

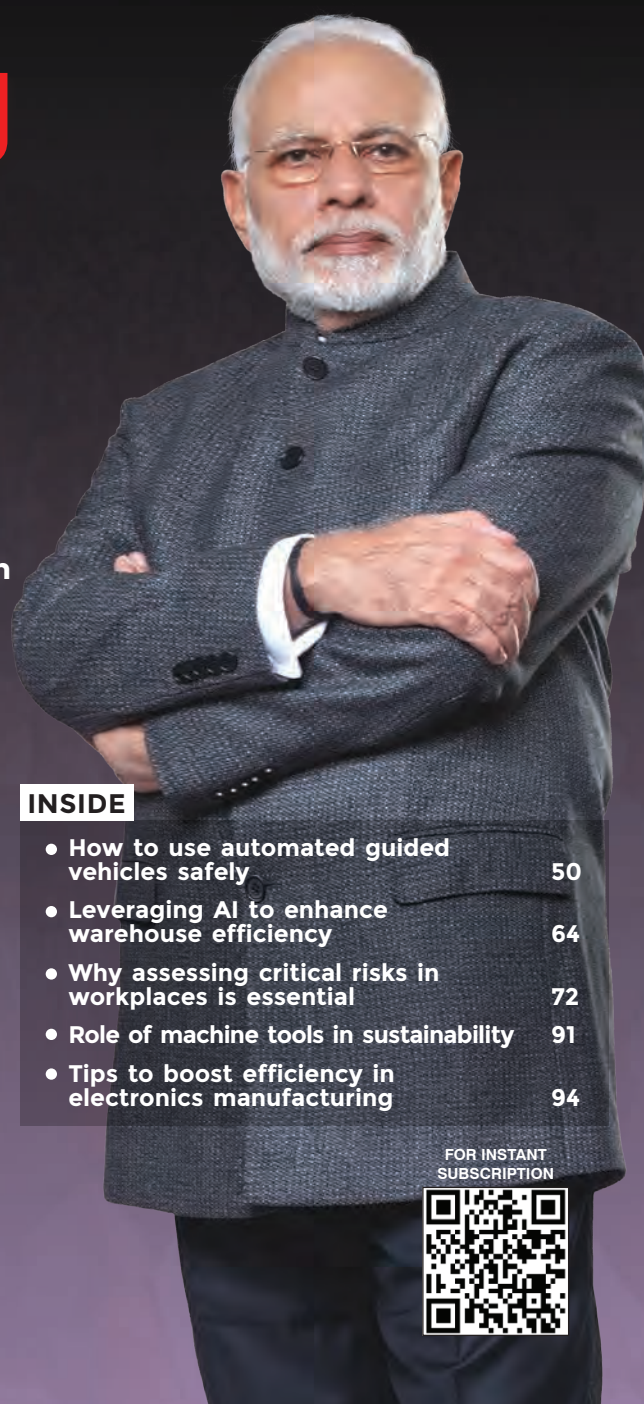
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Manufacturing Agenda for Modi 3.0

Despite the government's efforts in the last 10 years, the manufacturing sector's share in India's GDP has remained stagnant at around 17%. Will the third term of PM Narendra Modi-led government change the sector's fortunes?



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“As the industry celebrated MSME Day on June 27, the government needs to reinvigorate the micro, small, and medium enterprises (MSMEs) sector, which has been going through a challenging time in the recent years.

Focus on incremental reforms

According to a recent report of DSP Mutual Fund, the manufacturing sector's contribution to India's GDP is anticipated to rise from 14 per cent in FY24 to 21 per cent by FY34, bolstered by lower logistics costs and improved infrastructure. The manufacturing sector, driven by the Production-linked Incentive (PLI) scheme, is projected to expand threefold, reaching a market size of \$ 1.66 trillion from the current \$ 459 billion (FY24). However, this is easier said than done.

The government announced PLI schemes for 14 sectors in 2021 with an outlay of Rs 1.97 trillion. According to government data, PLI schemes have attracted over Rs 1.06 trillion investments till December 2023. While the scheme showed excellent results for the mobile manufacturing sector, the response has been tepid in sectors like IT hardware, auto, and auto components, textiles, and ACC battery storage. As per latest estimates, total disbursement of incentives under PLI schemes touched Rs 100 billion, but was mostly in just a handful of sectors. Now, the National Democratic Alliance (NDA) government, which recently assumed power for the third consecutive term under the leadership of Prime Minister Narendra Modi, is reportedly planning to tweak/change the terms of PLI schemes to make them more effective.

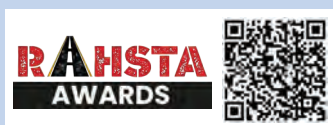
Inverted duties and confusing GST rates on products from same sector complicate things further. Basic customs duty structure, which affects \$ 680 billion worth of imports, has not been reviewed in 20 years. This has led to over 27 different duty rates and over 100 specific or mixed duty slabs. Currently, 85 per cent of customs duty revenue comes from less than 10 per cent of tariff lines, while 60 per cent of tariff lines contribute less than 3 per cent of revenue, according to the Global Trade Research Initiative (GTRI). The new government needs to take steps to simplify the customs duty structure for ease of compliance.

As the industry celebrated MSME Day on June 27, the government needs to reinvigorate the micro, small, and medium enterprises (MSMEs) sector, which has been going through a challenging time in the recent years. One of the demands of the sector is the revision in the Section 43B(h) of Income Tax Act that mandates payment to Micro & Small Enterprises (MSEs) within 45 days. *SME* magazine had raised this issue in its "Cover Story" of June 2024. Experts expect the Finance Minister Nirmala Sitharaman to make favourable changes in this rule in the upcoming budget.

After focusing on the key reforms in the last five years, experts believe the NDA Government in the third term will have to focus on the execution to accelerate manufacturing sector's growth with emphasis on generating jobs and increasing India's market share in the global trade pie. With India standing on the cusp of a transformative era, the need for comprehensive economic reforms has never been more urgent. The coalition government may not be able to take progressive reforms (like land, labour, agriculture, etc). So, instead of wasting its energy on big-ticket reforms, Modi 3.0 should focus on less contentious issues (like the few mentioned above), which can be equally effective in triggering growth.

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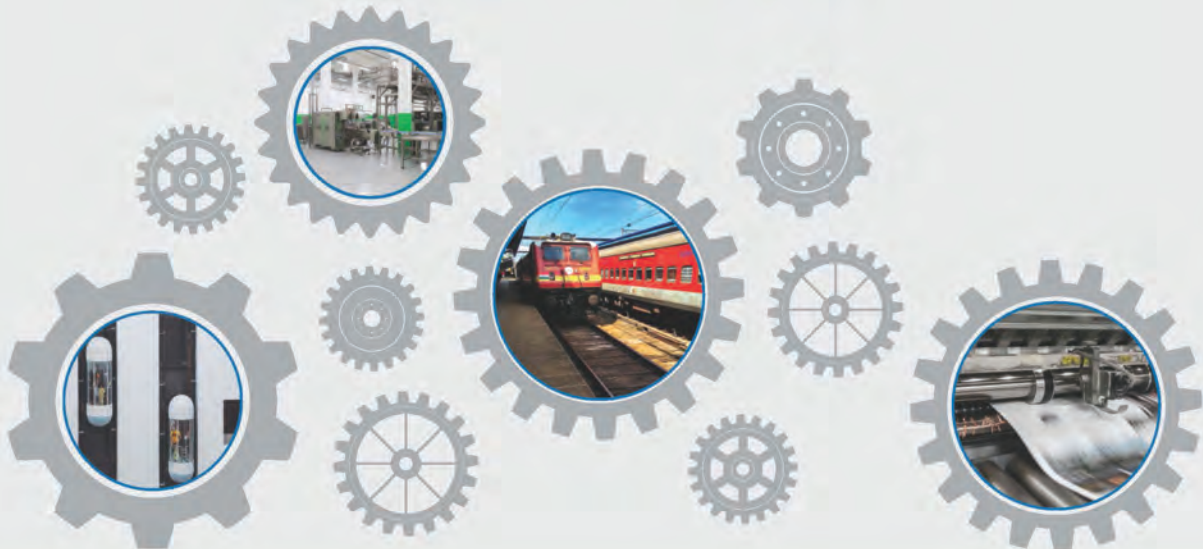
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As Prime Minister Narendra Modi assumes office for the third term, his immediate priority will be to step up GDP growth and job creation. While the coalition government may not be able to take progressive reforms, the industry expects continuity in the policy process. But, will it be enough to change the manufacturing sector's fortunes?.



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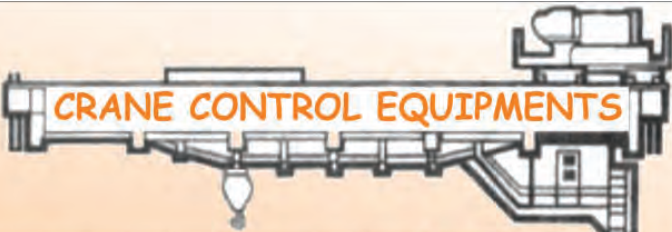
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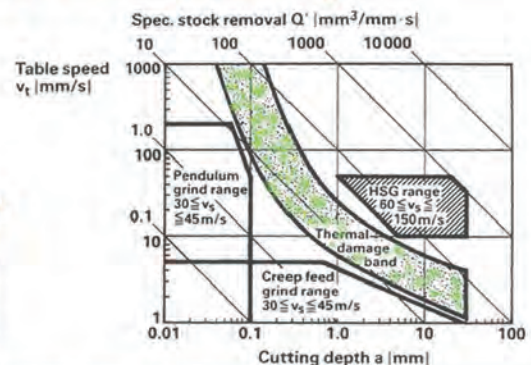
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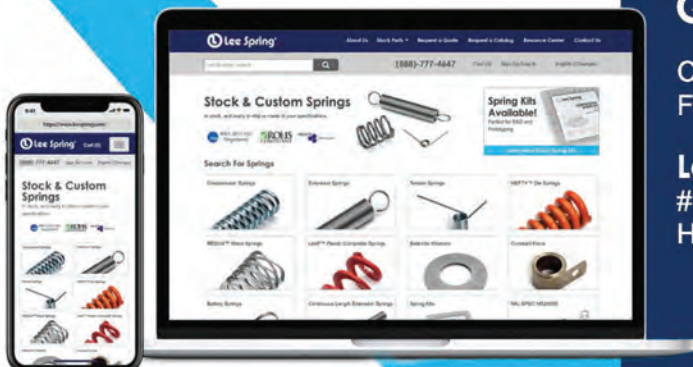
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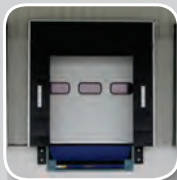


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Gates Corporation to establish Global Technical Center at Lalru, Punjab

Gates Corporation, a leading global provider of application-specific fluid power and power transmission solutions, has announced its plans to establish a Gates Global Technical Center in Lalru, Punjab. The foundation stone laying ceremony for this milestone project was held on June 13, 2024, with Dr Thomas Strong Moss, Senior Vice President of Innovation, Gates Corporation and Rajesh C Bhandari, Senior Managing Director, Gates India, leading the event.

This initiative marks a major step for Gates in India, highlighting the company's commitment to the region as a center for talent and R&D excellence. By setting up this cutting-edge facility, Gates aims to enhance its capabilities in innovation to deliver advanced solutions



to its global customer base.

Dr Moss expressed his enthusiasm for the project, stating, "We are excited to establish the Gates Global Technical Center in Lalru, Punjab. This new Technical Center reflects our confidence in India as a talent hub and R&D center. This investment will strengthen our

presence in India and drive innovation to benefit customers worldwide."

The Gates Global Technical Center will serve as a hub for collaboration and innovation, fostering partnerships with local institutions and industry stakeholders to address engineering challenges and drive breakthroughs.

Industrial Automation

Hikrobot launches machine vision photoelectric sensors for distance detection

Hikrobot has recently introduced the latest Machine Vision Photoelectric Sensors for various distance detection applications in India.

These photoelectric sensors were introduced to enable a wider range of applications across the verticals.

Commenting on Hikrobot's latest product offering **Ashish P. Dhakan**, MD & CEO, Prama Hikvision India Pvt. Ltd. commented, "India is experiencing a new wave of growth in the factory automation and machine vision segment. We are happy to share the latest photoelectric sensors for myriad distance detection applications to make complete solution for machine vision."

It is interesting to elaborate the how machine vision technology works with help of photoelectric sensors. The photoelectric sensors transmit 'light' such as visible light and infrared light through the transmitter, which then detects changes in the amount of light reflected or blocked by the detected object through the receiver to obtain an output signal.

Since detection can be performed without contact, the detection object will not be scratched or the sensor

itself will be damaged, extending the service life and requiring no maintenance.

At the same time, compared to other sensors, photoelectric sensors can be stable in high frequency electromagnetic fields and noise ambient to achieve long distance detection.

The photoelectric sensor feature includes following functions.

Excellent protection performance: The standard size sensor achieves IP67 protection rating and is able to suppress interference from sunlight, high-frequency LED light sources and strong electromagnetic ambient.

Wide range of detection objects: With the help of small point and laser technology, long-distance detection of various materials and scenes can be achieved.

Hikrobot is a globally recognised product and solution supplier specialising in machine vision and high-quality mobile robots. Heavily focused on IoT, smart logistics, and smart manufacturing, they build open cooperation ecosystems and provide services to industry and logistics customers.

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Electric & Electronics

Suzlon acquires 103.95 MW AMPIN energy transition order

Suzlon Group, India's largest renewable energy solutions provider, announced a new order win for the development of 103.95 MW wind power project for AMPIN Energy Transition Private Limited. Suzlon will install 33 wind turbine generators (WTGs) with a Hybrid Lattice Tubular (HLT) tower and a rated capacity of 3.15 MW each at the client's site in the Fatehgarh district in Rajasthan.

This order is for the company's larger rated 3.15 MW, S144-140m turbines from the 3 MW product series. As part of the agreement, Suzlon will supply the wind turbines (equipment supply) and execute the project, including erection and commissioning. Suzlon will also undertake comprehensive operations and maintenance services post-commissioning.



JP Chalasani, CEO, Suzlon Group, said, "We are extremely happy to partner with AMPIN Energy Transition, one of India's leading renewable energy transition platforms and Independent Power Producers (IPP). I am glad that AMPIN Energy Transition has reaffirmed their faith in us for this crucial project in Rajasthan. It is a

matter of pride for us that Suzlon's technology, end-to-end solutions, and services perfectly align with our customers' needs and expectations."

Vivek Srivastava, CEO-India, Suzlon Group, said, "Suzlon and AMPIN Energy Transition are committed to the expansion of renewable energy in India. Going forward, we will see the industry add on increasing volumes of hybrid renewable energy projects.

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Electric & Electronics

KEC International wins new orders worth ₹10.02 billion

KEC International Ltd., a global infrastructure EPC major, an RPG Group Company, has secured orders of ₹10.02 billion in its civil business. It has residential projects in Northern and Southern India from renowned real estate developers and is involved in the construction of official residences and associated facilities for senior defence officials in India.

Vimal Kejriwal, MD & CEO, KEC International Ltd. commented, "We are pleased with the new orders in our civil business, including our largest order in the Residential segment. The civil business continues to be on an exponential growth trajectory, which is reflected in the substantial repeat orders secured from existing clients across diverse segments."



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Auto Components

Pricol Limited achieves NABL accreditation for test labs

Pricol Limited, one of India's automotive technology companies, has received accreditation from the National Accreditation Board Testing and Calibration Laboratories (NABL). Its Product Reliability Assurance Lab (PRA Lab) located at Coimbatore, Tamil Nadu, India, has achieved NABL accreditation in accordance with ISO/IEC 17025:2017 standards.

The NABL accreditation process, involved a comprehensive evaluation of the laboratory's procedures, equipment, and personnel. This achievement not only enhanced the operational efficiency of Pricol's PRA Lab but also instils greater confidence in the services provided to customers, contributing to the advancement of scientific rigor and integrity in the field.



"We are proud of our PRA Lab team for their hard work in achieving NABL accreditation," said PM Ganesh, CEO & Executive Director, Pricol Limited.

"This accreditation is a testament to our commitment to quality and excellence. It reflects our pursuit of excellence and our dedication to

upholding the highest standards in all our endeavours."

The accreditation by NABL recognises the PRA Lab's competence in performing 79 different test scopes covering a wide range of automotive and industrial electronic products. The NABL is an autonomous body under the Department of Science and Technology, Government of India, and is the sole accreditation body for testing and calibration laboratories in India.

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Auto Components

Volkswagen makes 6 airbags the standard

Volkswagen India announced the standardization of 6 airbags across all the variants of the 5-Star GNCAP safety rated Taigun and Virtus, making India's safest portfolio of cars even more safe. Over one lakh Indian families have made the safer choice of owning the GNCAP 5-Star safety rated Taigun and Virtus as their preferred mobility solution since their market introductions to India.

Taigun and Virtus both offer customers a 5-star GNCAP rated safe mobility experience for both adult and child occupants. Volkswagen Taigun contributed to over 61 per cent of sales that led to the 100,000+ India 2.0 cars sales milestone while the Volkswagen Virtus has established itself as the premium mid-size sedan of choice among customers. Approximately 40 per cent of customers have fulfilled their aspirations of owning the highly coveted GT variants for both Taigun and Virtus.

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Railways

TRSL inaugurates new engineering centre in Bangalore for new product development

Titagarh Rail Systems Limited (TRSL), the prominent Indian rolling stock manufacturer, inaugurates a new engineering centre in Bangalore, furthering its innovation and design journey. The state-of-the-art facility will be dedicated to new product development for Train Control & Monitoring Systems (TCMS) and advanced Propulsion Systems, revolutionising the future of rail transportation in the country. The engineering Centre will also play a key role in executing TRSL's current and upcoming rolling stock & propulsion projects like Surat & Ahmedabad Metro, Vande Bharat, ICF EMU/MEMU etc. demonstrating company's unwavering commitment to the 'Make-in-India' and 'Aatmanirbhar Bharat' initiative towards a Viksit Bharat.

Outfitted with cutting-edge technology and infrastructure, the new centre is designed to foster creativity and collaboration among TRSL's engineers and

designers. The company anticipates hiring a large number of experienced engineers in several rolling stock disciplines at this facility. The center will function as an innovation hub, where ideas are transformed into tangible solutions that tackle the complexities of modern rail transportation.

"We are incredibly proud to inaugurate our new engineering centre in Bangalore. It is a hub of exciting engineering talent that will serve as a perfect opportunity for aspiring young engineers to support ever growing vision of Titagarh," said

Umesh Chowdhary, Vice Chairman & Managing Director, Titagarh Rail Systems Limited.

"The facility reaffirms our commitment to pushing the envelope in implementing cutting-edge rail technology while contributing to build an enhanced connectivity in the country."



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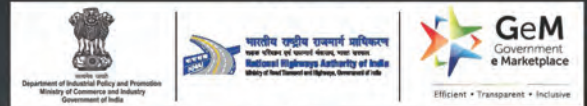
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Electric & Electronics

Siegwerk opens solar power park in Jaisalmer; aims for 35 per cent green energy by 2025

Siegwerk, a leading global provider of printing inks and coatings, proudly announces the inauguration of its state-of-the-art solar power park in Jaisalmer, Rajasthan on the occasion of World Environment Day 2024. This landmark propels the company closer to its ambitious goal of achieving 30 per cent renewable energy consumption at its Bhiwadi Centre of Excellence (CoE) by the year 2025.

This facility which is capable to generate 2,028,000 KWh of electricity per year was installed recently, significantly contributing to Siegwerk's renewable energy targets. The solar park spans 2.7 acres in Jaisalmer, a region renowned for its high solar radiation, approximately 20 per cent greater than Bhiwadi, enabling enhanced electricity generation. The high level of sun



radiation in the area ensures efficient and abundant electricity generation, supporting Siegwerk's energy needs at the Bhiwadi site. The solar park will contribute to environmental sustainability by reducing carbon emissions by 1,843 tonnes annually.

An agreement was finalised with a DISCOM, ensuring that the solar power generated is efficiently integrated into the grid. Consequently, official power draws from the solar park commenced on May 8, 2024. This project clearly showed the strategic focus of Siegwerk in generating a positive environmental impact by fostering innovation in energy solutions to contribute to a greener future for all.

The solar park is expected to be in operation for 25 years, contributing to renewable energy in the long term.

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Smart Manufacturing

Birla Carbon plants in Brazil, Hungary & Egypt receive ISCC PLUS certification



Birla Carbon, one of the leading manufacturers and suppliers of high-quality carbon-based solutions, is happy to announce that four more of its plants - Cubatão and Camaçari in Brazil, Tiszaújváros in Hungary, and Alexandria in Egypt, have secured the ISCC PLUS certification

Speaking on this recognition, **John Loudermilk**, President & CEO, Birla Carbon, said, "We are delighted to announce that our plants in Brazil, Hungary, and Egypt have achieved ISCC PLUS certification, representing a significant milestone in our sustainability journey. This accomplishment underscores our dedication to environmental stewardship and circularity through the provision of advanced products.

He added, "As we keep securing our certifications worldwide, we are boosting our commitment to sustainable and traceable practices, setting industry benchmarks, and driving toward a more sustainable future. This achievement reflects the collective efforts of our teams globally, driving us closer to our vision of a world where carbon solutions lead the way to a brighter, greener tomorrow."

Earlier this year, Birla Carbon achieved a significant milestone by obtaining the ISCC PLUS certification for its facilities located in the USA, South Korea, India, and Italy. The certification process for the rest of its plants is currently underway and is slated for completion through the remainder of CY 2024. These internationally recognised certifications serve as a testament to Birla Carbon's commitment towards realising net zero carbon emissions by 2050.

For Birla Carbon's stakeholders, ISCC PLUS certification serves as a trusted indicator of companies offering sustainable and circular raw materials.


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Electric & Electronics

Adani Solar maintains top performer position for 7 consecutive years

Adani Solar, the solar photovoltaic (PV) manufacturing arm of the Adani Group, has been recognised as a top performer in the 10th Edition of Kiwa PVEL's PV Module Reliability Scorecard.

Kiwa PVEL is a leading independent laboratory serving the downstream solar industry. Their annual scorecard highlights manufacturers that have produced PV modules demonstrating noteworthy results in independent testing.

Kiwa PVEL's Product Qualification Program (PQP) is the most comprehensive testing scheme to evaluate PV module reliability and quality through rigorous testing procedures. Adani Solar's PV modules successfully completed the PQP testing, demonstrating industry-



leading reliability and performance metrics. With this recognition, Adani Solar is the only Indian manufacturer to have maintained their status for seven consecutive years.

"We are honoured to win the Top Performer position again," said **Anil Gupta**, CEO, Adani Solar. "This

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Auto Components

DEP hosts the 2W/3W Industry Conclave in three cities across India

Detroit Engineered Products (DEP), creators of the MeshWorks integrated CAE platform, is pleased to announce the successful conclusion of the 2W/3W Industry Conclave. This event, themed 'Elevating Efficiency & Performance in 2W/3W Design and Development using AI/ML-enabled CAE Technologies', was recently held across three major Indian cities – Pune, Bangalore and Chennai. The conclave aimed to promote the development of faster, smarter, and greener vehicles through optimised design and manufacturing processes, reducing the need for prototypes. With advanced technologies, the event highlighted how costs are lowered, and time to market is shortened.

The conclave was attended by industry experts, professionals, and thought leaders from renowned companies such as Tech Mahindra, OLA Electric, Hyundai MOBIS, Bajaj Auto, KPIT, HCL Technologies, and Greaves Electric Mobility Pvt. Ltd.

The participants gathered to explore and discuss latest trends, innovations, and opportunities in the field.

DEP supports companies throughout the entire product development cycle. MeshWorks provides a suite of tools that facilitate design modifications, shape adjustments, and rapid iterations, thereby streamlining the design workflow.

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Manufacturing Agenda for Modi 3.0

As Prime Minister Narendra Modi assumes office for the third term, his immediate priority will be to step up GDP growth and job creation. While the coalition government may not be able to take progressive reforms, the industry expects continuity in the policy process, says Rakesh Rao. But, will it be enough to change the manufacturing sector's fortunes?

As the National Democratic Alliance (NDA), under the leadership of Prime Minister Narendra Modi, assumes power for the third consecutive term, expectations will be running high for transformative policies aimed at propelling India's economy. As a key pillar of the economy, manufacturing sector will have to play a pivotal role in making the country an economic powerhouse. Though working in a coalition may hinder the government's ability to undertake tough reforms, the industry can be assured of continuity in the policy process.

Ever since the NDA government was formed at the center in 2014, PM Modi has been an advocate of a strong manufacturing sector to propel India's economic progress. As part of its efforts towards making India a manufacturing hub, the government has announced a number of measures - including Production-linked Incentive (PLI) scheme - under its flagship programme of Make in India (later renamed as Aatmanirbhar Bharat scheme in 2020). Despite all these efforts, the contribution of the manufacturing sector to the GDP has remained stagnant at 15-17 per cent for decades. PL Muthusekhar, COO,

Hailstone Innovations Pvt Ltd, and Director on Board at Revathi Equipment Ltd, explains, "Manufacturing share looks stagnant because of other sectors growing at a better pace. Unless manufacturing sector grows double the GDP growth rate attaining desired results would be difficult. On competitiveness, we are losing our edge due to increase in cost of manufacturing and inflation compared to other smaller and developing countries. Unless government steps to contain inflation and also improve currency situation where Rupee needs to be strengthened."

The reforms of the 1990s triggered



My expectation is Make in India 3.0 with more ease of doing business and land reforms to become

investment friendly nation with single window system where both State and Central team works together.

PL Muthusekhar, COO, Hailstone Innovations, and Director on Board at Revathi Equipment

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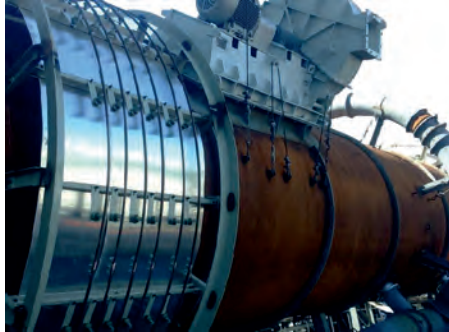
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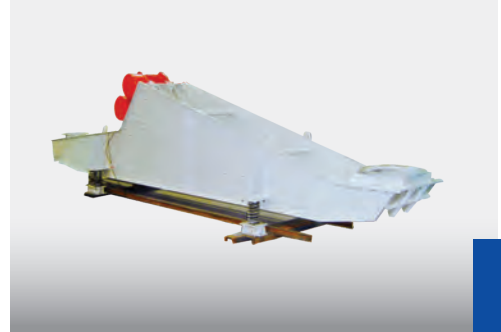
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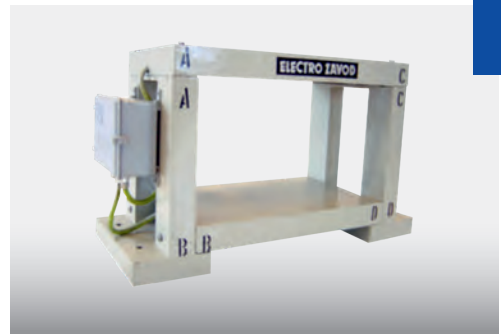
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the expansion of the service sector, which at present contributes over 50 per cent to India's GDP. The services sector not only contributes considerably to exports, it also attracts high-qualified youth and significant foreign investment. "With the advent of IT in 90s, India lost focus on manufacturing and so, manufacturing industry is not strong in terms of technology. We need to work on robust manufacturing processes that generate consistent quality results at high productivity," observes **Mohini Kelkar**, Director, Grind Master Machines Pvt Ltd.

Steady going

The Indian market is currently undergoing a transformative phase marked by both significant opportunities and challenges. **Anurag Garg**, Country Head & Managing Director, Vitesco Technologies India, comments, "The drive towards sustainable mobility and government initiatives, like the FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) scheme, have fostered a favourable environment for electric vehicles (EVs). However, the market faces substantial hurdles, including the need for better infrastructure, high initial costs, and the requirement for workforce upskilling to match technological advancements. The manufacturing sector is also dealing with supply chain disruptions, fluctuating raw material prices, and regulatory complexities."

The Modi government has been successful in bringing down fiscal deficit from 9.2 per cent in 2021-22 (largely due to Covid related expenditure) to 5.8 per cent in 2023-24 with a plan to reduce it to 5.1 per cent by 2024-25. While the revenue expense as a proportion of total expenditure was 89 per cent ten years ago, it will be just 77 per cent in 2024-25.

