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As India transforms into a global manufacturing hub, mainstreaming of metal 3D printing in the production line is expected in a big way in the near future.

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- Top five manufacturing trends of 2024
- Performance analysis of Indian auto component industry in H1 FY24
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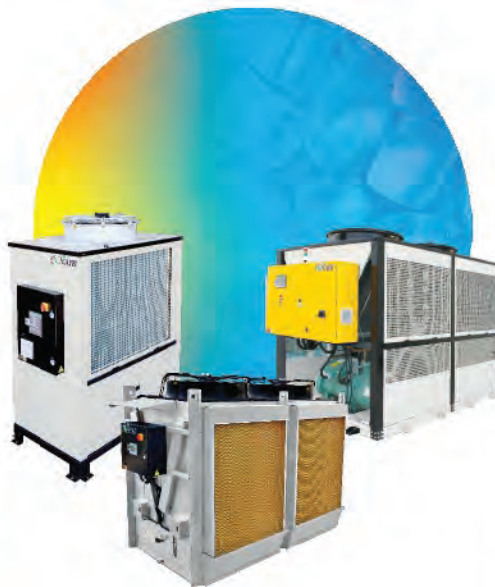
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Adding new dimension to manufacturing

When the Indian Space Research Organisation (ISRO) was looking to procure spacecraft's grid-fins for its Gaganyaan mission, India's first human space mission that is scheduled for a launch in 2024, it turned to a Bengaluru-based aerospace component maker that uses additive manufacturing (3D printing) technology. The company's 3D printed grid-fins from titanium material, which are critical to a spacecraft's safety parameters, will be used to keep astronauts safe in the event of a spacecraft launch failure. For ISRO, additive manufacturing (AM) is not new. It has been using 3D printing technologies for producing multiple end-use parts for their rockets and satellites.

Additive manufacturing uses materials such as plastics and metals to convert products envisaged on computer-aided design (CAD) to real three-dimensional items. AM is the opposite of subtractive manufacturing which is cutting/hollowing out a piece of metal with, for instance, a milling machine. With additive manufacturing, complex geometries are possible that conventional processes cannot achieve. This freedom in form and function offers potential for almost all industries as a result AM is both a complementary and a competing technology to conventional metal working technologies and processes.

In India, aerospace and defence sectors were the early adopters of AM through their thorough certification processes and validation of repeatability for flight worthy components. In fact, today it is impossible to imagine manufacturing of aerospace components without 3D printing. The Government of India (GoI) aims to achieve a turnover of \$ 25 billion (including an export of \$5 billion) in the aerospace and defense goods and services by 2025, and has framed Defense Production and Export Promotion Policy 2020 for providing impetus to self-reliance in defense manufacturing under the Aatmanirbhar Bharat scheme. With estimated contracts worth \$ 57.2 billion in the offing for the domestic industry in the next 5–7 years (2025–2027) in the defense sector, floodgates of opportunities will open up for AM players in India. Acceptance of AM is also growing in other sectors like automotive, medical implants, dentistry, tool and die, etc.

India's additive manufacturing market, valued at \$ 250 million in 2022, is predicted to reach \$ 1.79 billion by 2030, with a CAGR of 28 per cent from 2023 to 2030, according to Next Move Strategy Consulting. AM can revolutionise India's manufacturing and industrial production landscape through digital processes, communication, imaging, architecture and engineering.

Realising its immense potential, Ministry of Electronics & Information Technology (Meity), released the National Strategy on Additive Manufacturing (NSAM) in February 2022. The strategy is to develop 50 India specific technologies for material, machine and software, 100 new startups for additive manufacturing, 500 new products and train at least 1 lakh new skilled workers. The ultimate aim is to increase India's share to 5 per cent of the global AM market by 2025, with a goal of adding nearly \$ 1 billion to the GDP.

As India transforms into a manufacturing hub for large-scale international businesses, the demand for AM solutions for high-volume production is anticipated to witness manifold rise in the near future.

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A stylized, handwritten signature in black ink that reads "Praty Padode".

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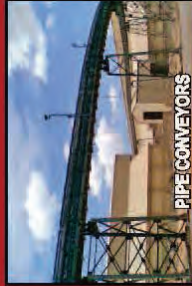
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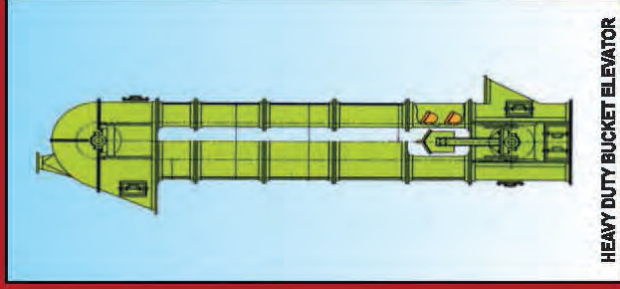
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About the company: G P Gaskets, began in the 1999 to cater all types of engineering industry requirements. G P Gaskets consistent quality and timely execution of work orders makes it one of the well known organization.

Contact:

G P Gaskets, Mumbai
Mobile: 09892004224 09867548499
Email: sales@gpgaskets.com



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CUSTOMIZED CYLINDRICAL WIREMESH FILTER

Raj Filters & Wiremesh Pvt Ltd offers a wide range of customized cylindrical wiremesh filter.

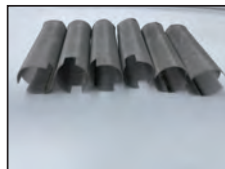
Features:

- These are cylindrical wire mesh filters, which have one closed end and one open end. The close end is produced by folding and spot welding wire mesh.
- The filter is made using various precision fixtures and is produced completely by our skilled technician.

About the company: Raj Filters is spread into multiple units, well equipped with the latest innovative machinery, ready to accept any specific filtration challenges. Our strength is our outstanding range of manufacturing knowledge and a team of well-groomed professionals where there is a zero compromise on the quality. We offer a wide array of product ranges supplied across the globe.

Contact:

Raj Filters & Wiremesh Pvt Ltd, Vadodara
Mobile: 09724190931
Email: support2@rajfilters.com



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BOPP SELF ADHESIVE TAPES

Sonal Adhesives Limited offers a wide range of Bopp self adhesive tapes.

Features:

- Biaxially oriented polypropylene (BOPP) carton sealing tape with a water-based acrylic adhesive. It has excellent adhesion, superior impact resistance, and excellent shelf life and UV resistance.
- Suitable for Automatic carton sealing and manual Dispenser machines.
- In all sizes and required lengths. Being one of the leading manufacturers of BOPP Tapes in India, we offer complete range of products. We have latest coating & slitting equipments to ensure excellent quality of the Tapes.

About the company: Incorporated in the year 1991, Sonal Adhesives Limited is one of the largest manufacturers and exporters of BOPP Self Adhesive Tapes and Various types of Speciality Adhesives & Emulsions in India.

Contact:

Sonal Adhesives Limited, Dist-Raigad
Tel: 022-49633128
Email: info@sonal.co.in

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REINFORCED WATER ACTIVATED PAPER TAPE

Mexim Adhesive Tapes Pvt Ltd offers a wide range of reinforced water activated paper tape.

Features:

- Water-activated paper tape (WAT) or gummed paper tape is made from natural starch based adhesive. To use the tape apply water to activate the adhesive.
- Its features include: Tamper evident: once applied, the tape bonds with the surface permanently, making them tamper-evident; cross weave reinforced fiber glass for increased strength.

About the company: Mexim was incorporated in 1987, as a trading firm authorized to distribute Tapes for Sanghi Polyester in the West-Zone markets of India.

Contact:

Mexim Adhesive Tapes Pvt Ltd, Mumbai
Tel: 022-6691 0120 Mobile: 09377705962 Email: sales@mexim.in



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PERFORATED CABLE TRAYS

Rama Enterprises offers a wide range of perforated cable trays.

Features:

- Offered perforated cable trays in different widths, heights and lengths. These are easy to install and cost effective. Owing to our in house facilities we offer tested and proven in the harsh environment of the offshore oil and gas industry to meet the customer's requirement.
- These are designed and developed by using sophisticated machinery available with durable finish standards available at cost effective prices.

About the company: Rama Enterprises an ISO 9001-2000 certified company. Take this opportunity to introduce as a manufacturing organization, that the production based in Ghaziabad, Uttar Pradesh in Year 2000 having manufacturing facilities for cable tray, slotted angle, raceways & earthing material.

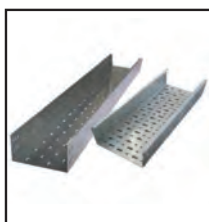
Contact:

Rama Enterprises, Ghaziabad

Tel: 0120-6531212 Mobile:

08800566900

Email: info@ramaenterprises.co.in



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**PTFE RODS**

Dhwani Polymer India Private Limited offers a wide range of PTFE rods.

Features:

- This PTFE rod is available in various diameters and lengths. On coil or reel with production lengths, straight lengths of 1000/2000mm or on customer-specific cut lengths. For applications requiring an exact diameter and roundness, we recommend grounded rod. This rod is processed after extrusion so desired diameter and roundness are guaranteed.
- These molded rods: available in diameter of 25mm to 300mm and Length of 300mm to 1000mm; Extruded Rods: available in diameter of 6mm to 200mm and length of 1000mm to 2000mm.

About the company: We are certified for the processing and application of PTFE and fluoropolymers. Some of our process capabilities include CNC machined components, precision seals and fluoropolymers coatings. We recognize quality as an essential part of our products we offer to our customers and believe that getting it right the first time is what differentiates us from our competition.

Contact:

Dhwani Polymer India Private Limited, Ahmedabad

Mobile: 09033012056

Email: info@dhwanipolymer.com



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**GASKET GRAPHITE POWDER**

Arihant Packing & Gasket Company offers a wide range of gasket graphite powder.

Features:

- The graphite powder is basically used for casting and polishing purposes, molding & carbon addition in steel industries.
- The graphite powder is well-treated and offers high conductivity. Their graphite powder is easily available at industry leading prices.

About the company: Established in 1956 our parent firm A.K Jain and Brothers www.akjain.co.in is a highly acclaimed name for Asbestos, Non-Asbestos Gland Packing, Ceramic Products, PTFE products, pure graphite products, Asbestos/Non-Asbestos Jointing Sheets, cut Gasket, Spiral wound metallic gaskets, Rubber Products, Brake liner & Friction Material and other industrial products in India for over 55 years.

Contact:

Arihant Packing & Gasket Company, Kolkata

Tel: 033-22624511, 33164018

Email: sales@arihantgasket.com



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**SEMI METALLIC AND METALLIC GASKETS**

PGE Industries Pvt Ltd offers a wide range of semi metallic and metallic gaskets.

Features:

- The PGE® SealProTM is a reusable gasket consisting of a solid metal core with serrations with a specialized flexible face consisting of various options for high temperature, chemical resistance, and exhaust gases etc.
- Once the gasket is installed, the soft non-metallic material is forced into the metal core serrated grooves.
- Unlike traditional spiral-wound gasket, all of the compressive force is exerted on the PGE® SealProTM facing, thus resulting in a very tight seal. Since the PGE® SealProTM is basically a solid metal, as opposed to alternating plies of metal and filler applied at spiral-wound gaskets.

About the company: Established in 1981, PGE India (PILOT Gaskets) is the prominent manufacturer of sealing and insulating products. needs.

Contact:

PGE Industries Pvt Ltd, Mumbai

Mobile: 08080890022

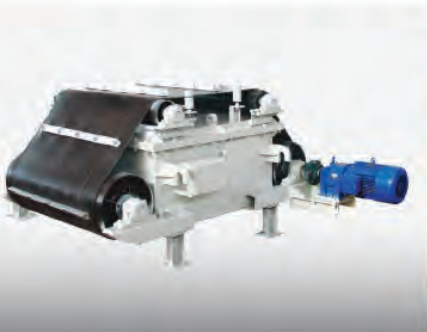
Email: info@pilotgaskets.com



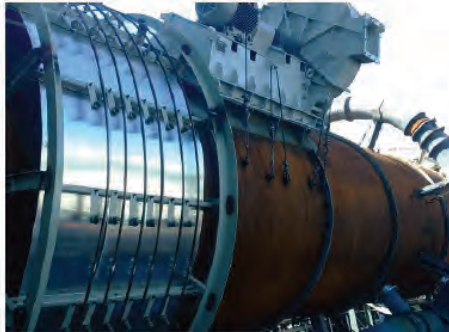
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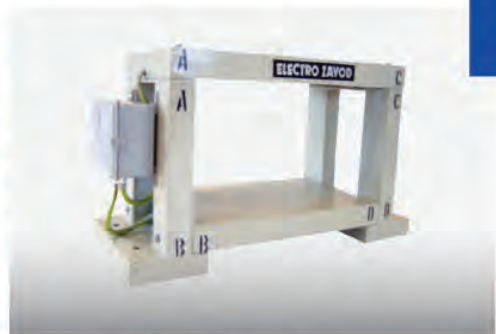
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THEME

MISSION \$100 BILLION EXPORTS

The Indian Textile Industry witnessed a surge in demand with exports touching a record \$43 billion in FY22 post covid restrictions. During 2022-27, the textile industry worldwide is anticipated to witness a projected CAGR of 5.67 per cent, prompting the Government of India, on its part, to take various initiatives to revive the fortunes of the textile industry such as: formulation of the PLI scheme, launch of mega textile parks, signing of FTAs and MoUs with many countries, etc.

ISSUE HIGHLIGHTS:

ITJ Annual 2024 will suggest steps to be taken to give impetus to the "Mission \$100 billion" target. It will broadly highlight on:

- Impact of various government schemes and policies
- How India could use the changing geopolitical situation to its advantage
- Using circularity and quality to enhance India's global appeal
- Banking on latest technologies to increase efficiency and productivity
- Leveraging on FTAs to increase exports, etc.

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- The edition is a perfect platform for all textile machinery & accessory suppliers and allied companies to advertise
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FEATURED PRODUCT

REPAIRING OF TIME MAKES DIGITAL PORTABLE METAL HARDNESS TESTER

Heat Treatment Sales & Services, Ahmedabad offers complete repairing, servicing and calibration of all kinds of digital portable metal hardness testers. The company has factory trained engineers who can handle repairing, servicing and calibration of all portable metal hardness testers. The company offers the services of refurbished and reconditioned metal hardness tester with 6 months warranty, which includes parts and labour charges also. However, the dispatching/transportation cost and related expenses such as packing charges



are not included in the warranty. One can dispatch their fault hardness tester properly packed/crated and they will provide a free written estimate upon thorough examination of their portable hardness tester. The company also maintains a complete stock of spares and accessories like impact devices, impact bodies, standard test blocks, support rings, batteries, etc. According to them, when a complete service with spares is conveniently available why do users think of buying a new LEEB hardness tester? It is much more economical to get the existing hardness tester repaired, reconditioned, and refurbished or rebuilt at a fraction of the cost.

Contact:

Heat Treatment Sales & Services
Contact Person: Mr. Bharat Shah
L/119 GIDC Industrial Estate, Odhav
Ahmedabad 382 415
Tel: 079-22870144/Mobile: 08980718181
Email: info@enmatest.com
URL: www.enmatest.com, www.enmatest.co.in

DIE CASTINGS

Supercast Industries offers a wide range of pressure die castings. These pressure die castings are manufactured for various industrial applications. They are appreciated for rust resistance, durability



and perfect dimensions, and are checked thoroughly before shipping.

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Contact:

Supercast Industries, Mumbai
Mobile: 09665094970, 09326474970
Email: response@supercastind.com

CAST IRON COUPLINGS

B K Tech Enterprise offers a wide range of cast iron couplings. Cast iron couplings manufactured in a wide range to meet a wide variety of end user applications. Highly versatile, of



high quality, and available at very reasonable rates.

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Contact:

B K Tech Enterprise Inc, Rajkot
Mobile: 09662861959
Email: sales@bktechenterprise.com, bktechenterprise@rediffmail.com

POWER PRESS

Universal Machine Tools Corporation offers MS body, fixed/inclinable type power press. The frame is off all steel construction, fabricated from rolled steel plates with suitable ribbings.



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Contact:

Universal Machine Tools Corporation,
Bangalore
Mobile: 09845006959, 09844199559
Email: universalblr@gmail.com

ALL ELECTRIC BALL SCREW PRESS BRAKE, BB4013

Meiban Engineering Technologies offers Muratec BB series AC servo press brake to realise high productivity and high precision. RAM shaft drive enables high speed movement at 100 mm/sec and stable repeat-stop accuracy by adopting a ball screw drive mechanism by AC Servo motor.



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Contact:

Meiban Engineering Technologies Pvt Ltd,
Bangalore
Tel: 080-26860600
Email: office@meibanengg.com



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FEATURED PRODUCT

SWISS MAKE "EQUOTIP 550 LEEB+UCI METAL HARDNESS TESTER"

Testing & Measuring Equipments offers the new Equotip® 550 LEEB+UCI. Equotip enables portable hardness inspection of almost any object, polished parts and heat-treated surfaces. The hardness measurements are made by using the dynamic rebound testing method according to Leeb, the static Portable Rockwell hardness test and the Ultrasonic Contact Impedance (UCI) method. The rugged Swiss-made metal NDT hardness testers are designed for portable hardness testing in the lab, in the workshop, at production facilities. Technical Specification of Equotip 550 Touch



screen Unit: Display: 7" color display 800x480 pixels; Memory: <100000 Measurements; Battery: Lithium Polymer, 3.6 V; Battery lifetime: > 8h; Weight: About 1525 g (incl. Battery); Dimensions: 250 x 162 x 62 mm; Operating temperature: -10°C to 50°C (14 to 122°F); Protection: IP54 fully rugged with shock-absorbing casing. Equotip UCI Probe: Measuring Range: 20-2000HV; Measuring Accuracy: $\pm 2\%$ (150-950HV); Resolution: 1HV (UCI) ,0.1 HRC; Test Load: Adjustable load HV1, HV5, HV10; Diamond Indenter: Vickers diamond according to ISO6507-2; Probe Dimensions: 155x $\varnothing$ 40mm(6.1x $\varnothing$ 1.57 Inches) without Foot; Scale: HB, HV, HRA, HRB, HRC, HR15N, HR15T, MPA. Equotip Leeb Probe: Native Scale: HLx (x=C, D, DC, DL, E, G, S); Conversion scales: HB, HV, HRA, HRB, HRC, HS, MPA; Measurement range: 100-999 HLx; Impact energy: 90 Nmm (G), 11 Nmm (D, DC, DL, S, E), 3 Nmm (C); Measurement resolution: 1 HLx/HV/HB; 0.1 HRC/HRB/HS 1 N/mm² (Rm).

Contact:

Testing & Measuring Equipments
Contact Person: Nisarg Shah
L-120, GIDC Industrial Estate, Odhav Fire Station
BRTS, Odhav, Ahmedabad 382 415
Tel: 079-22871096 Mobile: 09825045607
Email: nisarg.shah@tmeglobal.co.in

VOLTAGE TRANSFORMERS

Guru Nanak Electric Works offers a wide range of high voltage transformers. These voltage transformers are available in a wide range as per requirements and

specifications.

Manufactured from fine quality raw materials.

Contact:

Guru Nanak Electric Works, Ludhiana
Mobile: 09814090227, 09814090935
Email: gnew_avtar@sify.com



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HYDRO EXTRACTOR

Guruson International offers a wide range of cone hydro extractors. This machine comes with three-leg suspension to check vibrations created by unbalanced rotating fabric/material. Internal rotating perforated basket is dynamically balanced and made of stainless steel (304).

Contact:

Guruson International, Ludhiana
Tel: 0161-5056246
Fax: 0161-5015297
Email: guruson@rediffmail.com



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SHOT BLASTING MACHINE

Guru Nanak Mfg Company offers a wide range of shot blasting machine, hanger type. These machines are used in finishing of industrial components and products. Manufactured by experts

using finest grade

materials at par with industry norms.

Contact:

Guru Nanak Mfg Company, Jalandhar
Tel: 0181-5091321 Mobile:
09815496000, 09517511368
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HOT WATER SYSTEM

Haadi Enterprises offers a wide range of solar hot water systems. This solar hot water system has applications in both domestic and commercial areas. Manufactured using latest technology in compliance with international quality standards.

Contact:

Haadi Enterprises, Bengaluru
Mobile: 09845158011, 09620638110
Email: haadienterprises1109@gmail.com, ismailshiraguppi@gmail.com



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VIBRATORY FURNACE CHARGER

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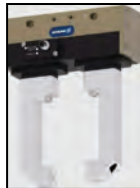


Contact:

Elektromag-Joest Vibration Pvt Ltd,
Mumbai
Tel: 022-66624444
Email: vibration@elektromag.com

PARALLEL GRIPPER - PGL-PLUS-P

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Contact:

Schunk Intec India Pvt Ltd, Bangalore
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Elektromag offers a wide range of metallic/plastic cable drag chains. This Elektromag drag chains enable the conveyance of flexible cables/



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hoses, etc to movable units with maximum reliability.

Contact:

Elektromag Methods, Mumbai
Mobile: 09820192772
Email: cablereels@elektromag.com

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Contact:

Secon Technological Solutions Inc,
Bangalore
Telefax: 080-23575752
Email: secontech2000@gmail.com

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Contact:

Kusam Electrical Industries Ltd, Mumbai
Tel: 022-27754546, 27750662
Email: sales@kusam-meco.co.in

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Contact:

HBK India (Brue & Kjaer), Chennai
Mobile: 07823990325
Email: sundar@hbm.in

AIR FILTER REGULATORS

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Contact:

Placka Instruments India Pvt Ltd, Chennai
Tel: 044-22231559
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Mobile: 09448288863
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PROGRAMMABLE CONTROLLERS - PCD-33A SERIES

Pro-Med Instruments (P) Ltd offers a wide range of programmable controllers - PCD-33A Series. Program can be easily set by inputting step temperature and step time

to each step. Communication method can be chosen from five types.

Contact:

Pro-Med Instruments (P) Ltd, Chennai
Tel: 044-42132295, 42142295
Mobile: 09840832296
Email: sales@promedindia.com



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MEASUREMENT SOFTWARE

Blum-Novotest Measuring & Testing Technology Pvt Ltd offers a wide range of measurement software. User-friendly software for workpiece measurement and temperature compensation with BLUM touch probes.

Contact:

Blum-Novotest Measuring & Testing Technology Pvt Ltd, Bangalore
Mobile: 09075004435
Email: info@blumnovotestindia.in



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DOUBLE OFFSET BUTTERFLY VALVE - SERIES - 7400

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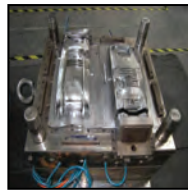
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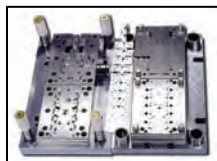


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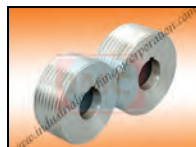
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IMTEX Forming 2024: 450 exhibitors to display novel solutions

IMTMA organised, IMTEX Forming 2024 highlights Tooltech, Digital Manufacturing and Weld Expo 2024 as concurrent shows during the event. It also collocated Mouldex India and Fastenex India alongside at Bangalore International Exhibition Centre from January 19 to 23, 2024.

The Indian Machine Tool Manufacturers' Association (IMTMA) will organise the eighth edition of its flagship metal forming exhibition. IMTEX Forming 2024 is Asia's leading exhibition on metal forming and manufacturing technologies which will be held at the Bangalore International Exhibition Centre (BIEC) in Bengaluru from January 19 to 23, 2024.

The exhibition would feature around 450 exhibitors from 18 countries in an exhibition space of around 45,000 sq mts covering five exhibition halls. Exhibitors will showcase the latest technologies in metal forming, innovations in metal forming technologies, robotics and automation, welding and joining, wire-forming and drawing, presses, die casting, hydroforming, sheet metal forming machines, presses for special applications, dies and moulds, hydraulic and pneumatic systems and elements, testing machines, and so on will be on display.

Expressing his thoughts on the upcoming edition of IMTEX Forming, Rajendra S Rajamane, President, IMTMA said, "IMTEX Forming 2024 offers great opportunities for manufacturing industries to capitalise on the positive business environment in the country."

