

THE MACHINIST

RNI No 71129/98

Volume 13 Issue 2 • February 2018 • Rs 75

www.themachinist.in

MACHINIST

MACHIE IS BACK

*And only the best will get it.
If you believe you are the best, nominate now.*

SHOPFLOOR

BUDGET
Enabler for
manufacturing growth

DEFENCE
Emphasis on
Indigenous technology

FUTURISTIC AUTOMATION TECHNOLOGY IS WHAT WE DO BEST!

Industrie 4.0 and AI are together going to bring about unimaginable changes to the shop floor and warehouses of the near future. As specialists in Drive Technology & Motion Control Automation for over 85 years, we at SEW-EURODRIVE are leading this change with our latest factories in Europe built to Industrie 4.0 norms.

With the best of German R&D along with a strong, competent local engineering team in India and a consultative approach, we are uniquely equipped to deliver the precise solutions required for your business.

Starting your automation journey with SEW-EURODRIVE enables you to scale up as your ambitions mature, right up to the cutting edge of motion control automation technology. So you never have to ask "WHAT NEXT?"

Call us for a discussion about customised solutions for your business.



BOLDITALIC/SEW



LEADER IN DRIVE ENGINEERING | MOTION CONTROL AUTOMATION EXPERT
IN INDIA SINCE 1997 | OPERATING IN 50 COUNTRIES | GERMAN DESIGN & TECHNOLOGY
© +91 96866 24322 | Email : marketing@seweurodriveindia.com | www.seweurodriveindia.com

SEW
EURODRIVE

Driving the world

EXPERIENCE
nvu
THE NEXT-GEN



DX 200 Series nvu
CNC Turning Centers



PX Series nvu
CNC Vertical Machining Centers



VMC Performance Series nvu
CNC High Performance Vertical
Machining Centers



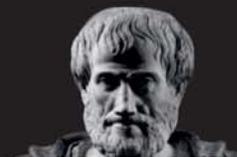
KMILL Series nvu
CNC Bridge Type Vertical Machining Centers



NX Series nvu
CNC Double Column Machining Centers



K3X85 Five Series nvu
CNC 5-Axis Bridge Type Machining Centers



We are what we repeatedly do.
Excellence then, is not an act, but a habit.
Aristotle



Back on good growth path!

really like the term 'back on good growth path' in the context of India's economic scenario. And I am not alone. The FM likes it, and even the IMF likes it. It is indeed a very interesting term; the implication being, 'we are not there yet but we are surely and steadily reaching there'.

Some would say it is too much skewed towards optimism. True that. But, this optimism stems from strong economic fundamentals. With the negative after-effects of demonetisation as well as GST now significantly subdued, the economy is now on a firmer course. What is important is that we will now start seeing the positive impact of these revolutionary measures.

The Government is saying that 'a series of structural reforms will propel India among the fastest growing economies of the world. Country is firmly on course to achieve over eight percent growth as manufacturing, services and exports back on good growth path'. I am quite positive about this forecast.

In fact, even the IMF, in its latest Update, has predicted that 'India will grow at 7.4 percent next year in the backdrop of services resuming high growth rates of eight percent plus, exports expected to grow at 15 percent in 2017-18 and manufacturing back on good growth path'.

There was a big need to provide a boost to the small and medium enterprises and the budget has addressed this quite well. The extension of the benefit of reduced rate of 25 percent to companies with turnover up to Rs.250 crore in FY 2016-17 is a masterstroke. As the FM has pointed out, this will benefit the entire class of MSMEs which accounts for almost 99 percent of companies filing their tax returns! This will surely propel the industry and create more jobs. This gives even more reason to believe that India is indeed back on good growth path.

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@wwm.co.in
+91 9820580009

Editor & Chief Community Officer **Niranjan Mudholkar**
niranjan.mudholkar@wwm.co.in
+91 9819531819

Associate Editor **Swati Deshpande**
swati.deshpande1@wwm.co.in
+91 99204 00833

Assistant Art Director **Sanjay Dalvi**
sanjay.dalvi@wwm.co.in

Project Coordinator **Fiona Fernandes**
fiona.fernandes@wwm.co.in

ADVERTISING

South **Mahadev B**
mahadev.b@wwm.co.in
+91 9448483475

West **Ranjan Haldar**
ranjan.haldar@wwm.co.in
+91 9167267474

North **Ashish Sahay**
ashish.sahay@wwm.co.in
+91 9899688440

SUBSCRIPTIONS

subscriptions.rmd@timesgroup.com
022 67427209 / 67427206

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 February 2018.
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, Aequs.
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

How our robots see an apple



For delicate handling and high precision

MITSUBISHI ELECTRIC adds delicate to the list of dull, dirty and dangerous jobs for robots! From fruit and food packing where any bruise or blemish impacts the bottom line to the handling of thin SiC wafers in the electronics industry and the packaging of pharmaceutical products, MITSUBISHI MELFA robots perform not only with high speed and high precision, but also as if each item is made of the finest crystal. Combining high-speed robot motion and delicate precision handling by the ideal gripper for your needs, our turn-key robot solutions robotize the handling of fragile products and can deliver significant increases in both the quality and quantity of production output. With MITSUBISHI ELECTRIC Factory Automation, you and your customers enjoy all the fruits of your labor.



MITSUBISHI ELECTRIC INDIA PRIVATE LIMITED
FACTORY AUTOMATION AND INDUSTRIAL DIVISION (FAID)
EL-3, J- Block, MIDC, Bhosari, Pune - 411206, Maharashtra, India
Phone: +91 020 27102000
www.mitsubishielectric.in/fa/factory-automation.php

CONTENTS



BUDGET

Highlights of the Union Budget 2018-19.....	20
Business environment and development friendly budget	24
Comprehensive budget	26



Insight

Rising India!.....	16
Challenges before industry in 2018.....	36



Defence

Make II: Major steps towards 'Make in India' in defence production	18
Year End Review- 2017: Ministry of Defence	32



Market

Enabling digital transformation ...	38
-------------------------------------	----



Cutting Tools

Tool Life app	58
Aerospace and defence industries have immense potential	60
Challenging yet encouraging times	62
Back on Track!	63
Relevance of traditional HSS tools	71

Editorial.....	4
News	8
Event Calendar	12
Appointments	14
Construction Equipment: Reaching a milestone	40
Facility Updates	54
Event:	
IMTEX FORMING 2018 paves way for technological advancements	42
Bigger, better & grander!	44
Is your shopfloor super?.....	46
Interview:	
New avatar!.....	48
Innovating processes	48
Democratising metal cutting!.....	50
The new benchmark.....	50
Evolving with times	65
Automotive Updates	52
Case Study:	
Technology for Swinburne electric car	68
Space:	
Sky is the limit for India	70
Products	72

Tough applications require 'Plus' performance.

M Star & MS Plus End Mill Series

M Star

29 different types.
Line up 1830 sizes.

MS4LTB



Realize ideal surface finish.

MS4EC



Long tool life without burrs.

MS2SB



2.5 times cutting efficiency.

MS2MS



Excellent chipping resistance.

MS2XL



Excellent long tool life.

MS Plus

Square End Mills

The irregular helix geometry reduces vibration to enable efficient machining of carbon and stainless components.

MPMHV

Improved Geometry

Expansion

Expansion of Slim Shank



Irregular Helical Flutes
Irregular helix flutes help prevent vibration

Length of Cut and Overall Length
Longer than standard DC x 2.5 flute length available

MPJHV

Ideal for Deep Wall Machining



Flute Length Options

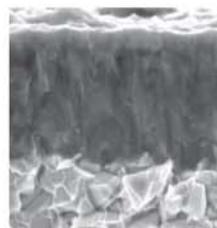
DC x 3.3 and DC x 4 flute lengths available

MS+ (Al,Ti,Cr)N multilayer coating (MS Plus)

Our original coating technology enables a multilayer of (Al,Ti)N and (Al,Cr)N. It allows machining of a wide range of workpiece materials.

Properties of (Al,Ti,Cr)N multilayer coating (MS Plus)

	(Al,Ti,Cr)N multilayer	(Al,Ti)N	(Al,Cr)N
Hardness (HV)	3200	2800	3100
Oxidation Temperature (r)	1100	800	1100
Adhesion (N)	100	80	80



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

Tel : +91 80 3080 7400 to 3080 7499
Website : www.mitsubishicarbide.com
Email : mmcindia@mmc.co.jp



YOUR GLOBAL CRAFTSMAN STUDIO

TOTAL SOLUTIONS



DRILLING



MILLING



TURNING



THREADING & GROOVING





NEWS

India to be a US\$ 5 trillion economy in 8-9 years: Suresh Prabhu, Minister of Commerce and Industry



SPEAKING AT THE 12th India Digital Summit, organised by the Internet and Mobile Association of India (IAMAI), Suresh Prabhu, Minister of Commerce and Industry said that India is expected to become a USD 5 trillion economy in the next 8-9 years with the manufacturing sector alone contributing 20 percent to that.

He further said: "Therefore we are preparing a detailed plan what will be going in that manufacturing." Prabhu said that experts who are involved in manufacturing are preparing the road-map and including all sectors where manufacturing can be promoted. The minister said if manufacturing alone is

digitised it will create a huge opportunity for technology firms.

He also mentioned that he is currently working on a strategy for international trade which will contribute USD 2 trillion to the economy where the contribution can come from both manufacturing and services. "India is not only bridging digital divide but also helping people scale up their income," Prabhu said.

Earlier, in his address to the delegates, Amitabh Kant, CEO of Niti Aayog said that every Indian will have a smartphone in the next five years. He said that this was a period of huge technology disruption in the country. "Today, 85 percent of the devices are still unconnected. Therefore, there is a huge opportunity in the Internet of Things (IoT) space. The opportunity would be in the range of \$70 billion by 2025," he said. According to Kant, Artificial Intelligence (AI) alone will generate the opportunity to the tune of \$32 billion. "Advanced robotics are already handling 25 per cent of the jobs. This will rise to 45 per cent in the coming years.

Arun Jaitley proposes changes in the Customs Act

WITH THE AIM OF further improving Ease of Doing Business in cross border trade, and to align certain provisions with the commitments under the Trade Facilitation Agreement, the Union Minister for Finance

and Corporate Affairs, Arun Jaitley announced certain changes to the Customs Act, 1962 while presenting the General Budget 2018-19 in Parliament recently.

Jaitley added that to smoothen dispute resolution processes and to reduce litigation, these amendments are being made to provide for pre-notice consultation, definite timelines for adjudication and deemed closure of cases if those timelines are not adhered to.



ADB Invests \$50 Million in True North's Fund VI

THE ASIAN DEVELOPMENT BANK (ADB) has signed an equity investment of up to \$50 million with True North VI LLP (True North VI), a fund established by the True North group (True North) to provide equity capital to middle-market companies in India embarking on their next phase of growth. True North is one of India's most experienced and well-regarded private equity fund managers.

"Through its investment in True North VI, ADB will support market leading businesses in India that require sophisticated funding solutions to realize their growth plans," said Janette Hall, ADB's Director of the Private



Sector Investment Funds and Special Initiatives Division. "With its dedicated business management team, True North is able to provide significant value to entrepreneurs and management teams seeking to transform and scale their businesses into enduring and socially responsible enterprises".

True North VI is a closed-end private equity fund that aims to make up to 10 equity investments of between \$50 million and \$150 million each in the financial services, healthcare, and consumer sectors. True North may also target investments in technology products and services companies.

True North was established in 1999 (as India Value Fund) with a view towards investing in mid-sized, India-centric businesses. Over the last two decades, True North has successfully launched five separate investment funds, with a combined corpus of approximately \$2 billion.

MOTUL **TECH**

**THE INDUSTRIAL
LUBRICANTS DIVISION
OF THE **MOTUL** GROUP**

SOLUBLE FLUIDS

INDUSTRIAL LUBRICANTS

FORMING OILS

QUENCHING FLUIDS

NEAT MACHINING OILS

HIGH PERFORMANCE GREASES

HIGH PRESSURE DIE CASTING

RUST PROTECTION

CLEANING

motul.com

Motul
119 boulevard Felix Faure
93300 AUBERVILLERS - France
Tel.: +33.1.48.11.70.30
Fax: +33.148.11.70.38

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



NEWS

NHAI heading towards a quantum jump, has invited bids for 10,460 km

THE NATIONAL HIGHWAYS AUTHORITY OF INDIA has invited bids for a length of 10,460 km, costing nearly Rs.1,75,000 crore till January, 2018, and is all set to achieve a quantum jump in the award of road projects in the year 2017-18. Further bids in another 1,000km will be invited within the next 15 days. The average length of road projects awarded by NHAI in the last 5 years was 2,860 km, with 4,335 km awarded in 2016-17. Nitin Gadkari, Minister for Road Transport & Highways, Shipping and Water Resources, River Development and Ganga Rejuvenation had set a target for NHAI for award of 10,000 km this year. Projects for a length of nearly 2,700 km, costing Rs.43,000 crore have already been awarded by the Authority in 2017-18, and there are plans to award 3,300 km. in Feb. and 5,000 km. in March 2018 subject to a good response in bidding and cooperation from state governments in land acquisition and



project clearances. India's GDP. With the above jump in awards, NHAI is set to give a good beginning for the ambitious "Bharatmala Pariyojana" approved by the Government in Oct., 2017. To ensure that the targets are achieved, NHAI has set up a robust monitoring mechanism.

India's first MSE sentiment index launched

FINANCE MINISTER ARUN JAITLEY recently launched CriSidEx, India's first sentiment index for micro and small enterprises (MSEs) developed jointly by CRISIL and SIDBI.

CriSidEx is a composite index based on a diffusion index of 8 parameters, and measures MSE business sentiment on a scale of 0 (extremely negative) to 200 (extremely positive). The parametric feedback was captured through a survey of 1,100 MSEs in November-December.

The first reading of CriSidEx stood at 107, indicating mildly positive sentiment during October-December (or the 'survey quarter'). For January-March 2018 (or the 'next quarter'), the sentiment is expected to be more positive.

Successful Fifth Flight Test of Agni-5 Ballistic Missile

LONG RANGE Surface-to-Surface Ballistic Missile, Agni-5, was successfully flight tested for its full range recently from Dr Abdul Kalam Island, Odisha. This was the fifth test of the Missile and the third consecutive one from a canister on a road mobile launcher. All the five missions have been successful.

The flight performance of the missile was tracked and monitored by radars, range stations and tracking systems all through the mission. All objectives of the mission have been successfully met. This successful test of Agni-5 reaffirms the country's indigenous missile capabilities and further strengthens India's credible deterrence.

The launch operations were led by Project Director, Agni-5, G Ramaguru and Programme Director, Agni, MRM

Babu. Scientific Adviser to Raksha Mantri and Director General, Missiles and Strategic Systems Dr. G Satheesh Reddy witnessed the launch. Directors of Defence Research & Development Organisation (DRDO) Labs namely ASL, DRDL, ITR, RCI and TBRL reviewed the entire launch operations. Senior officials from the Armed Forces were present on the occasion. Chairman DRDO & Secretary DDR&D Dr S Christopher congratulated Agni-5 team and said that the fifth consecutive successful flight test of Agni-5 is a major boost to country's defence capabilities. Raksha Mantri Nirmala Sitharaman congratulated DRDO on this successful feat and also lauded the industries who contributed to the manufacture of indigenous technologies that went into the making of the missile.

The Government of India to generate Rs. 100,000 cr. through disinvestment

THE GOVERNMENT has initiated efforts to generate funds as well as undertake banking sector reforms. The Union Minister for Finance and Corporate Affairs, Arun Jaitley, while presenting the General Budget 2018-19 in Parliament said that the Government has initiated the process of strategic disinvestment in 24 CPSEs including strategic privatisation of Air India.

Highlighting the Government's effort to generate funds,

the Finance Minister said that the Exchange Traded Fund Bharat-22, which was introduced to raise Rs. 14,500 crore, was over-subscribed in all segments. Similarly, the 2017-18 Budget Estimates for disinvestment were pegged at the highest ever level of Rs. 72,500 Crore and the estimated receipts from the same are expected to the tune of Rs.1,00,000 crore in 2017-18, far exceeding the target. The Finance Minister has also set the disinvestment target of Rs. 80,000 crore for 2018-19.

#1
Manufacturer
of CNC
Machines

Mean time to respond
< 4 hrs. (95% of all calls)

Mean time to repair
< 4 hrs. (83% of all calls)

Best in class Service

**MTBF
217
DAYS**

45,000+
CNC Machines

55 offices
across India

350+ Service
experts

MTTR

“MTTR less than 4 hrs for 83% of all calls” Historically, 83% of all breakdown cases have been fixed within 4 hours of registering the service call. This ensures that the uptime of the m/c is maximized, enabling higher m/c availability to the customer.

Meantime to respond <4 hrs for 95% of calls

MTBF

Best in class MTBF of 217 days through MMT’s largest service network of 55 offices across India, coupled with adequate local stocking of spares has ensured that MTBF of our CNC machines considering 3 shift running.



TURNING SOLUTIONS



MILLING SOLUTIONS



GRINDING SOLUTIONS



SALES & SERVICE



AUTOMATION SOLUTIONS



INDUSTRY 4.0 & IoT SOLUTIONS



www.acemicromatic.net



[/acemicromaticgroup](https://www.facebook.com/acemicromaticgroup)



[/user/acemicromatic](https://www.youtube.com/user/acemicromatic)



[/goo.gl/TIPMQT](https://www.linkedin.com/company/acemicromatic)



16 to 19 February 2018.
Opening hours daily 9 a.m. to 6 p.m

Hall F

Stall F17



• MARK YOUR DIARY •

A list of key events happening between March 2018 to November 2018, both nationally and internationally.

<p>International Engineering Sourcing Show (IESS) March 8–10, 2018 Chennai, India www.iesshow.in</p>	<p>ELECRAMA March 10–14, 2018 Noida, India www.elecrama.com</p>	<p>SIMTOS April 03–07, 2018 Seoul, South Korea www.simtos.org</p>	<p>Die & Mould India International Exhibition April 11–14, 2018 Mumbai, India www.diemouldindia.org</p>
<p>Hannover Messe April 23–27, 2018 Hannover, Germany www.hannovermesse.de/home</p>	<p>CeMAT April 23–27, 2018 Hannover, Germany www.cemat.de</p>	<p>ACMEE June 21–25, 2018 Chennai, India www.acmee.in</p>	<p>AMTEX 2018 July 06–08, 2018 New Delhi, India www.amtex-expo.com/amtex_delhi</p>
<p>Busworld India 2018 August 29-31, 2018 Bengaluru, India www.india.busworld.org</p>	<p>IMTS 2018 September 10–15, 2018 Chicago, USA www.imts.com</p>	<p>Wire India Show November 27–29, 2018 Mumbai, India www.wire-india.com</p>	<p>Metallurgy Show November 27–29, 2018 Mumbai, India www.metallurgy-india.com/</p>



THE ECONOMIC TIMES POLYMERS Awards 2018
Excellence in Plastics
Industry Partner

11th PLASTIVISION INDIA 2020 MUMBAI

AIPMA
Association of Indian Plastics Manufacturers

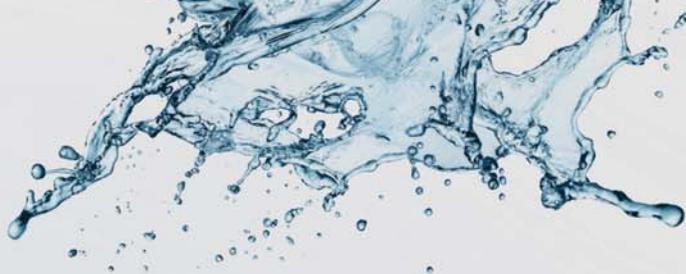


March 7, 2018, Sahara Star, Mumbai

Super SHOPFLOOR Awards 2018
May 2018

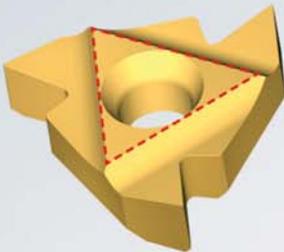
THE ECONOMIC TIMES POLYMERS
Global Conference on Plastics in Automotive
Coming soon

"THE FESTIVAL OF MANUFACTURING"
Coming soon



THREADING is **VARDEx**

New Thread Turning & Thread Milling Solutions



D-Line NEW

Deep Rake Internal Inserts

- Deep rake design for better chip flow
- Specialized solutions for the fittings industry
- Lower cutting forces for improved tool life



TM Solid TMDR NEW

Drilling, Thread Milling & Chamfering

- TMDR tools drill, thread and chamfer all in one tooling operation
- Pre-drilled holes are no longer required!
- Tools also work on components with pre-drilled holes, such as blind holes, through holes, and even semi-finished holes



TM Solid HCN NEW

For Long Threads

Up to 3xDo
(Thread Diameter)

- Relief neck for reduced cutting forces
- Multi-tooth geometry
- Reduced machining times for long threads



VARGUS | Tool Selector and CNC
GENius™ | Program Generator



Introducing the **NEW**
VARGUS GENius™ APP



Also available at www.vargus.com





QLIK APPOINTS NEW COUNTRY MANAGER FOR INDIA

Qlik has announced the appointment of Arun Balasubramanian as its Country Manager for India. In his role at Qlik, Arun will be responsible for leading and expanding Qlik's operations in India.

His deep experience in the Indian IT market and with cloud and subscription delivery models will add greater depth to and drive growth for Qlik's countrywide operations. Arun will report to Julian Quinn, Regional Vice President, Asia Pacific.

With over 20 years of experience in the IT industry, Arun has a distinguished track record of sales and market accomplishments in India, and has held senior executive positions at HP, CA Technologies, and Salesforce.

Prior to joining Qlik, Arun was spearheading Microsoft's Cloud and Enterprise business in India, and was responsible broad set of products including Azure, SQL and IOT. He also worked closely with go-to-market and alliances teams to increase the brand's footprint across enterprise, commercial and public sector clients.