According to **Farrokh N Cooper**, Chairman and Managing Director of

Bottlenecks for growth

Some of the hurdles before the Indian manufacturing sector are:

- Supply chain interruptions caused by trade disputes and geopolitical unrest, which make it more difficult for components and raw materials to arrive in a consistent supply
- Skills gap in the workforce, with many workers lacking the sophisticated technical skills needed for contemporary industrial procedures
- Insufficient transportation and logistics networks are examples of infrastructural shortcomings that make it difficult to produce and distribute goods efficiently
- Variable energy costs and irregular power supplies further burden manufacturing activities
- Bureaucratic and regulatory barriers, including onerous approval procedures and complicated compliance requirements, restrict growth and innovation



Improving manufacturing competitiveness is not indeed the job of the government; it is up to the industry to really do this. We have to improve our competitiveness through robust technologies, automation and having more appetite for the business.

Mohini Kelkar, Director, Grind Master Machines Pvt Ltd

Cooper Corporation Pvt Ltd, the market in India is currently robust, yet it faces several significant challenges. "Increasing raw material prices and high attrition rates are putting pressure on manufacturing units. Furthermore, the complexity and high rates of GST, coupled with elevated bank interest rates and power charges, are making the sector uncompetitive. Although the government encourages timely tax payments, there are considerable delays in tax refunds, disrupting business operations. Refunds should be processed within a fixed period to ensure financial stability for businesses. Additionally, subsidies need to be simplified and made accessible online with minimal bureaucratic interference. There

should be a regulatory body to address customer grievances with state electricity boards in a time-bound manner," he elaborates.

Since 2014, the share of India's merchandise exports has increased marginally from 1.70 per cent in 2014 to 1.82 per cent in 2023. India's rank in world merchandise exporters also saw marginal improvement from 19th to 17th during the same period. Despite persistent global challenges, India's overall exports increased by 0.23 per cent in FY24 to \$778.2 billion as compared with \$776.4 billion in FY23. While India's merchandise exports dipped by 3 per cent to \$437.1 billion in FY24, service exports rose by 4.85 per cent to \$341.1 billion in FY24 as against \$325.3 billion in FY23.



We anticipate the upcoming Budget to introduce measures that stimulate growth and innovation in the EV sector. We hope for policies that localise the EV supply chain, reducing import dependency and boosting self-sufficiency.

Anurag Garg, Country Head & MD, Vitesco Technologies India

For example, plastics exports at \$ 11.5 billion witnessing a decline of 3.5 per cent during FY 2023-24 on a YoY basis. “While the export of plastic raw materials fell by 10.1 per cent, the export of value-added plastics was lower by just 2 per cent. Multiple factors impacted the exports including high inflation in key markets; on-going war between Russia-Ukraine; conflict in the Middle East (Israel-Hamas); Red Sea crisis; and softer commodity prices. Further, during 2023-24, the average export price realisations for many products were lower,” elaborates **Sribash Dasmohapatra**, Executive Director, Plastics Export Promotion Council (Plexconcil).



“The upcoming budget must foster a more supportive and streamlined environment for SMEs. Specifically, I advocate for the introduction of a technological upgradation scheme similar to the PLI scheme to help small forging units modernise and remain competitive.”

Farrokh N Cooper, CMD, Cooper Corporation Pvt Ltd

Dasmohapatra adds, “Some of the more pressing concerns for the industry are non-tariff barriers, like mandatory BIS certification on polymer imports, which are expected to create raw material shortages and escalate production costs. Additionally, Indian buyers are dealing with a 10-15 per cent premium on polymer prices compared to global rates. Together, not only would this impact export competitiveness, but also domestic prices resulting in the import of cheap finished products.”

Manufacturing sector has been facing the persistent challenge of



To solidify India’s position as an economic powerhouse, the government will have to strengthen manufacturing with focus on advanced manufacturing.

skilled workforce. Kelkar adheres, “Skilled manpower is indeed a grave concern as we are losing the manpower to the other industries like IT, electronics, etc and to multinational companies. So the big challenge for manufacturing industry is to retain the manpower and to enhance their skill. In order to bridge the skill gap, the industry is devising its own training programmes. But, if institutions work closer with industry for training and up-skilling, manufacturing companies will get industry-ready workforce.”

The current state of the global market presents several significant problems for the Indian manufacturing industry. **Dhawal Gupta**, Co-founder, Subhot Enterprises, suggests, “My immediate hopes for the third term of Prime Minister Narendra Modi are centered on increasing the industrial sector’s competitiveness in the face of difficult global market conditions. First off, I see strong legislative backing for the Make in India campaign, which encourages industry-wide innovation and technology adoption. It is essential to simplify regulatory frameworks to lower administrative barriers and enhance the convenience of doing business. In addition, I anticipate that higher infrastructure spending will lower costs and boost efficiency, especially in supply chains and

logistics. To close the talent gap, skill development initiatives adapted to the demands of contemporary manufacturing will be essential. Moreover, maintaining prosperity will depend on developing strategic alliances and enacting robust trade laws to handle the complexity of the world economy.”

The government has been trying to prop up exports through free trade agreements (FTAs), with many in the pipeline. However, it has to act cautiously as FTAs signed earlier have not benefited India’s exports. Dasmohapatra states, “The terms of existing FTAs, particularly to mention the India-UAE CEPA, have not significantly boosted exports. While we welcome the government fast tracking FTA renegotiations, we wish to see greater benefits for

Table 1: India’s share in global merchandise exports

	2014	2023
Share	1.70%	1.82%
Rank	19 th	17 th

Table 2: India’s share in global services exports

	2014	2023
Share	3.10%	4.60%
Rank	8 th	7 th

plastics exports as well, which presently is not the case. High cost of finance and logistics is another key challenge faced by the industry. With the growing number of plastics parks, cluster development goals, we hope that some of the present challenges will be mitigated, and a more conducive environment may be created for manufacturing growth.”

Budget expectations

In the third term, the industry expects continuity in the development agenda which the Modi-government has set so far in the past 10 years. Mohini Kelkar elaborates, “Technology development for public sector always has a horizontal effect across other industries. The initiatives like Make in India will get deeper meaning if public sector companies are mandated to work with private manufacturing sector as a partner to develop higher value added equipment. I think currently, it is at the level of commodity products. When it comes to the higher technology, hand holding of public sector with the Indian companies can lead to better technology developments and this will also help in improving the skills of the people.”

Farrokh Cooper expects the upcoming Union budget to foster a more supportive and streamlined environment for small and medium enterprises (SMEs). “Specifically, I advocate for the introduction of a technological upgradation scheme similar to the PLI scheme to help small forging units modernise and remain competitive. Additionally, I urge the government to address the issue of delayed payments. Current regulations require SMEs to pay bills within 45 days, which is unrealistic given that payments for exports are often received after 180 days, and domestic sales payments are typically delayed by 60 to 90 days. This discrepancy disrupts cash flows and needs urgent resolution,” he adds.

Booster Dose

To increase the Indian manufacturing sector’s competitiveness, according to Dhawal Gupta following steps need to be taken:

- First, modernising and streamlining industrial processes can be achieved by investing in sophisticated technology and Industry 4.0 methods, such as automation, artificial intelligence, and the Internet of Things.
- Second, improving supply chain networks and logistics will lower manufacturing costs and improve operational efficiency.
- Third, a workforce equipped to handle advanced manufacturing techniques will be ensured by promoting skill development through training programs tailored to the needs of the sector.
- Fourth, both domestic and foreign investment can be attracted by streamlining regulatory frameworks and offering tax incentives.
- Furthermore, encouraging R&D projects will spur innovation and diversify the product line. Enhancing IPRs will safeguard investments and promote innovation.



The industry hopes the new government will simplify BIS requirements, reduce polymer price premiums, extend support schemes to all plastics manufacturers, renegotiate FTA terms, etc to promote domestic value addition.

Srihash Dasmohapatra, Executive Director, Plexconcil

Industry leaders have urged the government to give a policy push to put in more money in skilling/up-skilling the new workforce and re-skilling the existing workforce. The government should aim to create jobs by promoting skill development and vocational training, especially in futuristic areas including AI, robotics, machine learning, drones, chip manufacturing. Kelkar says, “Skill India initiative needs a boost and more cross checks in implementation on ground, particularly in rural India. Training the trainers should get a priority and compulsory to make such programmes effective.”

Dasmohapatra adds, “The plastics

industry struggles exclusion from the Technology Upgradation Fund Scheme and the PLI Scheme that are significant to the growth of the manufacturing segment. Plastics have a very wide application and, hence, such measures will not only help achieve Aatmanirbhar goals but also open wide opportunities for employment and entrepreneurship.”

At the moment, India’s GDP is growing at a robust pace clocking 7 per cent and 8.2 per cent growth in 2022-23 and 2023-24, respectively. However, this growth has been powered predominantly by the government’s massive capital expenditure (capex) post-Covid. While the central government’s capex in 2018-19 was just Rs 3 trillion (i.e. 1.6 per cent of GDP), it will be Rs 11.11 trillion (3.4 per cent of GDP) as per the 2024-25 interim budget.

Muthusekhar comments, “Budget expectations from industries would be in the form of improving the expenditure from both government and private spending. More developments in coal and other minerals can improve the GDP growth and also enhance the power supply which is an engine to drive manufacturing. Jobs creation an important under the current circumstances and private sector can play a major role in meeting this

challenge certainly with the help from the government through PLI and any other new Schemes.”

Streamline GST for a growth overdrive

The auto components industry, accounting for 2.3 per cent of India’s GDP and providing direct employment to 1.5 million people, play a crucial role in fostering manufacturing sector’s growth. Under GST, the auto components attract two different rates – 18 per cent and 28 per cent. While majority of auto components are at 18 per cent GST, 36 per cent of components are still subjected to 28 per cent GST. While the tax paid is cenvatable in the manufacturing supply chain, ACMA has expressed its concern pertaining to sales of auto components in the aftermarket, which is valued at Rs 674.91 billion.



It is essential to simplify regulatory frameworks to lower administrative barriers and

enhance the convenience of doing business. Also, I anticipate that higher infrastructure spending will lower costs and boost efficiency, especially in supply chains and logistics.

Dhawal Gupta, Co-founder, Subhot Enterprises

“Over 70 per cent of the players in the aftermarket are MSMEs. Counterfeit products and spurious parts adversely affect these players. A higher GST rate compels smaller component manufacturers to gravitate towards non-compliance and survive by means of under-invoicing and producing sub-standard/spurious components.

Many of the safety-critical parts are in the higher bracket of 28 per cent and are compromised, thus putting to risk the lives of drivers, passengers and pedestrians,” stated ACMA in a press release.

A reduction in tax rate would incentivise the unorganised sector to undertake GST compliance and it will also reduce the gap in the price between the standard vis-à-vis the sub-standards. ACMA has recommended that the entire component industry should be bracketed under 18 per cent (GST) rate or lower, as a large aftermarket services almost all categories of products.

While the Government has introduced various schemes to boost the demand of electric vehicles in India, there is an adverse impact on the industry due to inherent inverted duty structure as the GST input on raw material and other overheads are on average of 18 per cent wherein the output tax payable on EVs is pegged at 5 per cent. Since the parts and materials of electric vehicles are taxed at a higher rate in India, reduction in such rates is necessitated to boost localisation levels across the value chains in a bid to curb imports and promote indigenous manufacturing.

Commenting on his budget expectation, Anurag Garg says, “At Vitesco Technologies, we eagerly anticipate the upcoming Union Budget to introduce measures that stimulate growth and innovation in the EV sector. We expect incentives for R&D in advanced EV technologies and enhanced support for infrastructure development, including charging stations and supply chain improvements, to accelerate EV adoption in India. Additionally, we hope for policies that localise the EV supply chain, reducing import dependency and boosting self-sufficiency. Tax incentives or subsidies for local manufacturing of components could bolster domestic production, while

fiscal measures such as GST reductions and incentives for retrofitting traditional vehicles can make EVs more accessible to consumers.”

Table 3: Government’s capex propels India’s growth post-Covid

	2018-19	2024-25 (as per interim budget)
GoI Capex	Rs 3 trn	Rs 11.11 trn
Share of GDP	1.60%	3.40%

Improving competitiveness

Looking ahead, to improve the competitiveness of the Indian manufacturing industry, several strategic measures are necessary. Cooper elaborates, “Firstly, simplifying subsidies with minimal bureaucratic intervention and transitioning to online platforms would streamline processes and reduce administrative burden. Secondly, establishing a dedicated regulator for state electricity boards could ensure fair and efficient resolution of customer grievances related to power supply. Thirdly, implementing a faster timeline for income tax refunds for honest taxpayers is imperative. These long-term reforms would create a more conducive environment for manufacturers, promoting investment, innovation, and sustainable development across the sector.”

Meanwhile, some industry experts have urged the government to encourage increase in investments in research and development to push exports, which require innovative products to excel in the developed markets. Mohini Kelkar states, “Improving manufacturing competitiveness is not indeed the job of the government; it is up to the industry to really do this. We have to improve our competitiveness through robust technologies, automation and having more appetite for the business.

What government can probably do is promote the technology development through various R&D support programs. I would suggest forming mentors groups who can guide the younger team in their efforts. R&D based on industry needs should get priority. Such needs will improve competitiveness. Another important thing, the government can do is to reduce logistics cost for the industry.”

The new Union government needs to focus on streamlining regulations to enhance business competitiveness, further simplify procedures and reduce compliance burdens. Dasmohapatra elaborates, “In the short term, the industry hopes the new government will simplify BIS requirements, reduce polymer price premiums, extend support schemes to all plastics manufacturers, renegotiate FTA terms, etc to promote domestic value addition. For long-term competitiveness, the government should actively pursue enhancement of polymer production capacity, include plastics in the PLI Scheme, improve logistical support, foster technology adoption, strengthen domestic supply chains, invest in skill development, and promote sustainable manufacturing practices. Addressing these issues can significantly boost the industry’s growth and global competitiveness.”

Laying a solid foundation

To solidify India’s position as an economic powerhouse, the government will have to strengthen manufacturing with focus on advanced manufacturing, including Industry 4.0 technologies such as artificial intelligence (AI), Internet of Things, robotics and big data. Garg elaborates, “To enhance the competitiveness of the Indian manufacturing industry in the long



The big challenge for manufacturing industry is to retain the manpower and to enhance their skill.

term, it is recommended that the government prioritise several strategic areas. Firstly, there should be continued investment in advanced manufacturing technologies such as IoT, AI, and robotics under Industry 4.0, aimed at boosting efficiency and productivity. Providing financial incentives like grants, subsidies, and tax benefits to encourage adoption of these technologies could significantly impact the sector. Secondly, fostering robust public-private partnerships is essential to stimulate innovation and strengthen the supply chain resilience. Collaborative efforts involving industry leaders, academic institutions, and governmental bodies can catalyze the development of cutting-edge technologies and establish premier manufacturing centers. Lastly, implementing comprehensive policies that promote sustainable practices and green manufacturing will not only strengthen competitiveness but also ensure long-term economic and environmental viability.”

Modi 3.0’s immediate priority will be to sustain the pace of GDP growth (7 per cent in FY23 and 8.2 per cent in FY24), which will not be easy. In fact, GDP may slip below FY24 level in 2024-25. Instead of wasting its

energy on big-ticket reforms (like land, labour, agriculture, etc) that are difficult to pull off in a coalition era, experts feel the government should focus on less contentious issues (financial sector reforms, improving the dispute settlement mechanism, etc), which can be equally effective in triggering growth.

The government, under Prime Minister Modi, is already working towards laying a solid foundation for a strong and developed country by 2047. But to realise this mission the center will have to work closely with the state governments. Muthusekhar expects Make in India 3.0 with more ease of doing business and land reforms to become investment friendly nation with single window system where both State and Central team works together.

India needs to create 20 million jobs a year to gainfully employ its people. Though the unemployment rate for people aged 15 years or above dipped to 3.1 per cent in 2023 from 4.2 per cent in 2021 (according to the Periodic Labour Force Survey’s data), India has not been able to generate enough jobs in line with demand. Hence, Modi 3.0 needs to focus on labour intensive industries and MSMEs to generate more jobs.

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Building India's Global Manufacturing Capabilities

The Indian manufacturing sector stands at a critical juncture, with several opportunities arising from global shifts and local initiatives. But to take advantage of this evolving market, Indian manufacturers have to raise their global competitiveness, says Rakesh Rao.



The Government of India (GoI) has been aiming to increase the contribution of manufacturing to total GDP from around 15-17 per cent to 25 per cent for the last many years. To achieve it, GoI has rolled out various initiatives like Aatmanirbhar Bharat/Make in India, Production-linked Incentives (PLI) scheme, low corporate tax rates for new manufacturing units, etc. It has been also spending on improving infrastructure and the logistics network via Gati Shakti mission, multi-modal connectivity, etc. Despite efforts, manufacturing's share in the economy has not significantly increased and more efforts are required to propel its growth.

"It is crucial to integrate local resources while maintaining a global outlook to achieve success with value-based products. Regarding the efforts made by governments over the past decade to boost the manufacturing sector's contribution to GDP, it's evident that despite these efforts, the manufacturing share has remained stagnant to around 17 per cent," highlights **Manish Jhunjunwala**, Executive Director, PwC India.

India is experiencing significant development and opportunities fuelled by government spending in infrastructure and related sectors. This move has spurred demand in the manufacturing sector - especially automotive, construction equipment, agriculture equipment, and material handling. **Sandeep Khullar**, Director of Off-Highway and Commercial Vehicle, Dana India, elaborates, "In the tier one auto component manufacturing sector, there is significant excitement and

opportunity driven by government infrastructure investments. This creates a strong demand in automotive, construction equipment, agriculture, and material handling. The growth of e-commerce is also increasing the need for material handling solutions. Global customers are turning to India as a strategic partner, attracted by competitive pricing and the ability to meet global quality and delivery standards. Many OEMs are diversifying their supply chains away from China due to geopolitical factors, further benefiting India. India is emerging as both a manufacturing and sourcing hub to support global operations. This shift presents significant opportunities for the sector. The key challenge now is to effectively capitalise on this strong local and global demand."



The availability of skilled manpower is uneven across sectors and regions. Addressing the skill gap through targeted training programs is essential to meet the demands of advanced manufacturing.

Manish Jhunjunwala,
Executive Director, PwC India

Increasing India's global share

Sharing his perspective on the prevailing market scenario, **Dr Jairam Varadaraj**, Managing Director, Elgi Equipments Ltd, opines, "Protectionism is rising globally, driven by right-wing political platforms in developed countries seeking to safeguard their economies. Bilateral treaties are becoming more common as countries move away from multilateral agreements. India, with its strong international presence, is well-positioned to negotiate favourable treaties, so protectionism is not a major concern for Indian companies looking to access global opportunities."

However, he believes that the challenge lies within.

“India’s tendency has been to produce low-cost products for the bottom of the market pyramid. Globally, 80 per cent of opportunities are in high-performance, value-based buying, not price-based. Focusing on low-cost segments means limiting growth and keeping wages low, which isn’t beneficial for India. To capitalise on global opportunities, India must invest in technology, quality, and advanced systems and processes. This requires a long-term approach, but with commitment, the opportunities are substantial,” elaborates Dr Varadaraj.



India is emerging as both a manufacturing and sourcing hub to support global operations. This shift presents significant opportunities for the sector. The key challenge now is to effectively capitalise on this strong local and global demand.

Sandeep Khullar,
Director – Off-Highway and Commercial Vehicle, Dana India

According to **T K Ramesh**, Managing Director, Ace Designers Ltd, the market conditions for Indian manufacturing are both exciting and challenging. “The excitement stems from the potential for growth and the opportunities presented by the evolving global economic landscape. However, these opportunities come with challenges that require manufacturers to be agile and adaptable,” he adds.

The ability to predict long-term trends has diminished (because of the high volatility and uncertainty in the market), making it essential to plan for shorter terms. Ramesh explains, “Long-term plans of five years have now become two or three years. Strategic plans require agility, the ability to fail quickly and cheaply, and rapid retooling to stay competitive. The market is growing and becoming more competitive. Success hinges on adaptability and delivering better value to the marketplace.”

On the export front, Indian manufacturers face both opportunities and competition. He says, “Geopolitical shifts particularly trade tensions between the US and China, have prompted global companies to diversify their supply chains. This shift opens doors for Indian manufacturers to become strategic partners. However, India must compete with other emerging economies like Vietnam and Thailand, which are also vying for a share of the global manufacturing pie.”

Changing industrial landscape

The last couple of years have been full of ups and

downs for industries globally. Hence, Indian manufacturers are facing several challenges today. “First, capital investment is crucial. While the government has made substantial investments in infrastructure and the defense sector, private industry also needs to contribute. This is vital as Foreign Direct Investment (FDI) fell by 43 per cent from \$80 billion in 2022 to \$46 billion in 2023 and is expected to decline further in 2024. Second, there is a need for skill development, particularly in artificial intelligence (AI), machine learning (ML), and algorithm development. While there are new-age companies that are taking efforts, more needs to be done, especially in engineering colleges and professional bodies,” says **R Jayaraman**, Head, Capstone Projects, Bhavan’s S P Jain Institute of Management & Research (SPJIMR).

A strong, growing domestic market and favourable government policies (at the center as well as state level) have prompted global firms to look at India favourably. As a result, in the last few years, many multinational companies (MNCs) have increased their manufacturing footprint in India to meet their global requirements.

Elaborating on the key yardsticks used by MNCs while investing in a country, Sandeep Khullar says, “When making investment decisions, global companies consider several key factors. The presence of a substantial domestic market and long-term business potential is crucial. A country must offer significant domestic industry and consumer opportunities. Consistent government policies, favourable tax



Protectionism is rising globally. India, with its strong international presence, is well-positioned to negotiate favourable treaties. So, protectionism is not a major concern for Indian companies looking to access global opportunities.

Dr Jairam Varadaraj,
MD, Elgi Equipments Ltd

structures, and a business-friendly environment are vital for decision-making. Adequate infrastructure for manufacturing and a robust logistics network for exports are essential, especially for companies relying heavily on exporting goods. Availability of skilled labour in manufacturing and other functions is a significant consideration. A strong domestic supplier base for materials and components is necessary since not everything can be manufactured in-house. The country must be competitive compared to other investment options globally. India scores favourably on most of

these parameters, making it an attractive destination for global investments.”

China-Plus-One policy and relatively high national GDP growth rate present a big opportunity for India to emerge as a manufacturing hub for the world. Ramesh explains, “The US-China trade tensions have prompted many global companies to adopt a China-Plus-One



“The US-China trade tensions have prompted many global companies to adopt a China Plus One strategy. This presents a significant opportunity for India to position itself as a preferred manufacturing destination.”

T K Ramesh,
MD, Ace Designers Ltd

strategy, diversifying their supply chains by adding manufacturing bases outside China. This presents a significant opportunity for India to position itself as a preferred manufacturing destination. However, seizing this opportunity requires substantial improvements in infrastructure, technology, and human capital.”

But, India faces competition from countries like Vietnam, Indonesia, Malaysia, and Thailand, which are often better prepared in terms of infrastructure and company readiness. Despite this, he believes, the presence of major automotive giants and their established supply chains in India offers a foundation for scaling up and adopting newer technologies.

Impact of government initiatives

The Government of India, as part of its Aatmanirbhar Bharat initiative, announced Production-Linked Incentive (PLI) schemes for 14 sectors in 2021 with an outlay of Rs 1.97 lakh crore to attract big investments in manufacturing and build capacity. The PLI schemes offer financial incentives to manufacturers based on their production output. “The impact of these initiatives is expected to be significant in the long term. As manufacturers benefit from incentives and support, they are likely to invest in upgrading their facilities, adopting new technologies, and improving productivity. Over time, this will enhance the competitiveness of Indian manufacturing and contribute to higher GDP growth,” elaborates Jayaraman.

According to Manish Jhunjhunwala, India has a large youth workforce, which is a key strength. “However, the availability of skilled manpower is uneven across sectors and regions. Addressing the skill gap through targeted

training programs and partnerships with educational institutions is essential to meet the demands of advanced manufacturing. India’s overall competitiveness is influenced by factors like cost of production, innovation capability, and business environment. The country’s competitive advantage lies in its cost-effectiveness, but to sustain this advantage, continuous improvements in productivity, innovation, and quality are necessary,” he explains.

Have a global outlook

Government policies and initiatives play a crucial role in enhancing the competitiveness of the manufacturing sector. However, for India to make a mark on the international market, individual companies will have to play a big role by increasing their global competitiveness. “It is the individual players (citizens, companies, organisations, etc) who are the key drivers of the economy, while the government plays the role of a facilitator. Hence, it is important for every individual to aspire to be global for India to be a globally competitive



“The impact of PLI scheme is expected to be significant in the long term. As manufacturers benefit from incentives and support, they are likely to invest in upgrading their facilities, adopting new technologies, and improving productivity.”

R Jayaraman,
Head, Capstone Projects, S P Jain Institute of Management & Research

country. It is crucial for the company to transform at every level (such as processes, workforce, products, etc) with a global outlook and strategy. It is a long drawn process, but worth the effort as being globally competitive opens up new business opportunities,” opines Dr Varadaraj.

The Indian manufacturing sector stands at a critical juncture, with several opportunities arising from global shifts and local initiatives. Despite competition from other emerging economies, India’s advantages, including a large consumer market and favourable demographics, increase its attractiveness to global investors. SME

(With inputs from Sanskriti Ramachandran)

This article is based on the webinar - titled “Can India Build Global Manufacturing Capabilities?” - organised by Smart Manufacturing & Enterprises on June 21, 2024.



Safety Integration of AGVs

In the article, **Marcel Bogusch, Industry Manager – Intralogistics, K.A. Schmersal GmbH & Co. KG**, explains what do system integrators and users need to keep in mind when planning and operating materials handling systems with Automated Guided Vehicles (AGVs).



Courtesy: AGILOX Services GmbH, Austria

AGVs are increasingly commonplace in factories and plants.

AGVs and industrial service robots are solutions for autonomous, flexible materials transport. AGVs and industrial robots have arrived at the very heart of intralogistics. And the trend is set to continue. Market research institute Mordor Intelligence has predicted that between 2023 and 2028, Europe's AGV market will grow by around 19 per cent each year.

This is also due to the high level of market differentiation. The spectrum ranges from mini-vehicles for smaller containers all the way to heavy-duty AGVs with capacities of several hundred tonnes. There is also a proliferation of autonomous mobile robots (AMRs) with additional degrees of autonomy, used in a wide variety of areas, from the automotive industry to mechanical engineering, parcel logistics to heavy industry and even hospitals.

The challenge

From an occupational health and safety perspective, this is an exciting development, and a challenging one. AGVs often have to move in the same workspace as

personnel and, because they are automated vehicles, special safety precautions need to be taken and certain requirements satisfied. This is often new territory for users, and it is undoubtedly challenging.

Incomplete machines

The starting point is the definition of a 'machine' under the Machinery Directive. It's no trivial question. By definition, AGVs are typically supplied as incomplete machines. At the same time, the complete system must be regarded as an 'assembly of machinery', which requires a certificate of conformity. The party that is responsible for ensuring this, whether the manufacturer or system integrator, must be determined early on.

The manufacturer's perspective

The requirements for the safety of AGVs are more complex than those for other transport and conveyor systems as AGVs have to take both the Machinery Directive and its subordinate standards (i.e. the perspective of the manufacturer) as well as the



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occupational health and safety regulations of the respective facility (i.e. the perspective of the operator) into consideration.

For manufacturers of AGVs and complete systems, C-standard 'EN ISO 3691-4 Industrial trucks - Safety requirements and verification - Part 4: Driverless industrial trucks and their systems.' has applied since the end of 2020. The standard replaced EN 1525, which had been in effect since 1997 and had ceased to reflect the state of the art.

The new standard specifies the basic requirements for AGVs, transfer stations and the complete system. It distinguishes four different operating areas: operating area, operating hazard area, restricted area and closed area. Defined safety requirements must be satisfied for each of these four areas. These requirements include safety clearances, travel speeds, safety markings and specifications for active and passive personnel detection equipment.

The operator's perspective

In contrast to other automated systems, AGVs work at the very heart of production, with no safety fences or delineated working areas, which means that the occupational health and safety regulations of the production facility in which they are used apply to their integration into the production environment.

As an example, the Operational Safety Ordinance applies to AGV applications in Germany. Subordinate to these are the technical regulations (TRs) 'ASR1-2 Room dimensions and movement areas', 'ASR-A1-8 Traffic routes' and 'ASR-A2-3-1 Escape routes and emergency exits, escape and rescue plan'. These TRs must be taken into consideration, as integration of an AGV could have an impact on their requirements.