Speaking about IMTEX Forming 2024, Jibak Dasgupta, Director General & CEO, IMTMA said, "The economic outlook for companies in the metal forming sector looks promising and IMTEX Forming will play a catalytic role in realising this



promise. It will be a great opportunity for industries across sectors to visit the exhibition and explore the latest offerings, products, and solutions which will mutually benefit exhibitors and visitors."

IMTEX Forming 2024 highlights Tooltech, Digital Manufacturing and Weld Expo 2024 as concurrent shows during the event.

- Tooltech 2024 is focusing on machine tool accessories, forming tools, die and mould, metrology, CAD/CAM. It will showcase the world of parts, accessories, and systems for machine tools and manufacturing technology.
- Digital Manufacturing 2024 will feature the latest innovations in additive manufacturing and Industry 4.0. It covers innovative manufacturing technologies centred on robotics, automation, modelling,

simulation, data analytics, 3D Printers and sensorisation amongst others. The exhibition draws visitors from across the manufacturing sectors including automotive, aerospace, space, medical equipment, railways, energy and general engineering from private and public enterprises.

- Weldexpo 2024 is an exhibition for welding, cutting, and joining in association with the Indian Institute of Welding will be held concurrently. The onset of new automated manufacturing techniques has made welding and joining occupy an important space in manufacturing. Welding finds acceptance among a wide range of manufacturing applications including pressure vessels, railways, aircraft, ships, medical devices and high-volume products like

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automotive parts, appliances, food packaging and microelectronics. The exhibition will provide an opportunity to present products and technologies live directly to numerous industry sectors.

Rajamane added that, "As most visitors to IMTEX Forming would comprise key decision makers nurturing an intention to invest, exhibitors can have effective face-to-face business meetings".

The event will also have Mouldex India and Fastenex India as collocated shows alongside IMTEX Forming 2024. They will be focusing on showcasing moulding, fasteners and fixing technologies. With its unique fusion of traditional moulding techniques and advanced tool pattern technologies, Moldex India 2024 spotlights tool patterns, mould making, plastic technologies, and metalworking. IMTEX Forming bridges the gap between the fastener and forming industries, propelling cross-industry partnerships and innovations. Fastnexus India comes as a timely catalyst,



showcasing cutting-edge products, machinery, and technologies that galvanise these sectors.

The apex body Indian Machine Tool Manufacturers' Association (IMTMA) was formed in the year when India secured its independence. IMTMA has continuously played a leading role in the development of the machine tool industry, which is the backbone for industrial growth of

India. This national cause has been the guiding force behind IMTMA and its membership.

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NEWS SNIPPET

IMTMA to organise one-day seminar on forming technology prior to IMTEX Forming exhibition

The arena of forming technologies is getting wider with diverse applications of materials and manufacturing processes. These technologies are integrated through a deep ecosystem of expertise, equipment, tools, automation, and software. With a view to highlight advancements in forming technologies and its applications, Indian Machine Tool Manufacturers' Association (IMTMA) is organising a one day "International Seminar on Forming Technology" on January 18, 2024, a day before IMTEX Forming 2024 exhibition, at BIEC (Bangalore International Exhibition Centre). The wide coverage of topics and new developments showcased at the seminar could be readily adopted to improve productivity and stay updated with the market trends.

While the participants come to attend the international



seminar on January 18, 2024, it is a good opportunity to visit IMTEX Forming 2024 and witness the latest technologies in metal forming from reputed companies across the globe.

Seminar will focus on –

- ❑ Technologies of automotive/EV light weighting with improved crashworthiness
- ❑ Virtual proving and predictive software
- ❑ Stamping process, equipment and tools
- ❑ Recent developments in sheet/plate cutting, bending and joining
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“EV sector is a big opportunity for Magal Engineering”

The Bengaluru-based Magal Engineering Co India Pvt Ltd– which offers high-quality, customised solutions for the sheet metal machine tool and fabrication – will showcase latest solutions for electric vehicles (EV) and precision sheet metal industries at IMTEX Forming 2024. In this interview, **M K Narasinga Rao**, Managing Director, Magal Engineering Co, shares more details about the company’s future plans.

How has been the journey of Magal Engineering for the last more than 25 years?

Magal Engineering's journey over the past 25 years has been marked by innovation, resilience, and a commitment to delivering high-quality sheet metal forming solutions, cementing its position as a trusted and reliable partner in the industry. The company has experienced various phases of expansion, technological advancements, and market fluctuations during this time. Over the years, we diversified product portfolio, expanded geographical reach, and forged strategic partnerships to stay competitive in the global market.

One significant achievement is we had an ongoing agency business with Deratech Industries, which is now a joint venture - Deratech Machines India Pvt Ltd.

What is the present status of the industry?

Over the past years, the sheet metal industry has undergone significant transformations, largely influenced by technological advancements, shifts in consumer demands, and global market dynamics. The industry has matured a lot and has become very competitive. The sheet metal industry today is a dynamic landscape that values innovation, efficiency, sustainability, and adaptability to meet the evolving needs of various sectors

What are the USPs of your company and its products?

Our company's moto is



‘Innovative technology, Outstanding Service’. We sell technology with value add and offer tailored solutions. This allows our customers to procure machines to meet their specific needs or preferences. We provide cost-effective solutions without compromising quality.

Our after sales service team has fully trained engineers to attend to all technical issues following a strict process and aid in optimum use of machine.

What kinds of new opportunities are you looking to tap in the coming years?

EV laminations, EV batteries and precision sheet metal industries are some of the potential markets that we are looking to tap. We are meeting the growing demand for customised machines by offering flexible manufacturing solutions and design capabilities.

We are exploring opportunities in emerging markets and diversifying

product portfolios to cater to niche markets. We also plan to enhance service offerings, including maintenance, repair, and after-sales support, to create long-term relationships with clients and add value beyond the product itself.

What are some of the emerging trends in the industry?

Electric vehicle is one big opportunity and we have our plan in place to tap the EV sector.

The adoption of Industry 4.0 principles involves interconnected systems, and data analytics to create smart factories. These technologies optimise processes, reduce downtime, and enhance overall productivity.

Automation continues to evolve with the integration of robotics, AI, and machine learning. Implementing advanced automation systems in sheet metal fabrication can improve efficiency, precision, and production speeds.

What are your plans to maximise your presence at IMTEX Forming 2024?

Our focus will be on EV and precision sheet metal industry. We plan to highlight cutting-edge technologies, showcase our new product and also have live demonstrations at our booth.

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CNC Busbar



“CnC Laser plans to manufacture fiber and CO2 lasers in India”

Established in 2019, C. And C. Laser Engineering Pvt Ltd (CnC) has been providing a wide array of scientific and industrial laser products for all kinds of industrial laser solutions. In this interview, **Hrishikesh Sawant**, Director of C. And C. Laser Engineering, explains the advantages and market potential of laser technologies.

How has been the growth journey of your company since it was established?

C. And C. Laser Engineering Pvt Ltd has experienced good growth, since it was started in 2019. In our application lab, we now have fiber laser marking/cutting machines from low power to high power, UV laser marking machine, CO2 laser marking/cutting machines and many more. We now have a state-of-the-art clean room laboratory for the in-house servicing and repairing of sophisticated lasers like diode pumped IR, green, UV lasers, CO2 laser and medical laser systems. Our repair/service lab has state-of-the-art equipment like beam profiling, beam diagnostics, pulse diagnostics, oscilloscope, RF diagnostics, etc. We have now started catering to the medical industry as well. The diode pumped lasers offered from QPC Lasers provide solutions for key medical applications.

What is the present status of the metal working industry (with respect to demand and key growth factors)? Are the government's Aatmanirbhar Bharat and other initiatives helping the industry's growth?

The metalworking industry continues to grow, especially the sheet metal fabrication segment. This is in line with the growth of related industries such as manufacturing, construction, aerospace, automotive, architecture, electronics, food processing and tele-communications. Scientists have shown that lasers can concentrate extremely high powers in either pulses or continuous beams. Lasers are used in industries for



applications like cutting metals and fabrics, cleaning metallic surfaces, altering the surface roughness, measuring dimensions, and also to weld metals with high precision. In fact, laser systems are used in many manufacturing processes. Industrial lasers are used to cut metals and fabrics, mark tracking codes for industrial traceability, weld metals with high precision, clean metal surfaces, change the surface roughness, and measure part dimensions.

The automotive sector, which contributes 49 per cent to India's manufacturing gross domestic product (GDP) and 7.1 per cent to India's overall GDP, has been on slowdown for more than a year; however, it took a V-shape recovery once the lockdown was lifted. The data by the India Brand Equity Foundation (IBEF) says the Indian automotive industry (including component manufacturing) is expected to reach \$ 251.4–282.8

billion by 2026 and still will be a major contributor for growth.

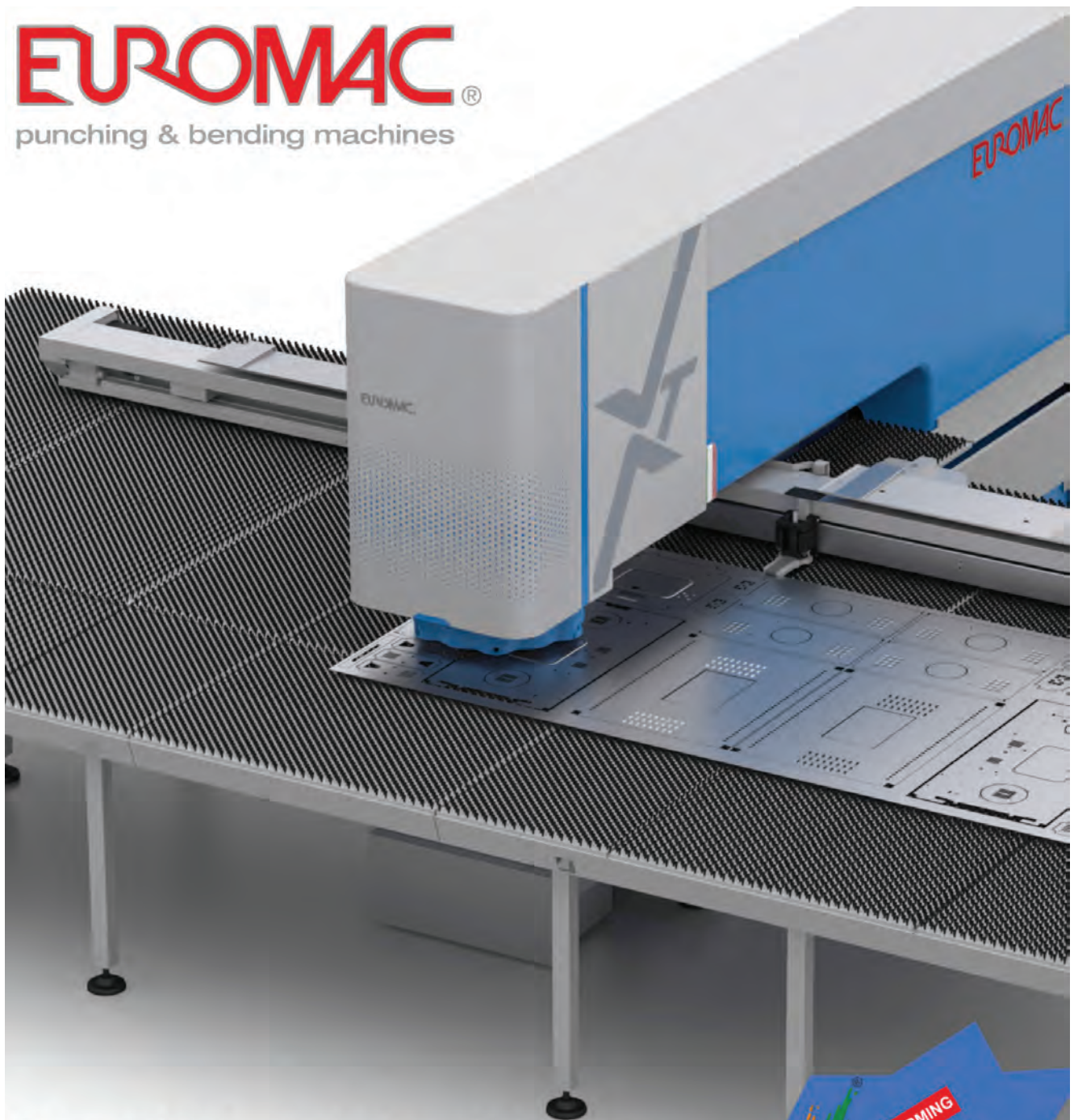
I see the manufacturing scenario is certainly going to change due to a push for certain market segments such as defense, infrastructure, automotive, and others, and one of the keys can be the Indian government's purchase policy. Due to the effect of the pandemic, the Indian government has put forth the Make in India and Atmanirbhar Bharat more strongly to reduce dependency on imports from other countries. As per the new government procurement policy, for purchase up to \$ 26 million preference will be given to the Indian manufacturer/integrator that can make systems locally or at least have a certain percentage of the components made locally. This will push companies to get into some kind of manufacturing if they have to do business with Indian government. This, I see in the long term, is a step towards giving a boost to local manufacturing even though it's going to assembly/integration as a first step, as all major components for lasers are normally imported.

Government labs such as IIT, CGCRI, and IISC are already developing different fiber lasers and other technologies. I am sure that with some private industries getting into partnerships, we may see manufacturing for laser or photonics components.

The Indian government's push to encourage local manufacturing in 24 identified sectors (such as aerospace and defense, automotive and auto components, railways, biotechnology, and others) along with new technologies (such as additive and Industry 4.0) will give a further push

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for local manufacturing. The Defense Production and Export Promotion Policy 2020 provides impetus to self-reliance in defense manufacturing under the Aatmanirbhar Bharat scheme. The government aims to achieve a turnover of \$ 25 billion (including an export of \$5 billion) in the aerospace and defense goods and services by 2025. The defense estimates potential contracts worth \$ 57.2 billion for the domestic industry in the next 5–7 years (2025–2027). This will encourage more participation from startups and micro, small, and medium enterprises (MSMEs) in defense R&D in achieving the Aatmanirbhar Bharat goal, and certainly lasers will be one of the key elements in the different production processes of defense equipment, from cutting, welding, and cladding to additive and others.

The Laser Industries Association of India (LIAI), founded in 2019, is a much-needed voice of the laser industry to put forth the issues faced by the Indian laser industry to government. With growing members every year, LIAI will have an active role to play in safeguarding and enhancing the domestic laser manufacturing and growth of the laser industry in the coming years in India.

The upcoming market is e-mobility, as the electric vehicle (EV) market in India is expected to be valued at \$7 billion by 2025. Right now, the majority of the batteries for EVs are imported and assembled in India. The government is providing benefit under the Faster Adoption and Manufacturing of (Strong) Hybrid and Electric Vehicles in India (FAME India) scheme for adoption of EVs and a \$4.6 billion incentive for setting up battery manufacturing plants in India.

How important is the automotive & auto components sector for the growth?

Globalisation, individualisations, digitalisation and increasing competition are putting press on the industry. In addition, increasing safety requirements and voluntary

environmental commitments by the automotive industry have also contributed to the changes ahead. Laser cutters are used in a variety of applications in the automotive industry, including cutting plastic parts, fabricating metal components, and marking and engraving parts for identification and branding. High power CO2 lasers are predominantly used for the welding of automotive components, such as gears and transmission components, which require circular and annular welds and in tailored blank applications. Laser welding is predominantly used in automobile industries which would require engineering works to be carried out with high precision. Nowadays, lasers are used for high-volume laser welding, laser marking of components, and also additive manufacturing using lasers.

Laser welding has hit the manufacturing mainstream in the past few years. From weld cells to handheld models, laser welding is creating efficiencies for OEMs and job shops. The technology - which offers high-quality welds, fast production speeds, and reduced post-weld processing - is drawing more interest from fabricators. The laser technology, meanwhile, continues to get more sophisticated.

Sustainability is a key focus for all industries (including your customers). Do your products & solutions help your customers in achieving their “green” (sustainability) goals?

CnC's products provide sustainability benefits as laser technology is economic & environment-friendly. This ensures the best protection for the health of operators, reduces the environmental impact of various processes, and avoids generating special waste, thereby saving costs associated with waste disposal. Laser technology offers benefits such as:

- ❑ **Increases business efficiency and competitiveness:** Laser technology reduces work time and increases production efficiency, enabling companies and laboratories to achieve

extremely precise results with minimal resource investment. The use of laser equipment saves money by optimizing energy use and reducing the time required to complete various processes, thereby improving the performance of individual collaborators.

- ❑ **Reduces waste:** Laser welding does not require the use of filler material, while laser marking minimises waste and optimises the use of raw materials. This aspect can be particularly significant for companies that need to mark large quantities of products made from precious materials such as gold or platinum.
- ❑ **Economic & environmentally friendly:** Laser marking or welding activities do not require the use of potentially harmful substances for humans and the environment. No industrial laser type involves the use of inks, solvents, or other hazardous chemicals
- ❑ **Promotes business growth:** Companies and laboratories that choose to adopt laser technology are on a safe path to expand the range of services offered to their customers, reduce the need for highly skilled labour, increase business turnover and increase profitability.

What are your short & long-term growth plans for the company?

C. And C. Laser Engineering will very soon have a much larger allotment of funds for repair and servicing of lasers here in India. In addition, CnC plans to start the manufacturing of fiber and CO2 lasers in India.

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TRUMPF to unveil new automated welding cell at IMTEX Forming

TRUMPF a manufacturing solutions provider in machine tools and laser technology fields showcases cutting-edge technologies with reliable and cost-effective solutions at IMTEX Forming 2024 trade fair.

TRUMPF, a high-tech company, provides manufacturing solutions in the fields of machine tools, laser technology, electronics, and Industry 4.0. The company is all set to present its latest solutions for sheet metal processing and industrial applications of lasers, along with the launch of new products in the Indian market at IMTEX Forming 2023 at Bengaluru.

From cutting-edge technology, reliable performance, to cost-effective solutions, company presents following machines at the trade fair.

New 2D laser cutting machine

TRUMPF is launching a new laser cutting machine that is the ideal start into the world of high-quality laser cutting. It comes with so far the most intuitive programming system from TRUMPF that makes it possible to start production quickly. It is powered by the latest TruFiber laser source of TRUMPF for cutting a wide range of sheet thicknesses and is economical even at low utilisation rates.

New automated Welding cell

The new automated Welding cell can be launched, programed and operated with very little training-video tutorials. It utilises the welding cell in one or two station operation,



TruLaser Cell 5030



TruBend Series 1000

depending on the component and lot size. This means, for example, one can either process a larger component or smaller components in larger batches parallel to production. The welding cell is a fully equipped machine tool, certified with CE.

TruLaser Cell 5030

The TruLaser Cell 5030 is a simple and affordable introduction to 2D and 3D laser welding and laser cutting. With its low machine-hour rate, its own for small to medium lot sizes and for when components are changed frequently throughout the day.

TruBend Series 1000

It combines TRUMPF quality with good value for money, thus making for an economical introduction to the TRUMPF bending world. Fast setup, simple control, and smooth operation with minimal downtime maximises the return on investment.

TruLaser Series 1000

Its solid-state laser impresses with its robust design and power that will last for years. The machine also makes the cut with its numerous intelligent functions that makes it worthwhile even at low utilisation levels. Due to its convenient interfaces, the machines of the TruLaser Series 1000 are also easy to automate or to connect to other machines.

TruPunch 1000

It is a perfect companion in professional punching of sheet metal parts. The compact machine excels with its high level of processing flexibility, and can produce even relatively small orders and lot sizes economically and quickly. **IPF**



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Nextgen Plasma to offer robotic welding solutions

Robotic welding systems, offered in collaboration Germany-based CLOOS, are tailored to accommodate various welding applications, ranging from heavy-duty welding applications to intricate precision welding tasks.

The Kolkata-based Nextgen Plasma will showcase the latest automated & robotic welding solutions at IMTEX Forming 2024 (Hall 3A, Stall B 118). These solutions optimise production workflows, enhance overall manufacturing capabilities and with excellent price to performance ratio. At the heart of Nextgen Plasma's line of automated welding systems lies their sophisticated laser-seam tracking technology, incorporating latest IGBT Inverter based Synergic GMAW Pulsed and GTAW Pulsed welding processes. This allows for unparalleled control and accuracy in the welding process, resulting in high-quality, defect-free welds.

Parallel to its automated welding systems, Nextgen Plasma also offers customised robotic welding systems from CLOOS, Germany. These robotic systems are tailored to accommodate various welding applications, ranging from heavy-duty welding applications to intricate precision welding tasks. This collaboration combines Nextgen Plasma's expertise in advanced plasma welding with CLOOS' proficiency in robotic welding systems. The result is a synergistic approach that promises to revolutionise the welding industry by delivering highly efficient and precise solutions. With the integration of CLOOS' state-of-the-art robotic welding technology, Nextgen Plasma's systems are poised to offer unparalleled automation, accuracy, and productivity in welding processes. This partnership not only showcases the commitment of both companies to pushing the boundaries of innovation but also signals a significant leap forward in the capabilities of robotic welding



Nextgen Plasma offers robotic welding system in partnership with Germany's CLOOS

systems for various industrial applications.

Nextgen Plasma will also display at IMTEX Forming 2024 the latest welding solutions such as:

- ❑ **Linear welding system for rolled components:** The PROSEAM line of long seam welding system represents a cutting-edge solution in streamlining the welding process for longitudinal joints with unmatched precision. This advanced system utilises PLC based controls and servo driven torch on LM guides to ensure consistent and high-quality welds along the length of a workpiece, significantly reducing the margin of error associated with manual welding.
- ❑ **Circular welding system for formed components:** The PROSEAM line of circular seam welding system is used for circumferential joints with unmatched precision. By employing real-time arc monitoring, the system adapts to variations in material thickness and joint

configurations, providing a versatile solution for diverse welding applications.

- ❑ **Customised welding automation for specialised applications:** These customised systems play a pivotal role in addressing the unique demands of specialised welding applications in the industries, ranging from earth-movers, aerospace to automotive and beyond. The advent of advanced technologies such as artificial intelligence, and machine learning has enabled the development of highly efficient and precise welding solutions.

At IMTEX Forming 2024, Nextgen Plasma will also showcase customised job holding fixtures, toolings and other accessories tailored for robotic welding systems, delivering precision and efficiency to modern engineering. These fixtures are meticulously crafted to securely hold workpieces in optimal positions, ensuring consistent and accurate welding results. Prioritising customisation meets the unique needs of Nextgen Plasma's clients, offering a comprehensive range of solutions that enhance productivity and reduce downtime. IPF

For details, contact Nextgen Plasma, Kolkata, on Tel: +91 33 2229 9771; Mob: +91 83350 42505; and Email: sales@nextgenplasma.com



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Luxinar to debut SR series of sealed CO₂ laser sources

Luxinar specialises in manufacturing CO₂ laser sources for industries worldwide, including automotive, electronics, e-mobility, glass, packaging and textiles. On its stand at IMTEX Forming 2024, company will showcase the SR 15i, with an output power of up to 175W.

Leading laser manufacturer Luxinar is proud to exhibit its sealed CO₂ laser sources and support its Indian agent LaseCo Technologies at IMTEX Forming 2024 for the first time. The event takes place from January, 19-23, 2024 at the Bangalore International Exhibition Centre in Bengaluru, India.

Luxinar specialises in manufacturing CO₂ laser sources for industries worldwide, including automotive, electronics, e-mobility, glass, packaging and textiles. Its CO₂ lasers, at wavelengths of 10.6, 10.25 and 9.3 microns, find extensive applications for ablating, cutting, drilling, marking and scribing, on materials such as glass, metals, paper, plastics and wood.

On its stand, Luxinar will showcase the SR 15i, with an output power of up to 175W from its established SR series of sealed CO₂ laser sources with the following key features:

- ❑ Wavelengths of 10.6µm, 10.25µm and 9.3µm to process a wide range of materials from textiles to plastics
- ❑ IP66 rating for harsh industrial environments
- ❑ Integrated and field replaceable RF power supplies for reduced production downtime
- ❑ Compact, lightweight laser sources for easy integration into laser-based processing machines
- ❑ Simple diagnostics for clear status indication
- ❑ Minimum shipment power

20 per cent higher than rated power for an extended laser lifetime and a reduced cost of ownership

The SR series of sealed CO₂ laser sources have a power range of up to 250W and hermetic sealing to ensure high protection against water and dust ingress. The units have a straightforward DC power supply

connection, an easy-to-understand control interface, and the same output beam position to allow for power upgrades with minimal design changes.

