

TAGMA TIMES

NEWSLETTER

(Technical Info. on Die, Moulds & Toolroom)

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July 2019

Indian Railways: Driving Industry on Growth Track

In Conversation With

Anand Wankhede,
L&T Electrical & Automation Vadodara

Techno Focus

Is It Time To Replace My CNC Machine?

Opinion & More

- ▶ Ashish Patankar, MD, Wire Rings
- ▶ Sunil Prayaga, Founder, PBS Technologies



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VR400 ESR	360 - 400	38 - 42	**	****	****
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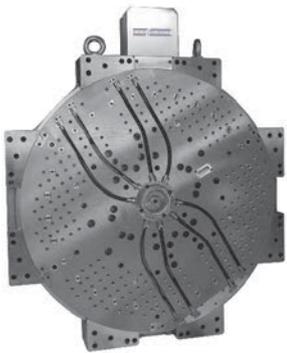
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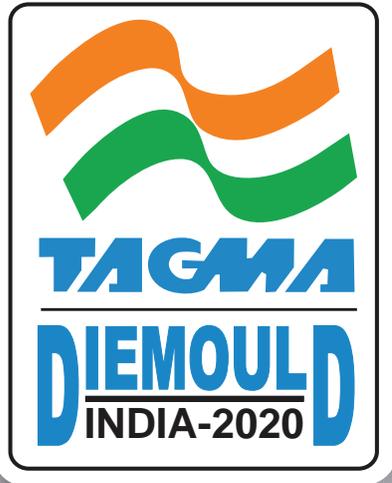
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Look Beyond Obvious

While I am writing this, the sentiment in the Indian industry is very low. The automotive industry, one of the largest consumers of die mould and machine tools, is going through a rough patch. There have been several speculations about the future of the automotive industry looking at the transitions happening due to BS VI norms, electric vehicles, and shared economy.

However, on an optimistic note, I would like to call it a 'Correction Time'.

Do we need BS VI Norm? Of course.

Are EVs a better option for the environment? Sure.

So instead of worrying, we should accept the changes and act accordingly. Remember, **CHANGE IS THE ONLY CONSTANT!**

Yes, automotive is the biggest manufacturing industry, but we must look beyond. We should gradually develop our expertise for industries such as railways, aerospace, consumer goods, packaging, and electrical & electronics, among others while catering to our primary customer, the automotive industry.

Starting July, we will highlight one such industry every month that has a promising future and holds vast business opportunities for tool makers.

As per reports, the investments in Indian urban rail infrastructure is estimated to reach nearly \$190 billion by 2050. Development of high-speed rail, new age coaches with modern technologies and amenities, is a clear indication that die mould industry should switch tracks and cater to the growing demand in the railways' sector.

See hope and new opportunities? Then, stay tuned because there is more. In the next edition, we will profile yet another fast-growing industry, aerospace.

As always, we would love to hear from you. Tell us which industry you want to read about and we promise to bring to your table everything you will need.

Happy Reading!

Nishant Kashyap

Editor

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PRESIDENT'S MESSAGE



The industry was looking forward to a very positive business scenario looking at the stability in the central government. We were expecting an improvement in ease of doing business, increase in FDIs, and stability in the economy. However, there has been no sign of improvement. The situation has deteriorated with the Indian automotive facing the worst slowdown ever in India. The sentiment across the Indian manufacturing industry is very negative at the moment which is directly impacting the tooling business.

The union budget has received mixed reactions from business leaders. While there are some sops provided to MSMEs like faster loans approval, and ease of doing business, among others. The experience of the previous term has not been so good and we will have to wait and watch how these schemes help the businesses.

Almost 50% of India's manufacturing GDP comes from the automotive industry and it needs serious attention. With no change in the GST rates other than EV during the Union Budget 2019, there has been a negative impact on auto sales thereby directly affecting the tooling industry. The policy on automotive has left auto OEMs confused. Major investments have been done to upgrade ICE to BSVI, however, it will take some time to mature. Industry wants a smooth transition from ICE to Hybrid to EV in a structured manner and we would like to have the return on investments made for migration to BSVI.

The government has to closely monitor the impact of budget proposals and make amends based on the feedback from stakeholders.

To conclude, I would say there is a major concern with the continued growth of the automotive sector in which the toolmakers are largely dependent.

At TAGMA, we are doing our part by sharing feedback at all the industry forums, to policymakers, and government institutes in the hope that remedial measures will be taken soon.

D. K. Sharma
President



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Available for working forces upto 150 kN



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Hillenbrand, INC. to acquire Milacron Holdings Corp.

HILLENBRAND, Inc. (NYSE: HI) and Milacron Holdings Corp. (NYSE: MCRN) recently announced that they have entered into a definitive agreement under which Hillenbrand will acquire Milacron in a cash and stock transaction valued at approximately \$2 billion, including net debt of approximately \$686 million as of March 31, 2019.

Under the terms of the agreement, which has been unanimously approved by the Boards of Directors of both companies, Milacron stockholders will receive \$11.80 in cash and a fixed exchange ratio of 0.1612 shares of Hillenbrand common stock for each

share of Milacron common stock they own. Based on Hillenbrand's closing stock price on July 11, 2019, the last trading day prior to the announcement, the implied cash and stock consideration to be received by Milacron stockholders is \$18.07 per share, representing a premium of approximately 34% to Milacron's closing stock price on July 11, 2019, and a premium of approximately 38% to Milacron's 30-day volume-weighted average price as of the close on July 11, 2019. Upon closing, Hillenbrand shareholders will own approximately 84% of the combined company, and Milacron stockholders will own approximately 16%.

Milacron manufactures, distributes, and services engineered and customised systems in the approximately \$30 billion plastics technology and processing industry, as well as fluid technologies and processing systems. Milacron operates in three segments: Melt Delivery & Control Systems, which designs and manufactures highly engineered, technically advanced hot runner and process control systems, mold bases, and components; Advanced Plastics Processing Technologies, which designs and manufactures plastics processing equipment and systems, including injection molding, extrusion, and auxiliary systems; and

Fluid Technologies, which manufactures products that are used in a variety of metalworking processes.

This transaction represents a pivotal step in Hillenbrand's vision to become a world-class global diversified industrial company. Together, the combined company will have increased scale and meaningful product diversification, enhancing its ability to serve customers through complementary technologies across the plastics value chain, including plastic base resins production, compounding, processing both extruded and injection-molded products, and recycling.

BFW announces a wholly owned subsidiary m2nxt Solutions

BHARAT Fritz Werner Ltd. (BFW), India's leading solution provider in the area of machine tools, announced the incorporation of a wholly owned subsidiary m2nxt Solutions. The new entity will provide complete offerings for Smart Manufacturing using both the Cyber and physical automation and solutions.

Digitisation and Automation are the next big disruption in the manufacturing sector. As an industry leader, BFW will be in the forefront of today's Industrial Revolution. The company will be a knowledge-based solution provider for advanced manufacturing processes including Jig &



Fixtures, Industrial IoT, Robotics and Data Analytics. The vision of the company would be to help enhance profitability through enhanced productivity of manufacturing companies.

BFW inaugurated its first digital factory in Hosur, Tamil Nadu in August 2018. BFW used all its Digital Knowledge and

Competency to showcase productivity improvement in this Factory.

Speaking at the announcement Ravi Raghavan, Managing Director, Bharat Fritz Werner Ltd. (BFW) said, "The digital transformation is bringing sweeping paradigm shifts in the manufacturing segment. Our new subsidiary m2nxt

Solutions will enable our clients to significantly enhance the efficiencies by creating Smart Manufacturing through Smart Process, Smart Machine and Smart People."

Praful Shende, Chief Sales & Marketing Officer, BFW said, "We are appropriately placed to enable Industry 4.0 ECO System for our Customers with all the three business verticals – Automation, Process Engineering & IIOT solutions." V Jagannath, Business Head, m2nxt Solutions said, "Under our new company, we are excited about bringing in a compelling value proposition for our clients to accomplish lean manufacturing."



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Alstom unveils proposed HS2 train design

ALSTOM recently unveils its proposed design for HS2 Ltd. The train is designed to meet all of HS2 Ltd's requirements for a world class, modern and flexible train which is as comfortable on the conventional network as it is on the new HS2 infrastructure. Alstom has market-leading high-speed rail expertise, from iconic train designs such as the TGV in France, Avelia Liberty in the USA and AGV in Italy, combined with 20 years' experience working with Pendolino trains on the UK's West Coast Mainline.



By integrating HS2 infrastructure and the conventional network from Scotland all the way down to the south of England,

HS2 will become the critical driving force in revitalising towns and cities all across the country, and especially in the midlands and the north.

"Alstom's vision is to make HS2 trains a timeless design classic, with a passenger experience that is as smooth, calm and spacious as it is high speed. Alstom is excited to unveil this proposed train for HS2, which is the most important economic regeneration project in Britain for decades. It will knit together the great cities of the midlands and the north as never before, and turbo-charge our regional economies." said Nick Crossfield, Managing Director for Alstom in UK and Ireland.

Bombardier wins additional order for 40 MOVIA metro cars from Delhi Metro

NEW order will bring the number of BOMBARDIER MOVIA vehicles in the Delhi Metro fleet to 816, making it one of the largest Bombardier metro fleets in the world

Mobility technology leader Bombardier Transportation has won a new contract to supply an additional 40 BOMBARDIER MOVIA metro cars to Delhi Metro Rail Corporation Ltd (DMRC). The new cars will increase DMRC's existing fleet of MOVIA metro cars from 776 to 816 to make it one of Bombardier's largest metro fleets in the world.

Sudhir Rao, Managing Director, India, Bombardier Transportation said, "Since 2007, in partnership with Delhi Metro, we have been supporting Delhi National Capital Region's ambitious expansion plan and we are proud to move safely around two million people every day in India's capital city with our



trains and signaling solutions." He added, "These additional trains will bring additional capacity to Delhi Metro's rail network and they will be delivered from our state-of-the-art manufacturing sites in Vadodara."

The high degree of localisation at both the Savli and Maneja sites is in line with Delhi Metro's

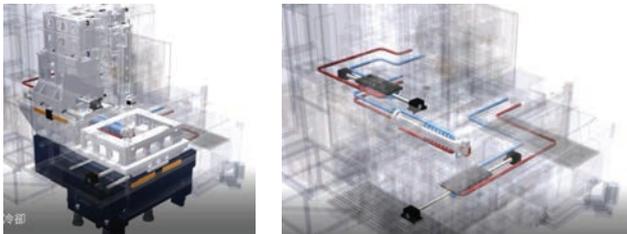
indigenous procurement plan that encourages local manufacturing and the Indian government's 'Make in India' program by delivering rail vehicles, products and solutions that are developed locally, for both Indian and foreign markets. Bombardier is one of Delhi Metro's largest rollingstock suppliers and with over 120 km of line in operation for Delhi

Metro's Lines 5, 6 and 7, is also their largest signalling solutions contractor. Recently, Bombardier commissioned the last major section on Delhi's first fully automated metro Line 7 with its advanced BOMBARDIER CITYFLO 650 communications-based train control solution to support safe and reliable automatic train operations.