JOHN DAVIDSON APPOINTED PRESIDENT, EUROPE & AFRICA REGION AT BIRLA CARBON

Birla Carbon has announced the appointment of John Davidson as President, Europe & Africa. Davidson will have full P&L responsibility for Europe & Africa and will join the company's Senior Management Team reporting to John Loudermilk, Chief Operating Officer, Birla Carbon. "John has a proven track record of outstanding results, market focused leadership in a variety of geographies, and brings a wealth of experience strengthening customer relationships," stated John Loudermilk. "We look forward to him joining our executive team to help drive our global strategy."

Davidson has over 28 years of industry experience and joins Birla Carbon from Lanxess where he led their Bromine & Derivatives business following its acquisition of US based Chemtura.

Prior to Chemtura, John held a variety of leadership roles with The Dow Chemical Company including Global Commercial Director, Industrial Goods Industrial Solutions Enterprise; Global Business Director, Amines and Chelants; Global Marketing Director, Polyglycols, Surfactants, Fluids and Oxygenated Solvents; and Global Asset Director, Specialty Alkoxylation assets, Polyglycols, Surfactants and Fluids.

EVA SIPILÄ APPOINTED AS METSO'S INTERIM PRESIDENT & CEO

Metso's Board of Directors have appointed CFO Eeva Sipilä as Metso's interim President and CEO as of February 3, 2018. The current President and CEO Nico Delvaux will leave his duties on February 2. His resignation was published on December 18, 2017. The search for a new President and CEO is under way.

Metso is a world leading industrial company serving the mining, aggregates, recycling, oil, gas, pulp, paper and process industries. Its products range from mining and aggregates processing equipment and systems to industrial valves and controls.



BOEING NAMES LEADER OF DEFENSE AND SPACE SALES TEAM

Boeing has tapped Jeff Shockey to be vice president of Global Sales and Marketing for its Defense, Space & Security unit, effective immediately.

Shockey, who joined Boeing in 2016 as vice president of Federal Affairs and International Policy, succeeds Tom Bell, who took a position at another company.

"Jeff knows our strategy, our customers, and our people," said Leanne Caret, president and CEO of Defense, Space & Security. "He is an amazing professional, and I look forward to working even more closely with him as we compete, win, and grow our business."

Prior to joining Boeing, Shockey was the staff director for the House Permanent Select Committee on Intelligence, managing partner at government relations firm Shockey Scofield Solutions (S3 Group), and minority staff director for the Appropriations Committee of the House of Representatives.



Automation for a Changing World

Delta CNC Lathe Solution Lathe Controller NC200 Series

Delta's CNC Lathe Solution adopts the CNC Controller NC200 Series to control 3-axis servo systems, a spindle servo drive, and a PM spindle motor. Through Delta's DMCNET protocol, it provides high-speed data exchange and precise turning control to satisfy the machining requirements for high speed and high precision.

Features

- **Embedded system design:**
High energy savings, high efficiency and high stability
- **8-inch high resolution color LCD:**
Three kinds of operation interfaces, English / Traditional Chinese / Simplified Chinese
- **User-friendly operation:**
Simple and easy-to-use interface with simple steps to fulfill market requirements
- **Delta's global service network:**
Professional technical support and excellent service



www.deltaelectronicsindia.com | automation@deltaww.com

 **DELTA**
Smarter. Greener. Together.



Rising India!

According to the latest World Economic Forum (WEF) report, India is the 5th-largest manufacturer in the world and ranks 30th in the global manufacturing index with regards to the structure of production

India has ranked 30th in the World Economic Forum's global manufacturing index with regards to the structure of production. Japan, South Korea and Germany are the top three countries with Switzerland, China and Czech Republic taking the next three positions. US is at number seven while Sweden, Austria and Ireland are placed at the bottom of the top ten countries. Amongst the BRICS Countries, except China (ranked five), India has outperformed Russia (ranked 35), Brazil (ranked 41) and South Africa (ranked 45).

According to WEF, India is the 5th-largest manufacturer in the world—with a total Manufacturing Value Added of over US\$ 420 billion in 2016— and ranks 45th in economic complexity. Over the last three decades, India's manufacturing sector has grown by more than seven percent per year, on average, while accounting for between 16 percent to 20 percent of India's GDP. Home to the second-largest population in the world and one of the fastest growing economies, the demand for Indian manufactured products is rising. India has room for improvement across the Drivers of Production, except for Demand Environment where it ranks in the Top five.

Challenges

Two key challenges for India are Human Capital and Sustainable Resources, as per the WEF report. India needs to continue to raise the capabilities of its relatively young and fast-growing labour force. This entails upgrading education curricula, re-vamping vocational training programs and improving digital skills. Furthermore, India should continue to diversify its energy sources and reduce emissions as its manufacturing sector continues to expand. In 2014, the government launched the "Make in India" initiative, with the primary goal of making India a global manufacturing hub. The government has made

Over the last three decades, India's manufacturing sector has grown by more than seven percent per year, on average, while accounting for between 16 percent to 20 percent of India's GDP.

a significant push to improve key enablers and move towards a more connected economy, most recently announcing a US\$ 59 billion investment in infrastructure in 2017, the report said.

The Fourth Industrial Revolution will trigger selective re-shoring, nearshoring and other structural changes to global value chains. Emerging technologies will change the cost-benefit equation for shifting production activities and, ultimately, impact location attractiveness. All countries must develop unique capabilities to make them attractive production destinations and capitalize on these shifts, the report said.

Being future ready

Readiness for the future of production requires global, not just national, solutions. Globally connected production systems need not only sophisticated technology but also standards, norms and regulations that cross technical, geographical and political boundaries, to release efficiencies and make it easier to do business across global value chains, the report added.

New and innovative approaches to public-private collaboration are needed to accelerate transformation. Every country faces challenges that cannot be solved by the private sector or public sector alone. New approaches to public-private collaboration that complement traditional models are needed to help governments quickly and effectively form partnerships that unlock new value. 



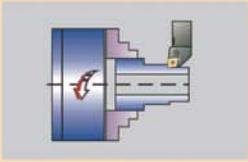
PMT Machines Limited

• 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

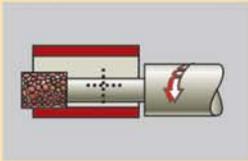


FIG-200 SPL CNC
BIG BORE GRINDER

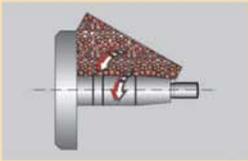


FIGT-300 CNC
FOUR STATION TURRET



FIGE-150 CNC
ID / OD GRINDER

CNC Cylindrical Grinding



AWH-1500 CNC
LONG SHAFT GRINDER

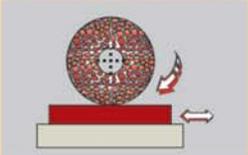


AWH-2000 CNC
HEAVY DUTY GRINDER



SWH-400 CNC
AUTO LOADING

Surface Grinding



SG-106 CNC
CREEP FEED GRINDER



SGR-60
ROTARY GRINDER



SG-63
HYDRAULIC / PLC

Automats



A15/25

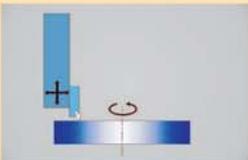


TD36
AUTOLOADING



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



Make II: Major steps towards 'Make in India' in defence production

Defence Minister **Nirmala Sitharaman** clears a simplified 'Make-II' procedure, which will enable greater participation of industry in acquisition of defence equipment.



As a major boost to 'Make in India' in Defence, the Defence Acquisition Council, chaired by Defence Minister Nirmala Sitharaman has cleared a simplified 'Make-II' procedure, which will enable greater participation of industry in acquisition of defence equipment. This process will greatly help import substitution and promote innovative solutions. This simplified 'Make-II' procedure will amend the existing 'Make Procedure' in Defence Procurement Procedure (DPP)-2016.

The revised procedure has been finalized after a series of consultations held with industry. The salient features of the new 'Make-II' procedure include the following:

- The industry can suggest projects, especially among those items which are currently being imported. Start-ups or individuals can also suggest proposals. Service Headquarters will also list out a series of projects which can be undertaken as 'Make-II' projects under the new procedure.
- The potential 'Make-II' projects will be approved by a collegiate comprising of DRDO, HQ (IDS), Department of

'Make-II' procedure reduces the total time from in-principle approval to placing of order by 50 percent. The estimated time to finish the whole process has come down to 69 to 103 weeks.

The industry can suggest projects, especially among those items which are currently being imported. Start-ups or individuals can also suggest proposals. Service Headquarters will also list out a series of projects which can be undertaken as 'Make-II' projects under the new procedure.

Defence under a committee chaired by Secretary (Defence Production). Based on the in-principle approval agreed by this committee, the projects will be hosted on Ministry of Defence/Department of Defence Production's website inviting industry to participate.

- There will be no limit to the number of industry who may respond to the EoI for development of the prototype subject to meeting the minimum qualification criteria. The design and development time of 12 to 30 weeks is granted to industry to offer the prototypes.
- There is no limit to the number of industry players who may show interest and offer prototype.
- After this period, a commercial RFP will be issued. Once the RFP is issued, it shall not be retracted. The industry who wins the bid, is assured of an order.
- Service Headquarter (SHQ) will constitute a Project Facilitation Team for facilitating the process under this procedure.
- The case will be progressed even if there is single entity offering an innovative solution.
- The industry who develops the product will retain the title and ownership and all other rights in intellectual property. However, for some specified reasons like National Security, Government shall have 'March-in' rights.
- Normally, there shall be no negotiations by Contract Negotiation Committee (CNC) in multi-vendor contracts.
- 'Make-II' procedure reduces the total time from in-principle approval to placing of order by 50 percent. The estimated time to finish the whole process has come down to 69 to 103 weeks.
- Projects involving developmental cost of less than three crores will be reserved for MSME. 

Source: PIB

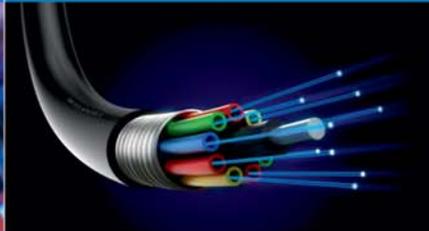
ZUKEN INDIA PRESENTS

Advanced Electronic and Electrical Design Automation Solutions

PCB Design Solutions

Electrical and Wire Harness Design

Engineering Data Management



Zuken is a global provider of leading-edge software and consulting services for electrical and electronic design and manufacturing. Founded in 1976, Zuken has the longest track record of technological innovation and financial stability in the electronic design automation (EDA) software industry. The company's extensive experience, technological expertise and agility, combine to create world-class software solutions. Zuken's transparent working practices and integrity in all aspects of business produce long-lasting and successful customer partnerships that make Zuken a reliable business partner.

Zuken is focused on being a long-term innovation and growth partner. The security of choosing Zuken is further reinforced by the company's people—the foundation of Zuken's success. Coming from a wide range of industry sectors, specializing in many different disciplines and advanced technologies, Zuken's people relate to and understand each company's unique requirements.



Salarpuria Cambridge Mall, Ground Floor "A", No.9, Cambridge Road, Ulsoor, Bengaluru - 560 008, Karnataka, INDIA
Tel: +91 80 4662 1100 Fax: +91 80 4662 1115, Email: sales@zuken.co.in

CADSTAR™
Desktop PCB Design Software

E³ series™
Electrical & Wire Harness Design

CR-8000™
PCB Design Suite

www.zuken.com



Highlights of the Union Budget 2018-19

Read on to know more about what the Union Budget 2018-19 brings for the manufacturing industry.

Government says that it is firmly on course to achieve high growth of 8 percent plus as manufacturing, services and exports are back on good growth path. While GDP growth at 6.3 percent in the second quarter of 2017-18 signalled turnaround of the economy, growth in the second half is likely to remain between 7.2–7.5 percent. The Union Minister for Finance and Corporate Affairs Arun Jaitley while presenting the General Budget 2018-19 in Parliament today said that Indian society, polity and economy had shown remarkable resilience in adjusting with the structural reforms. IMF, in its latest Update, has forecast that India will grow at 7.4 percent next year in the backdrop of services resuming high growth rates of 8 percent plus, exports expected to grow at 15 percent in 2017-18 and manufacturing back on good growth path.

The Finance Minister said that Government has taken up programmes to direct the benefits of structural changes and good growth to reach farmers, poor and other vulnerable sections of our society and to uplift the under-developed regions. He said, this year's Budget will consolidate these gains and particularly focus on strengthening agriculture and rural economy, provision of good health care to economically less privileged, taking care of senior citizens, infrastructure creation and working with the States to provide more resources for improving the quality of education in the country. He further added that the Government has ensured that benefits reach eligible beneficiaries and are delivered to them directly and said that Direct Benefit Transfer mechanism of India is the biggest such exercise in the world and is a global success story.

Medium, Small and Micro Enterprises (MSMEs) and Employment

The Budget has given a big thrust to Medium, Small and



Micro Enterprises (MSMEs) to boost employment and economic growth. A sum of Rs. 3794 crore has been provided for giving credit support, capital and interest subsidy and for innovations. MUDRA Yojana launched in April, 2015 has led to sanction of Rs.4.6 lakh crore in credit from 10.38 crore MUDRA loans. 76 percent of loan accounts are of women and more than 50 percent belong to SCs, STs and OBCs. It is proposed to set a target of Rs.3 lakh crore for lending under MUDRA for 2018-19 after having successfully exceeded the targets in all previous years.

Infrastructure and Financial Sector Development

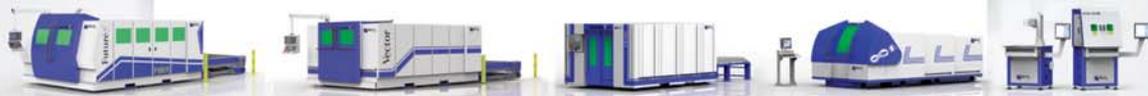
Emphasising that infrastructure is the growth driver of economy, the Finance Minister estimated that investment in excess of Rs.50 lakh crore is needed to increase growth of GDP and connect the nation with a network of roads, airports, railways, ports and inland waterways. He announced increase of budgetary allocation on infrastructure for 2018-19 to Rs. 5.97 lakh crore against estimated expenditure of Rs.4.94 lakh crore in 2017-18.

Foremost Frontier of
Fiber Laser Machine



Evolution of Excellence

LASER CUTTING
MARKING
WELDING
HARDENING & CLADDING
MICRO MACHINING



Is Now



CE

An ISO 9001:2015
certified company

Sahajanand Laser Technology Ltd.

E-30, G.I.D.C., Electronic Estate, Sector - 26,
Gandhinagar - 382 028, Gujarat, India.
Tel : +91 79 2328 7461-68 Fax : +91 79 2328 7470

UK: SLT Ltd USA: SLT Inc. Germany: SLT GmbH China: SLT Guangzhou

www.SLTL.com | www.sahajanandlaser.com

Email: mkt@SLTL.com | Cell: +91 99 2503 6495





The Government has made an all-time high allocation to rail and road sectors and is committed to further enhance public investment. The Prime Minister personally reviews the targets and achievements in infrastructure sectors on a regular basis. Using online monitoring system of PRAGATI alone, projects worth 9.46 lakh crore have been facilitated and fast tracked.

To further boost tourism, the Budget proposes to develop ten prominent tourist sites into Iconic Tourism destinations by following a holistic approach involving infrastructure and skill development, development of technology, attracting private investment, branding and marketing.

Under the Bharatmala Pariyojana, about 35,000 km road construction in Phase-I at an estimated cost of Rs.5,35,000 crore has been approved.

Railways

Railways Capital Expenditure for the year 2018-19 has been pegged at Rs.1,48,528 crore. A large part of the Capex is devoted to capacity creation. 4,000 km of electrified railway network is slated for commissioning during 2017-18. Work on Eastern and Western dedicated Freight Corridors is in full swing. Adequate number of rolling stock – 12,000 wagons, 5,160 coaches and approximately 700 locomotives are being procured during 2018-19. Over 3,600 km of track renewal is targeted during the current fiscal. Redevelopment of 600

Budget will consolidate these gains and particularly focus on strengthening agriculture and rural economy, provision of good health care to economically less privileged, taking care of senior citizens, infrastructure creation and working with the States to provide more resources for improving the quality of education in the country.

major railway stations is being taken up.

Mumbai's local train network will have 90 kilometers of double line tracks at a cost of over Rs.11,000 crore. 150 kms of additional suburban network is being planned at a cost of over Rs.40,000 crore, including elevated corridors on some sections. A suburban network of approximately 160 kilometers at an estimated cost of Rs.17,000 crore is being planned to cater to the growth of the Bengaluru metropolis.

Defence

Recognising the sacrifices made by the Armed Forces in meeting the security challenges, the Finance Minister proposed development of two defence industrial production corridors. 

Source: PIB

UPDATE

Government identifies 372 specific business reforms

All States have taken up these reforms and simplifications in a mission mode constructively competing with each other.

The Government has been continuously working towards improving the ease of doing business across the country. The Union Minister for Finance and Corporate Affairs, Arun Jaitely, while presenting the General Budget 2018-19 in Parliament today said that the Prime Minister, Narendra Modi has always stressed the importance of good governance with the vision of “Minimum Government and Maximum Governance”.

This vision has inspired Government agencies to carry out hundreds of reforms in policies, rules and procedures. This transformation is reflected in improvement of India's ranking by 42 places in last three years in the World Bank's 'Ease of Doing Business' with India breaking into top 100 for the first time.

The Finance Minister stated that to carry the business reforms for ease of doing business deeper and in every State



This vision has inspired Government agencies to carry out hundreds of reforms in policies, rules and procedures. This transformation is reflected in improvement of India's ranking by 42 places in last three years in the World Bank's 'Ease of Doing Business' with India breaking into top 100 for the first time.

of India, the Government of India has identified 372 specific business reform actions. All States have taken up these reforms and simplifications in a mission mode constructively competing with each other. Evaluation of performance under this Programme will now be based on user feedback.

EPPINGER

PRECISION GEAR SOLUTIONS



Since 1925

(A German Company. ISO Certified.)

Wide range of Planetary Gear Heads and Cycloidal Gear Boxes
with Cutting Edge Technology

Planetary Gear Heads



PE Series



PF Series



PT Series



PEB Series

Cycloidal Gear Boxes



CYK



CYKM



Servo Hypoid Spur Gear Boxes



Bevel Gear Boxes



Bevel Planetary Gear Boxes



Hypoid Gear Boxes



Special Gear Boxes



Custom Built Gear Boxes

CUSTOM BUILT / NON-STANDARD GEARS, GEAR COMPONENTS AND GEAR ASSEMBLIES

For more information, please contact:

EPPINGER TOOLING ASIA PVT. LTD.,

S.F. No.345/2A-2B, Kondampatty Village, Kinathukadavu Taluk, Coimbatore - 641 202.

Phone: 04259 - 304032, 33, 34. Mobile: +91 88700 13053 Fax: 04259 - 304018

E-mail: marketing@eta-tools.com, eppinger@dataone.in Website: www.eppinger-gears.com / www.eppinger.de

Dealers / Agents enquiries solicited from all over India



Business environment and development friendly budget

2018-19

The Prime Minister of India, **Narendra Modi** expresses his thoughts on Union Budget 2018-19.

I congratulate the Finance Minister Arun Jaitley for this budget which strengthens the foundation of New India. The focus of the budget is on issues ranging from agriculture to Infrastructure. On the one hand, the budget covers aspects such as health plans to address the concerns of the poor and middle class, while on the other hand it has plans to increase the wealth of small entrepreneurs in the country. Other aspects range from food processing to fiber optics, from road to shipping, concerns of youth to those of senior citizens, rural India to Ayushman India and Digital India to Start up India.

The budget is expected to give a boost to the hopes and aspirations of 125 crore people of the country. It is expected to accelerate the development process of the country. It is farmer friendly, common man friendly, business environment friendly as well as development friendly. Ease of Doing Business as well as Ease of Living are in focus in this budget. More savings for the middle class, new generation infrastructure for 21st Century India and assurance of better health - all these are concrete steps towards Ease of Living.

For a long time, the small and medium enterprises or the MSME in our country had to pay higher taxes than the big industries. A bold step has been taken in this budget wherein the government has reduced the tax rate for MSME by 5 percent. They will now have to pay only 25 percent tax in place of 30 percent which was the practice earlier. Credit seeking facility from the banks and NBFCs has been eased to ensure the required working capital for MSME industries. It will give a further impetus to the mission of Make in India.

MSME sector has been experiencing stress due to NPA in big industries. The small entrepreneurs must not suffer because of the fault of others. Therefore, the government will soon announce corrective measures to resolve the problems related to NPA and Stressed Account in the MSME sector.



The budget is expected to give a boost to the hopes and aspirations of 125 crore people of the country. It is expected to accelerate the development process of the country. It is farmer friendly, common man friendly, business environment friendly as well as development friendly. Ease of Doing Business as well as Ease of Living are in focus in this budget.

In order to realize the dream of modern India, to enhance Ease of Living of the common man and to ensure stability in development, India requires Next Generation Infrastructure. Special emphasis has been given to development of infrastructure related to Digital India. Allocation of Rs. 6 lakh crores has been made which is Rs. 1 lakh crore more than the previous year. These schemes will enhance employment opportunities in our country manifold. 🇮🇳

COMPACT LINE

The versatile solution
for indexable inserts



The COMPACT LINE offers maximum grinding performance in the smallest possible space. In production and/or regrinding operations, it grinds indexable inserts made of carbide, cermet, ceramic or PCB/PCD. Depending on the clamping system, the minimum inscribed circle diameter is 4 mm for the pin clamping system and 3 mm for the indexable insert clamping system.

www.walter-machines.com
www.ewag.com





Comprehensive budget

Here is how the manufacturing industry looks at the Union Budget 2018-19.