Lee Popplewell, Regional Sales Manager & Applications Specialist, states, "We look forward to supporting our distributor LaseCo and showcasing our laser sources to the Indian market at IMTEX FORMING. With more than 25 years of experience in the laser industry, Luxinar's range of CO₂ lasers stands out from the competition due to their proven reliability, flexibility and throughput." During the exhibition, the Luxinar and LaseCo team will be sharing their extensive knowledge and providing expert advice on laser technology.

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SR 15i sealed CO₂ laser source with power output of 175W

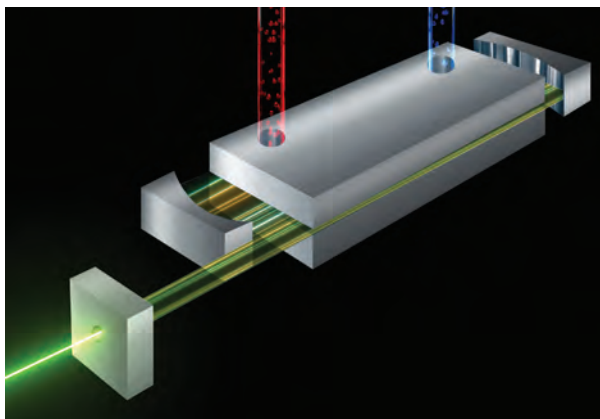


Image showcasing principle of sealed CO₂ lasers



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Schuler to live demonstrate its Digital Suite at IMTEX Forming

Schuler Group of Germany offers a wide range of solutions to the needs of engineering companies in the field of Metal Forming. Company will display its solid forming and forging lines solutions while unveiling its Digital Suit at IMTEX Forming 2024.

Schuler India Private Limited is a wholly owned subsidiary of Schuler Group Germany which has wide range of solutions to the needs of engineering companies to offer together with the value added services in the field of Metal Forming.

Fully equipped with well qualified and extensively trained engineering and administrative staff, company offers equipment, dies and tooling, and process technology to its customers. Schuler, at IMTEX Forming will be presenting its cutting edge solutions to the visitors. The company will display following products and solutions at the event -

- ❑ Digital products from the Schuler Digital Suite with a live demonstration of the digital die monitoring system "Visual Die Protection"
- ❑ Solutions for hot forming, including the new aluminum FAST technology **IPF**

- ❑ Solutions for solid forming and forging lines
- ❑ Press lines with the products Servo MAX, Servo NEXT, Mech NEXT
- ❑ Schuler services



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Beckhoff to present automation solutions for machine tool industry

Beckhoff offers a complete range of PC-based control and automation for metal forming, metal cutting and machine tools/SPMs. At IMTEX Forming 2024, company is all set with its offerings to customers with latest design and technology.



Beckhoff Automation is one of the world's leading specialists for automation and PC-based control technology. It offers a complete range of PC-based control and automation for metal forming, metal cutting and machine tools/SPMs. Industrial PCs can provide a powerful hardware foundation that allows machines used in the manufacturing industry to achieve higher energy efficiency. EtherCAT fieldbus communication protocol plays an important role in high-speed data exchanges with faster cycle times.

Beckhoff showcases industrial PCs, embedded PCs, edge devices, fieldbus IOs, and motion control automation solutions at IMTEX Forming 2024. Company highlights following products at the events at its display -

Beckhoff Industrial PCs

Beckhoff's comprehensive portfolio of industrial PCs, panel PCs, and embedded PCs are highly scalable products in all performance classes, from single-core to multi- and many-core. It offers huge freedom in configuration means that the best custom combinations can be built for the respective application purpose with long-term availability of the whole portfolio. An important feature of the Beckhoff product philosophy is the use of latest,

high-performance components and processors for the development and design of Industrial PCs: they integrate the latest developments offered by the technology market and are used successfully worldwide.

Modular I/O system for all signal types and fieldbus systems

Beckhoff supplies an extensive range of fieldbus components for all common I/Os and bus systems in different designs. With the Bus Terminals in the IP20 protection and the Fieldbus Box modules in IP67, all important signal types and fieldbus systems are covered and the right product is offered for every application. It has universal product range for the EtherCAT environment with extensive portfolio of fieldbus-independent I/O modules for connection to the desired fieldbus or Industrial Ethernet system. It can be implemented in the control cabinet or directly on the machine with an IP67 protection rating. It is a one stop solutions for all common signals in automation technology.

Drive systems for highly dynamic positioning tasks

Out of its extensive portfolio of highly scalable drive technology components, developed and produced in Germany, Beckhoff's drive systems provide long-term available products for long-term planning reliability. The comprehensive solutions are suitable for safety technology sector with TwinSAFE. The XTS and XPlanar provide intelligent product handling for highly dynamic applications as well. The innovative Beckhoff drive package offers a complete range of solutions for every application area.

The integration into the motion control system of the TwinCAT automation software is thus optimised for highly dynamic positioning, extremely accurate machining, and efficient motion profiles.

Powerful CNC solutions

The automation software by Beckhoff, TwinCAT maps all required technologies such as PLC, CNC and analytics in an integrated software environment. This reduces interfaces and the associated integration costs. Customer-specific CNC functions can be developed with the help of the standard editors, integrated into the real-time stack of the CNC kernel as a TcCOM module and provided with effective protection against third-party access.

Complete and system-integrated machine vision

With Beckhoff Vision, real-time image processing can be easily integrated into both new and existing control environments, as well as optimally synchronized with all machine and plant processes. Here, the previously strict separation between vision and automation technology is further eliminated through system integration in all environments. At the same time, Beckhoff Vision components win users over with their robust, attractive design as well as high scalability and long-term availability.

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MH&More to showcase novel metal material handling solutions

At IMTEX Forming 2024, Material Handling & More (MH&More) will display solutions that have the potential to reshape the landscape of metal material storage and handling.

The Palghar (Maharashtra) based Material Handling & More (MH&More) will present cutting-edge solutions in metal material storage and handling at IMTEX Forming 2024. Some of the solutions to be displayed at IMTEX Forming 2024 include:

- ❑ Versatile sheet storage racks (for storing sheet metal with precision),
- ❑ Sheet metal automated storage and retrieval system (for seamlessly optimising space and ensuring swift accessibility for advanced sheet metal storage),



Sheet storage rack

- ❑ Space-efficient bar/pipe/tube/rod storage racks,

- ❑ Slido tool storage cabinet (for storing smaller tools, components, and accessories securely and conveniently),

The company, a part of the Fledon Group, provides smart, convenient systems of material handling and storage products for various industries.

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6th International Congress to be held coinciding with WeldExpo 2024

The Indian Institute of Welding (IIW-INDIA) has joined hands with International Institute of Welding (IIW) to organise International Congress (IC) every three years to showcase the latest developments to the welding fraternity.

The 6th International Congress 2024 (IC-2024) will be held from 22-24 January, 2024 at Bengaluru International Exhibition Centre (BIEC) coinciding with IMTEX Forming 2024 and WeldExpo 2024.

IC-2024 aims to provide a dynamic forum for professionals from industries, academia and research institutes to share and enhance the knowledge base in welding science and technology, discussing strategies to make industries globally competitive. It will discuss the ways of boosting industrialisation through skill development and will promote regional cooperation by actively involving neighbouring countries. The International Congress will also offer a platform for Young Professionals in the field of welding to be a part of an exclusive Young Professional International Conference (YPIC).

The Indian Institute of Welding (IIW-India) was incorporated on the April 22, 1966 at Kolkata to foster the development of welding science, technology and engineering in India and since then has been serving the cause of the welding industry through its 13 branches throughout India. It has joined hands with International Institute of Welding (IIW) to organise International Congress (IC) every three years to showcase the latest developments to the welding fraternity.

Welding finds acceptance among a wide range of manufacturing applications including pressure vessels, railways, aircraft, ships, medical devices and high-volume products like automotive parts, appliances, food packaging and microelectronics. The demand for welding products across a cross-section of industry verticals have been

increasing day-by-day. Weldexpo, a concurrent show at IMTEX Forming 2024, shines a spotlight on the crucial role of welding in various manufacturing applications.

The growing importance of Welding in different sectors

Welding plays a crucial role in both the pressure vessels and railways sectors, where its importance cannot be overstated. The reliability and safety of welds in these applications are paramount. At Weldexpo, attendees will have the opportunity to observe demonstrations of cutting-edge welding techniques employed in these sectors, showcasing automated welding systems that ensure precision and consistency.

The medical device industry heavily relies on welding to manufacture intricate and highly dependable components. Weldexpo will showcase exhibits from top manufacturers, illustrating how micro-welding technologies are revolutionising the production of smaller and more complex medical devices with enhanced reliability.

In the automotive industry, welding is indispensable for crafting durable and secure vehicles. The exhibition will shine a spotlight on the latest advancements in automotive welding, featuring robotic welding systems and laser welding technologies that provide superior speed, precision, and quality.

WeldExpo 2024

The Weldexpo at IMTEX Forming 2024 goes beyond merely showcasing the versatility of welding; it also serves as a platform for spotlighting the latest advancements in welding technology. The exhibition



will present an array of cutting-edge welding solutions, ranging from state-of-the-art welding machines to innovative welding consumables.

A standout feature of the event is the demonstration of automated welding systems. These systems leverage robotics and advanced control systems to deliver welds of exceptional precision and repeatability, fundamentally reshaping the approach industries take towards welding. They not only enhance productivity but also elevate the overall quality of welding processes.

An additional exciting development is the integration of additive manufacturing or 3D printing into the welding sector. This groundbreaking technology allows manufacturers to construct intricate parts by layering material, unlocking new possibilities for design and production methodologies. The exhibition will also shine a spotlight on the increasing significance of welding data management.

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About the company: HTM Group has been in the field of hydraulics since 1995. Their expertise in the industry makes us one of the leading competitive companies in the field of trading, marketing & servicing and training for customers in India and abroad. HTM group has headquarters in Bangalore, India.

Contact:

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About the company: Powertech Pollution Controls Pvt Ltd was established in the year 1996, for the design and manufacture of a wide range of air pollution control equipment, specifically electrostatic filters, for the capture and control of most types of fumes, mist, smoke and fine dust, generated on the shop floor, during the production process. Electrostatic filters are marked under the brand name of Fumekiller(R) and Dustkiller(R) throughout India and Abroad.

Contact:

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Adding the “third dimension” to metal working

As India transforms into a global manufacturing hub, mainstreaming of metal 3D printing in the production line is expected in a big way in the near future, says Rakesh Rao.

The Indian government's policy to encourage local manufacturing in 24 identified sectors (such as aerospace and defense, automotive and auto components, railways, biotechnology, and others) along with new technologies is giving a push for local manufacturing. Additive manufacturing (or 3D printing) is one such technology that is revolutionising manufacturing processes.

Metal additive manufacturing (metal AM) utilises fine metal powders to construct robust, intricate components through computer-aided design (CAD) programmes or 3D scanning. Laser powder bed fusion, also known as selective laser melting (SLM), is the most stable and reliable metal AM process, which has been around for the longest amount of time. The global metal 3D printing market, valued at \$ 6.36 billion in 2022, is expected to expand at a compound annual growth rate (CAGR) of 24.2 per cent from 2023 to 2030, according to Grandview Research. SLM technology led the global metal AM market with 23.77 per cent share in 2022. Although the advantages and ease of operations associated with the SLM technology are encouraging the adoption of this AM method, advances in technology are opening up opportunities for several other efficient and reliable technologies such as selective laser sintering (SLS), direct metal laser sintering (DMLS), inkjet printing, electron beam melting (EBM), laser metal deposition (LMD), laminated object manufacturing (LOM), and electron-beam freeform fabrication (EBF3).



Complementary or competing technology

In the traditional subtractive manufacturing processes (such as milling), the scrap rate is as high as up to 80 percent. On the other hand, additive construction – which requires little energy - uses only as much material as is actually needed for the component. The excess powder in AM is also reprocessed. Using AM, one can reduce costs for small quantities, complex geometries, materials that are difficult to process or prototypes because 3D printing does not need molds. "Progressive automation brings additional cost savings. Thanks to the so-called "monolithic design", entire assemblies can be printed as one component, whereas employees would otherwise have to manufacture several components individually and then assemble them," opines **Sachin Gambhire**, Associate Director - Business Development and Marketing, TRUMPF (India).

He adds, "3D printing is particularly advantageous when complex components also need to be given special properties (for example, a prosthesis that is extremely stable but also absorbs shocks). Almost all industries benefit from this freedom in form and function."

Companies, across all industrial sectors, are recognising the pertinent need for adopting sustainable technology for manufacturing. This has increased market awareness about the need to move away from traditional methods and gradually adopt additive manufacturing. The demand for AM solutions for high-volume production is anticipated to rise as India transforms into a manufacturing hub for large-scale international businesses.

"With additive manufacturing, geometries are possible that conventional processes cannot achieve. This freedom in form and function offers potential for almost all industries. This is why additive

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manufacturing is both a complementary and a competing technology to conventional metal working technologies and processes," states Gambhire.

According to **Dr Vishwas Puttige**, CEO, Amace Solutions Pvt Ltd (a part of Ace Micromatic Group that manufactures metal based additive manufacturing machines), AM is a complimentary technology to conventional processes. "The key is to find the right balance between AM and conventional manufacturing to leverage from the best of both worlds and elevate engineering and manufacturing capabilities," he adds.

Aerospace driving demand

In India, aerospace and defence sectors have increased AM adoption through their thorough certification processes and validation of repeatability for flight worthy components. The space sector has also embraced the value delivery from this technology and is using it for manufacturing systems which deliver better performance.

Gambhire explains, "It is now impossible to imagine the aerospace industry without additive manufacturing of series parts. Our customer Airbus, for example, uses additive manufacturing to produce components for passenger planes and helicopters. Tool and mould making also benefits from 3D printing. Designers can rethink the design of components in additive manufacturing and print geometries that cannot be implemented in other ways, such as internal cooling channels for their tools."

As part of the Aatmanirbhar Bharat initiative, the government aims to achieve a turnover of \$ 25 billion (including an export of \$5 billion) in the aerospace and defense goods and services by 2025. Experts estimate potential contracts worth \$ 57.2 billion for the domestic industry in the next 5–7 years (2025–2027) in the defense sector. This will open up floodgates of opportunities for AM players as the demand for components grow manifold.

"Laser powder bed fusion as a technology is considered as one of

the most industry ready technologies for metal printing due to its ability to print high density and high strength parts making it more suited for end use applications (final products). ISRO, for instance, has been using our machine and technology for printing multiple end use parts for their rockets and satellites. The technology has also found huge application in the healthcare and medical sectors for medical devices and custom implant applications. In addition, we see the die and mould sector using our machines for printing conformally cooled and optimised dies and inserts," opines Dr Vishwas Puttige.

Rising AM market in India

The adoption of additive manufacturing in industries has seen steady growth over the past years. The process has seen some level of standardisation through establishment of manufacturing standards from ASTM, ASME, CEMILAC, etc. The Indian government has also acknowledged the importance of this technology through their National Strategy on Additive Manufacturing, which strives to create a sustainable additive manufacturing eco-system within the country for the domestic as well as the international market. Although AM can be used in almost all industries, the largest user of this technology in India is the aviation, space and defense sectors, closely followed by oil and gas and other industrial applications.

Gambhire, "For metal 3D printing machines, we observe India is an evolving market as well. The awareness, interest and technology adoption has started picking up the pace recently in the field of metal additive manufacturing. We started offering our TruPrint machines in India just a few years back and have already successfully grown our installed base across India. Our target market segments in India are customers from various industry sectors like medical implants, dentistry, aviation and aerospace, research, tool and die makers and educational institutes etc."

The overall revamp of supply chains globally has increased the importance of decentralised or distributed manufacturing. End users would rather have parts manufactured at a facility close to them rather than a central supplier base. This helps significantly reduce lead times for manufacturing and also enables reduction of cost of storage of inventory through on-demand manufacturing from a set of CAD files and processes set up in a digital inventory. This can be further strengthened by the establishment of data security practices including blockchain.

Taking the global led

Mainstreaming of 3D printing, especially metal AM, in the production line is expected to grow and expand in a big way in the near future. "In the last couple of years, we have been seeing big growth in industries such as space and aviation. Now, we are also seeing a steady growth in the medical, dental, tooling and automotive industries. As we have begun to see already this year, consolidation in the AM industry is happening. We believe that this will continue in 2024 with the AM industry maturing," opines Gambhire.

Additive manufacturing has huge potential in the future. Global uncertainty has forced companies to recalibrate their sourcing and manufacturing strategies to ensure business continuity even during unforeseen supply chain disruptions. This is providing opportunities for Indian manufacturers to expand their offerings beyond their traditional markets. By adopting new AM technologies, understanding customer's unique requirements and focusing on quality, domestic AM companies can increase their footprint and put India on the global map for additive manufacturing. **IPF**



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“3D printing complements the conventional production processes”

Amace Solutions Pvt Ltd (a part of Ace Micromatic Group) is one of the first indigenous manufacturers of metal based additive manufacturing machines in India. In this interview with Rakesh Rao, **Dr Vishwas R Puttige**, CEO, Amace Solutions, explains the evolution of additive manufacturing technology and explores its future.

How has Amace Solutions evolved since it was established? Which industries are driving the demand for 3D printing?

Amace Solutions started off as a R&D project in 2016 and was later spun off as an independent company, taking up customer validation projects for metal printing of diverse market segments and in the process gaining key insights into the capabilities of metal additive manufacturing, equipped with over 30,000 hours of metal printing experience, amace solutions launched its own indigenously designed and developed metal printing system in 2021 called the STLR 400, making it one of the country first to do so. Today with multiple installations across the country in defence, aerospace, die mould and automotive sectors Amace solutions is well poised to be a leading indigenous metal printing OEM.

How is Amace Solutions disrupting the status quo in the manufacturing sector?

3D printing is considered as an expensive and low productivity process which has been a major barrier towards the adoption of the technology, amace solutions has challenged this status quo by introducing a host of high productivity features on the STLR 400, such as a large production ready build volume of 410 x 410 x 450 mm complimented by a dual 1kW lasers, all this at a fraction of the cost compared of an imported system.

Is there a rise in usage of



additive manufacturing (AM) for manufacturing final products rather than just for prototyping purposes? Do you have any examples to elaborate on this aspect?

Laser Powder bed fusion as a technology is considered as one of the most industry ready technologies for metal printing due to its ability to print high density and high strength parts making it more suited for end use applications (final products).

ISRO for instance has been using our machine and technology for printing multiple end use parts for their rockets and satellites, the technology has also found huge application in the healthcare and medical sectors for medical devices and custom implant applications, we also see the die and mould sector using our machines for printing conformally cooled and optimised dies and inserts.

Is AM complementary or competing technology to conventional metal working technologies and processes?

AM is definitely going to be a complementary technology to conventional processes, but the key is to find the right balance between AM and conventional manufacturing to leverage from the best of both worlds and elevate engineering and manufacturing capabilities.

Could you please brief us on some of your latest launches?

After the successful and well received launch of the high productivity, Industry ready machine, the STLR 400, we are now glad to announce the launch of our entry level machine the STLR 180 with a cylindrical build volume of Dia 180 x 200 featuring a single 400W laser, which is perfectly suited to cater to the needs of educational and R&D institutions, along with addressing medical and dental applications.

What are the emerging trends in 3D printing to watch out for?

As OEMs, a large portion of our R&D efforts go towards proving out new materials and increasing our materials portfolio, while also working on improving the process parameters for printing of exiting materials, amace today has a material portfolio of over 13 materials to cater to the needs of various industries with many more under development, more applications are soon to emerge with many industries adopting the technology and finding new use cases for it.

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What are key challenges and new opportunities before AM players in India?

Some of the key challenges that we see is the willingness of Indian manufacturers to adopt and invest in new technologies, we are seeing some stalwarts who are taking the first plunge and investing in the future and are also benefitting immensely from the same, through this we anticipate a larger section of manufacturers will look into this, we as an industry need to come out of our comfort zone and adopt to newer trends to stay relevant in this ever changing,

We are glad to announce the launch of our entry level machine the STLR 180 with a cylindrical build volume of Dia 180 x 200 featuring a single 400W laser, which is to cater to the needs of educational and R&D institutions.

dynamic market.

What are your growth plans for Amace Solutions?

Amace has now moved to a new facility with an annual manufacturing

capability of over 100 machines, we are gearing up for a future where additive will become a core manufacturing technique and revolutionise the industry as we know it, we are also in the process of creating more awareness among the industry and academia for wider adoption of the technology.

IPF



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NEWS SNIPPET

Cyient DLM inaugurates new precision machining facility in Bangalore

Cyient DLM, an integrated electronics manufacturing company, has announced the inauguration of a new precision machining facility in Bangalore. The facility currently has a capacity of 60,000 hours per annum, and has been designed for 3x expansion, to elevate the capacity to 180,000 hours per annum with the addition of 20 cutting-edge machines. The new facility has 36,000 sq ft of manufacturing area.

Cyient DLM has expertise in CNC machining with high precision for Aviation, Space, and Ground control applications. Cyient DLM's Precision Machining includes the manufacturing of structural components, engine components, avionics packages and space components. The new facility has the potential to scale up to 250 employees with Indirect employment to around 600 individuals.

Krishna Bodanapu, Executive Vice-Chairman and Managing Director, Cyient said, "Cyient DLM is embarking on an exciting growth trajectory, and our new facility in Bengaluru represents the first step in our strategic expansion plan as an independent entity. Our focus is not only on meeting customer expectations but also on creating substantial employment opportunities, fostering a culture of innovation, and leaving a positive imprint on the local community. This move reflects our confidence in the region and underscores our steadfast commitment to being a driving force in Karnataka's economic landscape. Cyient DLM envisions a future defined by pioneering innovation, operational excellence, and meaningful contributions to the communities we proudly serve."

Anthony Montalbano, Chief Executive Officer, Cyient



DLM, said, "The inauguration of this precision machining facility in Bengaluru marks a key milestone for Cyient DLM as this represents our commitment to driving growth and delivering differentiated value providing end-to-end services to our customers. This precision machining facility will not only meet the current high growth demands of our customers but will enable new opportunities and partnerships."

Cyient DLM's precision machining ecosystem is built on three pillars - people, infrastructure, and processes. With over 350 suppliers, more than 140 manufacturers and around 200 authorised distributors and stockists, Cyient DLM's leverages a wide network of suppliers 2 to source seamlessly from global locations. Backed by certified quality assurance processes, Cyient DLM has a strong track record of supplying high-quality products.

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“Industrialisation of 3D printing will expand in a big way”

The Germany-based TRUMPF Group - one of the world's biggest providers of machine tools - is the market leader in 3D printers as well. In the last few years, the application of additive manufacturing (3D printing) has seen big growth across industries such as automotive, aerospace, aviation, medical, dental, tooling, etc. In this interview with Rakesh Rao, **Sachin Gambhire**, Associate Director - Business Development and Marketing, TRUMPF (India) Pvt Ltd, explains how 3D printing is changing the dynamics of industrial production and the company's growth plans for India.

How is TRUMPF serving the additive manufacturing (3D printing) space? Which industries are driving the demand for your 3D printing solutions?

3D printing is particularly advantageous when complex components also need to be given special properties (for example, a prosthesis that is extremely stable but also absorbs shocks). Almost all industries benefit from this freedom in form and function. TRUMPF particularly addresses the aerospace, energy, automotive, mechanical engineering, medical and dental technology sectors. TRUMPF is the technology and market leader in 3D printers for the dental industry. It is now impossible to imagine the aerospace industry without additive manufacturing of series parts.

Our customer Airbus, for example, uses additive manufacturing to produce components for passenger planes and helicopters. Tool and mold making also benefits from 3D printing. Designers can rethink the design of components in additive manufacturing and print geometries that cannot be implemented in other ways, such as internal cooling channels for their tools. Other industries are also discovering more and more the potential of 3D printing. One example is additive manufacturing of bicycle parts.

How is 3D printing shaping the future of industrial production?