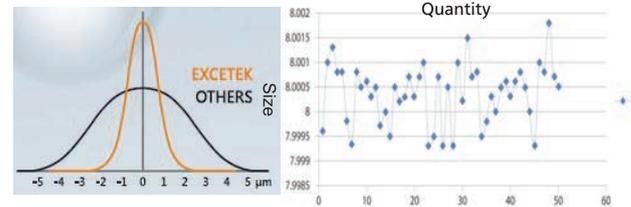
NANO PRECISION TECHNOLOGY CNC WIRECUT EDM MACHINE

A New Structure To Reduce Thermal Influence

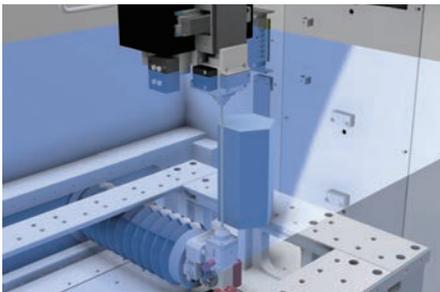
Linear Motor System



Stable Discharge Module



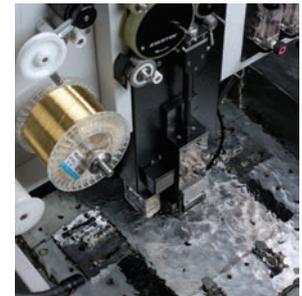
Auto Wire Threading



• 200mm Submerge threading



• 400mm thickness threading in break point



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Threading: 10 sec

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Siemens builds 9000 HP propulsion system to boost Indian Railways' electrification, haulage capabilities

THE propulsion equipment is completely designed, built and manufactured in India. The high-power equipment will improve haulage capabilities, average speed and utilisation of rolling stock assets.

Siemens is equipping Indian Railways 9000HP electric locomotive with the first indigenously-designed and produced integrated propulsion system and steel tank transformer. This propulsion system is uniquely designed to suit requirements of the 9000HP locomotive. Indian Railways is upgrading its electric locomotives from 6000HP to 9000HP as part of its rail

SIEMENS

electrification initiative.

Siemens is supplying high power traction converters, motors, drive systems and steel tank transformer, which will be part of the propulsion equipment for 9000HP freight and passenger locomotives. These locomotives will boost the haulage capacity of Indian Railways by around 50%, thereby improving average speed and utilization of rolling stock assets. The advanced technology aims to save

traction energy cost, thereby reducing fuel expenses and carbon emissions. Chittaranjan Locomotive Works (CLW) has pre-commissioned this indigenous 9,000HP electric locomotive and trial runs will commence soon.

"This important milestone is a step towards fulfilling Indian Railways' vision of complete electrification, enhanced haulage capability and building high-technology systems in line with the Make in India initiative," said Tilak Raj Seth, Executive Vice President and Head, Mobility, Siemens Ltd.

Indian Railways to invest 50 lakh crores in the next 10 years creating pool of opportunities

DURING CII Rail Connect, Mr Suresh Angadi, Minister of State Railways spoke of several interesting developments aimed at modernisation of Railways. "With growing consumerism and a large workforce, Indian Railways needs further investment, private participation and focus on freight transportation," said the Minister addressing the industry and the various stakeholders. "The Government is focusing on market-friendly mechanisms and ease of doing business."

Echoing the same vision for growth, Mr Vinod Kumar Yadav, Chairman, Railway Board said, "Indian Railways is now gearing up for quantum jump in infrastructure development." He said that freight transportation has been cross-subsidising passenger transport. There is no lack of demand, but capacity is

a constraint due to lack of land clearance and delayed forest clearances. Under digitalisation of railways, one of the many recent initiatives is the introduction of the real-time information system. A pilot project of GPS installation has been run on 4000 locomotives, and automated chartering of trains have been started.

Mr N Sivasailam, Special Secretary, Logistics, Department of Commerce, Ministry of Commerce and Industry also spoke at the inaugural session. "The logistics' contribution to GDP stands at 13 per cent, comparable to that of developed nations of 7-9 per cent. The cause of concern is the declining trend of the contribution made by Railways. Therefore, we need to prioritise freight in rail transportation". He emphasised that

digitisation, appropriate utilisation of assets, encouraging PPPs, and proper dispute resolution mechanisms will go a long way in streamlining railways and attracting private investors.

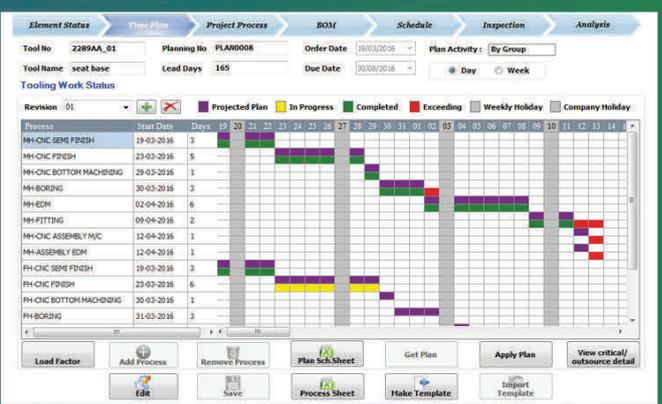
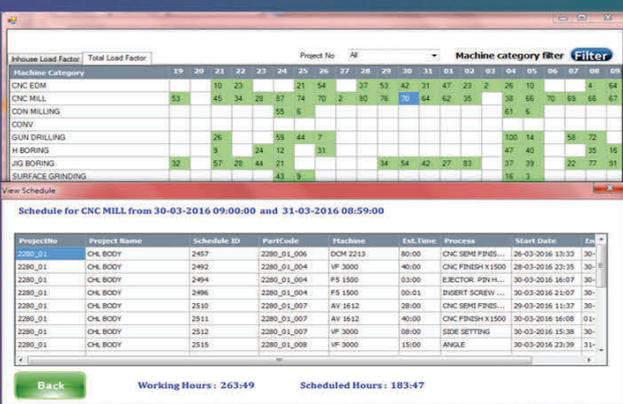
"With 17 per cent of the world population and only 2 per cent of the land area, it is not a surprise if we are spending on Railways, it is a surprise if we are not", said Mr Sachin Bhanushali, Co-Chairman, CII National Committee on Railways and Director and CEO, Gateway Rail Freight in his opening remarks on the INR 1 trillion spending on modernisation of the Indian Railways. He further emphasised that new and fast services, complete electrification and high-speed, reliable railways is a desirable shift that India is seeing. On the shift to use of renewable energy, he said, "India Railways has

set an ambitious target of using over 1200 MW of solar and wind energy for its energy needs. This shows its commitment to creating an environmentally sustainable railway system with an improved carbon footprint."

Mr Sudhir Rao, Co-Chairman, CII National Committee on Railways and Managing Director, Bombardier Transportation India applauded the Ministry of Railways for its ambition to be the best-in-class in the world, spirit of openness and receptivity to new ideas. He said, "Integration of short, medium and long-term projects is necessary for implementation. Without the success of mass-transit the planet will not survive." He added that CII will keep assisting Ministry of Railways in mitigating infrastructure challenges in the Indian Railways.

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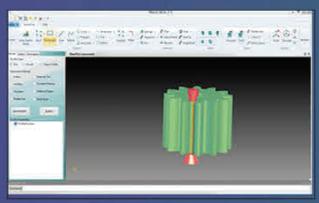
ADVANTAGES

The Return on Investment

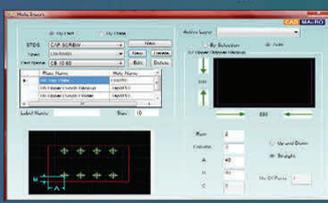
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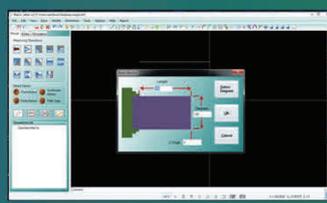
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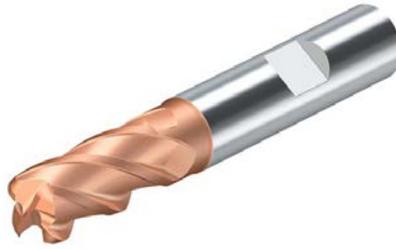
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More flexibility, maximum profitability

WITH the launch of the new MC232 Perform solid carbide milling cutters, Walter is both rounding off its portfolio of products and opening up new possibilities: For the first time, the Tübingen-based tool specialists are bringing a milling cutter with a corner radius and reduced neck to the market as part of Walter's cost-effective Perform product range. The Walter range in the MC232 Perform family now includes solid carbide cutters with or without a reduced neck and with or without a corner radius in a total of 126 dimensions, of 2–20 mm in diameter. The milling cutters can be used for all typical milling applications (lateral milling, full slotting, pocket milling, helical plunging, ramping) and are



suitable for a variety of materials and milling strategies.

Solid carbide milling cutters with corner radii meet an important demand of the market. This is because the corner radius allows the user to better approach individual component geometries. It also improves the tool life of the milling cutter, as the edge

stability is increased. The reduced neck in turn makes the milling cutter more flexible, as the user can use it with an even wider variety of cutting depths.

Other features of the Perform line have been adopted: For example, the high level of cost efficiency for small and medium batch sizes, or Walter's own WJ30ED grade, which provides a high level of wear resistance. ISO P materials are the primary application of the MC232 Perform, with ISO M and ISO K as secondary applications. The new milling cutters are likely to be of particular interest to job shops and manufacturers with frequently changing orders or quantities.

Divide By Zero launches AION500 MK3 – World's Fastest 3D Printer

ONE of India's largest 3D printer manufacturer, Divide By Zero has unveiled the AION500 MK3 – the fastest 3D Printer in the world, at the Automotive Engineering Show in Chennai.



Speaking at the launch, CEO & Founder Swapnil Sansare expressed "3D printing technology has been in the industry for the past 30 years and we all are fascinated by its potential, however, speed has been a drawback – until today. AION500 MK3 is 3X faster than conventional CNC machines. The printing speed is 10x more than any polymer extrusion-based platform anywhere in the world. Basically, you can now print the anatomical model of a human skull in minutes. Companies need not wait for a week for their

orders when they can have it in mere hours." He adds "The Rol for this machine is barely 4 months".

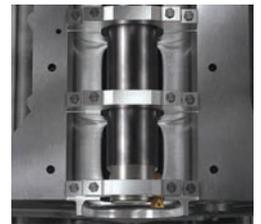
Powered with DBZ's revolutionary Patented 'AFPM' Technology AION500 MK3 can print 10X faster than any 3D printer without losing on mechanical properties, surface finish, and accuracy. Years of research has helped the team at DBZ to develop a high-speed, high throughput 3D printing solution which is built to revolutionise the industry worldwide and overcome the barriers of speed, time and cost. The added salient features of AION500 MK3 are –

- ▶▶ 1.5G Acceleration on Servo Gantry
- ▶▶ 1.5m/s Travel Speed
- ▶▶ All new dual drive Liquid Cooled Print Head\
- ▶▶ 10-micron positional accuracy

This is a breakthrough which the Rapid Prototyping industry was yearning for since last decade.

New damped CoroBore 825 improves security and productivity

CUTTING tool and tooling system specialist Sandvik Coromant is releasing a new generation CoroBore 825 damped fine-boring tool. The system makes use of Silent Tools™ technology, with dampers dimensioned specifically to suit every adaptor size in the assortment and deliver maximum performance for the user. This solution not only elevates process security where vibration issues are frequently encountered – such as when machining with long overhangs – it improves productivity as cutting data can be increased substantially.



Among the principal differences in the latest generation tool is the change of boring head material, from steel to aluminium. In addition, the head has been shortened so that the damper comes closer to the cutting edge, which is beneficial for process stability. "Internal channels are utilised to deliver coolant directly to the cutting edge, which is another factor that contributes to improved surface finish, higher penetration rates and greater process security," says Jenny Nilsson, Global Product Manager at Sandvik Coromant.