By Swati Deshpande

The Union Budget 2018-19 emphasises on various sectors including agriculture, rural development, infrastructure development, etc. It also has provision for incentivisation for the MSME sector.



BALANCED BUDGET

The Union Budget presented recently is a balanced Budget with a focus on the Agri Sector, Rural Development, Healthcare and a continued thrust on Infrastructure creation. All of these will provide significant impetus to the revival of growth and creation of employment. The Budget also addresses the opportunities to modernise and create new infrastructure in Affordable Housing, Railways, Airports which continues the effort of the last few years. These will present favourable opportunities for growth to the Indian Construction Equipment Industry. Incentivisation to the MSME sector, which forms the backbone of industrialisation of a Nation, as also job creation is another welcome step.

■ Vipin Sondhi, *Managing Director & CEO, JCB India Ltd*



BALANCED AND POSITIVE

The FM has presented a budget which is both balanced and positive. Focus on rural infrastructure, agricultural output and farmer income will help reduce the agrarian distress and boost the rural economy. Emphasis on health, education and employment generation would promote inclusive growth. Higher spending on infrastructure with a focus on airport capacity expansion and transportation especially de-bottlenecking of the railways will definitely boost steel demand as will the focus on affordable housing. We also believe that the spending on infrastructure will further help reduce the cost of doing business as it will drive greater efficiencies in logistics.

■ T V Narendran, *CEO & Managing Director, Tata Steel*



FOCUS ON INFRASTRUCTURE

The much awaited union budget presented by Finance Minister, Arun Jaitley shows immense promise for the country. The huge push given to infrastructure in the Union budget by the government is a good move. Construction of 35,000 km of highways under the Bharatmala project with highway construction to exceed 9,000 km by end FY18 and the government has also allocated Rs. 2.04 lakh crore for the Smart City Mission with 99 cities selected for development in FY19. These policy moves are set to increase employment opportunities and create demand for commercial vehicles and construction equipment. Additionally, the extension of 25 percent corporate tax benefit to organizations with turnover up to Rs.

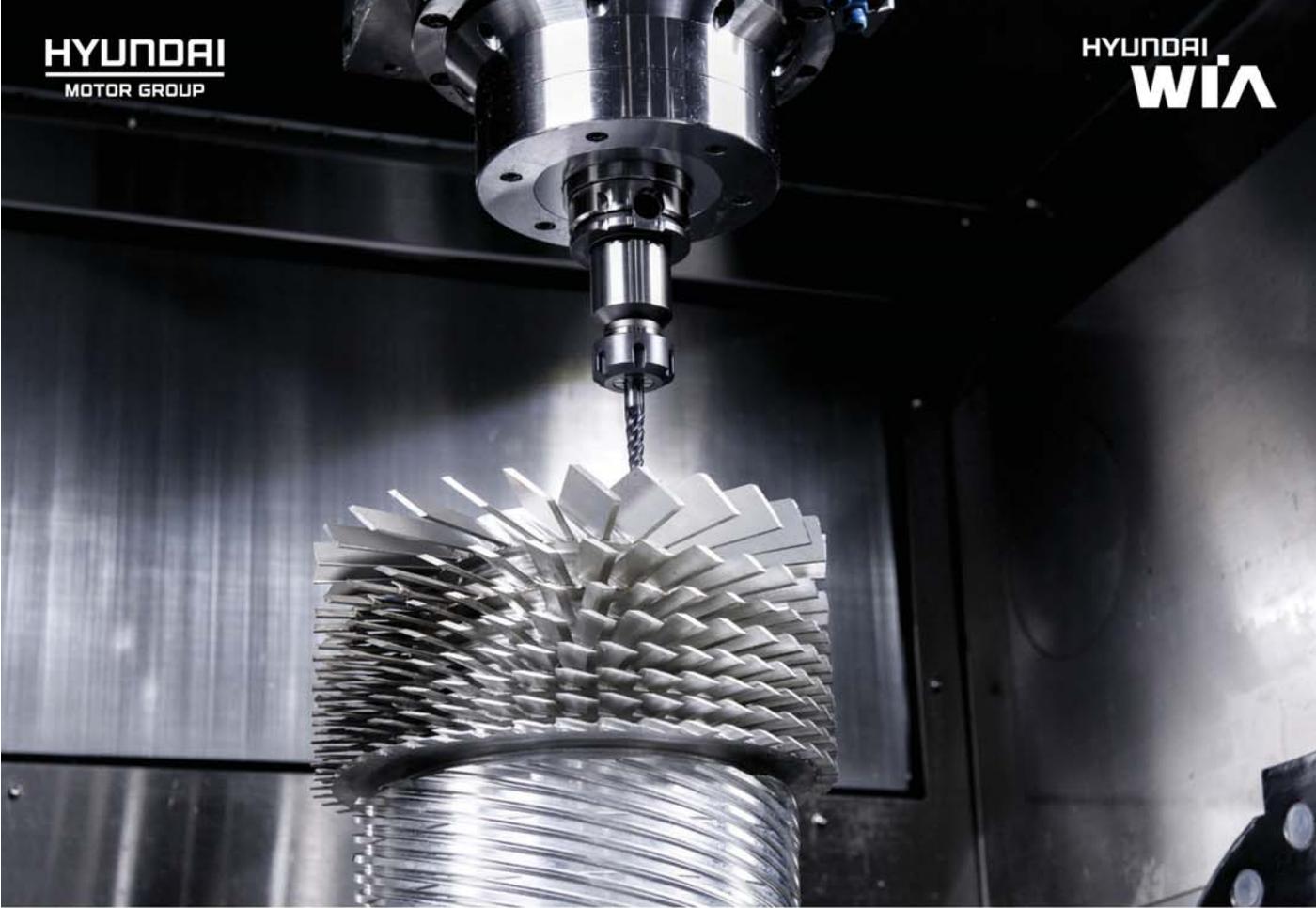
250 cr is also a welcome move. All in all, we at ZF are looking forward to this financial year as this budget gives us the motivation to continue on our path of futuristic and sustainable growth.

■ Suresh KV, *Country Head, ZF India*

COMPREHENSIVE AND WHOLISTIC BUDGET

The budget reaffirms the strategic direction of clean governance, inclusive growth and bold moves on infrastructure and disinvestment. Very comprehensive and wholistic!

■ Puneet Dalmia, *Managing Director, Dalmia Bharat Ltd*



INSPIRATION In TECHNOLOGY

- PROGRESSIVE TECH



KF5600
(Next generation VMC)

L2600SY (Robust Y-Axis Turning Center)

XF6300 (Flexible Performance & state-of-the-art 5-Axis VMC)

HYUNDAI WIA INDIA PVT. LTD.

#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
<http://www.machine.hyundai-wia.com>



BENEFIT FROM THE MSME TAX REDUCTION

The budget has introduced some interesting schemes towards agriculture and rural development. They continue to support investments in infrastructure, which will support our portable compressor range. Many of our suppliers will benefit from the MSME tax reduction and perhaps the tax reduction will encourage capital expenditure, which could in turn support our industrial compressor range. Overall, while there are no explicit manufacturing boosters, we hope that the momentum from the last quarter will sustain through 2018.

■ **Dr. Jairam Varadaraj**, *Managing Director, ELGi Equipments*



PRO PEOPLE AND PRO FARMERS BUDGET

The budget is on the expected lines since this was the last budget of the current tenure of Narendra Modi-led government. As Finance Minister mentioned this budget is pro people and pro farmers. The thrust on agriculture and health related schemes and provisions will have a trickledown effect on various other sectors too. Operation Greens which has been allocated a sum of Rs. 500 crore is a good start. However, use of cold chains and solar powered dryers could have been incentivized. Nonetheless, the emphasis on building a research driven economy through Prime Minister’s Research Fellows (PMRF) Scheme is commendable, and is a right step in the direction of building an innovation driven economy. Policies such as imposing customs duty on electronics and electrical products will boost indigenous manufacturing and fuel more employment opportunities.”

■ **Ajay Durrani**, *Managing Director, Covestro India*



THE BUDGET IS IN THE RIGHT DIRECTION

A budget is not a collection of figures. It is an expression of aspiration and the vision of a Government. In order to maintain the socio-economic balance of a country, it is very important to bring up the quality of life and the income of the lower and middle class. The budget is in the right direction to bridge this gap. The four pillars of a nation’s development - infrastructure, education, healthcare and rural economy are the major beneficiaries from this budget, signalling more job creation and spending power in the hands of the largest population which will automatically help the fifth pillar - industry by generating strong demand across business segments which is expected to boost the economy.

■ **Aditya V Agarwal**, *Director, Emami Group*

INCLUSIVE AND PROGRESSIVE BUDGET

The Union Budget 2018 is a very inclusive and progressive budget for all of us. It is indeed heartening to see that major emphasis has been laid on improvising social security, healthcare and education for everyone down the pyramid. We welcome the focus on strengthening the MSME sector in the form of capital support and interest subsidy. Investment in infrastructure would help strengthen the overall geographies of India and make it true to ease of living and doing business in the country.

■ **Rahul Garg**, *CEO & Founder, Moglix*

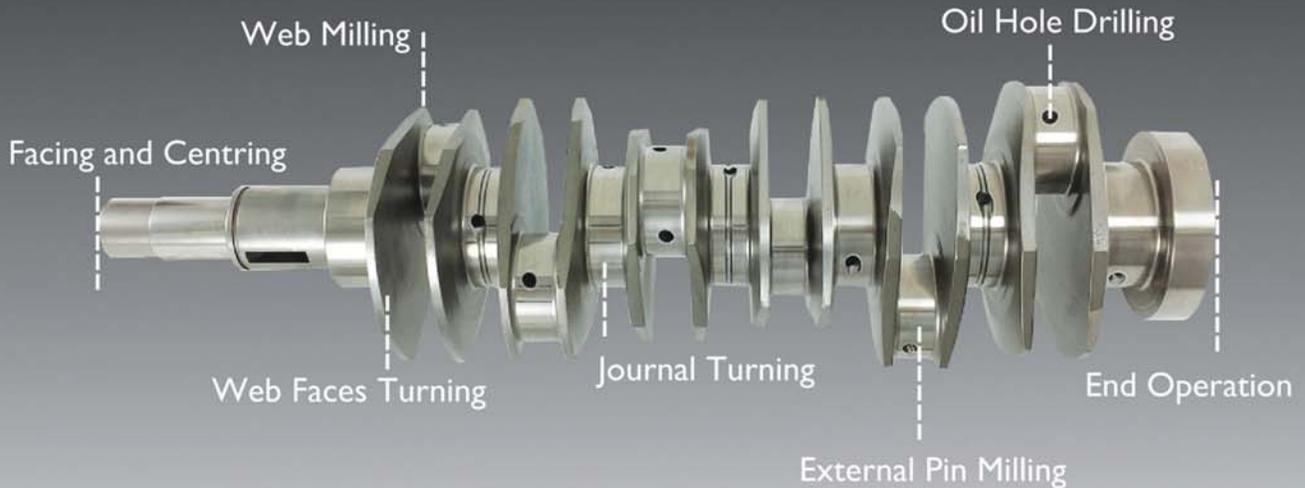
BOOST TO THE CAPITAL GOODS SEGMENT

The Union Budget 2018 is a comprehensive budget covering wide base of innovation and sustainability. The budget proposals to increase spends in Rural Areas, Agriculture, Infrastructure and major thrust on Social Sectors like Health and Education should provide a growth impetus to the Indian economy and demand generation. Major emphasis on Skill Development, Housing for all, Railway Infrastructure, Smart cities, Food processing sector, Agricultural market, Science and Technology and Textile is a welcome move that will boost the Capital Goods segment. It will be interesting to see how the financial mechanism works.

■ **Amar Kaul**, *Chairman and Managing Director, Ingersoll Rand (India) Ltd*

SOLUTION PROVIDER FOR CRANKSHAFT OPERATIONS!

BFW has supplied machining solutions for 300-3000 mm length of Crankshaft for:



Crank-shaft pin milling
Machine



Oil Hole Drilling Machine PDM 300



HMC with MQL Technique
320 MCR



**WITNESS THE CUTTING
EDGE TECHNOLOGY**

- Vertical machining centers
- Horizontal machining centers
- Vertical turning centers
- Horizontal turning centers
- Special machines
- Multi process technologies

www.bfwindia.com

Toll Free: 18004253332

BFW
Bharat Fritz Werner



ENABLER FOR MANUFACTURING GROWTH

Government of India with this budget has tried to establish harmony between demands rising from various sectors and bringing some kind of a fiscal discipline to meet the country’s economic goals in the long-term. The aim to bring down the fiscal deficit to 3.2 per cent of the country’s GDP in 2017-18 will help the country’s manufacturing growth in the long run.

■ **P. Ramadas**, *President, Indian Machine Tool Manufacturers’ Association (IMTMA) and Managing Director, Ace Manufacturing Systems Ltd (AMS)*



EMPHASIS ON INFRASTRUCTURE TO HELP THE MACHINE TOOL INDUSTRY

The reduction in corporate tax rate for MSMEs is a positive development since many of these units operate within prescribed limits. The incentives spelt out in the budget will bolster these units to enhance their production capacities.

The increase in budget outlay for infrastructure development especially for railways electrification and capacity enhancement including development of tracks is expected to step up demand for coach manufacturing. This will also create a demand for a broad range of machine tools such as special-purpose wheel lathes, light-rail transit systems, and heavy duty single and double column vertical turning and

lathes, large bridge type milling machines, horizontal lathes and special machines.

Further, the increased budget allocation for road and public infrastructure, rural infrastructure development and public healthcare will also give a fillip to these sectors and meet the aspirations of ‘Make in India’.

■ **V. Anbu**, *Director General and CEO, Indian Machine Tool Manufacturers’ Association (IMTMA)*



RIGHT FOCUS

The Union Budget, 2018, compliments government’s fiscal consolidation journey and rightly focuses on strengthening agriculture, rural development, healthcare, education, employment creation and health sector. However, there has been not much of positive stimulus for the growth of the Indian industries. Although, no new roadblock has been created either.

The Union Budget 2018 was more focused on agricultural sector and one welcome move for the Indian forging industry would be the development of the Defence corridor between Chennai and Bengaluru. Also, reduction in corporate tax from 30 percent to 25 percent for MSMEs would be a positive encouragement.

However, the industry expected relatively more attention than was actually given in the Budget.

■ **Muralishankar Sambasivam**, *President, Association of Indian Forging Industry (AIFI)*

PRACTICAL AND PROGRESSIVE BUDGET

I congratulate the FM for presenting a practical and progressive budget, covering all major economic and social segments of the country. There is a big impetus on agriculture, infrastructure and healthcare.

The FM has made a significant allocation towards developing smart cities, national highways, tunnels, railways, airports and inland waterways. This massive push in infrastructure, which is the backbone of any growing economy, will help boost economic growth and generate employment.

Three other critical announcements by the FM are noteworthy: One, a 25 percent tax rate for MSMEs, with a new threshold of Rs 250 crore, will encourage MSMEs, leading to job creation.

Second, the all-time high outlay in health, education and social protection is commendable.

Finally, the allocation towards digital innovation will help realise the PM’s Digital India vision.

Overall, it is a budget that will drive India towards economic and social prosperity!

■ **Prashant Ruia**, *Director, Essar Group*



11th DIE & MOULD INDIA INTERNATIONAL EXHIBITION

11 - 12 - 13 - 14 APRIL 2018

**Bombay Exhibition Centre,
Goregaon, Mumbai, India**

SUPPORTED BY:



EXHIBIT RANGE

- Additive Manufacturing / 3D Printing
- CAD / CAM system related to Dies & Moulds
- Coating → Cutting Tools
- CNC Milling / Machining Centre, EDM
- Digitizing → Die/mould polishing/ Die Spotting machines
- Dies & Moulds, Press Tools, Jigs, Fixture, Gauges
- Heat Treatment → Hot Runner System
- Injection Moulding Machine
- Machine Tools & Accessories for Dies Moulds
- Measuring Machines, Quality Assurance / Metrology
- Mould base & standard parts of Dies & Moulds, Toolings
- Moulding machines/ Die Casting machines, Sheet Metal Presses & ancillaries
- Precision Machining / Aerospace → Surface Treatment
- Rapid Prototyping & Tooling → Texturizing → Tool Steel
- All ancillary materials, equipments, accessories, consumables, services & automation covering Die & Mould industry

Meet the Leaders of the World Tooling Industry

See & Experience 'LIVE DEMO' to enhance Capability & Competitivity

To Visit Register Here



**Pre-Register
Online**

**Book Appointment
with exhibitor**

Supporting Partner Association



Supporting Media Partner



Organised by:



A-33, NandJyot Indl. Estate, Safed Pool, A.K. Road, Mumbai- 72
Tel: +91-22-28526876/28508976 Fax: +91-22-28503273
Email: tagma.diemould@tagmaindia.org



Year End Review- 2017: Ministry of Defence

Highlights of the steps the Ministry of Defence took to modernise its fleet and indigenisation of the equipment.

Enhancing safety and security of the country, providing humanitarian assistance and disaster relief during natural and man-made disasters, modernisation of the Armed Forces and supporting indigenisation and manufacturing of defence equipment through the Make in India initiative have been the main features of the Ministry of Defence during 2017. PM Narendra Modi dedicated the naval submarine INS Kalvari to the nation in December describing it as a prime example of Make in India.

Brahmos, the World's fastest supersonic cruise missile created history in November 2017 when it was successfully flight-tested first time from the Indian Air Force's frontline fighter aircraft Sukhoi-30MKI. The surface-to-air missile Akash was successfully launched. The first ever tri-services exercise INDIRA between India and Russia was conducted in October, 2017. The Ministry launched special campaign to celebrate Armed Forces Flag Day to honour the martyrs and the men in uniform.

Acquisitions

- **Light Combat Aircraft (Tejas).** In consonance with the 'Make in India' campaign launched by the Prime Minister, the first Squadron of Tejas, an advanced multirole aircraft with state-of-art avionics was formed on 01 Jul 16.
- **Su-30 MKI.** Induction of Su-30 MKI aircraft in the IAF is under progress. The current lot of Su-30 MKI aircraft are being manufactured in HAL through Transfer of Technology. Advanced indigenous weapons like 'BrahMos' supersonic cruise missile and 'Astra' Beyond Visual Range (BVR) missile has been indigenously integrated and fired from aircraft.
- **Rafale.** Inter Governmental Agreement (IGA) was signed with the Govt. of France for procurement of 36 Rafale aircraft. The squadrons are expected to form by 2022.
- **Hercules C-130J-30.** IAF has inducted additional six C-130J all-weather transport aircraft, which is designed for Special Operations. The aircraft has proven its worth in a



The Union Minister for Defence, Nirmala Sitharaman in front of Sukhoi 30MKI

number of HADR operations in Nepal, Bihar and J&K. The aircraft was instrumental in operations against ANEs at AF Station Pathankot and deployment of para military troops in Srinagar. IAF is enhancing the operational capability of the ac by procuring Night Vision Goggles.

- **Mi-17 V5 Helicopters.** IAF has been operating Mi-17 V5 and case for procurement of additional helicopters is in progress. Mi-17 V5 helicopter is specially designed with full glass cockpit, advanced avionics, weather radar and powerful aero engines for high altitude operations.
- **Sensor Fuzed Weapon.** IAF has procured Sensor Fuzed Weapons and associated equipment which can be utilised against concentration of tanks and other mechanized vehicles. Weapon integration has been completed in Sep 2017. Upgrades
- **MiG-29 Upgrade.** The MiG-29 aircraft are being upgraded with state-of-the-art avionics, an array of smart air to air and air to ground weapons. The addition of in-flight refuelling capability on MiG-29 upgrade has significantly increased its combat potential. The first phase of the project was Design & Development (D&D) in Russia. The Series Upgrade in second phase of the remaining aircraft is being undertaken in Nasik.
- **Advanced Light Helicopter Mk-IV.** Advance Light Helicopter has been further developed into ALH Mk-IV version. It has been transformed into armed platform by in-



Over three decades, we honed our strengths in Super Abrasives, to set bench marks for quality, performance and reliability. Catering to Customer's diverse requirements, we grew to offer a comprehensive range of Super Abrasives covering almost every conceivable application.

We harnessed our knowledge of grinding to deliver high performance, precision Grinding Machines for niche applications. Collaborating with world leaders Delapena, we developed a range of equally precise, highly dependable honing machines. . . both in vertical and horizontal versions.

Talk to us, we will provide the grinding and honing solution you are looking for.

Leaders in Total Grinding, Dressing and Honing Solutions

WENDT (INDIA) LTD.

69/70, Sipcot Industrial Complex, Hosur-635 126, Tamil Nadu.
Ph: +91-4344-276851, 276852, 276254, 405500, 405501.
Fax: +91-4344-405620, E-mail: wil@wendtindia.com

ISO 9001 | ISO 14001 | BS OHSAS 18001 | SA 8000 | TS 16949

For more information contact:
E-mail: SundariyaS@wendtindia.com
DKHotta@wendtindia.com



tegration of various modern weapons. ALH Mk-IV is armed with rockets, guns and air to air missiles for carrying out the armed role.

- **MLH Upgrade.** Contract for upgrade of Medium Lift Helicopters was signed with M/s Elbit Systems Ltd on 30 Jan 17. The upgrade will improve the Electronic Warfare (EW) and night operations capability of the fleet.
- **Restoration of Vintage Flight.** Vintage aircraft of World War-II era form an important

Brahmos, the World's fastest supersonic cruise missile created history in November 2017 when it was successfully flight-tested first time from the Indian Air Force's frontline fighter aircraft Sukhoi-30MKI.

part of Indian aviation and heritage of the IAF. One Tiger Moth and one Harvard aircraft, after restoration, are operating in IAF colours. Being an integral part of most air displays, both aircraft have enthralled audiences all over the country.

