: Source: TAGMA India

**Former President of India, Dr APJ Abdul Kalam lighting the traditional lamp at the inauguration ceremony while other dignitaries (LtoR) Executive Director, TAGMA, PN Surendranath; President, TAGMA, SC Kalyanpur; Director (TR), Office of the Development Commissioner (MSME), RK Rai; Officer-In-Charge & National Programme Officer, UNIDO-ICAMT, Deepak Ballani; and Founder President and Executive Council Member, TAGMA, N Reguraj look on**

While delivering the keynote address on 'A Vibrant Die & Mould Industry for an Economically Developed Nation' Dr Kalam stated, "Several rocket subsystems require jigs, fixtures and molds for the realization of such complex parts. For an engineer entering manufacturing in any sector be it space, automobile, machine tool or infrastructure, dies, molds, jigs and fixtures are the starting points. Their accuracies and soundness determine the product evolution. In order to boost manufacturing prowess across verticals, there is a need to have a strong base in tools and dies design. The industry needs to consolidate the experiences so far and use modern technologies to achieve this."

He noted that the market size of the Indian tool room industry reached ₹17,000 crore in 2012-13 despite the decline in the automotive sector. However, about 35 per cent of this came from imports. "The challenges lie in increasing the domestic quality and production ability to reduce import reliance and emerge as an overall net exporter in the sector," Dr Kalam said.

For overcoming such challenges, he outlined a five-point agenda for the tools, dies

**"In order to boost manufacturing prowess across verticals, there is a need to have a strong base in tools and dies design. The industry needs to consolidate the experiences so far and use modern technologies to achieve this."**

**Former President of India, renowned scientist, Dr APJ Abdul Kalam**

**"It is important to focus on inclusive sustainable industrial development by aiming at manufacturing excellence through product and process innovation."**

**Officer-In-Charge & National Programme Officer, UNIDO – International Centre for Advancement of Manufacturing Technology, Deepak Ballani**

**"On the technology front, most of the exhibitors showcased their incremental capability improvement at the event. In machining, we noticed more usage of high speed machining for finishing of die and mold."**

**Managing Director, TaeguTec India Pvt Ltd, and President, IMTMA, L Krishnan**

and mold industry, and also emphasized on the importance of competitiveness and creative leadership for attaining national economic growth.

Ballani gave insights on 'Enabling & Empowering through Focused Cluster Approach', and said, "UNIDO has been involved in cluster development in enhancing the competitiveness of micro, small and medium enterprises (MSMEs) in India for almost two decades. Though MSMEs generate a large share of employment and income opportunities, the development potential remains untapped since most of them operate in isolation. UNIDO addresses these issues by boosting the development of a competitive private sector and contributing to poverty reduction through a focused cluster development approach."

He added, "It is important to focus on inclusive sustainable industrial development by aiming at manufacturing excellence through product and process innovation. The manufacturing industry needs to establish meaningful business partnerships with technical and R&D institutions, academia, government and international development organizations for enhancing productivity and aiding technology upgradation."

Rai spoke at length about the journey of SME tool rooms and about the Technology Centre System Programme (TCSP), which enables to create a unique stakeholder ecosystem.

Apprising the audience about the activities and contribution of TAGMA-India – celebrating its silver jubilee year – towards the growth of the tooling industry in India, Reguraj said, "TAGMA is well-connected globally through the Federation of Asian Die and Mould Association (FADMA). It has established an online library for the service of its members and it functions from Bengaluru. Currently, the Association is engaged in setting up a center for growth and excellence in Pune."

Surendranath stated that the visions and insights on the die and mold industry shared by Dr Kalam in his keynote address were thought-provoking and would go a long way in boosting the growth of the Indian tooling industry. Concluding the inaugural ceremony, Kalyanpur delivered the vote of thanks.

## A trendsetter

From a humble beginning covering just 1,000 sq mt in 1998, the exhibition has grown by leaps and bounds to cover well over 20,000 sq mt in 2014. It served as a great forum for exhibitors to interact with their existing and potential customers alongside other business and technical partners in the industry. Executive Vice President and Business Head, Godrej Tooling Division, DK Sharma asserted, "The exhibition provided us a platform to showcase our latest capabilities to a wide range of customers. Our foray into tooling solutions for high tensile sheet metal parts and skin panels as well as for large transmission and engine components was well-received by the visitors."

The exhibitors were overwhelmed with the visitors' response and the event set new benchmarks in terms of technology display as opined by Managing Director, TaeguTec India Pvt Ltd, and President, IMTMA, L Krishnan, "Overall, we had a positive experience. Such a forum enables to launch specific segment-focused products and gives an opportunity for customer engagement and communication. On the technology front, most of the exhibitors showcased their incremental capability improvement at the event. In machining, we noticed more usage of high speed machining for finishing of die and mold."

## On display

The exhibition unveiled several cutting-edge technologies, with leading companies


Source: TAGMA India

**Visitors exploring technology offerings at the event**

**"The exhibition provided us a platform to showcase our latest capabilities to a wide range of customers. Our foray into tooling solutions for high tensile sheet metal parts and skin panels as well as for large transmission and engine components were well-received by the visitors."**

**Executive Vice President and Business Head, Godrej Tooling Division, DK Sharma**

**"Our main objective in recent years has been to expand the horizon for toolmakers and introduce them to allied technologies that will help them limit their dependence on a single domain."**

**Managing Director – India & Middle East, Delcam Plc, UK and ASEAN Business Development Director, Delcam Professional Services Ltd, UK, Vineet Seth**

**"The primary objectives of our company revolved around feeling the current pulse of the die and mold industry as we have a huge product basket to cater to its needs, and interacting with industry leaders to map their future requirements in terms of technology offerings."**

**Vice President-Sales, Jyoti CNC Automation Ltd, Vikas Taneja**

from India, Austria, Czech Republic, France, Germany, Hong Kong, Italy, Japan, South Korea and Singapore demonstrating the latest technological trends in the tooling industry along with cost-effective, energy-efficient and environment-friendly solutions for the dies and mold makers.