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TATA Technologies and Futuremove Automotive enter a strategic partnership

TATA Technologies, a leading global engineering services organisation, today announced that it has entered into a strategic partnership with FutureMove Automotive, a leading high-tech Chinese enterprise specialising in connected services, to develop comprehensive and unique connected mobility solutions for automotive manufacturers in China and worldwide. The companies signed the Memorandum of Understanding (MoU) at Auto Shanghai, the biggest auto fair of the South East Asia region.

The association will enable

both the companies to complement their value offerings for the automotive industry and serve their customers better towards future mobility. Tata Technologies has strong capabilities in delivering end-to-end vehicle programs. With over 9000 professionals, Tata Technologies serves clients in 27 countries from its 17 global delivery centers across Asia Pacific, Europe, and North America. FutureMove Automotive, with its digital and mobility services is a strategic partner to its customers in Mainland China, Hong Kong, Macao and the US. Through the agreement, the two

companies will integrate technologies, products, solutions, and resources to respond to demands within the automotive industry. The joint strategy will help support their clients across the globe by providing the capacity, capability, competitiveness and a range of innovative solutions for future mobility and ensure their leadership in the industry.

Mr. Warren Harris, Chief Executive Officer & Managing Director, Tata Technologies, said, "In support of our vision towards "Engineering a better world", Tata Technologies

is committed to building an ecosystem of partners. These strategic partnerships will be underpinned by a commitment to complimentary positioning and mutual success. The relationship with FutureMove will combine Tata Technologies' market-leading connected car service offerings with the platform and technology of FutureMove to provide a suite of services to the Chinese automotive industry. We are extremely excited about the opportunity to accelerate the value that we deliver to this dynamic and constantly evolving market."

ACMA welcomes a pro-manufacturing & growth oriented Union Budget

ACMA, the apex body representing India's auto component sector, welcomed the measures announced in the Union Budget for providing a much needed thrust to the structural reforms to make India a USD 5 Trillion economy by 2025. The industry body expressed satisfaction on the focus on development of rural and urban economy, manufacturing, infrastructure, education & skilling, ease of doing business and life, attracting investments and encouraging innovation and digitisation.

Congratulating the Union Finance Minister, Nirmala Sitharaman, President ACMA, Ram Venkataramani, said, "The Budget unveiled by Hon'ble Finance Minister is indeed futuristic and

lays the foundation for India becoming a global economic powerhouse in the next few years. The industry welcomes the measures announced to improve liquidity in NBFCs. This will provide respite to the cash-crunch being faced by the industry as also help improve sales in the auto sector. NBFCs today extend credit for most vehicle sales in the country."

"We are also glad that the Government envisions making India a global hub for manufacturing of EVs. Reduction of GST from 12 per cent to 5 per cent and additional Income Tax deduction of rupees 1.5 lakh on interest paid on loans for purchase of EVs are steps in the right direction to make EVs affordable. Further, focus on mega manufacturing projects for

semiconductors, photo-voltaic cells, Li-ion battery, etc. will facilitate localisation and spur manufacturing of EV components in India", added Ram.

He further mentioned, "enhancement of duty on select items such as oil & air filters, glass, lighting, vehicular locks, horns, sound signal equipment, wind screen wipers, catalytic convertors etc. is welcome. This will not only provide impetus to the local manufacturing industry but also prevent sub-standard imports that adversely impact the domestic market, especially the aftermarket."

Other promising measures announced include extending 25 per cent corporate tax to companies with turnover of up to

rupees 400 crore. Over 70 per cent of the companies engaged in the auto component manufacturing are SMEs and will gain from the measure.

Focus on AI, IoT, big data and robotics are key to modern manufacturing and improving productivity. These will facilitate India in being a globally competitive manufacturing nation.

The thrust given to the development of rural economy, infrastructure, particularly roads, augurs well towards creating a vibrant automotive market in the country, which in turn, will fuel growth and development of the domestic auto component industry.

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All auto segments down in Q1 of 2019-20

Production

The industry produced a total 7,215,513 vehicles including Passenger Vehicles, Commercial Vehicles, Three Wheelers, Two Wheelers and Quadricycle in April-June 2019 as against 8,064,744 in April-June 2018, registering a de-growth (-) 10.53 percent over the same period last year.

Domestic Sales

The sale of Passenger Vehicles declined by (-)18.42 percent in April-June 2019 over the same period last year. Within the Passenger Vehicles, the sales for Passenger Cars, Utility Vehicle & Vans declined by (-) 23.32 percent, (-) 4.53 percent and (-) 25.66 percent respectively in April-June 2019 over the same period last year.

The overall Commercial Vehicles segment registered a decline of (-) 9.53 percent in April-June 2019 as compared to the same period last year. Medium & Heavy Commercial Vehicles (M&HCVs) declined by (-) 16.60 percent and Light Commercial Vehicles declined by (-) 5.06 percent in April-June 2019 over the same period last year.

Three Wheelers sales declined by (-) 7.35 percent in April-June 2019 over the same period last year. Within the Three Wheelers, Passenger Carrier sales registered a de-growth of (-) 8.74 percent and Goods Carrier declined by (-) 1.45 percent in April-June 2019 over April-June 2018.

Two Wheelers sales registered a de-growth of (-) 11.68 percent in April-June 2019 over April-June 2018. Within the Two Wheelers segment, Scooters, Motorcycles and Mopeds declined by (-) 16.72 percent, (-) 8.76 percent and (-) 19.02 percent respectively in April-June 2019 over April-June 2018.

Exports

In April-June 2019, overall automobile exports grew by 0.16 percent where Passenger Vehicles and Two Wheelers exports grew by 3.55 percent and 3.12 percent respectively. However Commercial Vehicles and Three Wheelers registered a de-growth of (-) 52.41 percent, and (-) 12.97 percent respectively in April-June 2019 over the same period last year.

Continental launches new axle drive for electric powertrains

CONTINENTAL is presenting at the IAA 2019 the third generation of electric powertrains, with the new, very high-performance, light and compact axle drive. Series production of the new axle drive used worldwide will begin at the Continental plant in Tianjin, China, in the third quarter of 2019. With the new electric drive, the Powertrain division is assuming a pioneering role as a technology supplier for highly integrated electric axle drives for the mass market and is once again setting standards for the performance of these modules.

“We are promoting new mobility solutions with pioneering technologies. Our electric drives form a key element of innovative vehicles – from both

established manufacturers and start-up companies,” said Andreas Wolf, CEO of Continental’s powertrain business.

Back in 2006, development work began at Continental on an electric drive that was used in an electric car from a European manufacturer from 2011. The market-ready, third generation of the axle drive weighs

less than 80 kilograms. The function of an electric parking lock has now been integrated into the transmission.

“We offer the highly integrated axle drive in two performance levels, with 120 kW or 150 kW. The new, high-voltage drive, comprising an electric motor, power electronics and reduction gear, has also



reached a previously unseen level of development,” said Thomas Stierle, head of the Hybrid Electric Vehicle business unit of the Powertrain division. As far as an output of up to 150 kW and a maximum torque of up to 310 Nm is concerned, the new electric axle drive is roughly equivalent to a conventional two-litre turbo-diesel engine.

The new Continental technology is setting the Sion electric vehicle from German start-up Sono Motors in motion. The Sion is the first series-produced electric vehicle to have solar cells integrated into its body. The car thereby produces electric energy self-sufficiently, extending its range.

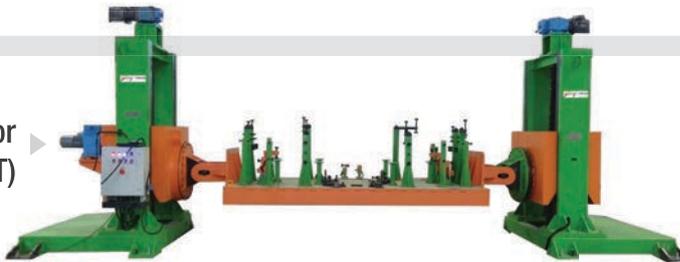


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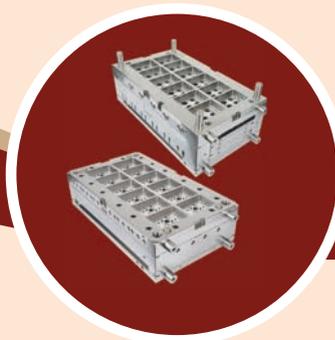
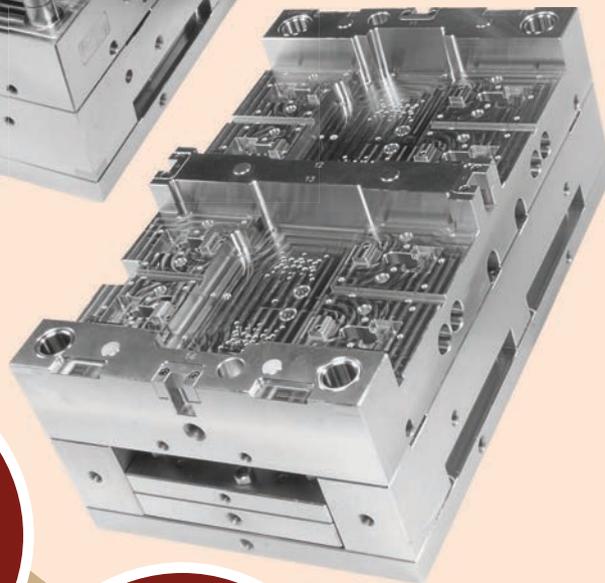
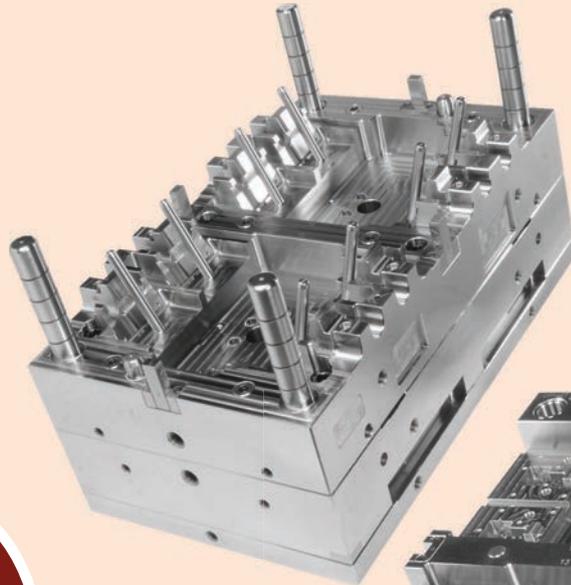


1. The full track length of Indian Railways can circle the equator one-and-a-half times.
2. Indian Railways carry more than 25 million passengers every day, more than the entire population of Australia.
3. The New Delhi Main Station, having the world's largest route relay interlocking system, has a place in the Guinness Book of Records.
4. Indian Railways is one of the world's largest railway networks, with 115,000 kms of tracks and a route of 65,000 kms.
5. The total distance covered by Indian Railways daily equals three and a half times the distance to the moon.
6. The world's highest railway bridge is being built over Chenab. It will dwarf the Eiffel Tower.
7. Indian Railways got its first 'aerodynamic and ergonomic engine' in the year 2018.
8. Train-18, India's first self-propelled or engine-free train was unveiled this year.
9. The Indian Railways has set up Country's first and world's third transportation university 'National Rail and Transportation Institute (NRTI)' in Vadodara of Gujarat in this year.