Additive manufacturing offers



following advantages:

- ❑ **Conserving resources:** Additive construction only uses as much material as is actually needed for the component. With subtractive processes such as milling, the scrap rate is up to 80 percent. Excess powder can be reprocessed. The printing process requires little energy.
- ❑ **Lower manufacturing costs:** Costs can be reduced for small quantities, complex geometries, materials that are difficult to process or prototypes because, for example, no molds need to be made. Progressive automation brings additional cost savings. Thanks to the so-called "monolithic design", entire assemblies can be printed as

one component, whereas employees would otherwise have to manufacture several components individually and then assemble them.

- ❑ **Complex components:** Designers have more freedom in terms of form and function. This enables innovative components with particularly advantageous properties. The parts have a consistently high quality (reproducibility) thanks to their digital data set.
- ❑ **Weight saving:** Lattice structures or cavities can be realized within a single part. The workpiece remains stable.

Is AM complementary or competing technology to conventional metal working technologies and processes?

With additive manufacturing, geometries are possible that conventional processes cannot achieve. This freedom in form and function offers potential for almost all industries. This is why additive manufacturing is both a complementary and a competing technology to conventional metal working technologies and processes.

Our robust systems deliver repeatable results, making them particularly suitable for industrial use. This is where our experience as a machine builder and laser specialist comes in handy. The laser, together with its optics and sensor technology, is crucial for productive additive manufacturing

With additive manufacturing, geometries are possible that conventional processes cannot achieve. This freedom in form and function offers potential for almost all industries.

Could you please brief us about some of your latest launches in the 3D printing space?

TRUMPF has further increased the productivity of the TruPrint 2000. The 3D printer is now also designed for mass production. Users from all industries benefit from the machine's high productivity. TRUMPF has equipped the 3D printer with a square instead of a round build plate and increased the power of the integrated fiber laser to 500 watts as an alternative to the 300 watts laser in the basic configuration. For example, dental technology companies print up to 36 percent more removable partial dentures on the square build plate than on a comparable round build plate. TRUMPF has presented the 3D printer for the first time at Formnext 2023, the leading trade fair for additive manufacturing in Frankfurt.

What are the emerging trends in 3D printing to watch out for?

We expect that the industrialisation of AM processes, especially for metal AM, will continue to grow and expand in a big way. In the last couple of years, we have been seeing big growth in industries such as space and aviation. Now, we are also seeing a steady growth in the medical, dental, tooling and automotive industries.

As we have begun to see already this year, consolidation in the AM industry is happening. We believe that this will continue in 2024 with the AM industry maturing.

Productivity is King! We have made massive jumps this year and expect that in 2024 this will continue. Serial production using AM is not a dream anymore, but an everyday reality for us and our customers. Even within TRUMPF, we have 3D printers printing parts for many of our other machine tools.

How are you serving the Indian market with your 3D printing solutions? What kinds of opportunities are you looking to tap in India?

TRUMPF is present in India since 2006, through its wholly owned subsidiary, TRUMPF (India) Pvt Ltd, located at Pune with regional offices at Bengaluru and Delhi. In recent years, it has further strengthened its presence across India by opening spare parts warehouses at satellite cities located at South, West and North regions with a 'closer to customer approach'. We have witnessed considerable growth for our machine tools and laser technology products in India, year-on-year.

For metal 3D printing machines, we observe India is an evolving market as well. The awareness, interest and technology adoption has started picking up the pace recently in the field of metal additive manufacturing. We



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started offering our TruPrint machines in India just a few years back and have already successfully grown our installed base across India. Our target market segments in India are customers from various industry sectors like medical implants, dentistry, aviation and aerospace, research, tool and die makers and educational institutes etc.

What are your growth plans for TRUMPF's additive manufacturing business in India?

Often, foreign machine suppliers enter in a new country first with just sales operations and then after evaluating the demand forecast, after-sales service support network is gradually expanded. For TRUMPF in India, it is not the same case. TRUMPF India has already a well-established service and spares support, available across the length and breadth of the country for its well-known machine tools and laser technology products.

We are consistent in working on educating the market and spreading awareness about immense possibilities that metal 3D printing presents. We are also focusing on growing our network in India to reach the untapped market potential and growing our business of metal 3D printing solutions portfolio in India.



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Dormer Pramet introduces metal cutting tool lineup

Dormer Pramet, a part of the Sandvik Group unveils an extensive range of cutting-edge milling, turning, drilling, and tapping tool holders, along with various collets and accessories.

Dormer Pramet, a prominent name in metal cutting tools and a part of the Sandvik Group, proudly announces the launch of its latest product line tailored for the Indian market. The unveiling includes an extensive range of cutting-edge milling, turning, drilling, and tapping tool holders, along with various collets and accessories designed for seamless integration across a diverse spectrum of machines ranging from traditional setups to state-of-the-art CNC centers.

Recognising the evolving landscape of engineering in India, Dormer Pramet aims to address the escalating demand for enhanced productivity and cost efficiency. The brand believes that the optimisation of the tool and workpiece clamping process play a pivotal role in achieving these goals. Proper clamping is not merely a requirement but is indispensable for ensuring precise workpiece dimensions, delivering high-quality surface finishes, extending tool life, and reducing setup times, ultimately enhancing overall machine efficiency. Each machining task comes with its unique clamping needs. With more than 100 years of experience to its credit Dormer Pramet stands ready to

offer comprehensive and tailor-made solutions aligned with the specific requirements of Indian manufacturers.

Dormer Pramet has also expanded its grooving and parting-off product portfolio to include new high-speed steel (HSS) drills, taps and maintenance tools. Notable additions to the Pramet GL assortment range include tools with high-pressure internal coolant, internal grooving and face grooving tools, single-sided inserts for extra deep grooving and parting-off, along with many more various small enhancements to make the GL range fully mature and competitive.

The global tool manufacturer also introduces a Dormer HSS drill with a three-flat shank to prevent slipping in the chuck, economical HSS taps designed for hand-held power tools, and screw extractors along with bolt removal kits to streamline maintenance processes.

Amit Raina, Country Manager for India said, "We are thrilled to introduce our premium and innovative Metal Cutting Tool Lineup to Indian manufacturers, with the aim of elevating productivity and reducing operational costs. With a rich legacy spanning over a century, our expertise is evident in the meticulous crafting of tools engineered for stability and efficiency, across diverse machining conditions. We endeavor to empower our Indian clients by enhancing operational efficiency, prioritizing sustainability, and creating a substantial impact towards ramping up efforts in this direction to deliver a reliable product range. At Dormer Pramet, our unwavering commitment is to establish product



excellence tailored for the customer's looking for value for money."

Dormer Pramet is a global manufacturer and supplier of tools for the metal-cutting industry. It is a member of the Sandvik Group. Sandvik is a global, high-tech engineering group providing solutions that enhance productivity, profitability and sustainability for the manufacturing, mining, and infrastructure industries. Dormer Pramet's comprehensive product program encompasses both rotary and indexable drilling, milling, threading, and turning tools for use in a wide range of production environments. An extensive sales and technical support service operates from 20 offices, including India, serving more than 100 markets worldwide. These are assisted by dedicated production facilities in Europe, Americas and Asia, along with a highly developed distribution and logistics network.

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3D ToF camera captures current status in a process with precision

The portfolio of a safety technology provider, Schmersal Group, now also includes a 3D camera that records processes in real time. This expands the portfolio of optoelectronic system components for intralogistics and automation technology.



Hardly any industrial automation process can be realised without high-performance optoelectronic sensors. This applies, for example, to the detection of components or load carriers in machines and on conveyor belts. Increasingly, it also applies to machine safety. Here, non-contact safety light barriers, light grids and light curtains offer benefits that surpass those of traditional safeguarding of hazardous areas with guard doors. The operator retains a clear view of the process, and the manufacturer or operating company of the system can introduce additional flexibility into workflows with functions like muting or blanking (spatial or temporal masking of individual areas of the safeguard system).

Optoelectronics replaces electromechanics

With its sister company, Safety Controls, which focuses specifically on optoelectronic protective devices,

the Schmersal Group is very well placed for this segment. Schmersal's range also includes sensors for non-safety-related tasks in automated assembly, production and intralogistics, particularly as the range is currently being expanded to include a high-end automation module to replace conventional industrial sensors (inductive, magnetic, laser-based) and thus enable additional functions.

3D camera technology replaces industrial sensor systems

This range expansion involves industrial-grade cameras that provide 3D depth images with millimetre accuracy. The AM-T100 camera came about as part of a cooperation project with a long-term development partner. This gave Schmersal the opportunity to integrate the customer's requirements directly into the development and, at the same time, to benefit from the partner's expertise in camera technology.

The AM-T100 is equipped with a Sony DepthSense sensor and uses Time-of-Flight (TOF) technology - the runtime measurement of emitted light pulses within the infrared range (850 Nm), which are reflected by the objects being detected. This enables high-speed creation of a 3D image of the scene with millimetre accuracy that is available as a point cloud.

With an image frame rate of up to 60 fps, this kind of 3D ToF camera can determine the positions and dimensions of objects in real time, for example the position and stacking height of the boxes that are being palletised by the robot. All this needs is one recording.

The camera is also capable of 'looking into' containers or large load carriers to detect their current fill level. In addition, the camera facilitates volume determination of general cargo and birds-eye monitoring of staging areas in production, assembly, storage and order-picking. Other uses include the capture of dimensions and surface quality. With IR illumination and an image resolution of 640 x 480 pixels, the AM-T100 achieves a visual range of 67° x 51° at a range of 8.3 metres.

Data evaluation in real time

What really boosts the performance of the 3D camera is its software, which allows the user to define and monitor things like 3D zones within a space in real time and

With an image frame rate of up to 60 fps, this kind of 3D ToF camera can determine the positions and dimensions of objects in real time.



as a moving image.

If the camera detects an object within the zone, it will switch digital outputs. In addition, digital inputs allow for switching back and forth between different 3D zones. An integrated Software Development Kit (SDK) offers support to software

developers and system integrators with software configuration and application creation.

High-performance algorithms can pre-filter the data so that the AM-T100 can be adapted to different ambient conditions. The image data are captured and transmitted via GeniCam so that they can be

analysed by common image processing software. An Ethernet interface enables rapid and extensive data transmission, as well as a 24 V power supply if required (Power over Ethernet).

The camera opens up a wide range of automation solutions in logistics and line manufacturing, thereby creating the preconditions for accurately recording the current status in a process as promptly as possible.

This helps to create a precise image of the current state so that subsequent steps in processing, assembly and handling of products, containers and packaging units can be initiated.

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Jaykay Enterprises forms joint venture with Phillips Machine Tools

Companies signed the memorandum of understanding (MoU) on December 9, 2023. The primary objective of this collaboration is to strategically expand their respective businesses across India and global markets.

Jaykay Enterprises Limited successfully executed a memorandum of understanding (MoU) on December 9, 2023, with Phillips Machine Tools India Private Limited, a subsidiary of Phillips Corporation, USA. The latter is actively involved in the advanced manufacturing technology products and services sector. The primary objective of this collaboration is to strategically expand their respective businesses across India and global markets.

As per the terms outlined in the MoU, the parties have a three-month window from the date of execution to engage in discussions and reach mutual agreement on establishing a Joint Venture Limited Liability Partnership (LLP). The envisioned joint venture aims to:

- ❑ Participate in the supply and installation of manufacturing systems and accessories in India and various global locations, as determined by the involved parties.
- ❑ Explore the possibility of establishing a manufacturing facility to supply machine systems and accessories to Phillips Corp Machine Tools' supply chain.
- ❑ Investigate the potential establishment of an Industry 4.0 Consulting and



manufacturing systems.

Jaykay Enterprises boasts a robust presence in the Indian market with a diversified business portfolio, including engineering, construction, and manufacturing. On the other hand, Phillips Machine Tools is a global leader in the machine tools industry, renowned for providing cutting-edge technologies and solutions, with a reputation for new age distribution, manufacturing expertise and outstanding after sales service.

The collaboration between these two entities is expected to yield significant synergies, particularly in the following areas:

- ❑ Joint marketing and sales efforts: Capitalising on each other's distribution channels to reach previously untapped

customer segments.

- ❑ Collaborative product development: Integrating Phillips' technological advancements with Jaykay's manufacturing expertise to foster the creation of innovative products.
- ❑ Joint bidding for large-scale projects: Pooling resources and expertise to enhance the likelihood of winning major contracts both in India and on the international stage. **IPF**

As per the terms outlined in the MoU, the parties have a three-month window from the date of execution to engage in discussions and reach mutual agreement on establishing a joint venture Limited Liability Partnership (LLP).



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Data management propelled additive manufacturing

Data management in additive manufacturing, as in any other ecosystem, involves the collection, organisation, and analysis of data throughout the process, from design and preparation to production and post-processing. It plays a crucial role in ensuring efficient and effective AM operations.



Manufacturing sector is considered as the backbone of economic development. Its evolution and influence on the global economy is tremendous and have been transformative through innovation and modernisation.

Manufacturing Industry has been shaping nations and propelling socio-economic progress by creating jobs, generating income through secondary and tertiary sectors, reducing poverty and stimulating economic growth.

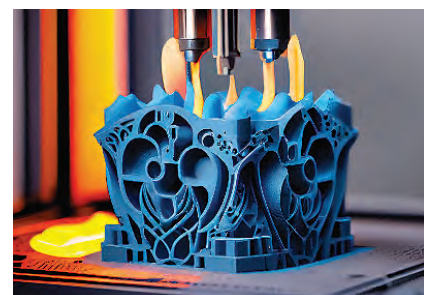
Despite challenges like globalisation, competition, technological change and environmental concerns, the manufacturing industry continues to

grow and diversify into different categories. One such type that is silently catching the imagination of the industry is Additive Manufacturing (AM), also known as 3D printing. It is a transformative technology that has revolutionised the way we design, prototype, and produce objects. It involves building a three-dimensional object from digital files by depositing material layer by layer. This process allows for the creation of complex geometries with intricate details.

AM enables rapid prototyping to quickly iterate on designs, test concepts, and produce functional prototypes, accelerating customised product development cycles. Unlike traditional manufacturing methods that are often constrained by tooling

and mould requirements, AM allows for the production of complex shapes, internal features, and personalised products. This opens up new possibilities for innovation and creativity in various industries.

AM enables the production of small batches of items cost-effectively. This makes it particularly suitable for



specialised or customised products, spare parts, and low-volume production runs with a wide range of materials, including metals, plastics, ceramics, and even biological materials. Its impact can be felt across various industries, including aerospace, automotive, healthcare, consumer products, etc, revolutionising the way we design, produce, and innovate.

Automation in AM enhances productivity, reduces production costs, improves product quality, enables more complex designs and promotes human safety through various aspects. One common aspect that binds itself with process control, monitoring and inspection, material handling or robotics integration is data management.

Data has become an indispensable asset and crucial element in the modern world. It helps in decision-making, enables higher levels of business intelligence, promotes research and development, fuels artificial intelligence and machine learning, enables personalised experiences for individuals and guides us to interact with the digital landscape. Automation enables the collection and analysis of data from the manufacturing process, allowing for continuous improvement and optimisation of process parameters.

Data management in additive manufacturing, as in any other ecosystem, involves the collection, organisation, and analysis of data throughout the process, from design and preparation to production and post-processing. It plays a crucial role in ensuring efficient and effective AM operations, optimising product quality, and enabling data-driven decision-making, analysis and



optimisation.

Key aspects of data management in AM include:

- ❑ Data collection: Data collection from various sources, such as design files, process parameters, sensor readings, and quality control measurements.
- ❑ Data organisation: Structuring, categorising and systematic storing of collected data to facilitate easy access, retrieval, and analysis.
- ❑ Data analysis: Extract meaningful information from the organised data to identify of trends, patterns, and correlations.
- ❑ Data visualisation: Data presentation in form of charts, graphs, and dashboards, to enhance understanding and decision-making.
- ❑ Data security: Protection of sensitive information through robust data security measures

Effective data management in AM enables manufacturers to optimise process parameters for improved product quality and efficiency, Identify and mitigate potential defects or failures, Trace product history and ensure regulatory compliance, Enable predictive maintenance and reduce downtime and Facilitate collaboration and knowledge sharing within the AM ecosystem.

Key hardware components in shaping up this vital aspect of data management are devices that can pull and pick data from the various elements of a shop floor ambience

and deliver it to a rugged and robust intelligent system like an industrial computer.



Pro-face is one of the early pioneers who have the complete solution in form of a versatile graphic touch panels that can double up as a logic controller, field IO modules, industrial PCs and associated software and tools. Without the need for getting into complex and expensive systems that get outdated within months, Pro-face offers long term, simple and innovative solutions to achieve the objectives of implementing a complete data management system by integrating various sub-systems from the manufacturing facility wirelessly, integrate them into PC and provide the ready data on the finger tips through a tab or a mobile device. **IPF**

For details contact VBR Technologies Private Limited, Tel: 91-87 22222 500, email: info@vbrtech.com



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AUTOMATIC DUPLEX DEBURRING & CHAMFERING TOOL

Shenoy Engg Pvt Ltd offers a wide range of automatic duplex deburring & chamfering tool.

Features:

- Burr-free, clean hole is a time consuming, cumbersome operation in a shop-floor. Our Automatic Duplex Deburring & Chamfering Tool is designed for a quick deburring of the top & bottom end of drilled hole, immediately after drilling the same set up, without declamping the job.
- It deburrs and produces a light chamfer in a drilled hole both at the top as well as at the bottom. No change either in the spindle speed or in the direction of spindle rotation or in the job set-up is required. The tool can be deployed immediately after drilling. Neither manual interruption nor special operational skills are required at any stage of its use. The time required for duplex deburring and chamfering is few seconds. Further, the chamfers will be uniform & concentric to the hole.
- The tool consists of only 4 parts - shank, HSS blade, fulcrum-cum-lock screw and screw for adjusting blade projection. The blade, having certain unique features, is made of HSS and it undergoes a special heat treatment process, because of which it attains certain level of spring action. After cutting on the top of a hole, the blade retracts inside the pocket, provided in the tool shank, as the cutting pressure increases. The blade gets slowly released from the pocket, as the cutting pressure decreases and the deburring and chamfering operations are done in the bottom of the hole.
- The tools are available in sizes from Ø5 mm to Ø24 mm in a stepless range. The holding shank is cylindrical, so that the tool can be mounted on the machine spindle through a drill chuck or collet.
- The robust construction, unique design features and heat-treatment process for wear resistance make the tool and the blade highly enduring under the most trying cutting conditions. The blade can be re-sharpened, when it's cutting edges become blunt.

About the company: Shenoy Engg Pvt Ltd has developed a number of grinding attachments which enhance the capabilities of existing machines. It has also started specialising in special purpose machine tools, jigs and fixtures, technological upgradation of conventional machine tools, etc. With in-house design and manufacturing facilities, the company is at the forefront to provide affordable solutions in the field of metal cutting and metal forming.

Contact:

Shenoy Engg Pvt Ltd, Bangalore
Tel: 080-28361767, 28361725
Mobile: 09243437487
Email: info@shenoyengineering.com



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INCREMENTAL OPTICAL SCALE FOR LARGE MACHINES - GVS 900

Givi Misure Pvt Ltd offers a wide range of incremental optical scale for large machines - GVS 900.

Features:

- Incremental optical scale, available in a single piece or in modular version for large machines. (up to 30040 mm of measuring length or higher on request).
- Application in various industrial fields such as machine tools, vertical lathes, gantry machines, laser/plasma cutting machines, robotics, automation etc.
- Stainless steel grating, integral with the machine guide, for an excellent accuracy at any temperature. Resolutions up to 0.1µm, accuracy grade $\pm 5\mu\text{m}$.
- Rigidly bound modules, for a perfect seal against liquids and environmental dirty, unaltered over time.

About the company: Givi Misure has been established by experts in the field to provide low cost automation solutions to machine tools and other machines.

Contact:

Givi Misure Pvt Ltd, Bangalore
Tel: 080-41272559, 41171374
Mobile: 09900028662, 09900028663
Email: info@givimisureindia.com
admin@givimisureindia.com

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ABSOLUTE OPTICAL SCALE FOR LARGE MACHINES - GVS 908

Givi Misure Pvt Ltd offers a wide range of absolute optical scale for large machines - GVS 908.

Features:

- Absolute optical scale, available in a single piece or in modular version for large machines (up to 30040mm of measuring length).
- Application in various industrial fields such as machine tools, vertical lathes, gantry machines, laser/plasma cutting machines, robotics, automation etc.
- Stainless steel grating, integral with the machine guide, for an excellent accuracy at any temperature.
- Serial interface SSI-BiSS C (unidirectional), with or without 1 Vpp analog signal, Siemens Drive-CLiQ and Fancu a-ai. Direct reading of absolute measure. Resolutions up to 0.1µm. Accuracy grade $\pm 5\mu\text{m}$.

About the company: Givi Misure has been established by experts in the field to provide low cost automation solutions to machine tools and other machines.

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INDUSTRIAL C TYPE POWER PRESS

Sachkhand Machine Tools offers a wide range of C type power press. The range of C type power press is manufactured using superior quality alloy steel and is extensively known for high load bearing capacity. The



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Contact:

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GRID CASTING MACHINE

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longer Industrial negative grid where the grid mould are heavy & manual casting.

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INDUSTRIAL ANGLE CUTTER

Vigshan Tools offers a wide range of angle cutters. The various attributes like durability and strength make their range of angle cutter high in demand. Manufactured using premium quality



carbide, these are used for shaping various equipment in diverse applications.

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*Vigshan Tools, Coimbatore
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RADIAL DRILL MACHINES

Technomech Machine Tools offers a wide range of heavy duty radial drill machines. These machines are widely used to deliver stable performance during drilling process. In addition to this, the machines offered by



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Contact:

*Technomech Machine Tools, Rajkot
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CARBIDE BURRS

SRT Industrial Tools & Equipments offers a wide range of carbide burrs. Offered standardized carbide burr tools for industrial use. This standard comes with two



popular cuts: double cuts and single cuts.

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CNC CUTTING TOOLS

Get Cutting Tools provides a wide range of CNC cutting tools. The firm offers an extensive array of CNC cutting tools to cater to various needs; the cutting tools are designed for CNC turning centres,



VMC, turnmill centres, and HMC of various capacities for automation of metal.

Contact:

*Get Cutting Tools, Pune
Mobile: 09890960067, 07875773447
Email: info@getcuttingtools.com*

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HYDRAULIC PRESS BRAKE

Techno Crafts offers a wide range of Boschert Profi 28 a press brake with hydraulic drives. With a press force of 280 kN (28t) and, for example, a bending length of 300 mm, this can



bend material of up to 10 mm thickness.

Contact:

*Techno Crafts, Pune
Tel: 020-25425551
Mobile: 09422319755
Email: technocrafts@vsnl.com*

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Indian auto component industry reaches \$ 36.1 bn in H1 FY 23-24

Automotive Component Manufacturers Association of India (ACMA) announced industry performance review for the first half of fiscal year 2023-24 which shows growth in exports and imports by 2.7 per cent and 3.6 per cent respectively.

Automotive Component Manufacturers Association of India (ACMA), the apex body representing India's Auto Component manufacturing industry announced the findings of its Industry Performance Review for the first half of fiscal 2023-24. The turnover of the automotive component industry stood at Rs.2.98 trillion year (\$36.1 billion) for the period April to September 2023, registering a growth of 12.6 per cent over the first-half of the previous year.

Vinnie Mehta, Director General, ACMA said, "With vehicle sales and exports displaying steady performance, the auto component industry demonstrated a growth of 12.6 per cent scaling a turnover of Rs 2.98 trillion (\$36.1 billion) in the first-half of FY 2023-24. Auto component supplies to all segments of the industry that is to OEMs, Exports as also the aftermarket remained steadfast. Exports grew by 2.7 per cent to \$10.4 billion (Rs 85.87 trillion) while imports grew by 3.6 per cent to \$10.6 billion (Rs 87.42 trillion). The Aftermarket, estimated at Rs 45,158 crore also witnessed a growth of 7.5 per cent. Component sales to OEMs in the domestic market grew by 13.9 per cent to Rs 2.54 trillion."

Shradha Suri Marwah, President, ACMA & CMD, Subros said, "With vehicle sales across all segments, reaching prepandemic levels and with mitigation of supply-side issues witnessed during the pandemic such as availability of semiconductors, high input raw-material costs and non-availability of containers, the auto components sector witnessed a

steady growth in both domestic and the international markets in the first-half of FY2023-24."