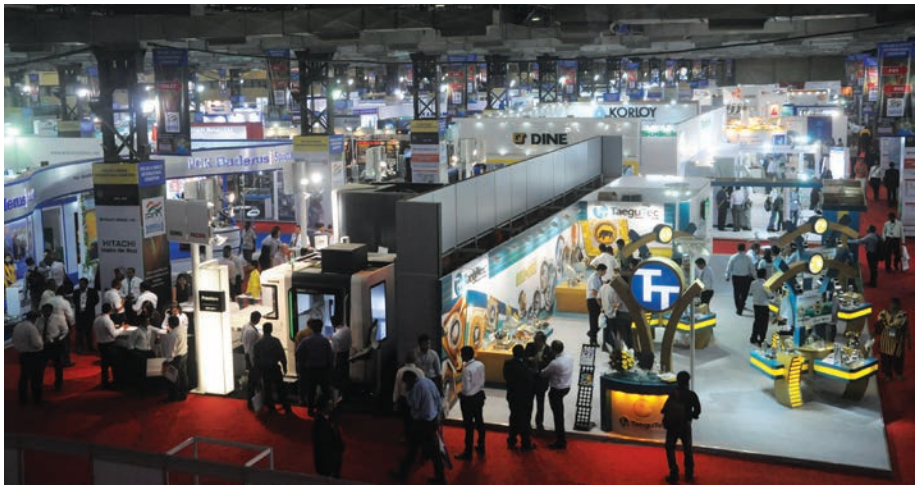
A key highlight of the show was the state-of-the-art dies and molds that were produced using advanced manufacturing solutions. Such tools were normally imported earlier, but today the tool rooms in India are raising the bar for competence across the die and mold industry. Some of the latest trends witnessed at the event included 3D laser scanning developed indigenously, and new metal cutting technologies. A number of CNC machines that focused on micro-precision machining of molds were also on display.

## Exhibitors

The exhibiting companies, to name a few, included DMG MORI Seiki India Machines and Services Pvt Ltd, Taegutec India Ltd, Godrej & Boyce Mfg Co Ltd - Tooling Division, Jyoti CNC Automation Ltd, Delcam, FARO Business Technologies India Pvt Ltd, G.W. Precision Tools India Pvt Ltd, Korloy India Tooling Pvt Ltd, Makino India Pvt Ltd, Metrol Corporation, Renishaw Metrology Systems Pvt Ltd, Sridevi Tool Engineers Pvt Ltd, Falcon Toolings, etc.

While expressing his views on the importance of such events, Managing Director - India & Middle East, Delcam Plc, UK and ASEAN Business Development Director, Delcam Professional Services Ltd, UK, Vineet Seth said, "DMI offers us a platform to reach out to our target market. Our main objective in recent years has been to expand the horizon for toolmakers and introduce them to allied technologies that will help them limit their dependence on a single domain. One of the highlights of this edition included the interesting displays by customers who have adopted automation in the tool room to increase reliability and efficiency of the manufacturing system."

Source: TAGMA India




**A wide array of products on display**

Taking cue from the fact that some state-of-the-art products can only be sold by demonstrating critical applications to customers, the exhibitors showcased machines endowed with the best capabilities. Vice President-Sales, Jyoti CNC Automation Ltd, Vikas Taneja stated, "The primary objectives of our company revolved around feeling the current pulse of the die and mold industry as we have a huge product basket to cater to its needs, and interacting with industry leaders to map their future requirements in terms of technology offerings."

## New launches

Several new products were launched by leading companies during the exhibition. TaeguTec India Pvt Ltd launched the high speed spindle – an innovative product that uses high pressure coolant available on the machine. Delcam Plc launched its latest HSM strategy Vortex along with MachineDNA. It also demonstrated the ease with which tool rooms can inspect components on the shop floor with the help of its PowerINSPECT CAD-to-Part inspection software and articulated measuring arms. Godrej Tooling Division displayed a large transmission die casting die that attracted the industry's attention, besides launching its new business adjacency to a wider audience – Engineering Services and Tool Management Services.

## Concurrent events

DMI 2014 hosted panel discussions and seminars, which included 'Die & Mold Industry - Meeting the Challenges for a Sustainable Growth'; 'Systematic Process Engineering for Draw Die Development and Stamping Process Design'; 'Relevance of High Speed Cutting in Die-Mold Application'; and 'MMP Technology (super finishing)'. MMI