- **Procurement and Upgradation of Aeromedical Simulators.** IAF is in the process of upgrading the existing aeromedical simulators and procuring new ones to enhance the operational training of aircrew using these simulators with the ultimate aim of achieving aerospace safety. Two Ejection Procedure Simulators have been installed at 1 and 2 Aero Medical Training Centres (AMTC) and are used for training aircrew in the correct procedure and posture to be adopted before ejection from a fighter aircraft. The Software and Hardware of the Spatial Disorientation (SD) Simulators installed at IAM and 1 & 2 AMTC have been upgraded in the month of Aug 2017.
- **Software Defined Radio.** The contract for Software Defined Radio (SDR) was signed in July 2017. The SDR will be integrated on various IAF Airborne and Ground platforms, and will enhance Network Centric Warfare capability of IAF.
- **AEW&C (Indigenous) System.** The first DRDO designed and developed Airborne Early Warning & Control (AEW&C) system, aboard Embraer-145 aircraft, was inducted in the IAF in Feb 2017. The state of the art Active Electronically Scanned Array based Radar system can detect airborne objects from far off distances and provides early warning to the Air Defence Command and Control Centres. AEW&C is a huge leap by India towards achieving self-reliance in development of military capabilities.
- **Pechora & OSA-AK.** Pechora missiles are being refurbished with a fresh lease of life for 10 years. The process involves extensive technical examinations of missiles frames/components, testing, repairs and replacement of propellants,

indigenised by Ordnance factories. The equipment is planned to be digitised from the existing valve-based technology. The missiles of OSA-AK have been refurbished with the help of Bharat Dynamics Ltd, Hyderabad.

- **SPYDER LLQRMS System.** The SPYDER Low Level Quick Reaction Missile system, equipped with Python 5 and Derby missiles, has been inducted into the IAF. This system provides a comprehensive response to the saturation attacks with multiple target engagement, thus boosting the short range AD capability.
- **MRSAM.** On completion of successful Verification Firing Tests of MRSAM system by DRDO, IAF is in the process of inducting these systems. MRSAM is capable of engaging targets from extreme low altitude to high altitude and very close range to medium ranges. This extremely capable Area Air Defence weapon networked in the modern IAC-CS system of IAF would defeat all types of hostile targets, including those with extremely low RCS, even in a dense jamming environment.

Make In India

- One of the main focus areas of the IAF is to support indigenisation and manufacturing of defence equipment, thus reducing dependency on import of defence equipment. Light Combat Aircraft, Akash Missile, Advance Light Helicopters (ALH) have already been inducted, thus giving impetus to indigenisation. Further, IAF plans to induct more capable and potent LCA Mk-IA in the future. IAF is also actively supporting DoD of LCH, RPAs, Medium Power Radars, Low Level Tracking Radars and other systems. IAF is also closely coordinating with DRDO for development of various types of state-of-the-art weapons.
- Modernisation plan is being pursued to beef up the defence manufacturing base and the eco system. IAF has already identified series of defence equipment that can be manufactured under 'Make' category. MoD has been striving to include the private sector in production of defence equipment. Various projects under 'Strategic Partner' model will give impetus to 'Make in India' initiative. This will not only generate employment, enhance skill level but also assist in harnessing key technologies for growth of aerospace sector in the country. 

Source: PIB

Win More Business.



There will soon be two types of suppliers: those who embrace digital manufacturing and those who don't. Customers today demand perfect parts, delivered on time and at a competitive price. At Micro-Mechanics, not a single line of NC code ever goes to a machine without being simulated in VERICUT. If you are serious about digital manufacturing, you must use VERICUT!

Chris Borch, CEO, Micro-Mechanics, Inc. – Morgan Hill, CA

Learn how VERICUT can help at cgtech.com/win

Right the first time. Every time. ■ Bangalore, India ■ Phone: 080 23 18 69 81 ■ info.india@cgtech.com

VERICUT®

CGTECH.com



Challenges before the Indian manufacturing industry in 2018

India needs to adopt the latest digital technologies to unlock its potential as a global competitor.

By V Ramnath

Since the launch of the 'Make in India' campaign in 2014, the government has been focusing on improving the global competitiveness of the Indian manufacturing industry. According to the World Economic Forum (WEF), India is currently at the 30th position on the global manufacturing index much ahead of other BRICS nations like Brazil, Russia and South Africa except for China which is at the 5th spot. India has been placed in the 'Legacy' group alongside Hungary, Mexico, Philippines, Russia, Thailand and Turkey, among others. While a number of factors like strong domestic demand, young population, growing middle class and high return on investment (ROI) have made India a lucrative investment destination for manufacturers, the 'Make In India' campaign has emerged as a unifying factor to augment the economic growth of the country.

Despite this growth, the Indian manufacturing sector is yet to achieve a sustainable future. This sector currently accounts for just 16-20 percent of the country's gross domestic product (GDP). Factors that are impacting its growth and competitiveness include inadequate infrastructure, skill gap, unavailability of adequate raw material, pressure for increased wages, among others. Under such circumstances, it is essential for central and state governments, industry leaders, academic, research and financial institutions to make joint efforts to leverage the digital manufacturing revolution so as to emerge as a

Despite this growth, the Indian manufacturing sector is yet to achieve a sustainable future. This sector currently accounts for just 16-20 percent of the country's gross domestic product (GDP).

At present, India needs to have a policy that will incentivize adoption of digital technology so as to develop the required digital ecosystem. The manufacturing industry in India has shown resilience and is confident about its growth prospects amidst these challenges.

strong global competitor.

Today, digital technologies are the key to unlocking global competitiveness. The rapid technological advancements are changing the manufacturing landscape worldwide. A growing number of traditional manufacturing leaders are increasing their investment in these technologies to get back into competition. However, adoption of digital technologies in India is still in its infancy and the country needs to embrace them in order to become a global manufacturing hub. India has a number of factors in its favour to propel itself to the top; this includes a large skilled workforce, qualified scientists and engineers, adequate research and development centers, the world's third largest technology start-up base and a government focus on making the nation an easy place to do business.

At present, India needs to have a policy that will incentivize adoption of digital technology so as to develop the required digital ecosystem. The manufacturing industry in India has shown resilience and is confident about its growth prospects amidst these challenges. The government, on its part, is determined to support the industry by undertaking policy reforms such as GST and enhancing public spending through infrastructure projects. 

The author is the Managing Director, Ariston Thermo India Pvt Ltd, India and South Asia





GATI-KWE WAREHOUSING SOLUTIONS. 3 MILLION+ SQ.FT. OF TECH-ENABLED WAREHOUSING, TO KEEP YOUR BUSINESS GROWING.

It takes state-of-the-art warehousing solutions to keep your business running like a well-oiled machine. Customised to your needs, our advanced warehouses come with warehouse management technology, Shop Floor Automation, world-class Material Handling Equipment, sophisticated racking systems, and conveyor belts. All of it integrated seamlessly with our pan-India express distribution network. Simply put, what you get is time- and cost-efficiency, improved order fulfilment, and constant traceability. Couple it with value-added services like freight forwarding, customs clearance, inventory management, import/export management, packaging and labelling, distribution, assembly/installation, after sales support, and reverse logistics, and you've got everything your business needs, under one roof.

So choose GATI-KWE Warehousing. And access customised solutions that help your business run smoother.



Value-added services



3.3 Mn+ sq.ft. WH capacity and fulfilment centres



100+ large format hubs across India



Customised solutions for multiple industries



Cost-effective, dedicated, and shared space



Best-in-class Warehouse Management System



Integrated warehousing and distribution



Unlock the GST advantage



Scan to know more

Gati Limited, Kondapur, HITEC City, Hyderabad – 500084 | businessenquiry@gati.com | www.gati.com | www.gatikwe.com | Call: 1860-123-4284

Cold Chain Solutions | Fulfilment Services | e-Commerce Logistics | Express Distribution | Freight Forwarding | Trading Solutions



Real growth!

A series of major reforms undertaken over the past year will allow real GDP growth to reach 6.75 percent this fiscal and will rise to 7.0 to 7.5 percent in 2018-19, according to the Economic Survey 2017-18.

A series of major reforms undertaken over the past year will allow real GDP growth to reach 6.75 percent this fiscal and will rise to 7.0 to 7.5 percent

in 2018-19, thereby re-instating India as the world's fastest growing major economy. This was stated in the Economic Survey 2017-18 tabled in Parliament recently by the Union Minister for Finance and Corporate Affairs, Arun Jaitley. It said that the reform measures undertaken in 2017-18 can be strengthened further in 2018-19.

The survey underlines that due to the launch of transformational Goods and Services Tax (GST) reform on July 1, 2017, resolution of the long-festering Twin Balance Sheet (TBS) problem by sending the major stressed companies for resolution under the new Indian Bankruptcy Code, implementing a major recapitalization package to strengthen the public sector banks, further liberalization of FDI and the export uplift from the global recovery, the economy began to accelerate in the second half of the year and can clock 6.75 percent growth this year.

The survey points out that as per the quarterly estimates; there was a reversal of the declining trend of GDP growth in the second quarter of 2017-18, led by the industry sector. The Gross Value Added (GVA) at constant basic prices is expected to grow at the rate of 6.1 per cent in 2017-18 as

The survey points out that as per the quarterly estimates; there was a reversal of the declining trend of GDP growth in the second quarter of 2017-18, led by the industry sector. The Gross Value Added (GVA) at constant basic prices is expected to grow at the rate of 6.1 per cent in 2017-18 as compared to 6.6 per cent in 2016-17.



compared to 6.6 per cent in 2016-17. Similarly, Agriculture, industry and services sectors are expected to grow at the rate of 2.1 per cent, 4.4 per cent, and 8.3 per cent respectively in 2017-18. The survey adds that after remaining in negative territory for a couple of years, growth of exports rebounded into positive one during 2016-17 and expected to grow faster in 2017-18. However, due to higher expected increase in imports, net exports of goods and services are slated to decline in 2017-18. Similarly, despite the robust economic growth, the savings and investment as a ratio of GDP generally declined. The major reduction in investment rate occurred in 2013-14, although it declined in 2015-16 too. Within this the share of household sector declined, while that of private corporate sector increased.

GST has given a new perceptiveness of the Indian economy and new data has emerged. There has been a fifty percent increase in the number of indirect taxpayers. There has also been a large increase in voluntary registrations, especially by small enterprises that buy from large enterprises wanting to avail themselves of input tax credits.

The Survey also stated that fears of major producing states that the shift to the new system would undermine their tax collections have been allayed as the distribution of the GST base among the states got closely linked to the size of their economies.

For the first time in India's history, data on the international exports of states has been dwelt in the Economic Survey. Such data indicates a strong correlation between export performance and states' standard of living. States that export internationally and trade with other states were found to be richer. Such correlation is stronger between prosperity and international trade. 



VIPER ULTRA

SMALL WHEEL BIG BITE

sales-metalprecision@tyrolit.co.in | www.tyrolit.com

A Company within the SWAROVSKI Group

TYROLIT



Reaching a milestone

Chinese construction equipment major LiuGong recently celebrated 15 Years of business operations in India and the tenth anniversary of its India Plant. The Machinist caught up with the Company's top management on the occasion.

LiuGong India, a subsidiary of Guangxi LiuGong Machinery—one of the world's largest manufacturers of wheel loaders has recently completed its 15 years business in India. "We are committed to embrace the 'Make in India' campaign with our initiatives and new offerings for the Indian market, Our machines are designed to meet any challenge, any day," said Huang Haibo, President, Guangxi LiuGong Machinery Co., Ltd. This celebration was also part of LiuGong's 60th Anniversary global tour which was announced last November.

Wu Song, Managing Director, LiuGong India said on the occasion, "It has been an incredible journey and we are proud to celebrate memories, experiences and our successes. We express our gratitude to all our patrons for their continuous support and commitment which has helped us develop and evolve as market leaders in the construction equipment sector."

"LiuGong believes in the Make in India initiative and we are contributing to it significantly in our field. To embrace the 'Make in India' campaign and generate better local employment opportunities, an additional investment of US\$ five million, has been invested to enhance the production capacity at our India factory in Pithampur. The Company's manpower

"To embrace the 'Make in India' campaign and generate better local employment opportunities, an additional investment of \$5 million, has been invested to enhance the production capacity at our factory in Pithampur."

Huang Haibo, President, Guangxi LiuGong Machinery Co., Ltd.

is likely to increase by 40 percent over the next 2-3 years; generating more manpower from Indian to support the motto of 'Skill India Mission'," said Haibo.

Haibo also said that the India market is very important for LiuGong and that the company remains committed and focused on this market. "Our investments so far and our focus on training and skill development show our commitment to the India market. We will also be looking at increasing the localisation in our products gradually."

The foundation of Pithampur manufacturing plant was laid in 2008 and the first made in India machine rolled out of the plant in 2009. The premises cover more than forty-four acres of land and has the capacity to manufacture 3,000 units of wheel loaders and motor graders annually. Besides manufacturing, the Pithampur facility also houses R&D and train-



Wu Song, MD, LiuGong India; Huang Haibo, President, Guangxi LiuGong Machinery Co., Ltd. & Nischal Mehrotra, Director Sales & Marketing, LiuGong India.

ing centers. The current product line of LiuGong India, which is quite comprehensive, includes wheel loaders, construction vehicles, motor graders, excavators and compactors. LiuGong India has been regularly launching new products from its India plant to meet the growing needs of the Indian construction and infrastructure industry.

Besides addressing the needs of the Indian market, LiuGong India also caters to the neighbouring countries like Nepal, Bhutan, Bangladesh and Sri Lanka. It has spare parts warehouses in Chennai and Indore.

With nearly six decades of operations, LiuGong Machinery Corporation has been a global presence in more than 100 countries with 20 manufacturing plants and nine subsidiaries worldwide.

"LiuGong India's machines are designed and tested to operate in the toughest conditions. The machines made in India are well tested for the local conditions. World class components are used in the equipment including engines, transmission axle, cylinders and control valves; from renowned manufacturers like Cummins, ZF & Kawasaki. LiuGong machines adopt proven technologies to thrive in the most rigorous conditions of India, making them - highly efficient, durable, simple to run, easy to service and cost-efficient," shared Song. 

**HYDRAULIC
 PRESSES**



**MECHANICAL
 PRESSES**



**SPECIAL
 PURPOSE
 MACHINES**



HIND HYDRAULICS & ENGINEERS

Prop. Hind Fluid Power Pvt. Ltd.

Works and Sales Office:

Plot No. 13, Sector - 24, Faridabad - 121 005, Haryana (India)

Tel.: +91-129-418 7777, Fax: +91-129-2234294

Email: hind@hindpress.co.in, sales@hindpress.co.in

Regd. Office: E43/1, Okhla Industrial Area,
 Phase - II, New Delhi - 110020





IMTEX FORMING 2018 paves way for technological advancements

The machine tools industry showcases its technological prowess at the event.

IMTEX FORMING 2018 & Tooltech 2018 organised by Indian Machine Tool Manufacturers' Association (IMTMA) held at Bangalore International Exhibition Centre, Bengaluru from January 25–30, 2018, which was the largest in the series, concluded on a positive note. The exhibition size grew by 18 per cent and showcased future technologies which could be vital for enhancing productivity for Indian manufacturing industry.

Exhibitors displayed wide range of high-end presses, laser cutting machines, and technologies related to bending and tube drawing. Advanced technologies such as Industry 4.0 and Internet of Things were also displayed by many exhibitors. Automation, robotics, sensors, CAD/CAM and tools that were more related to support the metal forming user industries were also displayed.

International associations from Germany, Italy, Japan, Taiwan, UK and USA also participated in the exhibition.

Parallel events also recorded good visitor turnouts.

Over 350 participants from 130 companies participated in the International Seminar on Forming Technology held on 24th January 2018 at BIEC, Bengaluru.

Researchers from 44 institutions presented their R&D projects. The best research projects were awarded. Marathwada Institute of Technology won the first prize. PDPM IIT DM won the second prize and Indian Institute of Technology Bombay won the third prize. Companies entered into tie-ups with some of these institutions to use their research for commercial purposes.

Twenty-one delegates from seven countries took part in the International Buyer-Seller Meet held from January 27–28, 2018.

More than 2000 students from over 50 institutions took part in 'i-Connect' to enrich themselves with opportunities in store for them in the manufacturing sector.



Delegations from public and private sectors representing user industries such as auto components, aerospace, defence, railways, electrical and electronics, plastic machinery, white and brown goods, medical engineering, and others took part in the show.

Speaking about the significance of IMTEX FORMING 2018 on the small and medium enterprises (SMEs), IMTMA President P. Ramadas said, "Indian manufacturing landscape has a significant number of SMEs. The exhibition was important for fulfilling their aspirations and goals. The SMEs were able to leverage opportunities which would enable them rise a notch higher. The presence of decision making authorities from original equipment manufacturers (OEM) resulted in securing well qualified leads and accelerated the sales process at the show. The show generated overwhelming response from SMEs engaged in manufacturing of vices, presses, manufacture of parts such as wheels and castors, measuring, welding and material handling solutions, and so on."

Reflecting on the potential of the show, IMTMA Director General & CEO, V. Anbu added, "IMTEX FORMING 2018 was the largest in the series in terms of exhibition area as well as exhibitors. There has been a significant increase in the number of business visitors which affirmed the immense potential of business opportunities that the exhibition had in store for the manufacturing industry. The show will further strengthen the bonds between machine tool manufacturers and customers and we hope the leads generated during the show will result in good business outcome."

IMTEX FORMING 2018 served to open up the way for development of Indian metal forming sector by acting as an enabler to forging long-term business relationships which could lead to the growth of the country's economy. 

Highlights

Total **504** exhibitors.

292 Indian exhibitors and **212** foreign exhibitors.

Over **500** live machines.

Business orders worth **Rs.539 Cr** generated.

Business enquiries worth **Rs.4819 Cr** obtained.

Footfall of **36,000** visitors.

Participation from **23** countries including India.



DOSATRON®

Because life is powered by water®



METAL PROCESSING INDUSTRY



Water powered dosing technology for :

CUTTING OIL

DIE CASTING

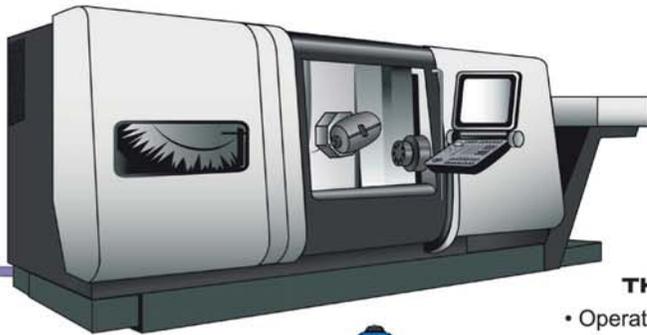
PART DEGREASING AND CLEANING

VIBRO ABRASION

SURFACE TREATMENT

WATER JET CUTTING (polymer injection)

VULCANISATION



D3RE10 • 3 m³/h • 1 - 10 %

Injection rate: 1 to 10 % (1:100 to 1:10)	Dosage réglable: 1 à 10 % (1:100 à 1:10)
Operating flow: 10 l/h to 3 m ³ /h	Débit pratique de fonctionnement: 10 l/h à 3 m ³ /h
Operating pressure: 0.5 to 6 bar	Pression de fonctionnement: 0.5 à 6 bar
Concentrated additive injection: 0.1 to 300 l/h	Débit d'injection du produit concentré: 0.1 à 300 l/h
Maximum temperature: 40°C	Température maximum: 40°C

THE MANUFACTURER declares its responsibility in case of use not conforming with the company's manual. LE FABRICANT déclare sa responsabilité en cas d'utilisation non conforme au manuel d'utilisation.

DOSATRON INTERNATIONAL S.A.
Avenue de la République, 11111 - FRANCE
Tél. 33 (0)5 57 97 11 11 - Fax. 33 (0)5 57 97 11 29
e-mail: info@dosatron.com - Web: www.dosatron.com

D3RE 10 THE PISTON TECHNOLOGY

- Operates with water pressure - Non-Electric
 - Precision and accuracy not affected by water flow and pressure variations
 - Excellent dosing repeatability and final solution homogeneity
 - Highly suitable for viscous additives
 - Self-priming
- Low operating and maintenance costs
 - High chemical resistance



For more information, please contact us at

Tél: **33(0)5 57 97 11 11**

mail: **info@dosatron.com**

www.dosatron.com

mobile: **98805 25397**

email: **kaushik.shetty@dosatron.com**





EVENT

Bigger, better & grander!



Plastivision India, one of the premier shows in the plastics industry, is slated to be bigger, better and grander than the previous edition, says **Rituraj Gupta**, Chairman, Plastivision India 2020

By **Niranjan Mudholkar**

Q What will be the key highlights of the 11th Plastivision 2020 with regards to the vital statistics of an event like this?

Plastivision India is one of the premier shows in the plastics industry. With reference to the highlights, the 11th Edition is slated to be bigger, better and grander than the previous edition. We are geared up to have 1500 exhibitors from 25 different countries to be participating this year on an exhibition area of 1,00,000 sq. meters. The business transaction is estimated to be in excess of Rs.2,000 Crore.

Q What are the various business benefits that a company will get by exhibiting at Plastivision India 2020?

Exhibiting in Plastivision India has manifold benefits; it offers opportunities in show casing of new technologies in processing, raw materials and development. It also provides opportunities for joint ventures, collaborations, technology transfers and R&D opportunities with research institutes in India and overseas. This shall enable the exhibitor to interact with the best in the business, exchange knowledge in the arena of plas-

“Plastivision also provides opportunities for joint ventures, collaborations, technology transfers and R&D opportunities with research institutes in India and overseas.”

