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India's First Infrastructure Equipment Magazine

Equipment INDIA

May 2024 • Vol. 17 No. 4 www.EquipmentIndia.com ₹150

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FOUNDATION OF INFRASTRUCTURE RESEARCH STUDIES TRAINING

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DATE: 9th & 10th October, 2024

VENUE: Hall 1, Jio World Convention Center, Mumbai

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- 14th India RAHSTA (Roads & Highways) Conference
- 12th Equipment India Awards
- 22nd Construction World Global Awards

PAST WINNERS - 2023

EQUIPMENT INDIA AWARDS

CONSTRUCTION WORLD GLOBAL AWARDS

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EIA

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India's First Infrastructure Equipment Magazine®

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CRUSHING BREAKTHROUGHS

What are the key criteria sought by operators of crushers and screens? And how do modern models differ in their features and capabilities?

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Border Roads Organisation

Vinayak Pai
CEO & MD,
TATA Projects

Dr Brijesh Dixit
MD, Maharashtra State Infrastructure Development Corporation

Anil Kumar Khandelwal
Member (Infrastructure), Railway Board at Ministry of Railways

Kuldip Narayan
IAS, MD,
NCRTC

S. V. Desai
Director and Sr. Vice President - Infrastructure, L&T

Terrence Busuttil
Director, Constructsteel,
World Steel Association

UJM RAO
MD,
Andhra Pradesh Metro Rail Corporation

Sanjiv Garg
MD, Director Pipavav Rail Corporation & Director General, Chartered Institute of Logistics

Muraleemohan M
Chief Operating Officer,
Maple Highways

Dinesh Jamwal
Head Project Delivery,
Noida International Airport

Mangal Dev
Director (Rail),
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Published by
ASAPP Info Global Services Pvt Ltd,
A-303, Navbharat Estates, Zakaria Bunder Road,
Sewri (West), Mumbai-400 015.
Tel: 022-24193000. Fax: 022-2417 5734.

Printed and Published by Tarun Pal on Behalf of ASAPP Info Global Services Pvt Ltd, printed at Indigo Press (India) Pvt Ltd, Plot No 1C/716, Off Dadoji Konddeo Cross Road, Between Sussex and Retiwala Ind. Estate, Byculla (East), Mumbai-400 027. and Published from A-303, Navbharat Estates, Zakaria Bunder Road, Sewri (West), Mumbai-400 015. Editor: Pratap Vijay Padode

INDIAN CE SECTOR – HITTING A PAUSE?

The Indian construction equipment sector continues its robust growth, demonstrating a remarkable 25 per cent surge in the fiscal year ending on March 31, 2024. This marks the second consecutive year of double-digit expansion, reaching unprecedented heights in the post-Covid era. Total industry volumes soared to approximately 135,000 units, encompassing both domestic and export sales, in FY24, a significant increase from the roughly 108,000 units recorded in FY23.

Looking forward, OEMs are poised to invest between Rs 1,400-1,500 crore in FY25. These funds will be allocated towards streamlining operations, advancing product development endeavours (including the production of CEV-V compliant equipment and exploration of alternative fuel-powered powertrains), and bolstering localisation efforts.

Even the auto component industry is expected to invest over Rs 25,000 crore in the next three to four years to expand production of electric vehicle parts.

However, the domestic mining equipment segment is anticipated to witness a downturn in FY2025, following two consecutive years of robust growth—26 per cent in FY2023 and 24 per cent in FY2024E—according to a report by ICRA. ICRA attributes this reversal in growth to a slowdown in new project awards during Q4 FY2024 and Q1 FY2025, coinciding with the Model Code of Conduct enforced during the Parliamentary Elections held in April-May 2024 (until the announcement of results on June 4, 2024).

Moreover, ICRA predicts a decline in aggregate revenues of its sampled companies by 9-12 per cent and operating margins by 100-150 basis points in FY2025. While the near-term outlook for domestic mining equipment demand remains challenging, the industry's long-term prospects remain promising, buoyed by the government's sustained emphasis on infrastructure development.

Volvo Construction Equipment reported either negative or stagnant sales in the first quarter of 2024, varying by region. The company notes a softening market demand compared to the robust sales recorded in Q1 2023, with reduced deliveries and order intake in Europe and North America partially offset by stronger performance in Asia.

Major OEMs are actively launching or upgrading their product lines. Volvo Construction Equipment is introducing two updated models of compact wheel loaders, featuring enhancements focused on operator experience. LiuGong has announced the release of five new electric machines, reaffirming its commitment to electrically powered equipment and intelligent machinery.

JCB India celebrated a significant milestone with the rollout of its 500,000th construction equipment—a telehandler—from its facility in Ballabgarh, Haryana. Similarly, Case Construction achieved a noteworthy milestone by producing its 20,000th vibratory compactor at its advanced facility in Pithampur, Madhya Pradesh. The company aims to escalate its production capacity to 10,000 units annually for all products by the following year, positioning it as CNH's second-largest manufacturing facility globally and CASE's principal export hub.

Recently, the Ministry has deferred the implementation date for emission norms (TREM V) for tractors, combine harvesters, and power tillers from April 1, 2024, to April 1, 2026.

With elections underway in certain regions of the country, a temporary slowdown in the sector is expected. The performance of Q2 will be closely watched to gauge the sector's trajectory. The new government has a 100-day agenda. Check out what the priorities are at the Infrastructure Today Conclave on July 18-19 in Delhi!

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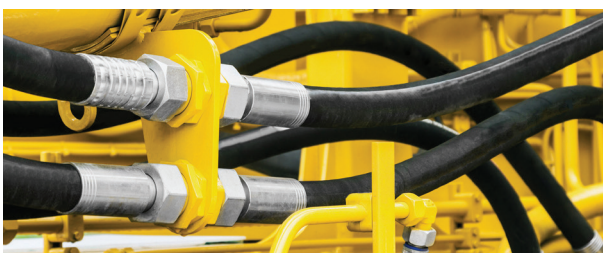

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This service is provided for easy reference to the organisations and individuals reported in this issue.

ORGANISATION

PEOPLE

Gadkari vows rapid transformation for Nagpur

Union Minister Nitin Gadkari has pledged to expedite the transformation of Nagpur, emphasising the government's commitment to the city's development. Highlighting the significance of infrastructure projects, Gadkari assured that efforts would be made to accelerate key initiatives aimed at enhancing connectivity and urban amenities in Nagpur.

Gadkari's assurance comes as part of the government's broader agenda to bolster urban infrastructure and stimulate economic growth across the country. Recognizing Nagpur's

potential as a pivotal economic and cultural hub, Gadkari reiterated the government's resolve to prioritise the city's development initiatives.

The minister outlined several key projects slated for implementation in Nagpur, including road and highway expansions, metro rail extensions, and urban rejuvenation schemes. These initiatives are designed to address critical infrastructure gaps, improve transportation networks, and enhance the overall quality of life for residents.

Gadkari also underscored the importance of public-private partnerships (PPPs) in driving urban development initiatives. By leveraging private sector expertise and resources, the government aims to accelerate project execution and ensure optimal utilisation of available funds.

SANY India expands presence with opening of new facility in Odisha

Sany Heavy Industry India, a leading global provider of construction machinery and equipment, was pleased to announce the grand opening of HO, Raghunath Machinary. The inauguration ceremony was presided over by Deepak Garg VC & MD Sany India & South Asia on April 24, 2024.

The establishment of this state-of-the-art facility underscored Sany Heavy Industry's commitment to providing unparalleled service and support to its customers in the south Odisha and western Odisha regions. The strategic location of the office enabled the company to offer seamless access to sales, service, and spare parts, thereby enhancing customer satisfaction and operational efficiency.

"We were delighted to announce the opening of Raghunath Machinary Head office at Rayagada, Odisha," said Garg.

"This expansion reflects our dedication to better serving our valued customers in the region. By bringing our comprehensive range of services closer to them, we aimed to further strengthen our relationships and deliver superior value."

The inauguration ceremony was attended by esteemed guests, dignitaries, industry partners, and members of the media. It included a ribbon-cutting ceremony followed by a facility tour, showcasing the advanced infrastructure and cutting-edge technologies incorporated into the office.

Customers can expect comprehensive assistance from a dedicated team of professionals trained to deliver prompt and efficient service at this strategically located office in Rayagada. Raghunath Machinery is also planning to open regional offices at the following locations across Odisha: Jaypore, Sambalpur, Bolangir, and Bhawanipatna, further expanding accessibility and support for customers across the region.

Vesuvius to inject ₹10 bn in India

Vesuvius India, a subsidiary of the UK-based refractory maker Vesuvius Group, announced its intention to invest approximately ₹10 billion in the country over the coming years. Patrick Andre the Chief Executive of Vesuvius Group stated that considering the growth prospects in India the amount of investment in the country would likely approach ₹10 billion within the next few years.

It was revealed by the Kolkata-based Vesuvius India that they had also inaugurated a new plant for manufacturing mould flux in Vishakapatnam. According to the company's statement this facility has been established to cater to the growing demand for flux a crucial element in the continuous casting process at steel plants.

CASE India rolls out 20,000th vibratory compactor

CASE Construction Equipment, a brand of CNH, has achieved a significant milestone of producing 20,000th vibratory compactors, from its state-of-the-art facility in Pithampur, Madhya Pradesh. The facility is the sole manufacturing hub for CASE's compactors globally in CNH. The company is now aiming to ramp up their production capacity to 10,000 units for all products annually by next year, making it the second-largest manufacturing facility by CNH globally and CASE's largest export hub.

Built in the year 1989, CASE's Pithampur facility, has been manufacturing an array of cutting-edge construction machinery, including compactors, loader backhoes, and crawler excavators. At this moment, the facility exports compactors to 44 countries and caters to the construction equipment requirements of over 105 countries across Africa, the Middle East, Asia Pacific, Latin America, in addition to India.

With eight unique models in its compactor portfolio, the manufacturing facility caters to both domestic and foreign markets and offers range of alternatives, including soil and asphalt compactors in addition to vibratory compactors.

SDLG inaugurates first manufacturing facility in Bengaluru

A member of Volvo Group, SDLG offers sustainable solutions to construction, earthmoving, infrastructure and mining projects. Present in India since 2009, SDLG has contributed to the Indian construction equipment market with its lineup of wheel loaders, motor graders, and excavators applied in ports, roadways, mining, steel, and cement industries.

SDLG is a pioneer in introducing groundbreaking innovations like the electric wheel loader L956HEV in India. Further to its commitment towards serving the Indian Construction & Mining Industry, the company today inaugurated its manufacturing facility for wheel loaders, in Peenya, Bengaluru, as a major step towards providing its customers with construction equipment made in India. This is a significant milestone for SDLG in its endeavour to increase localised manufacturing capabilities, introducing innovative new products, and expanding the customer base across the country.

Equipped with advanced technology, this state-of-the-art manufacturing facility boasts a comprehensive manufacturing setup for five products and has the capacity to produce 1,000 machines annually per shift. With the inauguration of the manufacturing facility in India, SDLG India is poised for accelerated growth in the market. The key priorities include ensuring cost efficiency, expedited delivery, offering tailor-made equipment for the region, and delivering superior customer service and support. SDLG's overarching plans and strategies for growth and expansion in India are centered on harnessing the country's burgeoning construction equipment market.