Elaborating on the mood of the industry and outlook for the near to mid-term future, Marwah mentioned, "Going forward, considering the festive season has gone well with significant sales across most segments of the vehicle industry, I am optimistic that the current fiscal year will witness another good performance from the auto components sector. The components industry continues to make investments for purposes of higher value-addition, technology upgradation and localisation to stay relevant to both domestic and international customers."

Key findings of the ACMA industry performance review for H1 2023-24

- **Sales to OEMs:** Auto Component sales to OEMs, in the domestic market, at Rs. 2.54 lakh crore (\$30.8 billion) grew 13.9 per cent compared to the first-half of the previous year. Consumption of increased value-added components and shift in market preference towards larger and more-powerful vehicles continued to contribute to the increased turnover of the auto-components sector.
- **Exports:** Exports of auto components grew by 2.7 per cent to \$10.4 billion (Rs 85,870 crore) in H1 2023-24 from \$10.1 billion (Rs 79,033 crore) in H1 2022-23. North America accounting for 33 per cent of exports and Europe for



another 33 per cent, saw an increase of 2 per cent, and 12 per cent respectively while Asia accounting for 24 per cent, witnessed a decline of 4 per cent.

- **Imports:** Imports of auto components grew by 3.6 per cent from \$10.2 billion (Rs 79,815 crore) in H1 2022-23 to \$10.6 billion (Rs 87,425 crore) in H1 2023-24. Asia accounted for 63 per cent of imports followed by Europe and North America, with 27 per cent and 9 per cent respectively. Imports from Asia grew by 2 per cent, from Europe by 8 per cent and from North America by 2.5 per cent.
- **Aftermarket:** The aftermarket in H1 2023-24 witnessed a growth of 7.5 per cent to Rs 45,158 crore (\$5.5 billion) from Rs 42,007 crore (\$5.4 billion) in H1 2022-23. IPF



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“Coolants will keep game going for us with EVs in auto sector”

Incorporated in the year 1987, Fleetguard Filters Private Limited is a leading manufacturer and supplier of filtration products comprising of air, lube, fuel, hydraulic and water filtration to coolants and chemicals. In this interview with Ayushi Khandelwal, **Niranjan Kirloskar**, Managing Director of Fleetguard Filters tells how company has achieves a well-established supply chain system while maintaining the quality of its filters throughout the years.

What trends are shaping industry's future? Is the growing EV industry will affect the future of filtration industry in automobile sector?

A significant shift in the industry involves the continuous reduction in filter sizes, paving the way for a future where we can breathe the exhaust from an engine without concern. Sustainability is poised to shape the industry's future, with ongoing efforts to develop technologies compatible with alternate fuels and ready for potential transitions like India adopting BS6 or BS7 standards.

In the realm of electric vehicles (EVs), the absence of oil, traditional fuel, and air is notable. However, the need for coolants to maintain optimal motor temperature remains a constant. As EVs become more prevalent, the demand for coolants ensures that the filtration industry will remain a key player in supporting these advancements. Filtration has undeniably played a crucial role in shaping the trajectory of the automotive industry and other industrial usage.

Can you highlight any recent product developments?

We've initiated the provision of modules for fuel and lube filtration. Our approach involves consolidating all filter components, such as casting heads and special sensors, and delivering them as a comprehensive package. Specifically for wet filters, we offer modules designed for both BS6 and BS4 vehicles. In the realm of



air filters, we go beyond by supplying the complete air intake system, encompassing approximately 15 distinct parts. This strategic initiative is aimed at enhancing the value we deliver to our customers.

How do you ensure the quality and reliability of your filtration products?

To ensure the delivery of the best quality, our primary focus is on investing in top-notch machinery designed to meet our quality specifications. Some of our machineries are our sourced globally and some we either development in-house or collaborate with Indian suppliers. Another crucial aspect is the establishment of robust processes. Our dedicated team of experts oversees this, implementing well-defined systems and methodologies to meet specific filter specifications. Upon the arrival of

machinery, a meticulous setup is carried out, followed by a trial run lasting at least a month. Only after successful trial runs do the machines proceed to mass-scale production. Additionally, we adhere to stringent quality systems such as QoS and ISO, which are already integrated into our operations.

Supply chain has been a major issue faced by the industry nowadays. How do you look at this issue?

In this domain, our primary approach diverges from traditional forecasting and schedules. Instead, we embrace a consumption-based system. Our operational framework incorporates a buffer system, featuring strategically positioned warehouses that directly cater to customer needs. With a network of five warehouses strategically situated across the country, we establish seamless connectivity with our customers. The system ensures that whatever they consume is manufactured within a swift two-day timeframe and subsequently dispatched for delivery on the third day. So, our lead time to our customer is only the transportation time from the warehouse to their point of usage.

IPF



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Rohde & Schwarz verifies NXP's next-gen auto radar sensor

NXP's next generation automotive radar sensor reference design is enabled by the industry's first 28 nm RFCMOS radar one-chip SoC family leveraging the R&S RTS radar test system.

The radar target simulator R&S RTS, Rohde & Schwarz' game-changing solution of automotive radar, in particular its ability to electronically simulate very close-range objects, has been used to verify the performance of NXP Semiconductors' next-generation radar sensor reference design. This collaboration enables the automotive industry to take another step forward in the development of automotive radar, the principal technology that enables advanced driver assistance systems (ADAS) and autonomous driving features.

Engineers from both companies conducted a comprehensive series of tests to verify the new sensor reference design which is based on a NXP's 28 nm RFCMOS radar one-chip SoC (SAF85xx). The R&S RTS radar test system combines the R&S AREG800 automotive radar echo generator with the R&S QAT100 antenna mmW frontend, offering unique short-distance object simulation capabilities as well as superior RF performance and advanced signal processing with many advanced functions. This enables realistic tests of next generation automotive radar applications and brings automotive industry's vision of fully autonomous driving one step closer.

NXP's next generation automotive radar sensor reference design is enabled by the industry's first 28 nm RFCMOS radar one-chip SoC family leveraging the R&S RTS radar test system. The radar sensor reference design can be used for short, medium and long-range radar applications to serve challenging NCAP (NCAP: New Car Assessment Program) safety requirements as well as comfort functions like highway

pilot or urban pilot for the fast-growing segment of L2+ and L3 vehicles.

The R&S RTS is the only test system suitable for complete characterization of radar sensors and radar echo generation with object distances down to the airgap value of the radar under test. It combines the R&S AREG800A automotive radar echo generator as a backend and the R&S QAT100 antenna array or the R&S AREG8-81S as a frontend. The technically superior test solution is suitable for the whole automotive radar lifecycle including development lab, hardware-in-the-loop (HIL), vehicle-in-the-loop (VIL), validation and production application requirements. The solution is also fully scalable and can emulate the most complex traffic scenarios for advanced driver assistance systems.

Adi Baumann, Senior Director ADAS R&D, NXP Semiconductors, stated, "We have been collaborating closely and successfully with Rohde & Schwarz for many years on the verification of our automotive radar sensor reference designs. Rohde & Schwarz' cutting-edge automotive radar test systems allows us high-quality and highly efficient validation of our automotive radar products and proves outstanding performance of our radar one-chip. The level of experience, quality and support that Rohde & Schwarz provides to NXP is making a difference."

Gerald Tietscher, Vice President Signal Generators, Power Supplies and Meters from Rohde & Schwarz, said, "We are grateful for the collaboration with NXP to accelerate the deployment of advanced automotive radar sensors based on 28 nm automotive radar chips. They serve ever more challenging NCAP



NXP has chosen the R&S RTS radar test system to verify their radar sensor reference design based on the industry's first 28 nm RFCMOS one-chip radar SoC.

safety requirements and will help enable new safety applications. Our experience in automotive radar testing allows us to provide a best-in-class test solution for this radar sensor design based on the industry's first 28 nm RFCMOS one-chip radar SoC."

The Munich based Rohde & Schwarz is striving for a safer and connected world with its Test & Measurement, Technology Systems and Networks & Cybersecurity Divisions. For 90 years, the global technology group has pushed technical boundaries with developments in cutting-edge technologies. The company's leading-edge products and solutions empower industrial, regulatory and government customers to attain technological and digital sovereignty.

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Excon 2023 breaks new ground in construction equipment industry

Excon showcased the latest in construction technology, reflecting India's commitment to revolutionising the industry and establishing itself as a global leader in machinery innovation.

In the heart of Bengaluru, the Bangalore International Exhibition Centre (BIEC) recently played host to one of South Asia's most significant events – Excon 2023. From December 12 to December 16, this bustling hub witnessed the convergence of over 1,200 exhibitors, both domestic and international, marking the 12th edition of the Confederation of Indian Industry (CII) organised extravaganza. The sprawling 30 lakh sq. ft display area was a testament to the grandeur of an event that has become synonymous with innovation, collaboration, and the future of India's construction industry.

Excon 2023 was not merely a local affair; it was a global rendezvous. The event attracted exhibitors from countries as diverse as Austria, China, Czech Republic, France, Germany, Italy, Romania, Russia, South Korea, Spain, Sri Lanka, Turkey, the United Arab Emirates, the United Kingdom, and the United States of America. This international participation underscored the global recognition of India's position as a hub for construction equipment manufacturing.

Nitin Gadkari, Minister of Road, Transport and Highways, Government of India, inaugurated the event. While delivering his inaugural speech, he expressed optimism about India's construction sector becoming the world's largest within the next five years. "The construction sector in India currently ranks as the world's third largest. Yet, by fostering collaborative endeavours among stakeholders, and corporations, and through substantial government support, we have the potential to propel it to the top spot



Nitin Gadkari (centre), Minister of Road, Transport and Highways, Government of India, inaugurating Excon 2023

within the next five years."

Chandrajit Banerjee, Director General, Confederation of Indian Industry, in the inaugural session said, "Currently, India's construction equipment industry is exporting to over 140 countries. To enhance sustainability and efficiency, private players in the construction sector should focus on automation, the adoption of advanced technologies, global best practices, the use of alternative fuels, and innovations in utilising waste materials as raw materials for construction projects. This approach aims to reduce both the cost of construction and the rate of pollution."

Vivekanand Vanmeeganathan, President, Indian Construction Equipment Manufacturers Association (ICEMA), said, "We are grateful for the invaluable guidance provided by Nitin Gadkari in steering India's construction sector. With confidence, we anticipate that in the coming years, the industry will

continue to draw upon his insights, striving to become not only the most sustainable but also the world's topmost innovator."

The technological wave

The construction industry is undergoing a profound technological revolution. Generative Artificial Intelligence is reshaping the design process, creating highly efficient and innovative structures. Technology has become the bedrock for gradual expansion and enhanced efficiency in the sector. It's not just about building; it's about building smarter, more sustainably, and with a keen eye on inclusiveness.

The highlight of the event was the world's first hydrogen powered JCB in India. For a long time, India has been a strong advocate of green hydrogen and the introduction of the hydrogen JCB falls in line with the vision of the Indian government which views green hydrogen as the fuel for the future.

Caterpillar India introduced a new

series of excavators in this edition, emphasising improved fuel efficiency, lower maintenance costs, and enhanced durability. **Amit Bansal, Director Sales & Marketing-BCP Division, Caterpillar India**, stated, "The machines can operate from -32oC to 52oC, suitable for use from the Himalayas to Rajasthan."

Volvo CE India showcased a monumental step towards sustainability with the largest display of electric machines in the country. The EC500 Electric excavator, L120 Electric wheel loader, and other electric machines demonstrated Volvo CE's commitment to reducing carbon footprints. The Equipment-as-a-Service (EaaS) business model and new-age service solutions underline Volvo CE's dedication to customer success and maximum uptime.

SANY India unveiled a groundbreaking lineup of 15 new models, including revolutionary electric construction machines. Spearheading the industry's shift towards sustainability, these electric machines promise superior operating economics without compromising safety or efficiency. The showcased products range from the futuristic Electric Wheel Loader SW956E to the powerful Crawler Crane SCS800A, setting a new standard for the construction landscape.

Komatsu India (KIPL) and Larsen & Toubro Limited (L&T) showcased their technological prowess and service capabilities, introducing hybrid technology and bio-fuel compatibility in construction equipment. The exhibition highlighted a comprehensive suite of services, including smart construction solutions and advanced oil analysis programmes.

Beyond the surface

Excon 2023 wasn't merely about showcasing the latest construction machinery. It was a multi-faceted platform, addressing diverse aspects of the industry. Alternate fuels, Artificial Intelligence pavilion, Aatma Nirbhar Bharat, skills, women operating construction equipment, conferences on defense and paramilitary, green construction focusing on sustainability, Internet of



Excon 2023 showcased innovation, collaboration, and the future of India's construction industry

Things, and automation in the construction engineering sector were among the many highlights.

The event was more than just a trade show; it was a dynamic catalyst propelling India towards continuous progress. As **Deepak Garg, Managing Director, Sany India**, aptly put it, "Excon 2023 is more than just an event; it serves as the driving force behind India's continuous progress, symbolising our robust infrastructure development and solidifying India's prominent global position in the construction equipment manufacturing sector."

The voices of industry leaders echoed the sentiment of a sector in the midst of transformation. **Amarnath Ramachandran, Managing Director, ARX Mining & Construction Equipment**, stated, "Excon is an excellent platform for us to display our machines and connect with contractors nationwide. In 2024, we expect significant growth, exceeding market indicators."

Vijay Kumbhani, Director Business Development, Kaushik Engineering Works, shared the long-standing relationship his company has with Excon, stating, "We've been actively participating in Excon for the past two decades, starting from the very first edition.

Excon has proven to be a valuable platform, providing us with good leads not only from all over India but particularly from South India."

Yasunori Fujii, Managing Director, Komatsu India, said, "Excon is a major event for us. This year, we're showcasing the PC01. The highlight is our first hybrid excavator, a certified premium equipment refurbished with a beautiful roof and standard warranty. We're particularly proud that it's entirely manufactured in India."

As the industry propels itself into the future, Excon remains a vital cog in the wheel, driving India's infrastructure development requirements. The commitment to innovation, sustainability, and inclusivity was palpable throughout the event. Excon 2023 was not just about building structures; it was about building tomorrow - a tomorrow where India stands tall as a global leader in construction equipment manufacturing.

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Five trends that will shape the manufacturing world in 2024

While businesses are continuing to invest in digital transformation initiatives, they are increasingly looking for actionable roadmaps which can deliver results incrementally, says **Poornima Arni**.

With large scale digital transformation programs becoming more prevalent, the manufacturing industry continues to ride the wave with a growing focus on product development, improving efficiencies, and driving new business models and customer experiences. As per a report from Deloitte, digital transformation is a top strategic priority for 94 per cent of executives in industrial products and services companies.

Traditionally, manufacturing organisations have been managing numerous applications and systems across different business units while largely working in silos. It has become crucial to evaluate the landscape in terms of modernization, driving a move to the cloud while investing in data and analytics platforms. Essentially, the end goal is to identify areas of digital value creation through data driven insights, automation, and process optimizations. As a result, we have found that businesses are continuing to invest in digital transformation initiatives but will increasingly look for actionable roadmaps which can deliver results incrementally.

As we begin 2024, there is a lot of traction building in the industrial and manufacturing segments and I foresee 5 major trends that will continue to shape the ever evolving landscape.

1: Rise of Industry 5.0: Complementing Industry 4.0

While Industry 4.0 focused on connecting machines and systems, Industry 5.0 will augment the

organization journey with a sharp focus on areas like worker empowerment that would cover human-machine interaction, upskilling of workers, and enablement with digital devices & automation. Sustainability initiatives would also be prioritized with a focus on minimizing waste, reducing environmental impact, alternate energy sources and electrification. Finally, there will be increased focus on enhancing customer experience with greater personalization and new product development.

Organizations will continue to focus on Industry 4.0 initiatives based on their maturity and innovation quotient and I see growing investments flowing in towards Industry 5.0 to further augment ongoing programs.

2. Progression of industrial metaverse

Increased adoption of IOT devices and 5G in Smart Factories is enabling large, real time data collection and monitoring, improvement of productivity, and reduction of down-time. The manufacturing sector is expected to demand more 5G IoT devices than any other sector. Edge computing will remain center stage and accelerate innovation and provide timely data analysis. In 2024, we expect more use cases for AI workloads closer to the source – along with data, image, video, and speech applications.

Digital Twins are enabling



transformation of industrial processes and the merging of physical and digital worlds. This will promote visualization and simulation of both machines and processes - to provide visibility and optimize production processes, improve utilization and throughput. Simulations based on performance data and alternate scenarios will help predict impacted behavior and future performance. In 2024, Digital Twins are expected to play a much more impactful role in optimizing production processes.

Manufacturing organisations are increasingly moving from equipment sales to 'Equipment as a Service' model and after-market services will become a strong differentiator. Products are now enhanced with IoT sensors, ML capabilities and can provide valuable insights about usage of products, health, among others and will provide improved customer experiences, unlock upselling and cross selling opportunities, and open new revenue-generation opportunities.

3: Widening reach of artificial intelligence

With increasing data that is collected by organizations, it is critical to identify the business outcomes



across the value chain and have algorithms enable the same. Use cases of predictive maintenance has greatly matured and are directly contributing towards greater utilization and improved performance of assets. IDC Manufacturing research shows that predictive maintenance plans can cut expenses up to 20% while boosting asset availability by 20%.

Automated demand forecasting and inventory management are some of the areas where advanced analytics will play a crucial role to amplify visibility and growth across the supply chain. AI-enabled visual inspection for product quality is streamlining new product development. Customer 360 and product recommendations are helping build hyper-personalized customer experience and engagement. Organizations are already beginning to see ROI for their AI investments in these areas, while new use cases are evolving continuously as organizations strive

to drive disruption and stand tall as leaders and disruptors.

4: March towards sustainability

Manufacturing Organizations will increasingly look to develop new solutions and systems for managing sustainability goals. Initiatives around waste reduction, energy management, alternate fuels & materials and lower carbon emissions will attract greater interest and investments while circular economy will become more prominent to ensure safe recycle and reuse.

5: Exploring the promised land of generative AI

Manufacturing organisations are experimenting with generative AI use cases around information support, chatbots for customer service, product design & development. With all the hype surrounding it, there is also cautiousness in the approach as manufacturing processes are quite complex and potentially impact an entire ecosystem of partners and machinery & equipment.

Organizations are actively investing in in-house talent, while they work with partners for evaluation of use cases and platform engineering. Emergence of more powerful models, enabling content generation across text, images, audio, and video will unlock new

possibilities and promote quicker movement from Proofs of Value (POVs) to real-world use cases.

Summing up

In conclusion, the Manufacturing Industry in 2024 will be characterised by continued advancements in technology, increased automation, productivity improvements, commitment to sustainability goals and greater emphasis on addressing evolving customer needs. This will foster a more agile, sustainable, and technologically advanced future for the industry.

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About the author:

Poornima Arni is the Industrial & Manufacturing Head at Happiest Minds Technologies, which enables digital transformation for enterprises and technology providers by delivering seamless customer experience, business efficiency and actionable insights through an integrated set of disruptive technologies: big data analytics, internet of things, mobility, cloud, security, unified communications, etc.



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NEWS SNIPPET

Bosch India realigns its global mobility business

Bosch, a leading supplier of technology and services, has realigned its Mobility Business to deliver regional growth and customer centricity. Effective January 1, 2024, Sandeep Nelamangala, Joint Managing Director of Bosch Limited, Executive Vice President – sales, Mobility Solutions, Bosch India, will steer the mobility business in India, in addition to his current responsibilities.

Nelamangala, who is the Head of sales and associated with Mobility Solutions so far, will also oversee the realigned structure now, handling the technology and strategic developments for the region. Bosch's major focus behind this realignment is to empower the regions to serve existing and new customer needs better and offer them with customized technologies and solutions.



Sandeep Nelamangala,
Jt MD, Bosch Ltd

"As we deepen our focus on developing indigenous and cost-effective solutions with this realignment globally, Sandeep's leadership will be important to cater to our customers' needs better and emerge as the preferred system solution provider for new-age technologies in India," said Guruprasad Mudlapur, President of the Bosch Group in India, and Managing Director, Bosch Limited.

"With a customer-focused culture at the heart of our strategy, backed by a large software team of Bosch in India, we strive to deliver innovation and seamless integration of hardware and software, in our goal to be the preferred partner for mobility and a one stop solution for our customers' needs," added Sandeep Nelamangala.

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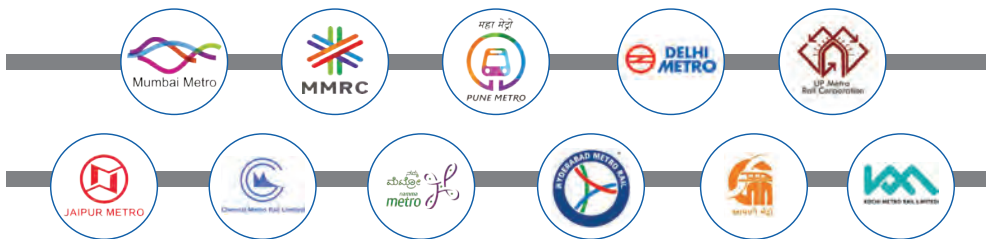
KEY HIGHLIGHTS OF THE CONFERENCE:

-  India boasts the third-largest metro network globally, with operational lines in 20 cities across 900 km.
-  By 2047, it is targeting 5000 km of operational metro rail in 100 cities.
-  Explore strategies for sustainable metro expansion in cities with varying populations.
-  Discuss the role of metros in curbing emissions, reducing congestion, and enhancing urban mobility.
-  Examine case studies of successful metro implementations and ridership growth.
-  Explore technologies which promote safety and sustainability.

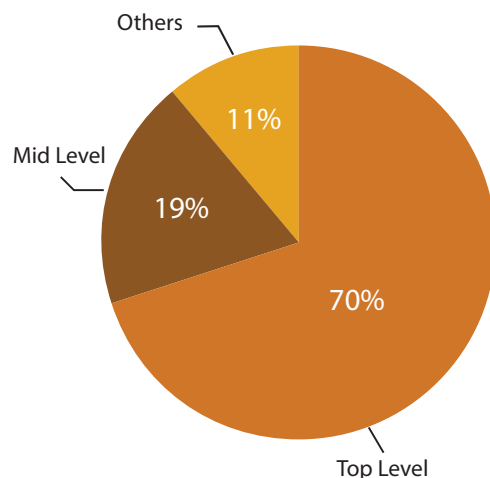
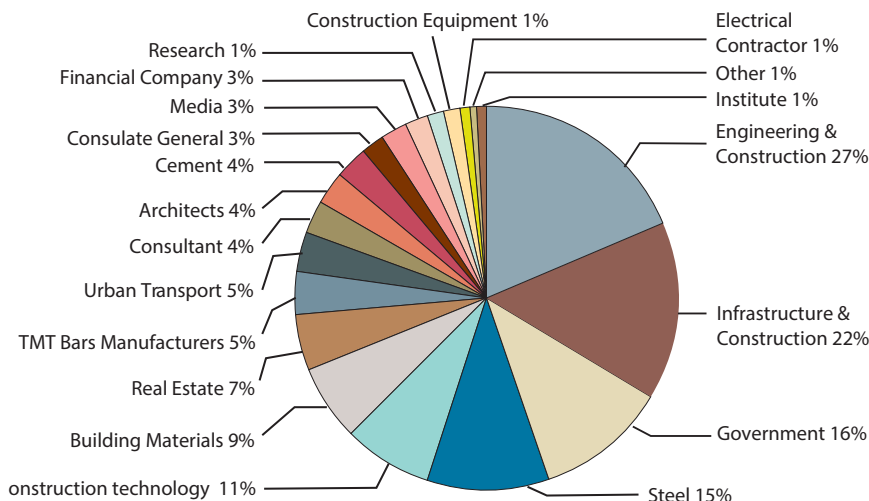
ANTICIPATED RESULTS:

-  Networking prospects for stakeholders to engage in collaborative efforts for upcoming metro initiatives.
-  Development of practical strategies for expanding metro networks in burgeoning cities.
-  Understanding of the environmental and economic advantages associated with metro rail.
-  Insights into financing models to ensure the financial sustainability of metro projects.

METRO RAIL ORGANISATIONS THAT ATTENDED THE CONFERENCE



PROFILE OF METRO RAIL ATTENDEES:



OUR ESTEEMED SPEAKERS



Vinay Kumar Singh
MD,
NCRTC



UJM Rao, IRAS
MD,
Andhra Pradesh
Metro Rail Corporation Ltd.



