TAGMA TIMES

NEWSLETTER

(Technical Info. on Die, Moulds & Toolroom)

Volume: XXVIII / No. 5 (Private Circulation for Members Only) January 2022

PUROHIT STEEL

YOUR PARTNER FOR BEST QUALITY STEEL AND SERVICES FOR NUMEROUS APPLICATIONS.

What We Provide ?

High quality mould steel for pvc, Switches, toys, rubber industry, automotive, caps and closures

Machined & Ground plates

Excellent hot work tool steels for forging and die casting dies

High performance cold work too steels for stamping, forming, cutting tool

Stainless steel grades for pharmaceutical industries

EN series steel for machine parts, gears, hobs etc

Quality Steel Providers From around world

NLMK Verona

BÖHLER

For More Information

Phone: 7798815678 / 25678 / 35678
Email: info@purohitsteels.com

made in india

EXATEMP®

TÜV INDIA
ISO 9001:2015 CERTIFIED

Touch Screen Hot Runner Temperature Controller with Leak Detection

FEATURES

- Material Leakage Detection function
- TFT Color Touch Screen with LED backlight
- Soft Start mode to avoid heater damage
- Automatic shutdown for heater abnormality
- Slave function for thermocouple disconnection
- Synchronized temperature raising/lowering
- Selectable two thermocouple types (J/K)
- Group setup function • Abnormal alert alarms
- Graphic display for temperature • USB Port
- Editable zone names (auto/manual)
- Auto/manual function • Selectable two temperature scales (°C/°F)
- Temperature control range: 0~600°C/ 32~999°F
- Detection function: current detection, TRIAC short circuit, fuse open circuit

MADHU®

Madhu Machines & Systems Pvt. Ltd.

Registered Office:
Vadodara, India.
91-9376215486
meeta@madhu-group.com

Factory:
Bengaluru, India
91-80-28360131
mms@madhu-group.com

SERVING THE PLASTICS INDUSTRY • Since 1984

www.madhu-group.com

Innovative Solutions

CONTENTS

Editorial & Design Team

Nishant Kashyap
Editor

Kimberley D'Mello
Associate Editor

Amol Padhye
Design & Operations

Abhijjeet Bhowmik
Sr Technical Writer

Cover Image Courtesy: elements.envato.com

TAGMA Executive Council

PRIVATE CIRCULATION FOR MEMBERS ONLY

EXECUTIVE COUNCIL 2020 – 2023

PRESIDENT

Mr. D. M. Sheregar
Devu Tools Pvt. Ltd., Mumbai – 400 072
Email: president@tagmaindia.org; sheregar@devutools.com

VICE PRESIDENT

Mr. D. Shanmugasundaram
S & T Engineers (P) Ltd., Coimbatore – 641 005
Email: shan@stengineers.co.in

MEMBERS

Mr. Akshay Kalyanpur
Sridevi Tool Engineers Pvt. Ltd., Vasai – 401 208
Email: akshay@sridevitools.com

Mr. Amit Kumar Parashar
Subros Tool Engineering Center (STEC), Noida – 201 301
Email: aparashar@subros.com

Mr. Arvind Chawla
ZAHORANSKY Moulds And Machines (P) Ltd - Coimbatore – 641 107
Email: arvind.chawla@zahoransky.com

Mr. D. Ravi
Classic Moulds & Dies, Chennai – 600 058
Email: ravi@classicmoulds.com

Mr. Gopalakrishnan T. S.
Multiple Special Steel Pvt. Ltd., Bangalore – 560 099
Email: gopalakrishnants@gmail.com

Mr. Paresh Panchal
Cam Tools, Mumbai – 400 072
Email: paresh@digitaltoolroom.com

Mr. Parveen Satija
Stitch Overseas Pvt. Ltd., Gurgaon – 122 004
Email: parveen@stitchtools.com

SECRETARIAT

Mr. Bhaskar Kanchan - Director
Mrs. Deepali Pandav - Deputy Director

FOUNDER MEMBERS

Anil C Kilachand
A R A Shaikh
J N Godrej
P N Rao
N Reguraj
S C Kalyanpur
S Samu
Vijay N Kulkarni

REGISTERED OFFICE

C/o. NTTF
23/24, Peenya Industrial Area,
II Phase, Bangalore - 560 058.
Tel.: 080-28397196 • Fax : 080-64509966
Email: tagma.bangalore@tagmaindia.org
Contact: Mr. Ashok Shetty - Secretary
Cell.: +91 98453 97780

CENTRAL OFFICE

A-33, NandJyot Indl. Estate,
Safed Pool, Mumbai - 400 072.
Tel.: 022-28526876 / 28508976
Cell.: +91 96534 27396 / 97694 07809
Email: tagma.mumbai@tagmaindia.org

PUNE OFFICE

Plot A-22/2, Chakan Industrial Area,
Phase II, M.I.D.C, Village Khalumbre 410501
Tal. Khed, Dist. Pune.
Cell.: +91-95276 89700
Email: tagma.pune@tagmaindia.org

COIMBATORE CHAPTER

C/o. S & T Engineers (P) Ltd.
22, Vasanth Nagar, Trichy Road,
Singanallur, Coimbatore - 641 005.
Tel.: 0422-2590810 • Fax : 0422-2573629
Email: tagma.coimbatore@tagmaindia.org

TAGMA INDIA

EDITED & PUBLISHED BY : D.M. SHEREGAR FOR TAGMA INDIA at A/33, Nand Jyot Indl. Estate, Safed Pool, Mumbai - 400 072.
Tel.: 2852 6876 • 2850 8976 / Cell.: 96534 27396, 97694 07809

THE NEW ART OF TECHNOLOGY

MILLUTENSIL spotting **presses provide the most advanced** technology for testing and proving the quality of your moulds and dies.

System

- Very high technological standard
- Best ergonomics
- Compact room-saving structure
- Very easy management

Services

- Ad hoc customer-specific solutions
- Multilingual professional assistance
- Special care to design
- Integrated diagnostic system

Security

- Maximum work safety
- Optimal access
- No dangerous handling of mould and dies
- Great saving of time and manpower

THE BEST SOLUTION TO VALIDATE YOUR MOULDS AND DIES

TAGMA DIEMOULD INDIA - 2022

12th DIE & MOULD INDIA
INTERNATIONAL EXHIBITION
27th April to 30st April 2022
Bombay Exhibition Centre, Goregaon, Mumbai, India

MILLUTENSIL®
SINCE 1955

Plant Via delle Industrie, 10
26010 Izano (CR) - Italia
info@millutensil.com
millutensil.com

Office Corso Buenos Aires, 92
20124 Milano - Italia
Tel. +39 02 29404390
Fax +39 02 2046677

NEW! BV 34 PLUS SPOTTING PRESS
size of press plates: 1.500x2.000 mm

PRESIDENT'S MESSAGE

Dear Tooling Fraternity,

I would like to begin by wishing you all a very Happy New Year and hope that 2022 has begun on an optimistic note for you!

The COVID-19 pandemic, which began in 2020, created a lot of chaos and disrupted not just the Indian economy but economies across the globe. In 2021, we crossed our fingers and prayed for a miracle. To some extent, our prayers were heard! Yes, we did face challenges in terms of the supply chain being disrupted, as well as challenges in terms of shortage of manpower, and gaps in skill development, to name a few. But the manufacturing industry received support from the government, which launched various schemes and undertook several initiatives to offer the sector the much-needed boost. Astoundingly, most toolmakers were able to avail of business opportunities all through the year.

Now, as we step into 2022, we ought to be aware of the happenings in the industry. We need to pay attention to our present and potential customers' evolving expectations; we also need to make a lot of changes in the way we have been doing business so far. As we continue to be impacted by the pandemic, and aspire to continue to grow and sustain, here are some things, which I believe, must be on our "to-do lists" for the year:

- Digital transformation
- Fast-paced technology adoption
- Diversification
- Skill development.

The 'Aatmanirbhar Bharat' campaign has given us a cause, namely, 'Make in India' not only for India but for the world. Today, statistics show that our country's dependence on imports is gradually decreasing. While the numbers are not record-breaking; it's definitely a start. If we focus on ticking the tasks off our "to-do lists" for the year, we can significantly improve the quality of our products and play a prominent role in the global tooling industry.

TAGMA is committed to helping you grow! Our association has, for years, been the voice of toolmakers. We promise to continue to do so and work for your betterment — be it reaching out to the government for a better policy framework, or organising events for you to establish a wider network. As an organisation that makes you its priority, we will always focus on organising activities to help you grow.

Stay tuned to know about the exciting events we have planned for you in the coming days!

Until then, stay safe, stay healthy!

D. M. Sheregar
President,
TAGMA India

DIE SPRING

GAS SPRING

CAM UNIT

GUIDING ELEMENTS

Making Things Possible

OILLESS PRODUCTS

MOULD ACCESSORIES

PUNCHES & DIE BUTTONS

CLAMPING ELEMENTS

'Made In India, Made For World'

25 Years 1996-2021

Pawan®

Standard Engineering Products

Practic®

N® FORCE

MADE IN INDIA Pawan MADE FOR WORLD

www.pawan-ec.com

EDITORIAL

To new beginnings!

New Years are all about new beginnings! But no one was ready for what 2020 had in store! For businesses across the world, 2020 began on a COVID-positive note! Chaos, supply chain disruption, and labour shortage, among other issues, plagued the world. Unable to cope with the scenario, many businesses shut down! And those, which survived, just about managed to stay afloat!

"Social distancing" became the norm and "work from home" gradually became the new normal. Those employed in the marketing, administration, etc., departments began to operate online. But this option could not be extended to tool rooms and job shops, which need manpower to function. Most tool rooms, therefore, began operating at half capacity. Moreover, the problems associated with procuring raw materials also impacted their contracts.

Many hoped that 2021 would ring in good tidings! The lessons learnt in 2020 have certainly helped them tide through the year. For instance, some toolmakers diversified their options, some held workshops and skill development programmes for their staff, and some automated their tool rooms to enhance their efficiency while keeping the safety of their staff in mind.

This brings me to the question: "What should define 2022?" I think 2022 should be the year of digital transformation. A few manufacturers have already adopted digital transformation initiatives across all domains. Technologies such as cloud computing, robotic process automation, artificial intelligence, and machine learning, among others, which are at the centre of this digital evolution, are giving manufacturers endless opportunities to explore new solutions.

During the pandemic, the manufacturing industry witnessed the rise of new trends, which may define how we manufacture products, procure raw materials, market and sell our solutions, and manage our shop floor operations. Read our '2022 Trends In Focus' and 'Digital Connect In Focus' sections to know more about the emerging trends and how the industry is shaping up. In our 'Tool Talk' section, B. Thej Kumar, Associate Vice President – Operations, Product Development & Quality, Toyoda Gosai South India Pvt. Ltd. suggests how you can reap the opportunities coming your way!

Now is the time to take that digital leap! Let's make 2022 the year of new beginnings!

Wish you all a very Happy and Prosperous 2022!

Nishant Kashyap
Editor
nishant@antechmedia.in

Aerotech introduces compact hexapod for precise 6-DOF motion

AEROTECH Inc., a global leader in precision motion control and automation, has released the HEX150-140HL, a miniature hexapod six degree-of-freedom (DOF) positioning system that provides precise translation in the X, Y, and Z directions and rotation around each of these axes. The HEX150-140HL delivers significantly better minimal incremental motion and more linear travel than its competitors – all within a compact yet stiff platform.

"This hexapod's combination of small size, high precision, and outstanding load capacity provides users with an incredible amount of flexibility," said Brian Fink, Aerotech product manager. "Plus our peak-to-peak specs mean customers know they can count on consistent, reliable six-DOF motion with every use."

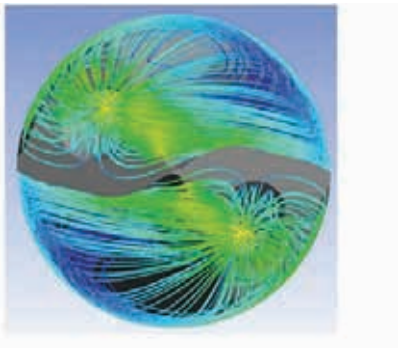
Key features include:

- Industry-leading minimum incremental motion of 20 nm in XYZxyz & 0.04 arc sec in θxθyθz;
- High payload lift capabilities up to 7.5 kg & backdriving resistance to 100 N;
- Ample range of motion for simple integration into complex applications;
- Multi-axis (servo, stepper, piezo & more) motion coordination using Aerotech controllers; and
- Easy to control & program with virtual pivot point adjustment.

The HEX150-140HL is ideal for addressing space-constrained, multiple DOF applications that require fine positioning resolution, including photonic device manipulation, alignment and packaging, optics inspection and alignment, optical wafer probing, aerospace and satellite sensor testing, and synchrotron and beamline sample manipulation.

Walter presents DC175 Supreme solid carbide drill with new cooling concept

WITH the DC175 Supreme, Walter is launching its first solid carbide drill with precision cooling. It is designed for machining ISO materials from groups 'M' and 'S'. Walter's own precision cooling guides the coolant very close to the main cutting edge, increasing the tool life of the drill. To achieve this, Walter developed a special end-face geometry. This features a tough, straight main cutting edge, a large clearance in the centre, and coolant channels positioned close to the cutting edge. When the drill was used at the customer's site, Walter achieved an increase in tool life of around 30%. In addition to the cooling and geometry, Walter's new WJ30RZ and WJ30RY grades also play an important part in this accomplishment. The highly wear-resistant TiAlSiN-based layer applied using HiPIMS coating technology takes the form of a complete coating for 3 and 5 × Dc (WJ30RZ grade) and a point coating for 8 × Dc (WJ30RY grade). The 8 × Dc version also features a polished flute.



The result is a very smooth surface, which ensures perfect chip evacuation. The HiPIMS coating and innovative new cooling concept make it possible for users to increase the cutting data, thereby improving productivity and reducing production costs because the time on the machine can be used more efficiently. The effects on the process reliability are similarly positive. The smooth surface of the DC175 Supreme optimises the chip evacuation and minimises built-up edges (for example, caused by the chips "sticking" in the flute). The ability to recondition the drill three times, paired with its long tool life, also makes it cost-effective and sustainable. Walter offers this service in its own reconditioning centres. The DC175 Supreme for cross-sector use is currently available to users for diameters from 3 to 20 mm and in dimensions of 3 × Dc, 5 × Dc and 8 × Dc; special tools such as 12 × Dc or step drills are available too.