MYCRANE makes strides in critical Indian market

MYCRANE, the world's first global platform for online crane rental, has seen a surge in new client registrations and project enquiries in the booming Indian market. MYCRANE has recently processed customer orders for crawler, rough terrain and telescopic cranes with a capacity of up to 300 tonne for leading engineering, procurement and construction companies L&T, Tata Projects and KEC. The cranes are being deployed on a pan-India basis, with MYCRANE-enabled lifting projects currently underway in Maharashtra, Gujarat and Rajasthan. The latest customer registrations reflect the diverse appeal of the platform and include Reliance, Adani Ports, etc.

After completing a simple and free registration, clients are able to quickly and easily find lifting equipment using the MYCRANE platform, saving time and money as they do so.

India is designated one of MYCRANE's three focus markets, along with the USA and Saudi Arabia.

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Sany debuts India's first electric mining truck

Sany India, a leading global manufacturer of construction and mining equipment, proudly unveils the SKT105E electric dump truck, the first of its kind to be locally manufactured in India. This groundbreaking addition to Sany's portfolio marks a significant milestone in the nation's mining industry.

The unveiling ceremony, held at Sany India's cutting-edge facility, was attended by Deepak Garg, Vice Chairman & Managing Director of Sany India & South Asia, esteemed guests, and industry professionals.

The SKT105E Electric Dump Truck represents a new era in mining technology, combining local expertise with global innovation. Designed to meet the rigorous demands of open-cast mining operations, this fully electric off-highway dump truck boasts exceptional energy efficiency and cost-effectiveness. With an impressive payload capacity of 70 tonne, it stands as a powerhouse asset for mining enterprises nationwide.

Garg, in his address at the launch event, emphasised the significance of the SKT105E in driving sustainable mining practices in India. He stated, "The SKT105E marks a historic moment for Sany India and the Indian mining industry. By localising production and introducing cutting-edge electric technology, we are not only enhancing operational efficiency but also contributing to the nation's vision of sustainable development."

CNH expands India Technology Center

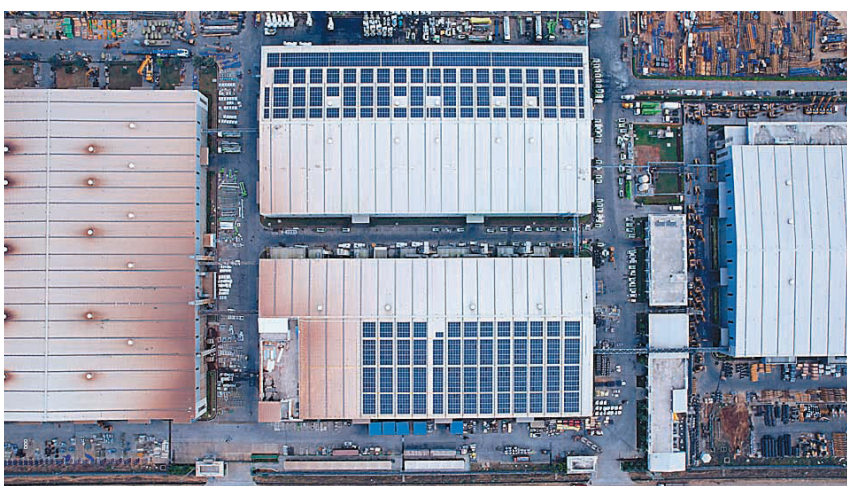
CNH, a global leader in agricultural and construction solutions, announced the addition of a cutting-edge Multi-Vehicle Simulator (MVS) at the company's India Technology Center (ITC).

The first-of-its-kind MVS in the Indian off-highway segment will play a pivotal role in CNH's global operations. This will serve as a key platform for various functions, including ergonomics simulation, user experience testing of controls, customer clinics, design reviews for product development teams, product validation and employee training.

The Simulator is equipped with advanced features such as body tracking sensors, virtual reality headsets and devices, multiple display screens, video and audio conference capture and playback systems, related software, Software - Hardware integration, and an adjustable frame to replicate various cabs.

The company also announced an expansion of the ITC. The new floor, spanning 32,000 square feet is equipped with high-tech amenities including three R&D labs as well as collaborative work areas.

Schwing Stetter installs 1 MW solar power system



Schwing Stetter India, one of the country's leading construction and concreting equipment manufacturers, has recently installed a 1MW solar power system in their Global manufacturing hub in Cheyyar. The facility was inaugurated by VG Sakthikumar, Chairman & Managing Director of Schwing Stetter India. Through this mode of energy production, the company aims to make the facility carbon neutral shortly- as the facility can generate 14 lakh kWh of electricity and fulfills 20 per cent of its total annual power needs. With Schwing's global manufacturing hub having an enormous potential to manufacture 14,000 machines annually, this endeavour reflects Schwing's commitment to sustainability. This initiative is also contributing to the Ministry of New and renewable energy plan of doubling the annual solar capacity by the end of 2026.

Last year, to celebrate Schwing's 25th anniversary and to promote carbon neutrality, the company planted 2,50,000 saplings across the country.

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- Best Digital Technology Award in road building
- Best Renewable Energy Integration Award
- Award for best use of waste material recycling in road construction
- Awards for Excellence in Bridge Engineering
- Award for Excellence in Tunnel Engineering
- Award for Excellence in Project Management
- Fastest road builder award
- Award for Highest standards of Excellence in Road Engineering & Construction

JCB India rolls out 500,000th construction equipment

JCB India celebrated the roll out of its 500,000th construction equipment. JCB has been in India since 1979 and its products are used in infrastructure development across the country. With six manufacturing facilities in India, JCB proudly exports "Made in India" machines to over 130 countries.

The event took place in the presence of JCB's Group Chairman, Lord Bamford at the company's India Headquarters at Ballabgarh.

Speaking at the occasion, Lord Bamford said "India is today one of the strongest economies in the world. There has been a significant focus on infrastructure development over the past decade and we are proud to have been a part of this growth through our machines."

He further added, "We have continued to invest in India since 1979,

that was when we set up our first factory here at Ballabgarh. India now plays an important part in our global business, as it is one of our largest markets, and also contributes to the global supply chain for JCB"

The 500,000th machine, a telehandler, is a versatile machine for material handling. It is a revolutionary new way to handle material at heights in a safer and more productive manner as compared to traditional options.

Deepak Shetty, CEO and Managing Director, JCB India said, "It is only fitting that the 500,000th machine to roll out from JCB is telehandler. This machine, ever since it was introduced in India, has made work sites safer and more productive with its superior design and engineering. JCB is a world leader in telehandlers and as India grows, we see opportunities for this machine in the material handling sector.

Additionally, our brilliant machines such as backhoe loaders, excavators among others will continue to be used in the infrastructure sector.

JCB manufactures over 60 different products in nine categories in India. The company has also created a benchmark for gender diversity in the construction equipment sector.

Capacite Infraprojects bags Mumbai infra projects

Capacite Infraprojects has secured construction projects in Mumbai worth Rs 5.49 billion, signalling a significant expansion for the company in the city's urban infrastructure landscape. This accomplishment underscores Capacite's expertise and capabilities in delivering high-quality construction solutions in complex urban environments. The awarded projects are poised to enhance Capacite Infraprojects' presence in Mumbai's construction sector and further solidify its reputation as a reliable player in the industry. With its proven track record and commitment to excellence, the company is well-positioned to execute these projects efficiently and contribute to the development of Mumbai's infrastructure.

The projects secured by Capacite Infraprojects represent a blend of residential and commercial developments, reflecting the diverse portfolio of the company and its ability to cater to various segments of the real estate market. By leveraging its expertise and resources, Capacite aims to deliver these projects within stipulated timelines and to the highest standards of quality.

The awarding of these projects reaffirms Capacite Infraprojects' status as a preferred partner for urban infrastructure development in Mumbai. The company's successful bid highlights its competitiveness and capability to secure significant contracts in a highly competitive market. Overall, Capacite Infraprojects' achievement in securing construction projects worth Rs 549 crore in Mumbai underscores its growth trajectory and reinforces its position as a key player in India.

CASE India inaugurates new dealership in Jaipur

CASE Construction Equipment, a brand of CNH, has broadened its presence in Rajasthan by appointing a new dealer partner, RDR Techsol in Jaipur. Located at Patel Nagar, Ajmer Road, the dealership will offer the company's wide range of products in India and provide comprehensive support for after-sales service and spare parts. The strategically chosen location will provide services to surrounding regions including Sikar, Ajmer, Dausa, Alwar, Bharatpur, Karauli, and Dholpur in Rajasthan. This cutting-edge facility will be offering the comprehensive range of construction equipment from CASE and provide a holistic customer experience. A global leader in construction equipment since 1842, CASE has been present in India since 1989.

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Amplus to launch distributed green hydrogen projects

Amplus Energy Solutions, a pioneer in renewable energy, announces its ambitious plan to introduce distributed green hydrogen projects by next year. With a focus on sustainability and innovation, Amplus aims to transform the energy landscape by harnessing the power of green hydrogen.

Amplus Energy Solutions, a leading player in the renewable energy sector, is set to revolutionize the energy industry with its upcoming distributed green hydrogen projects. Leveraging cutting-edge technology and a commitment to sustainability, Amplus is poised to lead the transition towards cleaner energy alternatives.

The move towards green hydrogen comes at a crucial time when the world is seeking sustainable solutions to combat climate change and reduce carbon emissions. As nations and industries strive to meet ambitious decarbonization targets, hydrogen emerges as a versatile and eco-friendly energy carrier.

Amplus's foray into distributed green hydrogen projects signifies a significant step towards a greener future. By decentralising hydrogen production and promoting its usage across various sectors, the company aims to address key challenges associated with traditional hydrogen.

KABIL & CSIR-IMMT team up for mineral technology

In a significant move towards bolstering India's mineral security and advancing technological capabilities in mineral processing, Khanij Bidesh India (KABIL) has inked an MoU with the Council of Scientific and Industrial Research - Institute of Minerals and Materials Technology (CSIR-IMMT). The agreement, signed by Sadashiv Samantaray, Director (Commercial) of NALCO & CEO of KABIL, and Dr Ramanuj Narayan, Director of CSIR-IMMT, paves the way for extensive technical and knowledge cooperation in critical minerals.

The signing ceremony, held at the NALCO Corporate Office in Bhubaneswar, witnessed the presence of Sridhar Patra, CMD of NALCO & Chairman of KABIL, underscoring the strategic importance of the collaboration. Under the MoU, KABIL will harness the technical expertise of CSIR-IMMT for various projects encompassing metallurgical test work plans, process flowsheet development, and the selection of process technologies for mineral processing, beneficiation, and metal extraction.

Moreover, the agreement will facilitate joint research initiatives and foster the exchange of scientific information between the two entities, aiming to propel advancements in the mineral and metallurgical sectors. Patra expressed his enthusiasm for the collaboration, emphasising its role in creating a conducive environment for critical mineral exploration.

Escorts Kubota CE sales jump 9% in March 23

Escorts Kubota Construction Equipment Business Division in March 2024 sold 662 machines registering a growth of 9.2 percent as against 606 machines sold in March 2023.

Kubota
Escorts Kubota Limited

The ongoing Government focus on improving infrastructure has laid a strong foundation for sustained growth in the industry. Going forward, we expect the similar demand momentum to continue in FY25 too. The company sold 1,798 machines in Q4 (recording YoY growth of 177 per cent) and 6,548 machines in FY 2024 (recording YoY growth of 41.7 per cent).

Escorts Kubota iperates in the sectors of agricultural machinery, construction machinery, material handling, and railway equipment. Its headquarters are located in Faridabad, Haryana. The company was launched in 1944 and has marketing operations in more than 40 countries. Escorts manufactures tractors, automotive components, railway equipment, and construction and material handling equipment.