Annex A, tables 1 and 2 of DIN EN ISO 3691-4 provide a detailed description of all relevant relationships with clearance dimensions, active/passive personnel detection equipment, permissible speeds, markings and restart procedures.

Central safety function

Quite understandably, a central safety function of AGVs is personnel detection. This ultimately decides whether an AGV detects a person working in the area of the planned route and responds accordingly, e.g. by stopping or modifying its route.

ISO 3691-4 (see above) requires Performance Level (PL) 'd' (PLR = d) for this particular function. The standard also specifies test requirements for upright and horizontal obstacles. In addition, it also imposes requirements on warning systems, emergency-stop devices, operating modes, load handlers, towing and trailer operation and on the technical documentation



Courtesy: K.A. Schmersal GmbH & Co. KG.

The Schmersal Group has extensive expertise in the safeguarding of hazardous areas in intralogistics

and operating instructions.

The best approach

From the perspective of the safety of machinery, the planning and commissioning of an AGV requires a different approach to that for the planning of conventional conveying technology. The complete machine must be planned with all aspects of the safety of machinery and operational safety taken into account. The task is thus more complex than with other internal conveyor and transport technology systems and since planning often involves different partners (e.g. the AGV manufacturer and a system integrator), tasks must be clearly distributed.

Employee training

It is also important to note that when planning AGV-supported intralogistics, the requirements for the operator organisation and awareness-raising amongst employees play a vital role in the safety of the complete system than is the case with other automated systems and machinery – precisely because the use of AGVs involves man and machine working alongside one another.

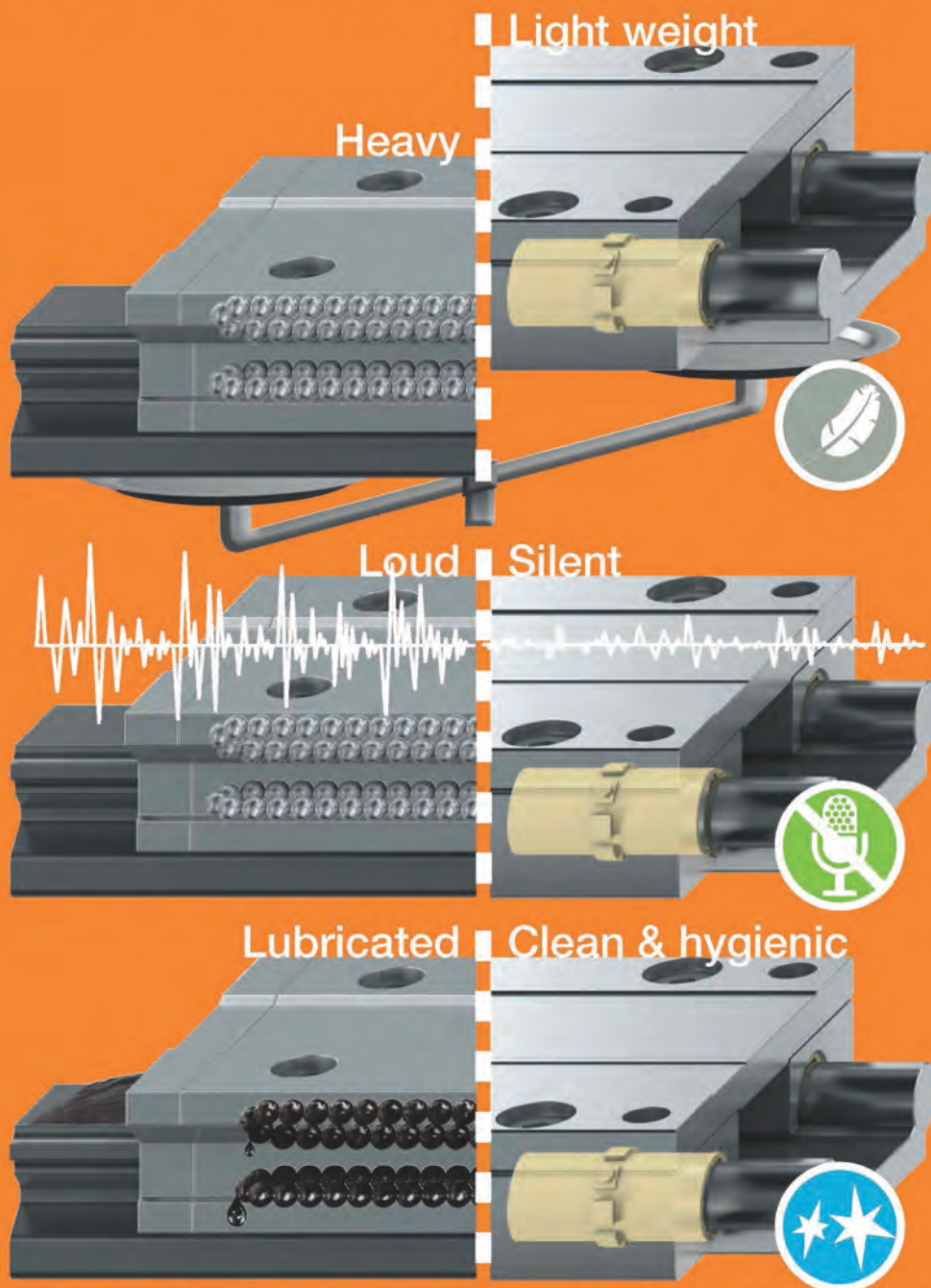
Employee training is thus becoming increasingly important. Practical experience shows that AGV cross-traffic and forklift trucks must also be taken into account. Due to the safety technology that is in place, AGVs are capable of avoiding accidents. Still, collisions between AGVs and forklift trucks are commonplace. Why? When a forklift truck operator is transporting goods on pallets, his ability to see flat-bodied AGVs ahead of the truck is limited. Training is an effective way to minimise this risk.

Literature reference

Ulrich Hochrein, *safety integration of AGVs*. In: MRL News 2022.01, p. 12-15 (a Schmersal Group publication)

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"Pepperl+Fuchs Enhances Efficiency in Intralogistics."

Pepperl+Fuchs is a pioneer of industrial sensors for factory automation and an expert for explosion protection in process automation. In this interview, **Aman Monga**, General Manager – Sales, Pepperl+Fuchs Factory Automation Pvt Ltd, delves into challenges faced by industries and how Pepperl+Fuchs is helping them navigate through these hurdles to improve their efficiency and productivity.

How is Pepperl-Fuchs helping its industrial customers?

Pepperl+Fuchs' factory automation division helps industries achieve higher levels of automation, efficiency, reliability, and addresses the complex demands of modern industrial environments. We are present in India as a 100-per cent sales subsidiary of Pepperl+Fuchs SE which is a German multinational. The company has two divisions factory automation and process automation with its Indian headquarters in Gurgaon and Bangalore, respectively. Our manufacturing facilities are located in different parts of the globe and manufacture products for both the divisions.

Our product portfolio consists of inductive, photoelectric, capacitive, magnetic, and ultrasonic sensors. Additionally, we offer powerful components such as rotary encoders, positioning and identification systems (RFID, Data Matrix, Barcode), AS-Interface. Industrial vision systems and vision sensors are the latest additions in product range. We, in India, offer both pre and post sales services and solutions to our customers. We are the ideal partner for a wide variety of industries in the Indian market. These include industries like automotive, material handling, packaging, print and paper, steel, metal, textile, dairy, doors, gates and elevator construction, process equipment, mobile equipment, and renewable energy.

How is your company helping its customers solve of their challenges?

The manufacturing industries face several key challenges today. Some of them are:

- **Adoption of advanced technologies:** Integrating technologies such as IoT, AI, and robotics into existing systems are complex and costly. Many companies struggle with the initial



investment and the skills required to implement and manage these technologies.

- **Talent acquisition:** Finding skilled workers is becoming challenging day by day. There is a growing need for training and development programs to equip the workforce with the necessary skills.

- **Inflation and cost pressures:** Rising costs for raw materials, energy, and transportation add financial pressure on manufacturing and logistics operations. Managing these costs while maintaining

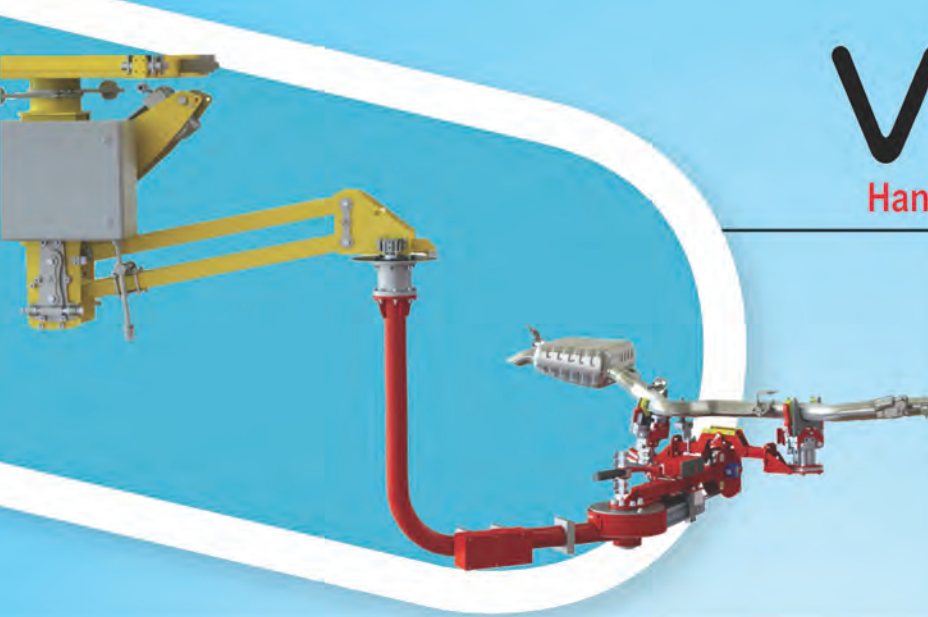
competitive pricing is a significant challenge.

- **Stringent regulations:** Compliance with international quality standards and regulations requires continuous monitoring and adaptation of processes. This can be resource-intensive and complex, particularly for smaller companies.

- **Market fluctuations:** Economic and political instability and fluctuating market demands impact production planning and financial stability. Companies need to plan well in advance.

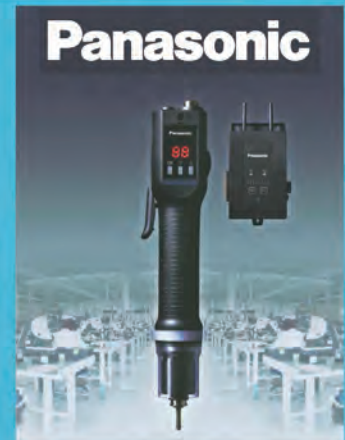
We, as a company, try to address key challenges in the manufacturing industries through various innovative solutions and technologies:

- **Real-time data and monitoring:** Pepperl+Fuchs' advanced sensor technologies and RFID systems enable real-time tracking and monitoring of goods throughout the supply chain. This improves visibility, allowing companies to quickly respond to disruptions and optimize inventory management
- **Automated systems:** By providing automation solutions such as Automated Guided Vehicles (AGVs) and robotic systems, Pepperl+Fuchs helps reduce dependency on manual labour and enhances the efficiency and reliability of logistics operations
- **Industry 4.0 solutions:** We offer a range of Industry

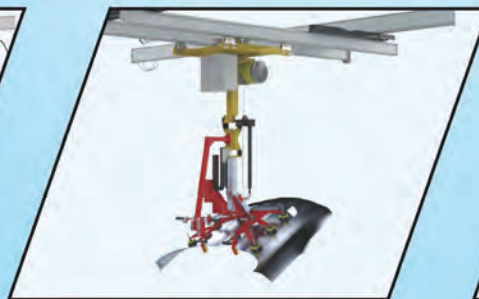


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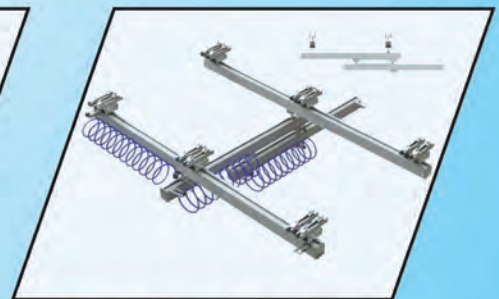
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4.0 technologies, including IoT devices, industrial networking products, and smart sensors. These solutions facilitate seamless integration and communication between machines, improving operational efficiency and enabling predictive maintenance.

- **Training and support:** As a corporate responsibility, we provide extensive training programs and technical support to the industry to understand and effectively use available advanced technologies. This helps bridge the skills gap and ensures that the workforce is proficient in handling new systems.
- **Flexible and scalable solutions:** Our products are designed to be flexible and scalable, allowing businesses to quickly adjust to market fluctuations and economic changes. This adaptability is crucial for maintaining operational stability and competitiveness.
- **Cost-effective technologies:** Pepperl+Fuchs focuses on providing cost-effective automation solutions that deliver high RoI, helping companies manage their budgets more efficiently while still investing in necessary technological advancements.
- **Advanced quality control and quality compliances:** Our machine vision systems and sensors are used for precise quality control and inspection processes, ensuring that product meet stringent regulatory and quality standards. This is particularly important in industries such as automotive and food & beverage.

By leveraging these advanced technologies and solutions, Pepperl+Fuchs is effectively addressing some of the most pressing challenges faced by the manufacturing industries today, driving efficiency, sustainability, and resilience.

How is the intralogistics market in India?

The intralogistics market in India is experiencing significant growth and is expected to grow robustly, with a projected CAGR of 14.93 per cent from 2024 to 2032. It is primarily driven by the expanding e-commerce sector and fuelled by the rising adoption of automation technologies. There is a strong focus on integrating advanced technologies such as automated storage and retrieval systems, industrial and mobile robots, conveyor systems, and sortation systems. These technologies help streamline operations, minimise manual errors, and enhance overall productivity.

Pepperl+Fuchs is contributing to the intralogistics industry through a variety of advanced technologies and solutions that enhance automation, efficiency, and safety. Here are some key ways in which Pepperl+Fuchs is helping the industry:

- **Sensors for material handling:** Sensors for material



Pepperl+Fuchs has introduced several innovations recently to enhance efficiency and meet the evolving needs of various industries.

handling are crucial for object detection, position monitoring, and distance measurement within warehouses. They facilitate efficient material handling and inventory management by ensuring precise detection and tracking of goods.

- **Automated guided vehicles (AGVs):** Pepperl+Fuchs offers critical components for AGVs, such as advanced navigation sensors and safety systems. These components ensure the safe and efficient operation of AGVs, which are increasingly used for automated material transport within warehouses. The innovative product offered to the warehouse industry by Pepperl+Fuchs is 360 degree LiDAR which has been able to solve numerous navigation applications in a warehouse.
- **Machine vision systems:** Pepperl+Fuchs offer advanced machine vision systems to perform tasks such as barcode reading (1D & 2D), object recognition, and quality inspection. These systems improve the accuracy and speed of sorting and handling processes in warehouses, contributing to higher efficiency and reduced error rates.
- **RFID systems:** Pepperl+Fuchs' RFID technology enhances the tracking and management of goods. RFID systems provide real-time data on the location and status of items, enabling better inventory control and reducing errors in the supply chain.
- **Technical expertise and support:** With extensive experience in industrial automation, we provide valuable technical support and expertise to help customers implement and optimise their intralogistics systems effectively.

Please highlight on some of your recent innovations?

We have introduced several innovations recently.

RFID systems: Pepperl+Fuchs has expanded its RFID portfolio with UHF RFID, which enhances identification and tracking capabilities. These systems



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are essential for automation and control in manufacturing and logistics environments.

Radar sensors: Pepperl+Fuchs has integrated multiple measuring modes into their radar sensors, enabling precise determination of distance, direction, and speed of objects. These sensors can operate in different modes such as ‘first object’, ‘best reflection’, and ‘fastest object’, enhancing their versatility for applications like collision protection for AGVs and material handling.

Ultrasonic sensors: The USi-safety ultrasonic sensor system is designed for safety applications in challenging environments. Advanced range of ultrasonic sensors with IO-Link offers a comprehensive range of settings for flexible and easy adjustments.

How do you see the current status of the Indian manufacturing sector?

The current status of the Indian manufacturing sector reflects a dynamic and evolving landscape driven by several key factors and initiatives. This sector has shown robust growth, with an 11.6 per cent increase in FY 2023-24. Exports have reached record levels, indicating strong global demand for Indian manufactured goods. The sector’s value added is projected to reach \$231.5 billion in 2024, highlighting its critical role in the Indian economy.

Manufacturing sector is experiencing a paradigm shift. The government is particularly focused on emerging sectors like semiconductor manufacturing and renewable energy components. By 2030, India aims to position itself as a global manufacturing hub, potentially exporting goods worth \$1 trillion.

To compete globally, Indian manufacturers are rapidly embracing Industry 4.0 principles, incorporating advanced technologies such as AI, robotics, AI and digitalisation to enhance efficiency and productivity. Automation is becoming a cornerstone, with significant investments in smart factories and digitalisation to streamline operations and reduce lead times.

What are the emerging trends in the industry?

The emerging trends in the manufacturing industry in 2024 highlight a shift towards advanced technologies, sustainability, and workforce innovation. Here are some key trends:

Smart factories and Industry 4.0: The adoption of smart factory solutions and Industry 4.0 technologies is accelerating. These include the integration of IoT, AI, machine learning, and robotics to create highly automated and interconnected manufacturing environments. Smart factories enhance operational efficiency, reduce downtime, and improve product

quality by enabling real-time monitoring and predictive maintenance.

Product electrification and decarbonisation:

The trend towards electrification of products, especially in the automotive industry, is gaining momentum. Manufacturers are investing in the development of electric vehicles (EVs) and energy-efficient technologies. Decarbonization efforts include adopting cleaner production methods and reducing the carbon footprint across the supply chain.

Digital transformation and supply chain

digitalization: Manufacturers are increasingly investing in digital tools to enhance supply chain performance and resilience. Digital transformation initiatives include the use of blockchain for supply chain transparency, AI for demand forecasting, and advanced analytics for inventory management. These technologies help manufacturers respond swiftly to market changes and disruptions.

Sustainability and green manufacturing: There is a growing focus on sustainability and reducing the environmental impact of manufacturing processes. Companies are adopting green manufacturing practices, such as using renewable energy sources, minimising waste, and developing eco-friendly products. The push for net-zero emissions is driving innovation in product design and production techniques.

Advanced materials and additive

manufacturing: The use of advanced materials, such as composites and nanomaterials, is on the rise. Additive manufacturing (3D printing) is becoming more prevalent, enabling manufacturers to produce complex designs with greater precision and less material waste. This technology is particularly beneficial for prototyping and small-batch production.

What are your growth plans?

Pepperl+Fuchs is well-positioned to capitalise on emerging market opportunities, and has outlined several growth plans and initiatives to drive its future development. We are investing heavily in technologies related to Industry 4.0 and the Internet of Things (IoT). These initiatives include developing cloud-based data collection applications and mobile computing devices, which are essential for the next phase of industrial automation.

We have also formed strategic partnerships to enhance technology offerings and market reach, in collaboration with VMT for advance vision solutions to automotive and allied industries. Lastly, we have successfully solved a diverse range of applications and are continuously developing new technologies to make processes more reliable and efficient in material handling area.

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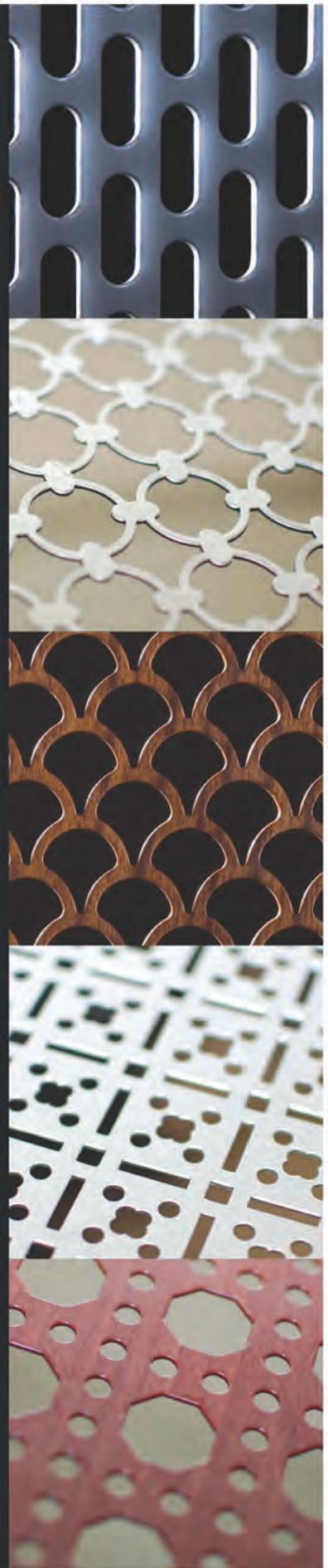
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"The next trend in MHE will be AGVs."

The material handling equipment (MHE) market in India has shown substantial growth. In this interview, **Manpreet Sachdev, Founder & CEO, Elite Material Handling Company**, highlights on new trends like automated guided vehicles (AGVs), drones, etc in the material handling space.

Over the years, how has Elite evolved in the MHE space?

Elite has come a long way from 1989 when we started our company with one product and one employee. We have been instrumental in educating the customer and providing all the information to the material handling industry and upgrading the Indian MHE industry. Our main goal is to bring the Indian MHE at par with the globe at half the cost. Cost cutting is one of our main aims; to always provide an in-expensive solution to the Indian customer. Since, we have been increasing our product base, our customer base is also increasing. We also have been influential in supplying to various industries like heavy engineering, aerospace, defence, agriculture, textile, steel, space and much more.

Are there any new developments in the last two years?

We have designed and developed new products for special applications to save time and energy for operators. Our products have also surpassed customer expectations. We have greatly saved the incurred cost for our end-users.

How is the demand for your MHE products from various end-user industries?

The demand for our products is always a huge amount. This is because labour cost is increasing and most companies depend on automation and cost saving solutions. We also help them to increase the productivity of existing labour.

What is the condition of the MHE market in India? What factors are driving the industry?

The MHE market in India has already grown and there are hardly any new players coming in. The industry



is mostly divided into two parts; organised and unorganised. In the organised industry, the players are aware of the necessity of MHE and start to plan for the same from the start of the project. In the other sectors, industries manage without MHE.

What are emerging trends in the material handling equipment industry?

At the moment, most customers are requesting automation and robotics. The next trend will be automated guided vehicles (AGVs) which is currently in its initial stages. Also, drones will be used for internal warehouses to transport and store light weight goods.

What is the effect of automation and digitisation on the processes?

With automation, India will be more competitive in the global market and will have an upper hand over other countries for supply of manufactured goods. With the advent of digitation the whole process gets easy and accessible to all.

What are the key challenges faced by SMEs like you? What are your expectations from the new Union Government?

SMEs are not fully recognised in India yet and we are facing a lot of challenges. We are still receiving late payments and are not getting the required subsidy in the sector. The labour laws are also seeming to be very difficult for industrialists to follow.

What are your growth plans?

Elite is ready to grow year after year. To make this possible, we invest in manpower, new equipment, and also continue to increase our capacity. We are also adding new products in our range and our development is linked to market standards.

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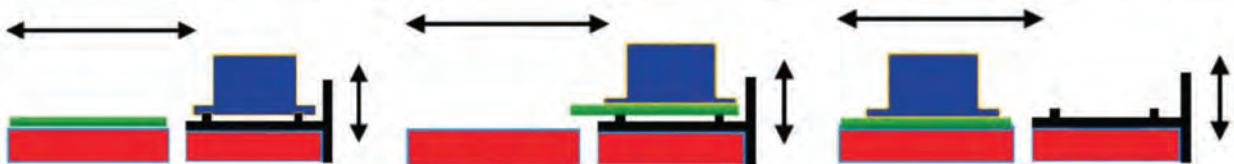
BATCHING

Autosys has designed and executed an innovative bin handling system that can fetch from and return to 100s of storage locations on a vertical rack divided into columns and rows. The speed of the ASRS can be customized to meet the specific application.

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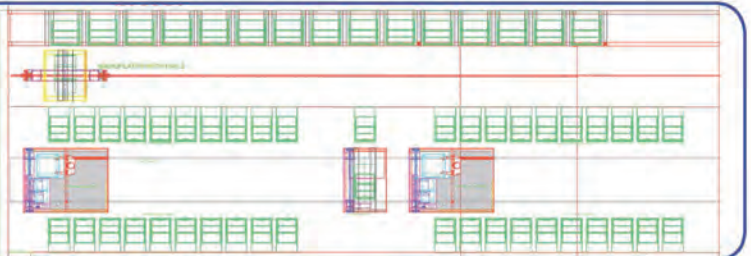
With multi-disciplinary expertise in Material Handling, Mechanical, Electrical, Electronics, PLCs, Barcode/RFIDs, Networking and Software, Autosys takes care of design, supply, installation, commissioning and maintenance of the entire system on turnkey basis, with guaranteed throughput.

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ASRS retract arm operations

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“MHE will Become One of The Biggest Industries Soon.”

Avcon Systems has extensive product offerings, to solve challenges in the Material Handling Equipment (MHE) space. **Aniket Sawarkar, CEO, Avcon Systems** shares his insights on the evolving material handling processes in India, Avcon's journey over four decades, the increasing demand for their material handling equipment (MHE) and their plans for future growth.

How has the material handling process undergone changes in recent years in India?

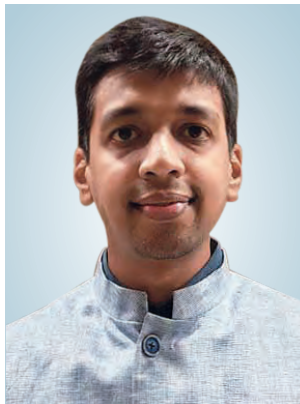
With the rise in process volumes, material handling is increasingly moving towards bulk handling. Although the average unit load has decreased in size, the process time for handling each unit has been reduced by at least 100 times compared to 10 years ago.

What types of products are you offering in the material handling space?

Avcon is a 40-year-old material handling solutions provider. We offer a wide range of products to enhance safety and productivity across diverse industries. Our offerings include stackers, floor cranes, scissor lifts, hydraulic lifts, and truck loading solutions, providing end-to-end handling solutions for various industrial processes.

How do you see the journey of your company in the material handling equipment (MHE) space over the years?

Avcon has been a part of the Material Handling Equipment (MHE) space for over four decades. It has witnessed significant changes in industry patterns and



the introduction of global products in the Indian market. We began our journey as a modest service provider, offering repairs and AMC services for multi-brand MHEs. Recognising customer pain points, we expanded into manufacturing stackers and scissor lifts. Today, our products are operational across almost every state in India and in various industry verticals.

Could you please share with us some of the new developments in your company in the last two years?

Avcon now offers a complete range of electric and semi-electric stackers. We have also newly added a range of shop floor cranes that are highly preferred by our customers for handling critical components. Our continuous R&D efforts focus on developing new solutions and moving towards automation to enhance customer satisfaction. We have adopted advanced AC motor technology for our drives, developed locally to reduce import dependency and improve serviceability.

How is the demand for your MHE products and solutions from various end-user industries?

The demand for our MHE products is rapidly increasing across multiple industry verticals. To meet this growing demand, we are opening a new manufacturing unit in Bhiwandi, which is five times the size of our current facility. This expansion will enable us to meet customer needs more effectively and offer our new product range with significantly shorter delivery times.

How is the MHE market in India? What factors are driving the industry?

There is a huge scope in Indian industry for the MHE



Although the average unit load has decreased in size, the process time for handling each unit has been reduced by at least 100 times compared to 10 years ago.

market to meet ever growing consumption of products by the domestic market itself. MHE will become one of the biggest industries in the coming years to meet global requirements of manufacturing and storage for raw material as well as finished goods. With India to become a global manufacturing hub MHE will become the backbone for achieving the vision.

What are some of the emerging trends in the material handling equipment industry?

To become a leading source for engineering goods, one must embrace automation and technology upgrades. With tight manufacturing timelines, it is important to transition from manual to digital and automated processes. This shift ensures standardization and accurate record-keeping for future process replication. Automated Guided Vehicles (AGVs) and Autonomous Mobile Robots (AMRs) have been emerging as key technologies in the material handling space.



To become a leader in engineering goods, one must embrace automation and technology.

What is the effect of automation and digitalisation on material handling processes?

Unmanned manufacturing operations, once a theoretical concept, are now a well-executed reality. Safety has become the highest priority in every organisation. There is a noticeable reduction in human effort and deskilling for standardization processes across the manufacturing sector.

What are the key challenges faced by SMEs such as yours? What are your expectations from the new Union Government?