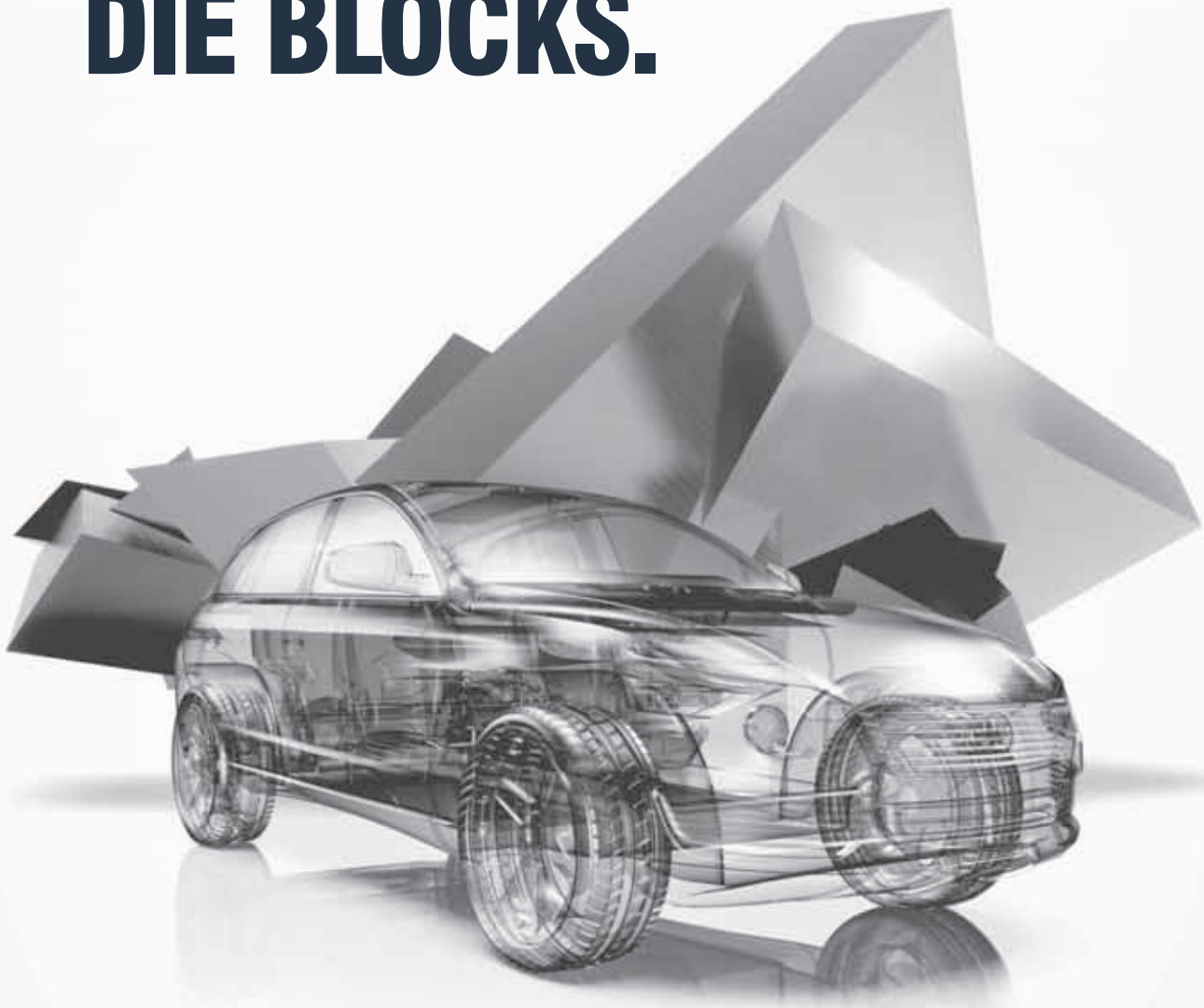
Authorized
Official Dealer
for India

FORGING&
CASTING
DIVISION

GROUP
LUCCHINI RS

EXTRA LARGE FORGED DIE BLOCKS.

For light alloys structural parts for automotive.



ESKYLOS®

2343 DC/HDC
2344 HDC

Dimensions:
Width 1700mm max.
Thickness 700mm max.

1. Fine grain size
2. Optimal micro-structure
3. Optimal "Heat Check" resistance

www.LucchiniRS.com

LOOK BEYOND

Mastercam Multiaxis machining improves productivity

MULTIAXIS machining can dramatically increase a shop's competitiveness. Mastercam Multiaxis is an add-on for Mastercam Mill 3D, Router 3D, Mill-Turn, and Mastercam for SOLIDWORKS®. It improves productivity with simultaneous 4- and 5-axis machining capability for Mastercam. Mastercam Multiaxis offers a wide range of multiaxis machining strategies, both basic and advanced. These toolpaths are also useful for advanced control of 3-axis machines.

The new Multiaxis Unified toolpath allows you to select multiple pieces of input geometry to generate the toolpath pattern. Using those geometry choices, the toolpath picks the best algorithm to calculate the path. This single toolpath gives you access to all the surface-based toolpaths, as well as the geodesic toolpath options, in a single interface.

New Deburr toolpath enhancements include a new option, number of cuts along edges, which allows users to add multiple cuts to the Deburr toolpath, rounding or flattening edges, to create a quality edge on deburred parts. Additionally, the new Tilt Range options allow you to limit tilt when machining type is set to 5-axis (simultaneous) or 3+2 axis.

Maintaining climb and conventional machining is critical for surface finish and tool life. Controlling Climb and Conventional Cutting now provide control of climb or conventional cutting, while working with surfaces that may require using both sides of a tool. It was previously impossible to maintain this while cutting a curved shape that would require the use of both sides of the tool.

Swarf Milling toolpath enhancements include the drop-tool-to-floor option, which controls whether Mastercam will drop the toolpath down to a floor or retract to the bottom of swarf surfaces. The new Sorting Spiral Multi Cuts option allows multiple slices to be output as a spiral instead of single slices, providing a better finish across the part.

Rotary Advanced toolpath enhancements include the Axis offset option, which allows you to shift the tool off-center to maintain a better contact point, which extends tool life and improves the machining quality. The new Smoothing options round sharp corners using a perfect of the stepover.

Mastercam continues to expand the critical machine simulation needed for optimal multiaxis programming with Mastercam Simulator, which includes the new Smart Measure feature that allows you to measure distances quickly and accurately in the graphics window during simulation. Simulator now processes standard 3-axis and 5-axis operations faster when backplotting, verifying, or simulating, and now lists all collisions, proximity alerts, and axis overruns in the new Report pane.

Additional enhancements to Mastercam Multiaxis include:

- Maintaining a single tool axis orientation with Accelerated Finishing tools, providing optimal tool axis control to minimize or eliminate extra multiaxis movement.
- The new Point tool to rotary axis option allows you to rotate a toolpath around an offset point instead of the toolpath being fixed to the axis itself, which leads to a better tool contact point.
- The new Automatic arc lead-in type creates automatic arcs in locations where it can be difficult to determine the correct arc to fit and makes it easier to add arcs to linking moves.
- New Apply filtering for conversion generates a more efficient toolpath by filtering incoming toolpaths to reduce size and noise.

Implement uniform 18% GST rate on all auto components: ACMA

INDUSTRY body Automotive Component Manufacturers Association (ACMA) has urged the Centre to implement a uniform GST rate of 18% on all auto components. In its recommendations for the forthcoming Union Budget, ACMA requested the government to consider the upward vision of 'RoDTEP' (Remission of Duties and Taxes on Exported Products) rates along with adopting measures for enhancing investments, including that for R&D.

"The auto component industry, being an intermediary, has recommended for a uniform GST rate of 18% on all auto components. The industry has significant aftermarket operations that are plagued by grey operations and counterfeits due to the high 28% GST rate. A moderate rate of 18% will not only address this challenge but will also enhance the tax base through better compliance," ACMA President Sunjay Kapur said.

Furthermore, the industry body pointed out that current RoDTEP rates for auto components sector is at 1% or lower, and said that these rates are inadequate to cover the incidence of unrefunded taxes and duties borne on export products. "This is deterring the competitiveness of the Indian auto component industry," ACMA said.

Additionally, it asked for provision to reintroduce investment allowance at 15% for manufacturing companies that invest more than INR 25 crore in plant and machinery. "This will motivate manufacturers to invest in new technologies, specifically e-mobility and its components or ancillaries-related plant and machinery," the industry body said.

In addition, it recommended to retain the weighted tax deduction on R&D expenditure. "The 2016-17 Budget reduced weighted deduction benefit from 200% to 150% and has further restricted the deduction to 100% from 1st April 2020. The association has also put forth several suggestions to 'ease' cost of doing business in India," it said.

Courtesy: IANS

Businesses to be given 'reasonable time' to explain mismatch in GSTR-1, 3B

TAX officers will give reasonable time to erring business to explain reasons for mismatch in turnover reported in sales return GSTR-1 and tax payment form 3B before initiating recovery action for short payment or non-payment of taxes. Apex indirect tax body CBIC has issued guidelines on recovery proceedings and said that taxmen would give a "reasonable time" to businesses to explain the reasons for such mismatch.

As per the changes in the GST law effective January 1, GST officers were allowed to directly initiate recovery action against those errant businesses, which showed higher sales in monthly return GSTR-1 but under-report it while tax payment in GSTR-3B. The move was aimed at curbing the menace of fake billing whereby sellers would show higher sales in GSTR-1 to enable a purchaser to claim an input tax credit (ITC), but report suppressed sales in GSTR-3B to lower GST liability.

So far, under the goods and services tax law, show-cause notices were first issued and then a recovery process was initiated in such cases of mismatch in GSTR-1 and GSTR-3B. Following doubts raised by the trade and the field formations regarding modalities for initiation of the recovery proceedings, the Central Board of Indirect Taxes and Customs (CBIC) on January 7 issued guidelines, saying that an opportunity needs to be provided to the concerned businesses for short payment or non-payment of the amount of self-assessed tax liability.

It noted that in some cases there may be a genuine reason for the difference between the details of outward supplies declared in GSTR-1 and those declared in GSTR-3B.

Giving example, the CBIC said the GST law permits rectification of typographical errors or omissions in the GSTR-1 or GSTR-3B of a particular month, in the returns or tax payment forms of subsequent months. There may also be cases, where a supply could not be declared by the registered person in GSTR-I of an earlier tax period, though the tax on the same was paid by correctly reporting the said supply in GSTR-3B. The details of such supply may now be reported by the registered person in the GSTR-I of the current tax period.

Courtesy: PTI

Bosch and Volkswagen want to industrialize factory equipment for battery-cell production

IN a signed memorandum of understanding, the Bosch Group and the Volkswagen Group have agreed to explore the possibility of establishing a European battery equipment solution provider. The two companies plan to supply integrated battery production systems, on-site ramp-up, and maintenance support for battery-cell and battery-systems manufacturers. The companies are aiming for cost and technology leadership in industrial-scale battery technology and the volume production of sustainable, cutting-edge batteries. Through the "local for local" production approach, this will also be a step toward the objective of carbon-neutral mobility. In Europe alone, the Volkswagen Group plans to build six cell factories by 2030.

The Bosch Group and the Volkswagen Group are setting up a project unit to explore the possibilities of industrial-scale solutions for battery manufacturing in Europe. A memorandum of understanding to this effect was signed by Rolf Najork, member of the board of management of Robert Bosch GmbH and chairman of the executive board of Bosch Rexroth, and Thomas Schmall, member of the board of management of Volkswagen Group responsible for technology and CEO of Volkswagen Group Components.

The companies aim to supply the entire range of processes and components needed for the large-scale manufacture of battery cells and systems. Across the industry, the demand is enormous: in Europe alone, various companies plan to build cell factories with a total annual capacity of around 700 gigawatt hours by 2030.

For both partners, this alliance is a further step toward playing leading roles in electromobility. The partnership will draw on complementary areas of expertise: while Bosch has excellent know-how in factory automation and systems integration, Volkswagen is an accomplished at scale automaker and is on its way to becoming a major battery cell manufacturer.

To quote Rolf Najork: "Together with Volkswagen, we seek a path to industrialize production processes for battery cells with standardized equipment. We have the best prerequisites for this: Bosch is not only the world's biggest automotive supplier, but also one of the leading suppliers of factory equipment. We understand how battery technology works, and know how to manufacture it. With more than 135 years of automotive experience and our proven industrialization expertise, we want to serve the growing demand for batteries. European industry has the potential to become a technology driver for the ecological transformation of the economy."

Thomas Schmall commented: "Europe has the unique chance to become a global battery powerhouse in the years to come. There is a strong and growing demand for all aspects of battery production, including the equipment of new gigafactories. Volkswagen and Bosch will explore opportunities to develop and shape this novel, multibillion-euro industry in Europe. Our decision to actively engage in the vertical integration of the battery-making value chain will tap considerable new profit pools. Setting out to establish a fully localized European supply chain for e-mobility made in Europe certainly marks a rare opportunity in business history."

Both partners have formed a project unit with the target to prepare the establishment of the new company until the end of 2022.

Omega Seiki Mobility inks pact with Jae Sung Tech to manufacture electric powertrains

ELECTRIC vehicle maker Omega Seiki Mobility (OSM) recently announced a strategic collaboration with Korean EV powertrain maker Jae Sung Tech to manufacture electric powertrains in India. As a part of the partnership, the two companies will be forming a joint venture – OSM Jae Sung Tech Pvt. Ltd. – with Jae Sung bringing in its technology and OSM providing its manufacturing prowess to localise the powertrain, the company said in a release.

The JV will roll out its first product Ra314 from OSM's cargo e-three-wheeler Rage+ in the first quarter of the fiscal starting April 2023, it added. The new Ra314 will be manufactured by OSM at its facility in Faridabad and group company Omega Bright Steel and Components' facility in Pune, the release said.

OSM said it will also be testing and calibrating the Ra314 for typical Indian

Image used for representation only.
Courtesy: Envato Elements

driving conditions and the state-of-the-art modular architecture will also allow the company to develop the Ra314 for small four-wheeler commercial vehicles. "OSM has always believed in constant innovation and is always working to make the product portfolio a step ahead of the competition. The new power unit will herald a new era of backward integration, making our products more efficient. We will also utilise Ra314's integrated and modular architecture to build customised power solutions for other EV makers in India to use, thereby helping in faster adoption of electric vehicles in India," said Uday Narang, founder and Chairman, Omega Seiki Mobility.

The Ra314 stands out with its 3S build – silent drive, simple architecture and superior durability – OSM said, adding that the new powertrain is IP-67 rated and will not skip a beat even if submerged in water for 30 minutes. Based on internal testing conducted by OSM and Jae Sung, the new powertrain is 30% more efficient and 20% lighter than existing power units doing duty in the e-three-wheelers at the moment, the company said. This has been made possible with an integrated motor and gearbox design. This leads to significant weight saving and improved vehicle efficiency, it added.

Courtesy: PTI

Bajaj Auto to set up INR 300 crore EV manufacturing facility at Pune

BAJAJ Auto Limited recently announced an investment of INR 300 crore (USD 40 mn) and commenced work at a brand-new unit at Akurdi in Pune for manufacturing Electric Vehicles (EVs). This unit will have a production capacity of 500,000 EVs per annum. Akurdi is also the site of the original Chetak scooter factory that made Bajaj Auto a household name in India.