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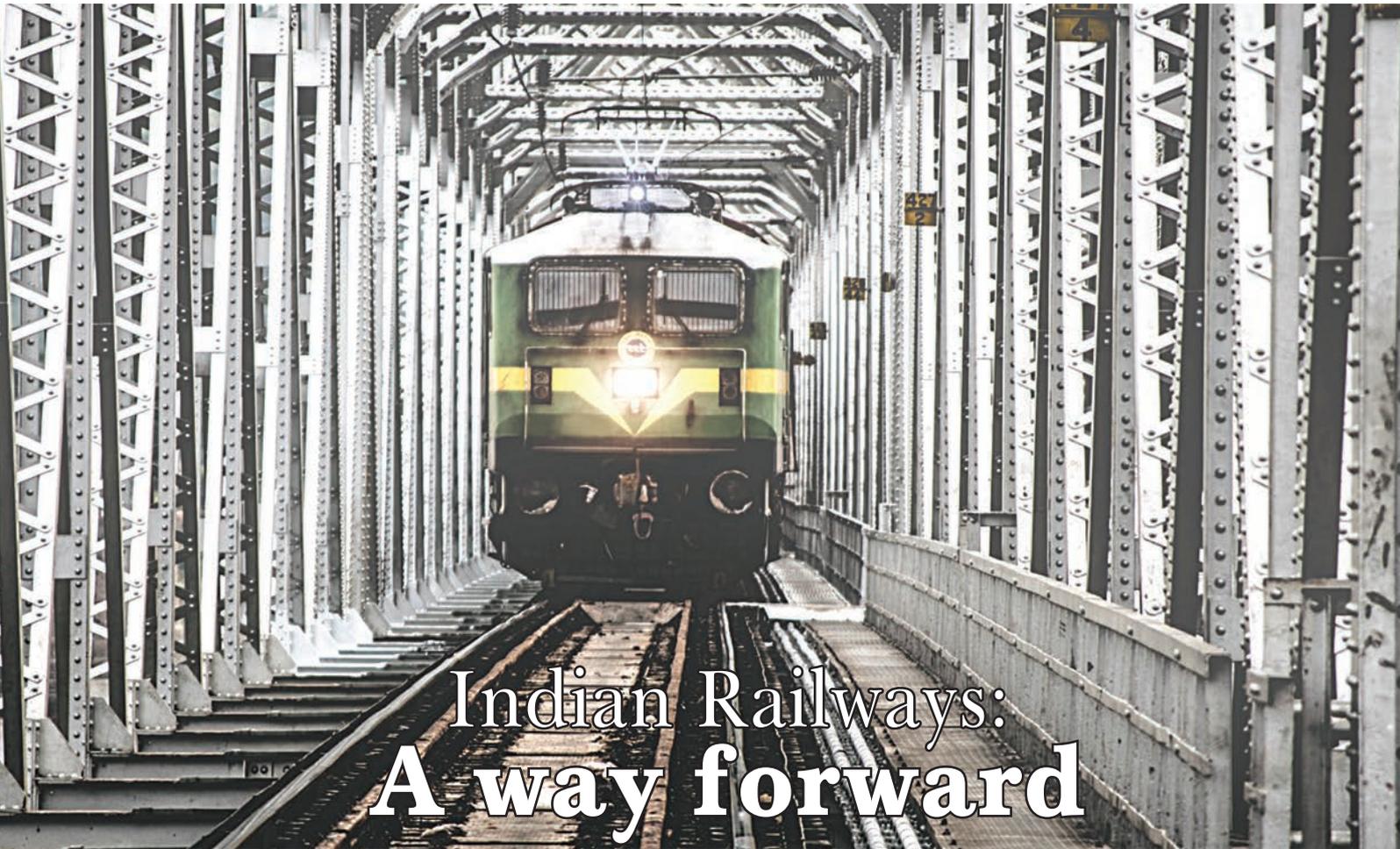
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Indian Railways: A way forward

This time, the Budget has opened up on the necessity for faster, safer, modernised trains. Along with the avalanche of investment pouring into the Indian Railways, it is the right time for the die and mould industry to tap the opportunity and show their mettle.

Debarati Das

Railways are the lifeline of India - be it the express trains, the local trains or the metro trains. With the increasing number of commuters, the need for new trains will never go down. However, the need for trains incorporated with new technologies making it faster, sturdier and safer is the need of the hour.

As India enters the era of semi-high speed train travel with modern world-class train sets, it is imperative for the Indian Railways to revamp its old and ageing infrastructure. This would make way for modern trains to attain the speed, safety and strength to its full.

An International Energy Agency (IEA) and International Union of Railways (UIC) report, stated

that the future of rail depends on how it meets the rising transport demand and increasing pressure from competing transport modes.

According to its report, The Future of Rail- "Rail activity in India is set to grow more than any other country, with passenger movements in India reaching 40 percent of global movement. Rail activity in India is among the highest in the world, second only to China for passenger movements and fourth for freight movements. The biggest part of the increased investment goes to infrastructure for urban rail (nearly USD 190 billion) and high-speed rail (USD 70 billion)."

The report suggests that the rail passenger traffic increased by nearly 200% since 2000. Hence, it is of

In Focus: Markets

utmost importance to being modernisation for faster, safer trains.

Future of Indian locomotives

The 2019 Budget also addressed the issues and focussed on transforming to the gen-next trains. This time, the government has set the highest ever overall capital expenditure programme for Indian Railways at Rs 1.58 lakh crore. With this, the country aims to bring in world class technology for the Indian railways. Some of the changes that this industry will witness are as follows:

Indigenous trains

To begin with, the Indian railways is all set to get a successor to its 30-year-old Shatabdi Express in the form of Vande Bharat Express. The 16-coach train, will be completely made in India over the next 18 months by the Integral Coach Factory, Chennai. The new trains, which will ply from Delhi to Varanasi, will reduce the travel time between by about 40%. It will also be the first locomotive-less train in the country. With this, the Indian railways is ushering into the era of self-propelled semi-high speed travel on world-class train sets.

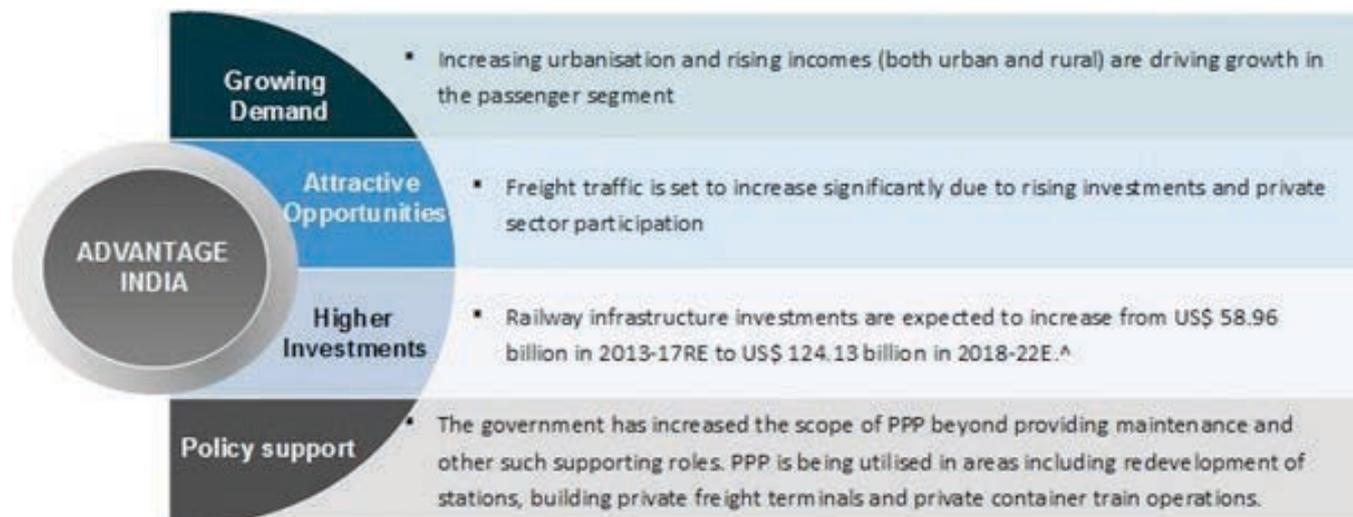
“It’s a train built completely in India by Indian engineers. It is an example that it’s possible to make world-class trains under Make in India,” announced Railway Minister Piyush Goyal.

The Railway Ministry is simultaneously trying to identify more routes where these trains can be incorporated. The Indian Railways is also looking to proliferate the manufacturing of similar train sets with aim to introduce a Rajdhani-style sleeper version as well.



Embracing partnerships

This year, the Budget also addressed the need for private investment in Indian Railways making way for Public-Private Partnership models in the railways in the upcoming future. All this, opens up the opportunity for a range of manufacturers, especially the die and mould manufactures, to have a share of the pie.



Note: [^]As per CRISIL Infrastructure Yearbook 2017, RE – Revised Estimates, E – Estimate

Furthermore, the announcement for Dedicated Freight Corridors to decongest the railway network for faster movement of trains, Special Purpose Vehicles (SPVs) for the suburban railway network development, will further bring in a fresh league of opportunities for the industry manufacturers.

The already announced two Dedicated Freight Corridors (DFCs) are targeted to be completed by 2021 in phases. The Rewari-Palanpur section on Western DFC and the Khurja-Bhaupur section on Eastern DFC are targeted for completion this year.

All this will open up a range of opportunities for the die and mould industry for them to show their mettle with high tech technology and cutting edge perfection.

Manufacturing volume

India has the world's third-largest railway network. As of 2016-17, India's rail network had a total length of 67,368 km. However, it is not enough to ply the constantly growing number of people commuting via train every day. Constant efforts are being made to expand its outreach and lay tracks in places still untouched by the railways. New coaches are being added to existing ones to encompass the influx of passengers. Several new trains and coaches were introduced earlier- for instance the all AC-3 tier, Humsafar Express train with 22 coaches; the superfast train- Antyodaya Express and Deen Dayalu coaches. Now, the manufacturing of these luxury coaches is expected to be increased so as to introduce them in new lines to bring in comfort in budget for passengers. Indian Railways is also stepping up to replace all short-distance MEMUs and DEMUs trains on the Golden Quadrilateral with Train 18-style trains and that will change the way Indian trains are manufactured.



Striving for bullet speed

Apart from the semi-high speed trains, India also gaining pace towards the introduction of its first bullet train service in the coming years.

The bullet train or the high-speed rail corridor that would connect Mumbai to Ahmedabad is a 508-km-long route. The train, which runs at the maximum speed of 320 km/hour, is expected to travel the distance in two hours and seven minutes, covering 12 stations. The project is scheduled for completion by the year 2023.

Post this, there are also plans to set up high-speed rail connectivity in five more locations in India including Delhi, Kolkata, Hyderabad, Chennai and Bengaluru.

This ascertains that the Indian Railways is looking towards faster, more punctual and safer trains with the modernisation of railway infrastructure.

The way forward

The IEA report states that Indian railways will account for nearly 40 percent of total global rail activity by 2050. Investments in Indian urban rail infrastructure is estimated to reach nearly \$190 billion by 2050. Along with the development of high-speed rail, fuel expenditures are estimated to reduce by nearly \$450bn.