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Gerrit Marx is new CEO of CNH

CNH Industrial N.V. announces the appointment of Gerrit Marx to the role of CEO effective July 1, 2024. He succeeds Scott Wine, whose request to leave the Company at the end of the current three-year business plan cycle to pursue other interests, has been accepted by the Board.

Marx rejoins CNH from Iveco Group whereas CEO he has led that company's drive into a new era of connectivity, integrating the latest digital and data technologies with Iveco's product offering. He has also chaired Iveco's powertrain business overseeing its transition to alternative

propulsion systems. Prior to first joining CNH in January 2019, Marx worked for 20 years in senior roles at McKinsey, Daimler Trucks, and Bain Capital, living in Brazil, China, Europe and Japan.

During the more than three years of Wine's tenure as CEO, CNH has become an agriculture and construction pure play following the Iveco Group demerger and is now solely listed on the New York Stock Exchange.

Among his achievements, Wine has delivered three straight years of record revenues and EBIT margins while overseeing the improved performance of the Company's Agriculture segment, the turnaround of the Construction segment, and the 2021 acquisition of Raven Industries, the precision agriculture technology business.

Liebherr tower cranes renovate bridge in Spain

Liebherr's revenue once again increased significantly compared with the previous year. The Group achieved increased revenues in 11 of its 13 product segments, some of them significant. It surpassed its previous revenue record from 2022 by Euro 1,453 million. At Euro 9,557 million, revenue in the earthmoving, material handling technology, deep foundation machines, mobile and crawler cranes, tower cranes, concrete technology and mining product segments was 11.6 per cent higher than in the previous year. In the product segments of maritime cranes, aerospace and transportation systems, gear technology and automation systems, refrigerators and freezers, components and hotels, Liebherr achieved total revenues of Euro 4,485 million, an increase of 11.3 per cent compared with the previous year.

Blastcrete announces distribution partnership

Blastcrete Equipment LLC, an industry-leading manufacturer of concrete pumps, shotcrete and gunite equipment and accessories, announces a distribution and service partnership with Italian concrete equipment manufacturer Mecbo Srl. The alliance forms "Mecbo America: a Division of Blastcrete."

This partnership will provide customers in North, Central and South America access to cutting edge Mecbo products, enhance the Blastcrete offering with new models designed around Mecbo pump technology and ensure a solid parts and service support network throughout North America.

Blastcrete will leverage the quality and innovative products designed by Mecbo, with an internal capability to modify and customise the equipment design to customer specifications.

IN BRIEF

Caterpillar expands Texas headquarters

wo years after relocating its headquarters from Deerfield, Illinois, to Irving, Texas, Caterpillar is expanding its presence in the Dallas-Fort Worth area.

The Dallas Morning News reported on April 10 that the company plans to add 50,000 square feet of space to its offices at Williams Square. The company will renovate the sixth and seventh floors of the building, along with a partial floor, at a projected cost of $10 million.

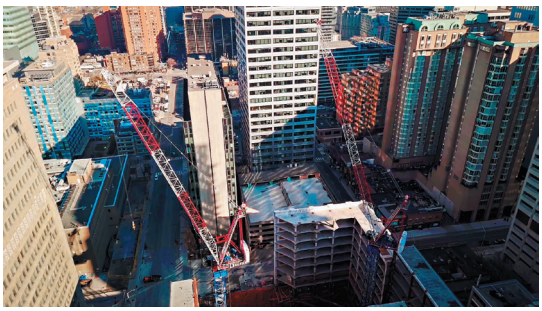
Work on the project is expected to start this month and conclude in May 2025.

FAE's stump cutter attachments for crawler mulchers

Remove stubborn stumps from a safe distance with the new SCL/RCU55 and SCL/RCU75 stump cutters for FAE's remote-control tracked carriers.

FAE says the new stump cutters bring added versatility to the dedicated forestry mulchers that are already capable of shredding branches and wood pieces up to six inches in diameter and grass and small shrubs up to three inches in diameter. SCL/RCU is ideal for removing stumps in forests and parks, on roadsides, by riverbanks, or agricultural settings.

Two Raimondi LR273 luffing cranes for landmark development in Toronto



Avenue Building Corporation deployed two Raimondi LR273 luffing jib cranes for the construction of The United Bldg, a historic landmark development in Toronto, Ontario, Canada. The 55-storey condominium, preserving elements from the 1928 building and the 1961 expansion, has earned a place in the historical conservation sector, making The United Bldg North America?s largest heritage retrofit.

"Avenue Building Corporation is adding another significant project milestone to our site portfolio by renting these two Raimondi LR273 luffing jib cranes to EllisDon, contractor of the project and international leader in construction services," stated Jim Patullo, President, Avenue Building Corporation. Installed between December 2023 and January 2024, the two 18t-luffers are currently onsite at a height of 60 and 54m with jib lengths of 45 and 50m respectively, and a tip load of 4.50t. Equipped with an 86kW hoisting gear, the LR273s lift at a maximum speed of 204 m per minute and have a drum capacity of 980m.

XCMG launches G2 crane brand

Leveraging 61 years of crane development experience and success of serving over 300,000 users, XCMG Machinery has officially unveiled the premium G2 crane brand on April 8, taking lead in the era of developing the New Quality Productive Forces with the goal of creating greater values for the users and pioneering innovation. The technical platform of G2 has introduced the innovative 5-G superior value system: G-ECO for efficient whole-cycle energy conservation, G-ICON for all-scenario intelligent control, G-Master for precise control under all working conditions, G-Comfort for enjoyable operation, and G-Safe to guarantee full life cycle safety and quality.

The platform integrates the whole process of product application, maintenance, operation, and management, including 21 core technologies and 31 spare parts. It has tackled 30 bottleneck problems such as the smooth telescoping of loaded lifting arm and intelligent cooperative control of the hydraulic system and engine.

Sany's green products at INTERMAT 2024

Sany Group showcased 34 cutting-edged machines spanning excavators, concrete machinery, road machinery, port machinery, and several hydraulic parts at INTERMAT 2024 in Paris. Attendees witnessed a batch of brand-new equipment, spanning mini excavators, Europe-customised wheeled excavators, pilling machines, reach stackers, telehandlers, mixer truckers, and road machines. SANY bought six electric machines to the show, including two forklifts SCP35C6, a milling machine SCM500E-10, a reach stacker SRSC45E5, a mixer truck SY408C-8FRBEV, and a mini excavator SY19E, underscoring the company's dedication to environmental responsibility.

IN BRIEF

Bill Gates fills a pothole with emissions-free asphalt

The billionaire philanthropist, investor and co-founder of Microsoft was in unfamiliar territory recently pushing a wheelbarrow filled with asphalt.

Bill Gates announced on social media that he had "filled a pothole," and at the same time, "reduced greenhouse gas emissions."

It was part of Gates' visit to Washington-based startup company Modern Hydrogen, of which Gates is an investor, to show off its "carbon-sequester asphalt.

Firstgreen's new Rockeat line of electric skid steers

Firstgreen Industries has expanded its line of cabinless, electric skid steers with the new Rockeat models.

Offering near-silent operation, the skid steers produce zero carbon emissions and include minimal operating fluids.

The Rockeats come in two models, the 700 and 1200. The 700 is 67 inches wide, and the 1200 comes in at 71 inches wide.

Both styles are compatible with either lead-acid or lithium-ion batteries, depending on the operator's preference.

CRUSHING BREAKTHROUGHS

Scan to read

What are the key criteria sought by operators of crushers and screens? And how do modern models differ in their features and capabilities?

The crushing and screening equipment market is poised for robust growth, projected to expand by 13 per cent annually from 2023 to 2027. With the escalating demand for artificial sand, the significance of crushing and screening machinery is steadily rising. After enduring a prolonged period of business stagnation in recent years, manufacturers of crushing and screening plants are now witnessing a gradual but discernible uptick in demand. The crushers and screens market holds vast untapped potential, especially with the recent extension of the government's Rs 111 lakh crore ($1.5 trillion) National Infrastructure

Pipeline (NIP) to encompass additional projects by 2025. This expansion of the NIP is expected to generate heightened demand for crushers and screens.

Furthermore, the Punjab Government has recently sanctioned the Punjab Crusher Policy 2023, aimed at providing consumers with access to sand and gravel at fair prices. Under this policy, crusher units are primarily categorised into commercial crusher units (CCU) and public crusher units (PCU). Notably, the policy stipulates that crushing units must incorporate screening, washing, and sorting facilities.

Speaking on the Indian market for their products, **Wayne Van Antwerpen, Group Crusher Technology Product Manager, Terex Material Processing,** said, "India is a unique market. While we may have successfully improved product performance in other regions, the Indian market is very price-sensitive. So, any changes must prioritise cost reduction. However, we also need to account for differences in skill levels among machine operators. India's labour force, much like in some other regions, may not possess the same level of expertise. Hence, we have been delving into automation controls to make our machines user-friendly, safe, and less prone to malfunctions. We've developed these solutions locally to cater to the specific needs of the Indian market. It's crucial to have a more connected approach to meet regional demands effectively.

Wayne Van Antwerpen
Group Crusher Technology Product Manager, Terex Material Processing

QUICK BYTES

- The crushing and screening equipment market is poised for robust growth, projected to expand by 13 per cent annually from 2023 to 2027.
- The Punjab Government has recently sanctioned the Punjab Crusher Policy 2023, aimed at providing consumers with access to sand and gravel at fair prices.

He added, "For automation controls and crushing chambers, the Indian market is distinct. Certain types of crushers are more popular in India than others due to their unique materials and demands. Our challenge is to introduce new concepts and technologies like automation controls, which might initially appear costly but can significantly boost productivity. The Indian market needs to embrace technology, just like how people use advanced features on their smartphones. We aim to open doors for Indian customers to realise the benefits of innovation."

Terex Material Processing is actively focusing on digital solutions, telematics, and electronic controls. These digital technologies not only enhance product performance and reliability but also contribute to sustainability and safety. We aim to reduce environmental impact and improve safety while providing cutting-edge technology to our customers.

Added Antwerpen, "In today's environment, developing entirely new crushing technologies is both challenging and time-consuming. Therefore, our primary focus is on improving existing technologies to make machines safer, easier to operate, and more productive. Environmental considerations are also crucial. We aim to remove components with toxic

The Indian crushing and screening equipment market is experiencing a revival driven by a focus on customisation, quality, and services.

elements, reducing health and safety risks and environmental contaminants. Additionally, we are working to eliminate the need for oxy-acetylene cutting and welding, as these processes release harmful substances into the atmosphere. So, our main goals are to enhance safety, productivity, and environmental sustainability."

Neil Robinson, Product and Applications Manager, Powerscreen, said, "Powerscreen Maxtrac 1300 is a medium to large-sized track mobile cone crusher that is ideally suited to secondary applications. It's an extremely reliable machine. I've visited three of these in Australia, and each of them had over 23,000 hours of operation with minimal issues. We're also working on introducing a fully electric variant for our machines, which aligns with the growing trend of electric vehicles in India."

Neil Robinson
Product and Applications Manager, Powerscreen

Speaking on energy efficiency, Robinson added, "Efficiency is a primary focus for us. Take the Chieftain 2200, for example. The technology in the screen allows for more aggressive screening, which results in higher-quality products and increased productivity. This means you can achieve more with the same amount of fuel, ultimately reducing operational costs. Additionally, our machines can often do the work of multiple machines, reducing the need for additional fuel and labour. For instance, two operators can manage two machines, but with our technology, one operator can handle the work of both, reducing fuel and labour costs. Furthermore, our hybrid and electric solutions provide additional fuel savings."