“We are geared up to have 1500 exhibitors from 25 different countries to be participating this year on an exhibition area of 1,00,000 sq. meters. The business transaction is estimated to be in excess of Rs.2,000 Crore.”

tics. Translating all of this into an increase in business revenue.

Q Why have you chosen Mumbai as the location for the exhibition once again?

Mumbai being the commercial capital of the country is once again chosen as our preferred location. It is home to several plastics MNCs and various SMEs & MSMEs and is not only well connected by air, road and rail with every state within the country but also has great connectivity with major cities internationally. The city of Mumbai offers world class hospitality through its wide range of hotels to accommodate various strata of our exhibitors and visitors at most affordable prices.

Q Please tell us about the concurrent activities like conferences, workshops and industry-academia collaborations that will be conducted at Plastivision India 2020.

Plastivision India events always have a lot of activities which run concurrently during the five-day event. There are focussed pavilions which are an important platform in their own right. To name a few, Plastics in Infrastructure, Automation & Robotics in Plastics, Indiamold, Plastics in agriculture, Medical plastics, Printing & packaging, Green pavilion, Finished products, Job & career fair and Consultant Clinic.

Plastics in Infrastructure, Automation & Robotics in Plastics, Indiamold, Plastics in agriculture, Medical plastics, Printing & packaging, Green pavilion, Finished products, Job & career fair and Consultant Clinic.

Apart from the specialised pavilions there would be conferences and seminars scheduled on various topics by eminent speakers and veterans from the plastics industry.



Inside the exhibition hall: Plastivision sees huge number of quality visitors

Control Cabinet Technology at its **best**

Component Terminal
Blocks

Switch Mode
Power Supply (SMPS)

PLC

Inline Remote I/Os

Slim Solid State &
Electromechanical Relays

Safety Relays

Current &
Voltage Transducer

Timer Relays

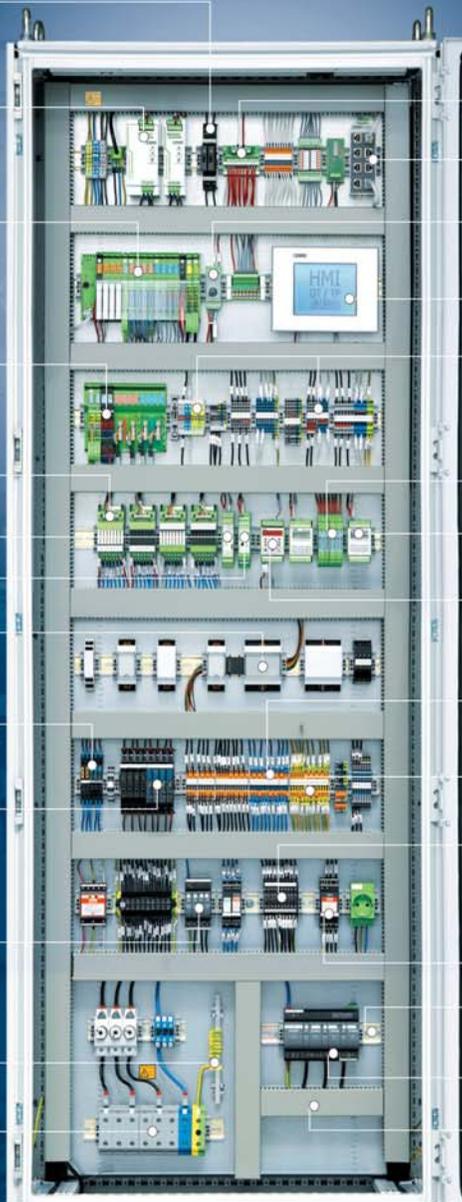
Signal Line Surge
Protection Devices

Electromechanical &
Electronic DC MCBs

Class C
(Surge Protection Devices)

N-PE Terminal Blocks
Bus bar type

High Current
Terminal Blocks



Varioface Cabling
& Relay Modules

Ethernet Switch

Industrial grade
Modem

HMI

Screw and Spring
Terminal Blocks

Mini Analog Converters

RTD/Thermocouple
Transducers

Frequency
Transducer

Push-in
Terminal Blocks

Terminals and
Wire Marking

Fuse Terminal
Blocks

Class D Surge
Protection Devices

Din Rail

Class B Surge
Protection Devices

Cable Duct

Components as diverse as your applications!

Phoenix Contact product range offers a wide range of Modular Terminal Blocks with complete Marking and Installation solutions catering to all forms of industrial connections. Innovative power supplies (SMPS), MCR signal converters, fiber optic converters and safety relays fulfill all the requirements for signal conditioning. Our industrial grade modern Ethernet components and Remote I/Os provide complete network solutions. Surge Protection Modules ensure all necessary protection for power, signal and data lines.

Together with customers, we are constantly discovering innovative solutions for enhancing the efficiency, space saving and increasing safety and reliability of control systems.

Visit us at
ELECRAMA 2018
10 - 14 March 2018
Hall no. H3, Stall no. H3A1
at INDIA Expo Mart,
Greater Noida.

**PHOENIX
CONTACT**
INSPIRING INNOVATIONS

HEAD OFFICE

Phoenix Contact (India) Pvt. Ltd.
F-26/2, Okhla Industrial Area, Phase-II
New Delhi - 110 020 INDIA
Tel.: +91-11-30262700/800
Fax: +91-11-41611070/71
E-mail: response@phoenixcontact.co.in
Website: www.phoenixcontact.co.in

SOUTHERN INDIA OFFICE

No. 10/7 - 8, 2nd Floor
Umiya Landmark, Lavelle Road,
Bangalore - 560001
Tel.: +91-80-33235400

WESTERN INDIA OFFICES

30, Shaswat Bungalow, 1st Floor
Ceaser Road, Amboli
Andheri [W], Mumbai - 400 058
Tel.: +91-22-31901500 / 2772 / 3334

5th Floor, Devi House
37, Shivaji Nagar Pune - 411005
Tel.: +91-20-30581224-33
Fax: +91-20-30523637



Is your shopfloor super?

It's that time of the year again! Of course, we are talking about The Machinist Super Shopfloor Awards and we are sure you are waiting for nominations to be opened.

So here they are.

The nominations process for The Machinist Super Shopfloor Awards has started. You can log on to <http://supershopfloorawards.themachinist.in/> to get the nomination form.

The process and categories remain more or less the same. The nominations for The Machinist Super Shopfloor Awards have been invited in 10 categories including Productivity, Safety, Machining Excellence, Innovation, Quality, Digital Manufacturing, Green Manufacturing, Supply Chain, CSR and Human Resource.

We are sure you have lot of award worthy developments in



these areas to be shared with us.

Also, the companies that send nominations in more than three categories qualify for Super Shopfloor of the Year.

Wishing you all the best!

About The Machinist Super Shopfloor Awards

The awards platform was conceptualised in 2015 with the aim of rewarding and appreciating plants that have achieved greater heights in various areas. In

Nomination process

1. Log on to <http://supershopfloorawards.themachinist.in/>
2. Download the nomination form
3. Fill requisite details
4. Send the hard copy to:

Ms Fiona Fernandes
'The Machinist Super Shopfloor Awards 2018'
Times Strategic Solutions Ltd.
1st floor, Vakratunda Corporate Park,
Vishweshwar Nagar, CTS No 256, Off Aarey Road,
Near Udipi Vihar, Goregaon East - 400063
Tel: +91 9768584005



Super Shopfloor Awards is a celebration of excellent craftsmanship. I believe engineers are craftsmen. I am glad that Ace Micromatic Group is associated with this event that celebrates true spirit of the manufacturing sector in the most glamorous way. The manufacturing industry works hard and obviously deserves a glamorous red carpet evening.

TK Ramesh, CEO, Micromatic Machine Tools Pvt Ltd.

2015, we created history by establishing an awards platform for the manufacturing industry. This gave the industry recognition for its efforts towards excellence. In 2016, we added glamour to it, by making it one and only red-carpet ceremony for the manufacturing industry. Not to forget, it was also aired on a leading business channel.



shaping your dreams

The Tooling Master Class

Innovations for shaping the future of global manufacturing



OSG (INDIA) PRIVATE LIMITED

Sector 8, Plot No. 6, IMT Manesar, Gurgaon,
Haryana 122050 India

Tel: +91 124 400 9737/41

E-mail : sales@osg-india.com





New avatar!

Maulik Patel, Executive Director, Sahajanand Laser Technology Ltd (SLTL) talks to The Machinist about the company's new avatar.

By Niranjan Mudholkar

Q SLTL has presented its new avatar. Please tell us about it.

It's been 30 years since Dr. Arvind Patel established the company. Initially, it has been a laser technology company that catered to diamond processing and then industrial lasers. Now, our range of products and its applications have grown. We offer medical lasers, radio frequency and microwave, etc. We also have expanded into renewable energy. It is not a laser company anymore but we have diversified into diamond processing machines, sheet metal processing machines, storage solutions, etc. In this scenario, we had to take this new approach. And hence, we have adapted a new avatar.



What's your view on this?

Whenever there is a change, initially it is weird then its messy and later people start embracing it. That's what has happened with the Indian manufacturing industry. Earlier there was demonetisation, and then it was impacted with GST implementation. But then the industry embraced these changes and hence started growing. Hence, we are witnessing the revival of the industry since last few months.

Q There is been a talk about revival of Indian manufacturing industry especially in last two quarters.

Q Tell us about your new products at IMTEX.

We showcased couple of new machines at IMTEX 2018. One of them is the very high speed vector machine, which is equipped with 4kW. Also, we displayed split laser machine. Another introduction for the event is pulse laser welding machine.

Innovating processes

Mohini Kelkar, Managing Director, Grind Master Machines Pvt. Ltd. speaks to The Machinist about new developments in the company and latest trends.

By Niranjan Mudholkar

Q Demand for automation solutions seem to be growing in India. What is your observation in this regard?

In the automation space, the robotics automation has been growing with faster pace mainly because it caters to diverse industries. For us foundry automation is picking up very well. Demand for quality further boosts demand for robotics. As automation has given excellent results in the foundry areas, it is preferred in this sector. Automotive is another area where demand for automation has increased. As the export of auto components grows, demand for consistent quality also is also increasing and it has catalyst effect on demand for automation solutions.



Holland. MJC's core competency is in flow forming technology, which is used for lightweighting the aero parts. This technology also has relevance in the automotive sector. On the other hand, Timesavers expertises in deburring. In the aerospace segment, quality of deburring is crucial and hence, this partnership helps us extend our business in this sector.

Q Grind Master has forged new partnerships recently. Can you please tell us about it?

For catering to the aerospace sector, we have collaboration with couple of companies - MJC Engineering, USA and Timesavers,

Q The company won an award recently for innovation. Can you please tell us about it?

Last year we won CII Innovation Award. We are continuously improving the processes. Uniqueness of Grind Master lies in innovating the processes. Processes for manufacturing the part in a better way has been our mission all way through. So we work on new processes and develop machines accordingly. We are also working on Industry 4.0 and have developed an indigenous system that provides accurate data. R&D in deburring also remains our core area and we are working on innovating deburring processes.

FIND THE PROBLEM...

BEFORE THE PROBLEM FINDS YOU.

- Thermal Cameras
- Clamp Meters
- Multimeters
- Non-Contact Voltage Detector
- Moisture Meters
- Flex Clamps

The Original
IGM™
INFRARED GUIDED MEASUREMENT



Images for illustrative purposes only.

For more details call us on: +91-11-4560 3555 or write to us at flirindia@flir.com.hk

FLIR Systems India Pvt. Ltd.
1111, D Mall, Netaji Subhash Place, Pitampura, New Delhi - 110034 | Fax: +91-11-4721 2006

WWW.FLIR.IN





Democratising metal cutting!

Siddhu Jolad, Director, Radcam Technologies Pvt Ltd, says the company has brought new products that are going to change a lot of things in the tool rooms.

By Niranjan Mudholkar

Q How is 2018 looking for RadCAM, which is not just a software company but also a consultancy company?

On a bigger note, we would like to call ourselves a technology company. RadCAM Technologies has a multiple product line so that a mechanical engineering company or an engineering services company can have a single source of supply and support. Today, India is in the focus. Hence, we have started doing campus drives and we are also increasing manpower. We are looking for more partnerships this year and in fact, we have already signed up with a few companies from US to Europe. So, 2018 is looking quite good for us.



American company with certain technologies related to tool making and mold making. These products were present in the Indian market for a while and then they disappeared. Now, that we have set up a good market for our product Radan which has started well, we would like to do the same with other products. I am confident that we will be able to do justice to these wonderful products.

These products are going to change a lot of things in the tool rooms. That is what sheet metal software did a few years ago. If a guy takes five days to design a mould, what if I give him a tool that can do the same job in five to six hours! So, this will be a gamechanger. Well, there are a couple of other products in the market who can also do the job in the same time, but they are priced exorbitantly. So, we want to democratise metal cutting technology. 

Q Tell us about RadCAM's new partnership.

RadCAM is now also associated with the 3DS. This is an

The new benchmark

Zeiss launched a new digital optical 3D sensor at Imtex 2018. The Machinist caught up with **Dr. Jochen Peter**, Member of the Executive Board of the ZEISS Group and President & CEO, Carl Zeiss Industrielle Messtechnik GmbH, to know more about it.

Q What are the various technical applications of AIMax?

This digital optical 3D sensor is the new benchmark in robot-based 3D in-line metrology in the fields of sheet metal processing and car body construction. It is useful for various applications like inspection of assembly and welding processes as well as in inline measuring technology in car body construction, metalworking and structural parts. It can be used for gap and flush measurement in the body-in-white and final assembly as well as for location recognition and positioning (parts, car bodies). It also provides robot-based coordinate measuring technology.



ognition. It provides the following benefits:

- Unique combination of three measuring principles in one sensor for gray scale image processing, multi-line triangulation and shadow analysis
 - Digital (GigE) camera technology with signal lines up to 100 m
 - High resolution for increased measuring accuracy
 - Fastest measuring speed for characteristic analysis
 - Flexible illumination control for optimal illumination like individually switchable segment illumination & combinations to generate ideal contrast of difficult-to-measure features
- Optimised sensor design for the measurement of features with an inclined sensor (not Normal-to-Metal)
- Attributive feature recognition for data matrix codes, existence checks, type identification and visibly recognizable process errors. 

Q What benefits will its users get?

The unique combination of three measuring principles in one compact sensor enables the measurement of complex geometric characteristics such as holes, bolts, and gap and flush with maximum robustness, as well as attributive characteristic rec-

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

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



Hyundai's success story across the world. It has received over 30,000 bookings and 2,00,000 enquiries in India and over 10,500 Units of export order from global markets. It has been the most awarded car of 2017 winning 10 awards including the prestigious "Indian Car of the Year 2018".

Hyundai India launches new version of VERNA

Hundai Motor India Ltd (HMIL) has introduced two new variants with 1.4 L New Kappa Dual VTVT petrol engine in the Next Gen VERNA. Launched in August 2017, the Next Gen VERNA has become a trend-setter in the Indian market and heralded a new chapter in

Commenting on the new engine introduction Rakesh Srivastava, Director-Sales & Marketing, HMIL said, "The Next Gen VERNA is a super sedan and has established its supremacy in the market since its launch in August 2017. The Next Gen VERNA with 1.4 L Kappa Dual VTVT petrol engine is the perfect combination of performance and fuel efficiency and showcases Hyundai's commitment to provide products based on customers aspirations. We are sure this addition will strengthen VERNA's popularity and offer the customers a wider option to own and experience the super sedan."

DENSO develops a new vision sensor

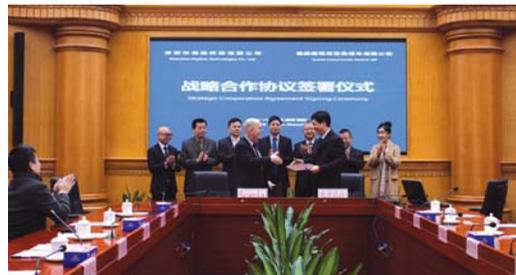
Denso Corporation has developed a new standard vision sensor that detects pedestrians at night, cyclists, road signs, driving lanes and other road users. Working in conjunction with a millimeter-wave radar sensor, the new vision sensor allows automobiles to automatically activate emergency braking when obstacles are identified, helping reduce accidents and improve overall vehicle safety. It is featured in the 2018 Toyota Alphard and Vellfire, which were released in January this year.

The new sensor illustrates how DENSO supports the widespread adoption of safety technologies that will play a critical role in the advancement of future mobility. It improves night vision by using a unique lens specifically



designed for low-light use, and a solid-state imaging device with higher sensitivity. These innovations help the sensor better identify other road users and different-shaped road signs, such as triangular, rectangular, and octagonal signs used in Japan, Europe, and the United States. An improved white-line detection algorithm and road-edge detection algorithm also broaden the operating range of lane-keeping assistance and lane departure alert functions, while a 40 percent size reduction from previous models reduces costs and makes installation easier.

Scania, Haylion Technologies to join hands



Scania plans to collaborate with Haylion Technologies, which focuses on solutions for the Chinese transport industry in the areas of autonomous driving, electrification and connectivity.

"For Scania, this partnership provides unique opportunities to contribute to as well as to learn from the rapid technology development now taking place in China in these strategic areas. We look forward to combining our knowledge and global perspective with the expertise and ambitions of Haylion Technologies," says Mats Harborn, Executive Director of Scania China Strategic Office.

Scania and Haylion Technologies will join forces in the field of non-fossil fuel powered, mainly electrified, vehicles, autonomous driving and urban bus transport. The common aim is to expedite the commercialisation of autonomous driving applications and sustainable transport.

"Gaining excellence in skills through collaboration has always been our principle. We recognise Scania's leading position in the world's commercial vehicle industry. I believe that our cooperation will further promote and accelerate China's development of intelligent vehicles and the Internet of Vehicle (IoV)," says Dr Jimmy Hu Jianping, founder and Chairman of Haylion Technologies.

Mazda opens engine machining factory in Thailand



Mazda Motor Corporation has opened a new engine machining factory at its powertrain plant in Thailand's Chonburi Province, Mazda Powertrain Manufacturing (Thailand) Co., Ltd. Mazda's Representative Director, President and CEO, Masamichi Kogai, was among the attendees at an opening ceremony held at MPMT.

"Congratulations on the opening of MPMT's engine machining factory," said Kogai in his remarks at the ceremony. "I'd like to express my sincere gratitude for the support we've received from the government, our suppliers and other parties. MPMT plays an essential role in Mazda's comprehensive vehicle production system in Thailand. Strengthening our production framework for engines, the most fundamental vehicle component of all, will help us to get our cars to customers without delay."

WABCO enters into a long-term agreement

WABCO Holdings Inc. has entered into a new long-term agreement to supply automated manual transmission (AMT) valve technology for a major global manufacturer of trucks and buses, which is headquartered in Europe. In a new technological development for heavy-duty transmissions, WABCO will supply its latest generation of tailored AMT valves. WABCO will support future series production as the sole supplier, primarily in Europe and South America. Further differentiated by its global infrastructure, WABCO provides production and supply chain capabilities that are in close proximity to the sites where this major customer plans their new gearbox and transmissions to be produced. WABCO's innovative AMT technology enables efficient, cost-effective automatic shift of gears and controls clutch actuation for commercial vehicles. In addition, this advancement can improve fuel economy through optimized gear shifting. WABCO AMT solutions also differentiate through reduced component weight, more compact design and simplified assembly processes, resulting in lower manufacturing and installation costs. "This significant supply agreement represents new incremental business for WABCO and reflects the value our customers globally place on AMT," said Jorge Solis, WABCO President, Truck, Bus and Car Original Equipment Manufacturers Division.





EMKAY TOOLS

**YOUR SEARCH FOR
TAPPING NEEDS
IS OVER**

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 | sales@emkaytools.com

Website : www.emkaytools.com



iCreate facility dedicated to the nation

The iCreate facility was dedicated to the nation by Prime Minister Modi and Israeli Prime Minister Netanyahu during the latter's state visit to India recently. Located on the outskirts of Ahmedabad, iCreate is an independent Centre created with the objective of facilitating entrepreneurship through a blend of creativity, innovation, engineering, product design and leveraging emerging technologies to deal with major issues such as food security, water, connectivity, cybersecurity, IT and electronics, energy, bio-medical equipment and devices etc. iCreate aims to develop an ecosystem in India to generate quality entrepreneurs. The Indian Prime Minister said that innovation has a key role to play in



bringing the people of India and Israel, closer to each other. The Prime Minister said that the Government is working to make the entire system innovation-friendly, so that intent can generate ideas; ideas lead to innovation; and innovation helps create a New India. He said that the first pre-requisite of success is courage. He congratulated the courageous youth who are engaged in innovative activities at iCreate.

ABB opens new factory in Nashik



ABB India inaugurated a new factory for the production of power distribution products in Nashik. The facility was inaugurated by Sanjeev Sharma, Managing Director of ABB in India in the presence of other dignitaries and customers from various sectors. ABB has been present in Nashik since 1978 manufacturing state of the art medium-voltage power products.

Spread over five acres, this facility will be equipped with smart manufacturing features with connected people, processes and assets capable of relaying real-time data and web-based integrated traceability system for daily planning and review. State of the art onsite digital screens provide information transparency across the factory and its products, for key parameters that can be adjusted to increase the efficiency of operators. Mobile applications will help customers and service engineers to access information about products specifications, installation support, factory test results etc. just by scanning the QR code on the product. "The Nashik location has been a hub of innovation for ABB across different medium-voltage power categories, which has been steadily growing for the last several years. The new smart facility will serve the growth and focus on efficient power distribution systems in the country," said Sanjeev Sharma.