Subsidies for capital expenditures are currently one of the biggest challenges for most SMEs. The rapidly rising real estate costs, heavy investments in technology and machinery are becoming increasingly volatile for these businesses.

What are your growth plans?

Avcon System's new factory will increase our capacity greatly. We are also upgrading our product offerings and will soon introduce a customised solution software to enhance customer experience in selecting equipment. 

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Email: info@eddycranes.com / info@eddycranes.in
Website: www.eddycranes.com



BTS Solutions for Smart Warehousing

By opting for a Built-to-Suit (BTS) warehouse, the company can design a warehouse that includes large and open dedicated sorting areas equipped with automated systems to handle thousands of orders per hour, says **Mahendra Waghule, Head- Projects & Development, Horizon Industrial Parks.**

Technologies such as the Internet of Things (IoT), automation and robotics, Artificial Intelligence (AI) and Machine Learning (ML), and advanced analytics are driving significant improvements in efficiency and productivity of smart warehouses. To stay competitive, businesses are eager to leverage these into their production and supply chain operations to their fullest potential.

The emphasis on greater supply chain efficiencies and sustainable operations is driving the demand for Built-to-Suit (BTS) warehousing and industrial facilities. Unlike traditional, one-size-fits-all storage warehouses, BTS warehouses are specifically designed and constructed to meet the unique needs of each business. With tailored layouts, scalable sizes, and integrated technological features, BTS warehouses provide the perfect environment for optimised storage, distribution, and logistics activities. This sort of customisation is an asset for businesses for several reasons.

Easy tech integration

One of the key advantages of BTS warehouses, as briefly stated above, is their ability to easily incorporate advanced technologies from the ground up. To do that in traditional warehouses might require extensive retrofitting which comes with higher costs. BTS warehouses on the other hand are designed with futureproofing in mind. This means that as new technologies emerge, these facilities can easily adapt. A great example is creating a warehouse for an e-Commerce business which includes advanced sorting and picking systems driven by AI and machine learning. By integrating these requirements into the design phase, the resulting warehouse can be fashioned with relevant requirements such as the necessary floor and structural requirements, the appropriate storage and docking area specifications, as well as the margin for scalability if needed.

A BTS warehouse can be designed with the Internet of Things (IoT), automation, and robotics in mind. To maximise the benefits of IoT, sensors and connectivity

infrastructure are built into the facility's framework. These are crucial in allowing constant communication between devices, leading to improved inventory management, predictive maintenance, and energy efficiency. Additionally, to support the extensive infrastructure required for automation and robotics, design considerations are made to incorporate specialised flooring for robotic movement, reinforced structures to support heavy automation equipment, and advanced power and data networks to ensure seamless operation.

Operation-specific optimisation

Customisation in BTS warehouses extends to creating environments suited to specific sectors. This comprises various aspects of warehouse design, from layout and scalability to storage and handling requirements.

A retail giant might require a layout that supports high-speed sorting and packing processes. By opting for a BTS warehouse, the company can design a warehouse that includes large and open dedicated sorting areas equipped with automated systems to handle thousands of orders per hour. To allow flexible racking systems, there can be an appropriate heightened space that can hold reconfigurable racks which accommodate different product sizes and seasonal inventory changes. Additionally, strategically placed packing stations can be designed to minimise movement and improve workflow, ensuring quick and accurate order fulfilment.

This adaptability extends to every aspect of the warehouse be it the docking bays, the temperature and humidity as well as sterility of the warehouse.

Drive sustainability

BTS warehouses not only offer customised solutions tailored to unique business needs but also play a significant role in promoting sustainability. Through energy-efficient designs and the use of renewable energy sources, BTS warehouses help businesses reduce their environmental footprint beyond enhancing operational

efficiency. Some of the possible integrations to drive sustainability include:

- High-quality insulation and advanced ventilation systems to help maintain optimal indoor temperatures, reducing the need for excessive heating or cooling.
- LED lighting systems, consuming less energy compared to traditional lighting and with longer lifespans, to lower energy consumption and reduced maintenance costs.
- Automated smart systems that control lighting, heating, and cooling based on occupancy and usage patterns to significantly reduce energy consumption.
- Installing solar panels on the warehouse roof to generate a significant portion of the facility's energy needs, reducing reliance on the grid.
- Integrate battery storage systems to store excess energy generated by renewable sources, ensuring a steady energy supply even during periods of low generation.
- Rainwater harvesting systems to collect and store rainwater for use in non-potable applications, such as irrigation of landscapes and sanitation.
- Charging stations for electric delivery vehicles,

promoting the use of clean transportation options.

Conclusion

BTS warehouses embody the future of warehousing, where innovation meets practicality, and where businesses are no longer confined by the limitations of traditional, generic storage spaces. Instead, they thrive in environments designed to enhance every aspect of their operations.

It is a facility, where every square foot is optimised for efficiency and every process is streamlined by cutting-edge technology. These spaces are more than storages—they are assets that adapt to your unique operational requirements and dynamically evolve with you.

SME



About the author:

Mahendra Waghule is the Head of Projects and Development at Horizon Industrial Parks. Waghule has 29 years of experience with leadership roles in the field of real estate development management, corporate real estate management, project management and facilities management.

Previously, he served as the Executive Vice

President at IndoSpace.

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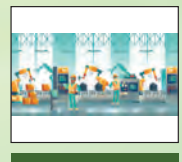
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AI Reshapes Warehousing

From real-time inventory monitoring to asset security and predictive data analytics, AI technologies are transforming operations and driving sustainable growth in the logistics industry, says **Naresh Kamboj, Founder & CEO, Intozi**.

AI has permeated across industries today, including warehousing and supply chain management. Be it the deployment of drones for last-mile deliveries or the utilisation of robots for internal warehouse operations, AI has revolutionised traditional practices, offering unprecedented opportunities for optimisation and efficiency enhancement. The emergence of AI-driven solutions, particularly in the field of video analytics, have immense potential for various applications within warehousing and supply chain management. They help in providing real-time insights and enable data-driven decision-making. Here are some key areas in which AI-driven video analytics is giving substantial benefits.

Real-time inventory analysis

AI-powered video analytics helps in autonomous monitoring of inventory levels. Through advanced algorithms and image processing techniques, it is possible for cameras to detect and analyse inventory levels in real-time. They generate instant alerts and send them to relevant stakeholders, such as inventory managers or procurement teams. This further enables them to take prompt action to optimise order fulfilment processes and streamline procurement operations. By enhancing visibility and agility in inventory management, organisations can minimise stockouts, reduce carrying costs, and improve overall operational efficiency.

Assets monitoring

It is imperative to ensure the safety and security of assets within warehouses for seamless operations. With AI-based video analytics solutions, it becomes possible to monitor assets, including devices, robots, machinery, and equipment. By doing so, these systems can detect anomalies, such as asset theft or malfunction, and trigger alerts in real-time. Apart from this, they provide a comprehensive 360-degree view, facilitating post-incident analysis and proactive measures to mitigate risks. Additionally, they also help in monitoring the health of assets by analysing various parameters such as outlook, shape, and environmental factors, ensuring optimal performance and longevity.

Access control and intrusion detection

Maintaining the security of high-value inventory

items is essential to mitigate the risk of pilferage and unauthorised access. AI-powered video analytics systems can enhance access control and intrusion detection capabilities within warehouses. By leveraging facial recognition, object detection, and behaviour analysis algorithms, they help identify and flag suspicious activities in real-time, thereby safeguarding valuable assets and minimising losses. Whether it is monitoring fragile items, expensive materials, or pharmaceuticals, AI-driven solutions offer a proactive approach to security management, bolstering overall resilience and risk mitigation strategies.

Data analytics using AI

AI technologies facilitate advanced data analytics, enabling organisations to derive actionable insights from large and complex datasets. By harnessing AI algorithms, warehouses can optimise various aspects of operations, such as last-mile delivery performance. Predictive analytics and machine learning models help analyse historical data to identify patterns and trends, allowing for informed decision-making. For instance, AI can assist in selecting the most suitable courier partners based on their past performance for specific regions. This helps in enhancing efficiency, reducing costs, and improving customer satisfaction.

Conclusion

Integration of AI technologies has the potential to optimise warehouse operations and enable data-driven decision-making across the supply chain. As organisations continue to embrace innovation, leveraging AI will be instrumental in driving sustainable growth and competitive advantage for many years to come.

SME

About the author:

Naresh Kamboj, Founder and CEO of Intozi Tech Pvt Ltd, is a visionary leader renowned for his expertise in technology and business management. Kamboj's journey is marked by roles at Gaadiz Automotive Pvt. Ltd, Acxiom Consulting Pvt. Ltd, Jabong, and The American Swan Lifestyle Company Private Limited.

His professional background includes collaborations with prominent entities such as VLCC, RJ Corp, and Deviyani International.



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Autosys Expands ASRS Application

ASRS are often seen as tools for warehouses and stores. Autosys through steady innovation has transformed the manufacturing sector.



Many might assume that Automated Storage and Retrieval Systems (ASRS) are exclusively used in warehouses and stores. However, Autosys has expanded the application of ASRS beyond these traditional uses, implementing it in various other areas.

Batching

Like in brake linings, food and pharma, multiple ingredients must be weighed and batched as per a recipe. Even the addition of each raw material to a common hopper should be done in a specified sequence.

A typical production product-run, may require 16-18 raw materials, which are in turn chosen from 100s of possible raw materials that are available in stores.

A vertical carousel based system stores all the required raw materials in individual bins in their designated locations. The set of raw materials required for a particular schedule will first be moved from their storage location to the batching location and arranged in their proper sequence as per the recipe.

Another batching trolley will automatically go to each bin, and the required weight of that material will be fed into a weigh hopper and the sequence repeats

for all the materials in the recipe. The quantity is then automatically transported to the mixer and discharged.

When the production schedule is changed, the materials required for the next product are rearranged. The unwanted bins are returned to the VC-ASRS and the required bins are fetched. Bins of various sizes (for example small quantity bins and large quantity bins) can be integrated into a single system. The changeover from one product to another can happen seamlessly and without any delay.

Raw material filling

The VC-ASRS also provides a separate filling and pick-up station for refilling the raw material into the respective bins. The bags issued by stores are scanned (using barcode scanner) and the corresponding bins are brought to the filling location. After the bins are filled, they are taken back to the storage location.

Tools and molds

Tools and molds used in various industries like machine tools, press, foundries etc., have the same problem of a wide variety. These must be stored safely, fetched when required and returned to storage after use. A vertical carousel based ASRS is ideal for such requirements as it saves time, eliminates mistakes and ensures automatic traceability.

Warehouse inventory retrieval

When we have a large number of SKUs to be managed in a small storage space, vertical racks are the ideal choice. But manual retrieval and restocking would be challenging due to the vertical heights and limited manoeuvring space. An automated vertical carousel system can make maximum utilisation of available space and the storage bins can be brought out with extreme precision and ease, both for stock retrieval and restocking.

SME

About Autosys Engineering

Autosys designs and implements the system on turnkey basis and guarantees the throughput of the system. The upstream and downstream process of the VC-ASRS can be customised for each application. For further information : Autosys Engineering Pvt Ltd, www.koremecgroup.com ; www.ael-india.com, Email : vjk@koremec.net, Mobile : +91 9840158512

(Communication provided by the management of the company)



Driving Efficiency with Avians

Equipped with an electronic hydraulic system, the dock levelers automatically move the platform to the optimal position.



In today's fast-paced business environment, optimising loading bay operations is crucial for enhancing productivity and ensuring smooth logistics processes. At Avians Innovations Technology, we are at the forefront of revolutionising loading bay solutions to maximise efficiency and streamline operations for businesses across industries.

Bridging the gap

Dock levelers serve as the vital link between the loading area and vehicles, seamlessly bridging differences in height and distance. Our advanced dock levelers are engineered to enhance safety and productivity by eliminating the need for multiple handling of loads, thus minimising risks and maximising efficiency.

Our dock levelers have a range of innovative features designed to meet the diverse needs of modern businesses:

Safe and sturdy construction: Built with heavy-duty corrosion-resistant steel, our dock levelers are CE certified, conforming to EN1398 standards. This ensures robust performance and long-term durability even in demanding environments.

Efficient hydraulic systems: Equipped with an electronic hydraulic system, our dock levelers automatically move the platform to the optimal position and extend the hinged lip for safe loading and

unloading. Separate hydraulic cylinders for dock and lip movement ensure smooth and reliable operation.

Customisable options: From standard lip to telescopic lip dock levelers, we offer a variety of configurations to suit different loading requirements. Our advanced control panel and power pack come with optional safety and integration features, providing flexibility and convenience.

Dock shelters

In the realm of material handling, sheltered and secure operations are paramount. Our range of dock shelters and seals provide a protective barrier between the loading bay and vehicles, safeguarding goods from dust, rain, and insects during the loading and unloading process.

Our dock shelters and seals are meticulously designed to form a tight seal between the truck, trailer, and building, ensuring maximum protection and efficiency. Features include:

Versatile configurations: Whether it's retractable or inflatable dock shelters, our solutions are tailored to suit different vehicle types and loading bay configurations, providing a snug fit and superior weather protection.

Energy-saving design: Engineered for energy efficiency, our dock shelters improve working conditions and reduce draught into the building, helping businesses save on heating and cooling costs while maintaining a comfortable environment for workers.

Conclusion

At Avians Innovations Technology, we're committed to pushing the boundaries of loading bay solutions to maximise efficiency and drive business success. With our advanced dock levelers and shelters, businesses can optimise their operations, enhance safety, and stay ahead in today's competitive landscape.

For businesses seeking to elevate their loading bay operations, partner with Avians Innovations Technology for innovative solutions that deliver results. Let's transform your loading bays into hubs of efficiency and productivity.

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PUMA LIFT ELECTRIC PALLET TRUCK

Puma Lift Trucks Pvt Ltd offers a wide range of puma lift electric pallet truck.

Features:

- The EP 25 SERIES designed and built by Puma Lift is to be the most rugged walkie pallet truck. Superior steel construction & with highly engineered stability systems and exceptional fork design and up to toughness you can feel.
- Life's tough for walkie pallet trucks. They must maneuver in tight spaces, withstand impacts, deliver power on demand and give operators-controlled performance.
- With Puma AC traction systems, users experience unmatched reliability and performance. Features such as e-Gen braking and Five - Year Supplemental Power unit and Fork weldment Guarantee.
- The EP 25 Series is preferred by operators hands down with our tiller handle, superior stability and a numerous operator - friendly features, the EP Series makes pallet handling easier than ever.
- Walkie pallet trucks are put to the test every day in the most demanding applications.
- Its performance: The innovative AC system offers quick response, accurate control structure and longer battery service life.
- PUMA's unique design of the suspension Driving Floating Adjustable system (DFA) ensures the trucks less vibration, stable no till while turning in high speed, guarantees the operator to handle freely and easily with full load, and could adjust operating force of handle to ease operator according to various workplace.
- Unique designed on the front frame ensures the clearance between front and rear frames stay constant, avoid the accident of clipping hand.
- Easy-Touch emergency plug mounted at up-right side on truck frame help operator take immediate action for any emergent happens. Anti-skid braking system stops truck roll-back while travelling on ramp.
- Excellent performance of getting in and of empty pallet, greatly increases the operation efficiency.

About the Company: Puma Lift Trucks Pvt Ltd was established in the year 1992, starting its manufacturing unit in Bangalore very modestly has progressed steadily & today the company boosts of best manufacturing unit

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Elite Material Handling Co offers a wide range of waste oil heater - EL 75H.

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About the Company: Elite provide logistics solution in material handling related to transportation, storage loading/unloading palletisation and package.

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Elite Material Handling Co, Bangalore
Tel: 080-25216561, 65991403
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JIB CRANE

Amsak Cranes Private Limited offers a wide range of jib crane.

Features:

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- Jib Cranes are otherwise know as pillar jib crane or pillar crane. All the parts accessories for our hoists and cranes are manufactured by Amsak Cranes.

About the Company: Amsak Cranes Private Limited is a pioneer in crane manufacturing and ranks amongst India's top 10 EOTCrane manufacturers today with more than 6600 installations.

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Amsak Cranes Private Limited,
Sriperumbudur, Chennai
Tel: 044-27163987 Mobile: 09003038355
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PUMA LIFT ELECTRIC STACKER

Puma Lift Trucks Pvt Ltd offers a wide range of puma lift electric stacker.

Features:

- The unique compact design and the small turning radius makes it a user- friendly machine.
- Whether for short distances solely in pedestrian mode, medium distances with combined pedestrian or a rider operation or long distances with rider operation. Capacities of 1000 to 2000 Kgs. and a range of lift heights of up to 6300 mm to suit varied operations.
- Array of Stackers: Wide Version (can easily handle all types of non-standard loads and pallets); Light Cradle (LC); Heavy Cradle (HC); Core Shaft (CS); Tool / Die Loader (DL); Roller Platform (Spl); Reach Stacker (RS) (RS Can be used wherever load arms stackers cannot operate).
- Innovative AC Technology: The AC motor provides increased efficiency with reduced operating costs over the entire lifespan of the truck and has the following advantages High efficiency with excellent energy management.
- High travel comfort with easy and individually adjustable performance parameters to provide the greatest productivity in particular applications.
- Performance: European connectors with top quality, prevents moisture and contaminants from interrupting truck operation in all environments, plus all the wires and cables reliably protected and fixed, greatly reduces the electrical error.
- Excellent performance of getting in and of empty pallet, greatly increases the operation efficiency. AC motor specially designed provided stronger power to keep high speed (6km/H) with full load and enhanced grade ability, make more efficient performance under high-capacity situation.
- Self - Diagnostics provided through the digital display allow easy trouble- shooting with the use of an external hand-held analyser.
- High-strength frame design, suitable for tough workplace, ensures longer service life.

About the Company: Puma Lift Trucks Pvt Ltd was established in the year 1992, starting its manufacturing unit in Bangalore very modestly has progressed steadily & today the company boasts of best manufacturing unit with a marketing widely spread over in almost all the business sectors in India.

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WIRE ROPE ELECTRIC HOIST

Jayco Hoist & Cranes Mfg Co, offers a wide range of wire rope electric hoist.

Features:

- These wire rope electric hoists are compact, rugged & elegant in appearance to accommodate specific requirements, flexible trolleys to negotiate small radius, high speeds & high lifts, hoists, foundries & chemicals plants.
- The hoists are of fixed type or movable with travelling trolleys.
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About the Company: Jayco is one of the leading manufacturer of electric hoists, cranes, goods lifts, hydraulic lifts, stackers & other material handling equipments.

Contact:

Jayco Hoist & Cranes Mfg Co, Palghar
Tel: 09321313691
Email: jaycohoist@gmail.com

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GOODS LIFT / FREIGHT ELEVATORS

Mega Cranes India Private Limited offers goods lift / freight elevators.

Features:

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About the Company: Mega Cranes India Pvt Ltd., is known for most reliable and trustworthy manufacturer and exporter from Coimbatore, Tamilnadu, India.

Contact:

Mega Cranes India Private Limited,
Coimbatore
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Assessing Critical Risks in Workplaces

Continuous review and enhancement of safety and health management systems are imperative for improving safety performance across all departments, says **Suresh Tanwar, Head of Audit and Consultancy – India, British Safety Council**

According to a recent International Labour Organisation (ILO) study, nearly three million workers worldwide lose their lives annually due to work-related accidents and illnesses, marking an alarming increase of over 5% since 2015. In India, a 2021 Labour Ministry report to Parliament noted that over the past five years, at least 6,500 employees lost their lives in factories, ports, mines, and construction sites. These statistics underscore the on-going challenge of ensuring employee health and safety, particularly in high-risk industries like construction, metals, chemicals, power, oil and gas, pharmaceuticals, and automotive.

Critical safety risks, defined as events that pose significant threats to business operations and can result in worker fatalities or permanent disabilities, are common in these sectors. These risks often arise from process oversights, leading to incidents such as fires, falls from heights, and other accidents. Typically, companies react to such incidents by allocating funds for investigations and corrective measures. However, many of these industrial accidents and fatalities can be prevented through proactive measures, which are more beneficial for both human lives and business profitability.

Importance of regular assessments

Regular assessments of critical risks are vital for preventing workplace accidents. A critical risks safety audit identifies and evaluates situations posing significant risks of injury or harm to individuals and assets. The audit examines high-risk tasks, including working at heights, confined space entry, lifting operations, electrical and fire safety, ground excavation, contractor safety, and specific activities like handling molten metal. It also assesses the organisation's leadership commitment, accountability, risk management, and permit-to-work procedures. This process involves engaging all employees, conducting on-site inspections, and thoroughly reviewing documentation.

Critical risks safety audit

A critical risks safety audit involves a detailed examination of all safety controls related to hazardous activities. It assesses the effectiveness of existing safety measures to prevent severe injuries, using a tailored approach to evaluate an organisation's safety performance in high-risk activities and benchmarking it against global best practices. The audit findings are compiled into a customised report addressing the organisation's specific needs, providing insights into its current standing regarding high-risk activities, and identifying areas for improvement. Subsequent consultancy services offer recommendations, knowledge sharing, and training to enhance safety measures.

The process

The audit process requires active engagement from every employee within the organisation and involves four phases:

- Leadership commitment and careful planning lay the groundwork for the audit. This phase involves top management clearly defining safety objectives, allocating resources, and establishing a safety culture that prioritises risk management.
- In this phase, the planned safety measures are put into action. This includes training employees, implementing safety procedures, and ensuring that all necessary equipment and resources are in place. Regular communication and involvement of all staff members are crucial to ensure adherence to safety protocols.
- The organisation's safety performance is monitored and measured to gauge the effectiveness of implemented measures. This phase involves regular inspections, incident reporting, and data collection to identify trends and areas needing improvement. Metrics such as incident rates, near misses, and compliance with safety standards are analysed to assess performance.
- Continuous improvement initiatives ensure the organisation evolves and enhances its safety protocols. This phase involves reviewing audit

CLEANING MACHINES FOR A CLEANER INDIA



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• Tel: +91-22-25786895 • Telefax: +91-22-25793034
• E-mail: info@somaspecialities.com • www.somaspecialities.com



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findings, soliciting feedback from employees, and updating safety procedures based on lessons learned. The goal is to create a dynamic safety management system that adapts to changing risks and continuously seeks to improve.

Throughout these phases, collective participation and commitment from all levels of the organisation are essential for the audit's success. By involving employees in the audit process, organisations can foster a sense of ownership and accountability for workplace safety.

Benefits

Adhering to occupational safety regulations is crucial for organisations engaged in high-risk activities. Noncompliance jeopardises individual safety and exposes businesses to potential injuries, risks, and legal liabilities.

The benefits of a critical risks safety audit include:

- Hands-on learning and training during the audit process help employees develop practical skills for identifying and mitigating hazards.
- The audit provides a structured approach to identifying safety hazards, analysing root causes, and implementing corrective actions.
- Regular audits and training sessions increase awareness and foster a culture of safety among employees.
- By adhering to safety performance benchmarks, organisations can reduce costs related to injuries and improve overall safety records.
- A systematic approach to safety audits can lead to a reduction in accidents, injuries, near misses, and physical hazards.
- Audits facilitate a comprehensive analysis of incidents, allowing organisations to implement corrective measures to eliminate hazards.
- Safety audits offer opportunities for team leaders and shop-floor employees to receive practical training in hazard identification and mitigation.
- Regular audits and training sessions help raise awareness about potential hazards and promote a proactive approach to safety.
- Involving employees in the audit process helps establish dedicated safety audit teams within each department.
- Creating detailed checklists ensures that all potential hazards are identified and addressed according to industry best practices.
- Pre-audit meetings help review checklists, address queries, and plan audit routes under management guidance.
- Comprehensive documentation of hazards and corrective actions ensures that safety issues are systematically addressed.

- Post-audit discussions review hazard findings and corrective measures, ensuring that all issues are adequately addressed.
- Regular follow-up meetings track progress on corrective actions, address inquiries, and maintain a focus on safety improvements.

Key takeaways

High-risk and hazardous industrial operations necessitate prioritising critical risk safety audits. Continuous review and enhancement of safety and health management systems are imperative for improving safety performance across all departments. Commitment to constant improvement involves thoroughly evolving policies, systems, and risk control techniques. The audit process also allows management to gain insights into high-risk areas and potential hazards, prioritising these areas for a focused approach to safety management. Ultimately, critical risk safety audits for high-risk operations help create a positive, confident, and secure work environment for all stakeholders.

Choosing the right partner

Selecting the appropriate partner organisation to conduct a comprehensive and meticulous critical risks safety audit is essential. The right partner will have experienced auditors trained in internal quality assurance and meet professional body standards. Their audit reports should undergo technical verification and quality endorsement before being issued to clients. Partnering with globally recognised audit and consultancy services firms ensures robust organisational health and safety systems.

In summary, assessing critical risks in workplaces is not an option but a necessity. Regular safety audits, proactive measures, and a commitment to continuous improvement can significantly reduce workplace accidents and enhance overall safety, ensuring a secure environment for all employees. Investing in safety audits and preventive measures not only protects employees but also enhances business profitability and sustainability by mitigating risks and avoiding costly incidents.

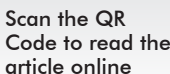
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About the author:

Suresh Tanwar, Head of Audit and Consultancy - India, British Safety Council
Suresh Tanwar is the Head of Audit & Consultancy-India for the British Safety Council. Prior to joining the BSC, he was Chief - Group Safety & Health with Tata Group. He has received The ASSP (American Society of Safety Professionals)

President's Award in the year 2016 in Atlanta, USA, for recognition of his efforts in enhancing Safety in Indian corporates.



As industrial sectors embrace new technologies across their operations, the risks and opportunities to address them change. Recognising the possibilities and dangers of Industry 4.0 in risk management is the first step to making the most of it, says **Emily Newton**.

In addition to improving hazard monitoring, Industry 4.0 can address these risks more effectively than conventional methods. Robotics can handle hazard-prone physical workflows to eliminate the risk of repetitive strain injuries. IoT proximity sensors can alert workers of incoming vehicles to prevent collisions. Whatever the specifics, new technology is faster and safer than traditional alternatives.

At the same time, Industry 4.0 adoption can introduce new risks. Hazard management frameworks must adapt to these emerging threats to ensure organisations stay as safe as possible.

Cyber threats are the most prominent risks stemming from Industry 4.0 technology. Manufacturing has become the world's most targeted industry — experiencing 25.7 per cent of all cyber attacks in 2023 — because of this shift. IT/OT convergence opens heavy machinery to hacking when it was once impervious. Beyond that, industrial organisations are implementing digital technologies without knowing how or why to protect them, leaving them vulnerable.

Similarly, some Industry 4.0 initiatives introduce new regulatory concerns. Data collection may open some businesses to privacy laws that could result in hefty fines for noncompliance. AI and robotics adoption may result in labor issues and could fall under future regulations as legal frameworks evolve.

How to implement Industry 4.0 industrial risk management

Industrial risk management must adapt to Industry 4.0 in light of these benefits and potential issues. Here's how businesses can use these new technologies in their hazard management frameworks while minimising the risks.

The first step is the same as in all industrial hazard management processes — organisations must identify

their unique risks. AI analysis makes this much faster and more accurate but requires extensive data. Considering that 90 per cent of workers today express doubt over their project information, that can be challenging. Consolidating databases into a single source of truth and cleansing them before analysis can help.

After identifying risks, businesses must quantify them, assigning each a score based on likelihood and financial impact. Once again, AI makes this analysis more reliable. This quantification will help determine where to divert resources for more cost-effective fixes.

2. Remove risks where possible

As organisations review their risks, they should look for opportunities to remove them. Automating dangerous physical tasks is one way to do so through Industry 4.0. Broader changes like reshoring or diversifying material suppliers can also help.

Cyber-risks deserve attention, too. Hosting IoT devices on separate networks from more sensitive data and hardware can eliminate the threat of lateral movement. Restricting access privileges will minimise social engineering risks.



After identifying risks, businesses must quantify them, assigning each a score based on likelihood and financial impact. Once again, AI makes this analysis more reliable.

3. Install relevant monitoring systems

Next, businesses must continue monitoring their hazards to identify solutions and measure improvements. That means adopting the technologies that best support their specific monitoring goals.

IoT sensors are an excellent way to measure physical hazards like high temperatures, airborne contaminants or collisions with machinery. Automated network monitoring tools can gather data on cyber security risks and user trends. In any context, businesses must focus on the hazards they know are most relevant to them to help spread out the costs of tech implementation.

4. Improve data governance and security

It's important to recognise that these data technologies can heighten dangers without proper protection. Consequently, thorough industrial risk management also means considering information



Data security also means extensive user training, as up to 95 per cent of cyber security issues result from human error.

governance and security.