"We view India as a fundamental market for the MB Crusher. Our commitment to providing innovative solutions in the construction and road construction sectors aligns perfectly with the evolving needs of the Indian market. Over the years, MB Crusher has garnered substantial recognition, emerging as a key player in the industry. Our strong brand recognition and the trust our customers place in us underscore our positive outlook on the Indian market. With a diverse range of products catering to the specific needs of the market, we are well-positioned to meet the demands of the growing construction sector in India. We believe that India is a pertinent market for the advantages offered by MB products and their features, given its vast geographical expanse. People often work in remote locations, including challenging environments like mountainous areas, making the attributes of MB products particularly beneficial in such scenarios", said **Piero Guizzetti, CEO, MB Crusher India**.

Piero Guizzetti
CEO, MB Crusher India

He added, "Sustainability is at the core of MB Crusher's ethos. We take significant steps to address environmental concerns through our product offerings. Our machines are purposefully designed to align with the principles of "Reduce, Reuse, and Recycle". This commitment runs through every aspect of our product design and development. One notable advantage is the minimal environmental impact of our product category. In contrast to other options, our units operate without the need for electricity and do not incur any extra fuel consumption beyond the standard

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operation of the base machine. This makes our solutions the most energy-efficient and eco-friendly choice available. We are continually improving our products and processes to further reduce our environmental footprint while enhancing project safety. Our goal is not just to meet industry standards but to set new benchmarks for sustainability.

Metso has bolstered its manufacturing capabilities for mobile track-mounted crushing and screening equipment in Alwar India. The recently-opened manufacturing facilities will increase the Alwar factory's size to approximately 3,40,000 sq m, a 35 per cent expansion from its initial establishment in 2008. With around 1,300 employees, the Alwar site has become one of Metso's largest manufacturing sites. The official inauguration occurred on September 19 2023 and production will gradually ramp up to full capacity by year-end.

Markku Simula President of the Aggregates business area of Metso

Markku Simula, President of the Aggregates business area of Metso, emphasised the factory's strategic importance stating. With an increased manufacturing capacity, Alwar becomes a key Metso site for expanding domestic operations in India and meeting the needs of Metso's global customers. Substantial investments have also been made in engineering and R&D resources establishing it as one of our primary global engineering hubs.

The Alwar factory will facilitate the production of various Metso Group brands. Alongside mobile Metso Lokotrack equipment, the expanded capacity in India will support the manufacturing of mobile McCloskey and Tesab equipment. Furthermore, the Alwar site will continue to produce essential wear parts and pumps for the aggregates and mining industries.

Metso's intelligent crushing and screening offering is expanding with a new software application called Metso Remote IC. The new Metso Remote IC is used for remote control and monitoring of the crushing and screening process, and it connects wirelessly all the Lokotrack® crushers and screens at the site.

With the Metso Remote IC app, the operator can view all the Lokotrack train machines and their main process parameters using a single dashboard. The feeder and crusher settings can be adjusted safely from the excavator cabin, and the overall visibility of the process allows the operator to adjust the feeding for an optimal production level. In problem situations, the Remote IC automatically stops the feeder, thus preventing overloading. It also instantly alerts and provides a reason for the stoppage, making it quicker and easier to get back to operation. With a lower overflow risk, the process can be run closer to maximum capacity.

Preferences

While the must-have features of a crushing and screening unit depend on the specific needs and goals of the operation, **Nachimuthu Krishnamurthy, Vice President - Operations, Transworld Garnet India,** highlights the top desirables as best-in-class efficiency, robustness and automation; versatility; and easy maintenance, durable components and effective monitoring. "Only then can you maximise the unit's throughput and output, reduce the processing cost per tonne and improve profitability

Nachimuthu Krishnamurthy, Vice President - Operations, Transworld Garnet India

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irrespective of the material handled, aggregates, minerals or recycled materials."

Drilling down to the application, some industry-specific features come to the fore. For example, "in the construction and aggregate industry, features like mobility, compact design and dust control systems may be critical, while in mining, heavy-duty components, automation and remote monitoring might take precedence," he adds. "Aligning the features with the application is vital for the success of the unit."

"At Transworld Garnet India, we prioritise energy-saving, environmental safety (including compliances) and worker health and safety features of crushers and screens," responds Krishnamurthy.

Screen must-haves

"We look for a manufacturer who is willing to work closely with us on the entire process plan, including the steps before screening and post screening, and understands material characteristics such as flowability, bulk and particle density, particle size distribution, moisture content, temperature, material shape and the cut points to be achieved," says **Bharath Shetty, Director, Silica Mines**. "Only then can screen sizing, type and design ensure success. Good design should reduce recycling loads and cross-contamination of product sizes, simultaneously focusing on optimal power consumption and minimal wear. We have found such a manufacturer in PSI Technologies Inc. It has successfully delivered high-frequency double-deck screens to our silica mines for grading 1,200 and 600-micron grades at 10 tonne/hr capacity."

Bharath Shetty
Director, Silica Mines

"We look for productivity in a screen used to make plaster sand," says **Kiran Jain, Director, Shri Dakshayani M Sand**. "If we feed 150 tonne of dry sand to a machine, in the machine of our choice (Proman), we get 30 per cent more plaster sand. In other machines, we have achieved only up to 15-20 per cent more output. In the case of water sand, we get up to 70 per cent more output in a Proman machine but 15 per cent less than that in a comparable machine. This is because of the size and design of the screen and the machine."

Kiran Jain
Director, Shri Dakshayani M Sand

In particular, the productivity and environment-friendliness of crushing and screening units have evolved significantly over the years. In that context, Krishnamurthy notes, "The features to look out for are higher efficiency ratings, durable components, versatility and mobility. Advanced automation and control systems optimise processes and reduce human intervention, leading to higher productivity. Digitalisation and data analytics allow real-time monitoring and optimisation of processes to improve productivity and minimise wastage and the environmental impact. Advances in material handling equipment and conveyors have improved the efficiency and environmental impact of the process and reduced manual labour and risk of spills or material loss."

"The recent addition of Telematics 'powerscreen pulse' to Terex Powerscreen track crushers and screening plants has been wonderful because we can monitor our plants from our office," says **Pralhad Deshmukh, Managing Director, PD Infraprojects,** a leading NHAI contractor from Maharashtra. "This remotely operated system allows us to know the current location, crusher hours, engine hours, closed side settings (CSS) settings, wear, etc. It reduces dependency on manpower to that extent. We can also plan the wear parts. Site productivity majorly increases."

"Newer cone and jaw designs and VSI designs deliver higher productivity for a lower motor rating," adds Jain. "We have machines with a 150 hp per hour motor rating that deliver 30 per cent more output than machines with a 200 hp per hour motor rating."

Pralhad Deshmukh
Managing Director, PD Infraprojects

Screen updates

Screening and grading technology has seen subtle changes that are producing lasting impact, according to Shetty. "Design for improved performance, reduced cost, improved durability and better safety is of significance. Previously, the tendency was to build the machine safe and heavy. Optimisation efforts weren't based on deeper insights and could lead to costly experiments and poor deliveries. In recent years, the availability of multi-physics tools that allow designers to model parameters such as type screen, frequency of vibrations and the G force to be employed has greatly improved designs. Simulation tools strengthen the designer's ability to put both the design and equipment to test, in a virtual but a highly reliable environment. Further, the integration of design and manufacturing is now being tackled with advancements in the CAD-CAM space."

Astec-TelSmith's newer products feature advanced automation and controls enabling real-time monitoring and optimisation of equipment, leading to increased productivity and efficiency. Recent innovations have enabled Astec-Telsmith high-frequency screens to operate at less than 60 per cent of the power consumption of traditional systems.

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Driving Efficiency

Scan to read

From powering pneumatic tools to supporting critical tasks like concrete production and road construction, mobile compressors play a pivotal role.

In recent years, the construction equipment industry has seen significant advancements, especially in the domain of portable machinery. Mobile air compressors stand out as pivotal tools within this sector, influencing productivity and efficiency on a large scale. These devices are critical in powering a plethora of construction activities, from simple road repairs to complex infrastructure projects such as tunnels and bridges.

Role of mobile compressors in modern construction

Mobile air compressors are indispensable in the construction and infrastructure sectors. Their primary function is to provide compressed air for various pneumatic tools and machinery essential in construction, maintenance, and repair activities at project sites. According to **Ramesh Kumar G, Vice President of Portables at Elgi Equipments**, air compressors are utilised across a broad spectrum of applications, including piling, road cleaning, rock anchoring, and shotcrete operations. The rising demand for these compressors is driven by global infrastructure development, spurred by governmental initiatives and economic growth.

Ramesh Kumar G
Vice President of Portables at Elgi Equipments

Advancements and applications

In the contemporary construction landscape, both electric and diesel-powered screw air compressors are used extensively. Electric compressors are preferred for sites with reliable electricity due to their higher energy efficiency, reduced operational costs, and lower environmental impact. For instance, the use of Atlas Copco's electric E-Air compressor in the Mumbai-Pune Expressway project exemplifies the effectiveness of these units in confined and environmentally sensitive settings. These compressors helped maintain a continuous flow of clean, dry air, crucial for shotcreting within the tunnels, showcasing their capability to operate under stringent quality demands.

Conversely, diesel compressors are favored in locations lacking consistent power supply or where mobility is a necessity. These units are designed for easy transportation and robust performance in harsh environments, making them suitable for more demanding tasks. The versatility of diesel compressors enables them to function efficiently in remote or off-grid areas, supporting critical

construction activities where high airflow and pressure capabilities are required.

Key uses across construction phases

Mobile compressors power numerous tools and machinery across various construction phases:

- **Pneumatic tools:** These include drills, hammers, and wrenches used extensively in building and structural assembly.
- **Concrete and cement production:** Compressors operate concrete pumps and mixers, which are vital for efficient construction.
- **Pavement and road construction:** They are used in compacting, smoothing, and repairing road surfaces.
- **Bridge and tunnel construction:** Compressors support the operation of drilling machines and other critical equipment in constructing and maintaining bridges and tunnels.

Technological innovations

The integration of technologies like Atlas Copco's PACE (Pressure Adjustable through Cognitive Electronics) system in their E-Air compressors illustrates the ongoing innovations within this field.
The PACE technology allows for adjustable pressure settings, enhancing the efficiency and quality of applications such as shotcreting. Additionally, advancements in filtration and cooling systems, as seen in ELGi's new portable compressor models, cater to extreme working environments, ensuring reliability and longevity of the equipment.

Cost-effectiveness and efficiency: One of the primary advantages of modern mobile compressors is their cost-effectiveness. Electric compressors, particularly, reduce the operational costs associated with traditional diesel-powered units. Their low power consumption and minimal maintenance requirements make them economically viable choices for long-term projects.

Sustainability: The shift towards sustainability is evident in the compressor manufacturing sector. Companies like Atlas Copco are aiming for net zero emissions by incorporating electric models that offer significant reductions in carbon footprint. Similarly, ELGi Equipments is enhancing its product line with low-noise, energy-efficient models to meet the increasing environmental standards and reduce overall energy consumption.

Dasika Ramarao
General Manager – Sales & Marketing, Doosan Portable Power

Dasika Ramarao, General Manager – Sales & Marketing, Doosan Portable Power, highlighted the importance of localisation and advanced engine technologies in enhancing the efficiency and environmental compatibility of air compressors. He said, "The focus on developing low-fuel consumption models and adapting to advanced emission norms are steps towards making air compressors more sustainable and economically viable."

Looking ahead, the air compressor market is expected to evolve significantly. Kumar notes that the trend is moving towards electric-powered solutions that offer higher energy efficiency and reduced emissions. The adoption of digital technologies for remote management and performance monitoring of compressors is also on the rise, paving the way for smarter, more connected construction sites.