All this can only be driven on the shoulders of technology and innovation. It is high time that the die and mould industry brings in the latest technology as it jumps into this bandwagon of opportunities. 🚂



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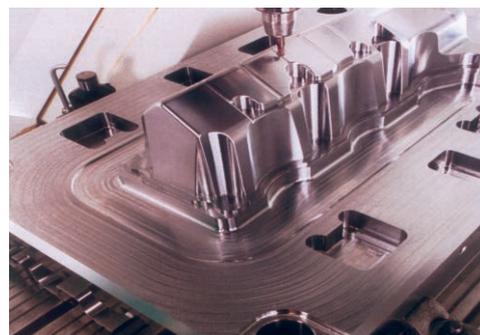
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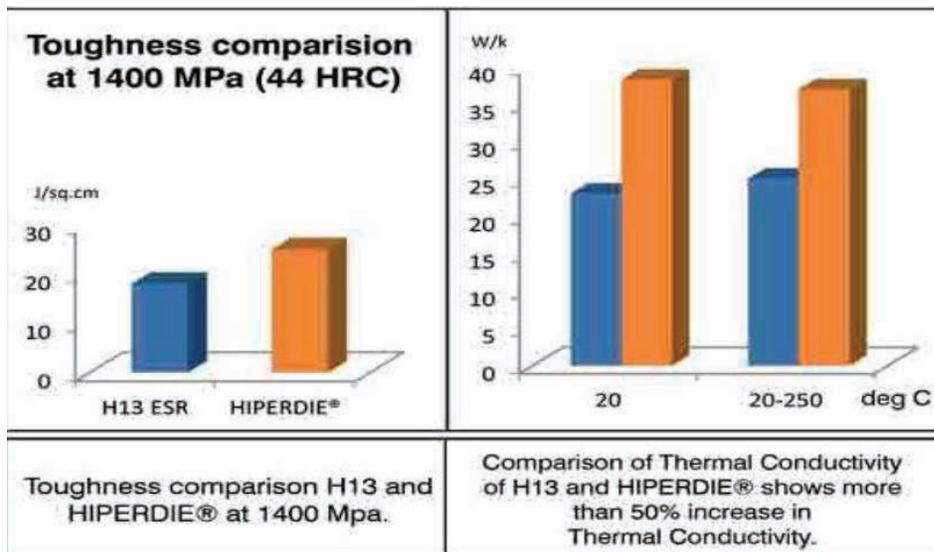
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Railway Manufacturing Transforming Industry Dynamics

The liberalisation policy and the railway policies of the Government of India, in recent years, have created a positive impact on the railways component manufacturing industry. The field of railway machining is experiencing unprecedented demand and growth, which, in turn, stimulate innovations and promote the adoption of the latest technologies. **Nishant Kashyap** finds out some of the technologies that are being used for manufacturing rail coaches.

In Focus: Technology

Technology is increasingly changing the process for manufacturing railway coaches. While coaches are being produced at faster rates, manufacturers must increase productivity & efficiency along with quality & innovation. Some modern technologies that are used to boost the railways manufacturing industry are programmable machines & tools, quality die mould, highspeed data communication & data management, adopting automated solutions, sophisticated sheet-metal cutting methods and advanced forging techniques.

New Product Design and Application

The demand for lighter and more efficient coaches has increased ever since the arrival of supersonic and metro trains. This has induced the manufacturers to do away with old production systems and adopt new methods. Traditional Special Purpose Machines (SPMs) and transfer lines have become outdated. Today, the world of rail manufacturing relies heavily on automated system. The automation used presently in rail machine shops currently is reliable, reduces human errors and provides production planning with a committed schedule, eliminating operator dependence to a great degree. Automated or flexible manufacturing technologies affect sheet-metal (a vital component for rail manufacturing) fabricators by radically improving productivity and quality. For OEMs and job shops of all sizes, Flexible Manufacturing System (FMS) offers a strategic opportunity in manufacturing.

Role of Software

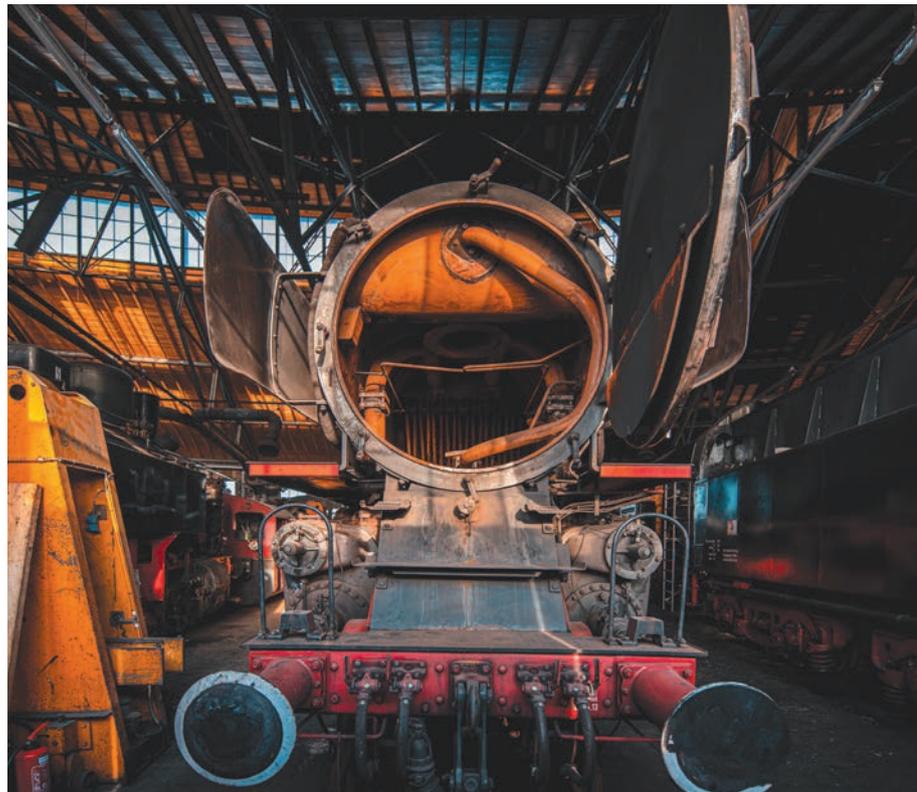
The makers of rail coaches, dies & tool are hard-pressed to cut down on lead time and optimise material & tooling costs to compete in this demanding market. In addition, using new materials, like High Speed Steel (HSS), is creating challenges as their behaviour changes when stamped. This has increased the usage of sheetmetal formability software solutions to simulate the outcome of the utilisation of new materials and processes, long before the dies were built or even designed. The most used software, CAD/ CAM, provides manufacturers a viable solution; therefore, several coach manufacturers are applying automation, as it provides flexibility and cost efficiency. Coaches are produced in an assembly line, which requires that the same type of components be produced in large volumes. Different components are pre-fabricated by machining processes and transferred to the assembly line for final production.

Sheet-metal Technology

The development of new machines and applications

is critical for the growth of any industry. Various advancements are taking place in the sheet-metal working sector, be it in cutting, bending, punching or forming. Sheet-metal is one of the most critical components for railway coach manufacturing. Many new materials are being used to manufacture lightweight coaches, which, in turn, increases the demand for sheet-metal machining technology. With the railway industry increasingly emphasising on both the quality and quantity, companies are bound to shift from conventional systems to automated ones. However, those in the traditional fabrication domain are still using the conventional machines.

These days, roll forming has become a key technology. Out of the many sheet-metal cold forming methods, roll forming has been most successful in generating significant interest in the Indian sheet-metal industry. High volume production, consistent product quality, less material handling and minimum labour utilisation are some of the advantages with cold roll forming process. Longitudinal welded tube made out of cold roll forming process already exists in India. Stainless steel materials up to 12-mm thicknesses are now being roll formed as well. However, as compared to the large variety of products that are being roll formed worldwide, roll forming is still an unexplored opportunity in India. For instance, though the Indian railways has realised the advantages of roll forming



In Focus: Technology



Forging

The characteristics of forged parts, such as strength, reliability and economy, make forging ideal for railway coach manufacturing. Forged components are commonly found at points of shock and stress such as wheel spindles, kingpins, axle beams & shafts, torsion bars, ball studs, idler arms, pitman arms and steering arms. Another common application is in the powertrain, where connecting rods, transmission shafts & gears, differential gears, drive shafts, clutch hubs and universal joints are often forged. Although typically forged from carbon or alloy steel, other materials such as aluminum and micro alloyed steels are also seeing great advances in forged rail applications. To improve product quality and efficiency in production, coach makers invest a large amount of time & money into developing and improving the manufacturing process, especially on materials & the cutting methods. Over the last decade, significant technological developments have taken place, changing and reinventing how coaches are produced, which should continue in the future as well. 🌈

process, it has re-designed only a few of the structural members of wagons.

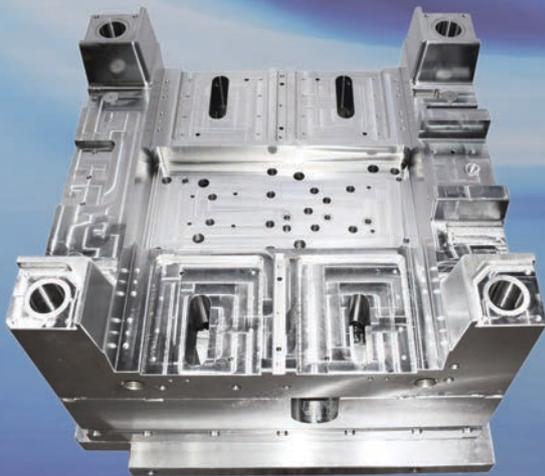
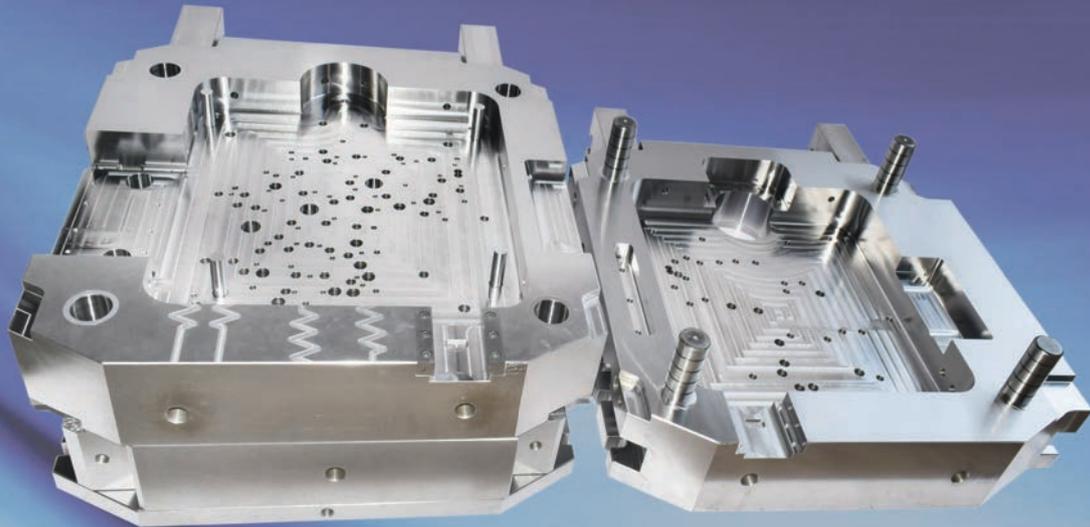
Die & Mould

To meet the challenges of railway industry, a host of new technologies have evolved over the years. Apart from the conventional technologies, like die sinking & wire EDMs, the new generation manufacturing extensively utilises hard machining and complex profiling on multi-axis machining centres to completely finish the dies & moulds with little need for manual finishing & correction. Supporting these machining methods are new developments in design analysis, inspection techniques and complex programming systems. Railway is one of the biggest caterer to the die and mould industry. Besides, demand is rapidly increasing from aerospace, computer hardware and telecom industries. This is a challenge as well as an opportunity for dies & mould manufacturers to deliver high-quality product at low cost in future.