Capgemini & PTC open CoE in Mumbai

Capgemini and PTC have announced the opening of a Center of Excellence (CoE) located at Capgemini's Office in Mumbai. The facility is designed as a working CoE where Capgemini will build and showcase cutting edge industrial solutions to help customers around the world improve the way they design, manufacture, sell, operate, and service smart connected products. These solutions will be built on PTC's leading ThingWorx® industrial innovation platform. Capgemini chose to set-up the CoE with PTC to maximize the breadth of the ThingWorx platform and tools, including its complementary portfolio of products that covers Product Lifecycle Management (PLM), Augmented Reality (AR)/ Virtual Reality (VR) and Computer Aided Design (CAD). "This Center of Excellence with PTC is a part of our commitment to build solutions for our customers' needs driven by connected devices. It will also serve as a center that consolidates our global best practices and will showcase the transformations we are enabling with the ThingWorx Industrial Innovation Platform," said Sanjay Salunkhe, Global Head – Product and Engineering Services, Capgemini.

Gogo Inc. opens facility in Chennai

Gogo, a leading global provider of broadband connectivity products and services for aviation, has entered the India market by establishing a technology development center in Chennai, with plans to be fully operational by March 2018. Gogo will commence its operations with a team of approx 30 engineers and developers, and it expects to increase the headcount to 100 by the end of 2018. "We are excited to set up base in India with our facility in Chennai. Our presence here provides access to a large pool of technology and software talent, which will enable us to accelerate the development of our inflight connectivity and entertainment solutions and introduce them to the market," said Anand Chari, Executive Vice President and Chief Technology Officer at Gogo.



Altair, DesignTech Systems to set up CoE

US based Altair Engineering has announced a collaborative effort with its partner in India, DesignTech Systems, and the Science and Technology Park, an institute supported by Dept. of Science and Technology (DST), Govt of India, to support the advancement of the Govt. of India's Skill India programme. The agreement to establish an Engineering Centre of Excellence (CoE) for research, innovation and skill building, is therefore expected to benefit a large community of



students, Academic Institutes and overall Industry. Dr. Rajendra Jagdale, Director General & CEO of Science and Tech Park said "This will promote start-ups in the design domain." Pavan Kumar, VP South Asia & MD, Altair India, said, "These initiatives are designed to use technological solutions and resources to better align technical institutes with industry requirements – by getting diploma and graduate students who are industry ready, and boost entrepreneurship in these budding engineers." Vikas Khanvelkar, CMD – Design-Tech Systems said, "The CoE can also extend engineering consultancy to small and medium scale manufacturing industries as classified under MSME- (Ministry of Micro, Small & Medium Enterprises)."

Siemens to make new gen photovoltaic inverters in India

Siemens India launched with Sinacon PV a new generation of photovoltaic (PV) central inverters with an output up to 5,000 kVA. The inverter is part of the Siemens new electrical Balance of Plant (eBoP) solution for PV power plant installations.

The state-of-the-art Sinacon PV inverter will be locally produced and manufactured at Siemens' Kalwa plant near Mumbai for the domestic market as well as for export into the region. The Indian renewable energy sector is the second most attractive renewable energy market in the world Crossing 14 GW of already installed solar capacity, the Government is firm on its ambition of 100 GW of installed solar generation by 2022.

Harald Griem, Executive Vice-President and Head of Energy Management, Siemens Ltd, said "Siemens is committed to partner the Government in its endeavour to increased use of clean energy sources. The National Solar Mission of the Government aims to establish India as a global leader in solar energy. Siemens aspires to contribute to this with local value-addition in line with Make in India."

Get **STABLE, CLEAN & RELIABLE** AC VOLTAGE



- ▶ Save energy
- ▶ Fast rate of correction
- ▶ Advanced features with microprocessor technology
- ▶ Reduce machine down time
- ▶ Reduce costs

Range: 10 KVA to 2000 KVA

Pan-India Service Network | Approved & Used by Leading OEMs

UNITY CONTROLS PVT. LTD.

- D-137, TTC MIDC Industrial Area, Nerul, Navi Mumbai - 400 706
- +91 7045456480
- +91 22 27611872/1823
- sales@unitycontrols.in
- www.unitycontrols.in



Bangalore • Chennai • Delhi • Gurgaon
Haridwar • Indore • Jalandhar • Jamshedpur
Ahmedabad • Kolkata • Kanpur • Mumbai • Pune • Rajkot



Spark Minda Technical Centre inaugurated in Chakan, Pune

Global Automotive Component Manufacturer Spark Minda, led by Group CEO, Ashok Minda has recently inaugurated its state of the art facility - Spark Minda Technical Centre (SMIT) based at Chakan, Pune. Spark Minda Technical Centre (‘SMIT’) is a division of Minda Corporation Ltd. SMIT will foster the technology development journey of the existing Group businesses and enable their initiatives towards electrification. It will also strive to strengthen and expand the Group’s presence in automotive systems area as a complete System Solution provider. The Centre will nurture innovations to create breakthrough solutions tailored to address the market requirements. It will actively pursue opportunities in the area of new generation technologies like Connected, Autonomous, Electrified Mobility Solutions, Body Control and Multi-function Controllers, Smart Security and Vehicle Access Solutions etc. It would also explore incubation of future technologies like Deep Learning, Artificial Intelligence, Internet of Things, Smart Vehicles technologies, Prognosis and Diagnosis etc. Ashok Minda, Chair-



man & Group CEO, Spark Minda, Ashok Minda Group said, “Our Group is committed to further expand this centre in the next 3 to 4 years to further enhance the R&D and to bring the products faster to the market. It is clear from the forecast that the electronics content in every vehicle is going to increase and hence a strong presence of embedded technologies will secure our future.”

Tata Steel commissions India’s first SLS Plant

Tata Steel has unveiled the Solid Liquid Separation (SLS) Plant for Gas Cleaning Plant (GCP) slurry at its Ferro Alloys Plant (FAP) at Joda, in Keonjhar district, Odisha.

Rajeev Singhal, Vice President, (Raw Materials), Tata Steel, Singhal said that as a responsible corporate Tata Steel had been undertaking several such initiatives that contributed towards sustainability of the environment. The SLS Plant, besides conserving water, would prevent water from sludge pits percolating into ground and contaminating ground water.

Installed at a cost of nearly Rs 8 crore at FAP, Joda the SLS Plant is an environment-friendly initiative, set to recover manganese-rich solid from the wet gas cleaning plant slurry. Water recovered by



the processing of GCP slurry will be fully recycled, leading to water conservation to the tune of 15 cubic metre per hour.

Also, the recovery of manganese-rich solids makes it possible to recycle the same, for production of Ferro Manganese. It helps conserve valuable high-grade manganese ore and use lower grade of Fe-rich manganese ore. Manganese-rich solid cakes from the new SLS Plant will be used for production of Ferro Manganese after suitable agglomeration.

Liebherr to make cooling appliances in India

Liebherr is ready to launch its new line of refrigerators for the mass premium segment in May for the Indian market. The new series of refrigerators will offer a whole range of refrigerators which brings German engineering into products that are crafted specifically to serve the needs of Indian consumers. In tune of Rs. 500 cr. has been invested for setting up the manufacturing unit in India for the first phase of this project. The parent group comprises of over 130 companies in more than 50 countries across the world.

The decision to construct the plant in India was outcome of “Make In India” project of Govt. of India. The decision to construct it in the Shendra industrial park in Aurangabad, Maharashtra was based on the area’s central location and its ability to facilitate a sound logistics network to cater different parts of India efficiently. With the aim to produce high-quality refrigeration appliances tailored to suit the Indian market, the plant will have initial capacity of manufacturing over 500,000 cooling appliances per year starting 2018.



HSIL opens new pipes manufacturing plant in Telangana

HSIL, India's leading Sanitaryware Company, and makers of the iconic brand Hindware have ventured into the household plumbing pipes segment with the inauguration of their manufacturing facility in village Insnapur,



District Medak, Telangana. The HSIL plant in Insnapur, Medak is the first of its kind manufacturing facility in the state and currently has a total production capacity of 30,000 metric tonnes with plans to scale up the production capacity to up

to 60,000 MT by 2020 in order to emerge as a key player in the CPVC and UPVC pipes and fittings segment. This plant is the epitome of the best manufacturing practices accumulated and market understanding from HSIL's existing operations. At the plant inauguration, Sandip Somany, VCMD, HSIL Limited said, "Venturing into pipes segment is a natural extension of our portfolio of bathroom product streams from 'front of wall' to 'behind the wall'." Rajesh Pajnoo, President, HSIL Pipes Division, HSIL Limited, said "We are extremely excited to launch our manufacturing plant in Insnapur, Telangana. To ensure product and technological supremacy we have entered into an alliance with Japan's Sekisui Chemical Co. Ltd. which is a 70-year-old \$9-billion turnover company, for supply of chlorinated polyvinyl chloride (CPVC) resin."

Bosch opens IoT campus in Berlin

Bosch is bringing together its global IoT activities at a new hub in the German capital. In the presence of Berlin's mayor Michael Müller, the Bosch CEO Dr. Volkmar Denner inaugurated the company's new IoT campus at the Tempelhofer Hafen in the creative Ullsteinhaus district.

Berlin is a hotspot for many important players working on and with connected solutions. They include software and hardware providers, technology partners, and start-ups. "With our new premises, we are building bridges between our own IoT ex-perts and others in Berlin's creative and digital scenes," Denner said. "The inauguration of the Bosch IoT campus is another important building block for Berlin as a digital capital," Müller said, speaking before guests from politics, business, and the media. "We believe in openness for the internet of things – open ecosystems and open collaboration and partnership. This idea is also reflected in the campus concept," Denner added.

VERSATILE



FRANKEN
TOP-Cut

Universal End Mills for
all Material Groups

TOP-Cut tools are versatile end mills made from solid carbide or HSS. They can be used in nearly all materials and milling strategies due to their special geometric properties. Ideal for both roughing and finishing operations.

www.emuge-franken.in

EMUGE
FRANKEN



Customer solutions in next to no time

Walter has expanded its range of products that can be ordered using the Walter Xpress fast delivery service to include indexable inserts.

Until now, the special custom solutions that customers could order using the service had been limited to round tools and indexable insert bodies/carriers, and the tools had to be ‘close to the standard tool’. Walter now offers its customers the benefits of Xpress for indexable inserts too, especially regarding short delivery times – three weeks for indexable insert special tools and four weeks for indexable inserts. Having short replenishment times aims to reduce the number of tools customers have in circulation and consequently cut their costs. They also help to ensure a higher degree of certainty when planning.



The first indexable inserts to be available via Walter Xpress are the high-performance P600 inserts (orders of 10 to 200 pieces), which have a diameter of between 12 and 37.99 mm and are suitable for holes with a tolerance of IT8 or IT9 – in intermediate sizes or with a special shoulder design (e.g. land or radius). Not forgetting the four-edged indexable inserts in the MX Cut system (orders of 10 to 50 pieces), which have a maximum cutting depth of 6 mm and a cutting width of between 1 and 3.3 mm – in intermediate sizes with a full radius, straight edge or lands between 30 and 50°. Both types of indexable insert can be ordered from your Walter contact partner or via the online form in the Xpress area of the Walter website.

Source: Walter Tools

The Tool Life app makes tool data fully transparent

Walter AG and Comara have recently been working together to further develop the ‘Walter appCom’ software solution. This is a tool that captures machine data in real time to provide the basis for optimising component machining in a targeted manner.

Walter is now presenting the ‘Tool Life app’, a solution for visualising and analysing tool data that can be seamlessly integrated into the appCom package. The browser-based user interface can be called up universally via the intranet network of the relevant customer. Users need the Walter appCom package – comprising an industrial PC and standard software developed by Comara – to make full use of the app.

Applications that are already included as standard in appCom enable simple analyses to be carried out, such as “which tool is currently on the machine?” and “which programs have been used for machining?” The analysis options provided by the Tool Life app, however, go even further, not only with regard to the depth of detail of analyses but also in terms of the scope of services and user friendliness. The newly designed user interface with intuitive menu navigation improves handling, while a newly structured database in the background enhances performance. In contrast to other solutions, the Tool•Life



The analysis options provided by the Tool Life app, however, go even further, not only with regard to the depth of detail of analyses but also in terms of the scope of services and user friendliness.

app does not need a code to identify the tools for the system. This means that users of the Tool Life app benefit from better performance, multi-device functionality and more flexible working. Walter maintains that the Tool Life app is the market that can reproduce tool data in such a high level of detail.

AceMicromatic
Group Presents

4th ULTIMATE GUIDE TO PROFITABLE MANUFACTURING
THE MACHINIST

Super
SHOPFLOOR Awards

Powered By **MOTUL** TECH



NOMINATIONS OPEN

Contact: **Fiona Fernandes**
fiona.fernandes@wwm.co.in | +91 9930723498



Aerospace and defence industries have immense potential

Ramakant Reddy, Managing Director, LMT Tools India talks to The Machinist about the company's business in the country and its new product range.

By Swati Deshpande

How has been the market for your company last year?

Last year started with a hangover effect of demonetization. Disruptions due to introduction of BS IV in Q1, GST implementation in Q2 affected the business to some extent. However, thanks to good monsoon and festive season, the engineering industry recovered well during Q3 and Q4.

How has been GST implementation for your company? Do you think it will have positive impact on the industry from long term perspective?

We transitioned to GST smoothly without any major hic-ups. It did not affect us adversely. In fact, it has a positive impact in terms of cash flows and compliances. We will be in a better position to supply to SEZs and EOUs (Export Oriented Units) since it gives level playing field commercially.

There has been immense emphasis on the infrastructure development in the country. Has it given a boost to your business?

Indirectly, yes. To fulfil the offset obligations of Make in India for the foreign suppliers, Indian business houses have set up separate production units for aerospace and defence industry, which has been beneficial for us.

What key trends do you observe in the cutting tools industry?

More and more customers are moving towards Solid Carbide tools. Also, 3D printing is gaining its popularity in the market. The processes are being reengineered to reduce cycle times and cost.

Aerospace and defence industries have immense potential and cutting tool industry is gearing up to supply customised solutions for them.

Tell us about your latest products and innovations.

One of our latest solution includes UNIFY Indexable insert hob. The engineering experts at LMT Fette have created a comprehensive product portfolio - from gears for



More and more customers are moving towards Solid Carbide tools. Also, 3D printing is gaining its popularity in the market. The processes are being reengineered to reduce cycle times and cost. Aerospace and defence industries have immense potential and cutting tool industry is gearing up to supply customised solutions for them.

vehicle transmissions to drives in wind turbines. One hundred years of experience, combined with the latest research and development, results in constantly generating innovative solutions to further reduce the cost per part.

This is how the new UNIFY Indexable insert hob came to be. It was created to enable even more users to utilize carbide with economic efficiency - exactly yours. It strengthens the field of applications of the proven Carbide Line-I (Indexable) hob family in the module range 6-12.

The new single-part base plate allows a compact design (diameter from 150 mm) and thus also brings the benefits of using 4-edged indexable inserts onto smaller machines: A longer tool life, shorter processing times and increased operational reliability significantly improve its economic efficiency. A robust and very precise working tool has been created by minimising the interfaces on the carrier body. 



THE STAGE IS SET THE SPOTLIGHT AWAITS!



7th MARCH 2018 - MUMBAI

The Economic Times presents the
FIRST EDITION OF THE COFFEE TABLE BOOK
recognizing the stalwarts of
the Plastics & Polymers sector

**HAVE YOU SCALED
THE PINNACLE OF SUCCESS?**

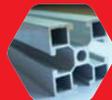
CATEGORIES



Raw Materials



Masterbatches



Extrusion



Injection
Moulding



Blow Moulding



Hot Runners



Compounders



Pipe Turning



Auxiliary



Recycling Machinery

For details contact

Mahadev. B | M: 9448483475 | mahadev.b@wmm.co.in

Ranjan Haldar | M: 9167267474 | ranjan.haldar@wmm.co.in

Ashish Sahay | M: +91-9899688440 | ashish.sahay@wmm.co.in



Challenging yet encouraging times

Prashant Sardeshmukh, Director, MMC Hardmetal India talks to The Machinist about latest trends in the cutting tools industry and company's innovations.

By Swati Deshpande

Q How has been the market for your company last year?
 Challenging yet encouraging. We have been successful in stepping into the new segments and have witnessed significant growth in our domain areas. This gave us strength and encouragement to set up manufacturing facility at Aurangabad to cater the rising demands of the market. Yet it was not a cakewalk. We had to put up best of our efforts to achieve our targets and because of terrific contribution by our business partners, we are making good presence in new market segments. We expect to experience encouraging response in the areas like non-conventional energy, medical and aerospace sector.

Q How has been GST implementation for your company? How did it affect your business? Do you think it will have positive impact on the industry from long term perspective?

GST, I believe, is one of the revolutionary steps towards economic reformation. It is a big change and any change, small or big, causes initial troubles when it comes to implementation. Alike everyone else, it posed some difficulties for us too but now things are easing out. It has averted cascade of indirect taxes which ultimately used to burden the end-customer. The government is taking regular review to make its compliance more simple and market friendly.

This is a good reform and I think, very much in line with government's Make in India initiative. It was needed to take India on fast-track mode. I think Indian manufacturing



industry will play a key role in giving good shape and momentum to the economy.

Q There has been immense emphasis on the infrastructure development in the country. Has it given a boost to your business?

Infrastructure is the key to growth of the country and the government has rightly put major thrust on infrastructural development. The changes are noticeable and they are bringing immense improvement in logistics, communication and efficacy in overall business indices. In fact, infrastructure development is one of the key contributors to our country's rise in a position of 'Ease of doing business.' This has given boost to our business too, especially in reducing lead time and improving our supply-chain system and logistic support.

Q What key trends do you observe in the cutting tools industry?

Metal cutting tools are widely used in almost all manufacturing industries and amongst them automotive, aerospace, medical, energy, machine tools industry are known to be the key users. The dynamics in these sectors will influence the demand for cutting tools on global scale.

In today's world, rapidly changing market demands require special efforts to implement new technologies at competitive





Metal cutting tools are widely used in almost all manufacturing industries and amongst them automotive, aerospace, medical, energy, machine tools industry are known to be the key users. The dynamics in these sectors will influence the demand for cutting tools on global scale.

price, stipulated time frame and user friendly ways. This is one of the biggest challenge cutting tool industry is facing recently. All tool manufacturers have to be constantly ready to offer new products before even industry actually demands. One of the major trends is increased usage of Difficult-to-cut materials in aerospace and energy sectors. We, at Mitsubishi Materials, are spending a major portion of our revenue on research and development through which we have already launched series of new products, making us one of the leading cutting tools brand globally.

Tell us about your latest products and innovations.

All latest innovations by Mitsubishi are in line with the demand by industry to improve cutting efficiency and reduce machining costs.

We have recently launched GW Series long lasting, easy to use cutting off & grooving system. Simplicity and convenience are key design features. It offers increased wear resistance due to usage of two through coolant ejection holes. With various grades and breaker combination, this system can be used for almost all work piece materials.

Mitsubishi has also launched VPX Series Multi-functional

Cutter for high efficiency machining. Customers can boost their milling performance with tough tangential insert. By arranging inserts tangentially, high holder rigidity is secured. It has double sided insert that has revolutionized tangential blade machining. Due to the three dimensional inserts design, high wall accuracy can be achieved together with excellent surface finish.

We have expanded MP9005, MP9015 & MT9015 Turning Grade Series which facilitate easy cutting of difficult-to-cut materials such as Heat Resistant Alloys, Titanium Alloys and Inconel. We have applied the latest Miracle Sigma Coating Technology for MP9005 & MP9015 grades which provides stabilisation of the high hardness phase. It improves crater wear and welding resistance.

Similarly we have also expanded WSX series; Low Cutting Resistance Face mill cutters. This takes face milling to a new level of usability. Due to its geometrical precision, it produces low cutting resistance and makes it ideal for all types of machines from low power through to heavy duty types. Reliability, predictable and safe performance is demanded by today's customers and WSX series meets these criteria with strong insert clamping and an Anti-Fly mechanism. 

UPDATE

Direct drive electronic position indicators

Elesa+Ganter has recently extended its range of electronic position indicators by introducing the new DD52R-E that joins the DD51-E model. Elesa+Ganter electronic position indicators are characterized for their wide orientable display, that ensures excellent readability even from a distance and from different viewing angles.

Display:

DD51-E – 5 digit of 8,0 mm height

DD52R-E – 6 digit of 12,0 mm height.

The AISI 304 stainless steel bushing ensures a high corrosion resistance.

Diameter:

DD51-E – 14 mm

DD52R-E – 20 mm.

The internal lithium battery ensures a long life:

DD51-E – over 5 years



DD52R-E – over 8 years.

The battery replacement can be performed easily, without disassembly of the indicator from the control shaft and without the loss of parameter configuration.

The window in transparent technopolymer moulded over the case protects the LCD display against accidental shocks. The ultrasonic welding between the base and the case avoids dust and liquids penetration offering a high IP protection class (IP65 or IP67). For this reason the electronic position indicators are suitable for applications that require frequent washing, even with water jets.

Thanks to the available functions and the programmable parameters, one item can be used for many applications.

For more information,
e-mail: info@elesaganter-india.com
www.elesa-ganter.in



Back on Track!

Read on to know more about how Taegutec helped the Indian Railways modernise.

The world's fourth largest railway network is on the cusp of technological transformation. The Indian national carrier intends to unleash semi-high speed trains (160Km/hr) on the tracks, potentially revolutionising what is one of the busiest networks in the world. Yet another Make in India project, these trains will be executed in collaboration with foreign manufacturing majors.

For high speed trains, the rail steel for the tracks require to be of high strength and high hardness running surface or head hardened. Rail steels with higher hardness demand high wear resistance cutting tools, while higher manganese content in the crossing rails (CMS) demand tool grades capable of machining work-hardening steel.

TaeguTec's advanced tooling technologies enable the manufacture of railway component like new rails, crossing rail (CMS), wheel and axle, bolster beams, bogie frame and various engine components. TaeguTec provides a diverse range of tools as standard or tailor-made to suit the machining requirements of these components, with high-productivity, high-performance results.