Conclusion

As the construction equipment industry continues to grow, mobile compressors will play an increasingly vital role in shaping the landscapes of tomorrow. With advancements in technology and a focus on sustainability, these machines are set to revolutionise the way construction and infrastructure projects are executed. The insights provided by industry experts underscore the potential for innovation and efficiency, promising a future where construction not only builds but enhances global living standards.

Choosing an air compressor for construction

CFM requirements: All air tools will have cubic feet per minute (cfm) requirement. It is important that the air compressor you choose to purchase will be able to drive the power tools you wish to use. For example, an air tool intended for general use will usually require 0 to 5 cfm at 70 - 90 psi (pounds per square inch).

Power type: Your air compressor power source is another factor to consider. Options include gas powered, electric as well as diesel options. Diesel compressors are very reliable and high performing, plus you do not need to worry about connecting to the electric grid to have power. Diesel particle filters (DPF) are often fitted to compressors to clean the emissions before they are released.

Size: For construction applications, your compressor must be small and compact enough to be easily towed whilst still being powerful enough to provide you with the flow of compressed air you need to power your equipment.

Noise: Depending on the type of construction work you are doing, noise may be a relevant factor to consider. In busy urban areas, a low-noise compressor would be the most beneficial as it would cause the least disruption.

Powering Construction

Air compressors play a crucial role in construction, maintenance, and repair tasks at infrastructure project sites.

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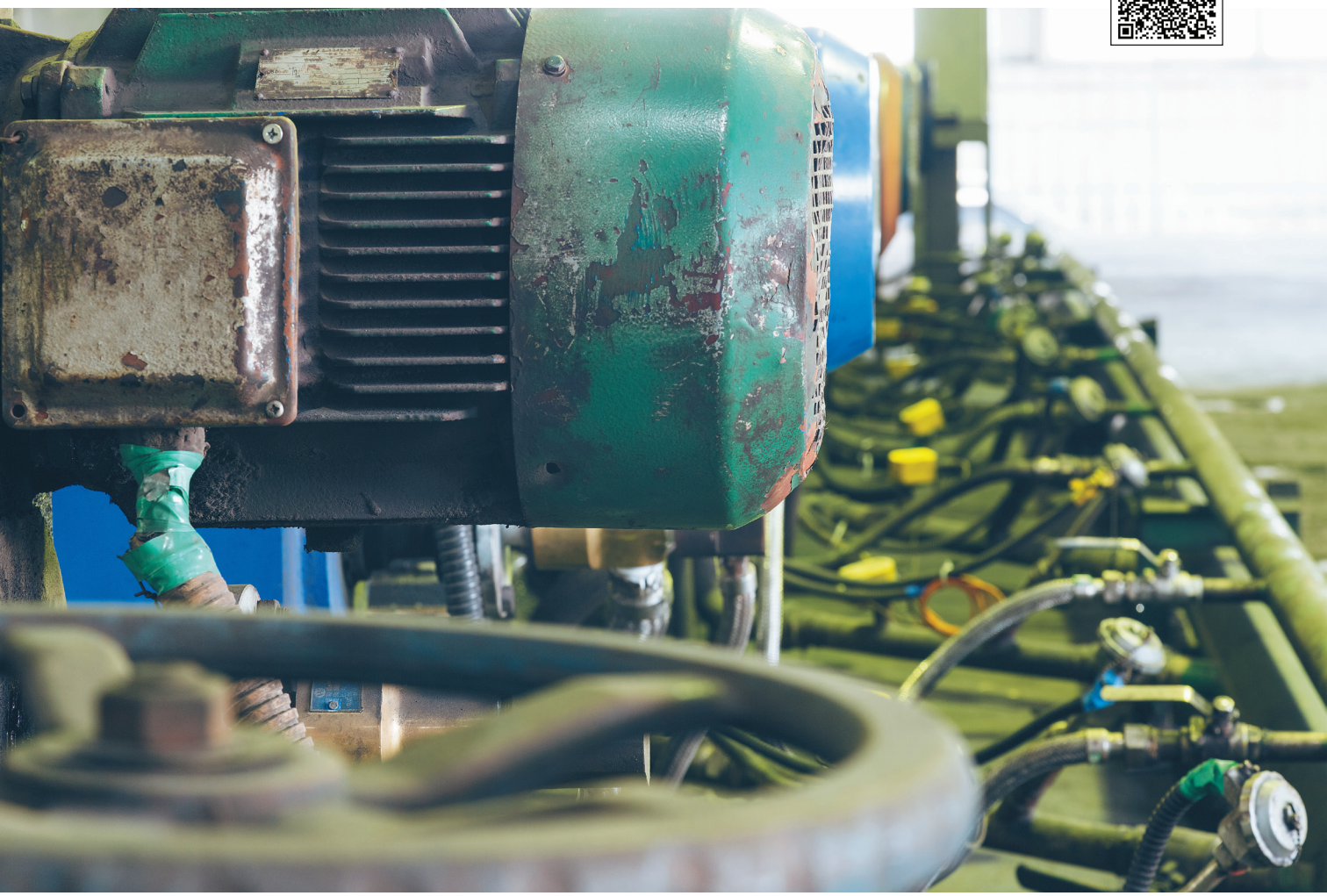

India's economic expansion in 2023 and the future is set to be propelled by substantial advancements in key industries, with infrastructure development playing a pivotal role in the nation's advancement. The infrastructure sector in India has seen significant growth due to government policies, increased investments, and the demands of a burgeoning economy. This sector's expansion is crucial for sustaining economic growth and enhancing the overall quality of life in India. According to the India Brand Equity Foundation, the construction market is projected to reach $1.42 trillion by 2027, growing at a compound annual growth rate (CAGR) of 17.26 per cent from 2022 to 2027. This growth is bolstered by modern tools and equipment that boost productivity while reducing operational costs. In this sector, both stationary and portable air compressors are vital, supplying compressed air for various pneumatic uses essential for construction, maintenance, and repair activities at infrastructure sites.

This growth in the infrastructure sector is anticipated to boost the need for portable air compressors, presenting an attractive opportunity for air compressor brands such as ELGi to be part of the growth story. Electric and diesel-powered screw air compressors have become indispensable tools in the construction and infrastructure industry, providing a reliable compressed air source for various applications. Electric screw air compressors are the preferred choice of

project managers for construction sites that have a reliable electrical supply. Electric portable air compressors offer benefits such as higher energy efficiency, lesser operational expenses, and lower environmental footprint. Additionally, electric compressors produce less noise, making them ideal for noise-sensitive construction sites. Their compact and portable design enables easy transportation and maneuverability at construction sites. Simultaneously, their ability to power various pneumatic makes them essential for construction tasks that require compressed air.

At construction locations where a consistent electrical power source might be missing, or mobility is essential, diesel-driven screw air compressors come into play. These compressors are typically mounted on trailers or skids, facilitating effortless transportation between construction sites. Designed to endure harsh dusty settings and rigorous construction tasks, diesel air compressors perform exceptionally well in challenging environments at infrastructure project sites. They provide enhanced versatility by functioning in remote or off-grid areas with no electrical power supply. Diesel compressors often provide higher airflow and pressure capabilities, making them suitable for challenging construction tasks that require substantial compressed air output. Here are some critical uses of air compressors in the infrastructure sector:

- **Pneumatic tools:** Air compressors power many pneumatic tools used in construction and maintenance work. These tools include pneumatic hammers, drills, wrenches, nail guns, and sanders.
- **Concrete and cement production:** In construction, air compressors operate equipment such as concrete pumps, cement mixers, and pneumatic vibrators. Compressed air helps convey and spray concrete, making construction more efficient.

- **Pavement maintenance:** Air compressors are used for tasks like crack sealing, pavement marking, and road surface repair. Pneumatic equipment is commonly employed for these applications.
- **Road construction and repair:** In road construction, air compressors are used to power equipment such as pneumatic rollers, which are used to compact and smooth the road surface.
- **Bridge construction:** Air compressors are used for drilling, piling, cutting, and maintenance work. They power tools like pneumatic bridge deck vibrators, concrete vibrators, and riveting machines.
- **Tunnelling and mining:** In infrastructure projects that involve tunnels and mining, air compressors are used to operate rock drills, tunnel boring machines, shotcrete machines for concreating tunnel surfaces, and other pneumatic equipment.
- **Cleaning and maintenance:** Air compressors are employed for cleaning and maintaining infrastructure, such as removing dust and debris from construction sites, equipment, and structures.
- **Bridge and dam maintenance:** Air compressors are used to maintain and repair infrastructure such as bridges and dams. They power tools for inspection, repair, and corrosion control.
- **Pipeline construction:** In the construction of pipelines, air compressors are essential for tasks like trenchless drilling and pipe laying, de-watering, pigging, and sandblasting. They also power pneumatic drilling rigs and other equipment.

Air compressors are engineered for various capacity requirements and end-use, including stationary and portable models. The choice of compressor depends on the specific requirements of the infrastructure project. They are versatile tools that enhance efficiency, safety, and productivity in constructing and maintaining infrastructure.

The future of air compressors in India will likely be characterized by a shift towards energy efficiency, sustainability, and advanced digital technologies. This evolution will be driven by the growing need for compressed air in various sectors and the desire to reduce energy consumption and environmental impact. The Indian air compressor market is expected to adapt to these trends and offer innovative solutions to meet the changing demands of industries across the country.

ABOUT THE AUTHOR:

The article is authored by Ramesh Kumar G, Vice President, Portables at Elgi Equipments.

"Localisation is the key to success."

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Doosan Portable Power, now under the Bobcat brand, offers a range of reliable and versatile portable power equipment designed for various jobsite needs. This includes portable air compressors, generators, and light towers engineered to maximise productivity with long runtimes, extended maintenance intervals, and durability. **Dasika Ramarao, General Manager – Sales & Marketing, Doosan Portable Power**, speaks on the applications of mobile air compressors in construction, mining, and drilling operations.

What are the key applications of mobile air compressors in construction, mining, and drilling operations? What is the current demand trend?

Mobile compressors play a significant role in road cleaning, breaking, rock anchoring, rock drilling, and OB drilling and sand blasting applications.

What are the key productivity parameters of mobile air compressors?

Air flow and pressure followed by feet/hour and fuel consumption/feet are the major influencers. Nevertheless to say the aftermarket support shall certainly be a deciding factor.

What are the new products and solutions offered? What are the features to meet extreme working environments?

Doosan introduced state-of-the-art electronic engines, first in the segment. These machines are focussed on low fuel consumption per feet with less carbon footprint and can easily upgraded to latest applicable emission norms. This is part of Doosan's initiative to bring the awareness and upgrade the customers to the advance technology and solutions in portable compressors business. The objective is to maximise the ROI and yet environment friendly. We are working on various alternate fuels along with the reputed engine manufacturers to get diesel-free engines.

Doosan air compressors are rugged and predominantly known for its low and high ambient temperature handling features, sturdy performance with reliability, durability and fuel efficiency faster drilling – with innovative technology of cooling package, oil and separation systems where quite improvements are achieved over decade

What are the environment-friendly features in your product range?

Our products have state-of-the-art electronic engines, highly-efficient air end technology supported by the proven package solutions offer the lowest fuel consumption per feet. We are working on the global platforms to bring the advance emission norms within our product range.

In the current difficult market conditions, how are you taking on the challenges in terms of production, sales, and aftermarket operations?

