

# THE MACHINIST

RNI No 71129/98

Volume 11 Issue 10 • October 2016 • Rs 75

[www.themachinist.in](http://www.themachinist.in)

## Quality in 'auto' mode

Impact of industrial  
automation



THE ECONOMIC TIMES

**POLYMERS**

Awards 2017

Excellence in Plastics

Log on to: [www.etpolymers.com/awards](http://www.etpolymers.com/awards)



Log on to: [mes.themachinist.in](http://mes.themachinist.in)



# LOCTITE®

## Success secured in every hot spot

When the alarm sounds, every piece of equipment must be in perfect working order. Emergency vehicle manufacturers rely on LOCTITE structural adhesives to make vehicles lighter, stronger and more dependable. For success when the heat is on.

See how we can help you secure success at [loctite-success.in](http://loctite-success.in) or email us at [marketing.ag@henkel.com](mailto:marketing.ag@henkel.com)



Excellence is our Passion

# Processes, For your dream.

## *Perfect, Precision, Progressive Machine Technology*

HYUNDAI WIA Machine Tools pours its whole efforts on every process of production and distribution, covering from self-reliant designing to manufacturing and after sales service.



### **E160 Series**

- 45° slanted one-piece high rigidity bed structure
- Unbeatable rapid travel speed: **30m/min**
- The most reliable high speed servo turret is adopted: **0.1sec/step**
- Compact design, able to install within a narrow space.



### **F500D/600D**

- High-precision P4 Angular Contact Bearing main spindle
- Dual Tables for high productivity
- Latest Servo ATC for fastest tool exchange in the class
- Latest SIEMENS 828D Controllers for various software support



### **HS Series**

- Heavy Duty Motion Roller Guideways
- Powerful Dual Wound Spindle Motor
- Heaviest Maximum load in its Class
- Big Plus Spindle (BBT)



### **Machine Tools Line-Up**

- CNC Lathe (Horizontal & Vertical)
- Drill Tap Centers
- Vertical Machining Centers
- Horizontal Machining Centers
- CNC Boring Machines

### **Hyundai Wia India Office**

#4/169, Rajiv Gandhi Salai, (OMR), Kandanchavadi,  
Chennai - 600 096, Tamilnadu, India

Tel. +91 76049 03348

e-mail. sales@hyundai-wia.com, service@hyundai-wia.com

ONE HUNDRED THOUSAND  
**1,00,000+**  
 installations globally



**DIE & MOULD SOLUTIONS**

Guide **the future** by the past,  
 long ago **the mould** was cast.

Neil Peart



**PRODUCTIVITY SOLUTIONS**

Improved **productivity** means  
 less human sweat, not more.

Henry Ford



**TECHNOLOGY SOLUTIONS**

Any sufficient **advanced technology** is indistinguishable  
 from magic.

Arthur C. Clarke

**JYOTI CNC AUTOMATION LTD.**

G - 506, G.I.D.C. Lodhika, Village : Metoda, Dist : Rajkot - 360021, Gujarat (INDIA).

☎ : + 91-2827-306100/101, 287081/82 📠 : +91-2827-360161/287811

✉ info@jyoti.co.in, sales@jyoti.co.in Follow us:     JyotiHuron



**BUY ONLINE**  
[www.jyoti.co.in](http://www.jyoti.co.in)



## Pursuit of excellence

It was a small manufacturing firm specialised in making equipment for the differently-abled people. Once it got an order to make 300 walking sticks for the visually impaired. The sticks were made a day in advance and kept ready for the final QC. The QC manager sent the entire inventory back to the paint shop. There was a tiny patch of discolouration under the handles of the sticks and he wanted it rectified.

The paint shop manager thought it was a frivolous error, which could be overlooked. The QC manager did not budge and neither did the paint shop guy who finally escalated the matter to the owner. "Am sorry for this error. But it is just a tiny patch and the people using the stick are never even going to realise it since they can't see," the paint shop guy explained.

**"EXCELLENCE IS NOT SOMETHING THAT WE DO FOR OTHERS. IT IS A CONSCIENTIOUS ADHERENCE TO SET STANDARDS NO MATTER WHAT."**

However, the QC guy still did not budge. "I don't care if they see it or not. But anything that goes through my inspection has to be absolutely flawless. Every product leaving this factory has to be up to the mark. My job is to ensure that and so I will not give my approval for these sticks," he affirmed. The owner saw the wisdom in this argument and asked the paint shop guy to re-do the job.

Excellence is not something that we do for others. It is a conscientious adherence to set standards no matter what. For all those who believe in this, we are organising the 2016 edition of our manufacturing excellence summit. And yes, we are scaling it up to the next level by re-positioning it as the 'Global Manufacturing Summit' with the theme of 'Excel. Enhance. Expand'.

Interested? Send us an email at [themachinist@wmm.co.in](mailto:themachinist@wmm.co.in) for delegate registrations as well as for speaker opportunities.

Editor & Chief Community Officer

Chief Executive Officer **Deepak Lamba**

Chief Financial Officer **Subramaniam S**

Publisher, Print & Production Controller **Joji Varghese**

Brand Publisher **Rishi Sutrave**  
[rishi.sutrave@wmm.co.in](mailto:rishi.sutrave@wmm.co.in)  
+91 9820580009

Editor & CHIEF COMMUNITY OFFICER **Niranjan Mudholkar**  
[niranjan.mudholkar@wmm.co.in](mailto:niranjan.mudholkar@wmm.co.in)  
+91 9819531819

Associate Editor **Swati Deshpande**  
[swati.deshpande1@wmm.co.in](mailto:swati.deshpande1@wmm.co.in)  
+91 99204 00833

Assistant Art Director **Sanjay Dalvi**  
[sanjay.dalvi@wmm.co.in](mailto:sanjay.dalvi@wmm.co.in)

### ADVERTISING

South **Mahadev B**  
[mahadev.b@wmm.co.in](mailto:mahadev.b@wmm.co.in)  
+91 9448483475

West **Ranjan Haldar**  
[ranjan.haldar@wmm.co.in](mailto:ranjan.haldar@wmm.co.in)  
+91 9167267474

North **Ashish Sahay**  
[ashish.sahay@wmm.co.in](mailto:ashish.sahay@wmm.co.in)  
+91 9899688440

### SUBSCRIPTIONS

[subscriptions.rmd@timesgroup.com](mailto:subscriptions.rmd@timesgroup.com)  
022 22733274 / 66354083

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

Disclaimer: All rights reserved worldwide. Reproducing or transmitting in any manner without prior written permission prohibited. All photographs, unless otherwise specified, are used for illustrative purposes only. The publisher makes every effort to ensure that the magazine's contents are correct. However, we accept no responsibility for any errors or omissions and accept no responsibility for any loss or damage caused as an effect thereof. The information provided in this publication is for general use and may not be appropriate for the specific requirements and / or conditions of the reader/s. The opinions expressed by experts are their own and in no way reflect those of the publisher.

## Editorial Advisory Board



**Aravind Melligeri**, Chairman and CEO, Aequus.  
*Works towards making India a leading hub for high quality precision manufacturing & aerospace*



**GK Pillai**, MD and CEO, Walchandnagar Industries Ltd.  
*Brings the best of the public and private sectors for the benefit of the manufacturing industry*



**Nitin Chalke**, MD – India, Eaton.  
*Combines the understanding and expertise of five business segments to provide visionary leadership*



**Viren Joshi**, CEO and President, Sigma Electric Manufacturing Corporation.  
*Blends the proficiency of growing new businesses and managing growth at large MNCs*

Change is the  
only constant

As a part of our ongoing evolution  
Introducing our **Changed look**

**Phillips**  
MACHINE TOOLS INDIA

Phillips Machine Tools India Pvt. Ltd.

*Create Better Ideas*

Our new logo retains the core elements  
but represents our belief of continuous  
growth and improvement towards  
our dynamic future.

Honing



Turning



Milling

Measuring



Grinding



**Phillips Machine Tools India Pvt. Ltd.**  
(Formerly known as CNC Servicing & Solutions (I) Pvt. Ltd.)

**Regd. office:** Plot No.W-225, TTC Industrial Area, Khairne MIDC, Thane Belapur Road,  
Navi Mumbai – 400 705, Phone: +91-22-61392800  
Website : [www.phillipscorp.com](http://www.phillipscorp.com)

# CONTENTS



## Insight

Need to Differentiate .....	18
Kingdom of Opportunities! .....	44
Achieving engineering excellence .	58

## COVER STORY

Quality in 'auto' mode .....	26
------------------------------	----



## POLICY

GST Bill: A boon to manufacturing companies in India.....	50
---	----

Editorial .....	6
News .....	10
Automotive: Continuously working towards expansion .....	14
Event Calendar .....	24
Case Study: Quality and reliability take precedence .....	56
CSR: Sharing good fortune!.....	61
Products.....	68



## Interview

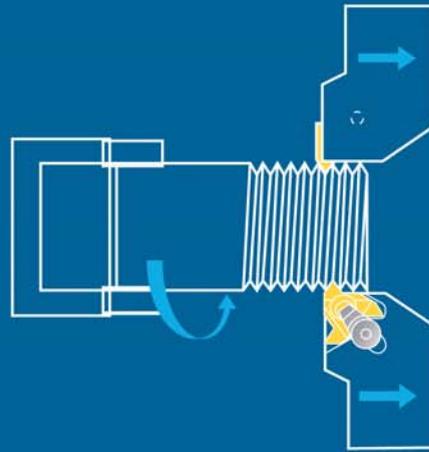
Being innovative and green .....	38
----------------------------------	----



## Event

GCPA: A grand success .....	52
Pune Machine Tool Expo concludes positively .....	64
Bigger...Better...Broader.....	66

# Innovative grooving & threading solutions.



## GY Series

Innovative clamping system ensures reliable grooving.



New TRI-LOCK system for increased stability and performance



## MMT Series

A series for precise & efficient threading



Fracture resistant grade VP20RT included in the range for ISO metric thread



**MMC Hardmetal India Pvt. Ltd.**  
A Subsidiary of **MITSUBISHI MATERIALS**

H.O.: Prasad Enclave, #118/119, 1st Floor, 2nd Stage,  
5th Main, BBMP Ward #11, (New #38), Industrial Suburb,  
Yeshwanthpura, Bengaluru – 560 022, Karnataka, India.  
Tel : +91 80 3080 7400 to 3080 7499  
Website : [www.mitsubishicarbide.com](http://www.mitsubishicarbide.com)



TOTAL SOLUTIONS



DRILLING



MILLING



TURNING



THREADING & GROOVING





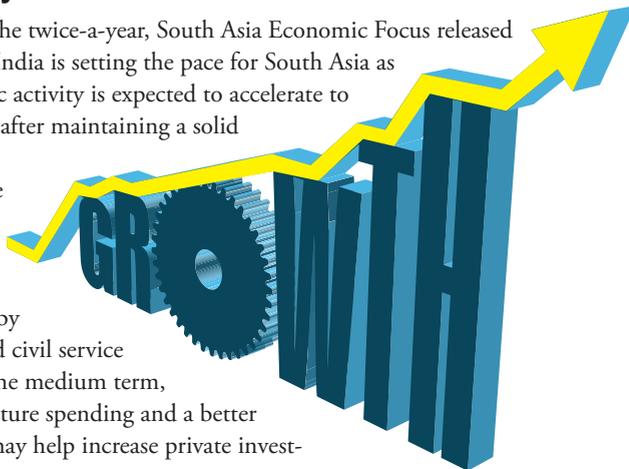
# NEWS

## Indian economy to rise to 7.7% in 2017: World Bank

**ACCORDING** to the twice-a-year, South Asia Economic Focus released by the World Bank, India is setting the pace for South Asia as a whole. Its economic activity is expected to accelerate to 7.7 percent in 2017, after maintaining a solid 7.6 percent in 2016.

This performance is based on solid growth contributions from consumption – boosted by normal monsoon and civil service pay revisions. Over the medium term, accelerated infrastructure spending and a better investment climate may help increase private investment and exports.

Overall, South Asia has defied a sluggish world economy and solidified its lead as the fastest growing region in the world in 2016, the new World Bank report said. Led by solid performance in India, economic growth is expected to gradually accelerate from 7.1 percent in 2016 to 7.3 percent in 2017.



## India climbs 16 places in Global Competitiveness Index

**THERE** is some sign of convergence in the competitiveness of the world's largest emerging markets – according to 'The Global Competitiveness Report 2016-2017' published by the World Economic Forum.

China, on 28, remains top among the BRICS grouping although another surge by India – which climbs 16 places to 39 – means there is now less of a gap between it and its peers. With both Russia and South Africa moving up two places to 43 and 47 respectively only Brazil is declining, falling six places to 81.

For the eighth consecutive year, Switzerland ranks as the most competitive economy in the world, narrowly ahead of Singapore and the United States. Following them is Netherlands and then Germany. The former has climbed four places in two years.

The next two countries, Sweden (6) and the United Kingdom (7) both advance three places, with the latter's GCI score being based on pre-Brexit data. The remaining three economies in the top ten; Japan (8), Hong Kong SAR (9) and Finland (10) all move backwards.

## ADB approves funds to build India's first coastal industrial corridor

**THE ASIAN DEVELOPMENT BANK (ADB)** has approved \$631 million in loans and grants to develop the first key 800-km section of a planned 2,500-km-long East Coast Economic Corridor that will spur development on India's eastern coast and create seamless trade links with other parts of South and Southeast Asia.

The Visakhapatnam-Chennai Industrial Corridor section of the East Coast Economic Corridor, connecting four economic hubs and nine industrial clusters, will mark the first industrial corridor developed along India's coast. The East Coast Economic Corridor will ultimately extend from Kolkata in West Bengal in the northeast of India to Tuticorin in Tamil Nadu near the southern-most point of the country.

## GST to be applicable from April 1, 2017 across India; Govt. working on implementation

**THE UNION GOVERNMENT** is abiding by the target date for implementing the goods and services tax (GST) to ensure that it is applicable from April 1, 2017 across India, Minister of State for Finance, Arjun Ram Meghwal said at an ASSOCHAM event held in New Delhi recently. "I can assure you that 1st April, 2017 is the target date for implementing GST in India and we are abiding that particular target and I can assure that 1st April 2017, GST will be applicable in the country," said Meghwal while inaugurating an 'ASSOCHAM Global Investors' India Forum.'

He said that all the issues relating to the states - whether pertaining to the standard rate, area-based exemption, product-based exemption, slab in the GST rate all will be decided in the GST Council after detailed discussion



with the states.

"We will deliberate the issues and definitely decide in the interest of the nation," said Meghwal.

The Union Minister added that the GST is a major initiative that can take India's GDP growth to double digit level i.e. up to 10 per cent from current level of over seven per cent.

Highlighting that the Government is slowly moving towards the goal of - one nation, one tax, he said, "We will consider all aspects and to promote ease of doing business and ensure success of Make in India program, we can also consider slab related issues."

*Introducing the all new Jobber Elite Series*

***New Name,  
New Machine,  
New Features.***



**THE BEST JUST GOT BETTER**



New  
J 300

New  
J 400 / SJ 400

New  
SJ 500

For sales enquiry please write to us

Email - [salesmmt@acemicromatic.com](mailto:salesmmt@acemicromatic.com)



# NEWS

Powered By  
**Phillips**  
MACHINE TOOLS INDIA

## Henkel opens acoustic lab for industry in India; will facilitate vehicle testing

**HENKEL ADHESIVES TECHNOLOGIES INDIA PVT LTD** has unveiled an acoustic lab at its Pune Innovation Centre. This new acoustic lab will enable Henkel India to offer cutting-edge solutions to meet the evolving and challenging requirements of customers in the area of Noise, Vibration and Harshness (NVH). Henkel India launched the acoustics lab with 'Henkel Innovation Day – Acoustic & Structural' summit for the automotive and general industry.

Henkel's acoustic lab is a world class facility with an anechoic and a reverberation chamber. The lab will facilitate vehicle and component level testing for different applications as per international standards. It will also help meet high level product validation tests



based on customer requirements.

Henkel's trained team of engineers analyze acoustic material properties of

structures and panels to determine their effectiveness in automotive, off-road equipment and appliance applications.

## Indian manufacturing improves for 9th straight month

**INDIA'S** manufacturing upturn was sustained in September, as a further increase in order books underpinned growth of output and purchasing activity. That said, rates of expansion eased in all cases.

One area of strength was external demand, with firms noting the strongest rise in new export orders since July 2015. The latest PMI figures also showed an intensification of inflationary pressures. Both input costs and output charges increased at quicker rates.

Posting above the crucial 50.0 threshold for the ninth consecutive month, the seasonally adjusted Nikkei India Manufacturing Purchasing Managers' Index (PMI) – a composite single-figure indicator of manufacturing performance – highlighted a further improvement in the health of the sector. Down from 52.6 in August to 52.1 in September, however, the latest reading indicated that growth lost some momentum.

One factor contributing to the slowdown in the sector was a softer increase in new business inflows. Whereas improved client demand supported the upswing in order books, growth was reportedly hampered by strong competition for new work. Foreign new orders for Indian-manufactured goods expanded markedly in September, and at the quickest rate in 14 months. Panellists commented on successful price negotiations with clients.

## Huawei starts manufacturing in India

**HUAWEI** has started manufacturing smartphones in India in collaboration with Flex India. Ravi Shankar Prasad, Union Minister, Information & Technology, Law and Justice made the announcement at Huawei's 'Make in India' inauguration ceremony at New Delhi. Starting from first week of October 2016, the Flex manufacturing plant in Chennai started to manufacture one of the Honor smartphones models. The plant has the capacity to make three million units by the end of 2017. In addition, Huawei will be strengthening its after sales services in India with over 200 service centers, including more than 30 exclusive Huawei service centers in India.

## Nexteer opens manufacturing plant in Pune, its third in India and 22nd globally

**NEXTEER** Automotive, a global leader in intuitive motion control, celebrated its new manufacturing plant in Pune, India recently. Pune takes its place as Nexteer's third manufacturing plant in India – joining plants in

Bangalore and Gurgaon – and as the 22nd plant within Nexteer's global manufacturing footprint.

"The Pune plant is a wholly-owned subsidiary of Nexteer Automotive, covering an area of 35,000 square feet

of shop floor with the capability for future expansion of an additional 35,000 square feet. The facility also provides 5,700 square feet of office space," Madhav Kulkarni, Managing Director Nexteer India, said.

# MOTUL

## TECH

### THE INDUSTRIAL LUBRICANTS DIVISION OF THE

### MOTUL GROUP



**METAL WORKING  
FLUIDS**

**SPECIALTY  
LUBRICANTS**

**MAINTENANCE  
LUBRICANTS**

**HIGH PRESSURE  
DIE CASTING**

**QUENCHING  
FLUIDS**

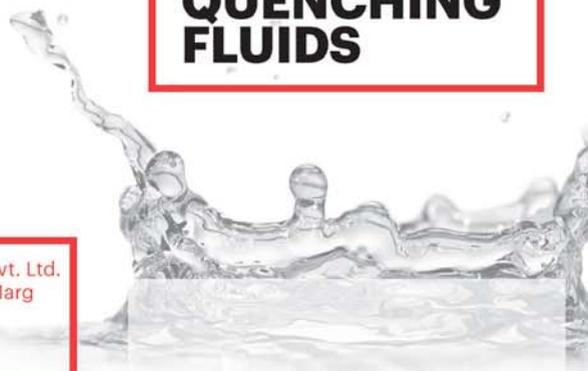


[motul.com](http://motul.com)

**Motul**

119 boulevard Félix Faure  
93300 AUBERVILLIERS - France  
Tel: +33.1.48.11.70.30  
Fax: +33.1.48.11.70.38

Atlantic Lubricants & Specialities Pvt. Ltd.  
301, Ketan Apts., 233, R.B. Mehta Marg  
Ghatkopar East, Mumbai 400 077  
Tel: + 91 22 2501 1960/2501 1961  
Fax: + 91 22 2501 1928





# Continuously working towards expansion

**Abhishek Jain**, Executive Director, PPAP Automotive Ltd speaks to The Machinist about the company's past, present and future.