Businesses must encrypt all data they collect and restrict it so only employees who must access it for their job can do so. It's equally crucial to keep and encrypt backups of all mission-critical information. Data security also means extensive user training, as up to 95 per cent of cyber security issues result from human error.

5. Review risk management framework regularly

No industrial hazard management strategy is complete without regular review. Risks change as businesses evolve — especially amid widespread Industry 4.0 adoption. The only way to ensure ongoing safety is to reassess the organisation's risks and solutions at least annually.

These reviews should work through the previous four steps, taking any new threats and emerging technologies into account. Penetration testing can also help on the cyber security side of things, given that at least 46 per cent of organisations don't have enough internal security staff to troubleshoot issues.

Advance your industrial risk management today

As industries evolve, so too must industrial risk management. New technologies can both help and hinder this effort. It all comes down to how organisations implement these innovations.

Recognising the possibilities and dangers of Industry 4.0 in risk management is the first step to making the most of it. Once businesses complete that step, they can capitalise on the positives while addressing the potential downsides for optimal hazard management.

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About the author:

Emily Newton is a tech and industrial journalist and the Editor-in-Chief of Revolutionized magazine.



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“Today, safety is not just a choice but a necessity.”

Safety in industrial environments is a top priority. Subtronics, a leading manufacturer of gas detection systems and other safety equipment, is delivering innovative solutions to address these concerns. In this interview with Rakesh Rao, **Manish Poudwal**, Chairman & Managing Director, Subtronics (India) Pvt Ltd, explains trends in industrial safety and the role played by his company in making workplaces safer.

How is Subtronics helping industries to ensure safety?

Ensuring safety within industrial environments is paramount, and at Subtronics, we understand the importance of reliable equipment. We specialise in gas detection systems and breath alcohol analysers. Our products and solutions are used across industries such as chemicals & petrochemicals, pharmaceuticals, battery charging rooms, metals & mines, power plants, cement, data centers, etc.

In India, certain regulatory and statutory bodies mandate specific approvals for industries. For example, regulatory bodies such as the Petroleum Explosives and Safety Organisation (PESO) enforce stringent requirements in India.

Our coverage begins right from the gate, where individuals, including truck drivers, undergo breath analysis for alcohol, addressing concerns related to drink and drive cases. It extends throughout the entire planning process, including gauges and the detection of toxic and combustible gases. In fact, our gas detection systems are designed to detect more than 200 different gases, including challenging ones, leaving no stone unturned in safeguarding both manpower and premises. In an era where safety is non-negotiable, clients recognise the value of such investments and understand that safety is not just a choice but a necessity.

How important is the role of government?

The government has played a pivotal role in making workplaces safer by implementing stringent quality and safety norms. They are also enforcing implementation of high standards of safety and quality in manufacturing processes to make Indian industries globally competitive. Regulatory authorities such as the Bureau of Indian Standards (BIS) conduct audits of facilities to ensure



compliance with established norms. Subtronics adheres to all quality standards, such as BIS, PESO, ATEX, etc from sourcing raw materials to the final dispatch.

Today, buyers are well-informed and prioritise products that meet regulatory standards. Therefore, having the necessary approvals and certifications is crucial for maintaining trust and credibility.

What are the emerging trends in the gas detection system?

The latest trend is the integration of Industry 4.0 principles. Previously, gas sensing systems were designed to detect specific gases, such as ethylene oxide (EO), presenting a challenge in terms of sensor specificity. However, advancements in technology have enabled the development of instruments tailored to detect particular gases with high precision.

Nowadays, the focus has shifted towards Industrial Internet of Things (IoT), where sensors and devices are interconnected to provide real-time monitoring and control. We are embracing this trend by developing products that adhere to Industry 4.0 standards. Soon, we will launch an IoT platform that allows users to monitor their entire plant's status from anywhere in the world using a mobile device, iPad, or desktop.

There is a demand for portable gas monitors that are compact and lightweight. We are developing India's smallest and slimmest pocket gas detector. We are also introducing multi-gas detectors that can detect multiple gases simultaneously on a single screen, a feature previously unavailable in Indian-manufactured devices.

What are your growth plans?

We aim to grow our export market and capitalise on the need for safety equipments. We have created a new division dedicated to export operations for the same. **SME**



Safety at the Entrance

Reports of accidents involving faulty gates have been increasingly common, highlighting the urgent need for more reliable and secure entrance solutions.

In a heartbreaking incident, a senior eye specialist tragically lost her life when a compound gate fell on her. Renowned for her contributions to the field, the specialist was fatally struck by the falling gate she was passing through.

This incident highlights a growing concern surrounding the safety of entrance automation systems globally. Reports of accidents involving faulty gates have been increasingly common, highlighting the urgent need for more reliable and secure entrance solutions.

Samir Gandhi, Director, Gandhi Automations Pvt Ltd, a leading company specialising in entrance automation and loading bay equipment, expressed deep concern over the incident. He emphasised the critical role of robust safety measures in preventing such accidents. "In our rapidly evolving world, where technology continually shapes and reshapes our daily lives, entrance automation stands out as one of the remarkable advancements that seamlessly blend convenience with safety." He stressed the importance of ensuring gates, doors, and barriers operate flawlessly to guarantee not only smooth traffic flow but also enhanced security.

Drawing from extensive industry experience, Gandhi highlighted that gate-related injuries are not uncommon globally. The root cause of malfunctioning gates is often poor design standards and engineering adopted by fabricators who do not prioritise safety parameters. These incidents frequently result from the incompetence of service providers and the poor quality of gate construction.

"Several tragic cases serve as poignant reminders of the consequences of neglecting gate maintenance", Gandhi added. Instances cited include a child crushed by a gate due to a faulty closure and a delivery driver fatally injured by a dislodged gate. These incidents underline the necessity for professional installation, regular maintenance, and adherence to stringent safety standards.

Gandhi emphasised the importance of proper installation, regular maintenance, and adherence to safety standards to prevent such tragic incidents. He



strongly advises all property owners and managers to ensure that their gates are serviced by qualified professionals and regularly inspected to meet all safety requirements.

To enhance safety and reliability, it is crucial to check gate safety features before purchasing from any reputable brand to avoid accidents.

- Digital limit switch with encoder: Provides precise control of gate operations and prevents over-travel.
- Wheel stoppers: Prevents the gate from over-traveling or derailling in case of a system failure.
- Nylon roller clamps with safety post: Ensures the gate leaf is securely held and guided for smooth and safe movement.
- Safety strike fixed at entrance ends: Strengthens the entrance ends to prevent accidental gate displacement.

Gandhi urged businesses and individuals to prioritise safety and reliability when selecting entrance automation solutions. He cautioned against opting for substandard alternatives, emphasising that investments in quality systems outweigh potential long-term costs associated with accidents and liabilities.

As the industry continues to evolve, Gandhi Automations remains adamant in its mission to innovate and improve entrance automation technologies, ensuring they meet the highest safety standards. Their advocacy for enhanced safety measures aims to mitigate risks and promote a safer environment for all users.



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A Century of Success: Berger Paints

Through its pioneering initiatives, Berger Paints has cemented its position as an industry leader, demonstrating commitment to innovation, sustainability, and customer-centric solutions.

For over a century, Berger Paints has stood as a beacon of excellence in the paint industry, showcasing a legacy defined by innovation, quality, and resilience. Since its inception, Berger has adeptly evolved with the times, consistently adhering to its core values while embracing change.

Innovation and expansion

From its humble beginnings to its current status as a global leader, the company's journey is marked by significant milestones in innovation and expansion. Central to Berger's success is its PROTECTON division, a pioneer in protective coatings. With a firm commitment to the 'Make in India' initiative, PROTECTON has advanced indigenous manufacturing and emerged as a premier solution provider.

The PROTECTON division: Leading through innovation

Under the visionary leadership of Sanjay Chowdhury, PROTECTON has redefined the landscape of protective coatings. Leveraging advanced technologies and strategic collaborations, PROTECTON addresses the evolving needs of Indian infrastructure. The introduction of water-based intumescent coatings, compliant with international standards, and partnerships with esteemed organisations like Promat and CMP, have solidified PROTECTON's role as a catalyst for progress and innovation.

PROTECTON is more than a manufacturer; it is a trusted partner dedicated to reducing corrosion losses and enhancing the durability of Indian infrastructure. Whether safeguarding bridges, metro-rail projects, or critical marine structures, PROTECTON's solutions are engineered to endure the harshest conditions, ensuring longevity and resilience. Beyond its domestic endeavors, PROTECTON's contributions resonate globally, extending expertise and solutions across borders. By championing collaboration, innovation, and customer-centricity, PROTECTON exemplifies Berger Paints' enduring legacy of excellence.

Achievements and future prospects

As Berger Paints celebrates its centenary, the PROTECTON division displays the progress, embodying the spirit of 'Make in India' and setting new benchmarks for excellence in protective coatings. With a century of



achievements behind it and a promising future ahead, Berger Paints continues to inspire generations with its commitment to quality, innovation, and customer satisfaction.

Blending tradition with innovation

With a legacy spanning a century, Berger Paints is a testament to tradition, innovation, and unwavering excellence. Known for its blend of time-tested technologies and cutting-edge innovations, Berger continues to lead the field of protective coatings. Berger's approach combines the wisdom of age-old technologies with the dynamism of modern innovations. Leveraging extensive experience and strategic partnerships, Berger delivers solutions that surpass industry standards.

Groundbreaking technologies

At the core of Berger's success is its robust R&D capabilities, certified by the Department of Scientific & Industrial Research under the Ministry of Science and Technology. This enables Berger to refine traditional technologies like alkyd and aluminum paints, which have stood the test of time, while introducing advancements to meet evolving customer demands. One such innovation is the Monocoat technology, revolutionising coating applications across various resin types, including alkyds, epoxy, and polyurethane. Monocoats streamline the coating process, reducing production time and becoming indispensable for

industries seeking efficiency and cost-effectiveness.

Specialised applications

Berger's commitment to innovation extends to specialised applications as well. From paints designed for cryogenic to high-temperature environments to solutions addressing corrosion under insulation, Berger's diverse product portfolio meets the most demanding industry requirements. In a move towards self-reliance, Berger has ventured into manufacturing polyurea, a critical component in water conservation efforts. By producing polyurea coatings indigenously, Berger supports essential sectors and reinforces its commitment to a self-reliant India.

Indigenous manufacturing

Berger's foray into specialised segments like CAN and DRUM coatings highlight its leadership in the 'Make in India' initiative. By entering domains previously dominated by multinationals, Berger reaffirms its role as a trailblazer in promoting indigenous manufacturing and fostering a self-reliant nation. Entering the food and beverage packaging market, Berger launched a new range of can and cap coatings designed to provide excellent adhesion, flexibility, and corrosion resistance, ensuring the safety and longevity of canned goods.

Sustainable innovations

Through its strategic blend of tradition and innovation, Berger Paints continues to shape the future of protective coatings. With a relentless focus on excellence, sustainability, and self-reliance, Berger remains at the forefront of positive industry change, inspiring confidence and trust worldwide. Berger Paints has consistently led the way in innovation, transforming industry practices with sustainable solutions that address critical challenges and contribute to environmental conservation and cost efficiency.

Pioneering solutions

Berger transformed the traditional alkyd paint system for railway coaches by introducing advanced epoxy-polyurethane systems. Collaborating with ICF Chennai and conducting exhaustive research, Berger's innovation, endorsed by RDSO, reduced maintenance costs and significantly lowered VOC emissions, aligning with environmental sustainability goals.

In the late 1990s, Berger tackled the detrimental effects of carbonation on concrete structures by advocating for epoxy-polyurethane coatings on external surfaces. Initially endorsed by Chennai Municipal Corporation, this innovative approach has since been adopted by numerous states, setting a new

standard in concrete protection.

Ensuring water purity

Berger's commitment to quality extends to ensuring water purity through innovative coatings. By introducing water-based asphaltic paint compliant with ANSI/NSF 61 5DZO standards and certified by UL, Berger enabled the replacement of Chinese suppliers in USA projects, bolstering water infrastructure projects and meeting stringent international standards.

Berger's development of fluoropolymer coatings, conforming to Japanese standards (JIS), marked a significant milestone. Endorsed by RDSO for bullet train projects and Vande Bharat bogies, these coatings exemplify Berger's commitment to pushing boundaries in high-speed rail infrastructure.

Groundbreaking applications

Berger's indigenous innovation of thermo-indicative paint offers a game-changing solution for industries reliant on precise temperature control. By providing a product that changes color with temperature variations, Berger enhances real-time process monitoring, reducing reliance on imports and improving operational efficiency.

Berger Paints continues to innovate, particularly in specialised floor coatings, addressing specific industry needs and enhancing operational efficiency. Berger's solution replaces traditional rubber mats in power control rooms with a cutting-edge floor coating capable of handling high voltages up to 42 KW. Tested and certified by CPRI and ERDA, this product enhances safety and reliability in high-voltage environments.

Setting standards in performance

Berger's polyaspartic flooring offers unparalleled protection and efficiency. Unlike conventional epoxy systems, polyaspartic flooring requires only one-fifth the thickness and has a rapid curing time, enabling same-day return to service. Ideal for applications with critical downtime, Berger's polyaspartic flooring sets a new standard for efficiency and performance.

In response to the demanding needs of the chemical industry, Berger developed a new range of high chemical resistance coatings. These coatings provide superior protection against harsh chemicals and corrosive environments, ensuring the longevity and integrity of the equipment and structures they are applied to.

Future-oriented innovations

The introduction of Quick Drying Polyurethane Matt Finish caters to infrastructure projects requiring fast turnaround times, significantly reducing downtime.

WRAS certified pipe coatings meet the stringent requirements of the water industry, ensuring safety for use in potable water systems and securing significant orders from major clients in the pipe manufacturing sector.

Sustainability and growth

Sustainability remains at the core of Berger Paints' business strategy, with plans to launch eco-friendly products, implement green manufacturing practices, and engage with local communities through environmental initiatives. PROTECTON is well-positioned for growth in infrastructure development, industrial

maintenance, and specialty coatings for niche markets such as offshore, marine, and food-grade applications.

Conclusion

Through these pioneering initiatives, Berger Paints has cemented its position as an industry leader, demonstrating commitment to innovation, sustainability, and customer-centric solutions. As Berger continues its journey, it remains dedicated to driving positive change and shaping the future of the paint industry.

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(Communication provided by the management of the company)

Communication Feature

Igus develops slewing ring bearing made of wood and plastic

With the new slewing ring bearing made of WPC (wood-plastic composite), igus is taking another step forward in the integration of renewable raw materials in industrial production. By using 50 per cent wood and 50 per cent high-performance plastics, customers receive a cost-effective and lubrication-free slewing ring bearing. It strikes a good balance between strength, durability and environmental friendliness with a proven low CO₂ footprint.

How can renewable raw materials also be put to meaningful use in industry? The plastics specialist igus has considered this question and has now developed an iglidur PRT slewing ring bearing made of wood-plastic composite (WPC for short) for the first time. "As a plastics expert, we are now also venturing into the wood sector. Last year, we presented wooden shafts as possible mating partners for our linear guides for the first time. This year, we are integrating the wood directly into our products," explained Marc Trenkler, Product Manager for Slewing Ring Bearings at igus GmbH. Here, igus can rely on its proven injection moulding.

The new PRT consists of WPC, a mixture of wood fibres and iglidur high-performance plastics. The materials incorporate solid lubricants that make the slewing ring bearing smooth-running, lubrication-free and maintenance-free. The wood content gives the whole thing a natural look. Both the housing and the component are made of the WPC material. It only takes four screws to connect the two parts.

Developed specifically for the standard



The new igus slewing ring bearing made of WPC impresses not only with its wooden look, but above all with its low CO₂ footprint.

installation size PRT 02, the slewing ring bearing from igus is an equally priced alternative to the cost-effective PRT made of solid plastic, without compromising on performance. It allows for easy adjusting, for example in furniture technology, while offering a robust design that fulfils the requirements of various applications. A special feature of this new product is its extremely low CO₂ footprint of just 0.0577kg. By comparison, the PRT-02-30-ECO, which is already made from 97 per cent regrunulate, has a CO₂ equivalent of 0.819868kg. To ensure the reliability and performance of the new slewing ring bearing, it was subjected to extensive tests under real conditions in the 3,800m² igus laboratory. These analyses confirm the high quality and reliability of the product under various operating conditions.

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Smart Security Seal Prevents Utility Meter Tampering

Safcon's Smart Security Seal ensures robust protection against tampering by using a unique pre-locked mechanism.



Safcon Seals Private Limited has recently developed a unique Smart Security Seal to protect utility meters from tampering to prevent the revenue loss to the utilities. The meter seal is designed to provide physical security to energy, water and gas meters. The newly launched Smart Security Seal provides high security to Smart Meters and is designed and developed based on years of research. The seal is provided in pre-locked condition having a unique locking mechanism and does not have any scope for pre-tampering the seal before installation. Another common problem with old meter seals is difficulty in reading seal numbers from the dark backgrounds, Smart Security Seal is provided with a serial number on white background which enables easy to read installed seal numbers and prevent any possibility of error in reading. In addition, the seal is provided with a DPM 2D data matrix barcode having seal number and utility's security ID to read seal number and security ID digitally by smartphone or barcode scanner. Encrypted secret code is provided on each seal to discourage duplicate fake seals and create barriers to defeat the meter seal and prevent power theft. Smart Security Seal plays the role of Professional Sentry on duty 24/7. Smart Security Seal has the following unique features to make the Smart Meter Smarter and the unique robust locking mechanism provides highest protection to utility meters.

Security and durability

The Smart Security Seal ensures robust protection against tampering. It features a unique pre-locked mechanism that prevents any unauthorised access without leaving visible evidence, guaranteeing the seal's integrity. This robust locking mechanism and the seal's construction from UV-stabilised polycarbonate and non-corrosive stainless steel ensure durability against ultraviolet rays, moisture, rust, and temperature variations, maintaining effectiveness for 15-20 years.

Advanced security features

Each Smart Security Seal is equipped with a DPM 2D data matrix barcode directly engraved on the seal. This barcode facilitates foolproof reading, recording,



and verification of the serial number using a smartphone or handheld scanner. Combining the DPM barcode with an embossed security ID and encrypted secret code provides heightened security against counterfeiters attempting to replace genuine seals

with duplicates. This ensures authenticity and prevents manual manipulation of records, enhancing overall security measures.

Reliability

Manufactured by Safcon, the Smart Security Seal upholds a proven track record of reliability and dependability worldwide. Initially introducing polycarbonate seals to replace old lead variants, Safcon has maintained its reputation for quality and customer satisfaction. Unlike competitors, Safcon Meter Security Seals are exclusively supplied directly to end-users. 

For details, contact Safcon Seals Pvt Ltd, Kolkata, on Tel: +91 33 2229 5486, Mob: +91 98748 55114, Email: sales@safcon.co.in, or visit www.safcon.co.in

(Communication provided by the management of the company)

T90 70R RIDE ON FLOOR SCRUBBER DRYER

Soma Specialities Pvt Ltd offers T90 70R ride on floor scrubber dryer.

Features:

- The T90 70R is a battery operated ride-on scrubber dryer used for cleaning large floor spaces as it is very productive due to its ergonomic and easy to use design. This machine scrubs and cleans the floor and dries the wet floor simultaneously by sucking the dirty water through vacuum action. It can provide productivity of upto 3500 sqm/ hr which is very useful when large areas are to be cleaned in short span of time and it also saves on labour costs as one machine can do the job of 10 people and it can still provide better results compared to manual cleaning.
- It comes with 2 brushes collectively measuring 700 mm so that it can cover a wider span in a shorter time. The tanks are made of tough rotomolded plastic and have large capacity of 90 Ltrs & 100 Ltrs for the solution tank and recovery tank respectively so that it can cover a larger area without needing downtime for tank refill & discharge.
- Tanks are designed to discharge water completely to eliminate bacterial & stain residue. Cleaning solution discharge is controlled electronically to regulate output and save water efficiently when not in use. Seating is designed for operator to work longer hours comfortably and also comes with a pressure sensitive switch which only activates the machine to start when the operator is seated on it and prevents machine movement caused by false triggering by anyone else other than the operator.
- The vacuum motor has a powerful suction that does not leave any water behind but is muted to eliminate noise that can cause disturbance to co-workers.
- The soft start of the brush reduces the burden on motor and batteries. Traction motor is quite powerful and offers speeds upto 5 km/hr and climbing gradient up to 12%. Brakes are also powerful and stop the machine immediately when applied to avoid any accidents. The T90 70R is highly useful for all types of large spaces such as in large spaces such as warehouses, factories, shopping malls, airports, railway stations, educational institutions, hospitals, residential & commercial complexes.



About the Company: Soma Specialities Pvt Ltd, the pioneer in introducing cleaning machines in India since 1992 has added yet another innovative floor cleaning machine to its range.

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Contact:

Soma Specialities Pvt Ltd, Mumbai
Tel: 022-25786895 Mobile: 09594988533
Email: info@somaspecialities.com

FIRE FIGHTER SUIT

Core Safety Group offers a wide range of multi-layered fire fighter suit.

Features:

- The suit is made of multi-layered light weight fabrics and protects a fire fighter from intensive flames and high heat radiation.
- Their product fire suit was developed keeping in mind the safety of people working in manufacturing plants and indoor or outdoor work sites.
- The suit is equipped with fire fighters – coat, trouser, gloves, helmet & fire protective hood.
- This fire resistant suit conforms to government standards and industry regulations.



About the Company: Core Safety Group is engaged in manufacture, import and distribution of safety products for personal and industrial applications.

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SAFETY SHOES

Harry Collection offers a wide range of karam FS 05 safety shoes.

Features:

- It is cleated outsole with wider cleats for higher grip and self cleaning effect.
- It has antistatic, oil/acid resistant, anti slip and heat resistant with shock absorbing property, anti fatigue.
- Its features include: Upper: made from full grain leather; quarter lining: black cambrel lining; vamp lining: highly abrasion resistant fabric lining; single density PU sole.



About the Company: Harry Collection, started in 2005, is engaged in the field of manufacturing, wholesaling and trading a quality range of safety shoes, safety gumboots, safety harness, safety mask, convex mirror, etc. The products are widely acknowledged for their lightweight, perfect grip, durability and immaculate finish.

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Contact:

Harry Collection, Ahmedabad
Tel: 079-22110599 Mobile: 07046022444
Email: harrycollection108@gmail.com

PB-135 RIDE-ON SWEEPER

Soma Specialities Pvt. Ltd. has launched a new ride-on sweeper, the PB-135.

Features:

- This sweeper has a sweeping width of 1350 mm and hopper capacity of 135 Ltrs making it suitable for sweeping in large areas and roads of an industrial plant. The sweeper is powered by powerful 36V batteries which can give coverage of upto 3-4 hours per charge. Batteries provided are dry and maintenance free batteries.
- The sweeper has a brushless DC (BLDC) motor which is capable of very long and maintenance free lifespan. With such maintenance free features, this machine surely cuts down on maintenance and after sales-services costs which are major headache for companies using fuel operated ride-on sweepers as their maintenance costs and spares costs are very much higher in fuel engine operated machines. This machine has a productivity of 8770 sqmtr/ hr with a max. speed of 6.5 Km/hr. Rear axle is equipped with a patented electric rear axle mechanism with a differential system for enhanced vehicle stability.
- The drive system is one of the most powerfully equipped to climb ramps of upto 20° making this machine to reach where no other machine can reach. The safety feature also includes an overload voltage protection device.
- This feature makes the sweeping productivity very much more effective in a dusty tropical country like India where dust is a major concern for cleaning. In other machines without the water spraying system, the dust escapes in the air and settles back on the ground thereby making the sweeping very less efficient. The PB-135 is made of steel frame for solidity and durability and water tank is made of tough rotomolded plastic tank. Reverse alarm is another safety feature of the machine making it very safe for the operator and the people around. Control panel is extremely easy and self-explanatory making it a very simple sweeping machine to use and low on maintenance cost. The PB-135 is an ideal machine for use in warehouses, factories, cement plants, power plants, industrial complexes, large housing societies, railway stations, airports, parking lots, bus stations etc.

About the Company: Soma Specialities Pvt Ltd, the pioneer in introducing cleaning machines in India since 1992 has added yet another innovative floor cleaning machine to its range.

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Contact:

Soma Specialities Pvt Ltd, Mumbai
Tel: 022-25786895 Mobile: 09594988533
Email: info@somaspecialities.com



CUT & SEWN NITRILE GLOVES

Mallcom India Ltd offers a wide range of cut & sewn nitrile gloves.

Features:

- Light palm coated cut and sewn nitrile dipped gloves. A comfortable glove with excellent dexterity, enhanced grip particularly useful in slippery and oil environments.
- Construction gives you excellent hand dexterity. Nitrile coated palm and finger on white cotton shell.
- Knitted wrist for better grip. Enhanced grip particularly useful in slippery and oily environments.

About the Company: Mallcom (India) Ltd is India's leading personal protective equipment (PPE) brand. Having a presence in more than 50 countries in 6 continents, Mallcom has established itself as the integrated manufacturer and distributor for head to toe protection and is a valued partner for major importers in their brand name.

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Contact:

Mallcom India Ltd, Kolkata
Tel: 033- 40161005/1077 Mobile: 09147157136
Email: sofia.chattopadhyay@mallcom.in
safety@mallcom.in



VIDEO SURVEILLANCE SYSTEM

Vouch Protection Services Pvt Ltd offers a wide range of video surveillance system.

Features:

- Then video surveillance would help all the risks at bay. Security is a big concern these days and so the demand for reliable, innovative, secure solutions is scaling high.
- The importance of having video surveillance cannot be underestimated ever because of the countless issues that happen in the daily business mundane.
- No doubt the importance of these measures cannot be underestimated, but none of these can't equalize or surpass the importance of video surveillance.

About the Company: Founded in 2009, Vouch Protection Services PvtLtdis a distinctive wholesaler, suppliers, distributors, traders and retailers of high quality security and automation solutions.

Scan the QR Code for instant product enquiry



Contact:

Vouch Protection Services Pvt Ltd, Noida
Mobile: 09810184718
Email: a.bajpai@vouchpro.com





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Over 500,000 Industrial Robots Shipped in 2023

The global industrial robot market is expected to grow on average, by 3.7 per cent per year between 2024 and 2028, says an Interact Analysis report.

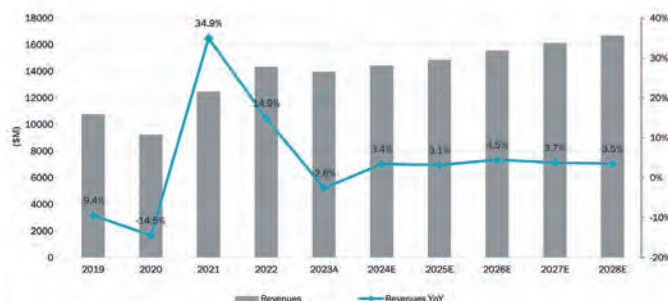
Overall global industrial robot shipment volumes exceeded 500,000 units in 2023, according to global market research firm Interact Analysis. This was a similar level to that seen in 2022 but the average price of industrial robots decreased last year. After a record high in 2021, 2023 reached a low point in terms of revenues and shipments but the long-term forecast remains positive. The global industrial robot market is expected to grow on average, by 3.7 per cent per year between 2024 and 2028.

The sales of industrial robots to the automotive industry in the Americas faced pressure in 2023, resulting in sluggish growth of the market – one of the largest downstream industries for industrial robots in the region. Mexico in particular has high dependence on the automotive industry, creating a greater impact on industrial robot sales in the region. On the whole, growth of industrial robots in the Americas plummeted by 17.3 per cent in 2023; compared to APAC, which saw a slight increase in growth, and EMEA, which remained stable.

The American markets accounted for around 17 per cent of global industrial robot revenues compared to 62 per cent for APAC and 22 per cent for EMEA. The industrial robot market enjoyed strong growth in the Americas during the immediate post-COVID period in both the automotive and non-automotive industries, where manufacturers were continually looking for ways to improve their production processes and reduce manufacturing costs by adopting the technology.

Material handling, welding and assembly

The top three most common applications – material



Market forecast- revenue for industrial robots

Source- : Interact Analysis

handling, welding and assembly – accounted for over 70 per cent of industrial robot market revenues in 2023, with material handling accounting for one third on its own. This common application is dominant in the Americas and Europe. The American market has the highest market concentration globally, where the top 5 suppliers shared nearly 80 per cent of revenues and over 2/3 of unit shipments.