Speaking about the new unit, Mr. Rajiv Bajaj, Managing Director, Bajaj Auto Ltd., said, "In 2001, Bajaj 2.0 took off on the roaring Pulsar; in 2021, Bajaj 3.0 arrives on the charming Chetak. Going forward, for the Bajaj portfolio, except for implementing one state-of-the-art ICE platform that is currently under development, all our R&D drive train resources are now laser focused on creating EV solutions for the future. This alignment reflects our belief that light Electric Vehicles for sustainable urban mobility is an idea whose time may finally have come. Thus, this investment at Akurdi completes the virtuous cycle of hi-tech R&D competencies, high-efficiency engineering capabilities, world-class supply chain synergies, and global distribution network, which should leapfrog us into a market leading position in EVs in India and overseas."

The new unit will have cutting-edge robotic and automated manufacturing systems for everything including logistics and material handling, fabrication and painting, assembly and quality assurance. These systems have been designed for flexible product mix, while keeping in mind the best worker ergonomics and maximum process efficiency. It is spread over half a million sq. feet and will employ ~800 personnel. The investments made by Bajaj Auto will be supplemented by a number of vendors, who will invest a further INR 250 crore (USD 33 mn). The first vehicle from this unit is expected to roll out by June 2022.

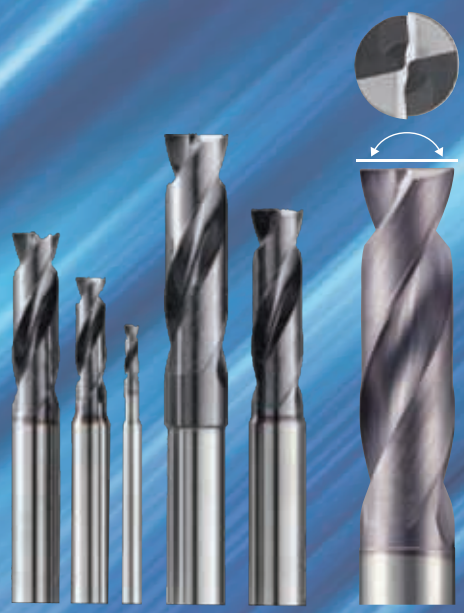
This new EV manufacturing unit at Akurdi is co-located with Bajaj Auto's state-of-the-art R&D centre to foster greater collaboration, leading to faster time-to-market. It should transform Bajaj Auto's Akurdi facility into a hub for design, development and manufacturing of a complete range of Electric Vehicles.

DIJET
www.dijet.co.jp

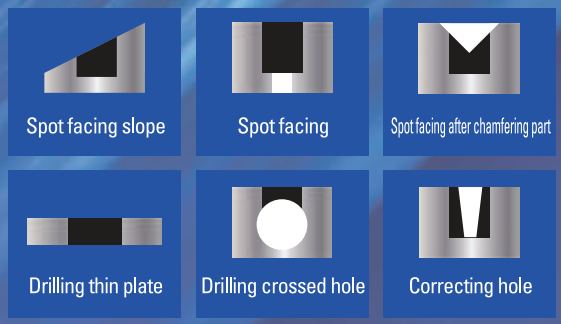
Hole Making tools by DIJET

Indexable Drills Up to L/D 8

Solid Carbide Spot faceing Drills



Indexable Spot Facing tool



Economy

Adopting unique low cutting force geometry (EZ geometry) reduced max.30% power consumption.

Hight cost performance

High rigid G-body produced long tool life of holders and inserts.

approx. holder life is more than 2,000m

High cutting performance

- Exclusive flute geometry and smooth surface treatment
- achieved body durability and excellent chip control.
- Adopting unique cooling system achieved
- surely coolant supply to cutting edge.

Spot facing tools

- Avalable in indexable as well as solid carbide
- Wide flute design for excellant chip control
- Stable drilling without pilot hole
- Reduced power consumption
- Achived accuracy & longer tool life

Contact Us:

Office: 322, Arcadia, Hiranandani Estate, Patlipada, G. B. Road, Thane (W) 400 607
Email: india_office@dijet.co.jp
Phone: +91 22 40121231 / +91 2241005361
Web: www.dijet.co.jp / www.dijetindia.com

BrahMos supersonic cruise missile, with enhanced capability, successfully test-fired off Odisha coast

BRAHMOS supersonic cruise missile, with increased indigenous content and improved performance, was successfully test-fired from Integrated Test Range, Chandipur off the coast of Odisha. The launch was recently conducted by Brahmos Aerospace in close coordination with the teams of Defence Research and Development Organisation (DRDO). In this text-book flight, the missile followed the predicted trajectory meeting all mission objectives.

The flight test is a major milestone in the way forward for the BrahMos programme. The highly manouverable missile cruised at supersonic speed for its maximum range and all mission objectives were met. The missile was equipped with the advanced indigenous technologies and followed a modified optimal trajectory for enhanced efficiency and improved performance. The missile with the modified control system has been fine-tuned to achieve an enhanced capability. This flight test was monitored by all the sensors of the range instrumentation including telemetry, radar and electro-optical tracking systems deployed across the eastern coast and the down range ships.

Teams from DRDO and NPOM, Russia, participated in the test. BrahMos Aerospace, the joint venture between DRDO and NPOM, Russia, has been continuously upgrading the powerful, highly versatile BrahMos to increase its effectiveness and lethality against sea and land targets. BrahMos is the potent missile weapon system already inducted into the Armed Forces.

Phillips Machine Tools hosts India's first Markforged Demo Day with 3D printers live in action

PHILLIPS Machine Tools, the provider of industrial additive manufacturing systems, recently hosted a two-day event, India's first 'Markforged Demo Day' at the Phillips Additive Labs in Pune and Bengaluru. This event saw the Markforged 3D printers on display 'live' for the first time.

While the lab in Pune displayed the Mark-2, the industrial desktop printer, and Metal X, the metal 3D printer for functional metal parts, along with Washer and Sintener, the Bengaluru lab displayed the Mark 2 & X7, the turnkey Industrial 3D printer for functional parts. Over 100 customers from well-known companies attended the demo day at Pune & Bengaluru Phillips Additive Labs.

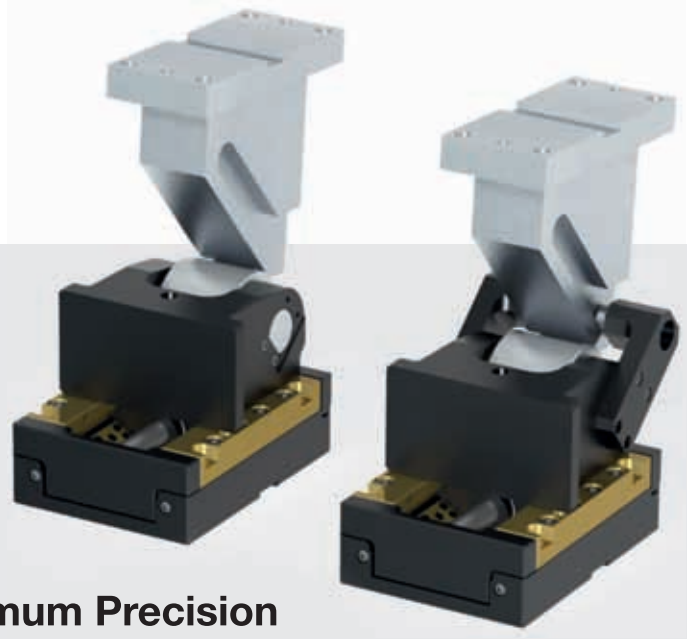
The Demo Day was a good opportunity for customers to see the live demonstration of Markforged 3D printers and to clear their queries regarding additive manufacturing and its various applications. Speaking on the occasion, Anuj Budhiraja, Country Head, Markforged, shared, "This was a great event, extremely well executed by the Phillips Team. We are thankful to all the people who visited and appreciated the technology. The excitement and curiosity of the people seeing AM technology making its way into manufacturing applications were evident. They also saw the application of end-use parts and composite 3D printed parts replacing metal parts for high strength parts. We see huge potential and phenomenal growth in the Indian manufacturing sector with the adoption of Markforged solutions at a very high speed towards meeting their needs of tool, jigs, fixtures, end-use parts, and replacement spare parts." Sumeet Bengeri, Business Head, Phillips Additive, thanked their valued customers, who had taken time out to visit the Demo Day and grace the event. "Post the pandemic, this has been the first offline Demo Day, which was extremely successful with prospective customers visiting our facility to witness the latest technological machines in a live demonstration."

Parag Nanavaty, Founder and CEO, ForeKen Technology, Ahmedabad, expressed, "Such Demo Days are an excellent opportunity to see the actual demonstration of the 3D printers – Markforged Mark 2 and Metal X. This live demonstration has been able to answer the multiple queries that people would have about the two printers, as well as the latest technologies employed. The presence of experts to explain and address all the queries to their satisfaction was an added benefit."

Such Live Demo Days are a great experience-building initiative for customers as well as the company to explore opportunities for collaboration and accelerated business growth.

NEW GENERATION CAM UNIT!

Roller Slide Unit



Maximum Precision Since 100 Years

Features

- **Most Compact with Large Working Surface**
- **Ease of mounting and flexibility in applications**
- **Work angles from back-draft punching -15° to 50° in free-angle steps**
- **Available with Back position Sensor**
- **High Service life of 10 Lakhs+ Strokes**

Visit us for more details **www.fibro-india.com**

boAt and Dixon Technologies form joint venture to manufacture wireless products in India

IMAGINE Marketing – the parent company of earwear brand boAt and electronics manufacturing firm Dixon Technologies – recently announced a 50:50 joint venture to manufacture wireless audio products.

Both the companies will come together to co-invest in the evolving Indian mobile accessory market, thereby paving the way towards 'Make in India' in this category.

Image courtesy: boAt

"Ramping up domestic production will significantly help in enhancing India's share in the global markets contributing to the vision of an 'Aatmanirbhar Bharat'. It will also give an impetus to build in-house design capabilities and to develop lifestyle-oriented products to delight our 'boAtheads'," Sameer Mehta, Co-founder and Chief Product Officer, Imagine Marketing Pvt. Ltd, said in a statement.

The joint venture is an important milestone in boAt's journey to establish a manufacturing base in India.

The association will enable the companies to meet the evolving needs of customers by delivering high-quality and aspirational lifestyle-focused hearable solutions, backed by quality manufacturing and robust R&D.

"Through our partnership, we aim to provide boAt with a faster ability to scale up manufacturing in India with our low-cost structure, high quality, and superior execution track record. We strive to develop innovative products with boAt for not only the discerning Indian consumers but also for global markets," Atul B. Lall, Vice Chairman and Managing Director, Dixon Technologies Limited, added.

Courtesy: IANS

Indian factories end 2021 on strong note despite dip in momentum

INDIA'S manufacturing sector ended 2021 on a solid footing with growth in new orders and output remaining sharp despite losing some momentum in December, but elevated price pressures were still a concern, a private survey showed.

The Manufacturing Purchasing Managers' Index, compiled and collected by IHS Markit Dec. 6-17, fell to 55.5 in December from November's 57.6 though it stayed above the 50 mark that separates growth from contraction for a sixth month. The survey results reinforce evidence of a continued recovery in Asia's third-largest economy from the coronavirus pandemic-induced slump. That and rising price pressures may add to expectations the Reserve Bank of India will tighten monetary policy earlier than thought, like some other central banks.

"The last PMI results of 2021 for the Indian manufacturing sector were encouraging, with the economic recovery continuing as firms were successful in securing new work from domestic and international sources," Pollyanna De Lima, economics associate director at IHS Markit, said in a release. While the latest survey showed the new orders sub-index, a proxy for domestic demand, slipped to 58.4 in December, it remained above the long-term average since the gauge was introduced in March 2005. That encouraged firms to maintain solid output.
Courtesy: Reuters

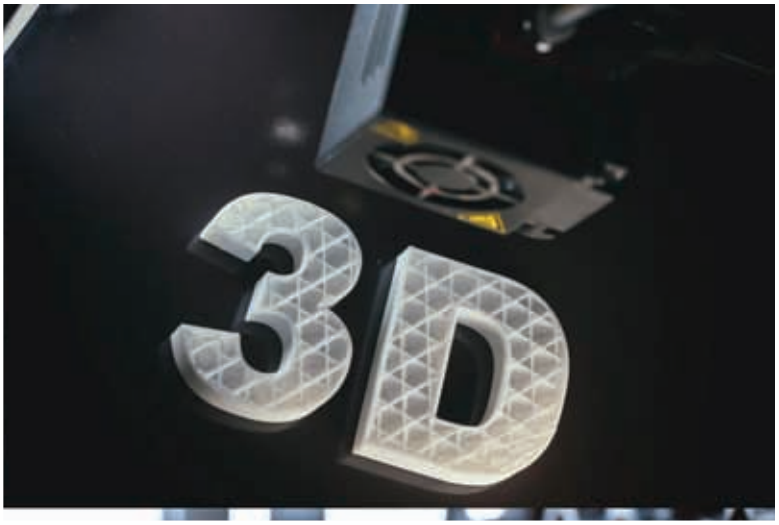
Hero Electric partners with ALT Mobility to deploy 10,000 Hero Nyx by 2023

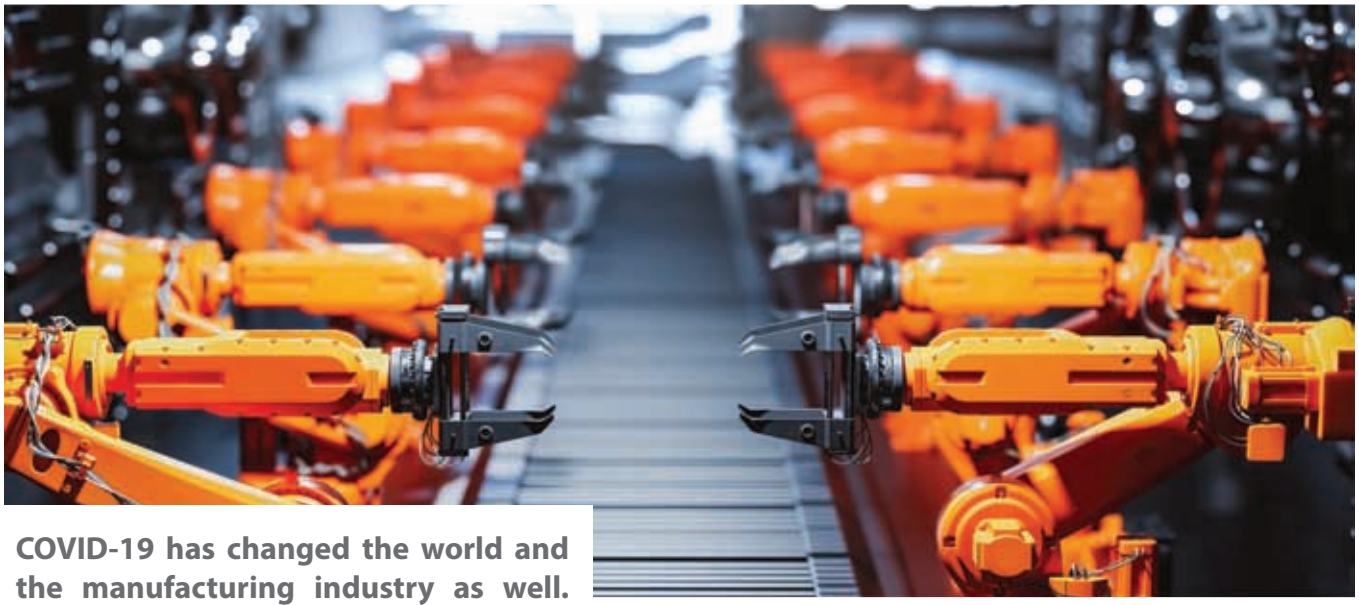
HERO Electric recently said it has partnered with ALT Mobility, a dedicated platform for leasing of electric vehicles for the logistics market, to deploy its electric two-wheeler Hero Nyx. Under the collaboration, the companies will work with logistic aggregators and fleet operators to deploy 10,000 Hero Nyx electric scooters by 2023, Hero Electric said in a statement.