By Swati Deshpande

**Q Please tell us about PPAP Automotives' journey so far.**  
The company was originally incorporated in the year 1978 to manufacture custom made extrusion products. We commenced the automotive parts business in the year 1985 with the start of production of the first Maruti cars in the Indian market. The firm was converted into a public limited company in 2008.

Today, we are a leading manufacturer of automotive sealing systems, interior and exterior injection moulded parts. We are currently working with three Japanese companies for our technology requirements. For the sealing system we work with Tokai Kogyo, we have a very long and healthy relationship with them, spreading over more than 25 years now. They own a small equity of our company and in 2012 we have also set up another company with them which is a joint venture company having equal equity partnership — to further enhance our product range for our customers. We have started a relationship in 2015 with their sister company to produce special toolings as well.

For the interior and exterior injection moulded products, we are working with Nissen Chemitec Corporation, Japan, an Ichimiyaya Group Company. The relationship started in 2007.

With both our technology partners, we continuously work to enhance the capabilities of local operations and our endeavour is to provide better value of products and services to all our customers.

Over a period of time PPAP has expanded its customer base and today supplies parts to most of the passenger vehicle manufacturers in India viz. Suzuki, Honda, Toyota, Renault



Nissan, Isuzu, Tata Motors, GM and Mahindra & Mahindra. Today we manufacture over 500 different products for our customers and continuously target to achieve zero PPM in quality and delivery performance for all our customers.

**Q Can you please elaborate on manufacturing capabilities of PPAP Automotive?**

PPAP is a leading manufacturer of automotive sealing systems, interior and exterior injection moulded automotive parts in India. The company's state-of-the-art manufacturing facilities are located in Noida (UP), Greater Noida (UP), Chennai (Tamil Nadu) and Pathredi (Rajasthan). All the plants are TS 16949, ISO 14001 and OHSAS 18001 certified. All the facilities are equipped with the latest technology available today for plastic extrusion as well as injection moulding.

The Automotive Sealing Systems are manufactured by the continuous Extrusion process. The company has Extrusion lines which are capable of processing Engineering polymers like PVC, PP, TPO, TPE and TPV materials. The company has Co-Extrusion facilities which are capable of extruding up to four different hardness materials into a single profile based on the customer's requirements.

The company has injection moulding machines ranging from 60 to 2500 tons. We continuously focuses on acquiring latest tech-

**"The vehicles will be getting more fuel efficient; the interiors of the car will have more technology and ultimately go towards a connected car concept. The government is promoting the use of clean fuel cars. We see a strong focus on developing Hybrid or Electric cars by many automobile companies, in the near future."**

Panasonic recommends Windows 10 Pro.

# Panasonic

## CELEBRATING 20 YEARS OF RUGGED REVOLUTION!

# TOUGHER THAN THE ENVIRONMENTS YOU WORK IN



**PANASONIC TOUGHBOOK CF-20  
FLEXIBLE & DETACHABLE TO MAKE WORK EASY IN  
TOUGH WORK ENVIRONMENTS.**



**IT'S A TOUGHBOOK. IT'S A TOUGHPAD. IT'S BOTH.**

The Panasonic Toughbook CF-20 delivers a new level of unrivalled versatility for mobile business computing as the first fully rugged detachable notebook. Loaded with advanced features and 6 different usage modes to meet every business need. This new convertible Toughbook is all set to keep you going even in tough conditions.

**PROVEN TO BE EFFECTIVE FOR: OIL & GAS INDUSTRY • CONSTRUCTION INDUSTRY • INFRASTRUCTURE SECTOR • POWER SECTOR • DEFENCE SECTOR • GOVERNMENT SECTOR • MANUFACTURING INDUSTRY**



OTHER TOUGH PRODUCTS



CF-31 13.1" (33.27 cm)



CF-54 14" (35.56 cm)



FZ-61 10.1" (25.65 cm)



FZ-M1 7" (17.78 cm)



FZ-B2 7" (17.78 cm)



FZ-X1 5" (12.7 cm)

# TOUGHBOOK

# TOUGHPAD

**20**  
YEARS  
RUGGED SINCE 1996



Contact us: 1800 419 0373 | Website: [in.panasonictoughbook.asia](http://in.panasonictoughbook.asia) | E-mail: [toughbook.marketing@in.panasonic.com](mailto:toughbook.marketing@in.panasonic.com)



nologies like Servo controllers, Electric machines, QMC, Magnetic platen, etc. to give a quality and cost effective product to the customer. These machines have been sourced primarily from the leading manufacturers in the world like Toshiba, JSW, Fanuc, Mitsubishi, Toyo, Nissei, etc. Moreover, we have also invested in robotic assembly technology for the assembly of the products.

The company also has a captive tool manufacturing facility which caters to the in house requirement of all tools, fixtures, moulds and dies. Additionally, we have EPDM rubber extrusion lines and TPV glass run channel line in our joint venture company. All the lines are fully automated and use the best and most cost effective technology.



**Q Please tell us about some of your products that are leading the market.**

We make two kinds of products, the first kind of product are the body sealing system. These include Outer belts, Inner belts, Roof mouldings, Windshield moulding, Skirt air damper, Trim door openings and Weatherstrip Partition. These products are made from plastics and thermoplastics. The basic function of all these products is to seal the vehicle from any water, dust, air or noise so that the passengers sitting inside the vehicle have a comfortable ride.

The other kinds of products that we manufacture are interior and exterior injection products. These parts are meant for the aesthetics and for functional purpose. We make parts like the complete inside door lining, pillar garnishes, rear tray assemblies, trunk linings, wheel fenders and side protectors.

**Q Light weighting is one of the trends that can be observed in the automotive industry. How do you see this trend getting popular in India. What new products/solutions has the company introduced in this regard?**

Light weighting is one of the key trends in the automotive industry and efforts are being made to make the vehicles lighter for achieving better mileage, while retaining all safety parameters. The company is continuously evaluating new materials as well as new design of the products to promote weight reduction.

**Q Kindly tell us about the exports of the company.**

We are exporting our products through our customers in India like Nissan, Honda and Toyota. The countries where are CKD parts are exported are Japan, Europe, Mexico, Brazil, Venezuela, Argentina, Thailand, etc.

**Q 'Make in India' seem to have given a boost to the Indian manufacturing industry, which was facing a sluggish market environment previously. How has been last couple of years for your company?**

We strongly believe in the manufacturing capability of the In-

dian industry. There are certain roadblocks towards it, but we believe that the Government is working on all fronts to ensure that India remains a competitive manufacturing base.

In the last couple of years, our company has added two new facilities. One in Chennai and other one in Pathredi. Apart from these we have added capacity in our existing facilities as well. Going forward, we will continue to focus on adding new manufacturing facilities depending on the requirements from our customers.

**Q What new trends do you see in the Indian automotive industry?**

The Indian automotive industry is one of the most challenging industries in the world. The customer expectations are changing and due to the easy access to internet and information, today the end-user is very well informed about the choices available.

This fact is driving a lot of changes in the automotive industry. The vehicles will be getting more fuel efficient; the interiors of the car will have more technology and ultimately go towards a connected car concept. The government is promoting the use of clean fuel cars. We see a strong focus on developing Hybrid or Electric cars by many automobile companies, in the near future.

**Q Lastly, please tell us about your expansion plans**

We are constantly working towards expanding our product base and our customer portfolio. Our endeavour is to provide customers with a superior value added solution for their vehicles. We are constantly interacting with the customers for new avenues where we can add value to them. We are also looking at expanding the target customer by examining opportunities in the Non Passenger Vehicle segment viz. LCV market, etc.

We are also investing in upgradation of technology in our existing plants so that we can become more competitive for our customers.

We are also adding new capacities in Chennai in order to service our customers in Southern India. We are also deciding on our strategy to set up capacities in Gujarat since the new Auto hub is emerging in that area. 

## ADDITIVE MANUFACTURING

**LASERTEC 65 3D**

A unique hybrid solution – **additive manufacturing** with built-in milling.

**HIGHLIGHTS**

- + The flexibility of laser deposition welding combined with the precision of 5-axis milling
- + High deposition rates with the coaxial powder nozzle:  
Ten times faster than a powder bed
- + 3D components up to  $\varnothing 500 \times 400$  mm,  
no need for support structures

**APPLICATION EXAMPLE**

Turbine housing // aerospace

Material: Inconel / bronze

Dimensions:  $\varnothing 190$  mm  $\times$  80 mm

Laser deposition welding: 375 min.

Milling: 35 min.



**CELOS®**

by DMG MORI



View the LASERTEC 65 3D video

You can find more on the LASERTEC series at [lasertec.dmgmori.com](http://lasertec.dmgmori.com)

**DMG MORI**



# Need to differentiate!



Innovation and New Product Development will be the key for Indian Pumps, Valves and Process Equipment companies to break free from the image of being low cost manufacturers and improving competitiveness in the global markets, say **Shripad Ranade, Abhishek Bagwe and Donnel Peter**

**P**VPE (Pumps, Valves and Process Equipment) industry is one of the most important light engineering industries with an approximate size of Rs35,000 crore (FY16). Indian PVPE industry caters not only to Indian market but is also a supplier to the foreign markets. Over a period of time, manufacturing products based on designs made in the developed countries, has created a perception of India being a 'low cost manufacturing destination' or 'per kg country' (products to be sold on steel content rather than the technology used).

In order to ensure growth of PVPE industry in line with the 'Make in India' initiative, Indian PVPE industry has to break free from this legacy of being mere low cost manufacturers and move towards creating greater value for their customers through high technology products and drive industry growth.

Additionally, recent trends in this industry are driving the need to provide innovative solutions. Newer applications like submersible pumps for deep water oil extraction require solutions that test the frontiers of design and technology. End users have started to look for products that minimise total cost of ownership, creating demand side pressure for utilising new-age technology—a big change from the earlier low priced

product requirements. Also, customers are seeking solutions that minimise parameters like downtime and the consequent loss of production. PVPE companies are feeling the need to come up with innovative solutions that provide service turnaround time guarantees along with their products.

#### **Growth and Innovation**

One of the key findings of the Global Innovation Index (GII) 2016 is that, countries that have made continuous and rapid progress – developed economies like Sweden, Germany and USA, and developing economies like China – have shown a common pattern where innovation has remained a key priority supported by a steady flow of R&D spending. Indian

"There is an increasing trend of deploying predictive maintenance in critical areas of plants – this is an area where innovative solutions and use of digital technology can be used to minimise break down and thereby equipment downtime."

**Peush Mahajan**, Ex Director (Technical) Engineers India Ltd.

17<sup>th</sup> Edition

**intec**



2017

1<sup>st</sup> - 5<sup>th</sup> June 2017

# INTEC 2017

INTERNATIONAL MACHINE TOOLS & INDUSTRIAL TRADE FAIR

1<sup>st</sup> - 5<sup>th</sup> JUNE 2017

CODISSIA Trade Fair Complex,  
Coimbatore, INDIA

NEXT GENERATION  
TECHNOLOGY



Organised by



**CODISSIA**  
Intec Technology Centre

## Exhibitors Profile

- ♦ Industrial Electrical & Electronics
- ♦ General Engineering
- ♦ Machinery for Process Industry
- ♦ Metallurgical Plant and Equipments
- ♦ Textile Machinery & Equipments
- ♦ Fabrication Machinery and Equipments
- ♦ IT Consulting and Service Providers
- ♦ Machine tools and Accessories
- ♦ Hydraulics and Pneumatics
- ♦ Material Handling Equipments & Machinery
- ♦ Foundry Equipments ♦ Pumps & Fittings
- ♦ Precision Tools, Cutting Tools, Dies & Moulds
- ♦ Instrumentations Automation
- ♦ Factory Cleaning & Pollution Control Equipments
- ♦ Industrial Consumables

**STALL  
BOOKINGS  
OPEN**

Platinum Supporter

**ELGI**  
Always Better.

Diamond Supporter

**JANATICS**  
Pneumatic

Gold Supporter



Silver Supporters



Conference Partner



Approved by



Mobile : 99655 15182 / 85080 22000 E-mail : [intec@codissia.com](mailto:intec@codissia.com) Web : [www.intec.codissia.com](http://www.intec.codissia.com)



investment in R&D is lower than the global average and it is placed a middling 66th on the GII ranking. It follows, that initiatives of the Indian government such as 'Make in India' that targets to achieve 25 percent of GDP from manufacturing sector by 2022 has to be accompanied by suitable investment to boost innovation and NPD (New Product Development). Tata Strategic research shows that focus on innovation and R&D and early adoption of advanced manufacturing trends are the key characteristics of leading PVPE companies in these economies.

**Challenges for Innovation and NPD**

Tata Strategic was the knowledge partner for FICCI PVPE Expo 2016 where several industry stalwarts discussed challenges faced by the industry. These challenges are:

**Internal challenges:** Most Indian PVPE companies don't have an effective innovation or NPD process. A number of companies have taken efforts for bringing about incremental innovation but these efforts have been requirement based rather than as a part of product development process. Further, Tata Strategic research shows that very few Indian companies focus on the areas of basic or applied research to develop Intellectual Property (IP) relating to product and process technology that will become marketable in the coming years.

**External challenges:** Indian companies find their ability to introduce new products constrained by the inability of their vendors to supply the requisite input due to lack of know-how, product gaps or even financial constraints. Indian companies are wary of developing new products due to certain long held practices of the end users like - end users are hesitant to try new products of Indian companies unless supported with a proven track record. Further, process plant projects continue to be awarded with a focus on minimising capital expense rather than minimising the Total Cost of Ownership. Consequently, companies are constrained to produce products that meet the minimum technical requirements at the lowest possible cost.

Another challenge, especially for SMEs is the insufficient tax incentive for R&D for developing indigenous technology.

**Imperatives to develop an ecosystem for innovation**

A collaborative approach is needed by the PVPE Industry – companies, industry bodies and central and state governments to develop an ecosystem for innovation and NPD in India.

**Companies:** Inward focus: Companies need to foster a mind-set for idea generation and innovation within the company by aligning their company vision and mission to being focussed on technology. They need to establish processes for

innovation and NPD and benchmark global companies on the processes adopted for innovation and NPD.

**Outward focus:** Companies need to work jointly with end users, suppliers and academic institutions to carry out joint product development projects.

**Industry bodies:** Industry bodies need to work towards increasing industry-academia collaboration by establishing agencies like Fraunhofer Society in Germany to channelise the knowledge from academia to applied research with practical industrial value. They need to work with the state and central governments to improve access to R&D funds and infrastructure by setting up sector specific research funds and facilities.

**Government:** Government initiatives like 'Make in India' need to be more specificity in their goals. E.g. cap on the maximum import content in new projects. Many industry stalwarts have highlighted the need for the government to provide such end user mandates and incentives. Government needs to provide more fiscal incentives to promote R&D.

**"There are only a handful of Indian companies that regularly approach end user companies to showcase their new products or solutions that they have been working on and to understand the future needs that might arise. We would be glad to collaborate more with Indian firms for new product development."**  
**BB Kathpalia, VP,**  
Tata Chemicals

**Conclusion**

Innovation and NPD will be the key for Indian PVPE companies to break free from the image of being low cost manufacturers. Only then will they have the ability to become preferred suppliers for the global markets. The central government has via the National Capital Goods Policy 2016 and other policy decisions already set the ball rolling for large number actions. Now, it is up to PVPE companies to step up their efforts towards innovation and NPD. The companies need to continuously assess their current innovation and NPD processes against successful global companies and institute an improvement program in line with their strategic

goals. It is an imperative for Indian PVPE companies and industry bodies to team up with the government on this front to yield the targeted results. 

**About the authors:** *Shripad Ranade is Practice Head, Abhishek Bagwe is Engagement Manager & Donnel Peter is Associate Consultant with Tata Strategic Management Group*

**Sources**

*TSMG – FICCI Advanced Manufacturing Survey 2016; 'Strategic Report on Pumps, Valves & Process Equipment' – A Tata Strategic Report for the FICCI PVPE Expo 2016; 'National Capital Goods Policy 2016 – Building India of Tomorrow' - Ministry of Heavy Industries & Public Enterprises Department of Heavy Industry; '2016 Global R&D Funding Forecast – A supplement to R&D magazine', Winter 2016 by the Industrial Research Institute; The Global Innovation Index 2016 - Winning with Global Innovation; and data.worldbank.org/indicator*

# SIEMENS

*Ingenuity for life*

SIEMENS



## All new SINUMERIK with PPU 161

Outstanding performance. Simply smart.

The best in class SINUMERIK CNC with PPU 161 comes with 8.4" display and digital spindle interface. It is preconfigured for turning and milling with upto 5 axes. Together with an IP65 degree of protection, PPU 161 ensures robustness and offers a long service life, even under harsh environmental conditions. With SINAMICS V70 servo drive, SIMOTICS S-1FL6 servo motors, 1PH1 spindle motors and Motion Connect 300 cables, it delivers unbelievable cost to performance ratio. The user friendly and compact SINUMERIK PPU 161 is the perfect fit for enhanced performance.

For more information call us on 1800 209 1800

[www.siemens.co.in](http://www.siemens.co.in)

# SIEMENS

*Ingenuity for life*



## All new SINUMERIK with PPU 161

Outstanding performance. Simply smart.

The best in class SINUMERIK CNC with PPU 161 comes with 8.4" display and digital spindle interface. It is preconfigured for turning and milling with upto 5 axes. Together with an IP65 degree of protection, PPU 161 ensures robustness and offers a long service life, even under harsh environmental conditions. With SINAMICS V70 servo drive, SIMOTICS S-1FL6 servo motors, 1PH1 spindle motors and Motion Connect 300 cables, it delivers unbelievable cost to performance ratio. The user friendly and compact SINUMERIK PPU 161 is the perfect fit for enhanced performance.