Maya Xiao, Research Manager at Interact Analysis comments, “The average price per unit of an industrial robot is on a downward trajectory, following a rise for two consecutive years, and we expect a price decline of around 3 per cent per year between 2024 and 2028. The COVID-19 coupled with high energy prices and inflation caused an average price increase in 2022. We originally expected robot prices to decrease again in 2023, but supply chain and inflation issues resulted in prices creeping up to levels close to those seen in 2022. This increased ‘price effect’ was also due to the market trend towards heavy payload robots, which are more expensive.

“It is important to note that our robotics forecasts are underpinned by the Interact Analysis Manufacturing Industry Output (MIO) Tracker. We can see from our data that the growth profile for industrial robots reflects the manufacturing slowdown during the pandemic and the subsequent downturn in 2023. If we look at the manufacturing output figures for China, Europe and the Americas, the historic manufacturing contractions are synonymous with the decline in growth for the industrial robot market that we have observed in recent years.” **SME**





“MSMEs are poised to play major role in India's economic growth.”

Micro Small and Medium Enterprises (MSMEs) are the prime drivers of India's economy contributing more than 29 per cent to the GDP and are responsible for 50 per cent of the country's total exports. To become a developed nation, it is crucial to build a strong MSME sector. Performing this role precisely is the MSME-Development & Facilitation Office (DFO). In this interaction with Rakesh Rao, **Milind Barapatre**, IEDS, Joint Director & Head of Office, MSME-DFO Mumbai, explains various pain-points of the industry and the role played by his organisation to facilitate the growth of MSMEs.



Can you tell us about your department and its role?

MSME Development & Facilitation Office (DFO), Mumbai, is the field office of Ministry of Micro, Small and Medium Enterprises. It is the nodal office of Office of Development Commissioner, MSME, New Delhi. MSME-DFO Mumbai implements policies, programmes and schemes of Ministry of MSME for the promotion and development of MSMEs in the state of Maharashtra.

Our mission is to provide technical and managerial support to entrepreneurs. We guide them through every step of their journey, from starting a venture to navigating business operations. We offer assistance with everything from sourcing raw materials to marketing their products. We conduct training programs and workshops to equip entrepreneurs with the necessary skills, ultimately promoting a thriving MSME ecosystem.

The organisation's name was changed from “Development Institute” to “Development & Facilitation Office”. Why?

Previously, our focus was primarily on knowledge dissemination. Now, we take a more proactive approach, actively facilitating entrepreneurs in overcoming hurdles. We connect them with various programs like capacity building initiatives, certification schemes, and public procurement opportunities. We also address issues like delayed payments and high-interest rates. This broader scope is reflected in the updated name.

How important are MSMEs to achieve the objectives of Viksit Bharat 2047?

'Viksit Bharat 2047' is the government's roadmap to making India a completely developed nation by 2047. The MSME sector is an important pillar of Indian economy as it contributes greatly to growth of Indian economy with a vast network of around 30 million units, creating employment of about 70 million, manufacturing more than 6,000 products, contributing about 45 per cent to manufacturing output and about 40 per cent of exports, directly and indirectly. The growth and sustainability of this sector is very crucial for meeting the objective of Viksit Bharat.

As the head of MSME-DFO, Mumbai, what are your priorities at present?

MSME-DFO Mumbai has been actively working for promotion of MSME sector in the state of Maharashtra. We have been closely working with stakeholders of MSME sector such as Industries Department, Government of Maharashtra, MSMEs, MSME associations, banks & financial institutions and others for promotion of MSME sector. At present, we are focusing on the PM Vishwakarma Scheme, the scheme of Government of India for the traditional artisans. We are also organising awareness programmes, workshops, skill development programmes for prospective entrepreneurs to support them to start their own ventures as well as helping MSMEs gain new markets through our Procurement and Marketing Scheme (PMS).

What are the pain-points of MSMEs?

Due to lack of budget, MSMEs face problem in accessing new markets and creating their brandings. Through schemes like Procurement & Marketing Scheme, we encourage MSMEs to participate in exhibitions at national level, and participation in these exhibitions are reimbursable. We provide new market access to MSME sector by conducting vendor development programmes in association with CPSUs. Support is also provided to MSMEs for obtaining trademarks, IPR, etc.

MSMEs often face the issue of access to credit/finance. How is your office helping MSMEs in solving this issue?

Access to credit/finance is one of the pain areas, and we are trying to solve this issue by: Promoting schemes such as MUDRA, PMEGP through awareness programmes, events and training programmes

Representing MSME sector in State Level Bankers' Committee (SLBC) & RBI's Empowered Committee Meetings and raising the issues relating to access to credit Coordinating with CGTMSE to promoting collateral free loans.

How can MSMEs raise their quality and productivity standards?

We work with agencies that promote quality, productivity and standards such as Bureau of Indian Standards (BIS), National Productivity Council, etc. We implement MSME Competitive Lean Scheme which aims to improve quality, productivity, performance and capability to change the mind-sets of manufacturers and transform them into world class manufacturers. In addition, we implement Zero Defect Zero Effect (ZeD) scheme which encourages and enables MSMEs for manufacturing of quality products using latest technology, tools & to constantly upgrade their processes for achievement of high quality and productivity with the least effect on the environment.

How is MSME-DFO, Mumbai, fulfill the needs of aspiring MSMEs?

We are planning to provide MSMEs better support services through techno managerial consultancy provided by our technical officers. We are also working closely with prominent MSME industry associations to gauge the aspirations of MSMEs. We are also coming up with a state-of-the-art multipurpose exhibition cum convention center in our premises to address the longstanding demand of MSMEs to provide them with exhibition space at affordable rates.

What are your expectations from MSMEs?

With increasing government support, greater access to technology, and a growing focus on innovation, MSMEs are set to play an even more significant role in India's economic growth. We see a future where MSMEs are not just job creators but also lead the way in developing cutting-edge technologies and sustainable practices.

Is there anything else you would like to share with our readers, particularly aspiring entrepreneurs?

Our office offers immense potential for MSMEs with ambition and good business ideas. MSMEs can leverage the resources available, attend training programs, and connect with the government for guidance to improve their business prospects and growth.

SME



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Studer's S110 Meets All Requirements

White, the world's leading manufacturer of orbital motors and steering solutions, incorporated Studer's S110 internal cylindrical grinding machine into their production for better productivity.



Studer S110 internal cylindrical grinding machine



Automation solution on the S110

It is April when the truck sets off on its journey north from the Studer plant in Biel, Switzerland, a distance of around a thousand kilometers. Its destination- the Polish production plant of White in Wrocław, the world's leading manufacturer of orbital motors and steering solutions. On board is the S110, a modern and high-precision internal cylindrical grinding machine. "It's always a great moment when a new machine is delivered," says **Paweł Soćko**, Senior Process Engineer, White, after the arrival in Wrocław.

"We opted for the S110 because it exactly meets our high requirements in terms of performance and quality in production. Thanks to the cooperation with Studer, we can grind our components with the highest precision and comparatively low costs - Studer therefore contributes to our success," he explains. In the modern plant with around 600 employees, several Studer machines are now in use together with the new S110, as well as other machines from sister companies in the United Grinding Group. Among other things, these enable the production of innovative electrohydraulic high-performance solutions, for example for steering systems in agricultural and construction machinery. White has over 50 years of experience in this field and is now part of the internationally established interpump group.

Optimisation

"The relationship with White has existed for decades and we are delighted that our grinding machines can continuously contribute to their success here," says **Adrian Schürch**, Area Sales Manager- Poland, Studer. As Studer has a local representative in Poland, communication went very well right from the start. However, before deciding on a specific machine model, the requirements of the component to be produced with it had to be determined. "As always, we examined this in detail with our specialist team to find the optimum solution for the customer," reports Schürch.

Specifically, it is about the internal grinding of hardened steel sleeves for hydraulic steering systems. It quickly became clear that the S110 from Studer's wide range of models was ideal for the component geometry and production requirements. "In addition to high precision, reliability, and compactness, this internal cylindrical grinding machine also offers an excellent price-performance ratio," says Schürch. But that was just the beginning. The Studer team specially configured and adapted the S110 for White so that the machine could be optimally integrated into the production process.

Short cycles & high quality

This process fell within the remit of Cesare

Mastroianni, who is responsible for project management at Studer's internal grinding competence center in Biel. "The optimisation is based on the specifications, where all technical specifications, the geometry of the component to be manufactured and operation plans are defined," he explains. His team worked closely with the specialists from White. "We were very impressed by their technical expertise, professionalism, and constructive attitude. It was a very pleasant cooperation, and we found the perfect solution between customer requirements and technical implementation", emphasises Mastroianni.

One of the challenges was to find the best mix of short cycle times in series production and high component quality. Thanks to the optimisation, the S110 can grind around 350,000 high-quality sleeves per year at the plant in Wroclaw. White is also satisfied with the result, "We produce in high volume, and this requires the best solutions in the world - because we cannot afford any losses due to insufficient precision or fluctuating capacity," emphasises Soćko. He adds, "The Studer S110 meets our requirements perfectly, it is stable and reliable."

Efficient production

Soćko cites yet another reason for choosing the S110- its automation capability. In the optional loading and unloading cell, a robot picks up the raw parts from a pallet, clamps them in the machine, and places the finished ground sleeves in another pallet. This process only takes a few seconds per sleeve. The S110 can therefore operate autonomously for at least an hour without human intervention and internal functions facilitate quality control.

"In practice, we even have almost two hours of autonomy, which reduces labour costs enormously," reports Soćko. This also has major benefits for production efficiency; employees can devote themselves

The S110 at a glance:

- Compact and flexible internal cylindrical grinding machine for processing medium-sized workpieces
- Center height of 102 mm (4") and a maximum grinding length of 120 mm (4.72")
- Optional loader for loading and unloading
- Up to three grinding spindles in a linear arrangement enable external and internal grinding in just one clamping operation
- The StuderSIM and StuderWIN operating systems enable safe programming of all basic cycles for grinding, dressing, and process-supporting measurement

to other tasks while the robot ensures speed and consistency that would otherwise not be possible.

Second life to aging machines

While the new S110 improves production with its high-tech capabilities, White continues to rely on tried and tested technology. "The oldest of our eight Studer machines is still working well after 30 years," emphasises Soćko. One reason for this is the machine overhaul service that Studer offers its customers.

With this service, an aging machine is restored to as-new condition as when it was delivered. **Steven Thiel**, Customer Care Consultant- Eastern Europe and Northern Germany, Studer explains the benefits, "Customers who are familiar with their machines and do not require new technologies for grinding components benefit enormously from this. This is because the machine overhaul only costs a fraction of the price of a new system and the customer can continue to work with the familiar machine in as-new precision and quality."

The ecological factor is also important for White, which has already taken advantage of several machine overhauls. "Environmental aspects always play a role for us, which is why Studer machines with their energy-saving solutions fit in with our corporate values," explains Soćko. This is because instead of replacing an outdated model that once required a lot of energy and resources to build, it can be used again for decades. It takes around three months to overhaul a machine in Thun, Switzerland, with Studer taking care of all aspects of logistics. "During this time, we provide a loan machine so that there are no production downtimes," says Thiel, who is available to White as a daily contact. Proven processes combined with the latest technology, White believes it is well-positioned for the future. "Properly implemented processes ensure success," says Soćko, adding, "Studer has shown that they are the ideal company to accompany us on this journey."

SME



OSPM - a compact steering unit suitable for vehicles and mobile machines with high axle loads.



Digital Maintenance Enhances Benz's Efficiency

Digital maintenance of TRUMPF laser in Benz streamlines real-time monitoring and predictive upkeep for enhanced production efficiency.

Mercedes-Benz and high-tech company TRUMPF honed their decades-long relationship to make complex systems in production more resilient and efficient. In the age of Smart Factory both companies are focusing on predictive digital maintenance the field of real-time laser maintenance. The corresponding pilot project at the Sindelfingen site served as a blueprint for all Mercedes-Benz plants worldwide. The innovative process significantly reduces the risk of unplanned downtime of machines, which enormously increases the resilience of complex vehicle production processes.

Predictive digital maintenance

Until now, lasers have been serviced at fixed time intervals directly in their respective locations. Master data maintenance, documentation and data exchange were carried out manually. With the help of Manufacturing Service Bus (MSB) and additional elements of the global MO360 data infrastructure, around half of the approximately 400 TRUMPF lasers and associated laser optics used worldwide at Mercedes-Benz are now connected in one cloud.

“The future of automotive production is about forward-looking, digital processes, dynamic maintenance and maximum failure avoidance. Together with our partner TRUMPF, we are driving forward continuous process optimisation with innovative condition monitoring even in system maintenance”, said Jörg Burzer, Member of Board of Management, Mercedes-Benz Group AG.

Condition Monitoring

In the digital service condition monitoring developed by TRUMPF, the status of the lasers are now continuously monitored and analysed cloud-based in real time. In so-called condition monitoring, TRUMPF service experts use algorithms to monitor the networked laser centrally from a single point while the machine is in progress. Abnormalities are detected immediately and reported directly to the corresponding maintenance department, accompanied by recommended actions. Mercedes-Benz is therefore able



L-R: Hagen Zimer, CEO, TRUMPF Laser Technology, & Jörg Burzer, Member of the Board of Management of Mercedes-Benz AG.
(Image Source: Mercedes-Benz AG)

to recognise additional maintenance requirements before a laser fails. The risk of a failure is so predictable and can be prevented by maintenance measures initiated on time. This avoids unplanned downtimes in production and significantly reduces breakdowns. Over 80 per cent of all service cases can be predicted and proactively planned.

The results help Mercedes-Benz to operate the laser and assist in the optimization of its production.

“Digital networking is the key to greater efficiency in production. With smart factory solutions, we are strengthening the competitiveness of our customers. Through condition monitoring and data analyses, we support our partner in its state-of-the-art production and increase the availability of our laser and machines”, said Hagen Zimer, CEO Laser Technology & Member of Board of Management, TRUMPF.

Data protection

Thanks to a globally uniform IT architecture and standardization of the components in all assembly and vehicle plants worldwide, the highly complex production facilities are validated. Production-relevant data is not passed on to third parties. Only the laser status data is sent to the TRUMPF cloud for analysis, whereby the data streams are protected by cloud assessments and audits.



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Tools for Sustainability

In machining, it is undoubtedly the machine tool, which consumes the majority of the energy used with its spindle and axis drives, peripherals and auxiliary units such as cooling, lubrication or compressed air supply.

In today's world, sustainability considerations are currently seen as a trend rather than a necessary practice. The machining and equipment used for it are no exception. Individual elements - such as tool holding - are often widely considered. Resources are limited and energy is increasingly expensive. When evaluating sustainability, it is important not to focus too narrowly on a product, but also consider the environment, the product life cycle and the entire process in which the product is integrated.

Sustainability in machining

Metal machining has many facets. Depending on the material, component geometry and quantities, a wide variety of machines, tools and clamping devices are used. External circumstances such as the production location, qualifications of the employees and possible automation must be taken into account. There are several manufacturing options that can be best, economical and sustainable depending on the case.

So how can we measure sustainability? Apart from the used materials, energy efficiency is probably the main factor that determines a sustainable process. Therefore, a promising approach is to look for the largest consumers and optimise their technology use.



Metal machining has many facets. Depending on the material, component geometry and quantities, a wide variety of machines, tools and clamping devices are used.

 **In addition to shrink fit chucks, we also have hydraulic chucks in our extensive portfolio, although their list prices are two to three times higher than shrink fit chucks due to the complex production process. They are the right solution for certain applications. However, they are not more sustainable.**



Andreas Haimer,
MD and President, Haimer Group

Savings potential

In machining, it is undoubtedly the machine tool, which consumes the majority of the energy used with its spindle and axis drives, peripherals and auxiliary units such as cooling, lubrication or compressed air supply. When purchasing new machines, the user can

significantly reduce consumption by paying attention to energy-saving components.

Andreas Haimer, Managing Director and President of the Haimer Group, explains: "In our own production, we have learned that replacing an old machining centre with a new one using the same machining process requires around 30 per cent less energy. As a family business, we pay a lot of attention to sustainability. For instance, we source our steel for tools from Germany, where for years we have been exclusively using electricity from renewable energy sources, and are investing in several more solar energy systems and green infrastructure. In the last financial year, we invested a total of over one million euros and saved over 250 tonnes of CO₂ per year."

Not every older machining centre can be replaced by a new one. Savings can also be made in the machining process, for example by using CAD/CAM-optimised machining strategies such as trochoidal milling.

Haimer, recalls an instance, "A customer provided us with data on how he was able to reduce the machining time by 75 per cent from 71 minutes to 18 minutes per part by trochoidal milling with our Haimer power shrink fit chucks and Haimer mill cutters compared to machining with a face mill cutter. The change in machining strategy was accompanied by energy savings due to significantly lower power consumption. While the spindle load was 80-85 per cent for 10 parts in conventional machining with a face mill cutter, resulting in total energy costs of around EUR 150, the trochoidal

milling strategy with a spindle load of 8-10 per cent and significantly shorter machine running time reduced energy costs to a total of EUR 5 for 10 parts. This in turn means a higher output with lower energy consumption per part produced - that's what I call sustainable and efficient."



Experienced users shrink a worn cutting tool and shrink a new cutting tool in a single operation. The tool holder is therefore only heated and cooled once.

A holistic approach

If you look at the whole process chain, have you ever thought about how a tool holder could contribute to sustainability? In view of a machining process in which the milling machine consumes an average of around 30 kW, plus the power of hydraulic and pneumatic devices, automation equipment and robots, tool holding only plays a subordinate role. This is because the tool holder is a comparatively small detail, even if the clamping process with a shrink fit chuck consumes a marginal amount of energy.

Looking at other clamping systems, the energy consumption during shrinking is higher in operational use than with a hydraulic or milling chuck. If you look at the entire product life cycle of a tool holder, which includes production, maintenance and disposal, a completely different picture emerges.

The production of a hydraulic chuck requires significantly more effort and energy due to its more complicated structure. In addition to the high-precision machining of individual components, there is also the soldering of the expansion sleeve, additional heat treatment to prevent the solder joint from breaking, as well as the effort required for cleaning, assembly and filling with oil. The energy required for production is around three times as high as for the shrink fit chuck.

"In addition to shrink fit chucks, we also have hydraulic chucks in our extensive portfolio, although their list prices are two to three times higher than shrink fit chucks due to the complex production process. They are the right solution for certain applications. However, they are not more sustainable. Our analyses have shown that a hydraulic chuck requires approx. 25 kWh more energy to manufacture than a shrink chuck. Conversely,

in terms of the product life cycle, this means that a shrink fit chuck with an energy requirement of 0.026 kWh per shrink fit and cooling cycle can be shrunk almost 1,000 times before it requires more energy than a hydraulic chuck." The same applies to milling chucks, which are much more complicated and contain more components as well as grease and lubricants", states Haimer.

Life cycle and process reliability

In addition to the increased manufacturing costs, there is also the difference in terms of maintenance. While the shrink chucks are maintenance-free due to the particularly high quality of the hot-work tool steel, in combination with the patented Haimer coil and shrink fit machine technology, they can be shrunk in and out an unlimited number of times. Whereas, hydraulic chucks and milling chucks have to be returned to the manufacturer every 2-3 years at the latest to check the clamping force, lubricate the clamping screw or grease the system and carry out regular maintenance of the chuck due to wear. The contained hydraulic fluid or grease also makes environmentally friendly disposal more difficult than with shrink fit chucks, which do not contain any additional components. In addition to the life cycle, there are also significant differences in terms of process reliability. In the event of dry machining or insufficient cooling in the machining process, hydraulic chucks pose the risk of the clamping chambers bursting due to the high heat development, including tool pull-out and the risk of scrap. Shrink fit chucks are more robust and durable in this respect. If one wants to completely eliminate the risk of tool pull-out, the Haimer Safe-Lock system is an option for shrink fit chucks for 100 per cent safety.



Apart from the used materials, energy efficiency is probably the main factor that determines a sustainable process. Therefore, a promising approach is to look for the largest consumers and optimise their technology use.

Energy consumption

But how is energy consumption really calculated during the shrinking process? Heating a shrink fit chuck



Haimer's shrink fit machine Power Clamp Air i4.0 Economic.

takes about five seconds with a current shrink fit machine. Experienced users shrink a worn cutting tool and shrink a new cutting tool in a single operation. The tool holder is therefore only heated and cooled once. The maximum output of the Haimer Power Clamp shrink fit machine with the patented NG coil is 13 kW, but the average is 8 kW. This means that a single, complete shrinking process consumes around 0.011 kWh. On top of this, cooling consumes around 0.015 kWh - although Haimer devices can cool up to five holders in parallel and at the same time with almost the same energy consumption. In the worst-case scenario, this results in a total of 0.026 kWh for the entire process. If a kilowatt hour costs 20 cents, shrinking and cooling a tool costs a marginal 0.5 cents.

"The energy consumption per clamping process plays a negligible role compared to the issues of life cycle, process reliability and machining strategy. Modern CAD/CAM-optimised milling strategies can save 75 per cent of machining time. Machinists must focus on such improved processes if they want to be sustainable and productive. And in a second step, they should select the most suitable and process-reliable tool holder for these strategies," summarises Andreas Haimer.

SME

Communication Feature

TRIO POWER IP67 power supplies for installation in harsh environment

Phoenix Contact offers the robust TRIO POWER power supplies with IP67 degree of protection, which are ideally suited for decentral supply in the field. The weather-resistant aluminium housing protects the devices against dust and water. This enables the power supplies to ensure high system availability even in harsh ambient conditions. Moreover, the power supplies feature high shock and vibration resistance as well as a high electric strength.

Fast installation directly at the load saves on cabling, reduces line losses, and also frees up space in the control cabinet. The inclusion of an easy diagnostic signaling contact facilitates convenient output monitoring and with dynamic boost it provides reliable starting of difficult loads. This ensures superior system availability even in harsh ambient conditions.

Advantages offered are:

- Direct installation at the load in the field reduces cable lengths and frees up space in



the control cabinet

- Robust die-cast aluminum housing ensures high system availability with resistance to extreme environmental conditions (temperature, dust, and water)
- Improved diagnostic options in the field with DC-OK LED and AC-OK LED
- NEC Class 2 (POUT <100 W)
- Efficiency of >92 per cent
- Wide temperature range: -25°C to +70°C
- Device connections: M12, M12-A, 7/8", IPD

SME

(Communication provided by the management of the company)



Advanced Heating Technologies for Electronics

Advancements in heating technology are revolutionising the electronics and electrical manufacturing industries, addressing inefficiencies in traditional methods such as slow processing times, energy waste, and uneven heat distribution, says **Dhawal Gupta**.

The tremendous progress of electronics and electrical manufacturing has required advances in multiple production elements, with heating technology being one of the most crucial ones. In this highly competitive industry, advanced heating solutions are now at the forefront of increasing productivity, raising quality, and cutting costs.

Innovative heating solutions

Heating technology is essential to the electronics and electrical manufacturing industries for operations including soldering, reflow, heating, and cure.

Inefficient aspects of traditional technologies include slow processing durations, energy waste, and uneven heat distribution. However, a number of significant advancements in improved heating technology are tackling these issues:



Laser heating offers control and precision by using laser beams to produce concentrated heat. It is perfect for tasks like surface treatment and micro-soldering that call for exact precision.

Induction heating: This technique heats conductive materials directly by means of electromagnetic fields. It is extremely effective, ensuring exact control over the operation and minimising energy loss through quick,

localised heating. Soldering applications benefit greatly from induction heating because it produces high-quality junctions with little to no temperature influence on neighbouring components.

Infrared (IR) heating: To transmit heat, IR heating uses infrared radiation, as it heats objects directly without warming the surrounding air, it is incredibly efficient. It provides accurate temperature control and rapid heating rates, infrared heating (IR) is widely utilised in reflow soldering and curing operations in the electronics manufacturing industry.

Laser heating: This method offers remarkable control and precision by using laser beams to produce concentrated heat. It is perfect for tasks like surface treatment and micro-soldering that call for exact precision. Automated production lines can benefit from the integration of laser heating systems, which increase productivity and uniformity.

Microwave heating: This method heats objects from the inside out by using microwave radiation. It

works very well for procedures where even heating is necessary, such as grinding and drying. Moreover, energy-efficient microwave heating lowers the total power used in manufacturing processes.



In the future, manufacturing of electronics and electrical components could undergo a revolution thanks to sophisticated heating technologies and Industry 4.0 concepts.

Efficiency and quality enhancements

Modern heating techniques have a major positive impact on the productivity and quality of electronics and electrical manufacturing. Here are a few of the main advantages:

Energy efficiency: These technologies lower overall energy usage by accurately directing heat where it is needed and avoiding energy loss. This decreases the carbon footprint of production operations, which helps sustainability programs as well as cutting operating expenses.

Speed and throughput: Production times are accelerated by fine and quick heating capabilities. Faster processing is made possible by technologies like induction and laser heating, which boost throughput and satisfy the expanding demand for electronic gadgets.

Improved product quality: Accurate temperature management guarantees repeatable outcomes, which lowers errors and rework. Modern heating techniques reduce thermal stress on parts, increasing

product longevity and reliability.

Flexibility and scalability: Contemporary heating systems are made to be flexible and scalable to a range of manufacturing settings. Due to their simple integration into current production lines, manufacturers are able to expand their operations without having to make major overhauls.

Challenges and future directions

Despite the noteworthy progressions, obstacles nonetheless exist in the extensive integration of these technologies. For many producers, the necessity for specialised knowledge and high upfront expenses can be obstacles.

To further enhance these technologies, increase their affordability, and broaden their applicability to new materials and processes, more research is also necessary.

In the future, the manufacturing of electronics and electrical components could undergo a revolution thanks to the combination of sophisticated heating technologies and Industry 4.0 concepts. Real-time heating process optimisation is possible with smart heating systems that have sensors and AI-driven controls. This increases efficiency and lowers waste.

These technologies will surely become more and more important as they develop to satisfy the demands of a world that is becoming more and more electronic.

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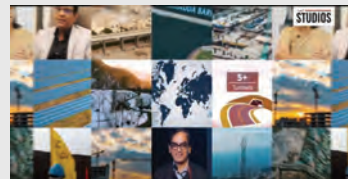
About the author:
Dhawal Gupta, Co-Founder, Subhot Enterprises
Dhawal Gupta is the co-founder of Subhot Enterprises. The expansion and prosperity of Subhot Enterprises have been greatly attributed to his vision and

leadership. The company has grown immensely, turning over ₹600 million during his leadership.

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Driving Energy Efficiency

ABB India's IEC low voltage motors are not just enhancing industrial processes, but are also leading the charge towards energy efficiency in Indian industries, writes Karthik Muthuveeran.

In a landmark achievement for sustainability in Indian industries, ABB India's Motion business has redefined energy efficiency with its IEC low voltage (LV) motors, saving an impressive 500 gigawatt hours (GWh) of energy over the past five years. This accomplishment not only highlights ABB's leadership in the sector but also underscores the pivotal role of advanced motor technologies in driving significant energy savings across the nation.

Sanjeev Arora, President of Motion Business, ABB India, emphasises the transformative impact of these high-efficiency motors. He said, "ABB India's IEC LV motors are not just enhancing industrial processes; they are leading the charge towards energy efficiency in Indian industries. Our commitment to providing innovative motion solutions is helping industries achieve their sustainability goals while optimising operational performance."

The adoption of higher efficiency motors, particularly IE3 and IE4 standards, has been propelled by regulatory shifts such as the Minimum Energy Performance Standards (MEPS) implemented in 2018. Arora explains the technological superiority: "IE3 motors offer approximately 20 per cent lower losses than IE2, and IE4 motors further reduce losses by another 20 per cent. This technological advancement translates directly into substantial energy savings and operational cost reductions for industries."



ABB India's motors factory shopfloor

emissions compared to their 2019 baseline. Highlighting their holistic approach, Arora said "By integrating solar power and achieving high levels of waste diversion, ABB India is demonstrating its commitment to environmental preservation and resource efficiency."

Collaborations with industry leaders like Witt India illustrate ABB's broader impact on infrastructure safety and efficiency. ABB's smoke extraction motors, integral to Witt India's tunnel ventilation systems, play a crucial role in ensuring safe and efficient tunnel operations across key infrastructure projects nationwide.

Underscoring the significance of their technological contributions, Arora said "Our smoke extraction motors not only comply with stringent safety standards but also enhance operational efficiency, contributing to safer commuting experiences for thousands of travellers."

Looking forward, ABB remains at the forefront of global efforts to advance energy efficiency standards. "ABB actively engages in setting and promoting higher energy efficiency standards globally, ensuring our products exceed regulatory requirements and deliver superior performance."