Localisation is the key to success and we are developing our vendor base in around Bengaluru to feed our production facility at Bengaluru. Our sourcing is constantly working to reduce the dependency on imported raw material. We are upgrading our existing manufacturing facility to cater the global markets, and are proud to be a part of make in India initiative.

We are strengthening our sales and channel network to ensure the serviceability to the remote corners of the country. We are focussing on Northeast dealer development to meet the service demand from the major customers.

What are your future plans in the changing market and operational conditions?

We are relying on self-resilience; strengthening our R&D and localisation of products are the future plan of action. We are planning to add complimentary products and technology to bring down the production cost. We are also gearing up for the upcoming BS IV and V norms for construction equipment and further look at the possibilities to export machines to NA and EMEA regions. Also, digital marketing and remote machine management are in pipeline.

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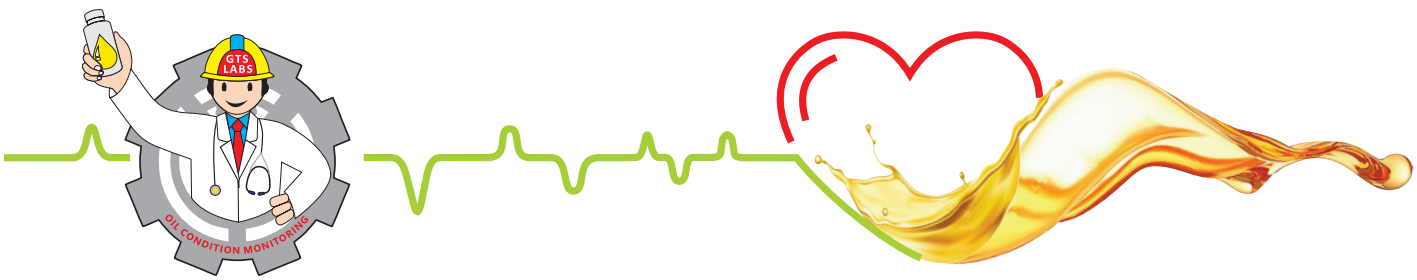

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OIL IN MACHINE IS LIKE BLOOD IN THE HUMAN BODY

Road Construction Leaders Launch Rahsta Expo 2024 in Delhi

14th RAHSTA (Roads and Highways Sustainable Technologies & Advancement) Expo - India's biggest road exhibition - will be held as a part 10th India Construction Festival 2024 at Jio Convention Centre, Mumbai, from October 9-10, 2024.

Scan to read

The who's who of the construction fraternity attended the RAHSTA launch event in New Delhi.
Top row (L-R): **Dr Jatinder Singh, Asst. Secretary General, PHD Chamber of Commerce and Industry; Sandeep Singh, Managing Director, Tata Hitachi Construction Machinery; Pratap Padode, Founder, FIRST Construction Council; Vipin Sondhi, Chairman, RAHSTA Expo Committee; Rajesh Menon, Director General, Society of Indian Automobile Manufacturers (SIAM); Akhilesh Srivastava, Road Safety Ambassador, International Road Federation;** and **Vijay Agrawal, Executive Director, Equirus Capital.**

Bottom row (L-R): **Dr Sohan Lal Swamy, Chairman, The Institution of Civil Engineers; Prof Satish Pandey, Principal Scientist, CSIR-Central Road Research Institute, Ministry of Science and Technology; Rajan Aiyer, Managing Director, Trimble; RK Pandey, former NHAI member and member of RAHSTA Expo Committee; Ashish Kumar Singh, CGM – Finance, National Highway Authority of India; Anand Sundaresan, Director, Ammann India; Subodh Dixit, Former Executive Director, Shapoorji Pallonji; Dheeraj Panda, Managing Director, Ammann India; Ankit Jain, CFO, Cube Highways Growth Advisors; Raman Kapil, President, Tata Projects; Satin Sachdeva, Founder & Secretary General, Construction Equipment Rental Association (CERA);** and **Lt Gen Harpal Singh, President, International Road Federation and former Engineer-in-Chief, Indian Army.**

The Ministry of Road Transport & Highways has constructed 12,349 km of national highways in 2023-24 - the second highest achievement! In 2020-21 a record 13,327 km had been constructed, the highest so far.
The experience of a well-constructed road is no accident but a badly constructed one can cause many," stated **Pratap Padode, Founder,** FIRST Construction Council, a pioneering infrastructure-driven council focused on advancing India's infrastructure development. Padode was speaking at the launch of a road show - **14th RAHSTA Expo,** which will be held from October 9-10, 2024, at Jio Convention Centre, Mumbai.

RAHSTA, which stands for Roads and Highways Sustainable Technologies & Advancement, is a dedicated event to the world of road construction equipment, technology, and sustainability.

Speaking at the launch, former Managing Director of Ashok Leyland & JCB, **Vipin Sondhi,** also Chairman of RAHSTA Expo Committee underscored the need for specialised platforms like RAHSTA Expo for the burgeoning road construction industry.

He said, "I believe the biggest opportunity in Indian infrastructure lies in road construction, which is evident to everyone. Over the last 10 years, there has been tremendous growth, and this trend is only going to

accelerate. Thus, in terms of infrastructure, every stakeholder has an opportunity to contribute for the right reasons. It's a promising business opportunity and sustainable for decades to come. Ultimately, citizens will be the biggest beneficiaries."

AK Singh, CGM – Finance, National Highway Authority of India, **R K Pandey** (former NHAI member and Member of RAHSTA Expo Committee), **S K Nirmal** (Secretary General, Indian Roads Congress, and Member of RAHSTA Expo Committee), **Prof Satish Pandey,** Principal Scientist, CSIR-Central Road Research, Ministry of Science and Technology, **Ankit Jain,** CFO, Cube Highways Growth Advisors, **Vijay Agarwal,** Executive Director, Equirus Capital and **Subodh Dixit,** Former Executive Director, Shapoorji Pallonji participated in a round table discussion on the new BOT proposals.

The launch function at PHD Chamber for RAHSTA Expo was attended by who's who of the infrastructure industry such **Lt Gen Harpal Singh,** (President, International Road Federation and former Engineer-in-Chief, Indian Army), **Akhilesh Srivastava** (Road Safety Ambassador, International Road Federation), **Sandeep Singh** (MD, Tata Hitachi Construction Machinery),

(Left) **Vinod Kumar Yadav, Director – Transport, NCC,** and **Pratap Padode.**

Rajesh Menon (Director General, Society of Indian Automobile Manufacturers), **Raman Kapil,** President, Tata Projects, **Anand Sundaresan,** Director, Ammann India, **Dheeraj Panda,** Managing Director, Ammann India, **Rajan Aiyer,** Managing Director, Trimble, **Satin Sachdeva,** Founder & Secretary General, Construction Equipment Rental Association, **Dr Swamy,** Chairman, The Institution of Civil Engineers and **Dr Ranjeet Mehta** (Executive Director of PHDCCI), among others.

"I believe that the RAHSTA expo will benefit all stakeholders – contractors, owners, lenders, and trade professionals such as architects and detailers – by helping them understand the importance of these technologies in their respective fields and projects. I am eagerly anticipating active participation in the expo and the opportunity to share and gain knowledge on how construction can be enhanced using digital technologies," said **Rajan Aiyer, Managing Director, Trimble**.

"We believe RAHSTA is the ideal platform for our presence, and we are confident in our participation in the upcoming expo scheduled for October," said **Anand Sundaresan, Director, Ammann India.** He added, "We predominantly specialise in road construction machinery, such as asphalt plants, concrete batching plants, pavers, and rollers, among others. Additionally, we offer ancillary equipment like supers. With the government placing significant emphasis on infrastructure development, there is a substantial demand for road construction machinery. Particularly noteworthy is the growth witnessed in the last year (2023-2024), with a surge in orders. Moreover, the construction of airports is underway, necessitating equipment for runway construction. We perceive immense potential and opportunity for growth within the industry."

Chai pe charcha: *(middle)* **Vivek Tomar, Business Head – Construction OEM and Mining, Gulf Oil Lubricants,** and *(right)* **Dheeraj Panda, MD, Ammann India.**

Said **Vinod Kumar Yadav, Director – Transport, NCC, and former Chairman, Railway Board**, "The RAHSTA expo will offer extensive information about the latest technology and methods for constructing high-quality roads. Currently, the challenge facing the roads industry is to uphold road quality and execute projects efficiently. RAHSTA will provide opportunities for everyone to learn about the latest worldwide technologies and equipment available, undoubtedly offering valuable insights to those involved in the roads sector."

"I congratulate the RAHSTA committee for this very good initiative. I believe it will provide an excellent platform for capital goods, consultant firms, equipment companies, and technology firms to converge. This meets a crucial need within the industry. The event also benefits older industries, as new technology and equipment continuously enter the market. These advancements are often cost-effective and, at times, eco-friendly. Thus, this platform is poised to play a significant role," said **Ashish Kumar Singh, CGM – Finance, National Highway Authority of India (NHAI)**.

"As far as roads are concerned, over the last decade, we have accomplished wonderful work, and this progress will continue at the same pace. However, to maintain this momentum, we need to make some improvements and sustain the rate of construction. We must focus on cost optimisation, sustainable development, and, most importantly, building safe roads. Regarding RAHSTA, we require a platform where all stakeholders—including academia, researchers, consultants, and government authorities—can collaborate. RAHSTA will provide them with a platform to achieve our common goals," said **RK Pandey, former NHAI member and Member of RAHSTA Expo Committee**.

Industry veterans: *(left)* **Anand Sundaresan, Director, Ammann India,** and **Vipin Sondhi, Chairman, RAHSTA Expo.**

Organised by the FIRST Construction Council, the RAHSTA Expo 2024, which will be held as part of 10th India Construction Festival, will bring together industry leaders, innovators, and stakeholders for two days of exploration, collaboration, and transformation.

Besides RAHSTA Expo 2024, the India Construction Festival 2024 will include the following:

- 14th India RAHSTA (Roads) Conference
- 12th Equipment India Awards
- 22nd Construction World Global Awards

Exhibitors can use RAHSTA Expo 2024 to showcase their construction machinery, building material machines, mining machines, and construction vehicles to a targeted audience of industry professionals. RAHSTA Expo will be an ideal platform to connect with key decision-makers, generate leads, and grow business in this rapidly expanding market.

Insightful discourse among industry titans: From L-R: **Sandeep Singh, Vipin Sondhi, Dheeraj Panda, Anand Sundaresan** and **Vivek Tomar.**

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Highways to Progress

India's road infrastructure has evolved through innovative public-private partnerships, technological advancements, and sustainability initiatives, driving economic growth and setting global standards.

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India's journey in transforming its road infrastructure is a tale of evolution, innovation, and collaboration, reflecting a significant shift from traditional government-led projects to a dynamic, inclusive framework involving public-private partnerships (PPPs). This transformation, which spans over three decades, represents a pivotal chapter in India's development, marking its transition into a modern economic powerhouse with a robust infrastructure at its core.

Traditionally, India's road infrastructure development was predominantly managed by the government with funding sourced from public coffers. As the Indian economy began to expand rapidly, the limitations of this approach became apparent, prompting policymakers to seek alternative models. This led to the adoption of PPPs, which became a cornerstone of India's strategy for infrastructure expansion, leveraging private sector efficiencies and capital to meet the growing demands of its economy.

Evolution of road procurement

RK Pandey, a former member of the National Highway Authority of India (NHAI)

The shift towards involving the private sector was driven by the need for specialised expertise in handling complex projects. **RK Pandey, a former member of the National Highway Authority of India (NHAI)**, notes that initially, the government managed road projects in-house. However, as projects increased in complexity, the necessity for external expertise became evident, leading to greater private sector involvement in both project preparation and execution. This shift not only enhanced the quality and efficiency of project delivery but also helped overcome resource constraints that the government faced.