For more information call us on 1800 209 1800

# Turbo charged performance.

Quick  
delivery

Trusted  
for years

Best-in-class  
products



▲ CNC Rotary  
Production  
System

Tilting  
Rotary  
Table  
▼



▲ CNC Rotary Table



• MARK YOUR DIARY •

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

<p><b>National Productivity Summit</b> November 24-26, 2016 BIEC, Bengaluru <a href="http://www.imtma.in/index.php?page=215">www.imtma.in/index.php?page=215</a></p>	<p><b>India International Textile Machinery Exhibition 2016</b> December 3-8, 2016, Mumbai <a href="http://itme2016.india-itme.com/">http://itme2016.india-itme.com/</a></p>	<p><b>BAUMA CONEXPO India 2016</b> December 12-15, 2016, New Delhi <a href="http://www.bcindia.com">www.bcindia.com</a></p>	<p><b>IMTEX 2017</b> January 26-February 1, 2017, Bangalore <a href="http://www.imtex.in">www.imtex.in</a></p>
<p><b>CONEXPO-CON/AGG</b> March 7-11, 2017 Las Vegas, NV (US) <a href="http://www.conexpoconagg.com">www.conexpoconagg.com</a></p>	<p><b>TIMTOS</b> March 7-12, 2017 Taipei (Taiwan) <a href="http://www.timtos.com.tw">www.timtos.com.tw</a></p>	<p><b>Automotive Engineering Show</b> March 21-23, 2017 New Delhi <a href="http://www.aes-show.com">www.aes-show.com</a></p>	<p><b>ACMA Automechanika New Delhi 2017</b> March 21-24, 2017 New Delhi <a href="http://acma-automechanika-newdelhi.in.messefrankfurt.com/newdelhi/en/exhibitors/welcome.html">http://acma-automechanika-newdelhi.in.messefrankfurt.com/newdelhi/en/exhibitors/welcome.html</a></p>
<p><b>ProMat 2017</b> April 3-6, 2017 Chicago, (US) <a href="http://www.promatshow.com">www.promatshow.com</a></p>	<p><b>Hannover Messe</b> April 24-28, 2017 Hannover (Germany) <a href="http://www.hannovermesse.de">www.hannovermesse.de</a></p>	<p><b>INTEC 2017</b> June 1-5, 2017 Codissia Trade Fair Complex, Coimbatore <a href="http://www.intec.codissia.com">www.intec.codissia.com</a></p>	<p><b>EMO Hannover</b> September 18-23, 2017 Hannover <a href="http://www.emo-hannover.de">www.emo-hannover.de</a></p>



All ZOLLER inspection and measuring machines can be found at [www.zoller-in.com](http://www.zoller-in.com)



Three of many ZOLLER measuring experts



»pomBasic«  
Compact solution for a universal tool inspection



»threadCheck«  
The high-end universal measuring machine for helical tools



»roboSet / genius 3«  
For fully automatic unmanned measurement of tools

# Mission inspection

Simple solutions for every measuring task



easy  
efficient  
flexible

- From miniature tools to crankshaft cutters
- For complete or part measurement of all grinding parameters
- At the push of a button, including documentation

ZOLLER India Private Ltd.  
Plot No. RM 104, 'G' Block  
Sanjeevani Complex, Near KSB Chowk  
MIDC, Shahu Nagar, Chinchwad  
Pune, 411019, India  
Tel: 91 20 2749 61 18, Fax: 91 20 2749 6114  
[info@zoller-in.com](mailto:info@zoller-in.com) | [www.zoller-in.com](http://www.zoller-in.com)

We have sales and service offices in:  
Pune, Bangalore, Chennai, Coimbatore, Dehli, Ahmedabad

**ZOLLER**  
expect great measures®



By Niranjan Mudholkar

We live in demanding times. We manufacture in demanding times. Customers – B2B or end-users – want nothing less than the best of qualities at competitive pricing. While ‘people’ are the biggest strength for any organisation, one major flaw that can upset any manufacturing brand’s quality quest is ‘human error’. Quality cannot be a one time achievement; neither can it keep changing. So if a company wants consistency, continuity and certainty with regards to quality both in its manufacturing processes and the final product then automation is the clear answer.

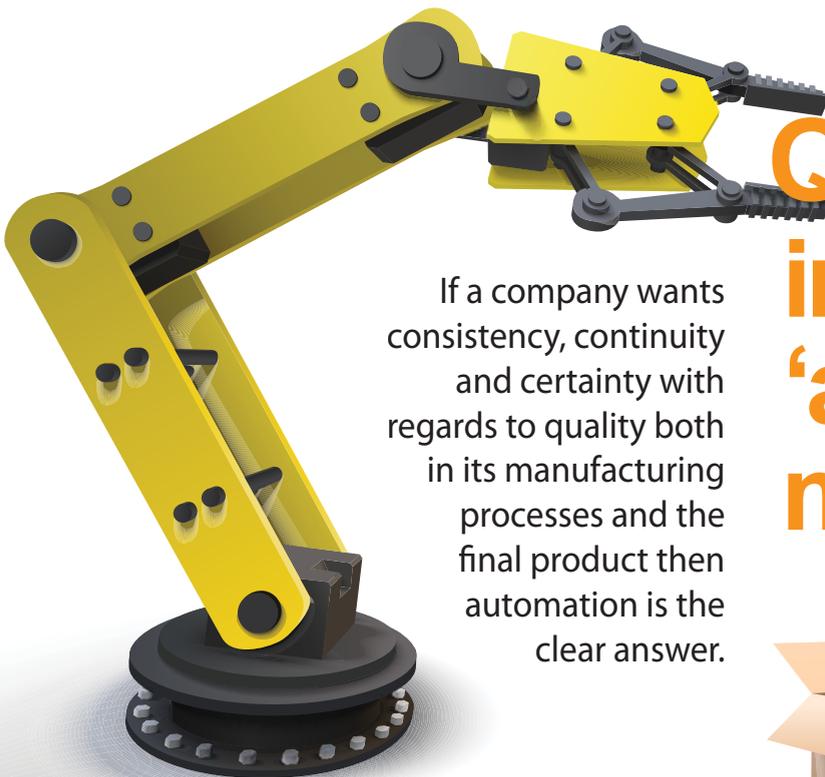
**Better processes, better quality**

The use of proper automation solutions can result in better manufacturing processes and better quality. Agrees Hussain Shariyarr, Sr. VP – Operations, Godrej Appliances, Godrej & Boyce Mfg. Co. Ltd. He says “Manual operations require a lot of skill, training and practice to ensure the correct way to perform the operation. Whereas automations help achieve precision consistently. Each process contains Value Added Activities and Non Value Added activities. Automation should be looked at to eliminate the Non-value added activities, if not eliminate, at least minimise.” Apparao Mallavarapu, Chairman and MD, Centum Electronics points out that automation brings in con-

sistency, scalability and quality and with the advancement in the area of robotic technology which unleashes unlimited possibilities of automating traditional processes giving an edge over the competition in the industry.

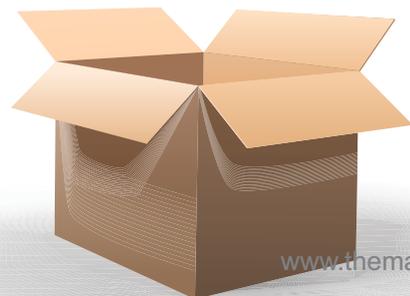
Manoj Vachhani, Chief Information Officer, Varroc Group, says that IoT enabled technologies like Industry 4.0 adoption and robotic automation will help manufacturers have full visibility of their operations and allow them to be responsive to information about inventory, raw material, customer demands and quality ensuring that opportunities for improvement are highlighted and action is taken.

“It will help manufacturers save money and time and help them in improving product quality, customer satisfaction and supplier relations. Use of proper automation solutions will prepare Indian manufacturers for more competition and equip them with the necessary pace and efficiency. With increasing consumer demands, legislation and competitiveness in the domestic market, one with proper automation solutions stand to win,” he says. Shariyarr emphasises that the approach of automation needs to be eliminating wastes and achieving productivity while reducing costs associated with wasted labour, rejection and rework and thus improving manufacturing processes and achieving desired quality. “Non-value added activities are nothing but the wastes that exist in the process. There are 7 types of waste-1.Over production, 2.Movement loss, 3. Excess or less



Quality  
in  
‘auto’  
mode

If a company wants consistency, continuity and certainty with regards to quality both in its manufacturing processes and the final product then automation is the clear answer.



# Made in India,

## TECHNOLOGY @ work



18<sup>th</sup> Indian Metal-Cutting Machine Tool Exhibition with International participation



19<sup>th</sup> International Exhibition of Cutting Tools, Tooling Systems, Machine Tool Accessories, Metrology & CAD / CAM

**26 Jan - 01 Feb 2017, Bangalore**

Venue



Organiser



Indian Machine Tool Manufacturers' Association  
T: +91-80-66246600. F: +91-80-66246661. E: info@imtex.in



[www.imtex.in](http://www.imtex.in)



“A systematic scrutinizing approach is necessary through which the low cost automations or larger complex ones involving huge capital investments can be distinguished and will keep delivering the results that they are established for.”

**Hussain Shariyarr, Sr. VP – Operations, Godrej Appliances, Godrej & Boyce Mfg. Co. Ltd.**



“Bringing in automation to existing facility may look difficult at the outset but when compared with the long term benefits, it is essential to transition from legacy manufacturing to the automated processes which brings in employee safety and achieving business excellence.”

**Apparao Mallavarapu, CMD, Centum Electronics**



**Indian manufacturing is largely aligned to global requirements and is no longer an isolated manufacturing hub catering only to domestic consumption.**

inventory, 4.Process itself, 5.Waiting, 6.Defects/rejection, 7.Motion loss.”

Sameer Gandhi, MD, Omron Automation, India, believes that industrial automation is like an ‘essential nutrient’ or the ‘life-force’ of a manufacturing establishment. “Every manufacturing set-up strives to become more intelligent, more efficient, safer, swifter, etc. as it evolves from a small scale to a medium scale to a large enterprise. Automation is the life force that makes it possible. It helps the manufacturers develop better machines — machines that are functionally innovative to deliver exceptional benefits to their customers in myriad aspects such as quality, productivity, efficiency, accuracy, safety, energy saving, durability, and above all the tasks which are beyond human capabilities.

Mahesh Bhangale, GM Manufacturing, Racold Thermo, says that with automation, output is no more dependent on operator’s skill. “As we achieve consistency in automation, variation in the process minimises, which results in better quality. In our company after shifting to Robotic pipe welding, we have achieved five times better productivity with rework reduction. This automation also helped us in achieving uniform weld penetration with good & consistent weld finish (earlier which was dependent on operator’s skill).”

Vishal Nerurkar, VP – Management System, TÜV SÜD South Asia, points out that

Indian manufacturing is largely aligned to global requirements and is no longer an isolated manufacturing hub catering only to domestic consumption. “In an emerging market like India that has put such a great impetus on the ‘Make in India’ initiative, mass production of high quality has become the primary motivator for applying automation.

“Higher production rate along with increased productivity, efficient use of materials, better product quality, improved safety, and reduced turn-around time are some of the advantages commonly attributed to automation. Automated processes and solutions are simple to operate, reliable in terms of output, quality, provide easy customisation and most importantly result in cost effectiveness. Process automation enables enhancement of product quality, improve process safety thereby ensuring efficient use of resources.”

**Blending with manufacturing principles**

Most production facilities follow some kind of manufacturing principle to bring discipline and standardisation to the processes. So how can the automated system blend with the different manufacturing principles?

Mallavarapu shares that at Centum, the New Product Introduction (NPI) are typically designed with modular manufacturing setups along with automation solutions that are evaluated and modified to suit the lean

# HIGH PERFORMANCE ABRASIVES FOR AUTOMOTIVE INDUSTRY

**CUMI**

## CENTRELESS WHEELS



## CRANK WHEELS



## ANGULAR GRINDING WHEELS



## FACE GRINDING WHEELS



## CAM GRINDING



## GEAR GRINDING



## CREEP FEED WHEELS



**Making Materials Matter ..**



**CARBORUNDUM UNIVERSAL LIMITED**

3rd Floor, Parry House, No. 43, Moore Street, Chennai – 600 001. Phone: 044 30006161, Fax: 044 30006191,  
For Enquiries Contact : Gnanamani, Mob : 99406 55424, gnanamanin@cumi.murugappa.com, www.cumiabrasives.com



**murugappa**



Follow us :   



**“Use of proper automation solutions will prepare Indian manufacturers for more competition and equip them with the necessary pace and efficiency.**

**Manoj Vachhani,**  
CIO, Varroc Group



**“Every manufacturing set-up strives to become more intelligent, more efficient, safer, swifter, etc. as it evolves from a small scale to a medium scale to a large enterprise. Automation is the life force that makes it possible.”**

**Sameer Gandhi, MD,** Omron  
Automation, India

manufacturing environment and creating a collaborative platform to improve the productivity, yield, quality and customer satisfaction. “We also typically practice Value Stream Mapping, identify MUDA thorough “TIMWOOD” and design automation solutions into manufacturing and business processes which brings in standardisation. In summary the road to automation has been well thought out and finely balanced initiative keeping in mind all the aspects of World Class Manufacturing (WCM) as well market trend.”

Bhangale from Racold Thermo underlines that automation helps to achieve single piece flow, which reduces the WIP, hence is helpful for JIT. “Consistent repeatability is achieved with automation which reduces variation in process & helps in abiding the principles of Lean Manufacturing & WCM. To optimise the result of automation it is suggested to involve lean / WCM team in designing stage, who have to work on work place origination, ergonomics, ease of Autonomous & preventive maintenance. We follow WCM in our origination, hence right from design stage of automation we activate EEM (Early Equipment Maintenance) pillar of WCM in Automation & prepare machine ledger, EVO, etc. EEM pillar also takes the inputs from WO (Work place organisation), AM, PM & logistics pillar.”

Nerurkar of TÜV SÜD says that businesses today are looking for processes and solutions which are simple to operate, reliable in terms of output, quality and flexible to change and of course, cost effectiveness. “Lean manufacturing or Just in Time (JIT) manufacturing principles are implemented to ensure that manufacturing cycle and response time to customers are as short as possible. Manufacturing processes including loading, unloading and transference to different locations are getting completely automated to ensure that operations are balanced, output is predictable and quality is measured online giving dual benefits of zero defect and lean manufacturing.” Shariyarr points out that any shopfloor contains two types of flows - material flow and information flow. “Integration of these two flows encircles the complete automation, which will give real time status on product and its related data. Here automation system helps providing instant feedback for quick decision making.” He explains that

on the product front, the system should track the components, sub-assemblies, which move right from the suppliers to the end consumers. “This not only builds complete traceability of the output but also helps reduce the throughput time. On the data front, it should collect all the relevant information of the process such as inventory levels, part quality, not in operation, etc. Such information will throw out wastes in the entire supply chain. This feedback/real time data shall provide the opportunities for improvement to act upon and make the processes lean.”

**Impact machine performance**

According to Shariyarr from Godrej Appliances, machine performance is built on three major functions that are: availability rate, production rate and quality rate. Collectively defined as Overall Equipment Effectiveness (OEE). All these parameters are interconnected and industrial automation plays a major role in improving it. “Automation compiles all machine related information and converts it into fruitful real-time data. This is further analysed to respond quickly whether machine itself is going out of parameters or product quality is getting deteriorated. New machine interfaces also provide the real time wear and tear information of critical machine components, which affects productivity and quality. This can be used for taking many preventive actions well in advance to avoid a breakdown or a poor quality output. Thus automation has reached a level where man and machine can interact with each other delivering value to the organization,” he explains. Varroc’s Vachhani says that the manufacturing industry is always looking for ways to improve the efficiency of machines and bottlenecks in their operations. And that’s where automation helps. “Industrial automation methods helps manufacturers to identify and take actions on negative factors such as unexpected downtime, equipment malfunction, production losses caused by shortage of resources and increases the overall equipment utilization rate,” he says.

Mallavarapu points that depending on the requirement, either the complete manufacturing line can be automated or the part of the manufacturing lines are automated. “In case of completely automated manufacturing setup, communication is controlled by the

# Experience the World of Machine Tools

▶▶▶ Cutting-edge New Products  
▶▶▶ Next-gen Solutions



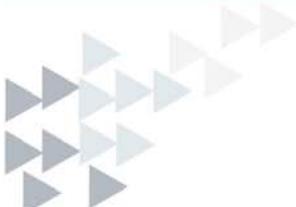
**6 Product Verticals**

**400 Product Variants**

**55 Years of Industry Experience**

**35000+ Installations Globally**

**Built To Last**



**BFW**  
www.bfwindia.com

**BHARAT FRITZ WERNER**

An ISO 9001 : 2008 and ISO 14001 : 2004 Machine Tool Manufacturer  
Complete Solutions for Turning & Machining



**“Many time companies focus on big automation to achieve better results. “This is not bad, but at the same time companies need to focus on low cost automations (LCA) to get some incremental benefits and reduce MUDA, MURA & MURI.”**

**Mahesh Bhangale,**  
GM Manufacturing,  
Racold Thermo

remote console, which enables the machine-to-operator and machine-to-machine communication from the single point thereby avoiding the wrong handling of the machine controls that results in reduced machine breakdown cases. Automation systems often comes with closed loop system in which continuous monitoring of machine health status, power consumption and various such parameters are measured against set parameters and take preventive measures to avoid damage in a predefined way. This kind of fool proof method will result in extended machine life and trouble free operation.” Racold’s Bhangale says that we can surely improve the machine performance with automation, but while designing automation we need to consider constrain of machine & accordingly modify the machine to get optimum performance. “In our company we have implemented automatic loading, unloading on existing welding machine. This had given us 60 percent productivity improvement with 50 percent manpower. But before that we had to modify the existing machine to suit for automation and inter locks.”

**Agility and flexibility**

Manufacturing companies need to have shop floor agility and flexibility both in terms of products and processes. This involves implementing changes and improvements quickly, efficiently and cost-effectively. How is industrial automation helping your organization on this front? How does it impact quality in this context?

Vachhani of Varroc believes that to grow sustainably and stay competitive manufacturing companies need to have shop-floor agility and flexibility. “Manufacturers face challenges in the initial stages in implementing changes and adopting latest technologies due to process maturity and IT savviness but usage of latest automation solutions helps manufacturers/OEMs to overcome these challenges.” Varroc has put impetus on R&D to develop product and process technologies over the past few years (in air filtration systems, electronic security systems, deep hole drilling for sodium filled and hollow engine valves, gear forming, digital electronic clusters to name a few). “Our exterior lighting systems business has been demonstrating LED headlamps, matrix LED lamps, adaptive high beams and

advanced signal lighting solutions to customers in an effort to bring these niche technologies to the volume segments. Besides we are also using IT to connect and make our business processes leaner and more agile,” Vachhani shares. To bring in agility and flexibility, Godrej Appliances has developed a dedicated team which focuses on the advancements in industrial automation and builds low cost automations to solve and improve day to day operational issues. This may include quick change-overs, deskilling operations, consistency in output and quality, enhancing safety and so on. A separate team tracks the changes happening in the manufacturing processes globally which are relevant to the industry. These processes are adopted post validating the value-add it will create for the business and end consumers without impacting environment or in some cases may even help the environment. “We are also working on a pilot project to implement industry 4.0 on our shopfloor. This, if successful, will be taken across our entire company and will be integrated with our ERP system,” shares Shariyarr of Godrej.

Gandhi of Omron points out that the forte and overall capabilities of the automation partner plays a very important role here. “The partner should have the entire spectrum of integrated automation solutions and the capabilities and right skills to keep it in sync with the ever dynamic manufacturing environment. It would be very helpful in not only looking after the flexibility requirements, per se, but also would help the solutions provider to live up to the expectations & demands of advanced and complex manufacturing environment such as digital factories, IoT, etc.”

He further explains it with an example. In a typical manufacturing set up of automotive industry, cars of different variants and models are made on the same assembly line and are produced in a mixed manner. Hence it’s extremely important that the parts of these variants are fitted in the correct model. For instance, in a diesel car it is extremely important to ensure that the engine, equipment and the tags for diesel are fitted properly. So is the case with the petrol version.