Anjum Parvez
MD,
BMRCL



KVB Reddy
MD & CEO,
L&T Metro Rail
(Hyderabad) Ltd.



Ashwini Bhide*
MD,
Mumbai Metro Rail
Corporation Ltd.



VK Srivastava*
MD,
Kolkata Metro
Rail Corporation Ltd.

* Invited

PANEL DISCUSSIONS:

Panel 1 - Technological Innovations in Metro Rail Infrastructure

Panel 2 - Smart Metro Cities: Integrating Metro Rail with Urban Development

Panel 3 - Improving Ridership for Metro Rail Network

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Efficient SCM a must for B2B brands in India

ERP systems are like magic wands for businesses. When ERP is combined with supply chain management (SCM), it means having the most up-to-date information to make the right choices says **Nirav Doshi**.

In the ever-changing world of Indian B2B brands, managing the way goods and services move from one business to another is crucial. This is where Supply Chain Management (SCM) comes into play. SCM helps businesses handle their processes smoothly, from getting products ready to delivering them to other businesses online. It's not just about making customers happy; it's about saving money and making more profits, making it a vital part of the success story for B2B brands.

The critical role of SCM for B2B brands

B2B transactions involve big quantities and complicated deals, so having a good SCM system is a must. This means making sure everything from buying materials to making the product, managing stock, sending out orders, and handling shipping all works together seamlessly. To do this, businesses often use high-tech tools like Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM). Efficient SCM is like a superhero for businesses – it saves costs, makes customers happy, and ensures things are delivered on time.

Unique challenges in B2B operations

In the B2B world, meeting deadlines is super important. Unlike buying something online as a regular customer, B2B companies must navigate tighter deadlines, as the precise timing of product delivery is crucial for maintaining the smooth flow of the supply chain.

Thankfully, the internet has made things easier for B2B businesses. They can find a wide range of suppliers and compare prices for



different parts of the supply chain, helping them save money. Negotiating prices and checking out the competition at each stage of the supply chain gives B2B companies the power to make smart decisions.

The role of ERP integration in B2B brands

ERP systems are like magic wands for businesses. They bring everything together in one place, making it easy to access information across different parts of the business. When ERP is combined with SCM, it means having the most up-to-date information to make the right choices.

Adding a touch of artificial intelligence (AI) to eCommerce software through ERP also helps predict things like weather conditions, which can affect supply and demand. This way, businesses can plan better and be ready for whatever comes their way.

The cost-saving benefits of automation

Imagine if your business could run itself in many ways – that's what automation does. It cuts down on costs and saves time. SCM and ERP working together don't just benefit the business; they make the entire supply chain work better, making customers happy. Being able to customise software for different parts of the supply chain process is like having a tool that fits the job perfectly.

Significance of supply chain efficiency in B2B

Supply chain efficiency is like the secret sauce for success in the B2B world. It's all about getting products to the right place at the right time while spending the least amount of money possible. This efficiency means faster order processing, smarter inventory management, and quicker deliveries leading to profits.

In India, where B2B markets are diverse and complex, having an efficient supply chain is even more critical. Navigating through different suppliers and sticking to tight delivery schedules is the key to success in this competitive landscape. Efficient supply chain management is a game-changer for B2B brands in India. By using advanced technologies like ERP and CRM, along with the internet for connecting with suppliers, businesses can make their operations more efficient and save money. Automation adds the finishing touch, making communication smoother and the entire supply chain more effective. As B2B eCommerce evolves, focusing on supply chain efficiency is the secret recipe for sustained growth.

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About the author



Nirav Doshi, the Founder and Managing Director of NIDO Machineries, is a forward-thinking entrepreneur in the machineries, automation, and robotics industry.



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“ABB sees India as a key growth market with immense potential”

ABB's Measurement & Analytics business unit is one of the world's leading manufacturers and suppliers of smart instrumentation and analysers. Leading this business globally is **Jacques Mulbert**, President of ABB Measurement & Analytics, which has more than 4,000 people spanning across 60 countries, with 24 manufacturing and integration locations. In this interview with Rakesh Rao, Jacques Mulbert explains why smart measurement & analytics solutions are the key for sustainability, operational efficiency and cost reduction.

Could you please provide us an overview of ABB Measurement & Analytics and its business in India?

Measurement & Analytics Division is organised into three business lines namely Instrumentation, Analytical & Force Measurement Products & Solutions. We have some of the world-renowned brands in our portfolio and we have more than 100 years legacy of serving our customers globally. In India we have our presence since several decades.

ABB boasts a newly built Smart Instrumentation Factory and a dedicated System Integration Unit for analytical measurement solutions in India. These units play a pivotal role in providing cutting-edge products and solutions, particularly catering to the oil and gas, petrochemical, chemicals, water, power and various other segments. Through seamless integration, ABB delivers highly valued solutions that have left a mark on prestigious projects in India, including India's one of the largest petrochemical complexes.

Acknowledging its contribution to the nation's industrial landscape, the company's prowess extends to critical sectors like the metal and paper industries. With a strong commitment to supporting these industries, the company has become an integral part of projects involving major players such as Tata Steel and JSW. ABB's involvement spans over several years, demonstrating a sustained dedication to providing state-of-the-art solutions.



The company's expertise in areas like flatness control, thickness gauges, and tension measurement solutions has positioned it as a trusted partner in enhancing the operational efficiency of metal and paper industries. ABB's commitment to excellence is evident in its enduring partnerships and contributions to the success of renowned projects, solidifying its reputation as a key player in India's industrial transformation.

As ABB continues to pioneer advancements in analytical measurement solutions, its impact on critical industries reverberates across the nation. The collaborative efforts with industry leaders and the successful execution of projects underscore ABB's commitment to pushing the boundaries of

technology, thus playing a vital role in shaping the future of India's industrial landscape.

What are the key challenges faced by industries (your customers) today? How are you helping them overcome some of these challenges?

The contemporary landscape of process industries is undergoing unprecedented challenges, demanding increased efficiency and a relentless pursuit of sustainability. Customers, across various sectors, are tasked with optimising their operations amidst tightening global regulations, which include rigorous standards even in countries like India. The recent surge in energy costs and raw material expenses compound the complexity, creating a constrained environment for industry players.

In response to these challenges, ABB is leveraging its technological prowess to empower plant operators to maximise the performance of their assets. Within the intricate web of process industries, characterised by a multitude of measuring points in each plant, ABB provides precision instruments with remarkable repeatability. The diversity of these measuring points reflects the amalgamation of old and new assets, a reality that introduces unique challenges for operators.

A significant hurdle faced by customers is the fragmentation of applications and data, residing in isolated silos. ABB's strategic response involves bridging the

physical and digital realms to offer a holistic solution. An embodiment of this initiative is the imminent launch of ABB Ability SmartMaster, an advanced asset performance management platform. This innovation interconnects field devices and instruments, such as flow meters, temperature sensors, pressure transmitters, and level devices, to a digital framework.

Through this integration, ABB delivers a wealth of valuable information to its customers, presenting a comprehensive overview of the health status of each device. The transition from preventive to predictive maintenance becomes a reality, aiding customers in remotely managing their assets in the field. This not only reduces operational expenditures (OPEX) but also facilitates the optimization of processes, contributing to overall operational efficiency.

Pollution (air & water) is one of the major concerns in many Indian cities today. How are you helping industries to minimize their impact on the environment?

In the throes of rapid urbanization, cities worldwide, including those in India, grapple with the consequences of environmental stressors on air and water quality. ABB, cognizant of this global challenge, stands at the forefront with technological solutions aimed at alleviating the pressures accompanying swift urban expansion. Stringent regulations, a response to the urgent need for cleaner air and water, underscore the critical nature of ABB's role in assisting cities.

Addressing air quality concerns, ABB's focus spans across diverse fronts. Notably, the company champions the cause of emission monitoring for industrial sites, recognizing the potential hazards associated with uncontrolled emissions. With a global footprint boasting in excess of 60,000 continuous emission monitoring systems in over 50 countries, ABB also has a significant presence in India, having a large installed base

of these systems. Recent endeavours include the deployment of such a system in northern India for a waste-to-energy plant, exemplifying ABB's commitment to regulating and improving industrial emissions.

For water solutions, we are working with the water utilities to allow them to have actionable data so they can improve their water distribution. And this is specifically true of the leaks. So we give them ways to measure very precisely the flow, the pressure and the level, which are the three main characteristics that allow to optimise the distribution networks and to minimise the water leakages.

India is looking to encourage investment in green hydrogen and energy storage sectors. What kinds of opportunities does it present to you?

Navigating the landscape of hydrogen applications presents unique challenges, primarily rooted in the gas's flammability and its ability to permeate materials. ABB recognizes these hurdles and addresses them comprehensively. As hydrogen gains prominence, ensuring safety and scalability becomes paramount.

The first challenge revolves around preventing leaks, considering hydrogen's flammable nature. ABB employs precision in measurement using advanced metering & measurement. The second challenge, error's induced due to permeability caused by hydrogen's molecular size, calls for innovative solutions. ABB has introduced H-Shield, a nano-coating applied to its Pressure Transmitters, ensuring resistance to permeability and avoids costly solutions in pressure measurement like gold coating of diaphragms.

Beyond safety concerns, ABB delves into the intersection of hydrogen and sustainability.

Carbon capture emerges as a pivotal aspect, reflecting the interconnected nature of hydrogen and environmental responsibility. ABB actively contributes to carbon capture solutions (CCS), exemplified by its involvement in the Northern Lights

CCS project in Norway.

Collaborating with major players such as Equinor, Shell and Total, ABB works on identifying contaminants in CO₂ before storage. This tailored solution underscores ABB's commitment to advancing technologies that contribute to a more sustainable future.

As hydrogen gains momentum on the global stage, ABB positions itself at the forefront, not only mitigating challenges but also propelling innovations that align with the evolving landscape of clean and sustainable energy solutions. In essence, ABB's multifaceted approach ensures that as hydrogen takes centre stage, it does so safely, sustainably, and with a commitment to environmental stewardship.

What are your growth plans in India?

Looking ahead, ABB sees India as a key growth market with immense potential. With a commitment to double-digit growth in the coming years, the company envisions substantial investments in infrastructure, water, sanitation, and emissions monitoring projects. ABB's recent establishment of a smart manufacturing plant in Bangalore is just the beginning of its ambitious plans for India.

In a bid to harness local expertise, ABB aims to expand its research and development initiatives in India. The company envisions India not only as a market for its products and solutions but also as a hub for innovation and export. As ABB gears up for the next five years, its focus on digitalization, sustainability, and smart manufacturing positions the company as a significant contributor to India's industrial evolution.

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(With inputs from Pranay Maniar)



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“We expect to grow by 10-15%, focus on Indian, global market”

Tacklers Engineering is a leading manufacturer of material handling equipment in the India. In this interview **Nirag A Choksi and Aman A Choksi**, Directors, Tacklers Engineering Private Limited (formerly known as Techno Industries) shares about its manufacturing facilities in India. Company plans to add cutting edge range of products to its portfolio with some global collaboration, they added.

How is your company fulfilling the material handling needs to its customers?

For nearly five decades, Techno Industries have been catering to the varied customer base across sectors such as heavy engineering, construction and infrastructure, steel, power, ports any many more.

We fulfil our valued customers in 5 major ways: 1) We directly supply our MHE to OEM/projects based (original equipment manufacturers), 2) we supply to the government institutions through tendering process, 3) we offer our product range to our channel partners across nation, 4) we cater our customer through EPCs consultants, and 5) we directly export our products to the global markets.

Can you brief us on your manufacturing capabilities? How are you upgrading your facilities with the emerging industry trends?

Our state of the art technology manufacturing facilities is spread across over 200,000 sq ft with 2 units based in Ahmedabad, Gujarat and 1 unit in Bangalore.

Our core competence lies in providing customised solutions that are design, estimation, fabrication,



Nirag A Choksi (Left) and Aman A Choksi

installation and commissioning. We also have shed, testing facility and additional land where we are on verge of expansion with sheds, painting booth and next generation CNC machinery.

What are some latest products and solutions from Tacklers Engineering?

While material handling equipment such as EOT crane, Hoists, etc have been our forte for last many years – which we have been offering in our Tacklers Brand, we are the strategic partner of Columbus Mckinnon brands – a) STAHL Crane Systems for EOT crane and Components, and b) Pfaff-siberblau for drive technology, lifting and traffic engineering solutions. We have also form a business alliance with Mennekes for industrial plugs and sockets. Over and above

catering to the conventional sectors, we are more focusing on newer applications such as railways, ports, warehouses, and logistics etc. We are further in discussion with the global players for adding the new product range so as to enhance our market presence.

Is the customer's requirement for the MHE changing with the emerging trends such as automation, robotics etc?

The basic application for MHE

We are the strategic partner of STAHL Crane Systems for EOT crane and Components and Pfaff-siberblau for drive technology, lifting and traffic engineering solutions.

Techno Industries have developed SOPs/SOGs for the critical functions/ departments that enable us to check processes, systems, documentation at each stage of manufacturing.

remains same and simple that is to provide lifting solutions effectively and efficiently, while minimising the human efforts. Automation and robotics assists in the further making it more efficient. We do have an efficient team of design engineers having adequate knowledge of software such as Autocad, Solidworks, Ansys etc assisting the manufacturing team to manufacturer better products for our valued customers.

Companies across industries are emphasising on sustainability. How is your company serving the sustainability route?

Unlike petroleum-powered machine/equipment, material handling equipment like EOT crane and Hoists are mainly used for lifting purpose does not generate emissions. Powered by electricity, sustainable overhead lifting equipment has a significantly lower carbon footprint. Equipped with load-specific attachments and

We do have an efficient team of design engineers having adequate knowledge of software such as Autocad, Solidworks, Ansys etc assisting the manufacturing team to manufacturer better products for our valued customers.

controllers that ensure steady, predictable movement, overhead lifting equipment reduces product damage. Further, overhead lifting systems are significantly less likely to leak oils and other fluids.

Further, Techno Industries have developed SOPs/SOGs for the critical functions/departments that enable us to check processes, systems, documentation at each stage of engineering and manufacturing.

What are your growth plans for the coming 2-3 years?

India Material Handling Equipment Market size is expected to reach by 2027, at a CAGR of 9.8 per cent. Further, all the end-use segment/sectors such as warehouse, logistics, railways, ports, and engineering is expected to grow at 7-9 per cent CAGR in upcoming years. With a further focus on exports, we are likely to penetrate in newer markets with our product range and this shall assist us to achieve an overall organisational objective. With this double-edged focus on India as well as global market, we expect Techno Industries to grow by 10-15 per cent.

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NEWS SNIPPET

Elgi powers the 11th edition of the Coimbatore Marathon

Elgi Equipments Limited, one of the world's leading air compressor manufacturers, is committed to fostering a sustainable and healthy lifestyle and living environment for employees, channel partners, and the community across the globe. As a demonstration of this commitment, ELGi is proud to power the 11th edition of the Coimbatore Marathon, the most significant sporting event in Coimbatore. The marathon aims to unite people passionate about running, walking, fitness, and wellness in general, helping them make a difference by raising awareness about cancer - the 2023 edition expects participation from over 18500 runners, including more than 1600 ELGi employees and their families.

During the last decade, the collaboration between Elgi



Equipments and the Coimbatore Marathon has transformed the fitness landscape in Coimbatore and helped make substantial progress in combating cancer, a critical health issue. The Coimbatore Marathon was conceived as a platform to raise awareness about cancer and support the Coimbatore Cancer Foundation (CCF). Over the years, this event has become synonymous with cancer awareness in the region. The proceeds from the

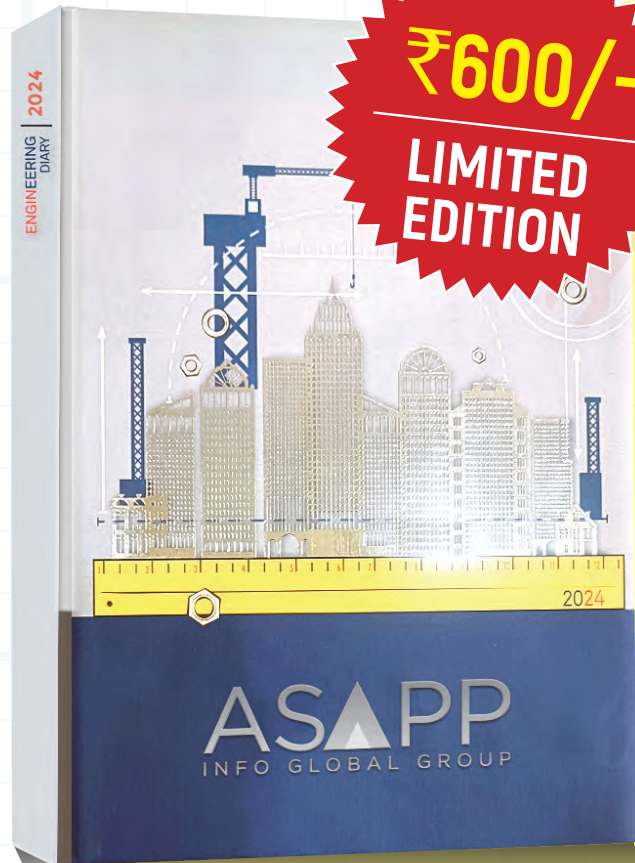
marathon have helped CCF expand its various activities, such as screening, counseling, and support groups, ensuring essential services are accessible to a greater number of individuals. In addition, the proceeds have also helped enhance the monetary aid provided to cancer patients, encompassing surgical procedures, chemotherapy, radiotherapy, diagnostic tests, hospital fees, and rehabilitation services.

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INITIAL PAGES' INFORMATION OF THE DIARY:

- Conversion Tables
- Weights & Measures
- Unit Conversion Factors & Conversion Power Tables
- Squares, Cubes, SQ. & Cube Roots
- Circumference & Area of Circles
- Non - Ferrous Metals
- Composition of Metals & Alloys
- Wire & Sheet Gauge
- Weight of Steel, Cast Iron, Materials & Mild Steel
- Dead Weight of Materials
- Live Loads on Floors & Roofs
- Rolled Steel Beams- Dimensions & Properties
- Equal & Unequal Dimensions & Properties
- Whitworth Standard Bolts & Nuts
- Square & Round Bars
- Conversion Table for Pipes
- Atomic Weight & Nuclear Cross Section
- Set Screws Hexagon Head
- Technical Information
- Useful Notes on Cement
- Dimensions & Technical



Tabulated Data Within:

The image shows a preview of the tabulated data within the diary, including:

- CONVERSION TABLES:** Length, Area, Volume, Weight, and Temperature.
- WEIGHTS & MEASURES:** Centimeters into inches, inches into feet, feet into miles, and kilograms into horsepower.
- Technical Information:** Atomic weight, nuclear cross section, and set screws hexagon head.

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Fronius India celebrates success of valedictory programme

Fronius India organises skilling project aimed to recognise and reward participants for their hard work and accomplishments, particularly for selecting welding as a career.

Fronius India, a subsidiary of Fronius International announced the successful completion of its skilling project, FACT, batch 4. The programme aimed to recognise and reward participants for their hard work and accomplishments, particularly for selecting welding as a career.

The batch 4 training programme, which began on September 25, 2023, was a 45-day of working days structured training programme that concluded on November 30, 2023. The fourth batch of 24 students was dominated by females (16 in total), which was a noteworthy highlight. This programme is meant to provide individuals with the information and abilities required to excel in welding, thereby contributing to personal growth and professional development and allowing them to make their foray into the industry as proficient welder.

Key highlights of the programme:

- ❑ **Diverse Participation:** The programme attracted students from all around India, demonstrating inclusiveness and relevance of the effort.
- ❑ **Comprehensive Curriculum:** Participants participated in a well-rounded curriculum that covered the fundamentals of welding in theory and practice, giving them a holistic understanding of manual welding jobs as well as the fundamentals of cyber security, balancing mental health at work, and soft skills.
- ❑ **Expert Guidance:** Renowned industry experts served as mentors and instructors, ensuring that participants received high-quality instructions and insights.



Fronius's FACT-Batch 4 with V V Kamath (in middle)

- ❑ **Placement Assistance:** Fronius India goes above and beyond by facilitating placement prospects for programme graduates. Several participants have already acquired promising employment in the welding sector, paving the way for their professional development.

- ❑ **100 per cent Scholarship Programme:** Fronius India fully supported the entire Programme by offering scholarship with 100 per cent fees waiver making it available to deserving students, which could be challenging and expensive to obtain such specialised training otherwise.

"We are overjoyed to announce the success of our Certificate Distribution Programme for FACT, Batch 4. Participants' excitement and effort have been absolutely motivating throughout these 45 working days, and we are overwhelmed with the passion of these students towards learning. This programme is aligned with our commitment to encouraging education and professional development, and we are thrilled to

see the positive impact on these exceptional individuals' careers. Everyone talks about the shortage of experienced welders, and the government is also working to address this gap, but it is a big challenge considering the quality and skillset required" V V Kamath, Managing Director of Fronius India, stated in his deliberations as "Need of the Hour."

Shrikrishna Karkare and Alka Karkare, Founders, Chairmen, and Managing Directors of Enpro Industries were impressed with the students' progress after viewing the welding gallery and artworks created by our students. They expressed their appreciation for this initiative mentioned that females should not seek for a separate privilege compared to males as there should be a gender equality in all fields of work and bestowed blessing on all the students.

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Klüber unveils specialised lubrication solutions at ComVAC

India ComVAC Show 2023 happened from December 14 to 16 at Pragati Maidan in New Delhi. The global expert in specialty lubricants, Klüber Lubrication, showcased complete range of lubricants, while showcasing sustainable future at the event.



The global expert in specialty lubricants, Klüber Lubrication, showcased its state-of-the-art solutions at the India ComVAC Show 2023 (December 14 to 16, Pragati Maidan). There is a particular emphasis on the solutions from Klüber Lubrication protecting and optimising the performance of compressors. This provides the benefit of reducing unwanted downtime and improving productivity through their complete range of lubricants, while parallelly working towards a healthy and sustainable future.

Unparalleled solutions for multiple applications

Compressors have to withstand

extremely high speeds, temperatures and pressures while being expected to have minimal unwanted downtime. Therefore, choosing the right compressor oil is vital – for the initial fill of a compressor as well as for regular oil changes.

Rotary vane and screw-type compressors must be kept free of oxidation residues to ensure trouble-free operation. Unfortunately, at the higher temperatures associated with compression, varnish can plate out on the rotors, bearings, shafts, and housings, as well as in the separators which leads to costly downtime and expensive repairs. The synthetic lubricants made by Klüber Lubrication consist of carefully

selected base oils and special additive combinations suited to the compressor requirements. They ensure that the entire system is kept clear of oxidation residue and sludge for extended compressor life.

Klüber Lubrication retains EcoVadis gold medal for Sustainability in 2023

Founded in 2007, EcoVadis is the world's largest and most trusted provider of business sustainability ratings, creating a global network of more than 1,00,000 rated companies, awarding a gold medal to only the top 4%. Klüber Lubrication won the gold medal first in 2022, and now we are proud to retain this

with an even better score in 2023. We are focused on both reducing our carbon footprint and increasing our handprint which mainly involves helping our customers be more sustainable.

Klüber Lubrication India's manufacturing plant in Mysore derives more than 55% of its energy from renewable sources. The proof: solar panels on the plant's roof. "With 300 sunny days in Mysore, our photovoltaic system will reduce smog-causing NOx emissions by 3.5 tons, SOx emissions, which could result in acid rains, by 3.2 tons and also decrease asthma-causing particulates by 0.2 tons. In addition, the project will reduce CO₂ emissions by roughly 1,110 tons, equivalent to more than 88,000 trees," says Hitendra Bhargava, CEO and Regional Management Board Member Asia Pacific at Klüber Lubrication. "Where Klüber really shines is in helping their customers be more sustainable through the use of their longer lasting and higher performing lubricants, thereby reducing waste, improving productivity and reducing energy consumption" he adds.