During this period, private sector participation in road projects saw a remarkable increase from just 0.3 per cent of the total budget in 1992 to 42 per cent in 2012. The use of innovative financing models like the Hybrid Annuity Model (HAM) also played a crucial role in sustaining growth and driving efficiency within the sector.

Technological advancements

The adoption of advanced technologies has been a key feature of India's road sector transformation. **SK Nirmal, Secretary General, Indian Roads Congress (IRC)**, highlights the significant advancements over the past two decades. The government's focus on infrastructure development,

SK Nirmal, Secretary General, Indian Roads Congress (IRC)

supported by substantial funding allocations, has enabled the integration of modern tools such as digitisation in highway planning and the use of sustainable materials like waste plastic in pavement construction.

Technological innovations like Light Detection and Ranging (LiDAR) and drone surveys have revolutionised project planning and execution, positioning India as a leader in infrastructure innovation globally.

"Today, we're proud to report the construction of over 10,000 km of national highways in the last five years alone, with this year's tally surpassing 12,000 km. The Indian government has prioritised infrastructure development, allocating substantial funds amounting to around 2.7 lakh crore, nearly exhausting the entire sum by 2024," said Nirmal.

Environmental and safety considerations

Prof Satish Pandey, Scientist, CSIR-Central Road Research Institute

Addressing environmental impacts and enhancing road safety have been critical aspects of road infrastructure development. **Prof Satish Pandey, Scientist, CSIR-Central Road Research Institute**, points out the challenges of natural resource depletion, with projections indicating an annual consumption of 2.5 billion tonnes of natural aggregates for road construction by 2025. To combat these challenges, India has embraced road recycling technologies and the utilisation of industrial by-products like steel slag.

Safety remains a paramount concern, with organisations like the IRC developing stringent guidelines and standards to mitigate accidents through standardised road designs and rigorous safety audits.

Financial opportunities

Ashish Kumar Singh, CGM – Finance, National Highway Authority of India (NHAI)

The evolving landscape of India's road infrastructure has also opened doors to numerous financial opportunities, attracting global investors. **Ashish Kumar Singh, CGM – Finance, National Highway Authority of India (NHAI)**, discussed how transparency and strategic planning have enhanced investor confidence, with investments expected to surpass significant figures. Lessons from past experiences, such as the National Highway Toll Collection controversy, have been instrumental in refining procurement frameworks and enhancing transparency.

"As we look to the future, plans are underway for the development of 50,000 km of access-controlled highways, requiring a strategic mix of funding models. While challenges persist, our experience from past initiatives informs our approach to refining agreements, enhancing transparency, and incorporating sustainable practices. Moving forward, we're committed to environmental responsibility, exploring initiatives to integrate sustainable technologies and practices into our projects. This includes considering mandatory inclusion of sustainable elements in project designs and exploring avenues for carbon credit generation and trading", added AK Singh.

Ankit Jain, CFO, Cube Highways Growth Advisors, adds that transparent project documentation since 2013-14 and successful programmes like toll-operate-transfer (TOT) have attracted investors with clean, diverse assets. Addressing revenue and traffic risks adequately is crucial for maintaining this investor confidence and ensuring the commercial viability of projects.

Ankit Jain, CFO, Cube Highways Growth Advisors

He said, "NHAI deserves credit for transparent project documentation, boosting investor confidence since 2013-14. The well-regarded TOT programme attracts investors with clean, diverse assets. Lessons from past aggressive bidding in 2012-13 highlight the importance of transparent assumptions on GDP, aligning expectations and fostering trust. To enhance commercial viability, extending concession periods beyond 20 years is suggested, allowing for longer construction periods. Streamlining concession agreements between different models like TOT and build-operator-transfer (BOT) would ease investor participation."

Challenges in road construction

Subodh Dixit, Former Executive Director, Shapoorji Pallonji

Subodh Dixit, Former Executive Director, Shapoorji Pallonji, highlighted key challenges in road construction, including safety hazards and inefficient project execution. By prioritising safety measures and fostering genuine partnerships, India can navigate complex construction landscapes effectively.

The construction process for road projects is intricate, spanning different geographical regions and states, each with its own set of challenges. Issues such as land acquisition, local politics,

environmental concerns, and varying interests have complicated execution. Continuous refinement of the process, along with effective risk-sharing mechanisms, is crucial for sustainable project success.

Furthermore, there is a need to address traffic projections and revenue risks effectively. Initiatives like infrastructure investment trusts (InvITs) and TOT models offer promising revenue streams and attract diverse investors. Striking a balance between risk and reward is essential to sustain investor confidence and secure project success.

The road ahead

India's transformative journey in road infrastructure is a testament to the power of innovation, collaboration, and strategic foresight. By leveraging technological advancements, embracing sustainable practices, unlocking financial opportunities, and continuously addressing construction challenges, India is not only enhancing its connectivity and efficiency but is also setting a global standard for infrastructure development. This ongoing evolution ensures that the nation's infrastructure is robust, sustainable, and capable of supporting its economic aspirations for generations to come.

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Study Proves Viability of Electric Construction

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Volvo CE is one of the collaborators which has played a key role in the research project, by project managing the tests and providing electric machines in various sizes and models.

The L25 Electric compact excavator working at Drottningtorget in central Gothenburg. Photo: Electric Worksite.

Electric construction machines equal diesel machines in performance – with the added advantage of zero exhaust emissions and a better working environment. What is more, the conditions to support a smooth transition to electric construction sites and emission-free contracting are now here. This is confirmed by a multi-partner study, "Electric Worksite", which has mapped the infrastructure needs for electric machines through testing at real-life worksites in Gothenburg, Sweden.

Societies today are transforming towards more sustainable city planning. Fossil-fuel free construction plays a major part in accelerating that shift and making progress towards national and global climate, environment, and air quality goals. The electrification of the construction sector will greatly contribute to a reduction in greenhouse gas emissions, noise pollution, and other harmful emissions, ensuring it plays a central role in sustainable community building.

In parallel with rising demand for emission free construction contracting and a growing market for electric machines, the need for collaboration between all players across the value chain is also increasing to ensure the infrastructure is up to par for the change. This puts new demands on the energy supply and electrical system, among other areas.

Collaboration and competence to accelerate the shift

The goal of the Electric Worksite project was for several players across the supply chain to come together to gain an important understanding of the opportunities and needs when putting to work electric equipment in urban applications. The project, which recently presented its final results, has had a clear focus on the system perspective, testing electric machines, energy storage and charging infrastructure in different urban sites to clarify the varied needs across interconnected technical and organisational systems.

The tests were carried out in real-life construction sites with electric-powered wheeled and crawler excavators, wheel loaders and load carriers, weighing between 3.5 to 30 tonne. Some of which were both battery-powered and others cable-connected. The study concluded that all tests have been successful, with the main learnings being:

- Electric construction machines can perform the same work to the same standard as fossil-fuelled variants in urban construction projects.
- Workers in and around electric machines experience several positive effects in the handling of machines and the working environment.
- Like most construction projects in general, the success of electrification is based on foresight, planning, and flexibility.
- New requirements for power supply are solved based on machine type and available electricity - such as electrical cabinets, mobile charging stations, cable-connected machines and potentially also energy storage units.
- End customers need to be made aware of new opportunities and challenges with electric machines, as well as of existing business conditions and contracting requirements towards contractors and subcontractors.

Volvo CE's large 30-tonne grid-connected electric excavator formed part of the Electric Worksite tests.

Volvo CE is one of the collaborators which has played a key role in the research project, by project managing the tests and providing electric machines in various sizes and models, as well as technical solutions for charging such as mobile energy storage and cable management systems.

Driving progress with contracting demands

Municipalities and government bodies play an important role in enabling and driving the transition, for example by setting requirements for emission-free vehicles and machinery in the procurement of construction work, and by establishing clear city development goals for all societal players to work towards. The City of Gothenburg was keen to be involved in this project, seeing that there are many benefits in accelerating electrification within construction.

"As the City of Gothenburg is a major procurer of construction and civil engineering contracts, we can and want to be involved in leading the transition towards an emission-free industry. We also see many other benefits for both the surrounding environment and the working environment, such as reduced noise and improved air quality," says **Peter Lindgren**, business developer for Electrified Transports at the Environmental Management Department, City of Gothenburg.

For the construction contractor NCC, the Electric Worksite has meant evaluating opportunities and challenges with electrification, together with other actors in the value chain.

"Once again, we can conclude that the most important take-away is that we need to get involved early in the project to plan for electrification – because the opportunities to influence emissions are greatest in the planning stage. To scale up the use of electric construction machines and vehicles, increased competence is also needed throughout the value chain. We also need electric machines to be demanded in the contracting by customers, and that they set requirements that drive the development forward," says **Pernilla Löfås**, sustainability manager, NCC Infrastructure.

Building strong foundation

Scan to read

The increasing number of construction projects is driving a surge in demand for piling, drilling, and deep foundation equipment.

Foundation equipment forms the cornerstone of construction projects, particularly those involving large structures like skyscrapers, bridges, and heavy industrial plants. The choice of foundation equipment is crucial as it must ensure stability, safety, and longevity of the structure.

The demand for piling, drilling and deep foundation equipment is on the rise, thanks to the greater number of construction projects necessitating such equipment being rolled out. Even better news is the fact that Indian contractors are demanding not just conventional technologies but newer piling and deep foundation technologies, which is spurring the sector to unprecedented heights.

Indian contractors are not only increasingly adopting new technology but using equipment in an innovative manner. For instance, Geo Foundations & Structures, Chennai, is using two Mait HR180 hydraulic piling rigs, each fitted with a 60-m kelly bar, to drill bores in the seabed from a moving gantry for a jetty for L&T Shipyard.

Earlier, drilling in the seabed was done using hydraulic rigs but instead of a moving gantry the rigs were mounted either on a jack-up platform or floating barges. This system is at least five times faster than drilling from the gantry using conventional tripod rigs as it saves time and financial resources (owing to faster completion).

The market size of the foundation equipment in India is estimated to be Rs 150-170 crore. The size of the market is well–expected to grow up with number of port projects lined up for green field and brown field expansion. Growth would also be catered by underground metro railway projects added with overall development of core infrastructure and real estate projects lined up.

Policy paralysis has made a major dent in demand for foundation equipment. A sluggish mood prevails over this industry segment. But the silver lining is that slow times are making construction companies more conscious about productivity and demanding of latest technologies.

The demand for foundation equipment in India is backed by continuous effort for modernisation of infrastructure. Major demand for foundation equipment comes from construction projects such as roads, metro, railway, power plants, special economic zone, mining and water and

irrigation sector.

Sany Heavy Industry (India), MAIT India, Bauer Equipment India, Casagrande (India) Piling & Geotechnical Equipment, Thyssenkrupp, PRD Rigs, Schwing Stetter, Ashok Industries and GeTech Equipments are some of the players competing in the Indian market on various grounds such as customer base, geographical presence, technology, repair and maintenance, product portfolio, etc.

Karan Chechi, Research Director, TechSci Research, says, "Several government initiatives such as development of urban infrastructure including metro rail projects, ports, industrial corridors and freight corridors are anticipated to boost infrastructural development in India. The focus of this will be to improve the connectivity by train, air, water and roadways. Additionally, the focus on smart buildings is constantly increasing in India, which is majorly attributed to the rising population, increasing urbanisation and improving lifestyle. Also, demand for affordable housing is increasing with rising income levels. All these are expected to provide a promising future for the foundation equipment market."