# Automotive Engineering Show

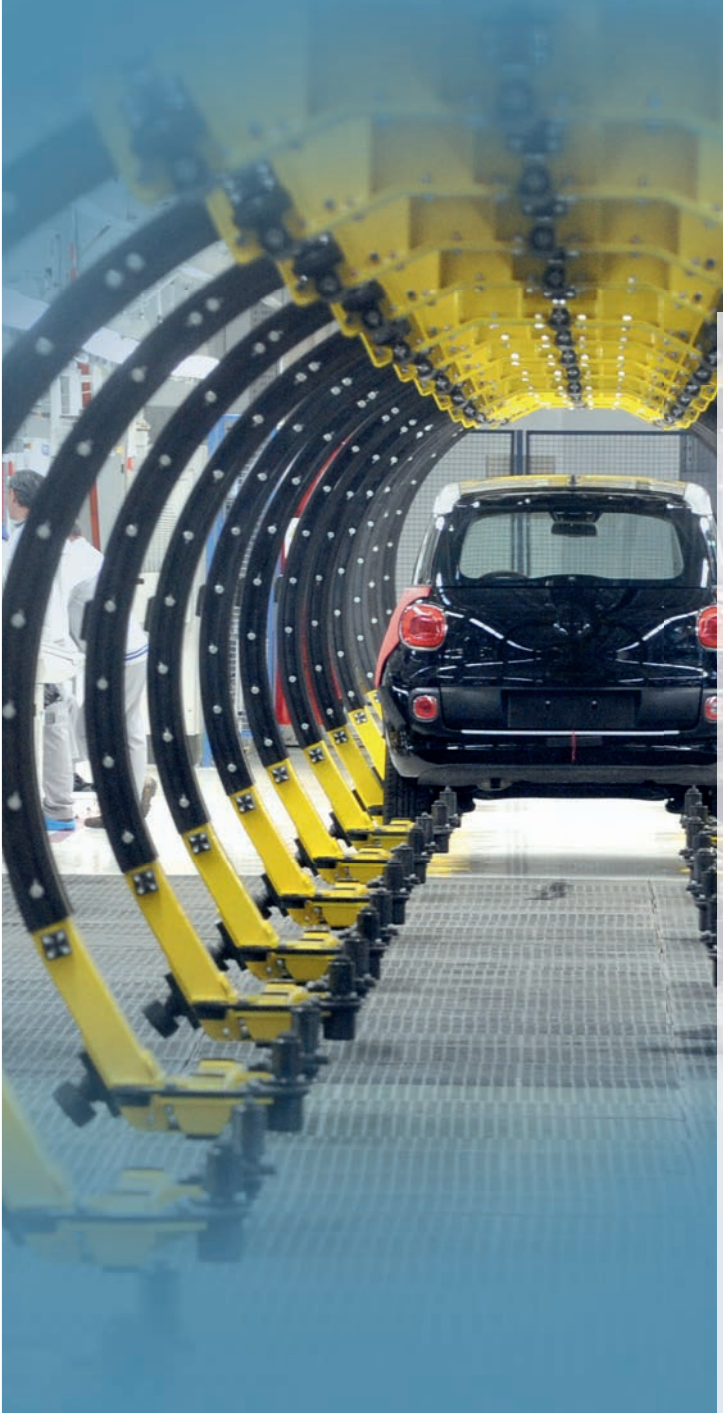
Free Expo Pass

International Exhibition on Technologies for Automotive Manufacturing

## 29 – 31 May 2014

Auto Cluster Exhibition Centre, Chinchwad, Pune

www.aes-show.com



## Show Highlights:

- The only tradeshow strictly dedicated to automotive plant processes and systems.
- 100+ exhibitors featuring the latest processes and technologies in automotive engineering.
- Concurrent seminar on "Lowering costs in Automotive plants"

**Bookings open**

**For more information, please contact:**

**sameer.khedkar@india.messefrankfurt.com**

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# Driving the Automotive Industry Forward

Organized by Messe Frankfurt India, the 8th edition of the Automotive Engineering Show (AES) will be a one-stop-shop for all technologies and products that will set new benchmarks for the automotive industry. Posing as a gateway to the Indian industry, the show will be held from May 29-31, 2014 at Auto Cluster Exhibition Centre, Chinchwad, Pune.

India is rapidly emerging as one of the most popular markets for automotive manufacturing, with a number of key global brands already operating production plants within the country. According to a recent report in The Economic Times, the automobile industry has invested a whopping ₹22,000 crore ($ 3.6463 billion) in building new factories, adding fresh capacity and bringing out new products.

Compiled by:
Nedra Pereira
Senior Feature Writer
Vogel Business Media India
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The much anticipated Automotive Engineering Show will provide the ideal platform for showcasing pioneering automation technology that will take the automotive manufacturing industry to the next level. This year sees Messe Frankfurt taking control over the trade fair's operations as it recently acquisitioned the show. The company will combine its proven expertise in the automation and automotive sectors to provide an international standard business and networking platform. The show is slated to be India's only trade fair that is focused on automotive manufacturing and will be open to trade visitors only.

## Ideal platform

The AES has maintained its focus on automotive plant processes and technologies over the years. It is one of the only tradeshows in the world with the 'automobile factory' as its focal point. Industry professionals from vehicle and auto component companies can use this platform to identify and source the latest automotive solutions. For instance,

Source: Messe Frankfurt


**Visitors at the last Automotive Engineering Show viewing equipment and interacting with industry experts**


Source: Messe Frankfurt

**Exhibition Director, Messe Frankfurt Trade Fair India Pvt Ltd, Sameer Khedkar addresses the audience along with delegates from the industry at the previous edition of the show**

Axxon is launching a fast charging carbon battery, a first-of-its-kind in India for solar power applications; Micromeasures Metrology Pvt Ltd is showcasing the EYP Model Pulse Wrench achieving highest torque accuracy for industrial fastening applications, 3C Solutions India Pvt Ltd is showcasing dry-lube equipment & consumables-an Italian Patented Technology-developed by m/s ALTEA S.r.l., Italy, and HumiSeal, a leading manufacturer of conformal coatings will also use AES 2014 as a platform to launch its new UV50 and UV500 products.

Acknowledging the show as an important industry event, Managing Executive Officer – Production, Maruti Suzuki India, MM Singh, stated, "Events like AES give auto and equipment manufacturers and OEMs like us an opportunity to interact with each other and observe what latest product innovations are taking the cluster to the next level."

Focusing on future-oriented technologies and innovations, the show will cover IT solutions in design, development, planning and manufacturing, automation systems, factory control and sensors, specialized solutions in welding including laser welding, automotive painting equipment, paintshop integrators, robotics, metrology, quality inspection & vision system and more.