"This association will aid us in enabling carbon-free mobility in the logistics market and cater to consumer needs of last-mile delivery offered by ALT Mobility," Hero Electric CEO Sohinder Gill said. With the changing market scenario and increased preference for the electric vehicle, there is a crucial need to boost EV adoption, he added. ALT Mobility CEO Dev Arora said the company conducted extensive tests on the ground and spent several months with the Hero Electric team before building its conviction that the Hero Nyx EV is a bankable vehicle for intensive logistic operations. ALT Mobility offers two and three-wheeler electric vehicles on monthly subscription to fleet operators. They cover the financing, road tax, auto insurance, and service and spare costs of the EVs.

Courtesy: PTI

5 Manufacturing Trends to Watch Out for in 2022





COVID-19 has changed the world and the manufacturing industry as well. Manufacturers that aim to survive in this new era should fully embrace Industry 5.0 and reimagine the future of their organizations. The sooner they do this, the better it will be for them.

Nishant Kashyap

Images Courtesy: Envato Elements

2022 Trends In Focus

The year 2021 was a year of drastic changes for most industries, including manufacturing. From supply chain issues to inflation and the threat of the ongoing COVID-19 pandemic, manufacturing companies weathered a tough year and certainly hope that 2022 offers some relief. Currently, manufacturers are still recovering from the impact of the pandemic while facing challenges like:

- Labour shortage
- Skills gap
- Supply chain disruptions
- Workers' roles with the rise of automation
- Retaining and attracting new employees.

If there is one thing that the pandemic has taught us, it is that solutions to complex issues are constantly evolving and sometimes take a long time. While it is impossible to foresee what 2022 may bring, there are a few manufacturing trends we can expect to see. These trends won't just revolutionize the manufacturing industry through 2022 and beyond, but they will definitely improve it. The essential thing to remember is that there is light at the end of the tunnel.

Let's understand which five manufacturing trends will gain prominence in 2022.

1

Additive Manufacturing (3D printing)

3D printing may seem like a concept that comes out of a science-fiction movie. But it has been associated with Additive Manufacturing for at least 40 years. Nowadays, manufacturers rely on 3D printing to support prototyping — a highly cost-effective approach for product designers to test and troubleshoot innovative products — and to manufacture items on demand instead of producing and storing them in a warehouse.

3D printing has further transformed the expensive and time-consuming procedures of tooling. In the past, it took several months for manufacturers to create jigs, moulds, and fixtures, which are vital for the mass production of heavy equipment. Earlier, many manufacturers relied on the support of tooling companies headquartered across the world. But now, thanks to 3D printing, manufacturers can finish tooling onsite within days. This has made 3D printing a suitable option for the aerospace and automotive manufacturing industries in recent years.

2

Industrial Automation

The second trend we're expecting to see in 2022 is focus on automation in manufacturing. While automation in the world of automotive manufacturing is nothing new, organizations, unlike earlier, are investing thousands of dollars on automated solutions. For example, in agricultural manufacturing, companies are using automated solutions for tasks such as harvesting, seeding, and weeding in the face of labour shortage.

Automation simplifies many processes in the production line, including material assembly, handling, painting, and other machining and finishing methods. Reducing human involvement in repetitive and hazardous tasks makes the production line safer and produces major cost savings for factories. However,

the capital and complexity of such automated equipment increase exponentially with the level of automation. Recent innovations in control systems and robotic technology make automation easy and cost-effective. This further makes robotic automation the most important technology among all the manufacturing trends.

3

Immersive Technology

Many assembly processes still depend on human workforce due to the degree of flexibility needed for the procedure. Human involvement increases the possibility of errors during calculations. Even though instruction manuals and quality standards are physically available, it is impractical to refer to them in assembly lines. This increases the chances of errors. Immersive techniques such as augmented reality (AR) convert these manuals into digital content that overlays on the part of the machinery and guides the operator to recognize and fix problems.

AR can render 3D visuals of machines in actual proportion too. This permits training operators through step-by-step visuals on repairing and maintaining machinery. Further, immersive technology enables highly skilled workers to carry out maintenance remotely and decreases the skill gap within plants. Moreover, virtual reality (VR) supports product prototyping, simulation, and training applications.

4

Supply Chain Resilience

Manufacturers are presently dealing with dynamic fluctuations in market supply and demand. A Deloitte report states that many purchasing managers keep experiencing system-wide complications from high consumer demand, increasing materials and freight costs, and slow deliveries. While the worldwide business infrastructure is running a lot more smoothly than it was a year ago, manufacturers are still affected by logistical bottlenecks. More than 60% of manufacturing companies are still encountering supply chain disruption

WORLD CLASS PRECISION MOULD BASES

INTEGRITY · IMPROVEMENT · SERVICE · TEAM WORK

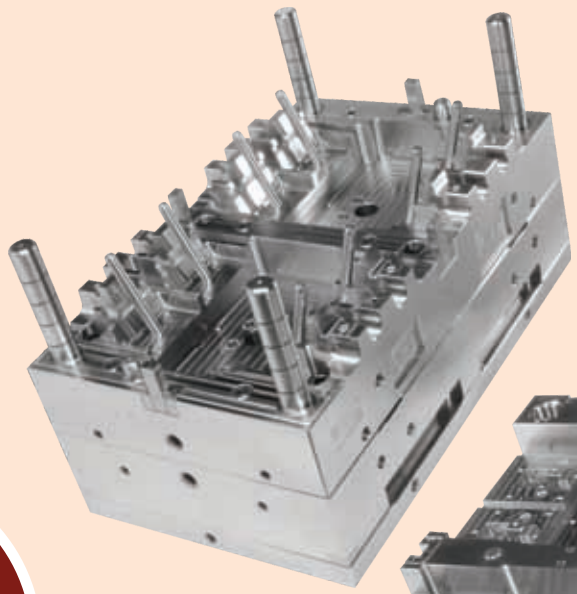
1994 — 25 YEARS — 2019

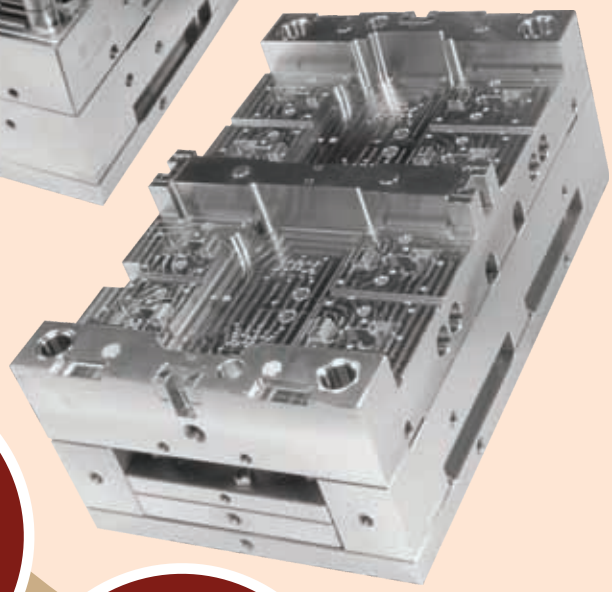
Are you looking for

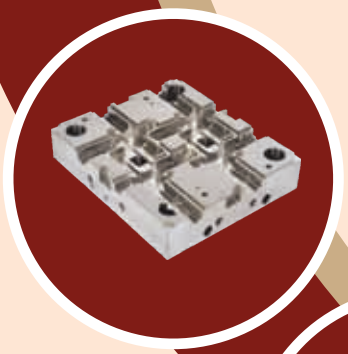
Precision engineering...

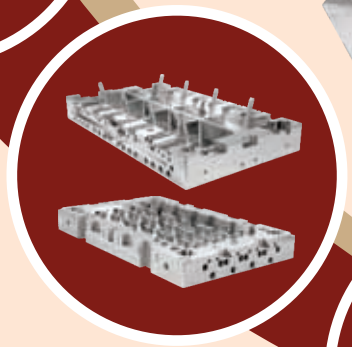
Machining competency...

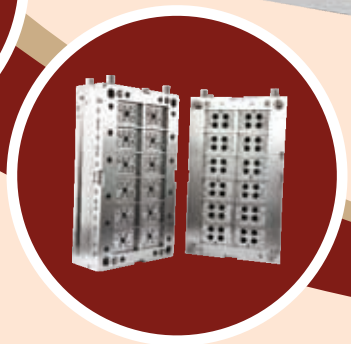
Timely delivery..

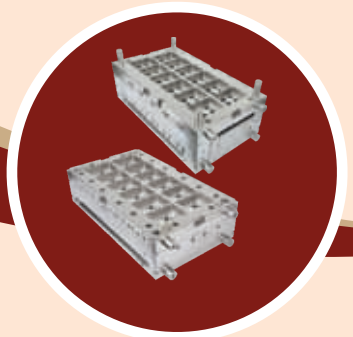












PMT™

PRECISION MOULD TECH

Your Success Partners

No. 159, 3rd Main Road, Industrial Town, Rajajinagar, Bengaluru - 560 044
Phone : +91-080-23405544, +91-080-23503142 Fax : +91-080-23402760
E-mail : info@precisionmouldtech.com Website : www.precisionmouldtech.com

in some form, with 1 in 5 discrete manufacturers arguing lead times are getting worse. Material deficiencies substantially impact customer service. About 53% of North American manufacturers have delayed some orders to prioritize high-end consumers. Moreover, 98% of manufacturing organizations say that enhancing customer satisfaction is a top priority for the next year, and increasing supply chain resilience will be an instantaneous manufacturing purpose for 2022. Digital supply networks and data analytics can be solid enablers for more flexible, multi-tiered comebacks to disruptions, added a Deloitte report.

Predictive Maintenance

When it comes to predictive maintenance, analysis of crucial equipment is costly for manufacturers with regard to downtime, repairs, and loss of productivity. A massive 98% of organizations report that only 1 hour of downtime costs them above $100,000. Hence, manufacturers need to guarantee that all equipment function at maximum performance levels. As a result, many are shifting towards predictive maintenance and predictive analytics.

5

Predictive maintenance decreases unplanned outages and extends machinery life by years. Predictive analytics enables manufacturers to track equipment performance by utilizing many performance metrics and automating the data collection process by utilizing IoT technology. You can even perform monitoring tests while the equipment is at work, which simply means there's no loss of production due to equipment shutdown. This insight gives manufacturers a better understanding of how systems work and when they will fail, helping them to administer predictive maintenance and save valuable time, money, and resources in the process.

Conclusion

These 'Top 5 Manufacturing Trends' significantly improve operational efficiency, decision making, and implement sustainability practices in a manufacturing company. Advanced production methods and sustainable manufacturing will revolutionize various manufacturing industries as we know them today. Identifying new opportunities and emerging technologies to apply to your business early on will go a long way in gaining a competitive edge.

HIGH QUALITY PRECISION COMPONENTS

For Moulds And Dies

PPD®

Mould and Die components

PRECISION PUNCHES & DIES

+91-7777039765 / +91-7777039632

5-B, Raju Industrial estate,Penkarpada Street, Near Dahisar Check Post,P.O.Mira, Mumbai-401107, Maharashtra,India

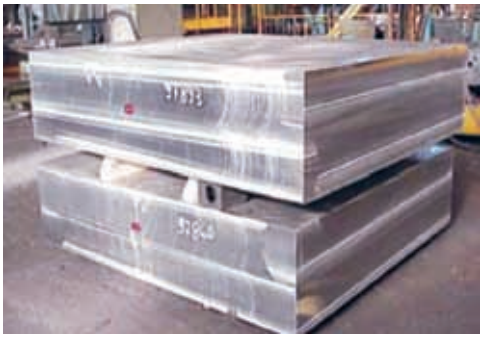
Email : info@ppdejectorpin.com, ppd.punches@gmail.com Web : www.ppdejectorpin.com

PCK-Buderus | Special Steels Your Reliable

The Partner for Plastics Industry

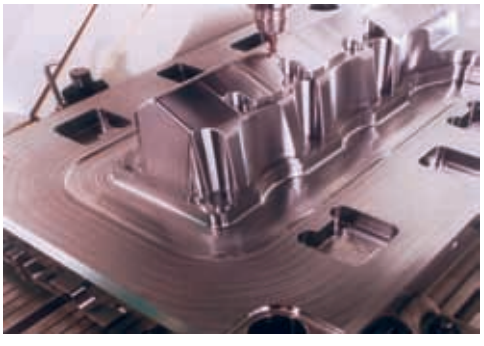
- Comprehensive Stock Holding of Plastic Mold Steels
- Service centers at Chennai, Pune and Ludhiana
- Express delivery in cut to lengths for blocks and rounds
- Contour Sawn Blocks for Cores and Cavities
- Machining Facility to handle piece weights upto 60 tons
- Delivery of 3D pre-machined Mold halves upto Bumper dimensions
- Deep Hole Drilling
- Technical Support on Steel Selection, processing, welding, Polishing and Texturising.

Stockholding Steels



6 Sides milled with Lifting hole

3D pre-Milled Dash board Mold



3D Machining to CAD Data

Grades in Program : • Buderus 2311 ISO-BM mod • Buderus 2738 ISO-BM • CONQUEROR SUPER CLEAN ISO-B • Buderus 2083 ISO-B

Partner in India for Buderus | Edelstahl

Partnership of 50 years with

Buderus | Edelstahl

and Indian Industry,
based on Reliability and Trust.