A state-of-the-art range of high performance solutions from TaeguTec for rail machining can be sampled with these products shown in the below images.

A case study involving machining of crossing rail (CMS) at a Tier-1 customer with one such TaeguTec solution has

Operating Parameters		
Details	Taegu Tec	Existing
Operation	Face Milling	
Machine	Double Column Plano Miller	
Cutter Diameter	250(Z=14)	250(Z=14)
Insert Spec	SNMX 1607	LNMU 1508
Cutting Speed Vc (M/Min)	157	157
RPM	200	200
Feed Ft(mm/tooth)	0.11	0.09
Feed F (mm/min)	308	252
Depth of Cut Ap(mm)	8	8
No. of Passes	2	2
Width of cut Ae(mm)	200	200
Length of cut (mm)	4300	4300
Coolant	Dry	Dry
Tool Life /Edge (Mtr)	12.9	8.6

CHASE2QUAD



Crossing Rail

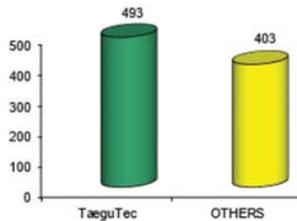
TFM45SN 14250-60R-16
SNMX 1607 ANTN-M TT7080



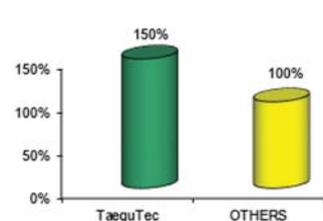
Features

- Stronger and thicker insert for 8 mm D.O.C
- Economical double sided insert 8 cutting edges
- Smooth cutting from positive chip former
- 45 deg entering angle for balanced cutting

Material Removal Rate (cm³/min)



% Increase in Life / Insert



demonstrated extraordinary results for every performance parameter including productivity, tool life and surface finish.

Taegutec Product: Chase2Quad

Features:

- Stronger & thicker insert for 8 mm D.O.C
- Economical double sided insert 8 cutting edges
- Smooth cutting from positive chip former
- 45 deg entering angle for balanced cutting

Benefits:

- 22 percent increase in Material Removal Rate. [493 cc/min with TT solution, as against 490 cc/min of Competition)
- 50 percent increase in tool life per edge!



Fish plate area



Wheel contact surface (face)



Wheel contact surface (top)

Solutions for rail machining

Source: TaeguTec



Evolving with times

With internal processes adapting and changing so quickly, ERP has an opportunity to become the controls and dashboard as well as the engine, says **Thiru Vengadam**, Regional Vice President, India, Epicor

By Niranjan Mudholkar

How important is the India market for Epicor?

India is an important part of the global growth strategy for Epicor. The India Technology Center in Bengaluru is a strong example of our investment in the country. Its rapid growth over the last two years reflects the extent to which the facility has had an impact across all areas of the company, from product development to customer support and services, across all the company's global target markets in manufacturing, distribution and retail.

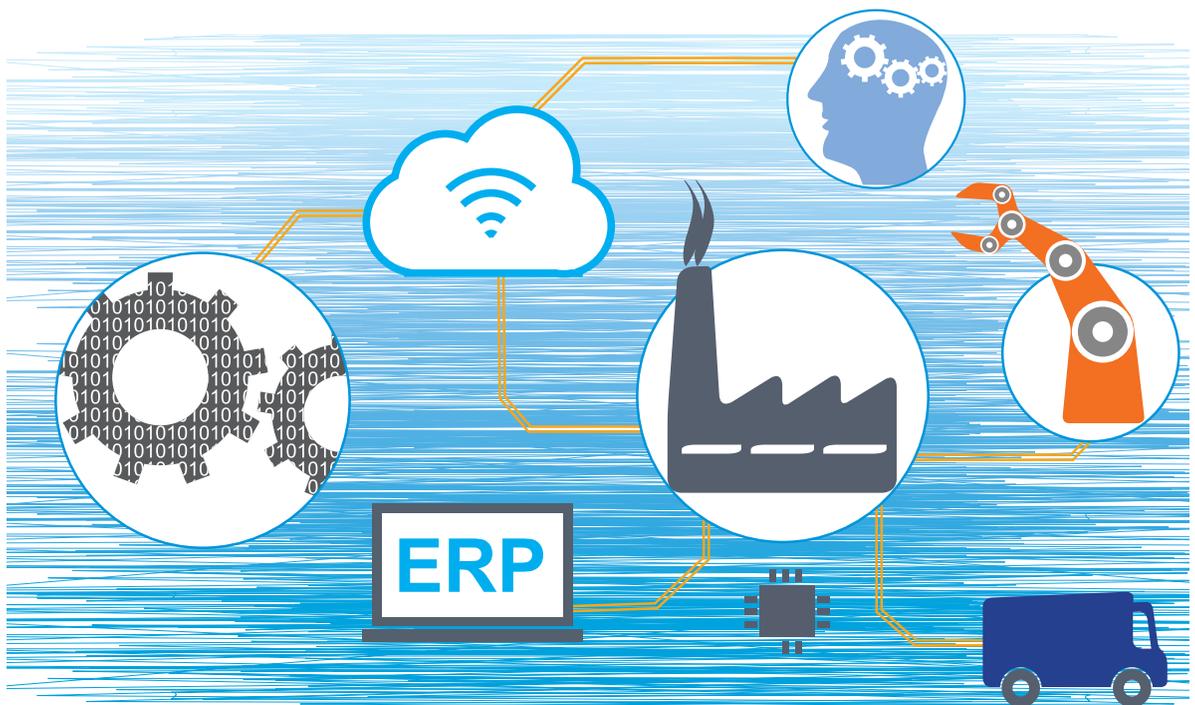
The center also provides Epicor customers and partners in India with local services and support, for example, ensuring that the product can easily cater for the new Indian GST tax requirements.

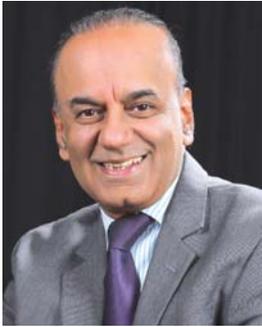
In addition, the recently announced distribution partnership with Redington India, one of the country's largest technology distributors, sees Redington selecting and training specialist resellers from its network of over 20,000 business partners. The partnership is part of the strategic plan to grow the local customer base for the global enterprise resource planning solution, Epicor ERP, in India.

India's digital economy is rapidly evolving with initiatives like Make in India and Digital India, and the implementation of modern technologies across manufacturing businesses offers a great market opportunity for Epicor. These initiatives help the country and its citizens to adopt digital technologies in business and business to consumer interactions, bringing in revolutions of paper less and secure transactions together with a completely new workforce that include millennials who use technologies with natural ease. Epicor ERP has evolved to support such workers with intuitive interfaces, google-like searches, built in social collaboration, analytics for immediate decision-making, integrating devices in shop floor and anywhere else and providing access to the data from any device and from anywhere.

Tell us about your journey with Epicor in the relatively short time so far.

I took charge in 2017 to spearhead the strategy to grow our regional footprint and help companies thrive by using modern ERP solutions. It has been an interesting journey so far.





“Production equipment, transportation and even logistics networks will become more connected and ERP can support and, more importantly, make sense of those connections revolutionising the industry.”

Epicor has appointed Redington India as the country-wide distributor for India. How will this help you extend your reach?

We recently announced a distribution partnership with Redington India, a nation-wide distributor with a large reseller network in the country, to reach customers faster with Epicor solutions.

Redington is one of the country’s largest technology distributors, with a network of over 20,000 business partners. Because Epicor focuses on quality partners, rather than quantity, only a shortlisted set of partners will be engaged as value added resellers.

As a distributor Redington will identify, appoint, train and equip these resellers, taking full responsibility for effectively managing the delivery and deployment of Epicor ERP solutions in India. In return, Epicor will provide Redington with the necessary support to deliver its solutions to the market, including marketing, professional services, training, and access to Epicor University with certification for partners.

As one of the largest technology distributors in India, Redington has an experienced and dedicated team on the ground that can enable local manufacturers to digitally transform their companies and grow their businesses.

Which industry sectors are you catering to primarily.

Epicor focuses primarily on the manufacturing industry in India including sectors like Industrial Machinery, Food-Beverage, Aerospace, Automotive, Construction, Electronics Manufacturing, Energy, Furniture, Rubber and plastics, Manufacturing software, Medical devices, Metal fabrication and Pharmaceutical-software. The majority of our current customers are global companies with operations in India, however, there are some local businesses that are managed by our channel partners.

What are the advantages of a robust and modern ERP system over a legacy ERP system?

Over the years ERP systems have developed alongside the needs of business, so much so that legacy systems have become complex beasts with a depth of functionality not replicated

in other newer business applications. However, the advent of modern technologies such as the Internet, mobile, wireless, and indeed the consumerisation of IT have all changed enterprises’ expectations of what can be achieved. Focus has shifted from the functionality of software (what it does) to the strategic importance (what it can be used for).

As a result of these changes ERP systems face some serious challenges. Challenges that include an increasing need to collaborate inside, across and outside of the organisation; a less than perfect implementation history; and the inability of many businesses to derive full value from its ERP solution with many features remain untouched.

Yet within each of the challenges there are opportunities for those companies that upgrade their system to take advantage of the changes. As the Internet of Things (IoT) continues to develop apace, for example, ERP has the potential to become more responsive and useful alongside it. The impact of IoT will be felt across the manufacturing and engineering sector. Production equipment, transportation and even logistics networks will become more connected and ERP can support and, more importantly, make sense of those connections revolutionising the industry.

“Technology is an enabler of growth and will play a key role in empowering businesses to innovate and embrace the opportunities that present themselves.”

Traditionally ERP was considered to be the engine of the business, but with internal processes adapting and changing so quickly, ERP has an opportunity to become the controls and dashboard as well as the engine. But to do that well it must become more intuitive—providing the intelligence to support better and more effective decision-making and not just supplying executional data.

As people, processes and businesses become more connected through smart devices, wearables and apps so the need to speed up data collection, interpretation and dissemination grows. Modern ERP solutions are well placed to solve this challenge if they can integrate with a company’s overall IT strategy, and support business automation and the decision-making process.

What kind of changes do you see happening in the manufacturing industry in the next 12 to 15 months? How do you see Epicor helping its customers ride the wave?

Manufacturing, is going through a significant period of change. Driven by rapid technological development, manufacturers need to work smarter, operate more efficiently, and be prepared to innovate. Technology is an enabler of growth and will play a key role in empowering businesses to innovate



and embrace the opportunities that present themselves.

Flexible businesses will be able to ride out the potential issues that political or legislative changes like GST may cause. For instance, having to adapt internal processes or employ personnel with different areas of expertise.

Epicor has decades of industry expertise, from working with thousands of manufacturing customers, and has solutions for growth. Manufacturers with a proven, comprehensive enterprise resource planning (ERP) solution will find it helps them grow now and positions them for success in the future.

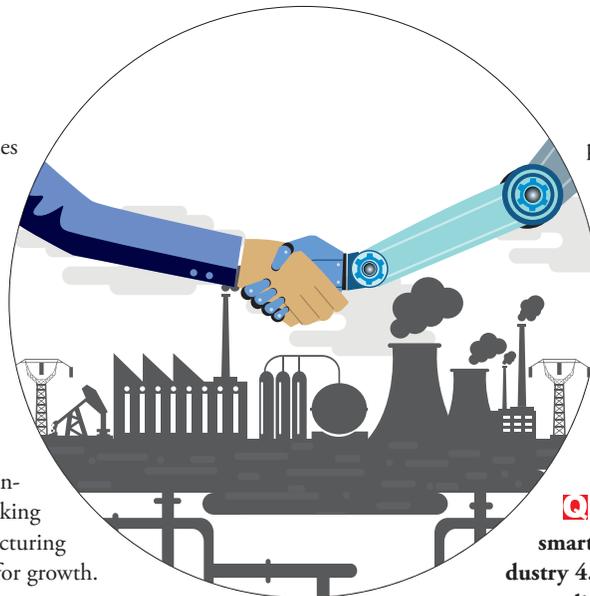
Designed for the way people work today, yet ready for how people will work tomorrow, we provide a proven foundation with which to leverage new technologies such as the Internet of Things, big data and analytics, social collaboration, mobility, and additive manufacturing. Epicor provides a new level of collaboration, visibility and results for increased productivity.

Do you see blockchain technology coming to the fore as far as manufacturing industry is concerned?

There is no doubt that blockchain is a disruptive technology which has the potential to transform industries. However, despite recent momentum, it is a technology that isn't (yet) particularly easy to use for many businesses. The platforms are still maturing, and, like many other software platforms, they are subject to bugs and operational errors. The potential risks of being a blockchain pioneer are higher than other technology adoption waves because blockchains typically apply to monetary transactions as well as transactions carrying fiduciary responsibilities.

However, blockchain technology is likely to be intrinsically embedded within business processes in years to come. Those businesses that have technology with flexible deployment options, and those with modern enterprise resource

Blockchain is a technology that can improve visibility, productivity and security for businesses and in some form, would appear in the future of manufacturing industry, even if it's not just yet.



Modern ERP solutions are well placed to solve the challenges if they can integrate with a company's overall IT strategy, and support business automation and the decision-making process.

Manufacturing, is going through a significant period of change. Driven by rapid technological development, manufacturers need to work smarter, operate more efficiently, and be prepared to innovate.

planning (ERP) solutions in place, will be in a better position to take advantage of blockchain technology and adapt faster.

Blockchain is a technology that can improve visibility, productivity and security for businesses and in some form, would appear in the future of manufacturing industry, even if it's not just yet.

With operations getting smarter each day, how do you see Industry 4.0 evolving in the context of Indian manufacturers?

Essentially, Industry 4.0 is about combining artificial intelligence and data science to realise the potential

of the Internet of Things (IoT). As more and more 'smart' devices are integrated into organisations, Industry 4.0 will continue to offer valuable benefits including predictive maintenance of machinery and increased levels of automation to help manufacturers optimise their operations.

According to a research conducted by MORAR Consulting and commissioned by Epicor, [1], 49 percent of business leaders in India said that expansion into new industries and product areas was a main priority for their business over the coming year. To support this, 80 percent of Indian business leaders recognised that cutting-edge technology/IT was a significant factor in the retention of key staff.

Over the last few years there has been a change in the outlook of Indian manufacturers in terms of their commitment to investments for digital operations solutions. Manufacturers in India are now more willing to invest in digitisation technologies such as sensors or connectivity devices as well as software and applications such as ERP and manufacturing execution systems (MES). [2]

References

[1] *The research was conducted by MORAR Consulting and surveyed 1,824 managing directors, and heads of finance, operations and IT in businesses with 100+ staff spanning the manufacturing, distribution and service industries (and in businesses of all sizes in Retail in Australia, Canada, China, France, Germany, Hong Kong, India, Mexico, Singapore, Sweden, the UK, and the US. (MORAR, Growth Survey, 2015).*

[2] *PWC Report: Industry 4.0: Building the digital enterprise India highlights.*



Technology for Swinburne electric car

Additive manufacturing technology helps Swinburne electric car to best-ever Formula SAE result

Metal additive manufacturing technology from Renishaw has helped a team of students from Swinburne University of Technology in Melbourne, Australia, to the University's highest overall score in the latest Formula SAE competition. As well as being placed sixth overall, the highest position for a team from the University, the car recorded some of the fastest times in the speed trial part of the competition.

Background

Formula SAE is a competition organised by the Australian branch of the Society of Automotive Engineers in which teams of students produce a prototype for a single-seat racing car and present it to a hypothetical firm for manufacture. The cars compete in a series of track tests. In addition, the teams are judged on the design and cost-efficiency of the car, and on a marketing presentation about their project.

Along with the practical experience gained, the programme gives students the opportunity to work together in a dedicated, multi-disciplinary team to produce an impressive vehicle for the competition. The skills of the team are pushed to the limit to ensure that the design and the manufacturing methods used are innovative and robust.

The team from Swinburne is made up of students in engineering, design and commerce, who work together to design, build, market and race their car. In 2010, the University was one of the first to enter an electric car in the competition. It has continued to race electric cars in subsequent years.

Challenge

The fundamental problem in racing an electric car against petrol competition is the weight of the batteries. This means that

the weight of all the other components must be minimised to make the car competitive. Team Swinburne is always looking for ways to reduce weight, including being one of only a few teams to base its car on a carbon fibre chassis, which is built at the University.

Following the 2015 competition, the team undertook a detailed calculation of the energy used by the car in the various trials.

One of the findings of this analysis was that the rotational inertia of the wheels during acceleration and braking was using much more energy than expected.

Ryan Wise, the Dynamics Section Leader for Team Swinburne, was given the brief to reduce the weight of the wheels and so cut their rotational inertia. Lighter wheels would, in addition, improve the acceleration and braking performance, and enhance the responsiveness of the suspension. Ryan had been associated with the Team for the 2014 and 2015 competitions, and had been given responsibility for the suspension, wheels, brakes and steering for the 2016 car.

Solution

The use of additive manufacturing was suggested by one of Ryan's colleagues in Team Swinburne following a general search of new materials and technologies being used by teams in the equivalent European competition, Formula Student. He had found examples of the use of the Renishaw technology by these teams and suggested that Ryan should contact the company.

Ryan approached Renishaw's office in Australia with a wheel from the 2015 car comprising a centre machined from an aluminium alloy, and a band also made from aluminium. Ryan worked through several design iterations, replacing the aluminium wheel centres with smaller ones made from

One of the things that I loved about using the Renishaw additive manufacturing equipment was the ability to increase the complexity of my design.

Swinburne University of Technology - Formula SAE (Australia)



titanium alloy by additive manufacturing. The new design also used a carbon fibre band in place of the aluminium one to give the maximum weight savings. Guidance in design optimisation for additive manufacturing was provided by Renishaw staff to reach an alternative design with which everyone involved was happy. Iterative FEA (finite element analysis) simulations were performed throughout the design process in order to predict the behaviour of the new component and to evaluate the benefits that could be gained.

“One of the things that I loved about using the Renishaw additive manufacturing equipment was the ability to increase the complexity of my design,” said Ryan.

“With parts that I had designed for traditional manufacturing methods, I had to be very aware of the size and shape of the cutting tools that were available as well as the added machining time that would be required by certain design features. By 3D printing the wheel centres, I was able to add in fine features that would be difficult to achieve using traditional methods and it cost nothing in extra build time.”

Once the design had been finalised, Renishaw Oceania manufactured nine wheel centres to provide Team Swinburne with two full sets of wheels and an extra wheel for testing. The wheel assembly was designed so that each of the titanium components would require minimal post-processing. On removal from the AM equipment, the parts were stress-relieved in a vacuum furnace, removed from the build plate with wire EDM and bead-blasted. No further post-processing or machining was required.

Results

The new design, with the titanium parts replacing the ma-

Printing the parts required very little effort on our behalf and they were manufactured much more quickly than the last set of wheel centres that we made. I was surprised at the quality of the surface finish and that we required no finish machining.

Swinburne University of
Technology - Formula SAE
(Australia)

chined aluminium centres, and the broader carbon fibre band, reduced the weight of each wheel by 20 percent, resulting in a significant 75 percent reduction in rotational inertia, leading to measurable improvements in acceleration and braking performance. The additively manufactured wheel centres also contributed to an overall weight reduction of 1 kg per wheel, whilst also maintaining safety, leading to an overall improvement in the car's performance that was evident in the results on the track.

A big advantage of using Renishaw's additive manufacturing technology was the ability to use titanium. “The amount of material for the initial billet, together with the machining time and experience that would be needed, had ruled out using titanium with traditional manufacturing methods,” explained Ryan.

“Printing the parts required very little effort on our behalf and they were manufactured much more quickly than the last set of wheel centres that we made. I was surprised at the quality of the surface finish and that we required no finish machining.”

“I think there were a few people who were quietly sceptical on seeing how thin they were,” added Ryan. “I'll admit that I was feeling nervous after the team next to us broke a wheel centre on the track. However, in the end, we gave them a good testing and they held strong. So it's a credit to Renishaw to be able to achieve the material properties required.”

As well as contributing to the team's success, Ryan gained personally from working with Renishaw. “At the start of the year, I knew next to nothing about additive manufacturing of metals,” he admitted. “I soon learnt that, as with any other manufacturing technique, you need to consider the capabilities of the process during the design

stage.

After a few educational sessions from Renishaw on how the 3D printing system worked and where the issues might arise, I was soon able to adjust the design to be more achievable.

We looked into some unique tricks, such as printing skins around an internal lattice to reduce weight and to keep the thermal stresses down. Once I understood the process, I found it surprisingly easy to come up with a design that was both light-weight and printable.”

Ryan expects to see more teams using metal additive manufacturing in this year's competition. “I lost count of the number of people that came into our pits, just to check out the new wheels,” he commented. “They looked incredible and we had no issues with them at all. A lot of people will have gone home impressed.” 

Source: Renishaw Plc



Sky is the limit for India

Highlights of the activities of the Department of Space during the year 2017:

India has achieved great heights in the space domain recently. Here is the overview of India's achievements in 2017.