Visitors can expect to see the latest technologies and cutting-edge solutions at the show while connecting with suppliers of automotive manufacturing technologies that are used all over the world. "In the emerging trend of system improvement to meet market demand and customer requirements, automotive OEMs in India are focusing on concepts like frugal engineering, lean manufacturing solutions, low-cost automation and high-definition automation systems. AES demonstrates all of the above," averred CEO, Ashok Leyland Nissan Vehicles, VK Bhalla.

## AES seminar

Being a credible industry platform, AES 2014 will represent the entire industry under a single roof and spotlight automation innovations and trends. A one-day seminar, scheduled to be held on May 30, 2014, alongside the show will see industry leaders come together to debate how automation in manufacturing can improve quality and productivity with a focus on reducing costs. Technical presentations and seminar sessions have been scheduled with a focus on lowering costs in automotive plants, a topic most relevant to overcome the severe cost challenges faced by manufacturers in today's market conditions. Experts on the subject have been lined up to discuss low-cost automation solutions for SMEs to improve operational excellence.

## Making the right choice

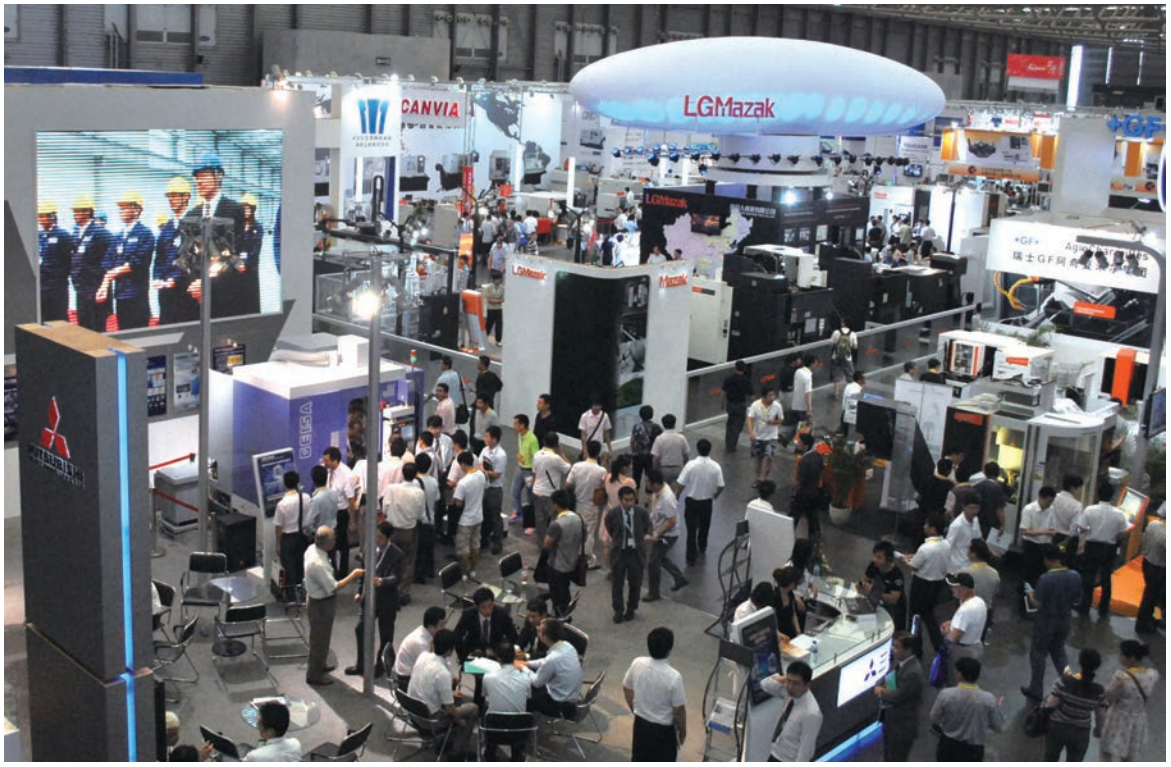
Nothing can replace the advantage of having one-on-one interactions with product experts and viewing the equipment in person. This is one of the benefits of attending AES. An understanding from these suppliers about the possible applications and automated, self-adjusting manufacturing lines for optimizing processes within plants is possible. Also, with the concurrent seminar at the venue, participants will have an opportunity to update themselves with the latest automation products, technologies, trends and services from across the globe, and all this in a professional business environment that will allow for making informed purchase decisions.

Leading brands and companies such as Anabond, Autofina, Bar Code India Ltd, Cybernetik Technologies Pvt Ltd, Disti Chemi Engg Pvt Ltd, Faro Business Technologies (I) Pvt Ltd, Flir Systems India Pvt Ltd, Gantner Instruments India P Ltd, Hages Business Solutions Pvt Ltd, ifm Electronic India Pvt Ltd, IPG Photonics India Pvt Ltd, Klockner Desma Machinery Pvt Ltd, Miyachi India Pvt Ltd, Paloma Turning Company Pvt Ltd, Rohan Standox Autolack, Sick India Pvt Ltd, Steepgraph, Axxon Material Science, Barry - Wehmiller International Ltd, S.V.A. Rikkon Lubes Pvt Ltd, Bettinelli, Leuze Electronics, Kaynes Technology India Pvt Ltd, Blue Star Ltd, Accurate Engineering Company Pvt Ltd, Henkel Adhesive Technologies India Pvt Ltd, Janatics India Pvt Ltd, Nordson India Pvt Ltd, Praj Industries, Spraying Systems (India) Pvt Ltd, ITC Infotech India Ltd, Chowgule ABP Coatings (I) Pvt Ltd, Elesa and Ganter India Pvt Ltd, Kirloskar Pneumatic Co Ltd, etc., will be seen exhibiting their latest innovations to the OEM and end-user automotive community.