ALL FROM ONE SOURCE

Corporate Office
PCK HOUSE,
New No. 84, Old No.13,
South West Boag Road,
T. Nagar, Chennai - 600 017
Tel : + 91 44 2434 6503 / 1904 / 8638
Fax : + 91 44 2434 1181
Email : info@pck-buderus.com

Pune Office :
Warehouse & Machining Division:
Gat. No. 191, 192, 193, Alandi-Markal Road,
VaduKhurd, Tal. Haveli, Pune - 412216/INDIA
Tel. : 020 66783000/66783002 to 66783023
Fax : 020 6678 3001
E-mail : punewh@pck-buderus.com
pckpune@vsnl.net

Ludhiana Stock Holding Center
C-I, Industrial Area C, Jaspal Main Road,
Kanganwal, Ludhiana - 141 120. Punjab.
Tel : + 91 161 6532016 / 2017 / 2510073
Fax : +91 161 2510072
Email : ludwh@pck-buderus.com

Kolkatta Office
Flat No. 403, Vishal Apartments,
4th FloorNo. 18,
Prince Anwar Shah Road,
Kolkatta - 700 033
Tel : + 91 33 2417 1078
Email : info@pck-buderus.com

www.pck-buderus.com

• THRUHARD SUPREME HH/HG • Buderus 2711 ISO-B • Buderus 2344 ISO-B
• Buderus 2316 ISO-B mod • Buderus 2767 ISO-B • Buderus 2379 IOSO-B

HIPERDIE®

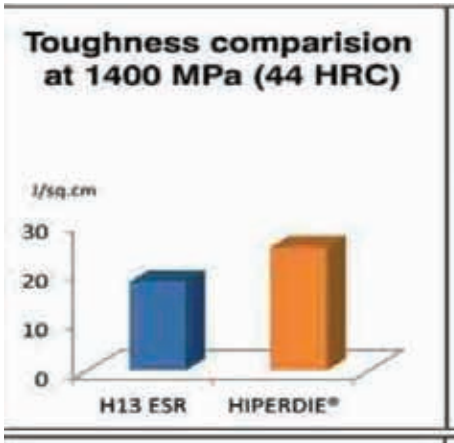
Pre-hardened Hot working Steel for Abrasive plastics

Advantages for Plastic Processors:

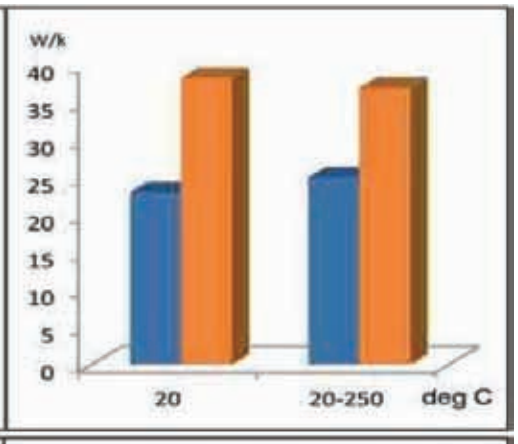
- Higher thermal conductivity than H11/H13 types whereby Injection cycle times can be reduced
- Higher toughness than H11/H13 type
- Longer Mold life

Advantages for Mold makers:

- Pre-tempered to 42+/- 2HRc
- Excellent machinability
- Thru-hardenability
- Shorter mold making time
- Good Polishability
- No Risks of heat-treatment
- No dimensional limitations
- Nitriding/ PVD treatment possible



Toughness comparison H13 and HIPERDIE® at 1400 Mpa.



Comparison of Thermal Conductivity of H13 and HIPERDIE® shows more than 50% increase in Thermal Conductivity.

HIPERDIE® is stocked extensively at Chennai and Pune.

Materials can also be delivered in pre-machined condition with low tolerances.

PCK Buderus (India) Special Steels Pvt. Ltd.

Corporate Office : PCK HOUSE, New No. 84, Old No.13, South West Boag Road, T. Nagar, Chennai - 600 017
Tel : + 91 44 2434 6503 / 1904 / 8638 Fax : + 91 44 2434 1181 Email : info@pck-buderus.com

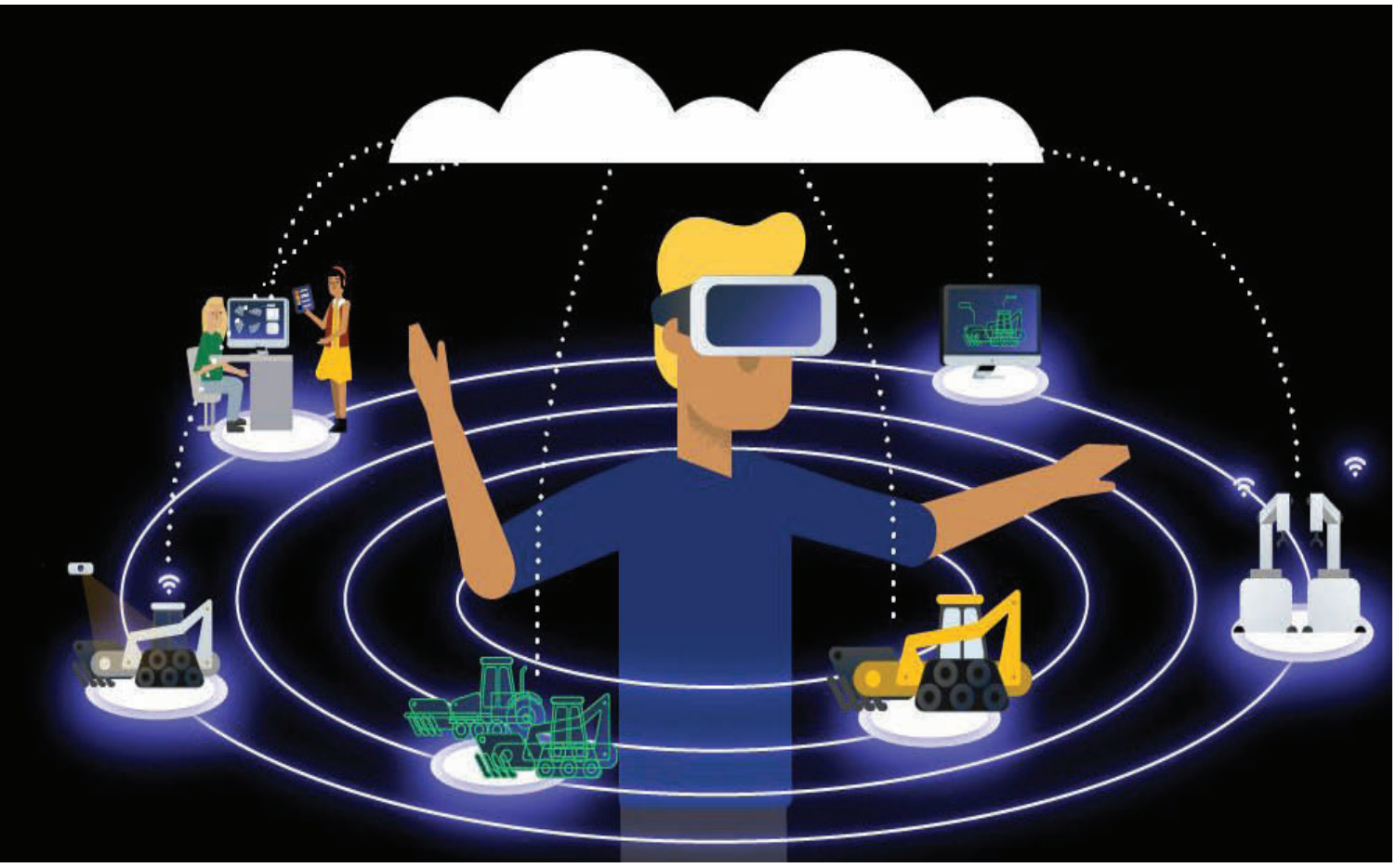
Chennai Stock Holding Center
Machining Division
No. 1/512, Ponni Amman Koil Street,
Gandhi Nagar,
Vengaivasal, Chennai - 600 073.
Tel : + 91 44 2278 1107
Fax : + 91 44 2278 1869
Email : info@pck-buderus.com

Pune Stock Holding Center
Machining Division
Gat no 191-192-193,
Alandi-markal Road,Vadu Khurd,
Tal-Haveli, Pune - 412216.
Tel : + 91 20 6678 3000
Fax : + 91 20 6678 3001
Email : punewh@pck-buderus.com

Ludhiana Stock Holding Center
C-I, Industrial Area C,
Jaspal Main Road,
Kanganwal, Ludhiana - 141 120.
Punjab.
Tel : + 91 161 6532016 / 2017 / 2510073
Fax : +91 161 2510072
Email : ludwh@pck-buderus.com

www.pck-buderus.com

7 Steps of Digital Transformation Herald a Connected Era of Manufacturing



Through digital transformation, manufacturers enter the data-driven, connected era and become more customer-focused, resilient, and agile.

These 7 steps of digital transformation in manufacturing evolve traditional processes and create a flexible, platform-based strategy for the future.

Imagine the future of manufacturing, when robots, autonomous vehicles, and artificial intelligence (AI) run production, while humans orchestrate operations. Productivity is high, processes are lean, and every product is customized. The industry is not far from this digital transformation wonderland, but it still has hurdles to clear.

Before 2020, manufacturing was struggling with a labour shortage, a skills gap, and a plateau in productivity. The COVID-19 pandemic compounded these problems, and almost overnight, companies also had to manage distributed workforces and evolving safety protocols. Consumer demand was like a pendulum, as people abruptly stopped buying things—then, quickly swinging the other way, started stockpiling goods. This demand shock caused the supply chain to seize up.

Digital Connect In Focus

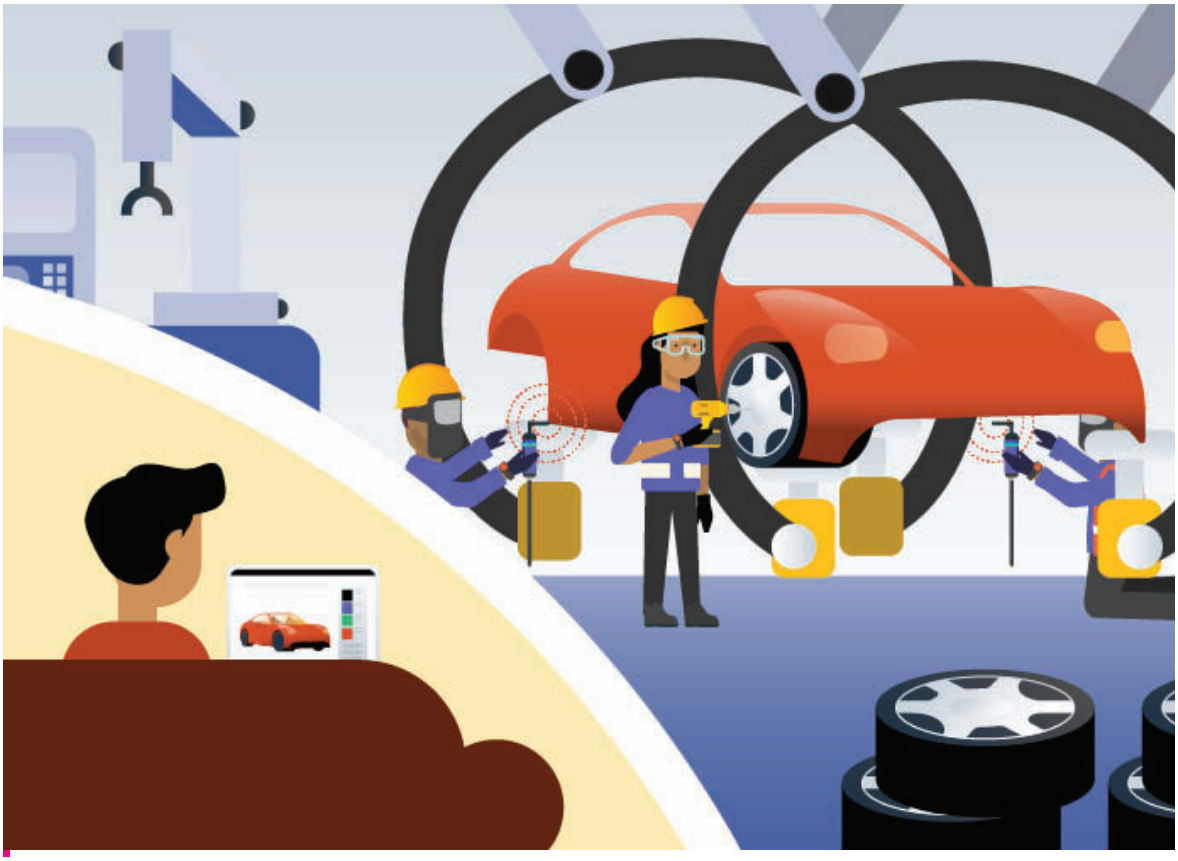
Now, manufacturers are under pressure to adapt to evolving expectations: better products, greater customization, faster production, and lower costs—all with a worker shortage. But with disruption comes the opportunity to do things better. Companies are addressing their longstanding issues with technology. They are flocking to the cloud and accelerating digital transformation in manufacturing.

To help guide companies toward a resilient, agile, customer-centric, and data-driven future—a new, connected era in manufacturing—here are seven steps of digital transformation to follow. Each step flows into the next, and each offers on-ramps that manufacturers should choose according to what's appropriate for their digital transformation journey. The first step connects processes in the traditional manufacturing lifecycle; the next five steps change that lifecycle through mass customization, design collaboration, flexible manufacturing, and smart services; and the final step incorporates a platform approach that breaks down silos and empowers the industry.

1. Connected Manufacturing Lifecycles

Product development and manufacturing comprises a series of steps performed by multiple disciplines: conceptualize, design, produce, sell, operate, retire. Traditional manufacturing lifecycles rely on manual processes, incompatible software, and fractured communication. That creates a siloed environment, where one person hands off a huge file to another person, who practically translates it to get what they need. It's inefficient, time-consuming, and costly.

To change that, the first step for companies is to find their on-ramp to digital transformation—which might be automating one process or department. Stitching together automated environments creates a single ecosystem, where all stakeholders have access to what they need to make faster, better decisions. The 'Global Lighthouse Network: Reimagining Operations for Growth', a whitepaper by the World Economic Forum, found that the most digitally advanced manufacturers increase production output by as much as 140% and reduce design-iteration time by as much as 98%. Creating a common data experience means frictionless workflows and a transparent process. In this scenario, design and make flow seamlessly, with data as the connective thread.



Digital factories allow manufactures to stay competitive by activating mass customization, which gives their customers the personalization options they crave.

Digital manufacturers can increase their chances of making their profit margins by giving customers more choices through 3D-rendering tools prior to manufacturing.

2. Mass-Customization Capabilities

Mass customization is now a must-have capability. People love the personalized experience their smartphones offer and want to replicate that with other products. Delivering that without sacrificing time to market gives manufacturers a competitive edge.

As companies update operations with additive manufacturing and automation, personalizing becomes possible. A great example is Porsche's new facility in Stuttgart, Germany, where the company makes the all-electric Taycan. It's a digital factory where autonomous vehicles have replaced the assembly line, moving each car through stations per the customer's order. Manufacturers can also deliver personalized user experiences with AI, data, and software. Peloton does this by curating content for each stationary-bike customer.