As ABB continues to innovate and expand its portfolio, the company's vision for the future is focused on leveraging emerging technologies. "The integration of Internet of Things (IoT) and Artificial Intelligence (AI) will further revolutionise energy management, enabling smarter, more adaptive industrial processes. ABB is poised to lead this transformation, leveraging our deep domain expertise and technological prowess," he said.

"The integration of Internet of Things (IoT) and Artificial Intelligence (AI) will further revolutionise energy management, enabling smarter, more adaptive industrial processes."



Sanjeev Arora, President of Motion Business, ABB India

ABB's dedication to sustainability extends beyond product innovation to encompass their manufacturing practices. Their facilities in Bengaluru and Faridabad are not only green certified but also showcase a remarkable 31 per cent reduction in scope 1 and 2 greenhouse gas



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Implications of Tax Withholding (TDS)

Withholding tax mandates that the payer deducts a portion of income as tax and gives it to the government. **Nikhat Patel, Consultant, and Rushabh Bhandari, Manager, Global Compliance and Reporting for Direct Tax, Ernst & Young LLP India**, delve into the intricate legal aspects and complexities surrounding the tax implications of year-end provisions, highlighting key judicial precedents and practical considerations for businesses.



As the book closing activities after the end of the financial year draws to a close, the accounting rules mandates businesses to undertake some year-end activities. One such is to estimate expenses for the year, which have not been booked yet, either for lack of issuance of invoice, pending quality inspections, or any other internal policy of the entity. To ensure the financial statements reflect a true and fair view of the company's financial position, these estimated expenses are recorded as provisions.

While generally, business expenses are deductible expenses for computing taxable business income of an entity, can year end provisions be considered as taxable deductible expenses, and if yes, what are the nuances for their deductibility are issues which have been subject matter of debate?

Provisions of the act

To understand the tax implications, it is important to understand the relevant provisions of the Income Tax Act related to TDS implications -

- **When to undertake TDS compliance:** Under Chapter XVII of the Act, TDS is required to be deducted at the time of payment or credit in books to the account of the recipient, whichever is earlier.
- **Consequences of Non-Deduction:** If TDS is not deducted or is short deducted, it leads to disallowance of 100 per cent of the expense for non-resident payees under Section 40(a)(i) and 30 per cent of the expense for resident payees under Section 40(a)(ia). This disallowance is independent of other consequences such as:
 - Recovery of tax under Section 201 of the Act.

- Levy of interest under Section 201(1A) for default in deduction and/or payment of taxes withheld
- Levy of penalty under Section 271C of the Act.

Now, considering the aforesaid provisions, it is apparent that expenses which are subject to withholding are deductible (100 per cent or 30 per cent) only if TDS obligations are complied with. In case of year end provisions, there arises a question if any TDS compliance is warranted at all. The tax authorities and taxpayers often have differing views on this issue.

The following arguments are generally made to contend that withholding is not warranted on year end provisions -

- At the end of the financial year, the exact amount of many expenses is not finalised for various reasons and provisions are made based on estimates, and sometimes the specific parties involved are not even known yet.
- Tax withholding applies only if the amount is considered taxable income. Since these provision amounts are not finalised, they cannot be treated as income for the payees.
- The entire provision amount is adjusted in the next financial year, with TDS deducted based on actual invoices. Detailed statements showing these adjustments are filed with tax authorities, ensuring compliance with TDS requirements.

A few judicial precedents which have held that withholding is not warranted on year-end provisions are as follows:

- Pfizer Ltd v. ITO (TDS) (ITA No.1667/Mum/2010)
- IDBI vs. I.T.O 107 ITD 45 (Mum)
- Kirloskar Oil Engines Ltd vs DCIT (ITA No 229 and 230/PN/2014)

However, tax authorities argue that TDS should be deducted even on provisional amounts. Arguments generally made by the tax authorities are as follows -

- According to the provisions of the act which deal with the withholding obligations, tax should be withheld on year-end provisions even though the same is credited to the suspense account.
- Once the payees are identified which is evident and generally confirmed in the tax audit report, it cannot be said that the provisions are not crystallised, even though such payees are not credited in the books of accounts. Accordingly, the withholding provisions are triggered.
- In case the assessee contends that the provisions are only ad-hoc as payees are not identifiable, the onus of proving the same with factual documents/details is on the Assessee.

Judicial precedents as under support this view:

- Biocon Limited Vs DCIT (ITA No 124/Bang/2014)
- IBM India Private Ltd vs. The ITO (TDS) (ITA Nos.

749 to 752/Bang/2012 dated 14.05.2015) (Bangalore Tribunal)

- Interglobe Aviation Ltd vs.ACIT (ITA No.5347/Del/2012 dated 07-01-2020) (Delhi Tribunal)
- Agreenco Fibre Foam (P) Ltd vs. The ITO (TDS) (ITA No.165/Coch/2012 dated 16th August 2013) (Cochin Tribunal)

Based on practical experiences, following are key take-aways on the issue -

- This matter is highly litigative and many taxpayers have faced arduous litigation on the issue.
- Once this matter is picked up for litigation, it is likely to recur. The time limit for passing the order for a TDS assessment is 7 years from the end of the relevant financial year, increasing the exposure to litigation risk.
- During litigation, the department often requires backup documents highlighting the mapping of actual booking vs. provisions created, and proofs of deduction and payment of TDS on actual invoices.
- There may be a risk of disallowance under Section 37 of the Act of the provision amount (as a contingent liability/ad-hoc provision) if the actual expenditure is significantly lesser than the provision for resident payees, even though the provisions are being disallowed under Section 40(a)(ia).
- The risk of 100 per cent disallowance increases with arguments on the non-availability of data, creating a risk of expense being categorised as a contingent liability.
- Generally, in the tax audit report, the disallowance gets reported section-wise and party-wise along with the final amounts. This makes it difficult to prove that the provision was created on an ad-hoc basis.

Conclusion

Year-end provisions are an essential part of financial reporting, but they come with complex tax implications, especially concerning TDS. By understanding these provisions and following best practices, businesses can mitigate the risk of non-compliance and avoid potential penalties. It may thus be prudent to withhold taxes, wherever factual backup supports the position. However, it would be crucial to consult with tax professionals to navigate these complexities and ensure all provisions are accurately recorded and compliant with tax laws. SME

(Views expressed above are personal.)

About the authors:

Nikhil Patel, Consultant (Global Compliance and Reporting), Direct Tax, at Ernst and Young LLP India

Rushabh Bhandari, Manager (Global Compliance and Reporting), Direct Tax, at Ernst and Young LLP India.



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Brakes India Joins Hands with Japanese firm ADVICS

Brakes India, a member of the TSF Group, has announced a collaboration with ADVICS, a company within the AISIN Group and Japan's foremost supplier of premium brake systems. This partnership aims to establish a joint venture focused on designing, developing, and manufacturing advanced braking products specifically for the Indian light vehicle market.

Brakes India, a TSF Group company and India's leading braking systems manufacturer collaborated with ADVICS, an AISIN Group company and Japan's leading premium brake system supplier, plan to form a joint venture to design, develop and manufacture advanced braking products for the Indian light vehicle market.

The joint venture will focus on developing advanced braking products in a phased manner for the Indian market, of which Electronic Stability Control (ESC) will be among the initial products to be rolled out. A green field project, this JV will be funded by both Brakes India and ADVICS with a 51:49 shareholdings respectively. Based out of the southern part of India, the company will be set up with an investment of over ₹5 billion employing more than 300 people over the next few years.

Together, this partnership will leverage strengths of both companies across advanced global technology, localisation capabilities, quality systems, manufacturing processes and superior customer connect.

"Looking at the growth of hybrid and battery electric vehicles (HEV/BEVs) in India and the increased demand for autonomous driving features, it is imperative for us to bring superior offerings to our customers. Our investments in R&D and localisation combined with proven global technology of ADVICS will accelerate adoption of these advanced braking systems while leveraging decades old collaboration between the TSF and AISIN Group. To begin with, the products manufactured at the joint-venture company will be supplied to the Indian light vehicle market through the parent companies", said **Vasudevan K**, President- Light Vehicles, Brakes India.

Keizo Oda, Chief India Officer, ADVICS commented, "We are respecting decades of experience and capability of Brakes India in Indian automotive industry. We are



L-R: Sriram Viji, MD, Brakes India & Keizo Oda - Chief India Officer, ADVICS

proud of our advanced technology preferred by Japanese carmakers and are further expanding to the global markets. We believe the partnership shall bring operational synergies by integrating the strengths of both companies and further reinforcing the safety offerings for Indian customers and consumers."

Over the years, Brakes India has been investing heavily in R&D and has continuously strengthened its localisation efforts across its braking systems offerings. With the ever-evolving global mobility, the company feels that having a technology partner with global exposure & technology expertise will further its capability in advanced braking solutions, and efficient braking for alternatively fuelled mobility. While Brakes India has worked with many technology partners in various capacities in the past, the long standing, fruitful relationship with ADVICS and the combined capabilities that the companies bring to table, this partnership stood out as the obvious choice for the TSF and AISIN Group.

SME



Minda Corp and Taiwan's HCMF sign JV for sunroof

The JV aims to provide cutting edge technology backed by the state-of-the-art manufacturing of sunroof and closure technology products for passenger cars by localisation in India.

Minda Corporation Ltd, the flagship company of Spark Minda that supplies automotive components to OEMs and tier-1 customers, on June 14, 2024, signed a joint venture (JV) agreement with HSIN Chong Machinery Works Co Ltd (HCMF) from Taiwan, the manufacturer of automotive sunroof and closure systems. This partnership - a 50:50 joint venture between Minda Corporation and HCMF - aims to provide cutting edge technology backed by the state-of-the-art manufacturing of sunroof and closure technology products for passenger cars by localisation in India.

Ashok Minda, Chairman & Group CEO, Minda Corporation, commented, "We are delighted to announce the signing of a joint venture agreement with HCMF, a partnership that will pave the way for smart mobility solutions. This collaboration highlights our commitment to Atmanirbhar Bharat, as we strive to deliver system solutions encompassing product design, development, and manufacturing for passenger vehicles. Spark Minda is committed to expanding our four-wheeler segment offerings by enhancing kit value, ensuring greater benefits for our customers. We will introduce advanced technology products that will drive the next phase of our growth."

With evolving consumer preferences and premiumisation, the market for sunroof in India is expected to grow significantly. HCMF is a global technology leader of automotive sunroof and closure systems and this move will offer advanced products and technologies in the vehicle access space, particularly for passenger cars increasing the content per vehicle.

Commenting on the JV, **Roger Hsi, Chairman, HSIN Chong Machinery Works Co Ltd**, said, "HCMF is dedicated to provide world-class solutions for the automotive customers globally. We are excited to collaborate with Spark Minda to expand our footprint in India's Indian vehicle market to develop and manufacture innovative integrated automotive sunroof and closure systems for next generation vehicles. HCMF is confident that this partnership will effectively channelise the complementary strengths of both organisations and establish a strong presence in the



L-R: Charles His (Sales President, SE and South Asian Area, HCMF), Ashok Minda, Roger Hsi and Aakash Minda (Director, Spark Minda)

rapidly expanding market for sunroof and closure systems market in India."

HCMF, headquartered in Taiwan, was founded in 1961 by Hsi Chieh to provide cost competitive innovative products globally to its customers. The company is engaged in various products groups like roof system, comfort closure system, door and closure mechanical system, seat system and mechanical & mechatronic system. The company operates via its 29 sales, technical and manufacturing facilities spread globally.

Minda Corporation is one of the leading automotive component manufacturing companies in India with a pan India presence and significant international footprint. The company has a product portfolio that encompasses mechatronics; information and connected systems and plastic and interior for auto OEMs.

These products cater to 2/3 wheelers, passenger vehicles, commercial vehicles, off-roaders and after-market. The company has a customer base including Indian and global original equipment manufacturers and tier 1 customers.

Minda Corporation has a dedicated R&D facility and collaborations with the leaders of the automobile industry. This has provided Minda Corporation with the edge in product design and technology to meet strict international quality standards.



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Gandhi Automations' Rolling Shutters for Safety and Convenience

Gandhi Automations Pvt Ltd offers modern rolling shutters that surpass traditional models in safety, design, convenience, and material strength.

Rolling shutters have always been considered one of the most dependable additions to any building due to their safety, durability, maintenance, and ease of operation. Along with safety and other features mentioned in the building, it also provides optimal privacy without compromising the aesthetic appeal of the property. Modern rolling shutters are outperforming traditional doors and the erstwhile prototype rolling shutter option. This is actually happening because of its innovative designs, handiness, and material strength, which are far better than those of its earlier roller shutter models. Gandhi rolling shutters are ideal for situations where side room is at a premium and security is required. They require very little headroom above the structural opening. Their strength, elegance, durability, and other salient features are designed for both external and internal applications. Gandhi rolling shutters are fabricated of interlocking galvanised, insulated, and non-insulated stainless steel, patented aluminium profiles, and patented MS Rolling Grills.

Gandhi Automations Pvt Ltd, India's No. 1 entrance automation & loading bay equipment company, is the only manufacturer of rolling shutters certified to EN ISO 9001:2015, EN ISO 14001:2015 & ISO 45001:2018 by TÜV Austria. This has resulted in the implementation of continuous improvement in personnel training, production technique, inspection, equipment calibration, machinery maintenance, logistics, and customer relations. The product engineering team



uses the latest software combined with technologically advanced machinery to offer the customer a well-engineered product.

Over years of meticulously working on the design, fabrication, and installation, Gandhi Automations has developed technical expertise in manufacturing various kinds of automated rolling shutters. The research and development team, with its extensive know-how and experience, is able to produce specific types of rolling shutters unique to certain sites and client requirements. A consistent quality product has thus become the hallmark of Gandhi Automations' manufacturing process, right through installation to after-sales service.

Each of Gandhi Automation's rolling shutters is designed to the client's specifications, conforming to IS 6248, and is solidly constructed to promote trouble-free operation and long life. Gandhi rolling shutters fit openings to a maximum width of 30,000 mm and height of 40,000 mm, with an endless array of options to satisfy both aesthetic considerations and working requirements. All rolling shutters are automatic, using vigorous drive expertise with manual override in case of power failure, and are dense, noiseless, and dependable.

SME



For details, contact Gandhi Automations Pvt Ltd, Mumbai on
Tel: +91 22 66720200 / 66720300(200 Lines),
Email: sales@geapl.co.in, or visit : www.geapl.co.in

(Communication provided by the management of the company)

EARTH LEAKAGE RELAY – JRC -172

JVS Electronics Pvt Ltd offers a wide range of earth leakage relay – JRC -172 (SETTING Range 0.3 To 1.8A).



Features:

- The relay used for protection of LV/MV distribution systems requiring very high sensitivity for earth faults.
- The relay measures the earth leakage current from the CBCT and if it exceeds the threshold, it extends a trip signal after the operating time.
- Its features include: Solid state reliability; built in test facility; very low primary current sensing; core balance current transformer supplied along with the unit.

About the Company: JVS Electronics Pvt Ltd is an exporter, manufacturer and supplier of audio indicating instruments, visual indicating instruments, electrical indicating instruments, etc.

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Contact:

*JVS Electronics Pvt Ltd, Bangalore
Mobile: 09448288863
Email: bangalore@jvselectronics.in*

BUTTERFLY VALVE

Nirmala Pumps & Equipments offers a wide range of butterfly valve.



Features:

- Butterfly valve design is an essential aspect which controls the flow of fluid through a piping system.
- It has a quick opening and closing quarter-turn function that controls the flow of gases or liquids. Butterfly valve typically pivots on an axis perpendicular to the direction of flow inside the flow chamber and is situated on a spindle that allows for flow in a single direction.
- This valve is frequently used as a throttling device which controls the level of flow in entirely closed/opened or partially opened positions.

About the Company: Nirmala Pumps & Equipments The dedicated and experienced manufacturers of various types of pumps and equipments. Their objective is to provide excellent quality equipment with innovative solutions to fulfill the specific requirements of our customers.

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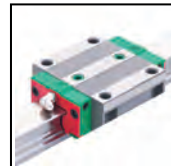


Contact:

*Nirmala Pumps & Equipments,
Ahmedabad
Mobile: 08401262518
Email: sales@nirmalapumps.com*

SUPERIOR ROLLING MOMENT WITH COVER STRIP LINEAR GUIDEWAY

IBK Engineers Pvt Ltd offers a wide range of Hiwin CG Series superior rolling moment with cover strip linear guideway.



Features:

- CG series guideways can be classified into non-interchangeable and interchangeable types. The sizes are identical. The only difference between the two types is that the interchangeable type of blocks and rails can be freely exchanged, and their accuracy can reach up to P class. The model number of CG series contains the size, type, accuracy class, preload class, etc.
- Its features include: O-type Configuration; higher rolling moment capacity; new lubrication path design; fully lubricated; rail with cover strip; stainless steel material; quick installation; protects wiper seal from fastener damage; protects block from particles that could collect in mounting hole.

About the Company: Established in 2014, IBK Engineers Pvt Ltd, is engaged in the wholesaling, supplying, distributing and trading of deep groove ball bearing, mechanical bearing, roller chain, steel rear sprocket, safety equipment, automotive components, electric equipment, etc.

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Contact:

*IBK Engineers Pvt Ltd, Bengaluru
Tel: 080-26321112 Mobile: 09880566644
Email: rajukn@ibizkart.com*

SIGNAL TOWER LIGHT

Werner Electric Private Limited offers a wide range of signal tower light.



Features:

- Signal tower lights provide a visual indication of machine status, enhancing operational efficiency and safety by alerting operators to changes or issues in industrial environments.
- These products boasts clean and crispy design, bulletproof product consistency and intuitive builds.

About the Company: Werner Products are created by top industry leaders in mechanical design and with extensive feedback of user experience. They are obsessed with their customer's success and take pride in their achievements.

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Contact:

*Werner Electric Private Limited, Mysore
Mobile: 7353947299
Email: info@wernerelektrik.com*

FLEXNUTS

Nord-Lock India Pvt Ltd offers a wide range of flexnuts.

Features:

- Flexnuts have been specially developed for through-hole applications. Their reactive design distributes the bolt load along many threads, adds elasticity and prevents stress concentrations in the first few threads.
- This helps relieve stress concentrations and increases the fatigue life of the bolt. Since Flexnuts are reactive nuts to be used opposite our tensioners, they are never torqued directly to achieve preload.

About the Company: The Nord-Lock Group has been providing customers with high-quality, safe and innovative bolting solutions since 1982. The Nord-Lock Group is wholly owned by Investment AB Latour, a company listed on the Stockholm Stock Exchange.

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Contact:

Nord-Lock India Pvt Ltd, Mumabi
Tel: 022-49743518
Email: info@nord-lock.in



PLAIN BUSHING AND BEARINGS

BMD Precision Bearings LLP offers a wide range of plain bushing and bearings.

Features:

- A bushing, also known as a bush, is an independent plain bearing that is inserted into a housing to provide a bearing surface for rotary applications; this is the most common form of a plain bearing.
- Plain bearings are used primarily in machinery that has a rotating or a sliding shaft component.
- BMD has spherical plain bearings, rod ends and bushings in various designs and with different sliding contact surface combinations. The design and combination of each bush has different properties which makes it particularly suitable for particular applications.

About the Company: BMD Precision Bearings was established in 2006 with a motto of supplying highest quality of bearings at optimal cost.

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Contact:

BMD Precision Bearings LLP, Chennai
Mobile: 07338822901
Email: info@bmdbearings.com



IMPACT CRUSHER

Crush Power offers a wide range of impact crusher.

Features:

- This vertical shaft impact crusher is widely used in all kinds of minerals. It provides the high quality sand and crushed stone aggregate to the high-speed railroad, high-rise construction, municipal administration construction, water and electricity dam construction, concretes agitation station.
- It is effective machines at present. It is also applicable to crush various stones with different hardness in medium and fine crushing area. It is more advanced in intermediate hard, extra, extra hard and abrasive material crushing.

About the Company: Crush Power are the manufacturer and supplier of heavy machinery like jaw crusher, horizontal shaft impact crushers, cone crusher, grizzly feeders, vertical shaft impactor and their allied equipments, and also conveyor system, hoppers etc mainly used in stone quarry and mining field.

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Contact:

Crush Power, Nashik
Mobile: 09657064878, 09922293339
Email: shashi@crushpower.net
sales@crushpower.net



INDUSTRIAL CYCLONES

Protector Fire & Safety India Pvt Ltd offers a wide range of industrial cyclones.

Features:

- This is a device to separate solids from air/gases. When the material is moving as in pneumatic conveying, the solids are separated.
- When the solid material attains high speed, it picks up centrifugal force and chooses to cling to outer surface while air retains high speed it gets due to its velocity factor.
- Suddenly in the center, air outlet is provided for air to go out while due to centrifugal force the solid material is not able to change direction but goes downwards and gets separated.

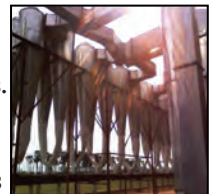
About the Company: Protector Fire & Safety, established in 1989 is a manufacturer, dealer and distributor in personal protective equipment (PPE), fire protection, road safety, marine safety and various types of special safety equipment.

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Contact:

Protector Fire & Safety India Pvt Ltd, Ahmedabad
Tel: 079-66823232
Mobile: 09377927740, 09377927739
Email: sales@protectorsafety.in



VIBRATORY FURNACE CHARGER

Elektromag-Joest Vibration Pvt Ltd offers a wide range of vibratory furnace charger.

Features:

- This vibratory furnace chargers are a cost effective method of increasing productivity and quality of melt.
- With constant improvement in technology, furnaces require rapid and uniform charging to keep pace with the melting power of the system for which the Furnace chargers are the optimum solution.
- The entangled pieces of scrap metal form a layer above and if unrecognized by furnace operator, bridging can lead to super heating of bath and failure of furnace lining and run out.
- Due to controlled feed, the hot metal splashing is avoided and the charger can be operated from a framed plate by the operator without actually being near to the furnace.

About the Company: Elektromag-Joest Vibration Pvt. Ltd., is a leading manufacture of Vibrating equipments for foundry, steel, mining, quarrying, chemical, food, recycling, air separation and thermal processing.

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Contact:

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



CABLE DRAG CHAINS

Elektromag offers a wide range of metallic/plastic cable drag chains.

Features:

- This Elektromag drag chains enable the conveyance of flexible cables/hoses, etc to movable units with maximum reliability.
- Its advantages of Elektromag cable drag chains is avoidance of mechanical strain on the cables/hoses.
- No tensile stress or compression, no frictional wear as there is no relative movement between the cables/hoses and the cable drag chain, no bending below an established radius, no crushing, buckling or forming of loops or torsion strain.

About the Company: Established in the year 1958, Elektromag is engaged in manufacturing of metallic/plastic cable drag chains and supplying to various steel plant, machine tools, cement, foundries, etc.

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Contact:

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



HIGH PRESSURE DIRECTIONAL CONTROL VALVES

HTM Hydraulics Pvt Ltd offers high pressure directional control valves.

Features:

- Dynex directional control valves offer high pressures of upto 700 bar, with a high flow capability of flows 151 lpm are possible.
- Actuator options include: Manual lever, direct solenoid, hydraulic piloted and Air piloted.
- Multiple flow patterns are available. For additional information contact sales team. Fluid viscosity: 7-323 cSt.
- Its applications used on wide variety of industrial, mobile, oil & gas hydraulic press and portable tools.

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.

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Contact:

*HTM Hydraulics Pvt Ltd, Bangalore
Tel: 080-41572101 Mobile: 09741165877
Email: info@htmhydraulics.co.in,
sales@htmhydraulics.co.in*



EARTH LEAKAGE RELAY

JVS Electronics Pvt Ltd offers a wide range of earth leakage relay (Setting Range 0.5 To 8.0A) - JRC 173.

Features:

- The relay used for protection of LV/MV distribution systems requiring very high sensitivity for earth faults.
- The relay measures the earth leakage current from the CBCT and if it exceeds the threshold, it extends a trip signal after the operating time.
- Its features include: solid state reliability; built in test facility; very low primary current sensing; core balance current transformer supplied along with the unit.

About the Company: JVS Electronics Pvt Ltd is an exporter, manufacturer and supplier of audio indicating instruments, visual indicating instruments, electrical indicating instruments, etc.

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Contact:

*JVS Electronics Pvt Ltd, Bangalore
Mobile: 09448288863
Email: bangalore@jvselectronics.in*

METERING CHAMBER

Excel Power Switchgear Pvt Ltd offers a wide range of metering chamber.

Features:

- Metering chamber is equipped on top of the breaker chamber and encased separately from the high voltage section.
- Based on customer's specification, protective relays, meters, control switches, indicating lamps and other pilot devices are flush mounted on the hinged and lockable front door.
- Sufficient space is available inside the chamber to arrange all the secondary control equipment, fuses, MCB's, auxiliary relays, terminal blocks, etc.

About the Company: Excel Power Switchgear, a high tech manufacturing unit established in 1998, is engaged in R&D, production, and manufacturing of low & medium voltage switchgear. Since then, Our company has displayed a rapid growth in the switchgear industry by attaching primary importance to customer oriented

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approach and by producing quality products.

Contact:

Excel Power Switchgear Pvt Ltd, Chennai
Tel: 044-22254870
Email: sales@excelpower.co.in



HOSE REELS – AIR / WATER / OIL

Vijay Air Control offers a wide range of hose reels – air/water/oil.

Features:

- An included spring works to retract a hose into the device automatically.
- A contained hose solves the short of air consumption for air tool owing to a large inner diameter.
- A ratchet system applied for the device can keep a tool suspended at any position on the hose travel where your want. Available in both closed body construction as well as open today.
- Its bore sizes: Ø16, 20, 25, 32, 40, 50, 63, 80 and 100; Conforms to ISO 21287 standards.

About the Company: : Vijay Air Control is a one large workplace where work is done and then put on the market in the form of products and services. This work must be benefit if it is to hold its own in the face of competition.

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Contact:

Vijay Air Control, Bengaluru
Tel: 080-23148871, 23141136
Mobile: 08951101436, 09880652082
Email: saivacblr@vacpneumatic.co.in



MEASUREMENT SOFTWARE

Blum-Novotest Measuring & Testing Technology Pvt Ltd offers a wide range of measurement software.**Features:**

- User-friendly software for workpiece measurement and temperature compensation with BLUM touch probes. y.
- They can be used both for workpiece referencing as well as for measuring during the production process.
- Optimum exploitation of potential of the BLUM touch probes.
- NC-based measuring cycles for measurement of the Kinematics of 4 or 5 axes milling machines. Measurement of the accuracy and correction of the kinematics of 1 or 2 rotary axes. Identification of machine problems caused by incorrect machine settings, collisions or wear.

About the Company: Blum Novotest Measuring & Testing Technology Pvt Ltd has made a name for itself in the list of top suppliers of bore gauge, radio receiver in India.

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Contact:

Blum-Novotest Measuring & Testing Technology Pvt Ltd, Bangalore
Tel: 080-23185468 Mobile: 09075004435
Email: info@blumnovotestindia.in



PRECISION TWIN MACHINE VICE

B R Precisions offers a wide range of precision twin machine vice.

Features:

- Twin machine vices are capable of clamping two pieces simultaneously with one single movement of the handle keeping the total length constants.
- This makes it ideal for machining series of work pieces in machining centers. The exterior clamping system towards the center makes the elevated forces in the clamp area to be compensated dynamically thus avoiding deformations.
- Grinding of all surfaces, Possible working positions supported on the base on the side or vertically on the head. Suitable for working in horizontal and vertical machining centers Squareness and parallelism accuracy at 0.02 Microns.

About the Company: B R Precisions is dedicated to the manufacturing of clamping solutions; our main products are high pressure and precision vices.

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Contact:

B R Precisions, Bangalore
Mobile: 09845208854, 09449648171
Email: brvices@rediffmail.com, brprecisions@gmail.com



POLIFLEX GRINDING POINTS

PFERD offers a wide range of poliflex grinding points.

Features:

- Poliflex® fine grinding tools are manufactured with high shape accuracy, outstandingly consistent quality and tight dimensional tolerances. They are ideally suited to fine grinding, structuring and preparations for polishing work, and are very frequently used for tool and mould-making applications.
- Poliflex® finishing points with the rubber bond are manufactured with pink aluminium oxide. The rubber (GR) bond is an elastomer-based soft bond. Ideal for use on surfaces.
- Finishing point in conical shape for fine grinding inner radii, contours and transitions..

About the Company: PFERD engages in development, production and support and distribution of tool solutions on jobs for surfaces and material cutting.

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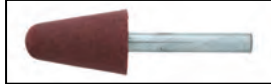
Contact:

PFERD, Bengaluru

Tel: 080-42187117

Mobile: 09880665415, 09741481117

Email: sales@swit.in



ALL ELECTRIC BALL SCREW PRESS BRAKE, BB4013

Meiban Engineering Technologies offers all electric ball screw press brake, BB4013.