With the last edition in 2013 attracting 120 participants and more than 5,600 industry visitors from OEMs as well as tier-one to tier-three suppliers, the show has set the stage for developing business contacts and knowledge sharing among vehicle manufacturers, auto components manufacturers, machine builders, forging companies, educational institutions and industry professionals. This is bound to be one eye-opening experience. See you there! MMI

Source: Messe Frankfurt

Source: CECIMO




**This summit will bring together some 200 leading machine tool makers from all over the world and buyers from China and the rest of Asia**

# Platform to Garner Stronger Foothold

EMTE-EASTPO Machine Tool Exhibition provides a one-stop business platform for leading manufacturers seeking to penetrate the dynamic marketplace in Asia. It will unveil a high quality showcase to buyers from China and other parts of Asia. Scheduled to be held from July 14–17, 2014, this is the first edition of the show, which is slated to be a biennial event.

EMTE-EASTPO is a joint exhibition organized by the European Association of the Machine Tool Industries (CECIMO) in partnership with EASTPO and MP Organisation. Through this trade show, the organizers look forward to helping European machine tool companies to establish a stronger footing in Asia. The Shanghai International Machine Tool Fair, better known as EASTPO, is one of the three largest machine tool exhibitions in China and the region. European Machine Tool Exhibition (EMTE) will be the addition to the event. With the partnership, the bridging of the business practices and cultures of East and West will be achieved through the combined efforts.

Asia is currently being seen as the 'land of opportunity' for machine tool companies for the various benefits it offers. Hence, Shanghai was chosen as the ideal destination for the EMTE-EASTPO Machine Tool Exhibition as it is the hub for key industry sectors in electronics, steel, chemicals and pharmaceuticals as well as industrial machinery and parts.

## Unique platform

The first edition of the joint exhibition is expected to be an innovative showcase of high performing, improved machinery and practical business solutions that address the demands of the global machine tool sector presented by leading names from around the world. The wide array of exhibits will be displayed in sectors that include machine tools, precision tools, parts, components, accessories, manufacturing and process automation, metrology and quality assurance, and services.

To ensure that EMTE will be at par with the European quality standards for exhibitors and visitors, a CECIMO-EMTE organizing team composed of people experienced in setting up and running national and international machine tool exhibitions as well as national pavilions worldwide has been set in place. It will follow the strong tradition of major

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exhibitions in Europe, where strict exhibitor admission rules, intellectual property protection and live demonstrations of exhibits are featured. Director General, CECIMO, Filip Geerts explained, "It will be the only CECIMO-backed exhibition in Shanghai, and the organizing team has a strong track record of organizing machine tool exhibitions and related shows."

## The Asia factor

This exhibition will be mutually beneficial to all who take part. Geerts mentioned, "Asia consumes almost 64 per cent of all machine tools in the world and will remain an important market for European machine tool producers even if no substantial growth of the consumption ratio is foreseen. The governments of China and India are making efforts to rebalance their economies. Their future economic growth greatly depends on the success of the reforms they carry out. Therefore, manufacturers in the region become more interested in productivity and optimization of processes."

For this reason Asia is a coveted market. Emphasizing on this, Geerts stated, "This is a perfect opportunity for European machine tool builders to expand their market share in Asia, since they can definitely offer the advanced solutions sought by the industry. European machine tool companies are known worldwide for their premium quality advanced machines that combine high productivity and precision and make an essential part of modern manufacturing."

The trade exhibition will showcase the best from the machine tool industry from around the world. EASTPO alone covered 80,000 sq mt of gross exhibition space in 2012, and the addition of EMTE is expected to add many square meters to the area covered by the four-day exhibition.

## Concurrent events

The exhibition will also see running along with it concurrent events. EMTE-EASTPO CEO Summit is a one-day conference targeted at top machine tool buyers from China and the rest of Asia. It is a platform to promote first class knowledge sharing and meaningful dialogs within the industry.

The summit, held in conjunction with the machine tool exhibition, will take place on July 15, 2014 at the Kerry Hotel Pudong, Shanghai. It will feature a panel of distinguished speakers to present and share ideas on the theme 'Profitable growth through state-of-the-art manufacturing'. The summit has already confirmed speakers and moderators from Gardner Business Media, Shenyang Machine Tool (Group), Staufen Shanghai Consulting Academy, Tornos and Volkswagen Group China, to name a few. The different topics covered will be 'Machine tools & automation: 21st century global trends and China's rising issue', 'The voice of customers: Perspective from producers and suppliers' and 'Keys to success for effective production and maximizing operational excellence'. It is expected that around 200 leading machine tool makers and their end-customers will discuss global trends, best practices and other issues that impact the manufacturing industry.

In addition, several onsite seminars and technical tours to manufacturing hubs near Shanghai will be conducted. This is to highlight the trends and create awareness among the players and stakeholders in the industry.

**"EMTE-EASTPO will act as a springboard to help machine tool builders gain exposure to China and other markets in the neighboring countries. It will connect them to high-profile customers to strike new sales deals and select right business partners."**

**Director General, CECIMO, Filip Geerts**

## Participation

The exhibition will also feature the latest innovations from different country pavilions that include Germany, Switzerland, Italy, Spain, South Korea, Czech Republic, etc. Key market leaders Starrag, Bystronic, Agie Charmilles, Fanuc, Agathon, UNITED GRINDING (previously known as Korber Schleifring), Carl Zeiss, Fastems, Tornos and Hermle have also confirmed their participation at EMTE-EASTPO 2014.