- In this calendar year i.e. 2017, Indian Space Research Organisation (ISRO) has launched 104 satellites, in a single launch, onboard PSLV-C37 on February 15, 2017 and 31 satellites, in a single launch, on-board PSLV-C38 on June 23, 2017. These satellites include – Two Indian Cartosat-2 series satellites, two Indian Nano-Satellites, one Nano satellite from Indian University and 130 foreign satellites from 19 countries, viz. Austria, Belgium, Chile, Czech Republic, France, Finland, Germany, Italy, Israel, Japan, Kazakhstan, Latvia, Lithuania, Slovakia, Switzerland, The Netherlands, UAE, UK and USA. The Cartosat-2 series satellites are placed in a sun synchronous orbit with a designed mission life of 5 years. The main objective of these satellites is to provide high resolution images of earth's surface at sub-meter resolution (Black & White image) and at 2 meter resolution (4-band coloured image). The images obtained from these satellites are useful in variety of applications requiring high resolution images, which include cartography, infrastructure planning, urban & rural development, utility management, natural resources inventory & management, disaster management.
- India's Geosynchronous Satellite Launch Vehicle Mark-II (GSLV-F09) successfully launched the 2230 kg South Asia Satellite (GSAT-9) into its planned Geosynchronous Transfer Orbit (GTO) on May 05, 2017. The launch of GSLV was its eleventh and took place from the Second Launch Pad at the Satish Dhawan Space Centre SHAR (SDSC SHAR), Sriharikota, the spaceport of India. This was the fourth consecutive success achieved by GSLV carrying indigenously developed Cryogenic Upper Stage.
- The first developmental flight (GSLV MkIII-D1) of India's heavy lift launch vehicle GSLV Mk-III was successfully conducted on June 05, 2017 from Satish Dhawan Space Centre SHAR, Sriharikota with the launch of GSAT-19 satellite. This was the first orbital mission of GSLV MkIII which was mainly intended to evaluate the vehicle performance including that of its fully indigenous cryogenic upper stage during the flight. Weighing 3136 kg at lift-off, GSAT-19 became the heaviest satellite launched from the Indian soil.
- A Memorandum of Understanding (MoU) was signed between the ISRO Telemetry Tracking and Command Network (ISTRAC), Indian Space Research Organisation (ISRO), Department of Space and the Council of Scientific and Industrial Research (CSIR)-National Physical Laboratory (NPL), Ministry of Science and Technology, in New Delhi on August 4, 2017. The MoU provides for time and frequency traceability services to ISRO by CSIR-NPL.
- Mars Orbiter Mission successfully completed three years in its orbit on September 24, 2017, surviving well beyond its designed mission life of six months. All Scientific payloads continue to provide valuable data of Mars surface and its atmosphere. Mars Colour Camera on-board MOM has acquired more than 700 images of Martian surface. MOM atlas is published and updates on MOM images are regularly provided on ISRO website. The observations drawn by scientists have been published in 20 scientific papers in peer reviewed journals. The archived scientific data has been released to public for free download and scientific research. About 1380 registered users have downloaded more than 370 GB of data.
- ISRO and Jet Propulsion Laboratory (JPL)/NASA are jointly working on the development of Dual Frequency (L&S band) Synthetic Aperture Radar Imaging Satellite named as NASA-ISRO Synthetic Aperture Radar (NISAR). The L-band SAR is being developed by JPL/NASA, while ISRO is developing S-band SAR. The L & S band microwave data obtained from this satellite will be useful for variety of applications, which include natural resources mapping and monitoring; estimating agricultural biomass over full duration of crop cycle; assessing soil moisture; monitoring of floods and oil slicks; coastal erosion, coastline changes and variation of winds in coastal waters; assessment of mangroves; surface deformation studies, ice sheet collapses and dynamics. 

Source: PIB



Relevance of traditional HSS tools

Ricky Payling looks at why HSS remains a popular option, the different compositions available and how the material has adapted to a fast-changing industry.

Despite the growing competition from solid carbide, HSS continues to be popular with manufacturers due to its high wear resistance and excellent hardness and toughness properties. HSS cutting tools are best suited to mass production environments where tool life, versatility, productivity and tool cost are of the highest importance to an end-user. It therefore still has a major part to play in efficient and reliable machining of many components. Also, the current focus for a good product quality, which meets the customer application requirements at a cost-effective price, is proving attractive in the present global economic climate. To support the growing worldwide demand for HSS, cutting tool manufacturers have committed extensive resources to this segment. This includes increased investment in not just new product development but also research and development activities.

This has led to HSS tools becoming more reliable with a reduction in number of defects, lower production costs and shorter lead times. The addition of improved substrates, including powder metallurgy and coatings have been instrumental in further enhancing performance.

HSS composition

A typical HSS composition features Chromium (4%), Tungsten (approx. 6%), Molybdenum (up to 10%), Vanadium (around 2%), Cobalt (up to 9%) and Carbon (1%). The different grade types depend on the varying levels of elements added. Typically, drills made with the addition of more cobalt are used in application specific operations.

Advantages

HSS tools can resist vibrations, whatever the type of machine tool, even if rigidity has been lost over time and regardless of work-piece clamping conditions. It can prevent mechanical shocks at tooth level in milling operations and cope with



A553 action at Larssons Mekaniska Bjärred.



“From a tool life point of view, HSS performs very well with intermittent cutting applications.”

varying lubrication conditions which may result in thermal changes. Also, thanks to the unique strength of High Speed Steels, tool manufacturers can produce extremely sharp cutting edges. This makes it easier to machine difficult materials, offers less work hardening of austenitic stainless steels and nickel alloys, gives a better surface quality and tolerances of machined parts. As the metal is cut and not torn, it provides longer tool life with lower cutting-edge temperatures. It also requires lower cutting forces, which ultimately means less power consumption from the machine tools.

From a tool life point of view, HSS performs very well with intermittent cutting applications. However, it has limited cutting speed range which is far lower when compared to carbide tools.

Coatings and substrates

HSS may be an established cutting tool material, but it doesn't mean it has not been subject to constant improvements. HSS-E with powder metallurgy offers a higher content of alloy elements and a combination of unique properties to improve toughness, wear resistance and hardness. Using HSS-E-PM prolongs tool life, makes it more predictable, improves feed and speed performance, as well as helps reduce chipping problems. Also, HSS-E and HSS-E-PM are excellent substrates for a variety of coatings, such as Titanium Nitride (TiN), Titanium Aluminum Nitride (TiAlN), Titanium Carbon-Nitride (TiCN), as well as multilayer coatings.

Coatings considerably improve tool life and further boost the performance of HSS tools in environments where productivity and speed and feed rates are high, as well as in dry operations and for machining of difficult materials. 

The author is product strategy manager for round tools at Dormer Pramet



Off through the desert!

Cables from igus make solar-powered off-road vehicle "Froggee" fit for the world record

For 18 years, teams at the University of Bochum have been developing solar vehicles. A completely new project is the SolarBuggy. The current model "Froggee" is due to cross the Australian desert in the spring of 2018, setting a new world record in the process. The buggy will carry chainflex servo cables from igus, which are ideally suited for thermal and mechanical loads it will experience.

Since the beginning of 2016, 16 students from the University of Bochum have been independently developing and constructing a solar-powered off-road vehicle. The team wants to design and develop their SolarBuggy "Froggee" independently, in such a way that it can cope with the toughest conditions for offroad vehicles, sand and dunes without problems. The goal of the project is to break the record of an Australian team for the fastest crossing of the Simpson Desert with a solar-powered land vehicle in the spring of 2018. This means a distance of 360 km along the "French line" from Purni Bore to Birdsville. Attached to the roof of the SolarBuggy are 2.5 square metre of solar cells. The team has less than four days, 21 hours and 23 minutes to accomplish their project.

Highest demands on built-in components

Against this background, all components in the SolarBuggy have to cope with the tough demands and at the same time have a low weight. This is especially true for the installed chainflex cables. They are used to connect the motor controllers to the electric motors, for driving the vehicle and for the internal wiring of the contactors. The combination of low weight and diameter as well as maximum mechanical durability is the strength of the igus cables. The servo cables in the SolarBuggy have a special conductor design that ensures the high current carrying capacity and withstands the mechanical loads due to motion and vibration, so that there are no interruptions to the power supply. "The cables are shielded, provide DC and AC voltage and have a high electromagnetic resistance to external influences," explains Kay Bollerhof, SolarBuggy team. "As they are very tough, they are ideally suited to thermal and mechanical stress in Australia," he continues.

Guaranteed reliability at high power

igus offers the chainflex servo cables with or without an inner



The cables are shielded, provide DC and AC voltage and have a high electromagnetic resistance to external influences.

Kay Bollerhof, the SolarBuggy team

jacket. Depending on the type, they are flame-retardant, coolant-resistant & oil-resistant, and cold-flexible. Originally, the cables were designed for use in energy chains. Tested under real conditions in the in-house igus laboratory, they ensure a maximum service life and guaranteed operational reliability. In case of the SolarBuggy, selected servo cables CF270.UL.350.01.D can cope with bend radii up to 7.5xd in smallest installation spaces. Due to their PUR outer jacket, they are oil-resistant, halogen-free and silicone-free and flame-retardant.

igus sponsors SolarBuggy as part of the Young Engineers Support

Such a project as this is supported by igus under its initiative, the "Young Engineers Support" (yes). The company promotes diverse innovative and bold projects of students and young hobbyists with free product samples and technical advice.

For more information, contact

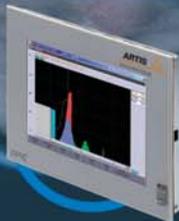
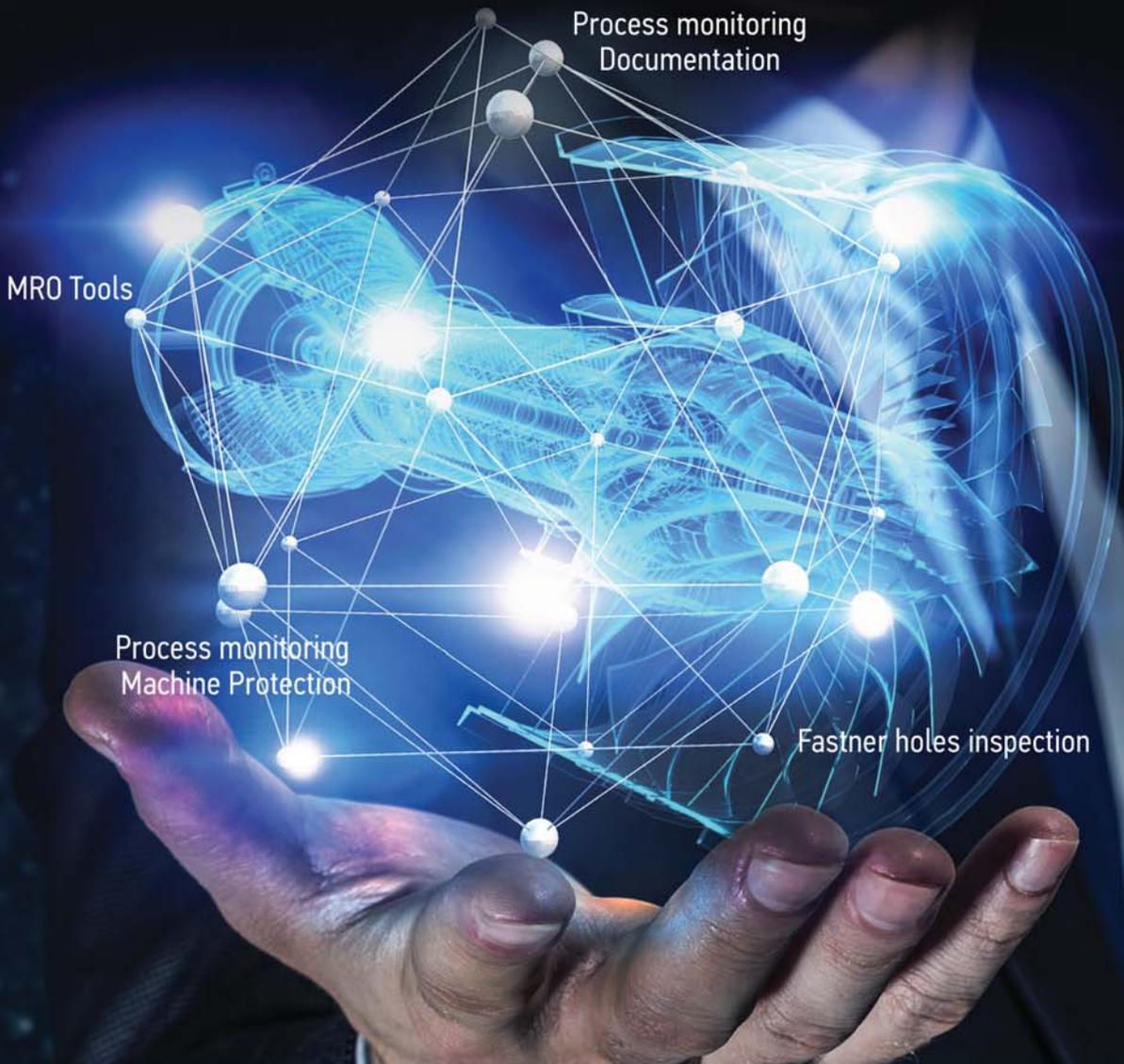
Ravikumar Alloli

Product Manager - chainflex®, igus (India) Pvt Ltd

navikumar@igus.in

www.igus.in

MARPOSS AEROSPACE YOUR WORK IN GOOD HANDS



ONE PARTNER, MULTIPLE SOLUTIONS.

Marposs Aerospace produces tools for MRO inspection, assembly, and machining components used for the aircraft engine. With thousands of tools manufactured and over 40 years of industry knowledge, Marposs can do it all. Currently, **Marposs Aerospace** can be found in Mexico, China, and in the U.S.



MARPOSS
www.marposs.com



Clamping pin of the quick-change pallet system

Until today it has been difficult to directly clamp on a quick-change pallet system large workpieces due to thermal dynamics, inherent stress or other difficulties in accurately mounting clamping pins for quick-change pallets. SCHUNK, the competence leader for clamping technology and gripping systems provides the right solution. The SCHUNK VERO-S SPD clamping pins compensate in a range of +/- 1 mm and pave the way to efficient direct clamping. In order to use this effect, the SCHUNK VERO-S quick-change pallet modules are briefly open for finish machining, and therefore a tension-free state is achieved. When the modules are relocked, the flexibility of the VERO-S SPD clamping pins avoids that the workpiece will deform again, and high precision results are achieved. The flexible clamping pins are available in two versions: the SCHUNK VERO-S SPD-B, which allows the compensation of +/- 1mm in one direction, and the SCHUNK VERO-S SPD-C, which compensates +/- 1 mm in diameter. The flexible clamping pins can be used with every SCHUNK VERO-S NSE plus module. As all the SCHUNK VERO-S components, the SCHUNK SPD clamping pins are also manufactured from stainless steel. They are connected with the workpiece with standard (M10) screws. The holding force amounts to 35 kN.



initially surface milled at the base plate to the same level with defined tapped holes and are then equipped with clamping pins of the quick-change pallet system. The parts can be exchanged in the machine with quick-change pallet modules within a few seconds, and are immediately precisely clamped. In comparison to the conventional clamping solutions, there are no interfering contours around the edges from chuck jaws or clamps in case of a direct clamping solution, so 5-sided machining with maximum accessi-

As all the SCHUNK VERO-S components, the SCHUNK SPD clamping pins are also manufactured from stainless steel. They are connected with the workpiece with standard (M10) screws. The holding force amounts to 35 kN.

bility is ensured. Plus unproductive downtimes just like time-consuming set-up, retooling, aligning or determining the zero point can be eliminated from the machine consistently. Direct clamping is similarly effective, if work-pieces are repeatedly modified or have to be machined under deadline. Due to the existing tapped holes the parts can be exchanged on the machine very precisely and within a very short time.

Direct clamping has numerous advantages

For direct workpiece clamping with the SCHUNK VERO-S, users do not need conventional clamping equipment such as clamping claws or lathe chucks with several chuck jaws. Instead, mould plates, freeform plates and other workpieces are

For more information, contact:

Satish Sadasivan

Schunk Intec India Pvt Ltd

Email: info@in.schunk.com

www.in.schunk.com

Deburring of aerospace sheet metal parts

GM Group is strategic partner with Timesavers Inc for promoting various wide belt grinding machines in India.

Deburring of Air Craft and Aero Space parts is a critical operation. Timesavers, GM's Partners offer a precise solution for this. Deburring without edge radiusing demanded by this industry is effectively achieved by machines that use deburring discs.

These machines use Combination of Abrasive belt, brush

These machines use Combination of Abrasive belt, brush & disc heads for precision deburring applications. Wet working disc machine can give a clean part after deburring. Multidirectional deburring ensures uniform edge quality.

& disc heads for precision deburring applications. Wet working disc machine can give a clean part after deburring. Multidirectional deburring ensures uniform edge quality.

Timesavers has installed over 55000 machines worldwide using their experience of over 55 years in developing deburring and finishing technology.



For more information:

E-mail: sales@grindmaster.co.in; www.grindmaster.co.in

Panasonic recommends
Windows 10 Pro.

Panasonic



ROUGH



TOUGH



RELIABLE

20
YEARS
RUGGED SINCE 1996

TWO DECADES OF WORKING IN FLOODS, FLAMES AND FAR-OUT PLACES.

TOUGHBOOK

TOUGHPAD



Windows 10 Pro



Android



ATEX Zone 2 certified*



180cm shock resistant*



Water and dust
resistant (IP65)*



Sunlight readable screen



Up to 13 hours battery life



Flexible configuration port
(GPS, Serial port, etc.)



Lightweight design - weights approx.
starting 270g

FOR INDUSTRIES LIKE OIL & GAS, CONSTRUCTION, INFRASTRUCTURE, POWER, DEFENCE, GOVERNMENT, MANUFACTURING, PHARMA, PORTS AND OTHERS.



CF-31-13.1" (33.27 cm)



CF-54-14" (35.54 cm)



CF-20-10.1" (25.45 cm)



FZ-G1-10.1" (25.45 cm)



FZ-M1-7" (17.78 cm)



FZ-B2-7" (17.78 cm)



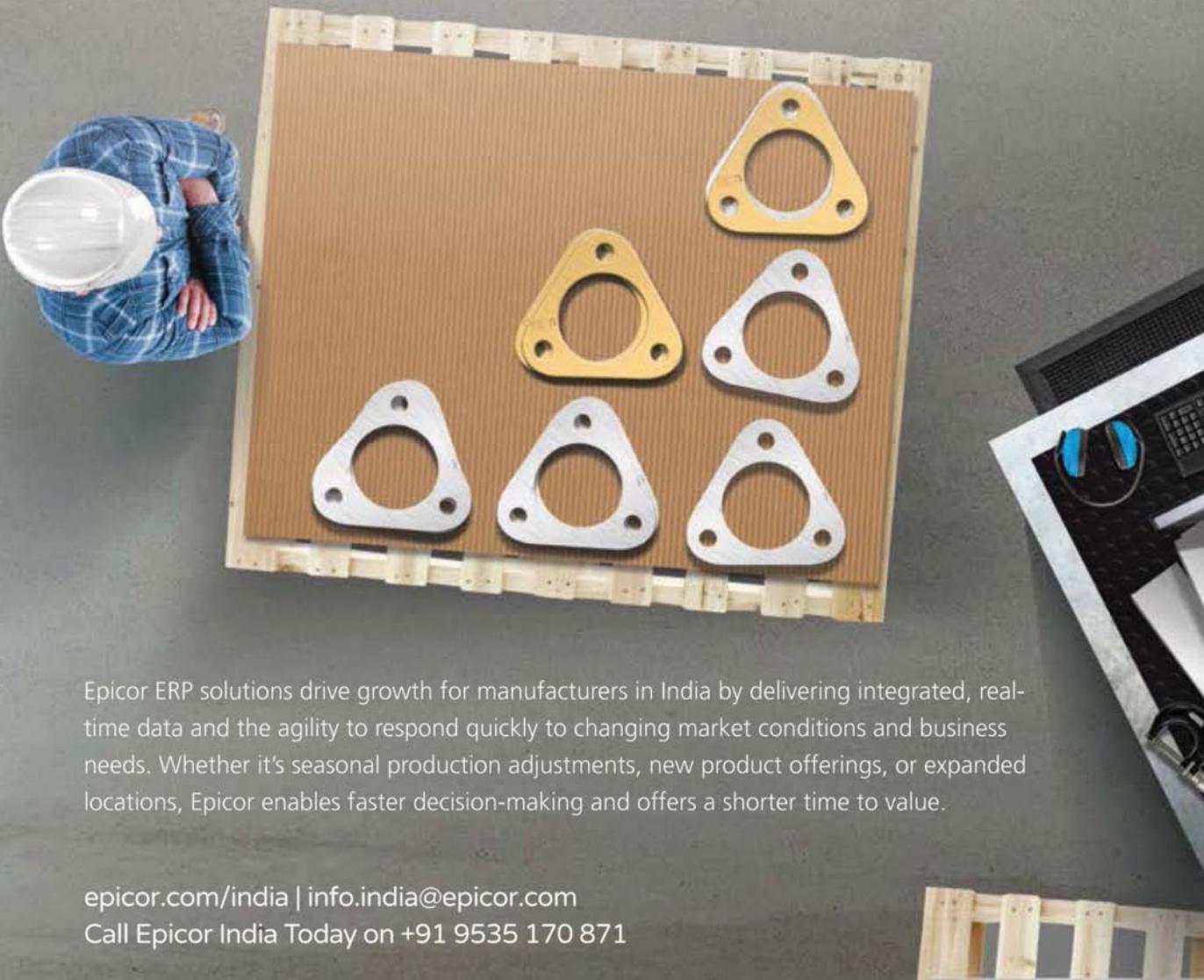
FZ-X1-5" (12.7 cm)



FZ-M1-4.7" (11.9 cm)

Contact us: 1800 419 0373 | Website: in.panasonic-toughbook.asia | E-mail: toughbook.marketing@in.panasonic.com

Maximize Manufacturing Growth



Epicor ERP solutions drive growth for manufacturers in India by delivering integrated, real-time data and the agility to respond quickly to changing market conditions and business needs. Whether it's seasonal production adjustments, new product offerings, or expanded locations, Epicor enables faster decision-making and offers a shorter time to value.

epicor.com/india | info.india@epicor.com
Call Epicor India Today on +91 9535 170 871

EPICOR.

grow business  not software®