Features:

- 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 and ball screw drive. This drive mechanism is superior in environmental performance as it is oil less and comprises of a reducer which reduces noise.
- The consistent repeat stop accuracy (repeatability) makes BB Series machines highly accurate.
- The operator support function has been enhanced, including an announcement and an indicator to notify the machine status.

About the Company: Meiban Engineering Technologies Pvt Ltd is a solution provider in the field of automation and turn key projects for manufacturing automobile and sheet metal components..

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Contact:

Meiban Engineering Technologies Pvt

Ltd, Bangalore

Tel: 080-26860600

Email: office@meibanengg.com



SERVO TYPE DRILLING/TAPPING SPINDLE HEAD UNIT

Secon Technological Solutions Inc offers servo type drilling/tapping spindle head unit.

Features:

- Every hardy precision spindle is built with high rigidity and quality housing material which is process by boring and honing. All spindles are made of alloy steel with the process of heat-treatment and assembled with NSK or SKF bearings for high performance and long life usage.
- The accuracy of the spindle is strictly under 0.003mm, this unit allows it to perform all types of machining applications such as drilling, peck drilling, threading, tapping, chamfering, reaming and countersinking.
- Feed rate is programmable and driven by a preferable servo motor.

About the Company: : Secon Technological Solutions Inc. is engaged as a manufacturer, trader, service provider, distributor of CNC machines tools, preventive maintenance and consultancy services.

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Contact:

Secon Technological Solutions Inc,

Bangalore

Telefax: 080-23575752

Email: secontech2000@gmail.com,

secontech@hotmail.com



SURFACE GRINDING MACHINE (MANUAL)

Universal Machine Tools Corporation offers surface grinding machine (manual).

Features:

- The machine is built of heavy cast iron hand scrapped to fine tolerance, easy movement of table slide by providing V – ways & flat ways.
- The grinding wheel spindle is hardened and round and runs in precision contact angular bearing and driven by flange, vertical grinding wheel slide movement down at right side in the body.
- The vertical wheel dial least count in 0.01mm and micro feed least count in 0.001 mm. These machines are available in various sizes: 450 X 225 mm , 600 X 300 mm. And also available in hydraulic version.

About the Company: Universal Machine Tools Corporation, established in 1981, is one of the leading companies in the machine tool industry.

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Contact:

Universal Machine Tools Corporation,

Bangalore

Tel: 080-23356231, 23108370, 23206821

Mobile: 09845006959, 09844199559

Email: universalblr@gmail.com



FLUORESCENT PIGMENTS FOR TRAFFIC CONE

Aron Universal Limited offers fluorescent pigments for traffic cone.

Features:

- This Rubber Paint is extensively used for colouring steel structural and concrete surfaces of chemical & fertilizer industries.
- These products are available in various colours and shades to suit varied client's requirement.
- Its features include: safe to use; non-toxic nature; long shelf life.

About the Company: Aron Universal Limited was established in the year 1974 and is headquartered at Bengaluru, India. It is India's leading manufacturer and exporter of vivid daylight Fluorescent pigments, etc.

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Contact:

Aron Universal Limited, Bangalore
Tel: 080-27825331 Mobile: 09791427847
Email: enquiry@aronuniversal.in



EXTRACTOR ARM

Powertech Pollution Controls Pvt Ltd offers a wide range of extractor arm.

Features:

- The Extractor Arm is device which allows the user to position a suction hood to capture fumes or dust close the generation spot with complete ease and flexibility.
- This highly useful accessory may be used with the Fumekiller(R) and DustBag(R) units maintenance and running costs are low as all components are built for continuous, reliable, safe and efficient use.
- The Extractor Arm consists of 2 ducts made of aluminium or stainless steel, connected by PVC flexible hoses and mounted on interconnected support rods with friction-loaded pivots.
- The arm can also be fitted to overhead ducting to provide suction points close to the flow level for the capture of fumes or dust from pollution generation spots.

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.

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Contact:

Powertech Pollution Controls Pvt Ltd, Bangalore
Tel: 080-23452156, 23452256
Email: powertech@airtelmail.in, philipthomas@powertechindia.com



WIRE HARNESS

Miracle Electronic Devices Pvt Ltd offers a wide range of wire harness.

Features:

- As a leading looms manufacturer in India, we exemplify the commitment to excellence in providing cutting-edge wire harness solutions that meet the highest industry standards. And, as a versatile looms manufacturer in India, we offer a range of wiring solutions, including circular connectors, D sub connectors, Mil-spec. connectors, D-38999 circular connectors, etc.
- These harnesses cater to various applications such as single & discrete EMI cables, EMI-shielded cable harnesses, wiring harness multiwire, flat cable harness assembly, RF cable assembly, airborne looms, etc.

About the Company: Miracle Electronics is a renowned Transformer manufacturer in India, engaged in manufacturing power transformers, toroidal transformers, EI transformers, SMPS transformers, etc.

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Contact:

Miracle Electronic Devices Pvt Ltd, Bangalore
Tel: 080-28362750
Email: sales@miracle.net.in



PARALLEL GRIPPER - PGL-PLUS-P

Schunk Intec India Pvt Ltd offers a wide range of parallel gripper - PGL-PLUS-P.

Features:

- These standard parallel grippers include small parts, universal, long-stroke, and sealed grippers for safe and precise handling of work pieces.
- The ability to equip the grippers with inductive sensor systems, magnetic switches or work piece-specific gripper fingers improves their functionality, process reliability, and productivity.
- Integrated sensor system: for precise and process-reliable monitoring of the complete gripper stroke via IO-Link. Large jaw stroke: enables flexible handling of a wide range of parts.

About the Company: Schunk Intec India is engaged in products distribution and supply of industrial automation systems, automation work holding, tool holding, heat shrink tool holder, etc.

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Contact:

Schunk Intec India Pvt Ltd, Bangalore
Tel: 080-40538999
Email: rakhi.singh@in.schunk.com, info@in.schunk.com



ROTARY CAM SWITCH

Werner Electric Private Limited offers a wide range of rotary cam switch.

Features:

- Rotary cam switches enable precise control of electrical circuits in industrial applications, offering versatility, reliability, durability, and efficient operation in various machinery systems
- These products boasts clean and crispy design, bulletproof product consistency and intuitive builds.

About the Company: Werner Products are created by top industry leaders in mechanical design and with extensive feedback of user experience. They are obsessed with their customer's success and take pride in their achievements. Innovation.

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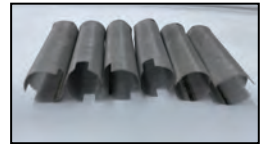
Contact:

Werner Electric Private Limited, Mysore
Mobile: 7353947299
Email: info@wernerelektrik.com



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. At the open end, there are two cut outs on the cylindrical periphery.
- 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.

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Contact:

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

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. Once applied, the tape bonds with the surface permanently making them tamper-evident. The tape does not get affected by dirt, dust, oil or extreme temperature environments.
- 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; Kraft Paper: high durability and tear resistance; eco-friendly, 100% recyclable.

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. Over the years, as Mexim grew in market share and with the availability of new technology, we set up our manufacturing in 1995 in Daman, India.

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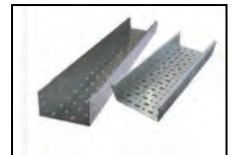
Contact:

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



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.

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Contact:

Rama Enterprises, Ghaziabad
Tel: 0120-6531212 Mobile: 08800566900
Email: info@ramaenterprises.co.in

PTFE RODS

Dhwan 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.

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Contact:

*Dhwan Polymer India Private Limited,
Ahmedabad
Mobile: 09033012056
Email: info@dhwanipolymer.com,
support@dhwanipolymer.com*



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.

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Contact:

*Arihant Packing & Gasket Company,
Kolkata
Tel: 033-22624511, 33164018
Email: sales@arihantgasket.com*



SEMI METALLIC AND METALLIC GASKETS

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

Features:

- The PGE® SealPro™ 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. As a result, the compressive stress increases, and multiple concentric high-pressure seals are created along the gasket face surface.
- Unlike traditional spiral-wound gasket, all of the compressive force is exerted on the PGE® SealPro™ facing, thus resulting in a very tight seal.

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

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Contact:

*PGE Industries Pvt Ltd, Mumbai
Mobile: 08080890022
Email: info@pilotgaskets.com*



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. Made with water based acrylic adhesive.
- In all sizes and required lengths. Being one of the leading manufacturers of BOPP Tapes in India, we offer complete range of products.

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.

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Contact:

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



SPECIALITY PAPER CHEMICALS

K-Tech (India) Limited offers a wide range of speciality paper chemicals. These paper chemicals, paper making chemicals, paper industry chemicals, etc.



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are made with the best available raw material.

Contact:

*K-Tech (India) Limited, Thane
Mobile: 08048704515
Email: response@ktechadditives.com*

DRY SYRUP POWDER FILLING MACHINE

Brothers Pharmamach (India) Pvt Ltd offers a wide range of the automatic single head linear augur type, dry syrup powder filling, model dryfill-30.



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It is suitable for filling dry syrup powder in various type and shape of bottles.

Contact:

*Brothers Pharmamach (India) Pvt Ltd,
Ahmedabad
Mobile: 09825037971 Email: info@brothers.in*

POWDER FILLING MACHINE/AUGAR FILLER

Veena Pharma Machinery offers a wide range of powder filling machine/augar filler. These powder filling machine are versatile filling machine for free flowing as well as non free flowing powder.



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Contact:

*Veena Pharma Machinery, Thane
Mobile: 09323958996, 09004563628,
09967707369
Email: sales@veenapharma.com*

LIQUID / SYRUP / ORAL MANUFACTURING PLANT

Bombay Pharma Equipments Pvt Ltd offers a wide range of liquid/syrup/oral manufacturing plant. The automatic liquid manufacturing plant is designed to be operated only by one operator and one helper.



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Contact:

*Bombay Pharma Equipments Pvt Ltd,
Mumbai
Mobile: 09820124804, 09820120086
Email: bombaypharma@mtnl.net.in*

BAKERY BISCUIT MAKING MACHINE

Ahamad Associates Plant and Projects offers a wide range of bakery biscuit making machine. The bakery biscuit machine offered by Ahamad associates plant and projects.



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Contact:

*Ahamad Associates Plant and Projects,
Bareilly, Uttar Pradesh
Mobile: 08006037771, 07300820345
9027956056
Email: watersystemsindia@gmail.com*

SOFTY ICE CREAM MACHINE – SI-825B

Sheth International offers a wide range of softy ice cream machine –SI-825B. It is equipped with the leading completely-sealed compressor. Micro-computer controlled system with the temperature digitally shown, regulate the hardness at any time.



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Contact:

*Sheth International, West Bengal
Mobile: 09800859856, 09641788835
Email: shethinternational09@gmail.com*

GINGER PASTE MAKING MACHINE

Sree Valsa Engineering Company offers a wide range of ginger paste making machine. It has constructed a sound manufacturing unit, where they



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manufacture and export a quality range of ginger paste making Machine.

Contact:

*Sree Valsa Engineering Company,
Coimbatore
Mobile: 09843017172, 09787140064
Email: srslsn@yahoo.com*

FULLY AUTOMATIC CHAPATHI MAKING MACHINE

Lakshmi Food Machinery offers a wide range of fully automatic chapathi making machine. This chapathi making machine made with full stainless steel (SS) food graded. This single unit can produce 2000 chapathi per hour.



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Contact:

*Lakshmi Food Machinery, Coimbatore
Tel: 0422-2565500
Mobile: 09787740500, 07540063500
Email: lfm.cbe@gmail.com*

CONTINUOUS FLUID BED PROCESSOR – R & D MODEL

Chamunda Pharma Machinery Pvt Ltd offers a wide range of continuous fluid bed processor – R&D model. This process equipment is designed to provide



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continuous output for free flowing powder.

Contact:

Chamunda Pharma Machinery Pvt Ltd,
Ahmedabad

Tel: 079-25840589

Email: info@chamunda.in

DOUBLE ROTARY PRESS

Imperial Pharmachines Pvt Ltd offers a wide range of double rotary press. These double rotary press is available in both open and GMP model. Currently more than 300 of our machines are producing tablets across the globe.



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Contact:

Imperial Pharmachines Pvt Ltd, Mumbai

Tel: 022-25781989, 25770554

Fax: 022-25780000

Email: sales1@pharmachine.in

CI TAPER LOCK PULLEY

Hasmukhlal & Brothers offers a wide range of CI taper lock pulley. Offering a quality assured assortment of CI taper lock pulley. These products are manufactured with advanced technology and equipment



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to assure the production of faultless products.

Contact:

Hasmukhlal & Brothers, Rajkot

Mobile: 09825340600, 9879760004

Email: bonnaflex@gmail.com

ELECON TYPE WORM REDUCTION GEARBOX

Micro Precision Works offers a wide range of elecon type worm reduction gearbox. It is designed in various adoptable models according to applications. Quick & easy



installation and adjustment of gearbox.

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Contact:

Micro Precision Works, Ahmedabad

Tel: 079-25893824

Mobile: 09924304636, 09824001570

Email: microgearbox@gmail.com
isionworks.com

PVC CONVEYOR BELTS

A G Belting Pvt Ltd offers a wide range of PVC conveyor belts. They are actively committed towards manufacturing, exporting, importing and supplying PVC conveyor belts. The offered conveyor belts



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are highly acclaimed by our customers for its durability.

Contact:

A G Belting Pvt Ltd, Ghaziabad

Mobile: 09810979977, 08800466515

Email: info@agengineers.net

INDUSTRIAL FLOW CONVEYOR CHAIN

Tripcon Engineering Pvt Ltd offers a wide range of industrial flow conveyor chain. They are one of the reputed organization engaged in offering high quality industrial flow conveyor chain to the customers.



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Contact:

Tripcon Engineering Pvt Ltd, Anand

Tel: 02692-236031

Mobile: 09825089070, 08347556104

Email: response@elevatorchains.com

PIV GEARBOX CHAINS

National Engineering Works offers a wide range of PIV gearbox chains. It is imported equivalent and import substitute quality PIV chains, designed to suit english, german, czech as well as Indian make PIV units, are available/developed in slat/laminated.



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Contact:

National Engineering Works, Kolkata

Tel: 033-22414414, 22573749

Mobile: 092318-20839

Email: nationalengg@bsnl.in

BELT DRIVEN TURNING SPINDLES

Capital Engineering Corporation offers a wide range of belt driven turning spindles. They are engaged in offering an extensive range of belt driven turning spindles



which are playing an important role in many industries.

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Contact:

Capital Engineering Corporation, New Delhi

Mobile: 09810056849

Email: yogesh@capitalspindles.com

MECHANICAL SHAFT

Anar Rub Tech manufactures a wide range of mechanical shaft. It has in store a flawless quality of mechanical shaft (bladder less shaft) which consists of steel lugs, brass cam, ratchet and slotted



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pipe. The shaft is very beneficial with cores having uneven inside diameter.

Contact:

Anar Rub Tech Pvt Ltd, Ahmedabad
Mobile: 09825405265, 09825047390
Email: sales@anarrubber.com

SPHERICAL PLAIN BEARING, SA1

Apex Precision Agencies manufactures spherical plain bearing. The spherical bearing is a heavy-duty self-aligning sliding bearing. Highly resistant to impact loads.



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Contact:

Apex Precision Agencies, Mumbai
Tel: 022-61464444, 25550900
Mobile: 09820040939
Email: sales@apexprecision.co.in

METALLIC BELLOWS

RMS Corporation offers a wide range of metallic bellows. This metallic bellows are the expansion controls in pipelines, ducting & vessels which carry hot or cold fluids or which are exposed to large



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variations in temperature is a major problem.

Contact:

RMS Corporation, Mumbai
Mobile: 09323804063, 09167245537
Email: rms_corp@vsnl.net

HELICAL SPEED REDUCER

MGM-Varvel Power Transmission Pvt Ltd offers a wide range of helical speed reducer. These helical speed reducers are made using best quality raw material that are sourced from reliable vendors.



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Contact:

MGM-Varvel Power Transmission Pvt Ltd, Chennai
Tel: 044-65681815, 64627008
Mobile: 08754470747
Email: info@mgmvarvelindia.com

PUMP SEAL

Global Sales & Engineering Company manufactures a wide range of pump seal. Pump seal are used in pumps to avoid the leakage from DE and NDE side of pumps. It can customize the seals as per client's requirement.



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Contact:

Global Sales & Engineering Services, Nagpur
Mobile: 07767817732, 07767817731
Email: globalsalesengineering@gmail.com

INDUSTRIAL CHAIN SPROCKET

A M Jeewajee & Sons offers a wide range of industrial chain sprocket. These chain sprockets are used in machinery either to transmit rotary motion between two shafts where gears are unsuitable or to impart linear motion to a track and tape.



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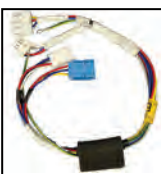


Contact:

A M Jeewajee & Sons, Kolkata
Tel: 033-22300957, 39855836
Mobile: 09830059710, 09830270753
Email: amjs_52@hotmail.com

CONNECTOR WIRE AND HARNESS

M D Cable & Harness LLP offers a wide range of connector wire and harness. In order to meet exact requirements of the clients without any hassle, they are engaged in manufacturing a broad array of connector & harnesses for a long time.



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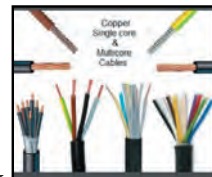


Contact:

M D Cable & Harness LLP, Greater Noida
Mobile: 09555870744, 09810708944
Email: sales@mdcablewire.com

COPPER SINGLE MULTICORE FLEXIBLE CABLE

K M Cables & Conductors offers a wide range of copper single multicore flexible cable. Its manufacturing a new



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range of electrical wires known as PVC/FRLS/HR insulated single/multi core cables.

Contact:

K M Cables & Conductors, Bangalore
Mobile: 09341285508
Email: info@kflexcables.com

INVERTER WIRE HARNESS

Sparsh Electronics offers a wide range of inverter wire harness. These products are widely used in various industries for assembling UPS, washing machine and inverters.



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Contact:

Sparsh Electronics, Pune
Mobile: 08411022333, 07030955409
Email: sparshelectronics@yahoo.in, sales@sparshelectronics.com

BATTERY CABLES

Q-FLX Wires & Cables offers a wide range of battery cables. Q-FLX wires & cables is supplying a wide range of battery cables and ignition cables for use in heavy duty vehicles like buses,



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trucks, tractors, earthmovers etc. for the purpose of lighting, igniting, etc.

Contact:

Q-FLX Wires & Cables, Chennai
Mobile: 09884522777, 07010753367
Email: enquiry@qflexcable.com

COAXIAL CABLES

Rashi Cables offers a wide range of coaxial cables. This cables have rich experience of manufacturing superior quality digital VSAT satellite telecom cables and radio frequency co-axial cables & RG series cables.



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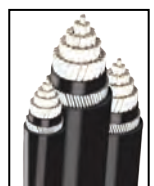


Contact:

Rashi Cables, New Delhi
Tel: 011-41707151
Fax: 011-41707352
Email: hgsrashicables@gmail.com
hgs@rashicables.in

CONTROL CABLES

KEI Wires & Cables offers a wide range of control cables. KEI control cables encompass a large family of cables manufactured to various IS, BS, EN, VDE, and other international standards. These



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cables are designed industrial, signaling, transmission, etc.

Contact:

KEI Wires & Cables, New Delhi
Tel: 011-26818840/8642/0242
Email: info@kei-ind.com

LT PVC CABLES

Jigar Cables Ltd offers LT PVC cables. LT PVC cables are ensures complete safety and perfect insulation. Manufactured from premium quality raw materials, Some of the industries in which LT PVC



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cables are used are power plants, projects and other electrical systems.

Contact:

Jigar Cables Ltd, Dist-Rajkot
Tel: 02825-221422 Mobile: 09099098809
Email: info@sigmacab.com

HOUSE WIRES / BUILDING WIRES, JAINFLEX-FR

Jainflex Cables Pvt Ltd offers a wide range of house wires / building wires, jainflex-FR. These cables are used for wiring domestic and commercial buildings. The multi strand / solid conductors make it ideal for concealed wiring.



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Contact:

Jainflex Cables Pvt Ltd, Ahmedabad
Tel: 079-27701899, 27506896
Mobile: 09898533000, 09898401000
Email: Sales@jainflex.com

PVC INSULATED WIRES & CABLES - ZHFR

Sanatan Cable Industries, offers sanflex wires are processed using a zero halogen flame retardant compound (ZHFR). The insulation is of superior quality, 100% PYC free and eco-friendly. In case of a fire situation



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ZHFR wires does not emit toxic or poisonous fumes.

Contact:

Sanatan Cable Industries, Ahmedabad
Mobile: 09825190972
Email: info@sanatancable.com

LT PVC & XLPE CONTROL CABLES

Lumino Industries Ltd offers a wide range of LT PVC & XLPE control cables. It is solid/stranded annealed copper conductor & tinned / bare; general purpose / HR PVC



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insulation; cores laid up; FRLS / general purpose PVC inner sheath; armouring round galvanized steel wires/ strips.

Contact:

Lumino Industries Ltd, Kolkata
Tel: 033-24412008-09
Email: lumino@luminoindustries.com

SINGLE DISK SCRUBBERS

Deluxe Cleaning Systems Pvt Ltd offers a wide range of single disk scrubbers. This new range of single disk scrubbers combines advanced technology and superior quality to provide optimal floor maintenance performance.



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Contact:

*Deluxe Cleaning Systems Pvt Ltd, Pune
Tel: 020-24531777, 24545029
Email: info@deluxecleaningsystems.com*

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Email: info@spectrumtechnicals.com*

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Contact:

*Balaji Enterprises, Pune
Mobile: 08048710129
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Contact:

*MRK Healthcare Pvt Ltd,
Mumbai
Tel: 022-62611111
Email: info@mrkhealthcare.com*

PROTEGER NITRIFLEX NINJA PLUS - 40114

Hallmark Safety Products offers a wide range of nitriflex ninja plus - 40114 under with brand proteger. All Ninja plus gloves are made of HPPE yarn feature lint - free, continuous filament yarn that is stronger than steel on an equal weight basis.



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Contact:

*Hallmark Safety Products, Mumbai
Mobile: 08369176994
Email: neeraj@hallmarksafetyproducts.com*

HAND WASH APPLE GREEN

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Contact:

*Crozier Hygiene Company, Udaipur
Mobile: 09782200789, 09887157509,
07300244488
Email: id-crozierhygiene@gmail.com,
info@crozier.co.in*

HAND SANITIZER DISPENSER

AV&T Solutions Private Limited offers a wide range of hand sanitizer dispenser. This hand sanitizer dispenser constructed of ABS housing for enhanced durability and an ample capacity of 300 ml, this product will make a great addition to your bathroom.



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Contact:

*AV&T Solutions Private Limited,
Mumbai
Mobile: 08048763273
Email: info@avnt.co.in*

Event	Date & Venue	Contact
FASTENER FAIR INDIA - NEW DELHI	July 26-28, 2024 Pragati Maidan Exhibition Center New Delhi	RX India, Gurugram Email: Chandan.Kumar@rxglobal.com
AUTOBOT - COIMBATORE	August 01-03, 2024 Codissia Trade Fair Complex Coimbatore	Midaas Touch Events & Trade Fairs LLP Ramapuram, Chennai Email: vivek@midaastouch.in
ELEKTROTEC - COIMBATORE	August 09-12, 2024 Codissia Trade Fair Complex, Coimbatore	Codissia Huzur Road, Coimbatore Tel: 0422-2221582 Email: info@codissia.com
AUTOMATION EXPO - MUMBAI	August 21 – 24, 2024 Bombay Exhibition Centre (BEC) NESCO, Mumbai	IED Communications Ltd Mumbai, India Tel: 022-22079567 Email: jyothi@iedcommunications.com
ADEX INDIA BOND EXPO - GREATER NOIDA	September 19-21, 2024 India Expo Centre & Mart Greater Noida	ADEX India India Expo Center & Mart Greater Noida Tel: +91 8177053335 Email: sales@theadexindia.com
IFAT INDIA - MUMBAI	October 16-18, 2024 Bombay Exhibition Centre (BEC) NESCO, Mumbai	MMI India Pvt Ltd Mumbai, India Tel: 022-42554700 Email: info@mmi-india.in
INDIA FASTENER SHOW - PUNE	October 17-19, 2024 Auto Cluster Exhibition Center, Mumbai Pune Road, Chinchwad East, Pune	FME (Future Market Events) Media Pvt Ltd Noida Email: eisha@futuremarketevents.com
LASER WORLD OF PHOTONICS INDIA – MUMBAI	November 07-09, 2024 Jio World Convention Centre, Mumbai	MMI India Pvt Ltd Mumbai Tel: +91 (2)2 42554700 Email: info@mmi-india.in
WIRE INDIA - MUMBAI	November 27-29, 2024 Bombay Exhibition Centre (BEC) NESCO Mumbai	Messe Düsseldorf GmbH Germany Tel: +49 (0)211 456001 Fax: +49 (0)211 4560668 Email: infoservice@messe-duesseldorf.de
INTERNATIONAL		
SHANGHAI INTELLIGENT BUILDING TECHNOLOGY - SHANGHAI	September 03-05, 2024 Shanghai New International Expo Center - SNIEC Shanghai, China	Messe Frankfurt (HK) Ltd. Hong Kong, China Email: info@hongkong.messefrankfurt.com
INTERNATIONAL METAL TECHNOLOGY - 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
CHINA INTERNATIONAL AUTO AIR-CONDITIONING & TRANSPORT REFRIGERATION EXHIBITION (CIAAR)- SHANGHAI	October 21-23, 2024 Shanghai New International Expo Center - SNIEC, Shanghai, China	Shanghai Gehua Exhibition Planning Co., Ltd. Shanghai, China Tel: +86 (2)1 67759083 Email: stephaniegh@126.com

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X Ministry of Coal



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X Ministry of MSME



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X Jeet Adani



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X Ministry of Railways



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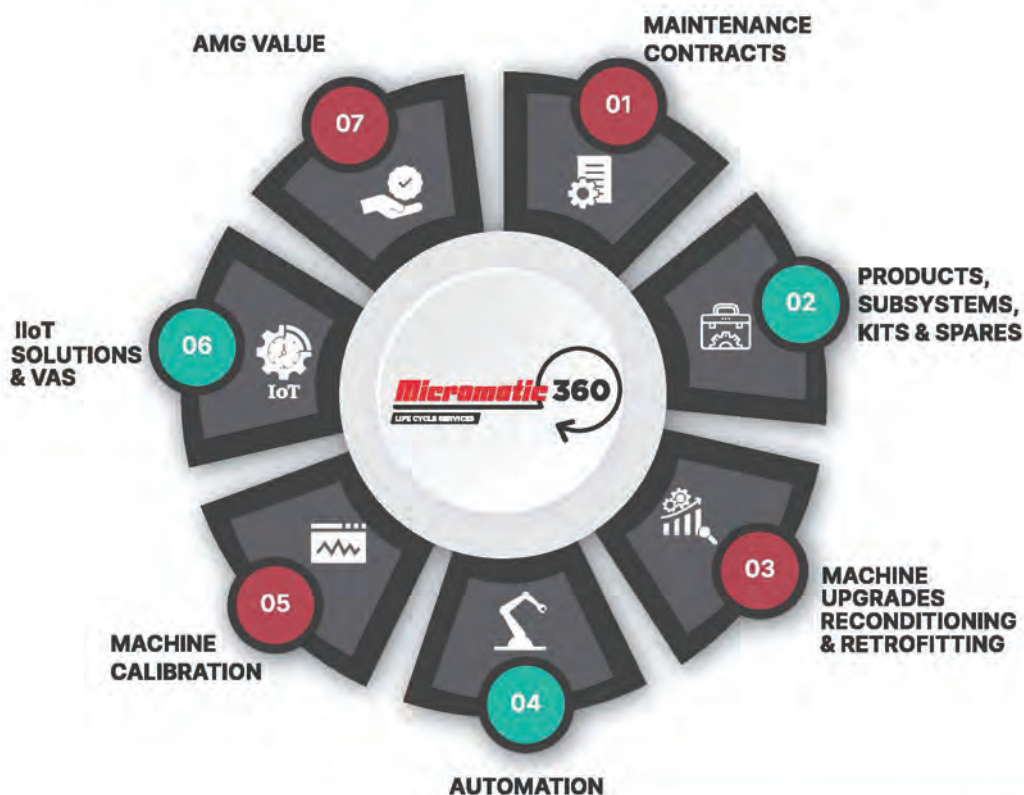
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