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In conversation With

“Indian tooling industry is transitioning from Reform to transform phase”

Anand Wankhede, In-charge Tooling Operations (ETS), L&T Electrical & Automation Vadodara opines about the state of the Indian die and mould industry focusing on the opportunities and the areas of improvement required to take the Indian industry to the global competition.

10-15 percent in the next three years. Moreover, the ‘Make in India’ initiative taken by the government will give further boost to the industry. Many of the Auto OEMs have responded positively to this drive and have decided to increase the contribution of locally manufactured components.

However, we must not neglect the International market. A few advanced countries are likely to stop manufacturing of die and mould for two reasons, competitiveness and non-availability of skilled manpower. Some more prominent countries that are hubs of Tool makers have started facing the same challenges. This situation opens the doors to international markets for Indian tool makers.

Q Since Automotive Industry- the largest customer, is currently in bad shape, what are the other avenues for tool makers?

The Indian die and mould industry is mainly driven by automotive industry. However, the increase in purchasing capacity of rural and urban India will boost the growth in manufacturing sectors of



Q What is the current business dynamics of Indian die & mould industry?

Every industry needs to pass through the phase of “Reform-Transform-Perform” before it becomes matured enough to meet customer delight. Today Indian tooling industry is in transition phase of “Reform to transform”. Large and organised sectors in tooling industries touched the upper band of transformation, and the good news is that many SMEs are overcoming the barriers of “reform”. On the other hand, the demand on Indian tooling industry is increasing exponentially- value wise as well as service wise.

Q What are the opportunities in the die & mould industry?

India has already registered itself as the fastest growing economy in the world and is capable of maintaining the position with expected growth rate of 7 plus percent in the coming years, hence there will be a strong demand in manufacturing sector. The tooling industry is one of the key drivers of Indian manufacturing sector.

As per a recent survey conducted by TAGMA, the overall die and mould market is expected to grow by

In conversation With

packaging, electronics, electrical, healthcare and machine tools. It is a great opportunity for the die and mould industry.

Nonetheless, one quick fix is the utilisation of engineering skills and high-end precision equipment like CNC machines to supply critical complex machined parts to industries like Aerospace and defence.

Q **How soon can we expect the condition to get back to normal in automotive industry?**

Today the Auto sector is struggling. However the government of India aims to make automobile manufacturing (passenger car) the main driver of 'Make in India' initiative with a 3X growth target by 2026. In that way, the growth potential is enormous. So, one shouldn't focus on the short-term high point and low point of the growth curve.

Q **Efficiency and productivity is key in the tooling business. What are companies doing to increase quality and precision of die and mould?**

Efficiency comes from effective preplanning and productivity comes from effective execution. Indian tooling industry is slowly migrating from traditional tool development methodologies and embracing the proven new and modern approaches. Every tool is being treated like a project. The days of spread sheets to track progress are a thing of the past. Many are introducing customised low-cost software for project management. This ensures process-waste elimination, also called "Muda" elimination in Japanese methodology. Almost all SMEs have adopted new age technologies for digital validation of Tool design and manufacturing process using integrated CAD/CAM/CAE software, ensuring First Time Right.

The number of high-end CNC machines, like 3-5 axis Vertical milling machines, Sinkers EDM, Wire EDM, Super finishing equipment has increased substantially in last couple of years. Increase in the number of CMM and VMM indicates that the Indian tooling industry believes "Something which gets measured gets improved."

Q **What kind of challenges does the die & mould industry face and how can they be overcome?**

The Indian tooling industry is facing external as well as internal challenges simultaneously. We are still lagging to deliver international standard of quality. Though there are opportunities, we are not the first choice. Building the infrastructure to deliver premium quality comes with a cost. The cost of

capital is the biggest hurdle for SMEs.

There can be two approaches to overcome challenge of capital:

- Work in association
- Work with clusters.

The model adopted by Taiwan and Korean tooling industry is a big success. The government of India is already promoting the development of engineering clusters.

Q **Almost all the tooling suppliers in the country are facing issues related to finding skilled manpower. What are the ways to tackle this situation? How government can help?**

There are many good technical institutes namely NTTF, IGTR, CIPET, CITD etc. The number of students graduating from these institutes are also large. These young boys and girls are the right raw material. However, the tooling industry demands experienced resource. There is a need to have patience to adopt these boys and girls and train them to become experts. Expert is better than experienced. It is true that the training is expensive but no training is more expensive.

However, the ITI scheme of Government of India is enough to fulfil the need of creating operational workforce but the curriculum needs to be reworked to suit the tooling industry.

There are good initiatives under "Skill India" mission but it will take some time to deliver the results.

Q **What's your opinion on the Indian engineering education?**

The Indian tooling industry is very fortunate to have pan-India presence of esteem educational institutes, providing tool and die making education. Most of these institutions also have a mandatory internship during the final year, which helps students become industry-ready.

The other allied engineering education like mechanical, production etc need to focus on the practical and application-oriented approach.

Q **How do you see the future of Indian die mould industry?**

The rate at which Indian tooling industry is improving day by day, it is possible to attain the phase of "Perform" in less than a decade from now. We are certainly in the right direction to cast our presence globally as a premium tooling industry. 🌈

Breaking from the past: Striving towards building a stronger India



The Union Budget 2019 has been grabbing the headlines all month. This was the first ever budget presented by a full-time woman finance minister in India- Ms. Nirmala Sitharaman. She broke away from the colonial briefcase system and brought back the traditional 'bahi-khata' or the red ledger book on the Budget day. This time, the Union Budget aimed at providing the much needed thrust to the structural reforms to make India a USD 5 trillion economy by 2025.

However, all said and done, the more important task here is to understand the things of significance that the budget has charted out to steer the economy away from downturn and the course for the machine and tool industry.

Here are some of the things that various associations of the country and companies have pointed out:

Union Budget 2019

On MSME Sector:



Vikram Kirloskar, President, CII stated that the new government's first Budget which came on the heels of a stunning electoral mandate did well to stick to the fiscal rectitude path underlined by the Interim Budget by targeting the fiscal deficit at 3.3 per cent of GDP for 2019-20. The Union Budget 2019-20 provided the right amount of stimulus which would unleash the animal spirits, fire up the economy to take it upto US\$5 trillion by 2025. CII applauds the government for announcing significant measures for upscaling investments to ₹ 100 lakh crore over the 5 years in the infrastructure sector, rejuvenating rural & urban economy, easing stress in the financial sector by addressing liquidity concerns, supporting start-ups in the country etc., which are all expected to debottleneck the economy and create a healthy eco-system for revival of business sentiment.



V Anbu, Secretary, Director General & CEO, IMTMA, the Indian Machine Tool Manufacturers' Association (IMTMA) expressed its satisfaction with the budget and pointed out that the lower 25 percent corporate tax on companies with turnover of upto ₹ 400 crore is expected to boost investments. "It is a positive step towards development of MSME sector and enhancing their production capacities. Machine tool industry is the backbone of MSMEs and this bodes well for machine tool manufacturers. Indian machine tool industry has around 1000 units engaged in production of machine tools, accessories / attachments, subsystems and parts. More than 90 percent of these are in the MSME sector and this sector stands to benefit immensely from this budget. The ministry's move will therefore eventually give an uptick to machine tool industry's business," IMTMA noted.



DK Sharma, President, TAGMA India, the union budget has got mixed reactions from Business leaders. While there are some sops given to MSMEs like faster loans approval, ease of doing business, among others. However, the experience of the previous term has not been so good and we will

have to wait and watch how these schemes help the business.



Shyamal Mukherjee, Chairman, PwC India opined, "The Finance Minister's Budget speech reiterates the Government's thrust on minimum Government and maximum governance. Ramping up infrastructure investments to ₹ 20 lakh crores a year would help India move to the 8% growth trajectory. The proposed Expert Committee will have a critical role to play in channelling long term private capital to meet this need. Resource mobilisation through further disinvestment and increase in tax rates, and encouraging banks to take risks in lending to NBFCs through partial guarantees to ease credit flow is likely to have a positive impact. The focus given to the MSMEs and the rural sector is welcome.



The Automotive Component Manufacturers Association (ACMA),

the apex body representing India's auto component sector, expressed satisfaction on the focus on development of rural and urban economy, manufacturing, infrastructure, education & skilling, ease of doing business and life,

attracting investments and encouraging innovation and digitisation. Extending 25 percent corporate tax to companies with turnover of up to rupees 400 crore was also applauded by ACMA as well. "Over 70 percent of the companies engaged in the auto component manufacturing are SMEs and will gain from the measure," pointed out Ram Venkataramani, President, ACMA.



Vikas Khanvelkar, Managing Director, DesignTech Systems Ltd

however added, "For MSME sector to grow fast, Government needs to provide affordable loans for working capital as well as for capital investments for technology upgradation and expansion."



Vartul Jain, CFO and Senior Vice-President, GreyOrange said, "The Government's continued focus on building a healthy entrepreneur ecosystem, as a key aspect for economic growth, is very encouraging. Several measures have been taken for easing FDI rules in various sectors which will have a direct impact on innovation, spurring the entrepreneurial spirit. In line with this agenda, the announcement to set up national tech incubators will promote business and economy. This is further visible in the government's efforts towards boosting investments in MSMEs."



Kavita P, Sr Partner, T Sriram, Mehta & Tadimalla (TSMT) said, "The Budget 2019 is definitely a MSME sector focused budget and has many progressive measures for the Sector. The budgetary allocation to the sector has been all time high and has increased considerably (6.99%) since the previous year. The Budget intends to ease cashflows and enable quick and easy access to funds to MSMEs and the measures in this regard are: Loans to MSME within 59 minutes, MUDRA Scheme, Interest subvention of 1% to MSME and 2% to GST registered MSME, Setting up of a digital platform to enable speedy payments and transparency in payments to MSME, Reduction in corporate tax rate from 30% to 25% to enterprises having turnover upto INR 400 Crores Proposals like Simplification of investment norms and tax benefits in sunrise sectors like electric vehicles, semiconductor etc., Enabling Geographical Indicator

Tags and Thrust on 'Make in India' will encourage more and more investment in MSME. MSME is a vast sector and quite dynamic. It contributes significantly in employment generation and nurturing entrepreneurship. The budget proposals should facilitate and boost multifaceted growth in MSME Sector."

On Next-Gen technologies:

IMTMA: Capital goods sector occupies a strategic position in the country's economy as it provides the machinery and equipment needed for many industries engaged in manufacturing of goods and services. Conventionally the Indian capital goods sector has been dependent on imports. The reduction in customs duty on certain raw materials is expected to promote indigenous manufacturing. The government's move towards imparting new age skills like artificial intelligence, internet of things, big data, 3D printing, virtual reality, and robotics as a part of the education curriculum can create a large pool of manpower with industry relevant skills. This will also create avenues for new jobs.

ACMA: Focus on AI, IoT, big data and robotics are key to modern manufacturing and improving productivity. These will facilitate India in being a globally competitive manufacturing nation.

GreyOrange: The government is actively looking to enhance skills and proliferation of emerging technologies such as Artificial Intelligence, Big Data, Robotics. Overall, we believe that the Government's thrust towards digitization to promote manufacturing and innovation are incremental steps for making India a front runner in technology, across the world.

Growth of nation- growth of industries:

CII: Allowing 100% FDI in insurance intermediaries is a good move as it will encourage global best practices in the India market. This along with the proposal to increase FDI limits in aviation, insurance and media will help improve the availability of foreign capital for these sectors. The easing of local sourcing norms for single brand retail is a big positive as well. The setting up of Credit Guarantee Enhancement Corporation in 2019-20 with a focus on long-term bonds with specific focus on infrastructure sector carry the potential of further deepening the markets and enabling the infrastructure companies to access long-term funds. Allocation of ₹ 70,000 crores for public sector banks recapitalisation is also welcome move and will help banks increase their lending to industry.