Klüber Summit SH 46 and SH 68 - Holistic solutions contributing to a quantifiable reduction in overall oil consumption

Klüber Summit SH oils have been designed especially for the lubrication of highly loaded, oil-injected screw-type compressors with oil change intervals up to 10,000 operating hours. These oils can also be used for compressors that were previously run with mineral oils. They are neutral towards most elastomer seals used in air compressors; thereby ensuring minimal leakage. These high-quality oils also help in longer service life of the oil filters, activated carbon filters and oil separators

Klüber Summit SH oils offer excellent oxidation stability due to the synthetic base oil, thus minimizing oxidation residues in the compressors and extending oil change intervals and the service life of oil filters and separators. Special inhibitors contained in the oils keep the inside

of compressors clean.

Klüber Summit PS 200 - Semi-synthetic air compressor oils for oil change intervals up to 5,000 operating hours

Klüber Summit PS oils are based on high-purity semi-synthetic oil formulation especially designed for the lubrication of screw-type, reciprocating piston and vane compressors and can be used for oil change intervals up to 5,000 operating hours. Klüber Summit PS oils can be used for compressors that were previously run with conventional mineral oils. These oils are neutral towards most elastomer seals used in air compressors, thereby eliminating any chances of leakage.

Klüber Summit PS oils offer good oxidation stability due to the synthetic base oil content, thus minimising oxidation residues in the compressors and extending oil change intervals and the service life of oil filters and separators. Special inhibitors contained in the oil keep the inside of compressors clean and ensure a high efficiency.

Klüber Summit Varnasolv : Effective and time saving compressor cleaning solution

Mineral oil-based compressor oils can cause lacquer-like residues and carbon build-up in oil-injected screw-type and rotary vane compressors that may form deposits in the entire oil circuit. This often results in increased energy consumption, increase temperature, clogged oil lines and filters, and high maintenance costs and downtime. Klüber Summit Varnasolv is a fluid cleaning concentrate designed to dissolve sticky residues, varnish and carbon build-up during operation. It is miscible with mineral oils, synthetic hydrocarbons, ester oils and polyglycols. It is especially developed for cleaning rotary screw compressors, vane compressors, hydraulic systems, gears and other oil circulating systems.

Using Varnasolv to clean the insides of compressors not only leads to reduced downtime and maintenance costs, but also results in

energy savings via reduced operating temperature and also optimal oil life.

About Klüber Lubrication: Klüber Lubrication is one of the world's leading manufacturers of specialty lubricants, offering high-end tribological solutions to virtually all industries and markets worldwide. Most products are developed and made to specific customer requirements. During its more than 90 years of existence, Klüber Lubrication has provided high-quality lubricants, thorough consultation and extensive services, which has earned it an excellent reputation in the market. The company holds all common industrial certifications and operates a test bay hardly rivalled in the lubricants industry. Klüber Lubrication, set up as a retail company for mineral oil products in Munich in 1929, is today part of Freudenberg Chemical Specialities SE & Co. KG, a Business Group of the Freudenberg Group, Weinheim. Klüber Lubrication has about 2,000 employees in more than 30 countries.

About Freudenberg Chemical Specialities: Freudenberg Chemical Specialities Munich was founded in 2004 as a new Business Group within the Freudenberg Group, Weinheim, Germany, a family-owned, diversified technology company with a history of more than 160 years. Freudenberg Chemical Specialities has a lean, market-oriented organisation with Management Board and Corporate Functions. Its objective is to promote innovation potentials in its field of activities and to expand world-wide market leadership in special lubricants and release agents. The Business Group includes five largely independent divisions which are active in more than 50 countries: Klüber Lubrication, Chem-Trend, SurTec, Capol and OKS.

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Igus offers new record guarantee of four years on cables

10 years ago, igus was the first industrial company in the world to introduce a 36-month guarantee on moving cables. Now the guarantee period for entire chainflex range extended from 36 months to four years.



If cables break, machines and systems come to a standstill. However, companies weren't able to be sure how long a cable would last. Not until igus solved the problem: 10 years ago, igus was the first industrial company in the world to introduce a 36-month guarantee on moving cables. Just in time for the SPS 2023 automation trade fair, the plastics specialist is extending the guarantee period for its entire cable range by a further 12 months to four years. This gives customers even more functional and planning security. The guarantee, which is unique in the industry, is possible due to thousands of new customer applications and over 20 billion additional test cycles in the in-house chainflex laboratory carried out in the past decade.

Which cables are robust enough to guarantee a high degree of reliability and durability? This question is a worry to companies as many manufacturers of industrial cables don't provide binding service life information. "We want to put an end to this uncertainty. We have therefore

has even been certified by the US institute Underwriters Laboratories (UL). "In the past decade, we have gained valuable expertise, which is why we can now extend our guarantee promise to a full four years. This gives our customers even more functional and planning security," emphasises Rössel.

More than two billion test cycles per year

The unusually long guarantee period is possible due to the largest test laboratory for moving energy chain systems in the entire industry, which the plastics specialist operates at the company headquarters in Cologne. Here, experts test the chainflex cables in practical test with over two billion test cycles per year. The data obtained from the tests also forms the basis for the online service life calculator igus provides. Here, customers enter the parameters of their application for a cable of their choice - such as temperature, radius and travel. The service life of a cable can be calculated with just a few clicks. "We have now gained so much

been giving customers a guarantee of 36 months on our entire chainflex range for 10 years, which is unusual in the industry," says Rainer Rössel, Head of the chainflex Cables Business Unit at igus. A promise that

experience with cable designs, tests, online tool and customer requests that we are increasingly able to find the right cables for specific applications," emphasises Rössel. In the unlikely event that a cable fails during the guarantee period, igus quickly provides a free replacement, which reduces downtimes.

Extended guarantee contributes to sustainability strategy

The main reason for extending the guarantee period lies in igus's efforts to make its own products as sustainable as possible. "Every time a cable breaks, a replacement has to be produced - with a corresponding CO₂ impact in the entire production and transport chain," Rössel points out. This also means that products that last longer save more CO₂. "For this reason, we are constantly working on improving our cables and adapting them to a wide range of industrial applications." Today, the chainflex range comprises over 1,350 cable types from low-cost to high-end options - including bus, motor and servo cables, but also robot and measuring system cables. The ideal combination of materials is the key to the long service life of chainflex cables in the energy chain. Real-life tests over many years have already proven their suitability. The products are used worldwide, including in storage and retrieval machines, cranes, lifts and platforms.

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JOST establishes its second plant in India



JOST, a world-leading producer and supplier of safety-critical systems for the commercial vehicle industry, consolidates and strengthens its commitment in India with the construction of a second production plant near the southern Indian city of Chennai. The second plant in India is set up to produce front loaders and associated implements and backhoes for its strong agricultural brand Quicke at Greenbase Industrial and Logistics Park belonging to the Hiranandani group. On November 23, JOST officially opened the new plant. The first facility in Jamshedpur was set up in the year 2008 for producing 5th wheels, axles, suspensions and other products related to the business line transport which has been running and growing successfully.

The new location in Chennai gives the brand Quicke the space and capacity needed to continue meeting the increasing demands. As in other important world markets, JOST is investing in manufacturing plants in the country, both in order to be close to the market as well as benefit from the optimal use of resources available on site for addressing markets outside India.

With a construction period of less than twelve months, the established plant is strategically located close to the port and in the heart of the most industrialised Oragadam area of Chennai. Modern manufacturing technologies and assembly lines for production have been installed on the 16,866 m² premises.

The grand opening ceremony was attended by Joachim Dürr, CEO of JOST Werke SE, and other senior management of the company besides the German Consulate General to India, Chennai Michaela Küchler. The new facility has 15,089 m² of production area and 17,77 m² office area. Mallikarjuna, Regional Director, IGCC, Chennai attended the plant inauguration and congratulated the management team of Jost for choosing Chennai and adding to the list of German companies in Tamil Nadu. "The establishment of the Chennai facility is an important step for JOST and its customers – a competitive manufacturing location for our agricultural product range and a commitment to the strongly growing Indian Tractor OEMs and the Indian agricultural market in general," said Joachim Dürr, CEO of JOST Werke SE.



ELGi celebrates innovative compressed air solutions at Technology Day, 2023

Elgi Equipments Limited, one of the world's leading air compressor manufacturers, marked another milestone in advancing technology and innovation at the 6th edition of Technology Day 2023, held at the Le Meridien, Coimbatore.

Technology Day celebrates ELGi's commitment to advancing futuristic technology while continuously creating energy-efficient compressed air solutions to minimise emissions and enhance our customers' competitive advantage.

The signature initiative saw over 200 attendees, including ELGi employees and industry representatives, gather to witness the unveiling of cutting-edge developments in the realm of compressed air. The technology team's contributions and complex engineering achievements were applauded during the event, amid technology presentations, knowledge-sharing sessions, and an impressive product display.



Dr. Jairam Varadaraj, Managing Director, ELGi Equipments



HPL Electric wins Rs 545 cr smart meter orders, supports national metering initiative



HPL Electric and Power, a leader in the electrical equipment manufacturing sector in India, is proud to announce that it has won smart meter orders worth Rs 545 crore from various prestigious customers in the normal course of business.

This achievement marks a significant stride in HPL's journey, further solidifying its market share in the competitive smart meter arena. The order is indicative of the Company's continued growth trajectory and promising future in the industry. This order is a milestone in HPL's journey and a strong indicator of its promising future in the smart metering industry.

On this notable occasion, Gautam Seth, Joint Managing Director of HPL, commented, "The receipt of these orders reflects our alignment with the government's ongoing efforts to implement smart meters nationwide.

While understanding that this is just one more step in a much broader initiative, it highlights HPL's significant role in this sector. Our high acceptability in terms of performance and quality with leading AMISPs demonstrates HPL's strong positioning in the smart meter market. This achievement is not just a measure of our current standing but also a promising indicator of the potential opportunities that lie ahead in the evolving landscape of smart metering in India."



MSME Ministry unveils 3 innovative schemes within existing RAMP program



Union Minister for MSME Narayan Rane launched three sub-schemes under the aegis of the RAMP programme. These are MSME Green Investment and Financing for Transformation Scheme (MSE GIFT Scheme), MSE Scheme for Promotion and Investment in Circular Economy (MSE SPICE Scheme) MSE Scheme on Online Dispute Resolution for Delayed Payments.

The first scheme - The MSME Green Investment and Financing for Transformation Scheme (MSME GIFT Scheme) intends to help MSMEs adopt green technology with interest subvention and credit guarantee support.

The MSE Scheme for Promotion and Investment in Circular Economy (MSE SPICE Scheme) is the first ever scheme in the Government to support circular economy projects which will be done through credit subsidy and will lead to realising the dream of MSME sector towards zero emissions by 2070.

The MSE Scheme on Online Dispute Resolution for Delayed Payments is a first of its kind scheme to synergise legal support with modern IT tools and artificial intelligence to address the incidences of delayed payments for Micro and Small Enterprises.

The Ministry is also taking new initiatives under the existing schemes to provide enhanced support to the MSMEs. The Support for Commercialisation of IP Programme (MSME – SCIP Programme) will enable the innovators in the MSME sector to commercialise their IPR. In addition, the ZED Scheme of the Ministry has now been

made completely free for women led MSMEs. The government guarantees payment of 100 per cent financial support for the certification cost. These two interventions were also launched by the Union Minister.

The Ministry exchanged memorandum of understanding (MoUs) with the implementing agencies SIDBI (for MSME GIFT and MSME SPICE schemes) and with National Informatics Centre Services Inc (for NICSII) for MSE ODR scheme.

The 2nd meeting of the National MSME Council was also chaired by Narayan Rane. Addressing the participants he asked all the States / UTs to work towards promotion and development of MSME Sector so that their efforts could result in increase in income and employment in the sector and contribute towards country's economic growth.



ABB to provide smart robotic automation solutions to Volvo Cars

ABB announced the strengthening of its long-standing partnership with Volvo Cars to supply more than 1,300 robots and functional packages to build the next generation of electric vehicles. This will support the Swedish car manufacturer to achieve its ambitious sustainability targets.

This agreement includes functional packages covering various production tasks, from spot-welding, riveting, and dispensing to flow drilling and ultrasonic weld inspection. Each package is a ready-to-use, customer-proven combination of hardware, software and services and will be implemented at Volvo Cars' facilities in Torslanda, Sweden and Daqing, China. Alongside the hardware and functional packages, ABB's latest range of OmniCore robot controllers will help to deliver energy savings of up to 20 per cent at sites due to their highly efficient power electronics and use of regenerative braking within the robot.



During the deployment, ABB will ensure production remains uninterrupted through the use of its RobotStudio® planning and programming software platform to visualise and optimise the deployment before the robots are installed. By developing and validating the required automation systems in a virtual space, Volvo Cars and

ABB will create solutions that can be engineered once but deployed multiple times.

Volvo Cars and ABB share a long tradition of joint developments to make the production of cars more efficient, and to continuously improve the capabilities of industrial robots in this area. This latest project will see the two companies continue to work together over the next few years, with the first deployments anticipated in early 2024. It is the latest in a series of solutions by ABB aimed at helping the global automotive industry reach its ambitious sustainability targets and transition to electric vehicle production.



Mahindra Last Mile Mobility, Attero collaborate for EV battery recycling



Electric 3-wheeler manufacturer, Mahindra Last Mile Mobility (MLMML) - a subsidiary of Mahindra & Mahindra, and Attero, a global leader in lithium-ion battery recycling as well as e-waste management, have joined forces. This strategic collaboration, focused on effective EV battery recycling, represents a proactive effort to tackle the environmental concerns linked to safe electric vehicle battery disposal.

MLMML, a prominent leader in electric vehicle technologies, offers an extensive selection of Li-ion electric 3-wheelers featuring models such as Treo, Treo Plus, Treo Zor, Treo Yaari, and Zor Grand.

Renowned for its recycling technology, Attero has achieved an outstanding recovery rate for precious materials at its Roorkee facility. The partnership between MLMML and Attero is specifically focused on the sustainability and recycling/reuse of lithium-ion batteries.

Suman Mishra, MD and CEO of Mahindra Last Mile Mobility, said "As a leader in India's last mile transportation electrification, we are unwavering in our pursuit of net-zero emissions and sustainable practices. Teaming up with Attero as a preferred partner for Li-ion battery disposal underscores our commitment to provide a pollution-free transportation and drive towards a greener future."

"Our commitment to a circular economy and green technology resonates with MLMML's vision for a sustainable future. Attero is a pioneer in Li-ion battery disposal and sustainable e-waste. The advanced

solutions, backed by years of expertise, ensure that we can recover and recycle electric vehicle batteries with unmatched efficiency." said Nitin Gupta, CEO and Co-founder of Attero Recycling.



Delta unveils intelligent automation solutions for plastic industry



Delta, a global leader in power and thermal management solutions, showcased its cutting-edge range of intelligent automation solutions for the plastic industry at Plastivision 2023, held in Mumbai. The event served as a platform for Delta to unveil its comprehensive lineup of hybrid energy solutions aimed at enhancing energy efficiency across various applications.

As a pioneer in the field of automation, Delta's presence at Plastivision 2023 was marked by the introduction of several innovative products and solutions, including a future-ready dedicated controller for plastic molding machines, single pump and double pump hybrid energy storage (HES) packages, high torque direct drive motors (MST), AC variable frequency drive (VFD) solutions customised for diverse applications in the plastic industry, a range of high-end programmable logic controllers (PLCs), motion controllers, high-resolution human-machine interfaces (HMIs), industrial power supplies, temperature controllers, and state-of-the-art pick and place robots. Among the highlights were the unveiling of the area sensor, laser displacement sensor, GIGE camera, and linear motors, signaling a significant expansion of Delta's already extensive product portfolio.

Delta's offerings at Plastivision 2023 included the spotlight on their hybrid energy storage (HES) packages, featuring both single pump and double pump configurations. These HES packages are a testament to Delta's commitment to sustainable and energy-efficient solutions, providing a reliable power source for plastic molding machines and other applications in the plastic industry.

In addition to the HES packages, Delta presented its high torque direct drive motor (MST) technology. This innovation offers enhanced precision, speed, and efficiency in the plastic manufacturing process, contributing to increased productivity and reduced energy consumption.



Abilities India secures patent for revolutionary piston, cylinder coating technology



Abilities India Pistons & Rings (Abilities India), a leading name in the manufacturing of pistons, piston rings, gravity casting, pressure die casting, and coatings, proudly announces the grant of a patent for its groundbreaking coating technology

applied to pistons and cylinders. This innovative coating is set to transform the landscape of engine components as it reduces friction, wear, emissions and fuel consumption by 2-3 per cent. As one of the leading Indian MSMEs highly involved in deep R&D, the company foresees a substantial growth of 15-20 per cent in revenue attributable to this patented technology, with 4-5 per cent expected in the current financial year. Looking ahead, Abilities India anticipates a top-line growth of 25-30 per cent.

Unlike the conventional electro-plating process, this innovative technology ensures a uniform coating thickness (3-100+ microns) irrespective of component size or shape, with exceptional coefficients of friction, heightened hardness, wear resistance, and superior adhesion. Particularly beneficial for alternate fuels like ethanol blends and biofuels, the coating showcases outstanding corrosion resistance and improved thermal properties, addressing challenges linked to the high-temperature ignition of hydrogen fuel. This advancement signifies a pivotal step towards prolonged engine component life, heightened efficiency in the face of evolving fuel technologies and reduced carbon emission significantly.

Furthermore, Abilities India has recently been honoured with the prestigious CII TOP 50 Companies Industrial Innovation Award 2023, recognising its strategic commitment to achieving manufacturing excellence and fostering innovation.

Sunil Arora, Chairman and MD, Abilities India Pistons and Rings said, "As one of the distinguished MSMEs focussed on cutting-edge research, Abilities India is proudly making technological strides in the auto components industry. This patent represents more than just a leap in engine component advancements; it symbolises our steadfast commitment to fostering substantial growth within the realm of sustainable mobility. With this innovative coating technology, we are not merely adapting to the shift in global mobility; we are actively shaping the future of automotive technology and reinforcing our position as pioneers in sustainable and efficient solutions for the global automotive landscape."

WEF recognises Schneider's Hyderabad factory as sustainability lighthouse

Schneider Electric, the leader in the digital transformation of energy management and automation, today announced that its Hyderabad, India, factory has been recognised by the World Economic Forum as a Sustainability Lighthouse.

This is the third such recognition for Schneider Electric, whose factories in Lexington, Kentucky, and Le Vaudreuil factory, France, received Sustainability Lighthouse status in 2021 and 2022, respectively.

The World Economic Forum began the Global Lighthouse Network initiative in 2018 to recognise manufacturers leading growth of the Fourth Industrial Revolution (4IR). The network now consists of more than 150 Advanced Lighthouses worldwide. Just 17 of these are also Sustainability Lighthouses which are recognised by the Forum for their technology-enabled improvements on environmental footprint. Together, these serve to showcase best practices of how companies can leverage 4IR solutions to unlock new levels of sustainability and efficiency in their operations.

Schneider Electric's Hyderabad factory manufactures mission-critical electrical equipment and operates with an advanced, cloud-based manufacturing system powered by IoT-enabled devices, leveraging real-time data and predictive analytics for smart decision-making processes. Over four years, the plant reduced its energy consumption by 59 per cent, improved waste optimisation by 64 per cent, decreased CO₂ emissions by 61 per cent, and reduced water consumption by 57 per cent.

To improve energy efficiency and thereby reduce CO₂ emissions, the Hyderabad team focused on the highest energy consumers in the plant: air compressors and chillers. An IoT-enabled device, Equalizer 4.0, was installed to regulate the compressors thereby improving their efficiency. To the chillers, a data-driven energy management system with closed-loop control was fitted to constantly monitor and adjust energy consumption in real-time, optimising energy efficiency.

"Sustainability is core to our mission and purpose," said Mourad Tamoud, Schneider Electric's Chief Supply Chain Officer. "Our Hyderabad factory is a compelling case for why companies should invest in 4IR technologies at scale and pace – not just for the sustainability outcomes, but also for the operational efficiency gains."

The Hyderabad factory is part of Schneider Electric's global smart factory and distribution center initiative, encompassing nearly 250 factories and logistics centers in more than 40 countries. This initiative is part of the company's STRIVE program.

STRIVE (Sustainable, Trusted, Resilient, Intelligent, Velocity and Efficiency) is the next evolution of Schneider Electric's supply chain transformation to be the most agile, innovative, planet and customer-centric supply chain.

International Hardware Fair highlights new industry dynamics

International Hardware Fair acted as a transformative force bringing together global expertise, showcasing cutting-edge products, fostering networking opportunities, and contributing to the industry's growth and recognition.

The much-anticipated International Hardware Fair India (IHF India) made a grand entry at Pragati Maidan, New Delhi on December 2, ushering in a new era for the hardware industry in India. Organised by Koelnmesse, the inaugural edition is powered by EISENWARENMESSE – International Hardware Fair Cologne, Germany, the world's largest hardware tools and accessories exhibitions and, propelling the hardware industry into a new epoch.

Igniting collaborative growth

International Hardware Fair India aims to be a focused event for the hardware community and embed German standards in facilitating the marketplace. The extensive hardware assembly brought together industry luminaries, leading manufacturers, the buyer's community, policy influencers, and crucial stakeholders; providing professional platform for the entire hardware community. With over 200 international exhibitors and more than 7000 trade buyers, the IHF floor is a vibrant tapestry of cutting-edge products and solutions from around the world. Participating countries include India, Taiwan, Germany, China, Turkey, Korea and more.

The grand inauguration ceremony was marked by the presence of key dignitaries R K Rai, Director - Office of Development Commissioner, Ministry of Small & Medium Enterprises, Arun Kumar Garodia, Chairman, Engineering Export Promotion Council of India, and Milind Dixit, Managing Director, Koelnmesse in the presence of several prominent industry leaders.

Delving into the significance of the hardware industry in India's



Inaugural ceremony of International Hardware Fair, 2023

manufacturing landscape, RK Rai, Director, Office of Development Commissioner Ministry of SME said, "The Indian hand tools market was valued at \$342.8 million in 2022, with a projected CAGR of 4.3%, reaching \$416.2 million by 2029. India is set to rival China in the Asia-Pacific hand tools market. Additionally, the industrial fasteners market is expected to hit Rs 460 billion by 2023, growing at a strong 9.6% CAGR since 2018. India's hardware and building materials market is also thriving, with a projected 1.68% growth rate (CAGR 2023-28) globally, contributing a 1.2% share in global exports. The government's Atmanirbhar Bharat initiative also aims to elevate manufacturing standards, especially for MSMEs. We foresee IHF India 2023 as a catalyst for meaningful industry interactions, collaborations, and advancements, promising a vibrant future for India's hardware sector."

Arun Kumar Garodia, Chairman of the Engineering Exports Promotion

Council (EEPC), emphasised, "India's ambitious goal of achieving a \$1 trillion merchandise export target by 2030, with engineering exports aiming for a significant share of \$300 billion. Despite facing global challenges like the pandemic and geopolitical conflicts, Moody's projects India's 2023 growth at 6.7% the highest among G20 nations. The Indian engineering sector, particularly the hardware industry, is a rapidly growing and diverse segment, making a substantial contribution to the country's development and manufacturing sector. With increasing global demand for hardware products, India is poised to emerge as a global leader in hardware manufacturing. We anticipate IHF 2023 to serve as a catalyst for industry growth and collaboration, firmly establishing India as a global powerhouse in the hardware industry."

Milind Dixit, Managing Director, Koelnmesse, India's ambitious goal to achieve a \$1 trillion manufacturing sector by 2030 is not just a numerical

target; it's a testament to the nation's commitment to economic growth and industrial prowess. As this sector is poised to grow at a robust CAGR of 11% from 2020 to 2030, the hand tools and power tools market play a pivotal role in shaping this trajectory.

Hand tools, often the unsung heroes behind manufacturing, are the linchpin for every industry, driving efficiency and precision. The raw material transformation in every sector relies on the craftsmanship enabled by these tools, making them indispensable contributors to the overall growth of industries. It's not just about numbers; it's about the essential tools that empower our industries and workforce on the journey to a trillion-dollar manufacturing landscape, he further added."

Addressing the burgeoning growth in the hardware industry, Ajay Kumar Goswami, Deputy Regional Chairman, EEPC India and Founder of Ajay Industries highlighted, "India's hand tool industry exports have soared to approximately 1600 crore currently. Anticipating a minimum growth of 10% over the next five years, this trajectory is made feasible by leading companies engaging in substantial bulk purchases, elevating the industry to new heights."