3. 24/7 Design Collaboration

Even in Industry 4.0, manufacturing relies on human collaboration. With digitalization, teams can communicate with the entire value chain, establishing an ecosystem of stakeholders (like suppliers and subcontractors) working in tandem for successful outcomes.

A centralized environment supports interoperability, allowing different disciplines to collaborate in real-time from the same files, reducing missteps. At Logitech, the computer accessories manufacturer, geographically distributed teams collaborate through Autodesk Fusion 360. Working from the same data-centered model, everyone has 24/7 access to up-to-date information.

4. Flexible Manufacturing for Greater Agility

Manufacturing has long operated by the just-in-time philosophy pioneered by Toyota. Companies ordered materials as needed—not a second before or after—for efficient inventory management. But this approach assumes supply chains always work; as the pandemic has proven, they're actually quite fragile.

Flexible manufacturing is a backup plan for supply-chain disruption. If there's a demand shock and the usual suppliers become inaccessible, or shipments are stuck in a backlogged port, companies can quickly pivot to produce materials in-house with additive or subtractive manufacturing, or they can source materials locally. Flexible manufacturing relies on a connected ecosystem, under one roof or within the supply chain, so manufacturers don't have all their eggs in one basket.

Working on a software platform, each designer and engineer adds to a manufacturing project using different tools at different times, although they're contributing to a unified effort.

5. Enhanced Customer Experiences

Consumers' expectations are changing rapidly. They want things faster, smarter, and better. With traditional manufacturing methods, companies are slow to adapt to these demands. In fact, 72% of product releases fail to meet profit margins. Manufacturers must give consumers what they want and deliver value by leveraging technology. If they don't, their competitors will.

One idea is to create virtual browsing experiences. It removes the consumer's risk and engages them differently. For example, bridge fabricator Mabey Bridge offers a 3D tool through which customers can select specifications for a digital rendering of their bridge—before placing an order. Customers gain a sense of control, which builds trust and makes the relationship stickier. This also leads to repeat business.

6. Smart Services for Customer Longevity

As companies transition to data-driven operations, extending digital capabilities of their products generates greater value. Think about smartphones: The hardware is a one-time purchase, but customers build on the relationship with the manufacturer by adding applications.

With products that generate data when they're in the hands of the customer, companies create revenue streams and opportunities to build relationships. As a result, smart services yield insights that improve the manufacturer's ability to compete effectively.

7. Platform as the Ultimate Ecosystem

This digital journey culminates at its final step: platforms. People engage with platforms every day by using smartphones, streaming movies, or hailing rideshares. Platforms are ecosystems of different technologies where data connects everything in the value chain, across disciplines or industries. By automating processes, connecting teams, and creating visual data models in a single environment, platforms improve coordination across all product development and manufacturing.

Companies can build onto platforms, adding capabilities to create the desired experience. This is the foundation of Autodesk Forge, a cloud-based platform that combines design and make to deliver greater value from people, processes, and technology.

At Walt Disney Imagineering, creating attractions for global theme parks requires collaboration among disciplines such as architecture, engineering, design, industrial manufacturing, digital media, animation, and 3D modeling. A platform creates a connected way to work together on such complex projects.

Think about designing and building a rollercoaster. Each person uses the software platform in a way that feels like one single application, even though they each experience it in their own way. The motion-design animator experiences the platform on a touchscreen, using a stylus. The data from this is connected to the mechanical engineer, who experiences the same platform in a different way, working on the track-wheel assembly in a CAD program. An electrical engineer accesses the data to lay out the ride's electrical system. Collectively, it looks like one single software. Why is this important? It reduces cognitive breaks, as these different personas go back and forth, enhancing mutual workflows on a collaborative project.

Manufacturing is at a crossroads—rooted in traditional methods incompatible with future needs, hovering on the brink of change. But the path forward is clear: Embrace a digital-transformation mindset, find an on-ramp, and work toward a platform strategy.

Article and images courtesy: *This article originally appeared on Redshift, an Autodesk publication dedicated to designers, engineers, builders, and makers that explores the future of making things, shares inspiring stories of innovation, and offers practical advice to help businesses succeed.*

NS TOOL

For Crafting Tomorrow

2-Flute Long Neck Ball End Mill with Short Shank for Hardened Steel and High accuracy cutting

NS TOOL CO.,LTD.

For Crafting Tomorrow

Technical website
NS TOOL **GLOBAL** Cloud+

Linkedin

Metacut Technologies
Complete Solution for Metal Cutting Industries
B-27, S.F, Patparganj Industrial Area,
Delhi-110092, India
Tel: +91-11-42878285, Fax: +91-11-42808285
Mail: sales.metacut@gmail.com
Website: www.mt-india.com

Linkedin

Metacut Technologies

'The emergence of EVs is not really going to have much of a negative impact on the tooling industry'

"Rather, I see a positive impact emerging with a large number of plastic components replacing the existing IC engines and the associated products. This will give a lot of opportunities for toolmakers to develop more tools," says B. Thej Kumar, Associate Vice President – Operations, Product Development & Quality, Toyoda Gosei South India Pvt. Ltd.

Q What are the emerging trends in the global automotive industry versus the Indian automotive industry? How will they impact the auto component industry?

Well, the emerging trends are all about digitalisation in every sector and, as is evident, the automotive industries are also increasingly digitalising. If you look at the global automotive industry, specifically at the developments in the US, Europe, and Japan, you will see that the usage of technology in terms of software is high.

Today, artificial intelligence, machine learning, and cloud computing are finding more space in the automotive industry — whether it's manufacturing or the end user. In the US and Europe, for instance, driverless cars have already hit the road. These countries have progressed far ahead of India, which is still in the process of entering the Electric Vehicles (EV) space, and discussing hybrid technologies. While we are definitely maturing faster, we have to keep pace with the global trends.

The auto component industry is likely to witness a significant impact because of the changes introduced by OEMs in terms of design requirements or customer requirements. For instance, when a feature-loaded vehicle, such as Mahindra XUV7OO, is launched, it will attract users. Besides, Tata Motors is bringing cars meeting global safety norms to the market. Developments like these and evolving preferences of end-users are going to have a great impact on component suppliers.

Today, the Indian auto component industry is exporting to markets like South Africa, Brazil, the US, and also to some European countries. Surprisingly, the export numbers surpass the domestic market numbers. So, looking at the growth in the Indian automotive industry, I expect the auto component industry to be poised for big growth in this decade.

Q With these trends likely to have a direct impact on component and tool suppliers, what are the major expectations from automotive OEMs and toolmakers with regard to the procurement of tools?

A decade ago, OEMs would bring out a new car

every three to four years. Today, every OEM is looking at launching new cars within less than two years. Companies like Tata Motors and Skoda have already declared plans to launch at least 15 to 20 models in India in less than 18 months. This recent trend of launching new products at a rapid pace will greatly influence die and tool makers. It will definitely impact those involved in manufacturing plastic injection tools, or any other tools manufactured for various processing technologies. Here's how:

- Firstly, OEMs and component makers are looking at global quality with a localised approach and this is where the challenge lies. Earlier, customers expected OEMs to deliver within 16 to 18 weeks. But now, the timeframe has been reduced to 10 to 12 weeks. So, OEMs have to deliver faster without compromising on quality.
- Secondly, lack of flexibility in manufacturing is a hurdle that needs to be overcome. Many small and big toolmakers do not have adequate capabilities to make engineering and design changes during a project. Often, OEMs make design changes during a project, which have to be incorporated within the time limit. It would be ideal if toolmakers could enhance their capabilities to incorporate the necessary changes.
- Thirdly, there's insufficient focus on building capacity and resources. The biggest challenge today in India is resources – be it raw materials, manpower, or infrastructure. Raw material and resource availability are some of the key factors that customers focus on.
- Fourthly, there's no real transparency! This is one of the biggest challenges we face in India. Often, whenever there is a problem, most toolmakers try to resolve it themselves without disturbing the customer. It's only when things spiral out of control does the information flow. But this shouldn't be the case. If the information is passed on before the situation gets bad, a solution can be arrived wherein even the OEM or any customer would join hands to resolve at sooner and the chances of the project getting delayed would be slimmer. Don't worry if the news is good or bad, please share it!
- Fifth is finance! Finance is one of the important points in today's context. We have seen many companies suffer because of COVID-19 among other reasons. We have faced challenges due to the lack of finance at the toolmaker's end. This is not something any toolmaker would want to be in but there has to be some solution to redress it. This primarily depends on the financial discipline exhibited by the tool maker with his finance providers and also need of payment terms by the customers like Tier1 or OEM needs to be revisited.
- Lastly, and most importantly, is the question that every toolmakers needs to ask themselves — 'How equipped am I to rectify tooling issues before dispatch?' A successful toolmaker will always be ready to tackle any such issue that could arise. Ensure 100% OK tool with shipping approval of customers.

Q What would you say are the key evaluation factors for any automotive OEM before finalising a tool room for a project?

When we talk about the expectations from OEMs or the Tier-1s, there are some similarities in terms of evaluation. For example, in most companies, at least in our organization, all tool rooms are surveyed before the actual project starts. At Toyoda Gosei South India (TGSIN), we assess various factors, which include:

- One of the key things we look at is the PQDC approach, which is productivity, quality, design capability and safety. Being part of Toyota family, in particular, we stress on the safety aspects apart from the resources and infrastructure.
- We also look at the engineering capability, which includes process engineering as well as engineering from the design point of view. How well the team can integrate with the customer based out of, say, Japan, Europe, or the US? So, integration becomes key.
- Another important aspect is the skill level. It's one of the biggest challenges in every industry. But in the tooling industry, especially those from design and development, need to be highly qualified.
- Another important thing is checking fixtures (CF) and gauges. I think it is important to have an understanding in terms of working with CF. But if the integration doesn't happen between the CF maker and toolmaker, we end up spending a lot of time and resources setting it right. It is an important criteria we look at.
- Also, overall infrastructure and network are looked at. The network is very important because not every toolmaker will have all the processes in-house. So, how well the toolmaker is connected with the other service providers of the ecosystem is very important.
- The last point is location. The toolmaker's location plays a critical role considering factors like transportation and logistics. Also, if the toolmaker is based in a location where all the players of the ecosystem are present, it helps in selection.

Q EVs are said to be the biggest game changers in the global automotive industry. How do you think will the emergence of EVs impact the demand for tools in the automotive industry?

EVs have become a trending topic not only in India but globally as well. Companies manufacturing two-wheelers as well as four-wheelers have also ventured into the EV space. In fact, the government aims to have EV sales accounting for 30% of private cars, 70% for commercial vehicles and 80% for two- and three-wheelers by 2030. EVs are going to impact component manufacturers to some extent. Let's understand how by looking at the case of four-wheelers. In a four-wheeler, IC engines and the associated components such as plastic parts that were used for weight reduction purposes like sub-frames, front module, and cover module, among others, will be replaced. But EVs will need a set of new components such as battery components, battery housing, and fire assistance, among others. Also, strong infrastructure for charging stations will be needed. Now let's look at what remains unchanged – the instrument panel, dashboards, consoles and door trip, seating and safety systems, bumper, etc.

So, the emergence of EVs is not really going to have much of a negative impact on the tooling industry. Rather, I see a positive impact emerging with a large number of plastic components replacing the existing IC engines and the associated products. This will give a lot of opportunities for toolmakers to develop more tools.

Q Apart from ambitious EV plans, the government has also launched many PLI Schemes for various sectors. What kind of growth opportunities will the PLI Scheme offer the automotive industry?

The PLI Scheme is like a game changer for the Indian manufacturing industry. I would like to congratulate those who visualised the scheme as well as executed it. The PLI Scheme will help industries that have been adversely impacted because of the pandemic. The budget for PLI schemes for various industries is close to INR 2 lakh crores out of which almost INR 57 to 60 crores is meant for the auto industry. This is a very positive development for the overall Indian automotive fraternity, including OEMs, component suppliers, and toolmakers. However, the impact it will have solely depends on the way we all make use of this scheme. But one thing is for sure, it will have a positive impact on toolmakers. All toolmakers need to do is be prepared with the right skillset and infrastructure.

Q Would tier-1s and OEMs integrate and set up captive tool rooms or nudge existing toolmakers to enhance capacity? What do you think will be the trend going forward?

Most OEMs today are focusing on the core area of vehicle manufacturing. Here, the main operations include vehicle assembly, confirmation, evaluation of the vehicle, inspection, roll-in roll-out of the factory, design, etc. OEMs will consider outsourcing some of the key activities like moulding, painting, etc. However, I don't think OEMs and Tier-1s wish to set up tool rooms because of two main reasons. Firstly, it's a very capital-intensive industry and secondly, OEMs may not be good with tool making, as compared to the actual toolmakers. So, in my opinion, toolmakers need not worry about it. However, keeping the quality and lead time in mind, there have been discussions about setting up an in-house tool room in future. Also, it depends on how the Indian tooling industry responds to the expectations.

Q Finding and retaining talented manpower is another big challenge for toolmakers. How should they overcome this challenge?

Retaining talented manpower is a really big challenge not only for toolmakers but also for other industries. Today's employees have a different thought process compared to those who were employed 20-30 years ago. Earlier, people would stay in one company until they retired. But today, the situation is different. The scenario in the tooling industry is no different, particularly from the design point of view where we see a higher level of attrition happening because it is in high demand.

As an industry, we have to provide employees a good work-life balance, good opportunities to learn, and good exposure. So, instead of representation of company only from senior executives to speak or attend conferences, we could probably send mid-level or even junior executives. This will help them get more exposure, connect with industry peers, and learn from the fraternity.

Toolmakers should also conduct skill development activities; this is something that they can start from their organization itself.

Buderus 2738 ISO-BM

For high quality Moulds where there is no compromise on quality

Buderus 2738 ISO-BM is stocked extensively at:

PCK **Buderus** (India) Special Steels Pvt. Ltd.