ACMA: The thrust given to the development of rural economy, infrastructure, particularly roads, augurs well towards creating a vibrant automotive market in the country, which in turn, will fuel growth and development of the domestic auto component industry. The industry also welcomes the measures announced to improve



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liquidity in NBFCs. This will provide respite to the cash-crunch being faced by the industry as also help improve sales in the auto sector. NBFCs today extend credit for most vehicle sales in the country.

DesignTech Systems: Budget has big focus on Social Causes like Water for every Household, Education, Healthcare and Affordable Housing. It provides relief to lower middle class by providing ₹ 5 Lakh limit for Income Tax. Higher Deductions on Housing loan interest will boost demand for housing and is a better for Realty Sector. ₹ 70,000 crore. Bank recapitalisation will improve liquidity for fund availability and Large Infrastructure Investments will give boost to Economy and lead to Job creation. Overall a very good budget for majority of people.

TAGMA: Almost 50% of India's manufacturing GDP comes from automotive industry and it needs serious attention. With no change in the GST rates other than EV during the Union Budget 2019, there is huge negative impact on auto sales thereby directly impacting the tooling Industry. The policy on Automotive has left auto OEMs confused. Major investments have been done to upgrade ICE to BSVI however it will take some time to get matured. Industry wants a smooth transition from ICE to Hybrid to EV in a structured manner and we would obviously like to have the return on investments made for migration to BSVI. The government has to closely monitor the impact of budget proposals and make amends based on the feedback from stake holders.

Future of cars:

ACMA: The Government envisions making India a global hub for manufacturing of EVs. Reduction of GST from 12 per cent to 5 per cent and additional Income Tax deduction of rupees 1.5 lakh on interest paid on loans for purchase of EVs are steps in the right direction to make EVs affordable. Further, focus on mega manufacturing projects for semiconductors, photo-voltaic cells, Li-ion battery, etc. will facilitate localisation and spur manufacturing of EV components in India. Enhancement of duty on select items such as oil & air filters, glass, lighting, vehicular locks, horns, sound signal equipment, wind screen wipers, catalytic convertors etc. is welcome. This will not only provide impetus to the local manufacturing industry but also prevent sub-standard imports that adversely impact the domestic market, especially the aftermarket. The Budget unveiled is indeed futuristic and lays the foundation for India becoming a global economic powerhouse in the next few years.



Kavan Mukhtyar, Partner & Leader (Automotive), PWC: The Government of India has stated its clear intent to push forward the adoption of Electric Vehicles (EVs). Allocation of ₹10,000 crore to the FAME 2 scheme, import duty exemption on EV components, additional Income tax deduction of ₹1.5 Lakhs on interest paid on loans for buying EVs will activate demand for electric vehicles. However, sustained growth of electric vehicles will require several other measures. Import duty increase for selected automotive components will support manufacturing in India. The Indian automotive industry, reeling under the pressure of demand slowdown, was expecting some short-term measures for demand activation. However the Government has chosen to instead focus on structural changes that will benefit the automotive industry in the long-term.

CII: In order to incentivize the manufacture of electric vehicles, the budget sharply reduced the GST from 12% to 5%, which in our view is likely to provide a fillip to the movement towards a greener environment. Among the other indirect tax measures, the budget measure to adopt a new Return format for GST, fully automated GST refund mechanism, usage of single cash & credit ledger are moves which will help further streamline the GST.

Overall, the industry seems to be quite pleased with the budget and are looking forward to an optimistic growth of the industry. 🇮🇳



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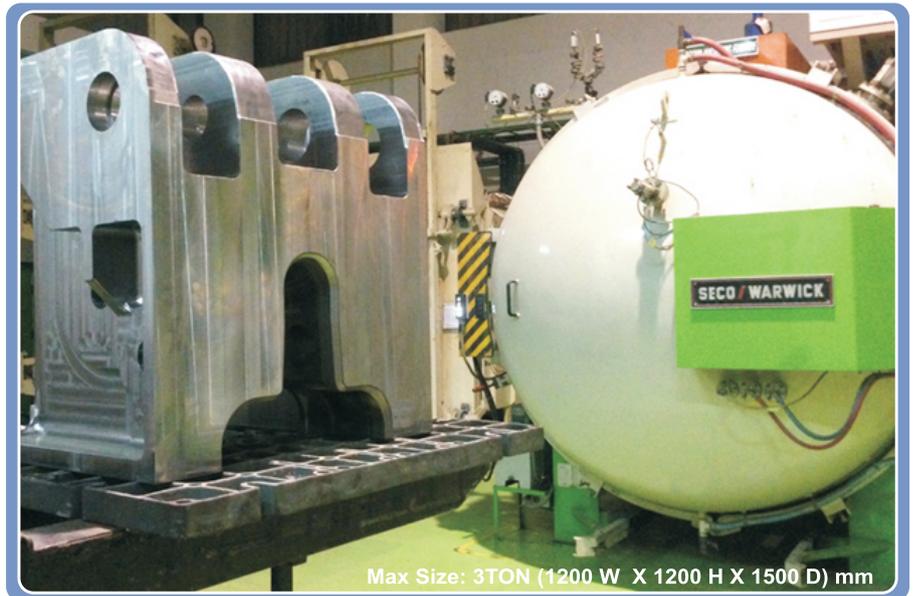
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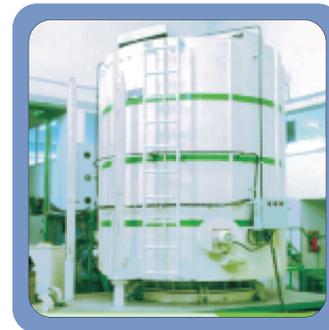
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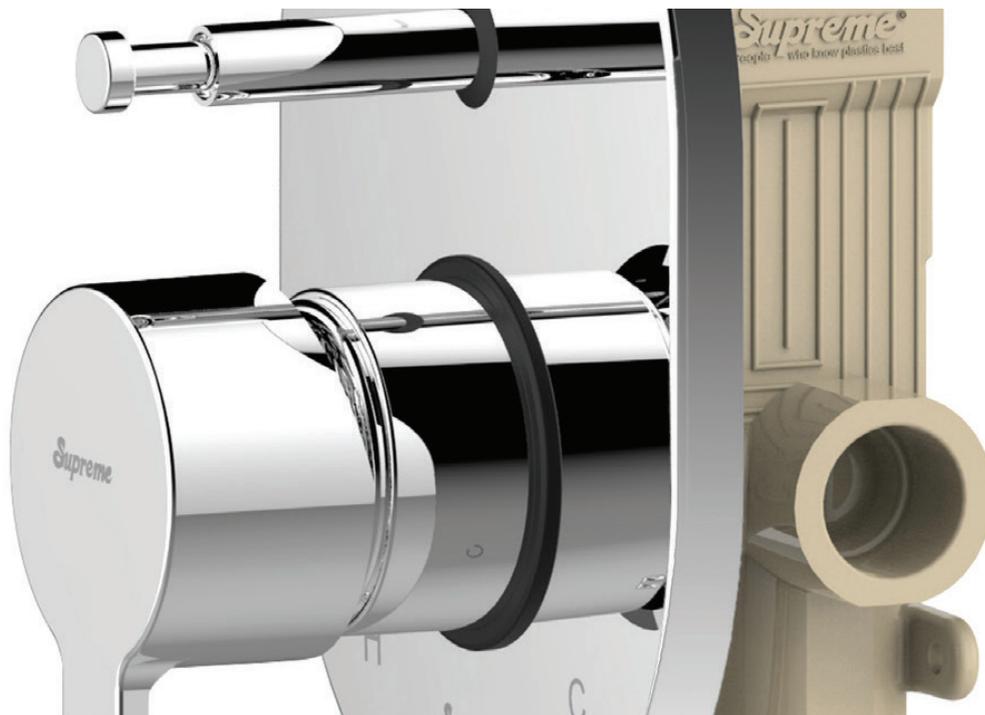


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“The 3D printer has helped us reduce cost of error, time to market, and identify design flaws at an early stage.”

Aniket Suryawanshi – Executive Product Designer – Supreme Industries

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Using Technology to Improve the Prototyping Process

Supreme’s new product development initiatives are key to its success. The company relies on cutting-edge technology for a fast product development cycle, ensuring that time-to-market deadlines and product quality benchmarks are always met. Prior to 2015, the company resorted to manual prototyping during product development. But this method posed a unique set of problems in terms of time, cost, and quality. Manual prototyping is prone to human error, and necessitated rework in many instances. This increased product development time and cost estimates, Upsetting the company’s time-to market targets.



A prototype water spray nozzle 3D Printed in ABS material to validate the nozzle size and flow capacity to withstand the speed of water.



To avoid the unpredictable nature of manual prototyping and add stability to the process, Supreme moved to standardize its prototyping efforts. The company also wanted to maintain design confidentiality by keeping product design in-house. To achieve these objectives, the company invested in 3D printing, which also promised to reduce product development time and cost, and improve quality. To select the appropriate 3D printer, the Supreme Design Center team established specific criteria. 3D printed parts needed to be tough, have a smooth finish and fit seamlessly with mating parts.

Preventing Prototyping Obstacles

Since the installation of Stratasys uPrint SE Plus 3D printer, Supreme's design department uses it extensively to fulfill various prototyping needs. The team uses 3D printing for design verification, marketing approvals of new products, and assistance in mold and tool development. By printing dimensionally and geometrically precise prototypes, the 3D printer also improves internal communications and client demonstrations.

For example, the marketing team printed a diverter part in ABS material to use for promotional activities and demos with clients. Diverters are used in bathroom fittings to mix hot and cold water. In another example, the R&D department 3D printed scaled-down versions of monobloc chairs to whether they stack with each other. The models also helped confirm the chairs are safe by ensuring they do not have sharp edges that could hurt users. Additionally, the team 3D printed a water spray nozzle prototype to validate the size of the nozzle and the maximum speed of water it can withstand.

Supreme uses ABS material for all its prototypes as it gives the required strength for functional testing. Also, the marketing team can easily demonstrate these prototypes to their clients and better explain product functionality.

The printed parts are accurate and display fine product



These stacking monobloc chair models were 3D printed in ABS material to check the viability of the design.

features, key benefits for proving the product's intended fit and function. The team also uses the 3D Printer to make butterfly valves, furniture parts and taps. They subject all printed parts to stringent functional tests for performance validations.

With in-house 3D printing, Supreme has been able to utilize the machine with ease and speed. On average, the team prints a prototype only in three hours, which used to take three days through the manual process. With the hassle-free, fast, and user-friendly 3D printing process, the team saves 90 percent time and produces durable, high-quality parts ideal for product design validation.

For Aniket Suryawanshi, Executive Product Designer at Supreme, the 3D printer has been a valuable addition. "The 3D printer has helped us reduce cost of error, time to market, and identify design flaws at an early stage." 🌈

The Time comparison between 3D Printing and Conventional Prototyping Methods

Method for prototyping	Time
Past (Without 3D printer)	3 Days
Present (With 3D printer)	3 Hours
Savings	90% (overall)



Ashish Patankar,
MD, Wire Rings

“Indian manufacturing holds big opportunities”

Ashish Patankar, MD, Wire Rings opines as he talks about some of the key issues and the way forward for the growth of SMEs and MSMEs

Q Tell us something about your company and its offerings

Wire Rings is a professionally managed company with consolidated interest in the manufacturing of Step - Circlips / Snap Rings / Retaining Rings / Bearing Rings / Lock Ring; Spherical Wheelnut Conical Washers and Allied Wire Products catering to the Bearing and Automobile Industry.