## Conclusion

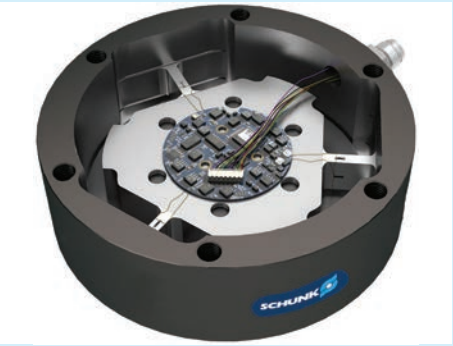
This event is sure to be one that will build avenues for companies trying to establish or strengthen their foothold in Asia. With industry stalwarts in attendance, and presentations on the latest technology innovations being conducted, the event is sure to be an ideal ground for networking with the right people. Also following European exhibition norms, only key players and decision makers will be allowed to attend making for beneficial interaction. If growing your business is on your mind, this is one exhibition you will not want to miss. See you there! MMI

Source: CECIMO

Source: CECIMO


**The event will be a one-stop shop for networking, trading and learning about the latest trends and innovations**

Schunk, a leading provider of clamping technology and gripping systems, has numerous innovative products in its portfolio. Here are some of its offerings:

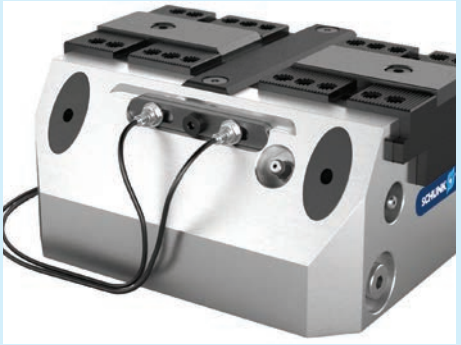


## Cost-effective Force-Moment Sensor

The force-moment sensor of the FTL series from Schunk has high measuring accuracy and is one of the most precise sensors on the market. Since every application does not require such a high precision, the company has expanded its range with efficient and cost-effective sensors. The flat sensor with less interfering contours can be economically used in simple applications. Since the evaluation electronics is completely integrated in the module, compact solutions can be designed. The FTL disposes of six independent load measurement ranges, whereby the forces of up to 150 N, and moments of up to 3 Nm can be recorded at a measuring accuracy of 3 per cent of the measured value.

## Welding Machine for Tool Steel

PSM 400 is a laser machine from Schunk that can achieve excellent results even in case of demanding welding tasks. It can process cast iron parts, high-carbon content steels and super alloys quickly and economically. Highly accurate linear axes, a full-fledged CNC controller with real-time simulation, a robust laser source, reflection-safe fibers and a stable, hardened T-slot table ensure high precision and repeat accuracy. The machine can be easily set up due to user-friendly HMC controller and the unique teach-in function for lines, arcs, circles and splines. Even parts that are complex or damaged on the surface can be handled rapidly in 3D space without time-consuming external programming.



## Upgraded Clamping Force Blocks

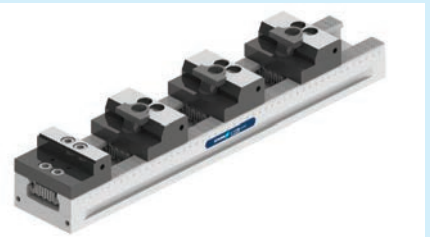
Schunk has extended its series of TANDEM KSP plus clamping force blocks with two helpful extras. With the jaw quick-change system, BWM clamping blocks can be retrofitted by separating them from installation position in less than 30 seconds onto a new chuck jaw set for O.D. clamping. Since base jaw and changing jaw are connected with each other via an integrated diagonal pull, the interfering contour of the clamping block remains unchanged. A spring mechanism ensures that the changing jaw will not fall out in the open position. The changing jaws can be equipped with standardized clamping inserts from the company.

## Analog Multi-positioning Monitoring

The analog Schunk MMS-A magnetic switch is the teachable encoder, which can be integrated directly into the C-slot of gripping modules. It serves to accurately detect the size of the gripped parts, which can be output as an analog voltage value as 0-5 V DC or 0-10 V DC, as selected during the current handling process. This compact MMS-A, with a 4 mm diameter, is sufficient for operations where previously several magnetic switches were needed. The required electronics are fully integrated. The output signal is sent over a displacement measuring range up to 30 mm with a resolution of up to 0.1 mm. Using an intuitive teaching function and two LEDs, different magnetic fields can be quickly and easily made linear.

## A Flexible Multi-clamping Vise with System

The Schunk multi-clamping vise KONTEC KSM2 is a reliable and precise all-rounder for stationary workpiece clamping. In order to efficiently use 3, 4, or 5-axis machines, it can simultaneously clamp several parts, which are located next to each other. Slim jaws without protruding, interfering contours ensure a particularly high part density and an optimum accessibility. Its performance during clamping together large workpieces with other KSM2 multi-clamping vises is convincing. A hardened and ground fine serration provides for maximum robustness, precision and dimensional stability. A system based on wedge clamping elements ensures that the workpiece is pulled down during the clamping process, no matter how big the workpiece is, and even in case of high feed rates, a safe and precise machining is ensured.