Corporate Office : PCK HOUSE, New No. 84, Old No.13, South West Boag Road, T. Nagar, Chennai - 600 017
Tel : + 91 44 2434 6503 / 1904 / 8638 Fax : + 91 44 2434 1181 Email : info@pck-buderus.com

Chennai Stock Holding Center
Machining Division
No. 1/512, Ponni Amman Koil Street,
Gandhi Nagar,
Vengaivasal, Chennai - 600 073.
Tel : + 91 44 2278 1107
Fax : + 91 44 2278 1869
Email : info@pck-buderus.com

Pune Stock Holding Center
Machining Division
Gat no 191-192-193,
Alandi-markal Road,Vadu Khurd,
Tal-Haveli, Pune - 412216.
Tel : + 91 20 6678 3000
Fax : + 91 20 6678 3001
Email : punewh@pck-buderus.com

Ludhiana Stock Holding Center
C-I, Industrial Area C,
Jaspal Main Road,
Kanganwal, Ludhiana - 141 120.
Punjab.
Tel : + 91 161 6532016 / 2017 / 2510073
Fax : +91 161 2510072
Email : ludwh@pck-buderus.com

www.pck-buderus.com

PCK-Buderus | Special Steels

Buderus 2738 ISO-BM

PREMIUM QUALITY PRE-HARDENED MOULD STEEL

Shopping Trolley Mould

Corporate Office :
PCK HOUSE
New No. 84, Old No.13,
South West Boag Road,
Chennai - 600 017
Tel : + 91 44 2434 6503, 2434 1904
Fax : + 91 44 2434 118
Email : info@pck-buderus.com

Pune Office :
Warehouse & Machining Division:
Gat. No. 191, 192, 193, Alandi-Markal Road,
VaduKhurd, Tal. Haveli, Pune - 412216/INDIA
Tel. : 020 66783000/66783002 to 66783023
Fax : 020 6678 3001
E-mail : punewh@pck-buderus.com
pckpune@vsnl.net

Ludhiana Office,
Stock Holding Center
C-I, Industrial Area C,
Jaspal Main Road, Kanganwal,
Ludhiana - 141 120. Punjab.
Tel : + 91 161 6532016, 6532017
Fax : + 91 161 2510072
Email : ludwh@pck-buderus.com

www.pck-buderus.com

PCK-Buderus | Your reliable Partner in India for Buderus | Edelstahl

Today's youth are very knowledgeable because of the internet and the gadgets that they use. We can learn so much from them.

Q What suggestions would you like to offer Indian toolmakers?

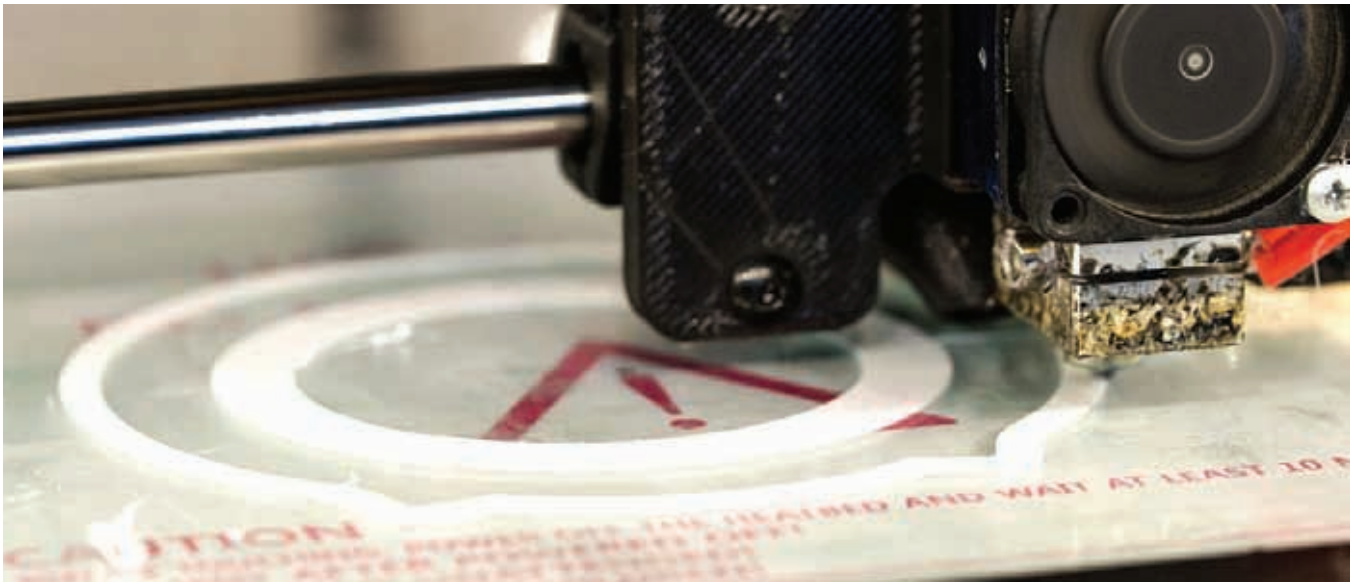
I believe that Indian toolmakers need to focus on the following factors:

- It's important to have a 'First time right, every time right' approach. When we talk about projects, the first thought that comes to mind is how many opportunities do we have for trials? But this is the wrong approach. Indian toolmakers need to focus on ways to synchronise their activities and strategies to get it right the very first time.
- Micromanaging processes and activities is one of the weak areas. We all have a habit of keeping a schedule, we have a list of activities to be done such as machining operation, designing, and heat treatment, among others. But we don't monitor it to the day-wise level and on many occasions, you have to do it on an hourly basis. On the shop floor, every hour counts and if you do not micromanage these activities, it will be an overall loss of time and resources.
- Aim for expertise. In India, most companies are trying to do the same thing and compete for the same share of the business pie. In China, I noticed that people grab one aspect of tool making and only do that. It helps them stand out in the crowd and become experts in the segment. This is how, they manage capacity balancing and optimally utilise resources. Indian companies need to follow the similar pattern and work together to grab bigger business opportunities.
- Skill development is another factor that I would suggest toolmakers to extensively work on. Formulate a plan and keep a budget for training activities.
- Also, try to solve the challenge of the raw materials' dependency. Make good global connections to source raw materials in any situation.
- Lastly, try to diversify. Apart from automotive, one of the promising industries in India is aerospace. So, there's a need to focus on how we can diversify the business into different segments like aerospace, pharmaceutical, etc. This would be key to grow.

These are some things we need to work on. However, considerable progress has already happened and in due course of time, the Indian tooling industry will be as good as any other market in the world.

3D Printing Trend for 2022:

The Increasing Relevance of Smart Data in 3D Printing



Today, 3D printing continues to transform factory floors, as companies adopt 3D printing for large-scale production across multiple sites. Historically, a lot of 3D printing production happened in isolation — separated from the conventional manufacturing process. But as the walls between these two manufacturing environments disappear, these two ecosystems now start to connect and create a more integrated production environment.

Such a unified, increasingly digital production environment enables greater efficiency, repeatability, scale, and control, but it requires a common resource — a common language, and that is data. Moving forward, we believe the role of data in additive manufacturing (AM) will become increasingly important in many ways.

In our round table, we bring together some of the finest minds at Materialise to discuss the relevance and ownership of smart data in AM and its impact on the need for human expertise.

How relevant is data in AM?

We call 3D printing "smart manufacturing", but the terminology originated from traditional manufacturing. AM, however, is probably more complex than its conventional counterpart because, with AM, the material and the product are reated simultaneously. So, the role of data is probably more important in 3D printing than in traditional manufacturing.

> **"Smart data holds the key to transform industrial 3D printing production. As manufacturers scale up production, smart data will allow them to reduce scrap rates, predict failures even before they start printing, and meet stringent quality requirements."**
>
> **- Tim Van den Bogaert, Sr. Market Director at Materialise Software**

Our ability to make manufacturing "smart", depends on our ability to collect data. But while access to data is crucial, it is certainly not enough. Manufacturing becomes smart when we are able to analyze the data to create "actionable insights". This allows us to improve the process, scale up production and, ultimately, make better products.

Or, as a customer recently stated: "We believe in a world

where the next part that we print is always a better version of the previous part." This will require a software platform that is capable of connecting to all of the systems and datasets found in the production environment and beyond.

"For medical AM applications, we need to distinguish between two types of data," says Materialise Innovation Manager for Medical, Pieter Slagmolen. "On one hand, smarter data allows medical companies to upscale the production process of personalized and increasingly complex medical devices. On the other hand, there is also 'patient data'. Incorporating this personalized data into the planning and production process allows us to improve patient treatment, but it also introduces additional concerns about privacy and data security."

According to Kristel Van den Bergh, Director of Innovation for Materialise Mindware, these concerns also apply in an industrial production context. "3D printing gives us the freedom to manufacture wherever and whenever we want. But in an increasingly distributed and cloud-based manufacturing environment, people are also concerned about the protection of proprietary data, such as prototypes or new designs."

Who owns the data in AM?

The question: "Who owns the data?" certainly isn't new. But for Peter Leys, Executive Chairman, this is not the most important question. Data allows manufacturers to create better designs and processes. So, the real question is: "Who owns your designs and processes?".

"Most manufacturers will not only claim ownership of designs and processes, but also express the desire to control them. They may decide to share some of these insights in order to empower other users, but manufacturers should retain ownership and control. This will enable them to create smarter production processes that allow them to leap ahead of the competition."

- Peter Leys, Executive Chairman at Materialise

"By anonymizing data, manufacturers can share data with greater confidence, allowing them to empower others and fuel industry innovation without disclosing their competitive advantage," adds Bart Van der Schueren, Materialise CTO.

In an industrial context, data ownership — whether it's process expertise or intellectual property — also comes with responsibility. Now, the transition from centralized production, where liability resides with one centralized manufacturer, to distributed production, which includes multiple stakeholders, opens up new conversations about responsibility and liability. And the legal framework that surrounds distributed production, is still being developed.

For medical AM applications, the process data clearly belongs to the hospitals and medical device manufacturers. As they create AM workflows, they need access to and control of the data for quality assurance. Ownership of patient data, on the other hand, remains a heavily debated topic. But delivering the most optimal care to patients, will require access to patient data, regardless of who owns it.

Will human expertise still be important in AM?

Smart data leads to optimized workflows, which may decrease the need for human intervention. At the same time, creating better production processes still requires human expertise. So, what impact will smart data have on the need for human intervention in 3D printing?

"The role and relevance of human intervention depends on the operational context," says Kristel Van den Bergh. "In the predictable context of standard operations, where lots of data is available, machines can play a dominant role and the human role can be reduced to supervision. However, when there is a lot of uncertainty or ambiguity, which is typically the case in the context of innovation, more human skills are required, like creativity, imagination, and intuition. These are two extreme ends of the spectrum and in most cases, automation and human intervention will go hand in hand.

"True, but even when an abundant amount of data is available, as is the case with AM, data alone is not sufficient to automate production flows", adds Bart Van der Schueren. "Because even in such a data-rich context, the domain-specific knowledge of human experts is required to optimize the process before it makes sense to automate it. In other words, if you use a lot of data to automate and scale up a bad production process, you still end up with a bad process."

Peter Leys sees additional opportunities: "Smart manufacturing, based on data, also creates an opportunity for smart people to make a difference."

We bring together some of the finest minds at Materialise to discuss the relevance and ownership of smart data in AM and its impact on the need for human expertise.

He explains: "A smart medical surgeon will use his or her experience, personal insights, and interpretation to add an additional layer of intelligence to improve patient treatment. Similarly, in an AM context, adding an additional, personal layer of intelligence to the process allows a company to make a difference and create a competitive advantage."

The third ingredient

"Breakthrough innovation depends on the ability to create a link between things that seem unrelatable," says Van den Bergh. "And while computers might process connections faster than humans, the human brain is able to create associations that wouldn't naturally appear in a given dataset. That's what distinguishes us from computers."

"So, to answer the main question: will more smart data replace or reduce human expertise? The answer is no!"

> **Companies need to invest in human expertise as well as in machine intelligence. But they will still fail if they don't invest in the third ingredient: a process to make those two successfully work together."**
>
> **- Kristel Van den Bergh, Director of Innovation for Materialise Mindware**

Conclusion

It's clear that smart data will play an increasingly crucial role in 3D printing. As part of that, we need to think about the ownership of data, but also ask ourselves: who controls the data? In the end, the success of 3D printing depends on having the right hardware and software, but also on our ability to capture, use and apply data to create actionable insights.

And then there's the human aspect. As data leads to smarter and more automated manufacturing, this reduces the need for operational human intervention. This frees up time for skilled engineers to do what they do best: defining and fine-tuning unique production processes. One of the challenges that lie ahead is to establish a workable process of how these two — machine intelligence and human expertise — can successfully work together and enhance each other at every stage of the 3D printing journey.

3DPN Manufacturing provides quick replacement of end used parts with Markforged 3D Printers

Industries: Automotive | Aerospace | Tooling

Applications: Tooling and Fixtures | Functional Prototyping | Replacement Parts

The Customer

3DPN Manufacturing Pvt. Ltd., an Indian 3D printing start-up based in Delhi-NCR, was founded by Navneet Arya (PGDM- IIM Indore) and Manu Sharma (B. Tech-IIT BHU). The start-up is envisaged to support manufacturing companies reduce their overall design cycles and enable faster manufacturing. The founding partners of the company bring with them rich combined corporate experience in diverse roles of 30+ years with good exposure in industries like power, manufacturing, oil & gas, aerospace, defence and consumer goods.

The Motivation

Having worked in various roles, the co-founders wanted to make a wider impact in their core engineering domain with a focus on supporting the manufacturing sector in India. 3D printing became an immediate choice for them, as this technology, not only enables traditional manufacturers to rethink manufacturing but also to demonstrate creative ideas in an efficient manner, reducing the turnaround time and go-to-market cycle time.

They found their motivation to improve manufacturing efficiency by supplying end-use parts, tools, fixtures, jigs & other functional components to manufacturers in quick time.

> **"Our aim is to become the benchmark 3D Printing Company, providing world-class products in terms of continuous innovation, quality, delivery and cost to the satisfied customers through continuous improvement driven by trust and creativity."**
>
> **Navneet Arya,**
> **co-founder,**
> **3DPN Manufacturing Pvt. Ltd.**

The Technology

Markforged has been fostering innovation with their production-ready systems globally and has also helped many corporations to improve their manufacturing processes overall.

"I am really glad to see 3DPN Manufacturing Pvt. Ltd. driving the adoption of Markforged composite solutions. The use of additive manufacturing to fabricate tooling will help reduce lead times and costs plus improve functionality and enhance the ability to customize."

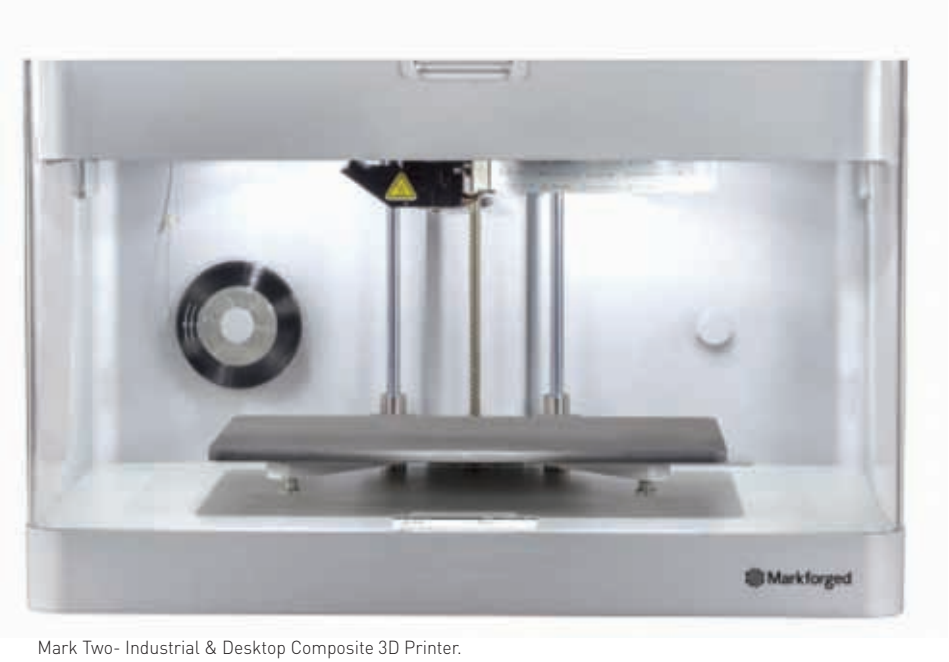
Anuj Budhiraja,
Country Manager - India, Markforged

Navneet Arya adds, "We see lots of diversified applications possible with Markforged 3D printers in our target industries and it is also a truly digital manufacturing solution provider. Phillips AdditiveTM and Markforged together bring the required experience and proven technological expertise, which helped us in finalizing on this technology."