Centum’s Mallavarapu says that by having the medium scaled blocks of processes which are likely to be common for most of the products across segments it is possible to



**“Businesses today are looking for processes and solutions which are simple to operate, reliable in terms of output, quality and flexible to change and of course, cost effectiveness.”**

**Vishal Nerurkar,**  
VP – Management System,  
TÜV SÜD South Asia

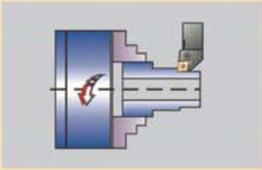
# PMT Machines Limited

• Pune • Halol

CUSTOMISED SOLUTIONS

CELEBRATING 50 YEARS

## CNC Turning



SC-8K  
GANTRY LOADER



SC-14  
BIG BORE LATHE



SC-25  
CNC HEAVY DUTY LATHE

## CNC Internal Grinding

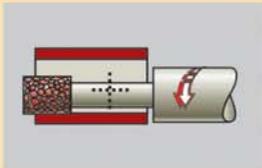


FIG-200 SPL CNC  
BIG BORE GRINDER

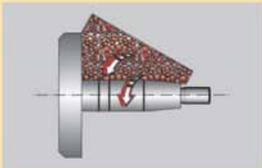


FIGT-300 CNC  
FOUR STATION TURRET



FIGE-150 CNC  
ID / OD GRINDER

## CNC Cylindrical Grinding



AWH-1500 CNC  
LONG SHAFT GRINDER

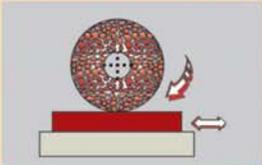


AWH-2000 CNC  
HEAVY DUTY GRINDER



SWH-400 CNC  
AUTO LOADING

## Surface Grinding



SG-106 CNC  
CREEP FEED GRINDER



SGR-60  
ROTARY GRINDER



SG-63  
HYDRAULIC / PLC

## Automats



A15/25

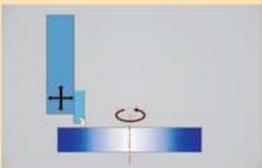


TD36  
AUTOLOADING



A42/60

## Vertical Turning Lathe



VIG-500 CNC  
VERTICAL INTERNAL GRINDING



VC - 60C  
1.5 M



VC - 75C  
TURNMILL (2.5 M)

**Built To Last**

Pune : Tel : +91-20-27426219 to 23 • Fax : +91-20-27426231/35 • E-mail : rd@pmtmachines.com, marketing@pmtmachines.com

Halol : Tel : +91-2676-246786/87 • Fax : +91-2676-246788 • E-mail : cb@pmtmachines.com, mkt.brd@pmtmachines.com • website: www.pmtmachines.com

Pune : 9960693354; Mumbai : 9821713400; Delhi : 9810401815; Bangalore : 9845026905; Chennai : 9840896822; Coimbatore : 9840366822; Jamshedpur : 9934119234; Vadodara : 9662503927



design, deploy and execute configurable production lines to suit the needs of the product. This also saves NPI time which helps customer to time the market and plan strategies.

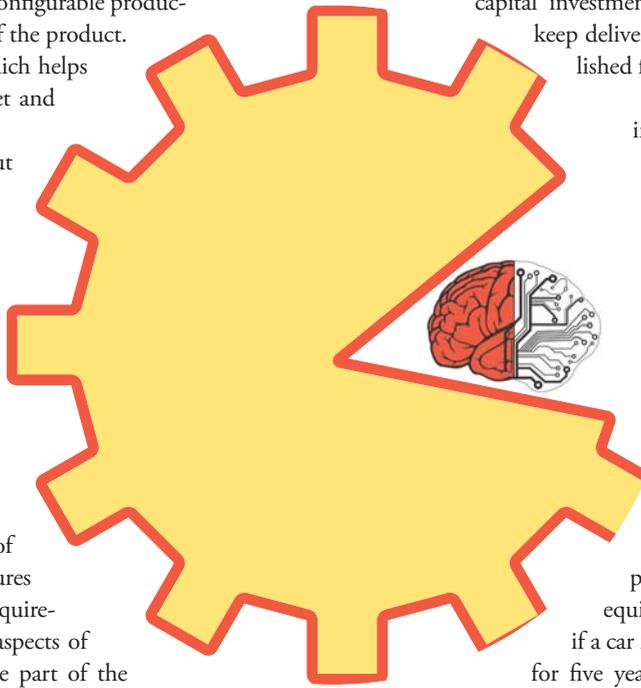
But he also points out that even though industrial automation brings in control of variability of processes, at Centum this is much more involved activity than it can be visualized. The reason? “In any high reliability products, substitution of any legacy process including introduced automation goes through the rigor of “Qualification” which ensures the Quality and reliability requirements are met while other aspects of need for automation will be part of the due diligence activity that will be carried out at the beginning of the automation initiative.”

According to Bhargale, this depends on type of automation selected. “In case the automation is designed considering the flexibility requirement; the changes are possible to do quickly, efficiently and cost-effectively. In our factory while designing the tank welding automation we have kept the provision of flexibility and improvements, which allows very fast and easy change over, just by selecting the program.”

Nerurkar believes that businesses need proper application systems to control and monitor instruments. The use of PLCs has revolutionised the manufacturing segment. Assimilation and classification of collected data is one of the benefits of PLC which is further supplemented by SCADA (Supervisory control and Data acquisition) which manages data collected. Together, PLC and SCADA control and monitor the infrastructure and facility based process of businesses and provide real time information on the condition of equipment. With use of automation, machining centers have transformed into versatile production machines where selecting proper tools, fixtures and attachments, user can produce variety of parts in small or large batches with required quality and predictable output.”

**Way ahead**

Godrej Appliances’ Shariyarr underlines believes that larger and complex automations like integrated manufacturing lines should address all aspects of operational excellence such as productivity, quality, capacity enhancement, reduction in cost of operations, enhancement in safety levels and should have zero impact on the environment. Such investments will add overall value to all stakeholders and give a faster payback. “Thus, a systematic scrutinizing approach is necessary through which the low cost automations or larger complex ones involving huge



capital investments can be distinguished and will keep delivering the results that they are established for.”

Mallavarapu concludes that bringing in automation to existing facility may look difficult at the outset but when compared with the long term benefits, it is essential to transition from legacy manufacturing to the automated processes. This enables organizations to stay ahead of competition. Nerurkar from TÜV SÜD states that application softwares used in industrial automation that is distributed on the shop floor, takes advantage of the flexibility provided by using programmable equipment. “To put it in perspective, if a car manufacturer is offering a warranty for five years and free replacement of modern, compact and complex but very efficient engine,

against any manufacturing defect, certainly the success can be attributed to industrial automation. This is only one of the several benefits of manufacturing using industrial automation. It enhances not only the final product quality but streamlines the entire production chain and aids in efficient waste reduction and energy conservation as well.”

Gandhi summarises in the context of ‘partnership’. “If the automation solutions provider has forged a customer centric relationship as a ‘complete end-to-end solutions provider’ – working with the customer right from the stage of concept creation to execution to after sales support- it is very much feasible to implement changes swiftly, at the desired level & cost, without affecting the RoI, quality and other essential key performance indicators,” he says. Racold’s Bhargale point out that many time companies focus on big automation to achieve better results. “This is not bad, but at the same time companies need to focus on low cost automations (LCA) to get some incremental benefits and reduce MUDA, MURA & MURI. Like use of gravity feed conveyors to reduce number of material handler, redesigning of assembly / work bench for better utilisation of golden zone, line balancing, etc, shop floor re-layout to reduce material & multiple handling.” Vachhani from Varroc is proud of the fact that his organisation is leading in making this push into the realm of Industry 4.0 adoption. “We have started implementing this solution across all of our plants and we were able to see the results. Machines and systems were seamlessly connected on Datonis in real time for all our operational metrics of machine utilization, performance, quality, condition and energy consumption. The Industry 4.0 solutions empowered us to plan better and improve our product quality, OEE and Capacity utilization.” 

**WORLD CLASS**

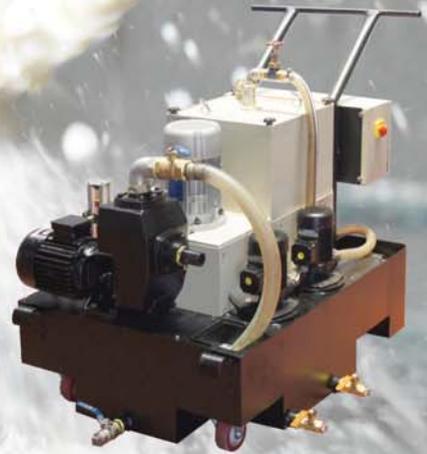
# Coolant Handling Solutions

## THE 'COOL' FIVE



### Compact Band Filter

- 1/3rd footprint of a conventional filter
- From 50 to 1200 LPM
- Reduces paper consumption



### Cool Clean

- Centrifuge on wheels
- Logic Controlled
- Media less
- Portable and Light
- Filters down coolant to 10 microns



### Coolant Centrifuge

- No filter media
- Filters down coolant to 10 microns
- Can be retrofitted



### Magnetic Separator

- Static permanent magnets
- Reduced power consumption - only 40W
- Rare Earth models in SS body available



### Oil Skimmer

- Removes tramp oil
- Available in sizes from 25mm to 150mm belt width
- Hinge Belt Skimmers for higher coolant temperatures



U-TECH ASSOCIATES

U-Tech House, #33/1 (296), Mallathahalli Main Road, Mallathahalli Post, Bangalore 560 056  
Tel.: +91 80 23182828 • Email: sales@u-techindia.com • www.u-techindia.com

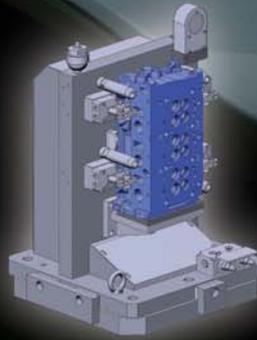
Solutions for | Coolant Handling | Air Handling | Chip Handling

U-Tech is expanding. We are hiring Sales Engineers and looking for Channel Partners. Email us with details.

SMOOTH TECHNOLOGY

C O M P L E T E

Mazak is not only manufacturing advanced machines, but also adds value by supplying a complete solution to our customers in India like Tools, Fixture & Automation



▲ Cylinder head



▲ Crankcase



High speed, high accuracy  
horizontal machining center

HCN SERIES

Designed for unsurpassed productivity

- Wide variety of spindles for optimum cutting conditions
- Rigid machine construction for heavy-duty machining
- Advanced factory automation equipment available for higher productivity



# SOLUTION



HCN-5000/50  
[ MAZATROL SmoothC ]



HCN-6800  
[ MAZATROL SmoothG ]

The New MAZATROL Smooth  
CNC series Designed to  
Increase your Productivity

4 axes simultaneous CNC

MAZATROL **SMOOTHC**  
MAZATROL **SMOOTHG**



## YAMAZAKI MAZAK INDIA

Tel : +(91)-2137-668800 e-Mail : [marketing@mazakindia.com](mailto:marketing@mazakindia.com)

INDIA TECHNOLOGY CENTER  
115, Pune Nagar Road, Sanaswadi,  
Pune. 412208.



# Mazak

**Your Partner for Innovation**



# Being innovative and green

**Hussain Shariyarr**, Senior Vice-President (Operations), Godrej Appliances reveals the company's strategy in manufacturing of consumer durables.

By Swati Deshpande

**Q** Godrej Appliances is one of the first refrigerator manufacturing companies in the country. Can you please tell us about the company's journey since then?

Godrej Appliances started its operations in the year 1958 with the setting up of a manufacturing facility for Direct Cool refrigerators in Mumbai and became the first company to manufacture refrigerators in India. It further added Frost Free refrigerators to its product range by adding another plant for Frost Free refrigerators and in-house compressor manufacturing to promote indigenization. In order to cater to the increased market demand and also optimise operational cost, it expanded its operations in the year 1996 by setting up new manufacturing facilities at Shirwal (Maharashtra) for washing machines and air conditioners, and Mohali (Punjab) for Direct Cool refrigerators. As the cost of operation in Mumbai was continuously rising, in 2005 Godrej Appliances shifted its complete manufacturing operations from Mumbai to Shirwal and Mohali.

This strategic initiative not only controlled the operational cost but also helped in increasing utilisation of both the off-site plants. It has truly evolved since then and made us realise what "Big M" is all about. Where manufacturing is not restricted to just production but also encompasses the process of supply chain & suppliers, R&D and design and after sales service & warranty. It also includes external factors such as global changes, environment changes, technology changes, regulatory changes and societal changes.

The manufacturing strategy of Godrej Appliances is four pronged: Operational excellence, Employee involvement, Supplier development, Sustainable growth and contribution to society. This strategy was formulated out of the learnings of the VLFM program mentored by Prof Shoji Shiba and executed being part of the CII led Manufacturing Excellence clusters. The cluster journey followed a tailor made roadmap and was based on Total Employee involvement, which helped the locations transform physically and culturally, whether it be



"The manufacturing strategy of Godrej Appliances is four pronged: Operational excellence, Employee involvement, Supplier development, Sustainable growth and contribution to society. This strategy was formulated out of the learnings of the VLFM program mentored by Prof Shoji Shiba and executed being part of the CII led Manufacturing Excellence clusters."

**Hussain Shariyarr**, Senior Vice-President (Operations), Godrej Appliances

SS, OEE improvement, inventory reduction, quality improvement or space optimization. Godrej Appliances has now embarked on the TPM journey to strengthen and build further on these fundamentals.

**Q** Please tell us about Godrej's manufacturing capability and capacity with regards to consumer durables.

Godrej Appliances' manufacturing facilities at Shirwal and Mohali are designed and continuously upgraded to deliver products of long lasting quality, latest relevant technology and style to suit today's lifestyle needs and expectations. The manufacturing team focuses on zero impact to environment by innovating and improving to ensure that Lean and Green co-exist. Today, the plants are benchmarks for green operations and are close to benchmarks for lean operations.

We at Appliances Manufacturing believe in continuously exploring what's happening around the world in the appliance industry. Starting with PUF in our refrigerators, the journey never ended. We were the first to introduce a completely green refrigerator and an HCFC / HFC free foaming and refrigerant material. We have been the first to introduce lokring in India- a method used for joining sealed system joints without using



**Warning!**  
**Machine tools without  
linear encoders  
may be inaccurate.**

HEIDENHAIN OPTICS & ELECTRONICS INDIA PRIVATE LIMITED

Chennai 600031, India

phone +91 44 3023 4000



**HEIDENHAIN**  
**shows the way to precision.**



Machine tools without linear encoders use the pitch of the ball screw as the measuring standard. But at the same time, the ball screw transfers enormous forces at high traverse speeds and deforms due to thermal changes. Result: the position values become inaccurate. Machine tools with linear encoders are statically, dynamically and thermally more precise—advantages that we symbolize with a sign. Most linear encoders installed on machine tools have it: our sign of precision. For more information, visit:  
[www.heidenhain.in](http://www.heidenhain.in)

- + angle encoders
- + **linear encoders**
- + contouring controls
- + position displays
- + length gauges
- + rotary encoders





any heat or flame. Now, practically everyone in the industry uses lokring. We have been first in introducing stretch hood packing, a solution which not only saves cost but is environment-friendly.

Godrej Appliances has made strategic investments in key manufacturing processes to adopt latest technologies that offer high process capabilities, improved fit, feel, finish and provide flexibility of operation. E.g. ITW Gema system for Powder coating, QS Metal lines for side panels and doors, QS pressure thermoforming machines for plastic sheets, Cannon and QS PU foaming machines. Investments are also planned to support manufacturing of new products like Multi door refrigerators, chest freezers and medical refrigerators. With an annual manufacturing capacity of 30 lakh refrigerators, 4.5 lakh washing machines, 2 lakh air conditioners and 23 lakh compressors, the plants are equipped to support customer demand even in peak season. To counter the seasonal demand of product categories the plants are moving towards multi- product manufacturing at both locations.

**Q The company has emphasis on “green manufacturing”. Can you please tell us more about it?**

To ensure sustainable growth, Godrej Appliances has adopted CII’s Mission on Sustainable Growth as the guiding principles. Targets are taken on all the commandments of Mission on Sustainable Growth, which are in most cases more stringent than company level targets. These include energy efficiency and use of renewable energy, water conservation, greenhouse gas reduction, material conservation and waste management, green supply chain, product stewardship and life cycle assessment of products.

Our Good & Green activities in achieving excellence in sustainability emphasise our approach that Lean can be Green and Green can be Lean,

- When Lean is not implemented as a short term strategy for short term gains.
- When the scope of lean is not limited to internal environment but includes the external environment.
- When innovation is the approach and not improvement Godrej Appliances achievements in Green,
- Use of producer gas for ovens has reduced consumption of fossil fuels and Zero SO2 emission.
- Waste management – Zero waste to landfill. Reduce, Reuse & Recycle is applied to all type of wastes.
- Water positive through rain water harvesting and has a water body to collect rain water
- 23 percent reduction in Specific Energy Consumption
- 24 percent share of renewable energy in the total energy used for the plant operations

Both manufacturing locations of Godrej Appliances are oases of green and heaven of flora and fauna. The Plant teams have been constantly working on enriching the biodiversity at the locations by creating green areas, water bodies and planting trees and shrubs.

Apart from a variety of seasonal wild vegetation growth, the campus at the manufacturing site is home to more than 1000 trees and shrubs, out of which more than 95 percent are native & adoptive species. We also have in our campus, few resident wild animals, butterflies, reptiles and amphibians.

**Q The manufacturing unit has won Platinum GreenCo certification from CII-Green Business Centre. Please tell us more about it. What is GreenCo Rating?**

CII works to create & sustain environment conducive to the growth of industry in India. CII initiated the voluntary programme “Mission on Sustainable Growth “, and sought voluntary commitments for reducing consumption of energy , water and other natural resources . More than 450 organisations joined this voluntary commitment. This initiated a demand from companies to formulate a system to evaluate the actual performance on the Green front & companies pursuing ecologically sustainable growth. This led to the birth of the GreenCo rating system. The Green Rating System for companies encourages a performance based approach. It provides guidance to businesses on how to implement Green strategies.

Godrej Appliances’ Shirwal plant embarked upon its GreenCo journey in August 2013. The journey gained momen-





**SORALUCE**

**Advanced machine solutions with cutting edge technologies**

# LATEST TECHNOLOGICAL DEVELOPMENTS

incorporated into the machines:



**Improving and offering the best**

- Precision and accurate parts
- Flexible and reliable machines

▼ Large size VTC and milling boring machines up to 8 meters. Targeted solutions for energy, heavy engineering, mining and earth moving, railway, etc.



**DANOBTGROUP**

**DANOBTGROUP India**  
Office No. 6 & 7, 2nd Floor, Business Avenue  
Niyoshi Park Road, Sanghvi Nagar Aundh  
PUNE 411007

Telefax +91 20 66094531 / +91 20 66070271  
mktg\_dg@danobatgroup.com  
[www.danobatgroup.com](http://www.danobatgroup.com)





tum and in barely two months, the entire documentation was complete and offered for assessment. With all its past efforts taken on the green front, Godrej Appliances easily achieved the Gold rating in the first attempt. Godrej, however, did not stop its journey here but went on to get the platinum in another six months. This achievement gave Godrej the unique distinction of becoming the first factory and company in India to get the Platinum rating. Horizontal deployment of all the learning of Shirwal plant at Mohali plant, made them achieve the Platinum rating in the first attempt itself.

**Q Godrej Appliances has launched range of ‘green products’ including air-conditioners, refrigerators, etc. Can you please tell us about these products?**

The company has moved from strength to strength when it comes to Green technology and has set a number of benchmarks for the industry including the launch of the first green refrigerator in India (2002), the first inverter AC in India (2005), the first 5 star range of DC refrigerators (2008), first green AC in the world (2012), the first refrigerator with 6 Star Performance (2012) and India’s first ACs with 7-star performance.

**Some of the green products from Godrej Appliances are: Refrigerators:**

Godrej Appliances became the first and only company in India to manufacture 100 percent CFC, HCFC and HFC- free refrigerators way back in 2002.

**Direct Cool:** In the Direct Cool segment, which comprises 70 percent of the market, Godrej Appliances boasts of the Godrej Edge Pro Refrigerator, offering 6 star performance across parameters like Maximum Energy efficiency (15 percent more energy efficient than other 5 Star Refrigerators in its class), Maximum Space (44 percent more vegetable space than other 5

Star Refrigerators in its class) and Faster Ice Making (50 percent faster) as compared to any other refrigerators in a similar segment. GODREJ EDGE PRO REFRIGERATOR is the undisputed leader in its segment.

**Frost Free:** Godrej Appliances’ energy efficient refrigerators promise best-in-class cooling with the best in class features like Stay Cool technology for cooling retention despite power cuts, i-Fresh technology for advanced freshness and best-in-class energy efficiency . Godrej refrigerators are not only green because of the environment-friendly refrigerant, but also significantly energy efficient. Godrej Appliances are the only ones in the industry who boast of 100% Green range of refrigerators.