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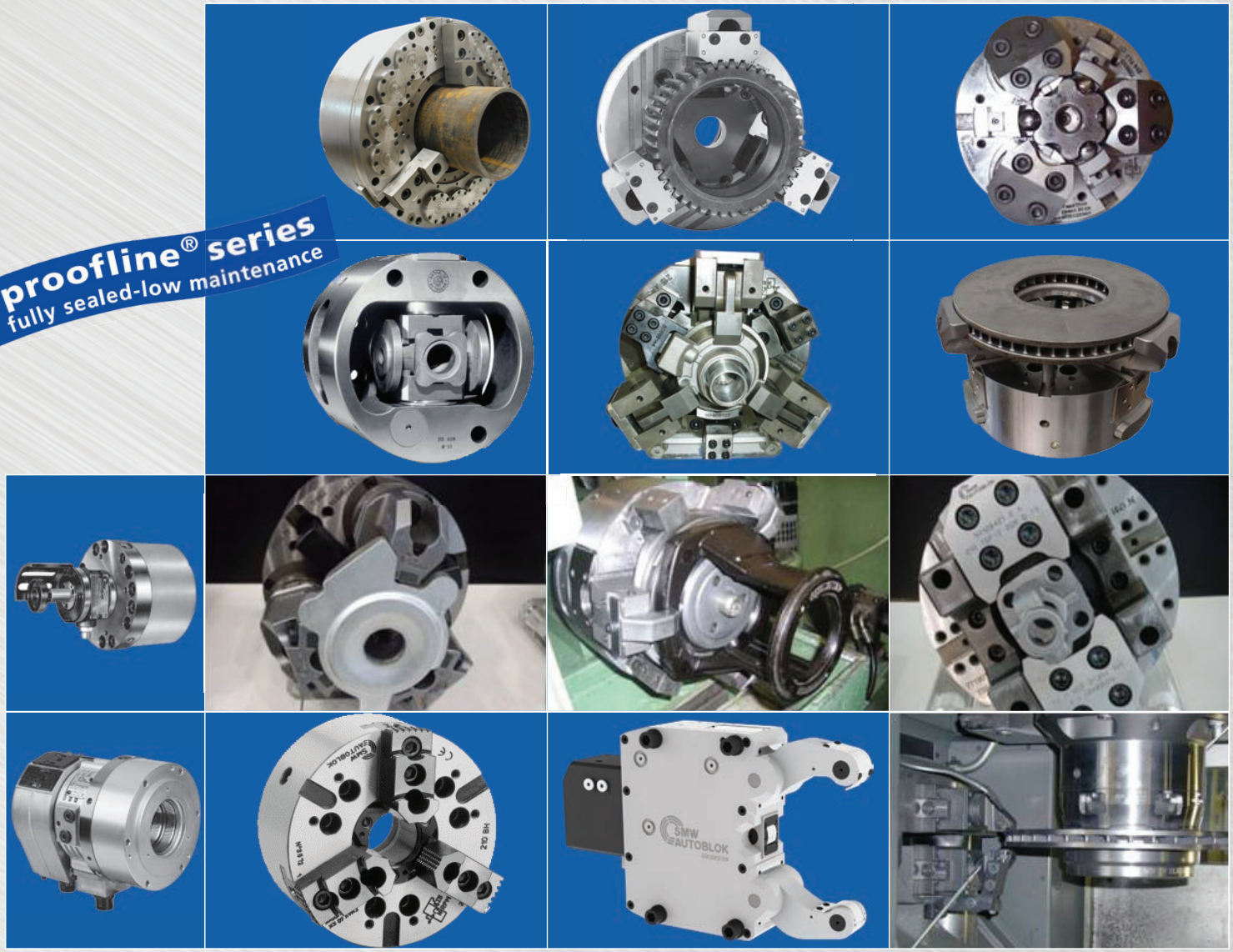


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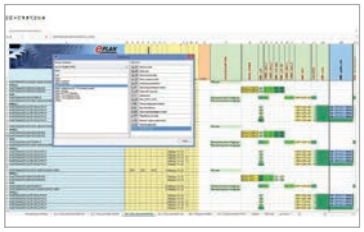
## Software Update



Thanks to the new version of EPLAN Engineering Center One (EEC One), detail engineering, the engineering times can be drastically reduced with comprehensive frameworks. Now available in 17 languages, the software supports important international standards and norms for the global market. The newly integrated dictionary function also ensures direct access to the EPLAN dictionary and hence to translations of the entire documentation of the schematics in all possible languages. Moreover, efficient engineering is not only reflected in streamlined, automatic processes but also in the user-friendliness of the software.

▸ **Rittal India Pvt Ltd - EPLAN Division**
Tel: +91 (80) 41515497, E-mail: info@eplan.in
www.eplan.in

## Tools for Microdrilling

Kennametal has launched GOdrill, versatile and cost-effective tools for micro-drilling. These tools are especially designed for holes in the range of 1 to 12.7 mm (0.0394 to 0.5 inches) diameter. Due to its unique design, the GOdrill expands the advantages of modular drills into the small diameter range. High-end material grades, a wear indicator coating and new, proprietary geometries allow shops to fully utilize the tool life capacity of the drill. Its unique design makes the GOdrill a versatile tool to be used in a broad variety of materials and workpieces.

▸ **Kennametal Shared Services GmbH**
Tel: +49 911 9735557, E-mail: carsten.gromoll@kennametal.com
www.kennametal.com

## Distribution Network Management

The Siemens Smart Grid Division has introduced a new distribution network management system that has been specifically developed for building and expanding smart grids. Spectrum Power Advanced Distribution Management System (ADMS) combines Supervisory Control and Data Acquisition (SCADA), outage management, and fault and network analysis functions for the first time on a software platform under a common user interface. This simplifies all work processes and facilitates the entering and updating of data. The system also allows network operators to not only control and monitor their distribution network more reliably, but also carry out maintenance and repair work more efficiently.

▸ **Siemens Smart Grid Division**
Tel: +91 (22) 33264832, E-mail: savio.denis@siemens.com
www.siemens.com

## Laser Scanner


FARO Technologies, Inc has released the new Laser Scanner Focus3D X 130. The scanner delivers tremendous power, compact design and the flexibility to perform laser scanning in both indoor and outdoor. With a scanning range of 130 mtrs, this laser scanner is ideal for mid-range scanning applications such as architecture, BIM, civil engineering, facility management, industrial manufacturing, forensics and accident reconstruction. Additionally, this ultra-portable scanner enables fast, straightforward and accurate measurement of objects and buildings.