The Markforged 3D printers can print composite materials reinforced with continuous carbon fiber, fiber-glass, and Kevlar. The technology allows modern manufacturers to print small-batch and end-use production parts. This possibility opens up a new business segment for manufacturers to cater to target industries such as aerospace, automotive, tooling and industrial equipment manufacturers.

"We thank 3DPN Manufacturing Pvt. Ltd. for considering Phillips Additive & Markforged as their technology partner. We appreciate their vision in considering 3D printing technology as a way forward for modern manufacturing. Glad to see technology start-ups adopting additive manufacturing to achieve competitive advantage, business growth and to set up digital manufacturing."

Sumeet Bengeri,
Business Head, Phillips Additive



Mark Two- Industrial & Desktop Composite 3D Printer.

Operating margins of auto ancillaries to remain under pressure in H2 FY2022 impacted by commodity inflation; Omicron wave adds to industry woes: ICRA

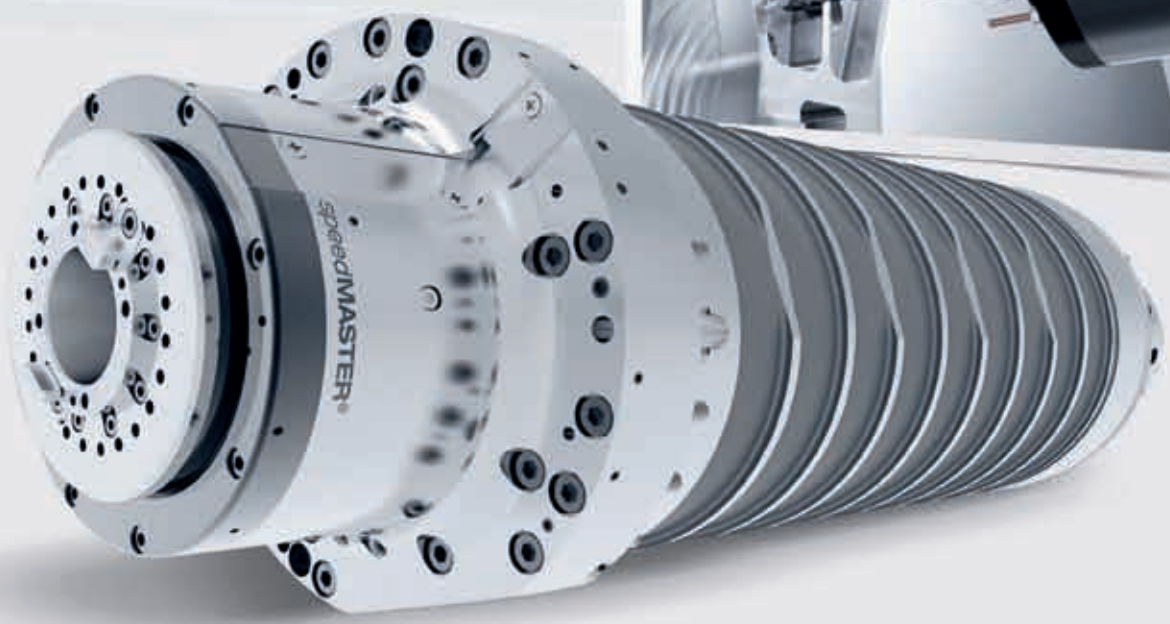
Long-term drivers remain strong, but near-term challenges because of the Omicron wave, supply-chain issue and commodity inflation persist. The revenue growth forecast for FY2022 has been revised downward by 200 bps to 15-17% from the earlier estimates due to the Omicron wave, delayed recovery in semi-conductors and muted 2W/bus demand. There could be a downward bias to ICRA's estimates in case of prolonged lockdowns or significant demand slowdown because of the Omicron wave. OPM of auto ancillaries (ex-tyres) will contract by 75-125 bps due to commodity price impact and will remain lower than the normal levels of 11-12%.

Image used for representation only. Courtesy: Envato Elements

36 MONTHS WARRANTY
FOR ALL MASTER SPINDLES

WITH **UNLIMITED** SPINDLE HOURS

36 month warranty



MASTER SPINDLES

speedMASTER, powerMASTER, 5x torqueMASTER, compactMASTER and turnMASTER spindles for new machine orders from 2018.

VACRODUR

as new material for spindle bearings

DMG MORI

+91 80 40896500

Demand for auto components stems from domestic OEM, replacement and exports. Most domestic OE sub-segments are expected to register healthy volume growth in FY2022, albeit on a low base of the last fiscal. Pass through of commodity prices will also inflate revenues by 4-5%. However, certain segments, like 2W and buses, will be impacted by the Omicron wave. We expect delayed recovery in the 2W segment because of affordability and dampened sentiments. Also, demand for buses is expected to be impacted during the upcoming school season for the third year in a row. Supply-chain issues could prolong further as well. Easing of COVID 2.0-related lockdown restrictions and improvement in personal mobility, healthy freight movement and pent-up demand arising from deferment of purchases last year, supported replacement sales for auto components in Q2 and Q3 FY2022. While there could be some impact on mobility because of the ongoing COVID wave, freight movement and deferment of fresh vehicle purchases will result in healthy replacement demand in Q4 FY2022.

Notwithstanding the potential Omicron impact, we expect an 8-10% growth in domestic aftermarket demand for FY2022. Exports remain a bright spot in the Indian auto component story. We expect a 20%+ growth in exports for FY2022. Indian auto component suppliers have reported a healthy improvement in sales volumes to Europe in YTD FY2022 and have a strong order book for the next few months, partly aided by the China+1 strategy. Q3 FY2022, has however, been relatively dull because of supply-chain issues. ICRA believes that the export order book for Indian auto component suppliers would have been even better if not for the chip shortages. As for exports to the USA, Class 8 truck order book is expected to soften as OEMs get cautious, even as demand remains strong. It is expected to bounce back over the next few months. Relatively high infections and prolonged lockdowns in India's key export markets like Europe and USA remains a downside risk.

Says Ms. Vinutaa, Assistant Vice President and Sector Head, ICRA Limited, "ICRA expects a robust 15-17% revenue growth in FY2022 for the Indian auto component industry, driven by domestic OEM, replacement, export volumes and pass-through of commodity prices. The healthy volume growth would, however, come on a low base of FY2021. The growth forecast for FY2022 has been revised downward by 200 bps to 15-17% from the earlier estimates due to the ongoing Omicron wave, delayed recovery in semi-conductors and muted 2W/bus demand. There could be a downward bias to our estimates in case of prolonged lockdowns or significant demand slowdown because of the Omicron wave."

Revenues of ICRA's sample of 48 auto component suppliers registered a healthy growth of 17.8% YoY in Q2 FY2022, supported by recovery across most domestic OE segments (except 2W), aftermarkets and exports. We expect revenues in Q3 and Q4 FY2022 to remain relatively muted on YoY basis, with supply chain issues lasting longer than previously expected. There could be a downward bias to our estimates in case of prolonged lockdowns. Commodity price and other input costs, like freight, have witnessed sharp increase in the last 3-4 quarters, and auto ancillaries have not been able to pass through entirely, resulting in significant decline in gross margins. The operating margins shrunk by 240 bps to 10.6% in Q2 FY2022. Given the anticipation of elevated commodity prices in H2 FY2022 as well, the gross margins of auto ancillaries will be lower on YoY basis in FY2022. OPM of auto ancillaries (ex-tyres) will contract by 75-125 bps due to commodity price impact in FY2022 and will remain lower than the normal levels of 11-12%. Operating margin of tyre companies will also moderate in FY2022 from record highs in FY2021.

Despite lower operating profits, the overall interest cover remains comfortable for most entities at over 10x. The liquidity position also remains comfortable currently across tier-I and tier-II players. Auto ancillaries continue to stock relatively higher inventory levels to ensure seamless operations, given the supply chain issues and elevated commodity prices. The coverage indicators for the sector are expected to remain comfortable going forward as well, aided by healthy accruals and modest debt-funding. Majority of ICRA-rated auto ancillaries continue to be in the investment grade category, reflecting a healthy credit profile. However, maintaining adequate liquidity is critical.

ICRA's interaction with auto ancillaries indicates that most of them are re-evaluating investment plans, in the backdrop of the recently announced PLI scheme. Given that most tier-I suppliers are eligible, the capex intensity is likely to increase going forward. At present, the incremental announced investments are primarily towards capability development i.e. new product additions and committed platforms, unlike the investments towards capacity expansion witnessed in the past.

"Over the long term, premiumization of vehicles and focus on localisation will translate into relatively stronger growth for auto component suppliers. We expect a 5-year CAGR of 8-10% for the industry. While operating margins are likely to be impacted in FY2022 because of cost pressures, FY2023 margins will benefit from improved operating leverage benefits and increasing premiumization of vehicles, apart from normalization of supply chain issues and commodity pressures." added Ms. Vinutaa.

Patron Members of TAGMA

NO	Existing Patron Members	CITY
1	ABHIJEET DIES & TOOLS PVT. LTD.	Vasai
2	ANAND MOULD STEELS PVT. LTD.	Navi Mumbai
3	BHARAT TECHNOPLAST PRIVATE LTD.	Mumbai
4	BRAKES INDIA PRIVATE LIMITED	Chennai
5	CRAFTSMAN AUTOMATION LIMITED	Coimbatore
6	DEVU TOOLS PVT. LTD.	Mumbai
7	ELECTRONICA HITECH MACHINE TOOLS PVT. LTD.	Pune
8	GODREJ & BOYCE MFG. CO. LTD - Tooling Division	Mumbai
9	HASCO INDIA PVT. LTD.	Bangalore
10	HTS HOT RUNNER SYSTEMS INDIA PVT. LTD.	Pune
11	HUSKY INJECTION MOLDING SYSTEMS PVT. LTD.	Tamil Nadu
12	JAIN IRRIGATION SYSTEMS LTD.	Jalgaon
13	KINETIC TECHNOLOGIES (a divn. Of Jayahind Sciaky Ltd.)	Pune
14	LMT TOOLS INDIA PRIVATE LIMITED	Pune
15	LUCAS TVS LTD.	Chennai
16	MAHINDRA UGINE STEEL CO. LTD.	Raigad
17	MANGAL INDUSTRIES LIMITED	Chittoor
18	METALS INDIA	Faridabad
19	MISUMI INDIA PVT. LTD.	Gurgaon
20	MULTIPLE SPECIAL STEEL PVT. LTD.	Bangalore
21	MUTUAL ENGINEERING PRIVATE LIMITED	Vasai East
22	NTTF	Bangalore
23	PCK BUDERUS (INDIA) SPECIAL STEELS PVT. LTD.	Chennai
24	PUROHIT STEEL INDIA PVT. LTD	Vasai East
25	SANDVIK COROMANT INDIA at SANDVIK ASIA PVT. LTD.	Pune
26	SCHUNK INTEC INDIA PRIVATE LIMITED	Bengaluru
27	SECO TOOLS INDIA (P) LTD.	Pune
28	SRIDEVI TOOL ENGINEERS PVT. LTD.	Vasai
29	SUBROS TOOL ENGINEERING CENTER (STEC)	Noida
30	SUNDARAM CLAYTON LTD.	Chennai
31	USBCO STEELS PVT. LTD.	West Bengal
32	VASA SPECIALITY STEELS PVT. LTD.	Mumbai
33	XCEED TOOLINGS PVT. LTD.	Mumbai
34	YUDO HOT RUNNER INDIA PVT. LTD.	Vasai East
35	ZAHORANSKY MOULDS AND MACHINES (P) LTD.	Coimbatore

Advertisers Index

AMPCO METAL

Our state of the art facility in Pune, Chakan MIDC, India

Beryllium Copper Alloys

AMPCOLOY®83
2% Beryllium
Hardness: 360 HB (40HRC)
I.A.C.S: 20%

AMPCOLOY®88/95
0.5% Beryllium
Hardness: 240 HB (22HRC)
I.A.C.S: 69%

Beryllium Free Copper Alloys

AMPCOLOY®940
Without Beryllium - For food & medicinal applications
Hardness: 210 HB (20HRC) I.A.C.S: 48%

AMPCOLOY®944
Without Beryllium - For food & medicinal applications
Hardness: 294 HB (30HRC) I.A.C.S: 30%

Applications

Tube Bending
AMPCO®18/21/22/M4

Tube Forming
AMPCO®18/21/22/25

Deep Drawing
AMPCO®21/22/25/26

Aerospace & Offshore
AMPCO®45/M4
AMSA4640/4881

Steel Mill &
General Engineering
AMPCO®18/21/M4

Address

AMPCO METAL INDIA PVT. LTD.
A-8/4, At Village - Nighoje, Chakan MIDC,
Phase IV, Tal : Khed, Pune – 410501
MAHARASHTRA, INDIA
Tel: +91 2135 610 810 | Fax: +91 2135 610 811
infoindia@ampcometal.com

AMPCO METAL S.A
Route de Chesalles 48 P.O Box 45,
1723 Marly Switzerland
Toll Free Phone: 800 8080 5050
Tel.: +41 26 439 93 00
Fax.: +41 26 439 93 01

Food Approval of AMPCO®, AMPCOLOY® Materials
AMPCO® 18, AMPCO® M4 , AMPCOLOY® 940 - AMPCOLOY® 944

AMPCO METAL EXCELLENCE IN ENGINEERED ALLOYS

HOT SOLUTION

YUDO

HOT RUNNER SYSTEM

Get the premium efficiency of prewired hot runner system that is setting benchmarks.

Product Features

- 100% Leak proof guarantee
- 0% heater and t/c failure
- Best in segment, cylinder cooling efficiency
- Customized system to suit gates at any angle

Part Advantages

- Perfect solution for GF and LGF applications
- Quickest color change
- Intelligently controls cascade injection moulding product with variable wall thickness
- Prevents over heat effect by optimizing thermal balance based upon casted heaters technology

YUDO HOT RUNNER INDIA PVT. LTD.

A/113 & 114 , Evershine Industrial Estate, Waliv Road, Chinchpada Junction, Vasai (E) - 401208, INDIA.

Tel.: +91 766639458, +91 7666920922 | Email: sales@yudo.co.in | www.yudo.com