Godrej Appliances has recently launched an entire range of 4-star rated energy efficient frost free refrigerators and as per the current energy efficiency regime, they have the largest range of these energy efficient models.

**ACs:** Godrej is the first brand in the world to manufacture ACs with green gases. Their green balance ACs have zero Ozone Depletion Potential and Global Warming Potential of only 3 which is lowest in the industry. The Green Balance range of ACs make use of the greenest refrigerant R290 and have been awarded with the coveted India Design Mark award as well as the internationally acclaimed Good Design award by Japan Institute of Design Promotion.

**Q What expansion plans does the company have in the pipeline?**

Two new manufacturing sheds are being constructed, one at each location. This will be to expand our washing machine and Air conditioner manufacturing capacities. Also to expand in new categories like medical refrigerator, deep freezers and big capacities refrigerators. We are also expanding our compressor manufacturing capacities. 

# SEAL MASTER CORPORATION

INFO@SEALMASTER.COM  
800.477.8436  
SEALMASTER.COM



ENGINEERED RUBBER INFLATABLE SEALS

---

**FABRIC  
REINFORCED  
SEALS,  
ACTUATORS,  
DIAPHRAGMS  
& PNEUMATIC  
SPECIALTIES**



Window to future. The modern Bahrain seen through a small opening in the wall of the ancient Bahrain Fort.

# Kingdom of Opportunities!

Bahrain is a splendid investment destination to establish manufacturing and trading bases for companies looking to spread their wings in the Gulf region, according to that country's Economic Development Board. *The Machinist* takes a quick trip to the country to find out more.

By Niranjan Mudholkar

**M**y recent trip to a Gulf country was full of surprises. And they were indeed pleasant ones! For starters, imagine a nation (in that region!), which started women's education way back in the 1920s. And as a result, women not only take up important government and corporate jobs but also drive cars wearing trendy western outfits! Well, if you aren't interested in social history or feminism, then how about an international economic agreement like signing of the Gulf's first Free Trade Agreement with the United States? Or how about a sports highlight like hosting of Middle East's first ever Formula 1 Grand Prix? Interesting? Read on.

The country I am talking about is all of the above and also the first country in the region to implement the privatisation law and also becoming the first country in the Arab world to fully liberalise its telecom industry? It serves as the gateway to the entire gulf market, which includes just half an hour's drive to GCC's biggest economy. It also has an International Investment Park that offers Zero corporate tax over a guaranteed period with 100 percent foreign ownership and duty free access to GCC and 10 other Arab country markets as well as duty free imports of raw materials and equipment. Well, we are talking about the Kingdom of Bahrain, a small but progressive and liberal nation in the Gulf region.

## Tradition of openness

Incidentally, the relationship between India and Bahrain is more than 5,000 years old, dating back to the Indus Valley civilisation when Bahrain was the hub of the Dilmun culture. Importantly, the association between the two countries has been quite friendly throughout and both nations have been engaged in business give and take as well as cultural exchange. In fact, Bahrain has served as an economic trade post connecting the Western and the Eastern halves of Asia throughout its history; a role it is very well positioned to play even today.

Unlike many other countries in the region, Bahrain's economic progress has been built on a tradition of openness. As

## Bahrain – A bird's eye view

**Capital:** Manama

**Head of State:** H.M. King Hamad bin Isa Al Khalifa

**Population:** 1.3 million (approximately 50 percent expatriates)

**Area:** 770 sq km (comparable to Singapore)

**Languages:** Arabic, English (used as business language)

**Currency:** Bahraini Dinar (BD) (\$ 1 = 0.38BD)

**Time zone:** GMT+3

**Religion:** Islam (85 percent, state religion). Christians, Hindus, Jews and other minorities enjoy freedom of religion

Be a part of this mega event and witness best practices in manufacturing



# National Productivity Summit 2016

24 - 26 November 2016

“Showcasing Competitiveness in Manufacturing”

@ Bangalore International Exhibition Centre (BIEC), Bangalore



To champion the cause of enhancing competitiveness in the Indian manufacturing industry, IMTMA is organizing the 10th edition of **National productivity Summit** from 24-26 November 2016 at Bangalore. The event showcases best practices in manufacturing through Inspiring Keynotes, Live Case Study Presentations, Plant Visits, Focused Technical Sessions, Success Stories and so on.

## Inspiring Keynotes

Learn from industry leaders who will share their knowledge and expertise on various facets of manufacturing competitiveness

## Plant Visits

TOUR A : Toyota Kirloskar Auto Parts and Toyota Kirloskar Motor  
TOUR B : Volvo Buses and Honda Motorcycles & Scooters India

## IMTMA - ACE Micromatic Productivity Championship Awards 2016

Live case study presentations on best manufacturing practices from renowned companies



### Contesting Companies



**Success Stories** : Listen to success stories of companies that have redefined manufacturing through 'Change Management' & 'Operation Excellence'

## Experts' Corner

One-to-one discussions with industry experts that will address manufacturing challenges and provide possible solutions

## Focused Technical Sessions

Enhance your learning ! Knowledge sharing sessions on topics of special interest from a panel of industry experts :

- Strategies to improve OEE
- Design to Target Cost
- Low cost Automation
- Machining Audits
- Trends in Intelligent Robotics
- Heat Treatment

## Productivity Buzz 2016

A display of manufacturing solutions and innovations through product samples, table top models, simulated videos, posters etc.

For details and to register online log on to [www.productivity.imtma.in](http://www.productivity.imtma.in)

Contact : Mr. Abhishek; [abhishek@imtma.in](mailto:abhishek@imtma.in) or call 080-6624 6829

Organised by

Indian Machine Tool  
Manufacturers'  
Association  
[www.imtma.in](http://www.imtma.in)



Awards Sponsor

**AceMicromatic**  
Group



JBF facility at the BIIP



“A key driver of Bahrain’s growth is the favourable business environment. This country offers a unified jurisdiction with a tried and tested legal and regulatory environment, and minimal restrictions on foreign investment and ownership.”

**Husain Rajab**, Executive Director of Manufacturing and Logistics, Bahrain Economic Development Board

an established hub for trade and investment, Bahrain has been a regional pioneer in a number of areas ranging from trading through oil exploration to finance and education. It is these attributes that allow the modern day Bahrain to blend its educated national labour force with a diversified economy and a high degree of integration in global commerce.

“A key driver of Bahrain’s growth is its favourable business environment. This country offers a unified jurisdiction with a tried and tested legal and regulatory environment, and minimal restrictions on foreign investment and ownership,” said Husain Rajab, Executive Director of Manufacturing and Logistics, Bahrain Economic Development Board (EDB), whom I met during the trip.

“The Kingdom has one of the lowest operating costs and taxation systems in the region, and enjoys a reputation as the “Gateway to the Gulf”, with the best market access to the economies of the Gulf Cooperation Council (GCC), comprising the Kingdom of Saudi Arabia, Kuwait, Oman, Qatar and the United Arab Emirates (UAE), a market which is valued at approximately US\$1.5 trillion, and could reach US\$2 trillion by 2020. Bahrain also has an established financial services sector with more than four decades of experience,” Rajab added.

### Excellent connectivity

The Kingdom’s strategic location provides the best access to the Gulf, with excellent regional transport links by road, sea, and air. Bahrain is connected by a 25km causeway to Saudi Arabia. A causeway is also due to be built linking Bahrain to Qatar.

Not many of us would know that the first flight of Concorde on January 21, 1976, was actually from London to Bah-

rain. Today, the Bahrain International Airport (BIA) hosts over 40 international airlines (including cargo and charter flights), is connected to over 50 international destinations and serves 9 million passengers annually. Established in 2008, the Bahrain Airport Company (BAC) is currently working on war footing to expand the BIA to accommodate future growth. “The airport is currently undergoing a significant modernisation project, upgrading existing facilities and expanding by building new ones. Construction is underway on a new terminal, scheduled for completion in 2019, which will dramatically improve the airport’s capacity to 14 million passengers a year,” said Mohamed Yousif Al-Binfalah, CEO, BAC.

Located just 13 km from Bahrain International Airport is the Khalifa Bin Salman Port in Hidd. The Port, which started operations in April 2009, offers services to shipping lines, freight-forwarders and beneficial cargo owners facilitating growth for the local economy and enhancing supply chains for the Northern Gulf. The port’s tonnage throughput was estimated at 18.2 percent in 2015 and was forecasted at 11.6 percent in 2016, with average annual growth of 11.7 percent between 2015 and 2019. It features channel depth of 14 metres - dredging is currently underway to deepen the channel approach to 15 metres and a berth depth of 15 metres. The Khalifa bin Salman Port is operated by APM Terminals Bahrain, which has a 25 year concession, and oversees the management and operations of the port.

Thanks to this superb connectivity network, Bahrain provides excellent accessibility to the Gulf and the wider MENA region, which are some of the world’s most important economic blocks. The GCC’s economy is worth more than \$1.5 trillion and is projected to reach \$2 trillion by 2020. In recent years

igus® the-chain ... moving energy made easy

# Top for robots



triflexTRCF

## Save time & increase reliability ...

triflex® TRCF for maximum robot reliability:  
3-chamber system for large hoses and cables. Easy to open using a screwdriver and easy to lengthen and shorten. Now 25% more push-pull strength. Available in sizes 65, 85, 100 Ø, and in dresspack modules.  
For more details visit us at [www.igus.in/triflex](http://www.igus.in/triflex)

Phone +91-80-45127800 Fax +91-80-45127802 info@igus.in

**igus®.in**  
plastics for longer life®



From single components to turnkey engineering solutions for your industry – igus® the-chain

igus® (India) Pvt. Ltd. 36/1, Sy. No. 17/3, Euro School Road, Dodda Nekkundi Industrial Area - 2nd Stage Mahadevapura Post Bangalore - 560048



## General Economic indicators

Indicator	2012	2013	2014	2015	2016f	2017f
Real GDP growth (%)	3.6 %	5.3 %	4.5 %	2.9 %	2.9 %	2.7 %
Non-hydrocarbons sector	6.9 %	3.0 %	4.9 %	3.9 %	3.5 %	3.2 %
Hydrocarbons sector	-8.5 %	15.3 %	3.0 %	-0.9 %	0.5 %	0.5 %
Nominal GDP growth, %	4.1 %	8.4 %	3.0 %	-4.8 %	5.7 %	9.6 %
Inflation (CPI %)	2.8 %	3.2 %	2.8 %	1.8 %	4.8 %	2.7 %
Current account (% of GDP)	7.3 %	7.8 %	7.7%f	-0.2 %	-2.7 %	1.2 %
Fiscal balance (% of GDP)	-2.0 %	-3.3 %	-3.6 %	-11.9 %	-10.1 %	-7.0 %
Oil price in USD (Arabian Medium)	109.9	106.4	96.0	50.0	45.0	60.0

f = forecast

## Economic Diversity

While it was the first amongst the GCC member states to discover oil, the Kingdom of Bahrain was also the first Gulf economy to diversify away from oil as its primary driver of economic growth. Although, it still continues to enjoy a strong income from oil, Bahrain also has a diverse economy where the upstream hydrocarbons sector now accounts for less than 21 percent of real GDP. Other sectors of comparable importance include financial services and manufacturing, which is increasingly driven by downstream investments. The value of non-oil exports in Bahrain has increased by 12 percent since 2010; with the export bundle being dominated by base metals and articles of base metals; accounting for over 50 percent of total export value. In 2015, growth was particularly strong in construction, private education and health care, and the tourism sector of the economy.



“Bahrain provides a business friendly environment where infrastructure and utilities are world class, skills development is facilitated through the education system and training institutions, access is made easy and Government work together to deliver and make it easier for new businesses in the country in a practical and day-to-day manner.”

**Dr Jarmo Kotilaine**, Chief Economist and Executive Director of Strategy and Planning, Bahrain EDB

member states have taken greater advantage of the opportunities the GCC alliance creates. Bahrain is a major beneficiary and will continue to benefit from further trade and business integration efforts.

### Bahrain International Investment Park

To attract international companies to set up their manufacturing and trading bases in the country, the Bahrain International Investment Park (BIIP) was created in 2006. This 247-hectare business park has excellent connectivity and access to both the Bahrain International Airport and the new Shaikh Khalifa Sea Port. Some of the companies operating successfully at the BIIP include Mondelez (formerly Kraft Foods), MTQ Corporation, BASF, Siemens, Reckitt Benckiser, Al Jazeera Sweets Factory as well as India based companies like JBF, Chemco and Ion Exchange.

The success of BIIP is due to concessions like Zero corporate tax over a guaranteed period, 100 percent foreign ownership and duty imports of raw materials and equipment. According to Gerry Sharky, Marketing Manager, BIIP, “BIIP also offers duty free access to GCC and 10 other Arab country markets. This is a significant advantage over free zones in the region which are subject to import duties once the product leaves the free zone. As BIIP is an integral part of the GCC there is no customs duty

to be paid for transfer within the GCC.” Sharky also added that business costs at BIIP (and overall in Bahrain) are low by regional standards and importantly, there are no labour recruitment restrictions for the first five years. BIIP will ultimately house over 70 companies.

As pointed out by Dr Jarmo Kotilaine, Chief Economist and Executive Director of Strategy and Planning, Bahrain EDB, Bahrain is not blessed with the same abundance of oil as other countries in the region and it knows this fact quite well. “So it has to think harder, and work smarter than its rivals. It does this by providing a business friendly environment where infrastructure and utilities are world class, skills development is facilitated through the education system and training institutions (like Tamkeen), access is made easy and Government work together to deliver and make it easier for new businesses in the country in a practical and day-to-day manner,” Dr Kotilaine added.

Today, several Indian large enterprises as well as entrepreneur drive organisations are looking to expand their operations overseas. For those looking to spread their wings in the Gulf region while also keeping an eye on the west, Bahrain could be a good option. 

*The Editor travelled to Bahrain on invitation from the Bahrain Economic Development Board (EDB)*

THE ULTIMATE GUIDE TO PROFITABLE MANUFACTURING  
**MACHINIST**

# Global Manufacturing Summit

Excel • Enhance • Expand

Powered By  **MITSUBISHI  
ELECTRIC**  
*Changes for the Better*

Industrial Lubricant Partner

**MOTUL** TECH

**December 7, 2016, The Westin, Gurgaon**



- **Keynote address**
- **CEO Panel Discussion on Global Leadership:  
Going Global, Thinking Local.**
- **Industry Presentation:  
Marrying product innovation with market dynamics**
- **Operations Panel Discussion on:  
Achieving Zero Defect Zero Effect.**
- **Hall of Fame**

For delegate registration, contact:  
**Ms Anjali Nair**  
themachinistmagazine@gmail.com  
022-22735609, +91 9769429278

For speaker opportunities, contact:  
**Niranjan Mudholkar**  
Niranjan.mudholkar@wmm.co.in  
+91 9819531819

For partnership opportunities, contact:  
**Rishi Sutrave**  
Rishi.sutrave@wmm.co.in  
+91 9820580009

For more details log on to: <http://mes.themachinist.in>



## GST

# GST Bill: A boon to manufacturing companies in India

With Goods and Services Tax (GST) into the picture, the manufacturing sector will have to think from a different perspective as far as finances are concerned. Here is an overview of impact that the GST may have on the manufacturing industry.

By Kaustubh Roplekar

**M**anufacturing is a competitive industry and has been a major economic driver for many developing economies across the world. Although India enjoys a favourable demographic and geographic position, its manufacturing industry has been close to stagnant for the last two decades. With reference to 'Make In India', the government realises that to become a manufacturing hub, it will require several planned reforms to simplify manufacturing in India. The implementation of the Goods and Services Tax (GST) will set off a transformational shift for a complex multi-layered indirect taxation system to a cohesive indirect taxation system.

The proposed GST has included various central (Excise Duty, Additional Excise Duty, service tax, Countervailing or Additional Customs Duty, Special Additional Duty of Customs, etc.), as well as state-level indirect taxes (VAT/sales tax, purchase tax, entertainment tax, luxury tax, octroi, entry tax, etc). While the cost of production trims down, every business will still face the challenge of creating incremental value of the customers. All major business dynamics will have to be thoroughly analysed to assess the impact of GST on business.

## Improved working capital

Working capital is one of the significant factors for manufacturing sector and as per the GST announcement; stock transfers are deemed supply and are subject to GST. Although GST paid at this stage would be available as credit, realisation of this GST would only occur when the final supply is concluded. This is likely to result in cash flow blockages and therefore companies would have to rethink their supply chain management strategies to minimise this impact on their cash flows.

Under the present Indirect Tax regime, only excise duty is paid on branch/stock transfers at the time of clearance of finished goods from manufacturing unit and the VAT/CST is liable to be paid at the time of the sale of goods. But under GST regime the Integrated Goods and Service Tax (IGST) is levied, which would be divided in Central Goods and Service Tax (CGST) and State Goods and Service Tax (SGST) on all inter-state branch/stock transfers. The rate of IGST would be higher than the prevailing excise duty since it will be the combination of CGST and SGST. This will create adverse impact on cash flow since till the time of supply of goods to customer the IGST paid at the time of interstate stock transfer will get blocked.

With reference to 'Make In India', the government realises that to become a manufacturing hub, it will require several planned reforms to simplify manufacturing in India. The implementation of the Goods and Services Tax (GST) will set off a transformational shift for a complex multi-layered indirect taxation system to a cohesive indirect taxation system.



### Hassle-free supply of goods

As per the existing indirect tax regime free supply of goods are not subject to VAT. The Model GST Law further instructs that specific transactions without consideration would also be treated as supplies. Therefore, GST might be applicable to free samples, leading to rise in overall costs.

This will impact the sales and marketing cost of companies which are following the system of free samples or free supply scheme such as buy ten quantity and get one free, warranty replacement free of cost, logistics damage replacement, etc. The net impact will therefore be the difference between the existing Excise duty which is currently paid on free units and the GST payable under the GST regime.

### Restructuring of Supply chain

Transition to GST should hopefully result in such decisions being taken to optimise business efficiency. For example, at present warehousing choices in different States/ between is often based on arbitrage between VAT rates and CST rates. With the initiation of GST, it is expected that such ware-

**GST will convert entire India into a unified common market. GST is a tax on the supply of goods and services, right from the manufacturer to the consumer and input credit of taxes paid at each stage will be available in the subsequent supply stage. This makes GST a tax only on value addition at each supply stage. Hence, the final consumer will bear only the GST charged by the last dealer in the supply chain with input tax benefits at all the previous stages.**

housing and logistics decision would be based on costs and location advantages with reference to key customers. GST is a tax on the supply of goods and services, right from the manufacturer to the consumer and input credit of taxes paid at each stage will be available in the subsequent supply stage. This makes GST a tax only on value addition at each supply stage. Hence, the final consumer will bear only the GST charged by the last dealer in the supply chain with input tax benefits at all the previous stages. In view of the system of seamless tax-credits throughout the value-chain and across boundaries of States, there would not be any cascading effect of taxes. Hence in GST regime the prevailing CST paid on interstate sale will get eliminated. The decision making factors for warehousing choices would be purely based on service levels the company

wants to achieve, distances between demand and supply centres, ensuring minimum of inter depot transfers versus the cost of having & managing the warehouse. 

*The Author is the CFO of Racold Thermo Pvt Ltd*



YOUR SEARCH FOR  
**TAPPING  
NEEDS**  
IS OVER





**EMKAY TOOLS**

B-27 & B-27/1, M.I.D.C., Industrial Area, Hingna Road,  
Nagpur - 440 016 (India)  
Tel : 91-7104-237363, 237584 Fax : 91-7104-232862  
E-mail : [hq@emkaytools.com](mailto:hq@emkaytools.com) | [sales@emkaytools.com](mailto:sales@emkaytools.com)  
Website : [www.emkaytools.com](http://www.emkaytools.com)



## GCPA: A grand success

The conference which aimed at highlighting the opportunities and challenges in the area of plastics in automotive was attended by who's who of the industry. Here is an overview of the event.