We started this company in 1997. Earlier we were only doing shaping of wires for TATAs and then slowly ventured into making snap rings. NRB bearing was one of our first few customers who bought our snap rings and later we developed L shape snap ring for the first time in India. Gradually we started gaining more acceptance in the industry and got orders from companies such as Schaeffler, SKF etc. In 2001 we got our first export order from USA which was a big moment for us. Even today, we are supplying products to the same customer in USA. We used to do about 50-60% exports but now the exports have reduced because the domestic business has increased so much.

Q Your view on how the industry is performing

The Indian manufacturing industry holds huge opportunities. However, the biggest mover of the industry, the auto sector, is currently going through a historic bad phase; especially in India. A report suggested that about ₹ 39,000 crore worth of unsold inventory is lying with OEMs and some of the major automotive companies even

stopped production for few days. Many dealers have closed down across the country. So this really does not sound like a good time for automotive industry and its suppliers. Indian manufacturing sector largely dependent on automotive sector and is considered the barometer of manufacturing sector. The current slowdown is impacting the overall climate in the Indian industry.

Having said that, we expect and truly hope the industry to bounce back soon and continue its growth trajectory.

Q What are the key challenges you face in your business?

Marketing is one of the major challenge for us. Spreading out the message for our product and promoting quality products has been one daunting task.

Also, sometimes the mind set becomes challenging for us. There are many or almost all Indian companies who prefer cost over quality without knowing that it will eventually impact them in future. We are into a very niche product market that demand precision but however at times it gets difficult to convince the customers about the same.

It is very difficult to keep the profit margin high in our industry. Some companies have started asking our balance sheet to understand our profit margin and asking us to reduce the price of our products supplied to them and kind of arm twist us to compel us to give year on year cost reduction.

Secondly, the attrition rate is increasing throughout the manufacturing industry. There are very few youngsters who are ready to join the manufacturing industry because today's generation wants everything in quick time just like fast food. They want quick money, quick



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success without actually working for it. The youngsters want to work in an air-conditioned office for a stipulated time and just do not want to blacken their hands in a factory or work hard, the least. The result being most of the youngsters work in a call centre and the less privileged ones work in malls!

Q How to overcome this situation?

The only solution I can think is automation. Going forward skilled people are going to be the biggest assets in an organisation. The importance of the skilled manpower will increase multifold in future. One can buy machinery but not people; so the importance of automation will increase which will eventually help us increase efficiency.

It is a cycle, US faced this challenge in 1950's, then Europe in 70's and slowly but steadily Asia is moving in the same direction. The mass upliftment of people's standard in Asia will take time but will surely happen and in turn will damage the environment.

Q What are the opportunities you see in the market?

I believe, India will continue to grow for another 15 years for sure. Since China's cost is increasing, India becomes the next best option for global manufacturing sector. China progressed in last 15 years significantly and I believe we have chance to replicate the same kind of growth here in India. With some many SME friendly policies getting introduced and increasing demand from middle class population we have good days ahead. Automotive Component Manufacturers Association (ACMA) has predicted that in coming 2 years India will be one of the major manufacturing hubs in the world.

Q What are the policy changes needed for the growth of SMEs?

First of all, we need a good infrastructure. We are still struggling for the most basic things such as water, electricity, roads etc. The government has to only support us with these basic things and we will do the rest on our own. We have got skills, market opportunities and good FDIs; we can definitely grow and compete with global firms. I personally feel that Indian industry is bogged down by red tapism. The recent changes in the companies law is horrendous, say to open a simple Current Account; the KYC of all directors including foreign ones are compulsory wherein a notarised affidavit is required from the foreign director's home country and that too in English. So the foreign Director has to go to Indian embassy, translate in English and then get it notarised.. All this costs money.. Opening a Current Account takes 7-10 working days which is ridiculous! Do we want foreign investments or not?

Secondly, make in india is just a slogan. As we try to come up with a better alternate solution, still our own companies do not want to rely on us !!!

Q How TAGMA is helping you?

I have recently joined the association so I cannot comment on the benefits I have got. However, I hope they can take forward few issues such as infrastructure and ask the government to improvise the technical courses to develop industry and the manpower. TAGMA has been helping Indian die mould industry in its growth, I hope they continue to do so with even better and more offerings. 🌈



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Sunil Prayaga,
Founder, PBS Technologies

“This is a great opportunity for India to grow”

Sunil Prayaga, Founder, PBS Technologies talks at length about the challenges, opportunities and the way forward for the industry to grow and face international competition.

Q Insight into the company

PBS Technologies was launched in 2008 with the special focus on hot runner systems and serve the growing tooling industry. We are pioneers in the design, engineering and manufacturing of custom made hot runner systems in India & provide innovative solutions to the hot runner industry.

We are very strong in packaging industry as the multi cavity needed in this industry is our key forte., but we focus on thermal gates where high cavitation, caps and closers are needed. The demand from packaging industry is on continuous rise and looking at our strength we are able to serve some of the large customers in the industry. We are very successful in medical and pharma industry as well.

After receiving feedback from customers and looking at the rising demand, and the infrastructure was available we ventured into manufacturing of mould as well and became one stop solution provider for mould related requirement. From 2014 onwards we started our mould making activities in full swing and are now serving some of the large customers in India.

Q How the industry is performing

In last two years, mainly after demonetisation, there has been lots of changes in the industry. There were some confusions earlier related to demonetisation and GST but now it's on track and it is helping the industry.

I believe it will further improve in the coming days. We see this government is putting efforts in right direction to help Indian mould makers like us. I personally know many companies who have stopped mould imports from China and getting the mould from Indian suppliers instead. It's difficult and time consuming to import from China or any other country because trials and other activities take time. However if you source the mould from India, it saves time and cost.

Companies have realised this and at the same time Indian mould makers have improved on quality and efficiency which is further boosting the business sentiments in India. Also the dollar has gone up so import has become even more costly. Another factor that is helping the industry is that China is no longer 'cheap', they are charging like any other countries. This is a great opportunity for India to grow.

Q Challenges you face in the industry

I don't really see much of challenges in the industry. What I feel is as long as you are able to maintain good quality for your product, I am sure that the scope is enormous. There is huge amount of opportunities available in India. We only need to improve our quality and act as per the demand.

Q Opportunities in the industry

Government's push to enhance Indian manufacturing setup and become global manufacturing hub is helping us in getting good business opportunities. The demand from moulds will increase significantly in coming days as

we see good demand coming from all kinds of industry. Of course, there is some slowdown in automotive but we expect this to get better in few months. However there has been good business opportunities from industries like pharma, consumer goods, packaging, plastics, medical, among others.

Q What are the policies needed to boost the condition of Indian mould makers?

Even though the situation is better now and we have many schemes available for SMEs in India, I feel we still need to look at other countries like China where the government support is so high that a mould maker just needs to focus on his manufacturing activities while other things are taken care by the government.

Here in India, if I want to start a factory I need finance for land, building and machines and by the time we are done with the land and building we do not have money left for technologies. So starting a manufacturing base in India is very challenging. However in China, the government supports the manufacturers to such an extent that although land and building is not for free, but one can pay the amount in small instalments over the next 20

years with almost no or very less interest rate.

So they can invest on getting the right kinds of technologies. In our case, since we are exhausted from buying land and building, we compromise on the technologies which eventually hampers the quality and efficiency. Maybe government can support us on these fronts. Today we are surviving not because of the government but in spite of the government. We have the potential to beat China but we need infrastructure and basic support for the same.

Q How you are planning to expand

In our industry, our work proves what we are. The only way to grow in tooling business is word of mouth from customer to customer. A happy customer always give references to other companies and this is how we get business. We plan to participate in domestic and international exhibitions to showcase our capabilities. As always, our focus will continue to improve our services and after sales support which is very important in our business. We believe in technology, so we will continue to invest in high-end solutions to improve our productivity and efficiency. 🌈

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Product Update

Machining Centre

A new series of 3-Axes Double Column Machining Centers (BM 1530M & BM 2035M; hereinafter, the BM Series) from Doosan Machine Tools is optimized for machining large moulds. Based on the symmetrical double-column structure, the new BM Series delivers greater rigidity and machining accuracy, coupled with thermal error compensation of the spindle and frame, which is essential for the precision machining of large and heavy moulds.



Furthermore, Nut-cooling-type Ball Screws have been applied to all the axes as a standard feature of the BM Series to prevent thermal error in the axis feed system, while Roller LM Guides and Linear Scales have been fitted to the X, Y and Z axes as standard features to ensure greater accuracy and rigidity for the heavy duty cutting of heavy workpieces. A long-nose type spindle has been adopted to provide optimum support and rigidity to provide access into deep cavities in moulds, whilst maintaining both heavy duty cutting performance and high quality surface roughness finishing operations.

Further information:

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Measuring System



The new laser measuring system LC50-DIGILOG is a ground-breaking system that has been completely redeveloped to revolutionise and future-proof the speed, precision and in-process reliability of tool measurement in machine tools. One of the highlights of the system is the newly implemented DIGILOG technology. Whereas the proven digital/switching

laser measuring systems by BLUM using NT technology only generate a small number of signals for recording measurements, the new LC50-DIGILOG generates many thousands of measurement values per second. Thanks to the new technology precision, speed and in-process reliability have been enhanced to a never before imagined level. The compact BLUM smartDock represents another world-first. This innovative standard interface serves as the basis for all new support systems and contains all the necessary pneumatic valves in addition to the electrical, mechanical and pneumatic connections between the machine and laser measuring system.

Further information:

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National:

Automotive Engineering Show

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PROPAK India 2019 is an international processing and packaging trade event for India. October, 21-23, 2019; Bombay Exhibition Centre, Mumbai.

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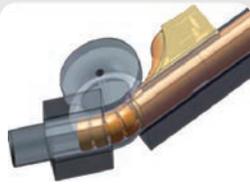
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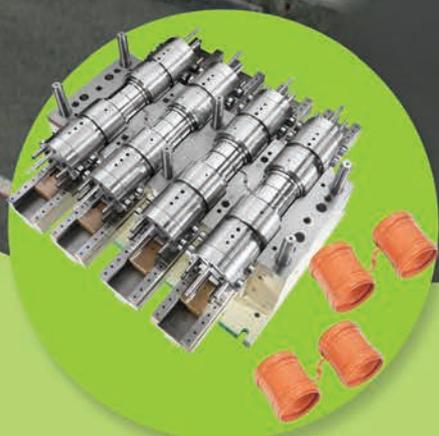
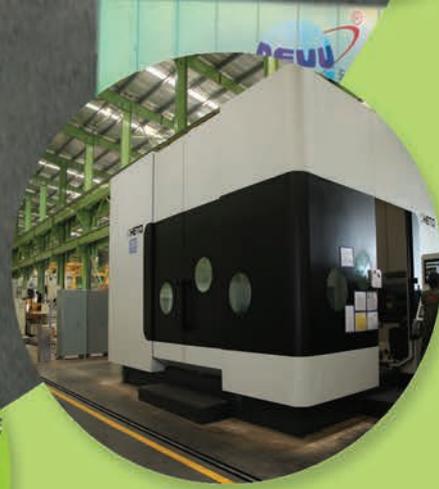
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At Devu tools we begin with a complete understanding of your needs, problems and production requirements. An in-depth analysis from our experienced engineers, resulting in solution to meet your molding needs. With World-class facility, high-end technologies, and skilled manpower, we are well positioned to serve the growing demand for the complex mould requirements. We believe in changing with time and well equipped to face the changing market dynamics.



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