▸ **FARO Technologies, Inc**
Tel: +91 (11) 46465664, E-mail: india@faro.com
www.faroasia.com/in

## New Head Geometry for Flat Bottom Drilling

Using two drills to machine a flat bottom hole can not only be time consuming but also increase the possibility of errors. To resolve these issues, TaeguTec has expanded DrillRush with a flat-face geometry head for flat-bottom machining of diameters ranging from 8 to 25.5 mm. This new product line eliminates the need to use a two-step process, thus shortening cycle times and substantially increasing productivity. The combination of the new flat-bottom drill head and DrillRush body offers excellent chip breaking while easily performing high precision flat surfaces. These new heads are suitable for applications like bolt-hole machining.

▸ **TaeguTec India P Ltd**
Tel: +91 (080) 27839111, E-mail: sales@taegutec-india.com
www.taegutec-india.com

## Multipurpose Grades


Seco Tool's CP200 has long been an excellent grade for parting-off and grooving operations involving challenging materials. To further increase the versatility of this proven PVD product, the company has now made it available for multi-directional turning (MDT) applications. While primarily intended for superalloys, including Inconel, Hastelloy and Waspaloy, as well as high-strength steels, the new CP200 for MDT is also highly productive when cutting cast iron with low hardness and martensitic stainless steels. The latest inserts feature an optimized micrograin and sharp, periphery-ground cutting edge that allows them to excel in high-speed operations and maintain a high resistance to plastic deformation.

▸ **Seco Tools India (P) Ltd**
Tel: +91 (2137) 667300, E-mail: seco.india@secotools.com
www.secotools.com/in

## Tool Setter


Metrol presents P21 series of Tool Setters with 0.0005 mm accuracy. They are used for length detection of tools such as drills, endmills and taps mounted in machining centers and drill-tap machines. The high level of repeatability offered by the sensor ensures precise measurement of the tool, compensating the thermal growth within the machine axis, and even the slightest tool wear is updated automatically. The timely breakage detection by the sensor prevents rejection of workpiece and damage to subsequent tools.

▸ **Metrol Corporation India**

Tel: +91 (080) 41101550, E-mail: shereen@metrolindia.com
www.metrol.co.jp/en

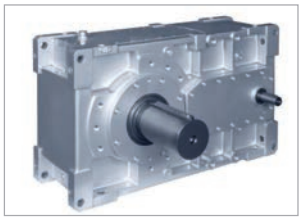
## PC-based Controls


Datron offers PC-based controls for use on machines that conduct high-speed machining with micro tooling. It helps customers use complex machines effectively and efficiently. The advantage of Windows-based software is it can handle multiple applications. The software is loaded onto the machine according to the requirements of the customer. Also, the advanced controls are user-friendly, yet have the needed complexity to allow desired flexibility. As a result, the machine can control the pick-and-place system and multiple axis, facilitate robot integration, diagnose hardware, monitor tool wear, keep track of alarms and monitor the temperature, and can be networked throughout the plant.

▸ **Datron India**

Tel: +91 (080) 26765265, E-mail: info@datron.co.in
www.datron.co.in

## New Sizes for Parallel and Bevel Helical Gearboxes



The Bonfiglioli heavy duty parallel and bevel helical gearboxes HDP and HDO are now more competitive, thanks to the incoming new 125 size. HDP 125 and HDO 125 are available in 2, 3 and 4 stages, with a range of reduction ratios from 1:9 to 1:500. They feature an output torque above 49 kNm, and improves both series in the torque area between 40 kNm (HDP 120) and 70 kNm (HDP 130), which is fundamental for varied applications such as screws, lifting systems, pumps, conveyors, mixers and mixer-stirrers, etc.

▸ **Bonfiglioli Transmissions Pvt Ltd**

Tel: +91 (044) 24781035, E-mail: salesindia.mws@bonfiglioli.com
www.bonfiglioli.in

## Single Chamber Multiprocess Cleaning Machine

Gala Precision Engineering offers single chamber multiprocess (SCMP) cleaning machine for aqueous or solvent media. Cleaning with Aqueous media can be undertaken with alkaline, neutral or acidic water-based cleaning compounds while drying takes place under vacuum. Moreover, cleaning with solvent media can be undertaken with chlorinated and non-chlorinated hydrocarbons, modified alcohols, etc. In this case, cleaning and drying takes place under vacuum while vapor degreasing is used for fine cleaning. Some of the main features of the machine include multiple cleaning cycle options like spray, IFW, ultrasonic, etc, energy-efficient processes and continuous filtration of cleaning media.

▸ **Gala Precision Engineering Pvt Ltd**

Tel: +91 (022) 41410404, E-mail: massfinishing@galagroup.com
www.galagroup.com

## Mega Line for Extra Large Pitches

Covering a pitch range of 10 to 24 mm (2-1tpi), Mega Line tools from Vargus feature an innovative insert design with a new geometry that is specially suited to large part machining. Mega Line further provides significantly increased levels of stability and support during machining due to the specially designed toolholder support that is uniquely suited to each insert profile. In addition, it boasts of a unique clamping system with an indented insert edge that is intended to withstand increased cutting forces during machining and prevent insert rotation.

▸ **Vargus Ltd**

Tel: +91 (02135) 654748, E-mail: info@vargusindia.com
www.vargusindia.com

## Grinding Steady Rest


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

▸ **SMW Autoblok Workholding Pvt Ltd**

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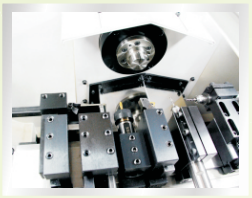
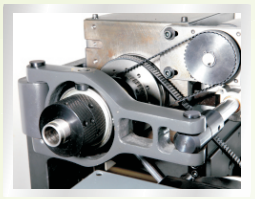
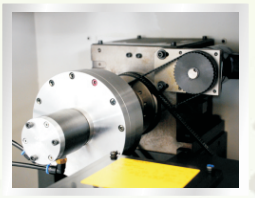
## This recommendation—Best seller model:

## XKNC-20GL(Auto-loading/FANUC 0i-mate TD)



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