By Swati Deshpande

In the current trends of light-weighting and cost reduction, plastics play an important role in the automotive industry. On this background, Worldwide Media recently concluded first of its kind of an event — The Economic Times Polymers Global Conference on Plastics in Automotive (GCPA). The one day conference, which was held at The Westin, Mumbai, focused on the various applications of plastics in automotive.

### Inauguration

The event was inaugurated by Rajan Wadhwa, President & Chief Executive – Truck, Construction Equipment & Power Train Business, Head – Mahindra Research Valley; Member of the Group Executive Board, Automotive Farm Equipment Sectors, Mahindra & Mahindra Ltd and President – Automotive Research Association of India (ARAI), Ajay Durrani, Country President, India and MD, Covestro (India), Antony Kurian, MD, igus India, and Vishal Agrwal, President, Yudo Hot Runner India and Yudo Suns. Later, the Welcome Note was delivered by Ajay Durrani. While welcoming delegates, Durrani said, one cannot ignore the contribution of plastics to the automotive industry. He further added that “In the days

to come, the vision of the industry should be delivering smart solutions while making the world a brighter place to live in.”

In the keynote address, Wadhwa highlighted the journey of plastics in the automotive industry over the period of 4-5 decades. “Apart from being light in weight, plastic has numerous other advantages as well. It is extremely customer-friendly as it is odourless, has great visual appeal and there is no problem of any kind of emission,” he continued. Wadhwa further mentioned that “Along with customers, engineers are also delighted to work with it as the material helps them reduce the weight by 30 percent and cost by the similar number. Moreover, it is consistent and reliable material. It possesses the features to replace steel and high-strength steel in some areas.”

### CEO Panel Discussion

One of the interesting sessions at GCPA was the CEO Panel Discussion, which discussed about the challenges and opportunities in the auto component industry with regard to plastic. Ajay Durrani, along with Dr. Madhu Ranjan, MD, ElringKlinger Automotive Components India Pvt. Ltd.; RK Sharma, Co-Founder & MD, Daejung India; B.P. Shiv, Chief Marketing & Programs Officer, Plastic Omnium Auto Exteri-

# THE ECONOMIC TIMES POLYMERS

Awards 2017

**Excellence in Plastics**

Venue: Mumbai

Concurrent With

Ufi  
Approved  
Event



**10<sup>th</sup> PLASTIVISION  
INDIA 2017**

**19-20-21-22-23 JAN 2017  
MUMBAI, INDIA**



The categories

- Agriculture
- Packaging
- Building & Construction
- Automotive
- Consumer Durables
- Recycling

**Nomination invited from Large Enterprises and SMEs**

Contact for nominations:

**Ms Anjali Nair**

E-mail: [themachinistmagazine@gmail.com](mailto:themachinistmagazine@gmail.com)

Phone: 022-22735609 / +91 9769429278

For partnership enquiries

**Mahadev B**

M: +91 9448483475

[Mahadev.b@wmm.co.in](mailto:Mahadev.b@wmm.co.in)

**Ranjan Haldar**

M: +91 9167267474

[Ranjan.haldar@wmm.co.in](mailto:Ranjan.haldar@wmm.co.in)

**Ashish Sahay**

M: +91 9899688440

[Ashish.sahay@wmm.co.in](mailto:Ashish.sahay@wmm.co.in)

For more details, Log in: [www.etpolymers.com/awards](http://www.etpolymers.com/awards)



ors India and Amit Kavrie, Executive Director, Supreme Treon participated in the discussion moderated by Editor Niranjana Mudholkar.

Durrani said, “OEMs at the global level are struggling on the topic of sustainability. We are living on borrowed resources. How much we are ready to give it back to the environment is the question. Considering this, topics like weight reduction, energy efficiency are going to be very important in the future. We can be compatible yet sustainable. All we need to do is start thinking from this point of view to find solutions.”

Seconding the same, Dr. Ranjan added that, “In view of strict regulations that we all have to adhere to such as Euro 6, light-weighting plays an important role in the automotive industry. To progress in this direction, we need to achieve drastic weight reduction and plastic is the answer to this challenge. In short, going ahead plastic is the future.” For enabling weight reduction, what companies need to have is a right technology.

According to Shiv, “There are several technologies available globally for using plastics in the automotive industry. However, cost is an important factor in bringing these to India. Hence, such technologies have to be brought in country with some optimisation and localisation. So that, products made out of it are cost effective. Such optimisations will help OEMs upgrade their products to global level at affordable cost.”

In such scenario, supply chain as well plays a big role. Speaking on the same, Kavrie noted, “When it comes to the supply chain, we are a unique country and need unique solutions. We cannot copy paste from the world. Right from our solutions, material partners, engineers and also competence has to be local. It has to be Made for in India and Made for India. It is very important for the success of the industry.” In the process of offering light, cost effective solutions to the customer, what is more important is to understand the customer’s needs.

Speaking on this, Sharma mentioned, “In this era where product lifecycle is shortening and upgrades are happening quickly, there is a great opportunity for Tier II industry to adapt new technology, learn material and the processes and graduate to next level. At Tier II level you have the obligation

to provide full service support to your immediate customer.”

**Key takeaways**

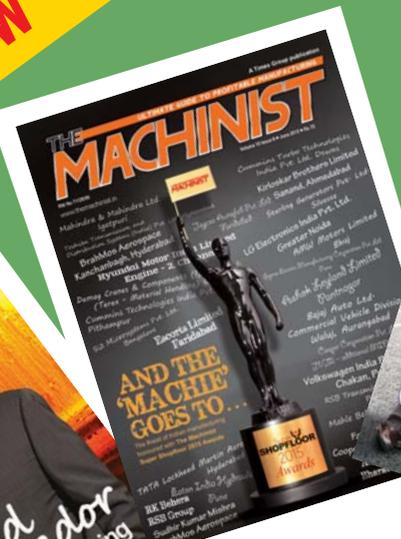
Two panel discussions threw light on light-weighting and use of plastics in vehicle exteriors and also touched upon various opportunities and challenges in the respective areas. Sandeep Waykole, Program Director India, Faurecia Interior Systems India Pvt. Ltd.; Vasanth Kamath, VP, Development, Brose India Automotive Systems Pvt Ltd.; Harish Iyer, DGM, Product Development, Chassis Systems, ZF India; Ravishankar S, GM (Product development), Ashok Leyland Technical Centre; Antony Kurian, MD, igus India, Divakar Gokhale, Head-Business Development–BU-PCS, Covestro India discussed on various aspects of correlation between plastics and light-weighting. On the other hand, B. Thej Kumar, GM, - Product Development and Quality, Toyoda Gosei South India Pvt. Ltd.; Sachin Awatade, Sr. Tech. Specialist - Advanced Polymers, Asia Technology Innovation Center, John Deere India Pvt. Ltd. and Kumar Iyer, Head-Commercial operations–BU-CAS, Covestro India participated in the panel discussion on plastics in vehicle exteriors.

Additionally, Syamal Adhikari, Head - Materials Technology & Test Labs, Mahindra & Mahindra Ltd (Automotive & Farm Equipment Sectors) presented a case study on Role of Plastics in Vehicle Interior. Rajeev Sharma, Head Proto Manufacturing Factory & Tool Room, Global Centre for Innovation and Technology, Hero MotoCorp Ltd presented his thoughts on Additive Manufacturing techniques.

The conference also witnessed information on the available solutions in the market. Doing exactly the same, Suresh V. Market Development Manager, Covestro India highlighted various solutions that the company offers for the automotive industry. On the other hand, Deepak Paul, Sales Manager, igus India, informed the audience about offerings from igus. Vishal Agarwal, President, Yudo Hot Runner India Pvt. Ltd. and Yudo Suns Pvt. Ltd. presented various case studies about successful use of hot runners in the challenging situations. In all, with the presence of over 200 delegates, the maiden edition of GCPA was a great success.

**SUBSCRIBE NOW**

**Special Offer**  
**1-Year**  
**12 Issues**  
**Rs 800**



**INDIA'S PREMIUM  
 MAGAZINE FOR  
 THE MANUFACTURING INDUSTRY**

Mail this coupon along with your cheque/DD to B2B subscription offer, RMD (M) Dept., Bennett, Coleman & Co. Ltd., The Times of India Building, Dr. D. N. Road, Mumbai - 400 001. Call: 022-66354083 / 022-22733274. Log on to: [mags.timesgroup.com](http://mags.timesgroup.com)

**1-Year**  
**(12 Issues)**  
**Rs 800**

**2-Years**  
**(24 Issues)**  
**Rs 1400**

**Subscriber's Details:**

**All fields, including Postal code and contact number/s are mandatory.**

Name: (Mr/Ms) \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Tel No. (with STD Code) \_\_\_\_\_ Mobile: \_\_\_\_\_ E-mail ID: \_\_\_\_\_

**Payment Details:**

Credit Card No.:

Card Expiry Date:  MM  YY

CREDIT CARDS:  MasterCard  VISA  AMERICAN EXPRESS for ₹ \_\_\_\_\_

**Debit Cards are not accepted**

Date of birth:  DD  MM  YY

Card Member's name: \_\_\_\_\_ Card Member's Signature: \_\_\_\_\_

Cheque/DD Enclosed  Cheque/DD No.: \_\_\_\_\_ Cheque Dated: \_\_\_\_\_ Bank Name: \_\_\_\_\_

₹ \_\_\_\_\_ (payable to Bennett, Coleman & Co. Ltd.)

Existing subscribers please specify customer ID \_\_\_\_\_

I have read the terms and conditions and I would like to avail of this offer.

Signature: \_\_\_\_\_

**TERMS & CONDITIONS :** • Cheques/DDs should be drawn in favour of M/s Bennett, Coleman & Co Ltd. • Cheques/DDs must contain the code/address of the issuing branch. • Money Orders will not be accepted. • Non MICR cheques/two separate cheques for one subscription not accepted. • Please superscribe full name, address and signature on the reverse of the cheque/DD. • For multiple subscriptions, attach separate coupons (photocopies allowed) along with separate cheques/DDs. • Please allow a delivery period of 4 to 6 weeks for the first issue of the publication subscribed to reach you from encashment of remittance. • Subscription copies will be delivered by post/courier as soon as the issue is released in the market place, however BCCL will not be responsible for postal or courier delays. • Avoid giving post box or APO addresses. • This offer is valid for the number of issues as indicated in the table for respective publication. • This offer is non-refundable and cannot be combined with any other offer. • Offers and rates are valid in India only. • Disputes if any, will be subjected to the exclusive jurisdiction of competent courts in Mumbai only. • Terms & conditions are subject to change from time to time. • Incomplete or illegible forms will not be accepted.



# Quality and reliability take precedence

With its in-house CNC machining capability, Subspec Srl is able to control cost, new product development and part quality.



Professional deep-sea divers need to know a thing or two about technology and engineering, but they're not usually required to know how to run CNC machine tools. The founders of Italian dive equipment manufacturing company, Subspec Srl, have taught themselves all they need to know to make parts for some of the best and most innovative commercial dive systems available. "My friend, **Ciro Caiazzo**, and I started the company in 2012," says MD **David Marzi**. "We were both commercial divers working around the world in the oil and gas industry. We had an idea for a gas reclaim valve – we felt the industry generally was slow to develop and adopt new technology, so we thought we'd design, make, and patent the product ourselves."

During lengthy, deep dives, professional divers use very large amounts of breathing gas mix. A gas reclaim system recovers helium – an expensive constituent of breathing gas that would otherwise be vented and lost to the atmosphere. A gas reclaim valve is a critical component of the gas reclaim system, and is subject to high rates of wear and corrosion. The responsibility for running Subspec's CNC machining operations falls to Technical Director **Ciro Caizzo**, "Our main machine is a Haas VM-2 mould maker. Our products – typically valves – are critical features, and can mean the difference between life and death if they don't work flawlessly and reliably. We wanted to be 100 percent sure the parts were made to our standards, and to eliminate the possibility of quality issues. That's why we bought the Haas machine – so we could take control and do all the critical machining in-house. Most of the parts we

make are stainless steel, and tolerances are tight; 0.02 mm is common for an O-ring seat. The VM-2 table has a grid of T-slots in X and Y, which gives us flexibility for holding all the different sizes and shapes of parts we machine. We also do our own laser welding in-house." These days, Subspec is a world-leader in bespoke subsea diving systems, and has close ties and partnerships with various other organisations, including neighbouring firm, **Drass Srl**, which manufactures the full gas reclaim system in which the Subspec valve is used, as well as complete hyperbaric chambers, and other systems used by commercial saturation divers.

"We make all the fittings and valves for the chambers, and the diver monitoring and safety systems built by **Drass**," says **David**. "For example, a complete hyperbaric chamber might cost a customer around €2 million. The parts we make could easily constitute €350,000 or more of that total cost. Being next door to **Drass** has helped our working relationship enormously. In fact, we're now invested as a partner of the company."

Subspec is on a roll: "We're planning to open a UK office, and we have lots of ideas for new products," says **David**. "Perhaps the most exciting is the full diving helmet we're designing. We're still at prototype stage, but we already plan to do all the machining in-house using a Haas UMC-750 universal machining centre." In an industry where mistakes are punished in the severest way, professional deep-sea divers are trained to get the job done, but carefully. **David Marzi** and **Ciro Caiazzo** don't take chances with the parts they make, or with the CNC machines they use to make them. 

Source: Haas



**INDIA'S FINEST AND LONGEST RUNNING PUBLICATION FOR THE POLYMERS INDUSTRY**

**SUBSCRIBE NOW**

Mail this coupon along with your cheque/DD to B2B subscription offer, RMD (M) Dept., Bennett, Coleman & Co. Ltd., The Times of India Building, Dr. D. N. Road, Mumbai - 400 001. Call: 022-66354083 / 022-22733274. Log on to: [mags.timesgroup.com](http://mags.timesgroup.com)

**1-Year  
(6 Issues)  
Rs 400**

**2-Years  
(12 Issues)  
Rs 720**

**Subscriber's Details:**

All fields, including Postal code and contact number/s are mandatory.

Name: (Mr/Ms) \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Tel No. (with STD Code) \_\_\_\_\_ Mobile: \_\_\_\_\_ E-mail ID: \_\_\_\_\_

**Payment Details:**

Credit Card No.:

Card Expiry Date:  MM  YY

CREDIT CARDS:    for ₹ \_\_\_\_\_

**Debit Cards are not accepted**

Date of birth:  DD  MM  YY

Card Member's name: \_\_\_\_\_ Card Member's Signature: \_\_\_\_\_

Cheque/DD Enclosed  Cheque/DD No.: \_\_\_\_\_ Cheque Dated: \_\_\_\_\_ Bank Name: \_\_\_\_\_

₹ \_\_\_\_\_ (payable to Bennett, Coleman & Co. Ltd.)

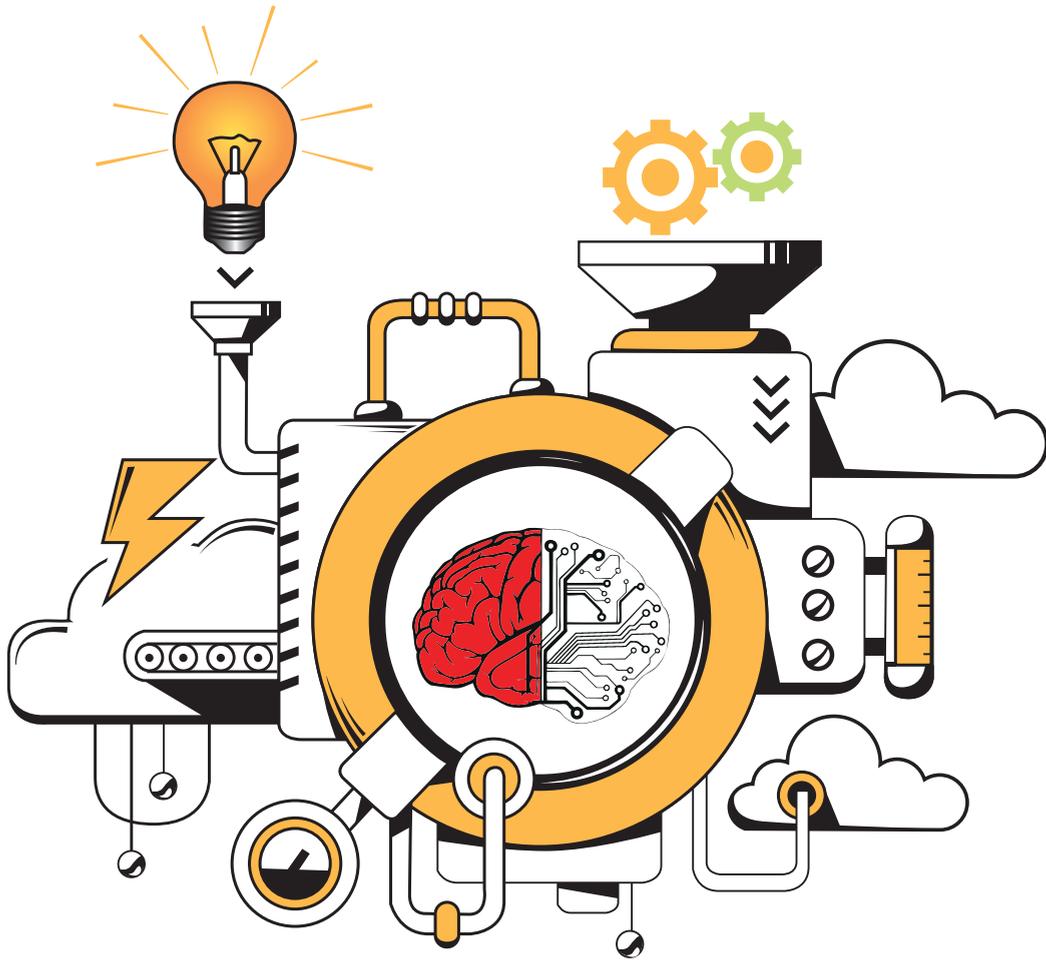
Existing subscribers please specify customer ID \_\_\_\_\_

I have read the terms and conditions and I would like to avail of this offer.

Signature: \_\_\_\_\_

**TERMS & CONDITIONS :** • Cheques/DDs should be drawn in favour of M/s Bennett, Coleman & Co Ltd. • Cheques/DDs must contain the code/address of the issuing branch. • Money Orders will not be accepted. • Non MICR cheques/two separate cheques for one subscription not accepted. • Please superscribe full name, address and signature on the reverse of the cheque/DD. • For multiple subscriptions, attach separate coupons (photocopies allowed) along with separate cheques/DDs. • Please allow a delivery period of 4 to 6 weeks for the first issue of the publication subscribed to reach you from encashment of remittance. • Subscription copies will be delivered by post/courier as soon as the issue is released in the market place, however BCCL will not be responsible for postal or courier delays. • Avoid giving post box or APO addresses. • This offer is valid for the number of issues as indicated in the table for respective publication. • This offer is non-refundable and cannot be combined with any other offer. • Offers and rates are valid in India only. • Disputes if any, will be subjected to the exclusive jurisdiction of competent courts in Mumbai only. • Terms & conditions are subject to change from time to time. • Incomplete or illegible forms will not be accepted.

ETP



# Achieving engineering excellence

Though the importance of engineering excellence has increased manifold in a fast-changing modern world, some basics of engineering remain the same.

By Dr. Gopichand Katragadda, Chief Technology Officer, Tata Sons

**D**eveloping into a good engineer is a lifelong venture. Engineers have created the world we live in today. The industrial ages of mechanisation, electrification, and digitalisation are the consequence of engineering excellence. Each age has impacted the work environment and the skills required for success. With the advent of mechanisation, came factories and the nine-to-five work culture. Engineers designed, built and diagnosed the steam engines, the cams and the pistons that mechanised all production processes.