Diverse Industry Segments

The event focuses on diverse segments, including building material hardware, automotive supplies & accessories, cutting and welding equipment, premium hand tools, power tools, specialty tools, construction and infrastructure, automobile/automobile service, woodworking and furniture, gardening and horticulture, and abrasives, every sector of the hardware industry is well-represented. Notable exhibitors who participated are HR International, Carborundum Universal Limited (CUMI), Powertex Tools, D P Garg & Co, FMI Limited and many more.

Support from Industrial Associations

The event is comprehensively supported by key national and



international industrial associations, like Engineering Export Promotion Council of India, Taiwan Hand Tool Manufacturers Association, Bhutan Hardware Association, Ludhiana Hand Tools Association, Jamnagar Factory Owners Association, Fasteners Manufacturers Association of India, Jamnagar Hardware Manufacturers Association, Chamber of Industrial & Commercial Undertakings, Alwar Hardware Merchants Association, New Timber Market Dealers Association, Haridwar Hardware Association and others.

Unveiling Excellence in hardware industry

This curated series of exclusive events aims to captivate industry leaders and experts through diverse formats. The discussions revolved around critical topics, featuring insights from Rakesh Nayar, Director at FMI Limited, on 'Advancements in Measuring and Testing Tools,' Sharad Agarwal, Director at Oaykay Tools/ Forging & Chemical Industries, addressing the 'Need for Modernisation and the Future of Hand Tools' and L N Gupta, Director at Powertex Tools Co Pvt Ltd, exploring 'Power Tools: Market Dynamics & Competitive Landscape.'

Special Events

The event includes an Innovation Product Showcase Zone featuring the top 9 innovative products for our visitors to explore. Attendees have the opportunity to cast their votes for the most innovative product of their choice. On the third day, the brands that receive the highest number of

votes will be honoured.

These activities enhance the overall excitement and engagement for our event participants.

Showcasing India's Potential

The hardware industry in India is vast and diverse that encompasses a wide range of products. The high demand for hardware products, offering lucrative opportunities for international businesses to tap into varied consumer needs. The diverse representation of industry segments allows businesses to explore new market opportunities, expand their reach, and establish valuable connections with potential clients and partners. India's consistent economic growth contributes to its attractiveness as a market for investment. The hardware industry, being an integral part of infrastructure development, aligns with the overall growth trajectory.

International Hardware Fair acts as a transformative force, bringing together global expertise, showcasing cutting-edge products, fostering networking opportunities, and contributing to the industry's growth and recognition. Despite global challenges, the industry's focus on innovation, government support, and rising demand paints a promising picture for its flourishing journey. **IPF**



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Cement EXPO 2023: Revolutionising the Indian cement industry

Indian Cement Review Conference and Awards 2023, hosted along with the 14th Cement EXPO, witnessed participation of top notch companies and industry leaders.



L-R: Dr Vibha Dhawan, Director General, TERI, Ali Emir Adiguzel, Founder and Director, World Cement Association, and Pratap Padode, Founder, FIRST Construction Council (FCC).

In a landmark event at the prestigious Manekshaw Centre, New Delhi, the 14th Cement Expo and 9th Indian Cement Review Conference 2023 unfolded a two-day symphony of innovation and collaboration. Inaugurated by Dr Vibha Dhawan, Director General, TERI, and Ali Emir Adiguzel, Founder and Director, World Cement Association, and Pratap Padode, Founder, FIRST Construction Council (FCC), the conference aimed to propel the Indian cement industry into a sustainable future marked by technological advancements.

The 9th Indian Cement Review Conference 2023 served as a hub of ideas and discussions on

technological innovations essential for the industry's sustainability journey, focusing on the theme 'Driving Sustainability Through Technology.' In his welcome address, Padode said, "All the big players of the Indian cement industry are focussing on increasing their capacity, with an estimated projection of 200 million tonne (MT) of fresh capacity to be added in the coming years. Emphasis is also laid on being the lowest-cost cement producer in India. In fiscal 2023, 30-32 MT (inclusive of grinding and integrated units) capacity addition is reportedly expected. Given that the higher input costs have moderated we could see capacity addition picking up pace in fiscal 2024 at over 30-32 MT leading

up to the addition of 150 MT by fiscal 2027. Considering this speed of expansion, the tug of competition and a buoyant demand from infrastructure and housing segments, the Indian cement sector is poised to take a giant leap."

The Conference entailed panel discussions and presentations, followed by the 7th ICR Awards. The thought-provoking sessions were complemented by the 14th India Cement EXPO that brought latest innovations in cement manufacturing and technological advancements on the same platform. Over 80 exhibitors presented their cutting-edge technology and innovations at the EXPO that was visited by more than 2000 visitors.

Key Highlights

The grand inauguration witnessed luminaries like Dr Vibha Dhawan and Ali Emir Adiguzel, who expressed their confidence in the Indian cement industry's commitment to 'Driving Sustainability Through Technology.'

The event garnered support from esteemed entities like the Ministry of Road Transport and Highways, Government e Marketplace (GeM), and the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, Government of India (GoI).

Dr Dhawan addressed the issue of climate change: "Nearly two-third of infrastructure development in India is still pending. Cement and steel are materials that are required in bulk to support this kind of development. This gives an insight into a higher demand, leading to the need of higher production, which is an opportunity for cement manufacturers to grow their business and develop the nation."

She added, "The unfortunate part



L-R: Falguni Padode, Co-founder, ASAPP Info Global; Dr Jayprakash Rao, Group President (International), Dineshchandra R Agrawal Infracon; Pratap Padode, Founder and President FIRST Construction Council; Lt General Raghu Srinivasan, Director General, Border Roads Organisation; Sumit Banerjee, Chairman Editorial Board, Indian Cement Review and K K Taparia, Advisor, Vadraj Cement.

of climate change is that it was established that a 1.5oC increase in temperature is acceptable as per norms, but that is slowly shifting to 2.5oC. Temperature above 52oC will not support human life. It will also impact biodiversity and climate change will bring along with itself a plethora of diseases known and unknown. The impact will not be uniform across the globe. Countries like ours will be impacted more as we are already affected by climate change."

In his speech, Adiguzel said, "The power of Indian Cement industry goes beyond its sheer size. It is a catalyst for economic growth driving employment, investment and innovation, creating job opportunities directly or indirectly. The question is - are global Net Zero policies colliding with economic growth in India? Navigating the interplay between Net Zero policies, economic policies and emission targets in the cement industry is a global conversation."

Jaxay Shah, Chairperson of the Quality Council of India, emphasised the dynamic nature of the cement industry at the event through a video message. He acknowledged the significance of the Cement Expo, highlighting its role as a testament to the industry's adaptability. Shah stressed the importance of integrating ideas, best

practices, and technology to shape the future of cement and construction.

Dr LP Singh, Director General, National Council for Cement and Building Material (NCB),

principles for a sustainable cement industry.

Panel Discussions **Sustainable Challenges and Opportunities**



Panel discussion on "Sustainable Challenges and Opportunities" in progress

emphasised the holistic definition of sustainability in cement and concrete, with the organisation working on every aspect to ensure future development while protecting the environment. Kaustubh Phadke, India Head, Global Cement and Concrete Association, lauded the Indian cement sector as the most energy-efficient globally, reducing over 40 per cent of CO2 intensity at the national level. The industry aims to deliver Net Zero concrete by 2050, aligning with global sustainability goals. Ulhas Parlikar presented a technical paper on 'Circular Economy Practices in Cement Production,' emphasising the significance of embracing circular economy

The panel discussion explored collaboration, innovation, and knowledge-sharing as essential drivers for a more sustainable future. Industry experts discussed challenges and opportunities, emphasising the need for collective efforts.

Panelists: Manoj Rustagi, EVP & CSO, JSW Cement; Kaustubh Phadke, India Head, Global Cement & Concrete Association (moderator), Sameer Bharadwaj - Head Manufacturing Excellence, JK Cement; Soundararaj Naveenthakrishna - General Manager, IKN Engineering; and Aashish Maheshwari, Associate Business Director, Evonik India.

Alternative Materials and Technologies

Bernd Henrich, Area Manager, Gebr Pfeiffer; Shiv Shubhang Mathur, Sr



This panel explored alternative materials and technologies for eco-friendly cement manufacturing

This panel delved into exploring alternative materials and technologies for sustainable cement manufacturing. The discussion highlighted the importance of innovation in materials and processes to enhance sustainability.

Panellists: Dr SB Hegde, Prof Jain University & Visiting Professor Pennsylvania State University, USA, (moderator); Ashwani Pahuja, Chairman & Managing Director, NextCem Consulting; KN Rao, My Home Industries;

Dr Bibekanand Mohapatra, Advisor & Consultant, Ultratech; and Rajesh Khanna, Director Sales & Marketing, Loesche India.

Revolutionising Cement Manufacturing: Technology and Automation

This panel revolved around the many tools of automation deployed by cement companies to make the manufacturing process more efficient and sustainable.

Panellists: Himanshu Ghawri, Partner, PwC, (moderator); Durgamadhab Mohanty, Senior VP - IT, Birla Corporation; Vimal Kumar Jain, Technical Director, Heidelberg Cement; Hemantkumar Aiyer, VP and Head R&D, Nuvoco Vistas Corp;



Panelists discussing how technology and automation can revolutionise cement industry

General Manager and Head (Sales and Marketing) Industrial Chain Division (Tube Investments of India); and Manish Chordia, Regional Sales Manager - Cement, South Asia & Africa, ABB India.

Future Trends and Innovations in Cement Industry: A Sustainability Outlook



Experts highlighted the importance of innovations and future trends in the cement industry

This panel was devoted to crystal-ball gazing into innovations in the pipeline, and the areas of cement manufacturing that need sustainable solutions.

Panellists: Sumit Banerjee, Chairman Editorial Board, Indian Cement Review (moderator); Pankaj Kejriwal, Executive Director, Star Cement; Shailendra Kumar Gupta, Chief Operating Officer & Cluster Head-North Zone, Ultratech; Nilesh

Narwekar, CEO, JSW Cement; Sanjiv Garg, Secretary General, The Chartered Institute of Logistics & Transport and Managing Director, Pipavav Rail Corporation.

The conference also included presentations by Flender, Gebr. Pfeiffer, Loesche India, ATS Conveyors, TAIHEIYO Engineering Corporation, KHD HUMBOLDT and ISGEC.

ICR Awards

The 7th Indian Cement Review Awards commenced with a lamp lighting ceremony with the guest of honour Lt General Raghu Srinivasan, Director General, Border Roads Organisation; Pratap Padode, Founder and President FIRST Construction Council; and Sumit Banerjee, Chairman Editorial Board, Indian Cement Review.

Padode delivered the welcome address to the eminent dignitaries

and guests. This was followed by a presentation by Tanveer Padode, Chief Information Officer, ASAPP Global, on the new developments within the company. Thereafter, the chief guest unveiled the Indian Cement Review Annual issue. Falguni Padode, Co-founder, ASAPP Global joined in for the unveiling. Members of the awards jury were felicitated and the Awards function got underway.

Recognising her contribution to the cement industry, Vinita Singhania, Vice Chairman and Managing Director at JK Lakshmi Cement, and Chairman of Udaipur Cement Works Ltd, was presented with the prestigious Lifetime Achievement Award. In her acceptance speech, she said, "I remember when I had entered the industry in the late '80s, with a basic understanding of management, a lot of eyebrows were



The Winners take it all

raised as it was thought to be a male dominated industry. but over the period of time, I picked up the required knowledge to operate the business. Being a woman meant handling business and family simultaneously. For the first few years, it was challenging for me but my great team helped me a lot to achieve excellence."

She further added, "We should invest our time, effort and capital to educate and empower the women for their upliftment, growth and independence. I look forward to the continued growth of the cement industry."

The guest of honour Lt General Raghu Srinivasan, Director General, Border Roads Organisation, said, "We are working in some of the most difficult parts of the world, in terms of climate and terrain. As Director General of Border Roads Organisation, we have projects in every border state, covering deserts, high mountains, rainforests, and construction work in these places is done as per seasons. In the North, you cannot work in the winters, and neither in the North-East during monsoon. This is one of the challenges for which we need to have an interface with the industry, and ask the industry to develop something that works for us in these typical working conditions. We use approximately 3 lakh MT of cement per year. We are doing innovative work in many fields, and now I have realised that cement is one of the industries we should engage with."

UltraTech Cement, JK Cement,

Award winners is as follows:

Sr No	Award Category	Winner
1	Lifetime Achievement Award	Vinita Singhania, Vice Chairman & MD, JK Lakshmi Cement
2	Fastest Growing Cement Company (Large Category)	UltraTech Cement
3	Second Fastest Growing Cement Company (Large Category)	JK Cement
4	Fastest Growing Cement Company (Medium Category)	JSW Cement
5	Second Fastest Growing Cement Company (Medium Category)	JK Lakshmi Cement
6	Second Fastest Growing Cement Company (Medium Category)	Star Cement Ltd
7	Fastest Growing Cement Company (Small Category)	Udaipur Cement Works
8	Second Fastest Growing Cement Company (Small Category)	Shree Digvijay Cement Company Ltd
9	Excellence in Sustainability (Cement Supply Chain)	GreenLine Mobility Solutions Ltd
10	Excellence in Sustainability (Cement Supply Chain)	Global Technical Services
11	Product of the Year	ATS Conveyors India Pvt Ltd

JSW Cement, Star Cement, etc. were among the winners of ICR Fastest Growing Cement Company awards in various categories. The complete list of the 7th Indian Cement Review

Conclusion

The 14th Cement Expo and the Indian Cement Review Conference and Awards set the stage for a transformative journey, steering the Indian cement industry from challenges to opportunities through technological advancements. As the industry focuses on sustainability,

innovation, and global collaboration, the event stands as a testament to the sector's commitment to driving positive change and achieving net-zero targets.

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- Kanishka Ramchandani



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ENGIMACH 2023: Adding vibrancy to manufacturing sector

Recognised as a Pre-Vibrant Gujarat Event, ENGIMACH 2023 showcased the latest developments and innovations in modern manufacturing technologies and automation essential to the success of Make in India mission.



L-R: Nihar Rathod, Paras Rathod and Rakesh Rathod of Allcut Sales



Tacklers Engineering Pvt Ltd Directors & the team



Paresh Shah, Business Head, Rabatex Industries

The 16th edition of ENGIMACH, held from December 6-10, 2023 at the Helipad Exhibition Centre (Gandhinagar, Gujarat), received arousing response from the industry with exhibitors showcasing their latest innovative, technologically advanced solutions for user industries. The biennial trade show for technology and innovation in engineering machinery, manufacturing and automation witnessed the unveiling of a wide range of groundbreaking products and solutions reinforcing the event's position as an industry trailblazer.

For example, Jyoti CNC Automation Ltd, one of the major contributors of innovative metal cutting solutions, took center-stage by unveiling state-of-the-art and cutting-edge technologies. The Jyoti booth attracted a substantial number of visitors who were eager to witness the latest advancements of the metal cutting solutions in aerospace and defense, EMS, automobile and general engineering segments. Jyoti also showcased Industry 4.0 solutions, marking a forward leap in the landscape of modern manufacturing.

The trade fair featured several

highly attractive concurrent shows such as Casting & Foundries Expo, Vibrant Gujarat Startup Conclave & Exhibition and India Smarttech Manufacturing Conference & Exhibition. While the Castings & Foundries Expo created synergy between manufacturers of engineering products and castings, the Vibrant Gujarat Startup Conclave & Exhibition ignited the enthusiasm and energy of young entrepreneurs and their innovations. At India Smarttech Manufacturing Conference, numerous distinguished international industry leaders enlightened the participants about the latest in use of information technology (IT) in modern manufacturing.

Spread over a 72,000 sq m of gross exhibition area and 12 centrally air-conditioned halls, ENGIMACH featured more than 1200 participants who displayed over 100,000 innovative products. Buyer seller meets and participants of global companies & thought leaders present a right platform for Indian companies to explore international markets.

Thus, ENGIMACH 2023, officially recognised as a Pre-Vibrant Gujarat Event, helped participants to identify,



Jatin Shah, Director, Bhavya Machine Tools

showcase and promote the latest developments and innovations in modern manufacturing technologies and automation essential to the success of 'Make in India' for India and the world.

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Gandhi Automations offers sturdy, dependable high speed doors

Prime High Speed Doors are the ideal solution for internal and external entrances and effectively operate in any situation, even when strong winds are blowing and in rooms with high volume traffic.



High Speed Doors designed and manufactured by Gandhi Automations are sturdy, dependable and are the ideal solution for medium and large entrances. The doors are manufactured with European collaboration and technology with innovative and creative engineering.

Fast moving functional and reliable doors are needed in industrial and commercial contexts. Gandhi designed and manufactured High Speed Doors are versatile and solid ensuring long-lasting reliability. The modular structure of the curtains, assembled and joined by anodized aluminium extrusions, provides for a wide range of polyester sections available in a variety of colours. Wide, full-width window panels ensure a safer traffic and allow more light in. Their fast and easy replacement, in case of accidental tearing, saves money and time. The alternating metal tubular

large entrances.

High Speed Doors for external entrance are equipped with spring steel wind lock in curtain pocket that ensures silent door travel, higher wind loads and curtain stability.

High Speed Door - Prime Reset

It is a unique High Speed Self-Repairing Door with the latest technology that prevents downtime of the door system. In case, the curtain is impacted accidentally it will cause the curtain to move out of the guides without damage. The movement of the door is designed in such a way it can be recovered with a simple opening and closing operation. Gandhi Automations manufactures doors of the highest quality that meet the issue for greater flexibility desired by clients. High Speed Self-Repairing Door in PVC is the most suitable solution in the field industries, it lowers the time of transition from one facility to

structure there inserted ensures high wind-resistance.

Prime High Speed Doors are the ideal solution for internal and external entrances and effectively operate in any situation, even when strong winds are blowing and in rooms with high volume traffic. Sturdy and dependable, Prime is the intelligent door for medium and

another, avoiding any human error which can cause damage to the High Speed Door and all this can be achieved due to the innovative Anti Crash System. Gandhi Automations provides a world class product with great security.

Below are the features of self-repairing high speed doors offered by Gandhi Automations:-

- ❑ Flexible and self-repairing door
- ❑ Functional, safe, quick and resistant
- ❑ Innovative anti-crash system
- ❑ Can be equipped with PVC vision windows
- ❑ Self-Lubricating maintenance free guide
- ❑ Smooth and silent opening and closing
- ❑ Protects traction unit, enables rapid wiring and safety photocell
- ❑ Flexible curtain in self-extinguishing material
- ❑ Self-resetting without intervention
- ❑ Quickly back to operation
- ❑ Control panel designed for an intensive continuous service

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For details contact Gandhi Automations Pvt Ltd, Mumbai, Tel: +91 22 66720200, 66720300, fax: +91 22 66720201, email: sales@geapl.co.in or visit www.geapl.co.in

(Communication provided by the management of the company)



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DIE & MOULD INDIA MUMBAI	February 14-17, 2024 Bombay Exhibition Centre (BEC) NESCO Mumbai	Tagma India, Mumbai Mobile: 09653427396, 09769407809 Email: tagma.mumbai@tagmaindia.org
PAINTINDIA MUMBAI	February 22 -24, 2024 Bombay Exhibition Centre (BEC) NESCO, Mumbai	NürnbergMesse India Pvt Ltd, New Delhi Tel: 011-47168823 Email: sakshi.sawhney@nm-india.com
INDUSTRY AUTOMATION & CONTROL MUMBAI	March 04 -07, 2024 Jio World Convention Centre, Mumbai	Chemtech Foundation, Mumbai Tel: 022-40373737 Email: conferences@jasubhai.com
CHEMTECH WORLD EXPO, MUMBAI	March 04-07, 2024 Bombay Exhibition Centre (BEC) NESCO Mumbai	Chemtech Foundation, Mumbai Tel: 022-40373737 Email: conferences@jasubhai.com
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INDIA RUBBER EXPO -MUMBAI	March 20-22, 2024 Bombay Exhibition Centre (BEC) NESCO, Mumbai	All India Rubber Industries Association, New Delhi Tel: 011-25825011 Email: info@allindiarubber.net
INTERNATIONAL		
PUMPS & VALVES DORTMUND	February 21-22, 2024 Messe Dortmund, North Rhine-Westphalia, Germany	Easyfairs GmbH Germany Email: bielefeld-office@easyfairs.com
SIAF - SPS INDUSTRIAL AUTOMATION FAIR GUANGZHOU	March 04-06, 2024 Canton Fair Complex Haizhu District, Zhanchang W Rd 510308 Guangzhou, Guangdong, China	Guangzhou Guangya Messe Frankfurt Co. Ltd. Guangzhou, China Tel: +86 (0)20 38251558 Email: phil.wong@hongkong.messefrankfurt.com
INTERNATIONAL METAL TECH- NOLOGY - TAIWAN IMT TAIPEI	October 16-18, 2024 Taipei Nangang Exhibition Center, Taipei, Taiwan	Kaigo Co., Ltd. Taipei, Taiwan Tel: +886-2-2595-4212 Email: info@kaigo.com.tw

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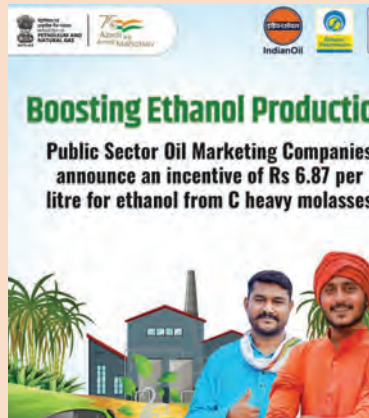
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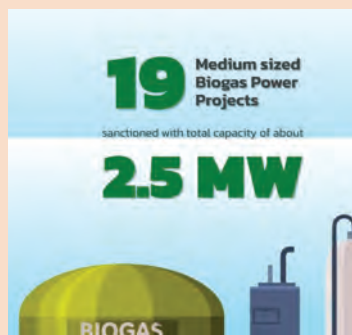
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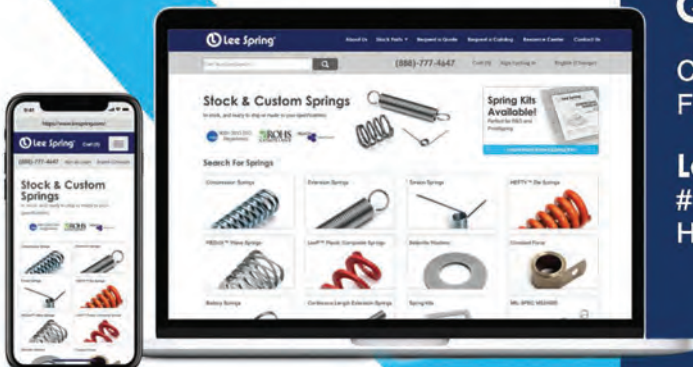
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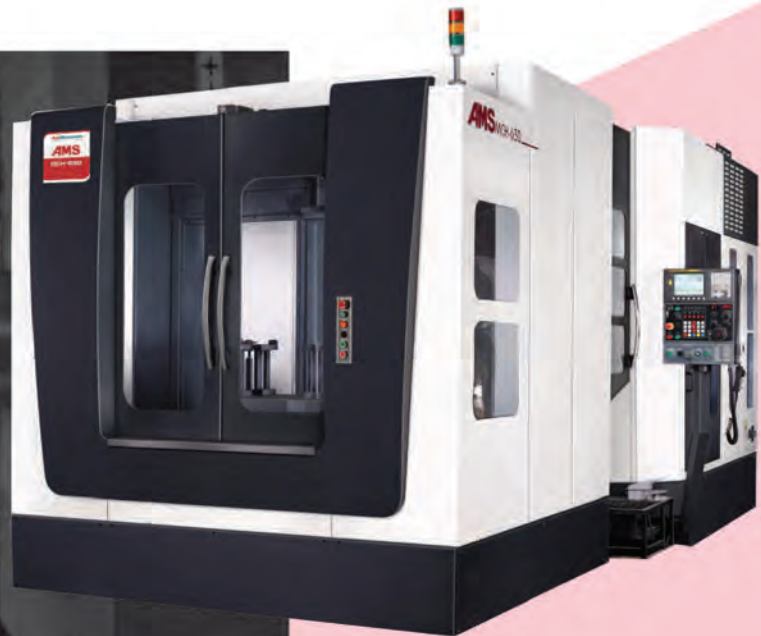
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