With mechanisation came rapid transportation systems by land and sea, enabling larger global trade. Electrification enabled

higher efficiency in operations making mass production possible with every factory tool being motorised and the creation of the modern production line. Engineers designed and built electricity generation, transmission, and distribution equipment

“Today, with the democratisation of digitalisation offered by mobile phones, engineers are building cyber-intelligent systems, digitalise every conceivable decision through algorithms.”



that brought electricity to homes, factories and farms.

With digitalisation, the primary work location shifted from the factory to the office. Increasing level of automation and remote operation of factories allowed engineers to focus on electronic design and software implementation for factory and office automation. Today, with the democratisation of digitalisation offered by mobile phones, engineers are building cyber-intelligent systems, digitalise every conceivable decision through algorithms.

Despite the rapidly changing environment, the underlying basis for engineering excellence endures. Broadly speaking, I group engineering excellence into three categories: 1) building a solid foundation, 2) developing an engineering mindset, and 3) focusing on execution.

**“It takes time and focused effort to develop engineering excellence. Each new learning experience is just a door that opens up a myriad of unknowns. It is important to focus and develop deep-rooted expertise in a single technical area for a minimum of six years early in one’s career.”**

### Build a solid foundation

- 1. Strong fundamentals:** *When in doubt, always go to the fundamentals.* Be it Newton’s Laws or the derivative Navier Stokes Equation, Maxwell’s equations or the derivative static, diffusion or wave equations. It is important to understand the physical meaning of mathematical expressions and be able to hand calculate approximate values of variables for critical verification. It is also important to understand the limitations of numerical methods and determine where experimentation is necessary.
- 2. Deep technical focus:** *Rome was not built in a day.* It takes time and focused effort to develop engineering excellence. Each new learning experience is just a door that opens up a myriad of unknowns. It is important to focus and develop deep-rooted expertise in a single technical area for a minimum of six years early in one’s career. It is also true that once an expertise is developed, the ability to translate the learning to other technical areas is relatively quicker and easier. However, the credibility from the core technology area sticks throughout one’s career and hence is extremely important.
- 3. Hands-on expertise:** *The best way to ‘see’ an engineered part is with your hands.* There are a number of hurdles to be overcome between a thought experiment or theory and actual realisation in the field. It is important to take every opportunity to experience the complete product life cycle. Books cannot capture or substitute the lessons of hands-on learning. Speed in engineering comes from a gut instinct of what might work. This instinct is developed

through hands-on work.

- 4. Simulation expertise:** *Experimentation matters.* With advances in simulation, the volumes of iterative physical experiments required have been dramatically reduced through the effective use of validated models. It is important for modern-day engineers to effectively use simulation tools and computational power at their disposal. At the same time, it is important to understand and prevent numerical errors that creep in through a variety of sources.
- 5. Continuous learning:** *Once an engineer, always a student.* The accumulated knowledge in engineering is huge, but miniscule compared to the amount of unknown possibilities in the physical world. An engineer excels by continuously striving to be at the edge of knowledge and scientific progress. It is the mapping of a new science or material to new market needs that advances the frontiers of engineering.

### Develop an engineering mindset

- 1. Attention to detail:** *The devil is in the detail.* Engineering is about figuring out the details. Many showstoppers are not apparent at the big picture level. Manufacturing issues, cost issues, life issues, and ‘maintainability’ and ‘inspectability’ issues are amongst the many issues that need to be fleshed out. Solutions to problems can create new ones in their wake if regression analysis and testing are not performed. Engineering excellence, hence, is in the detail.
- 2. System-level thinking:** *‘The whole is other than the sum of its parts.’* From an engineering standpoint, it is important to be able to define and model complex interactions among components that make up an engineered system, and implement the system with effective use of available resources. While we work on a component, the system should not be forgotten. In system engineering, the output of a system is typically linked to a customer need.
- 3. Market and customer orientation:** *First understand what the market needs and then proceed to make it.* Engineering is about serving the market. Every feature should be looked at from a customer’s viewpoint. This does mean not just listening to the customer. It also means anticipating the customer need and changes in the market. It is important to maintain an external connection through journals, tradeshow, databases, industry peers, end-customers and emerging markets.
- 4. Innovation and change orientation:** *Innovation is finding new ways of creating value.* An engineer should keep abreast with the cutting edge technology, while serving the current market needs. Every new market need and customer problem can be looked at as opportunities to innovate, leveraging the latest knowledge in the field. Innovation is clearly not only idea generation, but also the ability to take the idea to market. Innovation needs the engineer to create with freedom, nurture with passion and change with detachment.



5. **Engineering judgment:** *An ounce of engineering judgment sometimes works the miracle of tonnes of analysis.* Engineering judgment comes from the confidence and decision-making capability developed through technical knowledge, experience and an appetite for risk-taking. Engineering judgment enables the engineer to quickly sense and articulate risks, and also come up with optimal solutions to complex technical problems. Engineering judgment is a starting point and needs to be followed by detailed analysis, experimentation and validation.

#### Focus on execution

1. **Critical analysis:** *Measure twice and cut once.* The ability to draw the right engineering conclusions from available data includes understanding whether the data is insufficient to support a claim and what additional data would enable a better conclusion. Also important to critical analysis is knowing which tool or experiment would give you the best information required to make the right conclusion and decision.
2. **First time right and design margin:** *Quality is reputation, quality is credibility and quality is revenue.* With products such as aircraft engines and nuclear reactors in the portfolio, there is no second chance. Being right at the first time with adequate design margin is of paramount importance. Having the right tests and statistically significant number of tests to ensure confidence in our designs and testing our designs for failure to understand the validity of our design margins is critical for success.
3. **Detailed documentation and design practices:** *Work not documented is work not performed.* Every engineering success and every failure has a lesson that needs to be shared. Documenting is also a way to unlock certain missed details. By writing for others, you articulate certain assump-

“Engineering is about serving the market. Every feature should be looked at from a customer’s viewpoint. This does mean not just listening to the customer. It also means anticipating the customer need and changes in the market. It is important to maintain an external connection through journals, tradeshow, databases, industry peers, end-customers and emerging markets.”

- tions, which upon expression might throw new light on the problem being addressed. Documenting your work is also a means of collaborating with yourself over time. Design practices are vital to ensure design knowledge developed through intense analysis and experimentation is transferred to the engineering community.
4. **Cost / productivity consciousness:** *One of the responsibilities of an engineer is to take an idea to market.* A significant component of success in the market is to be able to give the best value. To ensure good contribution margins while providing excellent customer value, an organisation has to have a handle on the cost and productivity. Hence, the engineer’s job is to also keep in mind the cost and productivity while still optimising quality and schedule.
5. **Sense of urgency and desire to win:** *Sometimes it is all about time-to-market.* The engineering incentive is to be the first with an elegant technical solution to significantly enhance human health or comfort in an environmentally friendly way. A sense of competitiveness and a race to be the first have defined many engineering successes from the light bulb to the aircraft engine to decoding the human genome. 



# Sharing good fortune!

**Priyanka Behera**, Head – CSR, RSB Group, believes that business is not about making money but about creating social values and doing public good.

By Niranjana Mudholkar

## What is the fundamental principle that guides RSB Group's CSR activities?

We believe that true happiness comes when the good fortune is shared with those who are not as fortunate as we are. Therefore, Group has made CSR an essential fabric of business life with humble endeavour to think not just from the heads, but also from the heart. We believe business is not about making money, but creating social values and doing public good – an obligation beyond the requirement of law to pursue long term business goals that are good and bring about positive impact to the society. The RSB Group believes in conducting business in ethical way and in the interests of wider community by responding proactively to emerging social priorities and expectations, a forward approach to act ahead of the regulatory confrontation and balance at all times the interests of stakeholders. The Group has the earnest efforts to shape a brighter future by contributing in efforts to under-privileged in rural.

"I always believe that corporates should pursue CSR activities with the same zeal, commitment and enthusiasm as they would do for achieving their business goals."

## CSR activities at Pune Plant

1. Social initiative for under-privileged by providing financial support to education of under-privileged students of Vidyashram School (English Medium) under Silver Spring Foundation, Warje Malwadi, Pune, a charitable trust, formed under Indian Trust Act, for a social cause by payment of fees for 23 students who are socially under-privileged & for books, stationery & uniform.
2. For under-privileged girls at Tribal Girls Hostel, Maharashtra Arogya Mandal (Public Charitable Trust), Ambegaon, Narudi, Near Pune, who are orphaned in Malin flood strategy. As part of green initiative, installed auto charge/ maintenance-free solar lamps to give sufficient light during the night for safety of tribal girls.
3. Installed solar lamps at Kinara Vridashram Matimanda Seva Trust for old age home at Ahirwade Phata, Village Kamshet, Near Pune, where young and old alike have been neglected by kith and kin, to give enough light during night hours.

## Do you think it is important for corporates to pursue CSR activities with the same enthusiasm as they pursue their business goals? Why?

I always believe that corporates should pursue CSR activities with the same zeal, commitment and enthusiasm as they would do for achieving their business goals. As said earlier, business of business is not about all making money, but, as social commitment and obligation, enhance and enrich lives of those who are not so privileged as us. The joy of sharing and bringing a smile is incomparable. With statutory enactment coming into force since 2014 wherein two percent of average PBT for preceding three years to be contributed to CSR, has come as a big boost to down-trodden poor. It's all how much we care for community in a broader perspective. At RSB we have been working for last more than two decades in various community development projects as a social commitment, in unspoken action and deeds.



### Q How do you align your CSR activities with the Group's Sustainability Strategy?

RSB pursues the triple imperatives of protecting the environment, socio-economic upliftment and sustainable developmental models for growth while respecting government initiatives and commitment to employees, community and stakeholders at large. RSB's social responsibility philosophy is integral to its corporate strategy, and our employees are guided to internalise the values RSB's approach to environmental challenges entails precautionary modelling of projects, initiatives to ensure greater environmental responsibility and utilisation of environment friendly technologies.

Besides, all our plants are globally accredited and certified to ISO 14001 in Environment Management System and is well integrated in CSR activities where project goes through strict scrutiny of Aspect/Impact Analysis, Implementation, Monitoring/Masurement and ultimately effectiveness of the same at planned intervals. Besides, our units at Jamshedpur, Pune & Pant Nagar have won coveted Deming Prize for integrating the EMS into every activity as a part of process.

### Q You follow a structured path with the PDCA (Plan, Do, Check, Act) approach. How do you implement it?

Our every CSR Project goes through strict scrutiny of Deming's PDCA Cycle, the guidelines and formats for which are loaded in our intranet portal. RSB's approach to CSR and Sustainability Strategy goes in a structured manner centrally from corporate aligning with Vision/Mission values and statutes promulgated in amended Company's Act which mandates us for sustainable CSR practices. The structured path have PDCA (Plan, Do, Check, Act) approach as an integral part to ensure every activity and project is measured in terms of output and effectiveness is gauged post-output in a specified time span to achieve the desired social impact. The RSB CSR Policy Document rolled out after approval from the Board of Directors is uploaded in RSB global website. The social impact assessment has also been put in place in line with statutory requirements so as to touch the nucleus of CSR beneficiaries. The monitoring and measurement at planned intervals is

### CSR activities at Jamshedpur plant

1. Adopted a school for education of tribal children, Dumaria, East Singhbhum having around 320 students, where RSB, Jamshedpur, provides:
  - a. Mid Day meal, b. Full meals to hostel inmates, c. School Uniforms, d. Winter wears & Carpets, e. Mosquito Nets, and f. Books & Stationery.
2. **Green initiative at Surya Mandir** - Develop and continually maintain greenery, lawn, trees, bushes, etc using bio-fertilizers with specific guidelines and operational control procedures. Green carpeting evenly maintained with adequate water supply. Control insects, rodents and repellents through organic pesticides. Adequate space for senior citizens. Garbage-free ambience with green disposal facility. Natural fall of leaves, branches and tree barks recycled for organic manure. Natural habitat for birds.
3. **Community based initiative** – Home for Senior Citizens for pleasure in leisure during the evening of their life through – a. Indoor games, b. E-entertainment and amusement facilities, c. Chat Group, d. Greet-Meet of senior citizen, e. Snacks during greet-meet, f. Health check-up at planned intervals, g. Youth meeting seniors regularly to bridge the divide, h. "A home away from home" to have joyous togetherness, i. Regular interaction to listen to their experiences, j. Give quality life devoid of old age loneliness & isolation, k. Books & periodicals for reading & keep updated.
4. **Tribal people upliftment by giving them adequate health care:** In the villages of Bhagabandi and Badalgoda of [Dumaria block], interior Jharkhand, RSB conducts free medical camps once a week where the company's doctor & CSR representatives visit these places to provide free medical checkups, consultancy and medicines to the poor village folks.
5. Up-liftment of Under-privileged by providing them with sports facilities and opportunity to build/shape/brighten/compete in sports in future - built entire basket ball court at St Xavier School, Jsr, for under-privileged students to play during their PT and leisure time.



continual to check for gaps and timely actions are taken to ensure corrections are made with preventive measures to avoid any recurrence.

**📌 How do you monitor, assess and measure the impact of these CSR activities?**

Our CSR Team spread across pan India is guided with monitoring and measurement mechanisms/reports especially tailor-made for each CSR Project with on-site assessment of effectiveness of CSR work through monthly/bi-monthly visits and ensure that it reaches the nucleus of CSR beneficiary. At RSB,

**CSR activities at Mania plant, Odisha**

1. Community-based initiative for socially under-privileged by providing education to below poverty line rural children at Village Mania, Cuttack and deep rural pockets of Odisha through establishment of Padmabati Shiksha Niketan, an English Medium School (on CBSE pattern) formed under Society Act for a social cause.
2. Health initiative for socially under-privileged tribal people through establishment of RSB Health Centre at Mania, deep rural Odisha (total of 8056 patients treated per year), by providing:
  - a. Free medical assistance,
  - b. Free medical consultation,
  - c. Free medicines,
  - d. Free ambulance service,
  - e. Mobile clinic for all emergency cases,
  - f. 24/7 medical assistance,
  - g. Treatment at site where patients cannot reach clinic,
  - h. Reaching patients to nearby hospital for critical cases after giving emergency aids in mobile clinic (two ambulances kept),
  - i. Every patient given Health History Card for proactive track of chronology of illness with vital health parameters recorded,
  - j. Saving scores of lives with timely medical help,
  - k. Cataract/Medical camp for tribal folks,
  - l. Surgical treatment in emergency cases,
  - m. Blood camp and donate bottles to Blood Bank to serve needy,
  - n. Preventive health check-up of under-privileged students.

**CSR activities at Lucknow, Pant Nagar, Dharwad & Chennai**

**Lucknow** - Noor Convent School, Village & Post - Goila, around 50 km from Lucknow – provide:

1. Regular payment of monthly fees to under-privileged & BPL students totalling 26 nos, after verification of documented credentials.
2. Monitor/Check their improvement in academic performance.
3. Interact with teachers/principal for their academic improvement where gaps are noticed.
4. Interact with their parents how they work at home for studies and take their feedback.

**Pant Nagar** - Up-liftment of under-privileged students of Sri Puran Singh Mohan Interschool, Kuwanrpur, Gola Par, Haldwani, Dist: Nainital by providing them with hygienic stainless steel lunch plates, water purifiers and storage water tank for a comfortable study atmosphere.

**Dharwad** - Anganwadi for socially under-privileged tribal children of Heggeri Village, Near Dharwad, Belur, Karnataka. Provided –

1. Educational aids to imbibe basics in learning.
2. Utensils & plates for mid day meals.

**Chennai** - CSR initiative for socially under-privileged student-patients by providing financial support to carry out monthly physiotherapy treatment for differently-abled of Vishwas Special School, Chennai under 'Col. K.G. Pandalai Charitable Trust' as per Indian Trust Act, through paying Physiotherapist salary every month.

we believe that merely by completing the project, our responsibility does not end there, but continues thereafter to ensure that how far same is effective at the site. Our team directly interacts with under-privileged beneficiaries; taking their feedback through photographs and video recording, correct the gaps if any so as to get aligned in congruence with our plan. For e.g. the solar lamps we have installed still undergoes on-site assessment to see whether lamps are functioning properly and suffice the needs of under-privileged.

**📌 How do you involve and engage your employees in the CSR activities? What is their attitude towards this?**

We involve our colleagues on the lines of i-Volunteer, where they participate in CSR activities with zeal and enthusiasm on their own – be it organising blood donation camps, celebrating their birth day or marriage anniversary at orphanage treating the inmates to meals, sponsoring the under-privileged children for their education or health, giving relief materials to affected people in natural calamities, meet the senior citizens who are in the evening of their life through greet-meets, donate used winter wears to have-nots, etc. all of which are self-motivated drive of RSBians, who are known for service to community by working in silence and only their deeds speak. 



View of the exhibition hall

# Pune Machine Tool Expo concludes positively

Pune Machine Tool Expo was conducted at Auto Cluster during Sept 29-October 2, 2016. Read on to know more about the success story of the fair.

**P**une Machine Tool Expo, 2016 – Western India's B2B exhibition, concluded on a positive note on October 2, 2016. With more than 100 exhibitors, the machine tool exhibition attracted around 7,400 visitors and 62 trade delegations from various industries such as auto component, automobiles, capital goods, defence, aerospace and railways. Along with host city Pune, the event was visited by impressive number of delegates and visitors from the Tier II and Tier III cities such as Aurangabad, Nagpur, Kolhapur, Mumbai, Satara, Ahmednagar, besides the neighbouring state of Gujarat.

Organised by the Indian Machine Tools Manufacturers' Association (IMTMA), the exhibition was held for four days from September 29 – October 2 2016 and served as a platform to demonstrate the latest manufacturing technologies. The expo covered both metal cutting and metal forming technologies including automation and robotics, tooling systems, CAD/CAM and other technologies, which are essential for today's manufacturing.

## Leaders speak

The exhibition was inaugurated by Nitin Chalke, Managing Director – India, Eaton Technologies. P. Ramadas, Vice President, IMTMA and Managing Director, Ace Manufacturing Systems Ltd, V. Anbu, Director General and CEO, IMTMA, Rajiv Khatri, Chairman, IMTMA Regional Council (West) and Dr. Anant Sardeshmukh, Director General, Mahratta Chamber of Commerce, Industry and Agriculture were also present on the occasion.

Speaking at the inauguration, the chief guest, Chalke said,

“Exhibitions like these update us about the latest technologies and products that are available. Machine tool industry should now look moving towards Industry 4.0 and develop energy conserving products that can reduce the consumption of energy at the production level to minimize the cost.”

**Nitin Chalke**, Managing Director – India, Eaton Technologies



**“The expo addresses needs of the Original Equipment Manufacturers (OEMs) of the various industry sectors in the Tier II and Tier III cities in the western region”**

**V. Anbu**, Director General and CEO, IMTMA

“Exhibitions like these update us about the latest technologies and products that are available. Machine tool industry should now look moving towards Industry 4.0 and develop energy conserving products that can reduce the consumption of energy at the production level to minimise the cost.” He also said that “Exhibitions like these play a crucial role in providing platform for information exchange.”

He thanked IMTMA for bringing the machine tool exhibition to Pune. “Machine tool industry is important for the growth of the country and with the Indian government’s thrust on Make in India, it will continue to play a crucial role in future,” Chalke added.

Speaking about the need of such regional shows, Anbu said, “The expo addresses needs of the Original Equipment Manufacturers (OEMs) of the various industry sectors in the Tier II and Tier III cities in the western region.” Adding to it, Ramadas noted, “The technological requirements of the manufacturing industry are growing rapidly. Exhibitions like these are the key enablers to address these requirements. Pune also

**“The technological requirements of the manufacturing industry are growing rapidly. Exhibitions like these are the key enablers to address these requirements. Pune also hosts many auto, auto ancillary, heavy engineering, aerospace, defence and other manufacturing industries. This Expo provided an apt platform to meet the requirements of industries located in the region.”**

**P. Ramadas**, Vice President, IMTMA and Managing Director, Ace Manufacturing Systems Ltd

hosts many auto, auto ancillary, heavy engineering, aerospace, defence and other manufacturing industries. This Expo provided an apt platform to meet the requirements of industries located in the region.”

The Pune Machine Tool Expo turned out to be fruitful for both visitors as well as exhibitors and most of the exhibitors were satisfied with the quality of the crowd and the business opportunities that the exhibition provided them.

The success of Pune Machine Tool Expo has given further impetus to the IMTMA’s idea of Regional Machine Tool Expos – to address requirements of the OEMs of the various industry sectors in the Tier II and Tier III cities in the various regions of India.

**Conclusion**

Pune Machine Tool Expo 2016 displayed state-of-the-art technology solutions and innovations which are vital for the manufacturing industry to keep itself up to date with quality, productivity and competition. The Pune Machine Tool Expo opened up avenues for penetrating into the regional markets of western India giving immense opportunities for the various industry sectors in the region.

Continuing with the idea, the next Regional Machine Tool Exhibition will be the second edition of Delhi Machine Tool Expo, which will be held from August 10-13, 2017 at Pragati Maidan, before returning to Pune in 2018. 





## Bigger... Better... Broader...

Plastivision India 2017 is just around the corner and with every inch of exhibition area sold out one year in advance, the organisers are bracing themselves for making it really big and expecting 2 lakh visitors. Kailash B. Murarka, chairman, Plastivision India 2017 talks about the event, its highlights and new challenges. Read on to know more...

By Swati Deshpande

**A** gathering of the global plastics industry under one roof. That's how we can describe Plastivision India 2017, one of the largest trade fairs for the plastics industry in India. It is organised by The All India Plastics Manufacturers' Association (AIPMA). As many as 1,500 exhibitors are expected to showcase their products and solutions for five days from January 19-23, 2017. With this massive number of exhibitors, we exactly get an idea about scale of the show. No wonder that it has emerged as one of the top five trade fairs for the plastics industry in the world.

The 10th edition of Plastivision India is going to be held at Bombay Exhibition Centre. "Mumbai is considered as Plas-

tics Hub of the Western India. Moreover, it is globally as well domestically well-connected city. Hence, it turns out to be the right venue for the upcoming edition of the show," informed Kailash B. Murarka, Chairman, Plastivision India 2017.

The event is supported by numerous national and inter-

"Mumbai is considered as Plastics Hub of the Western India. Moreover, it is globally as well domestically well-connected city. Hence, it turns out to be the right venue for the upcoming edition of the show,"  
**Kailash B. Murarka**, Chairman, Plastivision India 2017



**“As compared to the last edition, you will see bigger German pavilion in terms of floor size while Chinese pavilion will occupy 500 percent more space. That is considerable increase in size of the pavilions.”**

**Raju D. Desai, Chairman-National Advisory Board, Plastivision 2017**

national institutes including British Plastics Federation, IPF Japan, Sharjah Chamber of Commerce & Industry, India China Chamber of Commerce & Industry, Association of Japan Plastics Machinery, TAGMA India, Indian Plastics Institute, NSIC, CIPET, FIEO, Indian Institute of Packaging, PLEXCONCIL, PlastIndia Foundation, TAMI, Italian Plastics & Rubber Processing Machinery & Moulds Manufacturers' Association, Indo-Italian Chamber of Commerce & Industry. “NSIC’s support has come as a boon for SME and MSME sector as it offers subsidies over the participation in the show. Therefore, you will see substantial participation from these sectors as well,” said Murarka. Plastivision India is also approved by UFI (the international Paris-based exhibition rating agency).

### Response from the industry

The exhibitors at the show come from different segments. Right from the raw material & chemical suppliers to pre & post processing machines manufacturers, mould & dies, packaging lines, automation solution providers are in the exhibitors list. Having such an elaborate exhibitor segments are well categorised into pavilions. “Our pavilions are thoughtfully created. We have pavilions where similar kind of businesses will be located together such as Automation & Robotics, Plastics in Infrastructure, Green Pavilion, etc. However, the unique pavilions that we have created are Consultant Clinic and Job & Career Fair. The Consultant Clinic will offer an enthusiast complete guidance — from conceptualisation up to beginning of production — of setting up a plastic related

enterprise. On the other hand, Job & Career Fair is a perfect match making place that is aimed at bridging the human talent gap,” mentioned Murarka.

Other than these specialised pavilions, Plastivision India 2017 will have country pavilions from China, Taiwan, UK, Korea, Germany, Italy, USA and Turkey. “As compared to the last edition, you will see bigger German pavilion in terms of floor size while Chinese pavilion will occupy 500 percent more space. That is considerable increase in size of the pavilions,” stated Raju D. Desai, Chairman-National Advisory Board, Plastivision 2017. Adding further, Murarka said that in all, exhibitors are coming from 25 countries. “Such an extensive international participation creates new opportunities for exhibitors as well as visitors,” he continued.

Moreover, exhibitors coming from width and breadth of the global industry reinforce the faith that they have in AIM-PA as an organiser. “The space for the exhibition was sold out a year before the show. Exhibitors look forward for this event, keep their budgets and participate wholeheartedly. Many of exhibitors had booked their space in last edition of the show itself. And, we are still receiving enquiries and trying to accommodate as many exhibitors as we can by erecting temporary hanger,” ensured Murarka.

### Broadening horizons

Plastic is one of the industries that holds immense growth in the future. And with support from government through ‘Make in India’, the industry can achieve a lot. Speaking on the market scenario, Murarka said “A decade back, the market was estimated to be at 20 million metric tonnes by 2020. However, we have crossed this mark well in advance in 2016. This talks a lot about the potential and growth rate of the plastics industry. Through Plastivision India, AIPMA is offering a platform for the industry to make the most of it.”

Additionally, plastic is a magical material that finds its application in variety of industries. “Therefore, we are targeting to take this show to all these user industries such as infrastructure, automotive, packaging, agriculture, etc. In order to spread the awareness on the show in varied sectors, we are conducting road shows in approximately 50 industrial hubs in the country. We also have invited government bodies and research & development agencies to visit the show,” explained Murarka.

### To summarise...

A trade fair is normally looked upon as a networking platform. However, Plastivision India 2017 has gone beyond the traditional recognition of the exhibition. Along with live demonstrations of the machines, the show will offer ideal networking platform for B2B meetings. Also, it is a perfect matchmaker for businesses which are looking for exports, agents, dealers, etc. The new pavilions will showcase the expanded use of plastics. In other words, this show is going to be bigger, better and broader in all respect compared to its earlier editions! 



## Minimised to the max

STUDER offers range of grinding machines. Read on about the company's S121, a universal internal cylindrical grinding machine.



The S121 from STUDER is a universal internal cylindrical grinding machine for medium-sized workpieces in individual and small batch production. Equipped with the advanced technology of its sister machines S131, S141 and S151, this series model has been limited to the essential equipment. A striking example is the spindle turret, which swivels through 180° to a stop and is equipped with two grinding spindles. Alternatively a fixed spindle is possible. With the S121 STUDER has thus created a tailor-made machine for internal, surface and external grinding of chuck components, which offers exceptional value for money. While a T-slide arrangement or the use of maximum two tools guarantees the attractive price, the manufacturer has made no compromises in terms of the advanced technologies used. This is evident in the StuderGuide guideway system for the X- and Z-axis, which guarantees high geometrical traversing and guidance accuracy through the entire speed range, together with high load capacity and cushioning levels. At the same time the combination of StuderGuide, linear motors and direct measuring systems guarantee exceptional interpolation accuracies.

Although the smallest machine in the universal series in terms of space requirement, larger diameters can be machined on the S121 than on an S131. This makes it a high-performance machine with an impressively compact design and excellent ergonomics. STUDER's offering of high performance in a small footprint with the customised S121 is evident in the

swing diameter over the table of 400 mm and the maximum workpiece length of 300 mm, with a maximum grinding length of 175 mm for internal and 100 mm for external diameters. This large range of workpiece dimensions is made possible by optimal arrangement of the machine components.

### Tailored to the perfect size

The configuration of the S121 as a tailor-made machine is above all made possible by the fact that the machine can be equipped with a fixed spindle or a spindle turret with two spindles. When using a spindle turret, the turret swivels hydraulically through 180° to a stop, and one spindle can be fitted with an external grinding wheel. However, STUDER also implements the "tailor-made" principle through a workhead with manual cylindricity correction, which is adjustably mounted on the workpiece table, and a high-resolution C-axis with direct measuring system, which is ideally suited for form and thread grinding. The machine concept always allows optimum accessibility for the operator, whether for workpiece changeover, dressing or changing the grinding wheel.

The S121 is a universal internal cylindrical grinding machine, which is designed for the production of high-precision parts. The basis for this precision is the machine bed comprising of Granitan S103 which, with its excellent cushioning and thermal behaviour, ensures outstanding surface quality of the ground components. The excellent cushioning behaviour also extends the service life of the grinding wheel, which in turn reduces auxiliary times. As the machine bed largely equalizes

STUDER's offering of high performance in a small footprint with the customised S121 is evident in the swing diameter over the table of 400 mm and the maximum workpiece length of 300 mm, with a maximum grinding length of 175 mm for internal and 100 mm for external diameters.

temporary temperature fluctuations, a high dimensional stability is ensured throughout the machining time. The modules of the S121 are ideally suited to each other and produced with the customary STUDER precision. The large distance between the guideways and the very rigidly constructed slides are further cornerstones for the precision and productivity of this machine. Simple, reliable programming and efficient operation of the S121 is guaranteed by the StuderWIN software.

The possibility of fully integrating the in-process gauging and sensor technology for process monitoring as well as contact detection and automatic balancing systems in the control enable standardized programming of the different systems. The drive elements are optimally adapted to the control. The S121 is tailor-made for a large range of internal grinding applications. Numerous applications are in the production of machine tools, drive elements as well as in the aircraft and die industries.



## New PPED series press brakes from LVD

LVD Company nv has introduced a new range of press brakes to its bending product line. PPED Series hydraulic press brakes feature a multi-axis backgauge, CNC V-axis crowning system, and a 15" version of LVD's TOUCH-B graphical icon-driven CNC controller. Combined, these machine features provide users with greater flexibility and enhanced capability for a variety of bending applications. A cost-efficient design married with LVD precision and reliability delivers true application flexibility. Easy to use, PPED Series press brakes are ideal for a wide range of bending jobs. Their rigid construction and servo-controlled hydraulic system ensure consistent bending results no matter the application. The PPED has 3 models (PPED-4, PPED 5 and PPED-7) with either 2 (X, R) or 4 (X, R, Z1, Z2) standard backgauge axes. A multi-axis backgauge makes the PPED highly versatile and reduces machine setup time across simple to complex bending jobs. The multi-axis backgauge combined with LVD's TOUCH-B control makes higher productivity possible. With the same core functionality of the full-featured TOUCH-B control, this user-friendly touch screen CNC control minimizes operator input and makes part programming easy and intuitive. With minimal input, the operator can create designs in 2D and simulate in 3D on the 15" touch screen. Dimensions are simply keyed into the controller or the part program is recalled from storage. As a new feature for PPED machines, users can also work with standard and custom parametric programs to



offer rapid programming. TOUCH-B works with the centralised database and is compatible with CADMAN-JOB and CADMAN-B.

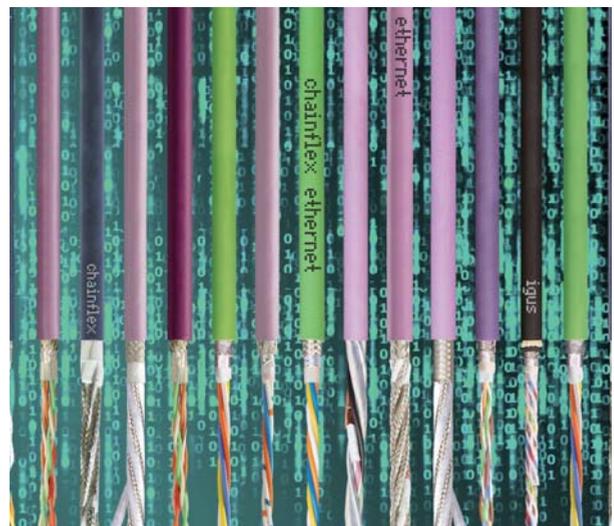
The PPED is a versatile and capable machine, able to address a broad range of bending requirements. The PPED is available in different models from 50 to 320 metric tons, bend lengths from 2000 to 4000 mm.

For more information, e-mail: [slcs@lvd.be](mailto:slcs@lvd.be)

Website: [www.lvdgroup.com](http://www.lvdgroup.com).

## Ethernet cables for moving applications

igus has expanded its range of Ethernet cables for use in energy chains and now offers 27 cables at seven price points. In situations where cables are fitted in static installations, commonly used Ethernet cables get the job done. But the service life of these cables is severely restricted when used in moving applications. The bus cables igus, are optimised for movement to provide the best possible transmission properties. The cables for linear movements are stranded with optimised strands and are available in six different jacket materials (from PVC to TPE), depending on the quality required. For cables from the CFROBOT product range, the components within the cable are guided loosely so that the cable can move safely when the wires and shielding twist together and apart. To demonstrate that these special designs and materials prove themselves in real-world applications, igus inspects all cables at its 2,750 sq mtr in-house test laboratory by conducting more than two billion test cycles per year. Aside from electrical resistance values, which are determined using the specially designed AutΩMeS system from igus, these test sequences are also used to continuously monitor Ethernet-relevant values.



For more information, e-mail: [sreejith@igus.in](mailto:sreejith@igus.in)

Website: [www.igus.in](http://www.igus.in)



## Production. Without the Line.

Powered by the Stratasys signature FDM (Fused Deposition Modeling) technology, the Fortus 450mc 3D Production System is a smart solution for companies involved in producing jigs, fixtures, factory tooling and production parts, as well as functional prototypes that require heavy testing. The system provides four choices in layer thickness, allowing operators to create a mix of strength and detail in their 3D prints.

Users of the Fortus 450mc system can choose among nine thermoplastics ranging from standard applications, such as snap fit test, assembly test, to engineering or high-performance applications, including customised tooling, fixtures on factory floor and also low-volume end-use parts for pilot production processes in mass-production industries, there-



by reducing product development cost and time. Through a more streamlined and efficient manufacturing operation workflow, manufacturers will experience shortened time-to-market while minimising design error. In bridge-to-production phases, having a Fortus 450mc would allow teams to create viable products while full-scale tools and production processes are being created, finalised or somewhere in between.

In addition, the Fortus 450mc system is ideal for businesses centered on low-volume production of highly customised products as minimum quantity is not required in 3D printing. Manufacturers would not have to worry about part complexity adding time or extra cost. Spare part costs, re-tooling cost for end-of-life products can be 3D printed on demand, saving manufacturers mas-

sive cost in production and/or related costs.

## Universal plug & work media transfer module

SCHUNK has expanded its range of modular system for stationary workholding with compact, universal media transfer module SCHUNK VERO-S MDN. It can be used to put pneumatic, hydraulic or vacuum components on VERO-S NSL plus clamping stations into operation within seconds via plug & work. In automated machine loading the interplay of the quick-change pallet system and media transfer module enables fast and reliable change of different clamping devices. Alternatively, the module can be used to supply components for automated monitoring or cleaning.

The media transfer can be flexibly combined with new or existing SCHUNK VERO-S NSL clamping stations, which eliminates expensive and complex isolated or special solutions. It can be mounted either from above or below. The module is equipped with two independently controllable fluid feed-through, and is designed for a system pressure of up to 250 bar. Like all components from the SCHUNK VERO-S modular system, the decisive piece of the puzzle for more efficiency in production, the stainless media transfer module features a robust and durable design. Low-maintenance, specially sealed couplings ensure process-reliable change and operation. The module is controlled either on the base via channel bores in the clamping station or on the side via hose lines. If necessary, two SCHUNK VERO-S MDN media transfer modules can be combined to create a fourfold media interface. With a height of 39 mm it is exactly



adapted for integration in the SCHUNK VERO-S NSE plus quick-change pallet system.

For more information,  
call : 080-40538999,  
email: [info@in.schunk.com](mailto:info@in.schunk.com)  
web: [www.in.schunk.com](http://www.in.schunk.com)



[www.gb.schunk.com/tendo-e-compact](http://www.gb.schunk.com/tendo-e-compact)

1945 - 2015

70 Years

Superior Clamping and Gripping



## 300% longer tool life\*

The high-performance program for heavy-duty machining. Proven since 1978. TENDO – the original hydraulic expansion toolholder from SCHUNK. Easy handling and tool change within seconds.



High tech from a family-owned company

Up to **2,000 Nm** torque

**TENDO** E compact

\* Verified in a study by the wbk Institute of Production Technology at the Karlsruhe Institute of Technology (KIT).



*J. Lehmann*

Jens Lehmann, German goalkeeper legend, SCHUNK brand ambassador since 2012 for precise gripping and safe holding. [www.gb.schunk.com/Lehmann](http://www.gb.schunk.com/Lehmann)



**TENDO** Original  
The universal one.  
DIN-standard in  
29 interfaces

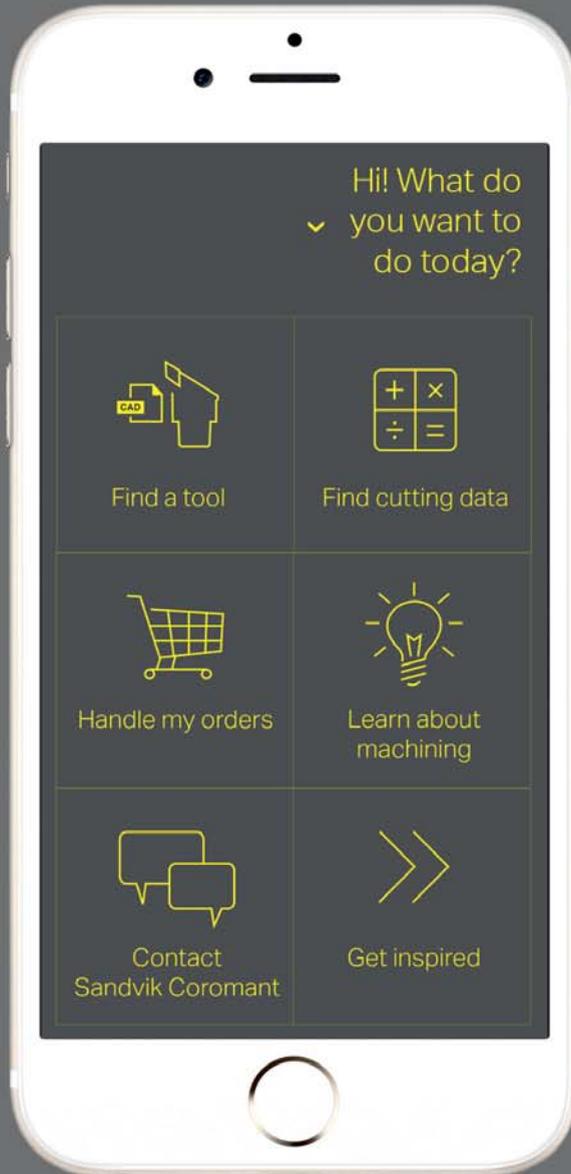


**TENDO** Aviation  
100% pull-out safety  
in high-performance  
machining



**TENDO** ES  
0% interfering contour  
for ideal range-of-freedom  
in working areas

# Sandvik Coromant at your fingertips



Visit [ifind.sandvikcoromant](http://ifind.sandvikcoromant) or download the app today.