Karan Chechi
Research Director,
TechSci Research

The development of stronger, more durable materials is enhancing the capabilities of foundation equipment.

Market trends in foundation equipment

Automation and Robotics: Automation is revolutionising the foundation equipment sector. Robotic equipment can perform repetitive tasks more efficiently and with greater accuracy than human-operated machines. This not only speeds up the construction process but also reduces labor costs and improves safety by minimising human error.

Eco-friendly technologies: As global awareness of environmental issues grows, the demand for sustainable construction practices is increasing. Manufacturers are now producing foundation equipment that emits fewer pollutants and uses less energy. This equipment often employs electric or hybrid engines and uses advanced technologies to reduce noise and carbon footprints.

Advanced materials and techniques: The development of stronger, more durable materials is enhancing the capabilities of foundation equipment. For example, new steel alloys and composite materials are being used to produce lighter, more robust, and more corrosion-resistant machines. Additionally, innovative techniques such as Continuous Flight Auger (CFA) and drilled shafts are improving the efficiency and effectiveness of foundation construction.

Data integration and IoT: The integration of the Internet of Things (IoT) in foundation equipment allows for the real-time monitoring and control of machinery. Sensors embedded in equipment can track everything from fuel consumption and operational hours to stress levels and maintenance needs. This data is invaluable for improving operational efficiency and predictive maintenance.

Increased modularisation: Modular construction techniques are becoming more prevalent in the

foundation equipment industry. These techniques involve preassembling components of the equipment in a factory, which are then transported and quickly assembled on-site. This method reduces construction time, waste, and overall costs.

"The demand for foundation equipment in India is cyclic in nature, it will grow for two to three years at the rate of 20-25 per cent and then for next one to two years, it will remain flat. However, the major demand of foundation equipment will come from metros, MTHL and other important government projects", says **Sanjay Saxena, COO – Sales , Marketing and Customer Support, Sany India & South Asia.**

Sanjay Saxena
COO – Sales , Marketing and Customer Support, Sany India & South Asia

Vast product range

In foundation equipment, Sany Heavy Industry India offers small sized rigs for soft soils SR155 and SR205; mid-sized and higher depths - SR235, SR265, and SR285; and big sized and for hard rock SR365, SR405, SR445, and SR485. "We already have a vast range of piling rigs, however, to serve our customers better we will be introducing some more models in near future like SR185, SR215, SR245, SR335 and micro piling," adds Saxena.

Sany rigs are generally heavy in weight which increases the stability while operation. Also, crowd force of Sany rigs is maximum, which helps us cut through the rock very easily. The company uses renowned engines in its piling rigs, which help increase its efficiency by almost six per cent more than its respective competition. This also helps in low fuel consumption while operating rigs. We use auto calibration mode which helps in accurate vertical drilling.

Types of foundation equipment

Piling rigs: Piling rigs are essential for driving piles into the soil to support the foundation of a structure. They are available in various types based on their operation mode, including hydraulic, diesel, and vibratory hammers. Each type is suited for different soil conditions and project requirements.

Drilling rigs: Used for creating holes for cast-in-place piles, drilling rigs are vital for constructing deep foundations. These rigs vary from small, mobile units for tight spaces to large, heavy-duty machines capable of reaching great depths.

Excavation equipment: This includes a range of machinery such as excavators, backhoe loaders, and trenchers. These are used for digging, removing, and relocating soil or rock from the foundation site. Modern excavation equipment often features enhancements such as GPS and real-time data capabilities to increase precision and efficiency.

Crane and lifting equipment: Cranes are pivotal in moving heavy foundation elements like steel cages and concrete blocks. Lifting equipment must be robust and reliable to handle the significant weights involved in foundation construction.

MAIT rigs are most preferred and coveted equipment because of ease of operation and maintenance, coupled with unmatched service as well as spare parts support. MAIT rigs are multipurpose equipment that can be used for different foundation techniques like bore piles, CFA piles, diaphragm walls, stone columns, driven piles, cased CFA piles, SDA piles etc.

MAIT HR180 and HR260 are the most popular rig models depending upon the soil profile, which are suitable for drilling 2 m diameter and 40 m depth. Currently, there are more than 500 units of HR180 and more than 40 units of HR260 rigs operational with Indian customers.

Casagrande piling rigs have found applications in many construction projects across the country. Prime among this includes, construction of underpass section in New Delhi by Valecha Engineering. The company is using a Casagrande B125 with a KRC1 Diaphragm Wall Kelly Bar. The piling rigs have been finding usage in construction of DMRC projects.

Challenges

The initial investment for advanced foundation equipment can be prohibitively high, especially for small to medium-sized enterprises. This can limit their ability to adopt newer technologies and remain competitive.

As equipment becomes more technologically advanced, the need for skilled operators increases. However, there is a notable shortage of trained personnel in the construction industry, which can hinder the deployment of sophisticated machinery.

Construction sites are governed by strict regulations aimed at ensuring safety and environmental compliance. Adhering to these regulations can be challenging, especially when introducing new technologies or equipment.

Conclusion

The foundation equipment market is undergoing significant transformations driven by technological advancements, environmental concerns, and evolving construction practices. While the sector faces challenges such as high costs and regulatory complexities, the trends indicate a move towards more efficient, safe, and sustainable construction methods. As these trends continue to develop, they promise to reshape the landscape of foundation construction, making it smarter, faster, and greener.

Revolutionising construction

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Construction companies can schedule proactive maintenance, preventing breakdowns and minimising unplanned downtime.

In the ever-evolving landscape of construction, technological innovations continue to shape the industry, and at the forefront of this revolution is the integration of Artificial Intelligence (AI) in construction equipment. Exciting innovations could be noticed in AI-driven construction equipment with multitude of advantages to the construction sector. Among many other things we could notice that the predictive maintenance is the centre of focus as on date.

Innovations in AI-driven CE

The integration of AI into construction equipment marks a revolutionary leap forward in the industry. Traditionally, construction equipment relied on manual operation, often limited by human capabilities. However, AI-driven equipment brings a new level of intelligence, learning, and adaptability to machinery. From excavators to bulldozers, these machines are now capable of real-time analysis, decision-making, and optimisation.

One notable innovation is the use of AI algorithms to enhance the performance of construction equipment. These algorithms can analyse a plethora of data in real-time, including soil conditions, material weight and environmental factors, to optimise the equipment's operations. The result is not just improved precision but also increased safety and efficiency in construction processes.

Advantages of AI-driven CE

The advantages of incorporating AI into construction equipment are manifold, offering benefits that go beyond traditional methods.

- **Precision and efficiency**: AI-driven equipment, through its ability to analyse data and adapt in real-time, significantly improves precision in construction tasks. Whether it's excavating, lifting, or navigating complex terrains, these machines operate with heightened accuracy. This, in turn, translates into increased efficiency as tasks are performed more swiftly and accurately.
- **Safety enhancement**: With AI, construction equipment becomes safer and more reliable. The ability to assess environmental conditions and adjust operations accordingly minimises the risk of accidents. Autonomous construction vehicles, guided by AI, can navigate through construction sites with enhanced safety, avoiding obstacles and optimising routes.
- **Resource optimisation**: AI algorithms can analyse data on material usage, equipment performance, and workforce efficiency to optimise resource utilisation. This data-driven approach empowers construction companies to make informed decisions, ensuring that resources are allocated where they are most needed. This, in turn, contributes to project cost-effectiveness.
- **Operational adaptability:** AI-driven equipment adapts to changing conditions, making it suitable for a variety of construction projects. Whether it's a large-scale infrastructure project or a more nuanced task, these machines can adjust their operations to meet specific project requirements.
- **Reduced downtime:** Unplanned downtime is a significant concern in construction projects, often resulting in delays and increased costs. AI addresses this challenge by proactively identifying potential issues and optimising maintenance schedules. The result is reduced

downtime and enhanced project continuity.

Power of predictive maintenance

One of the standout features of AI-driven construction equipment is its ability to usher in a new era of maintenance practices – predictive maintenance. Traditionally, maintenance was reactive, with repairs conducted after a piece of equipment had already failed. This approach often led to costly downtime and repairs.

AI changes the game by introducing predictive maintenance, a proactive strategy that leverages the power of data analytics and machine learning to forecast potential issues before they become critical. Embedded sensors collect a wealth of data on various parameters such as temperature, vibration, and usage patterns. AI algorithms then analyse this data to identify patterns indicative of wear and tear or potential failures.

By foreseeing maintenance needs, construction companies can schedule proactive maintenance, preventing breakdowns and minimising unplanned downtime. This not only increases the lifespan of the equipment but also results in substantial cost savings for construction projects.

Real-world examples

Several real-world examples showcase the impact of AI-driven construction equipment and predictive maintenance. For instance, a construction company utilising AI-enabled cranes experienced a significant reduction in operational errors and accidents. The AI algorithms continuously assessed factors such as wind speed, load weight, and equipment condition, adjusting crane operations in real-time to ensure optimal safety and efficiency.

In L&T, about 13,000 critical construction equipment are IoT enabled and AI/ML based data analytics helping in improvement of productivity and reduction in operational errors and accidents.

Also, in 3D machine control technology, take levelling for instance — a machine control system enables grading tractors to compare a digital grading map to the position of the blade and cut it to the proper elevation and position on the job site.

In another example, a fleet of AI-driven autonomous construction vehicles was deployed on a large infrastructure project. These vehicles navigated the construction site with precision, avoiding obstacles and optimising routes. The result was not only improved efficiency but also enhanced safety, as the vehicles seamlessly adapted to the dynamic environment.

Challenges and future considerations

While the advantages of AI-driven construction equipment and predictive maintenance are clear, challenges exist. Data security is a critical concern, especially considering the sensitive information generated and analysed by these systems. Robust cybersecurity measures must be in place to protect against potential breaches and unauthorised access.

Moreover, the initial investment required for implementing AI technology may be a barrier for some construction companies. However, it's essential to view this as a strategic long-term investment that pays dividends through improved efficiency, reduced maintenance costs, and overall project success.

Looking ahead, the future of AI in construction equipment holds even more promise. As technology continues to advance, we can anticipate even more sophisticated AI algorithms, capable of autonomous decision-making and seamless adaptation to dynamic construction environments. The integration with other emerging technologies, such as the Internet of Things (IoT) and advanced robotics, will further amplify the capabilities of AI-driven construction equipment.

Conclusion

In conclusion, the innovations in AI-driven construction equipment represent a significant leap forward for the construction industry. The advantages of precision, efficiency, safety enhancement, resource optimisation, and reduced downtime are reshaping the way construction projects are executed. The incorporation of predictive maintenance, powered by AI and machine learning, ensures that equipment operates at its optimal level, minimising disruptions and maximising longevity.

As construction companies embrace these technologies, they position themselves at the forefront of industry innovation, ready to tackle the challenges of tomorrow's infrastructure projects. The marriage of AI and construction equipment is not just a technological leap; it's a transformation that paves the way for a more efficient, sustainable, and technologically advanced future in construction. The construction site of tomorrow is not just a place where structures are built; it's a dynamic ecosystem where AI-driven equipment collaborates seamlessly with human expertise to create tomorrow's world.

About the authors:

SP Rajan is Head, Plant & Machinery at Larsen & Toubro. Rajan is a Mechanical engineer, who has been associated with construction industry for over 35 years. He is currently heading Competency centre involving functions like Plant & Machinery, MEP, AGL, precast, erection and fabrication functions of RBF business unit.

Amit Singh is Digital Officer at Larsen & Toubro. With 12+ years of experience in setting up startups in India and Bahrain, Singh has helped various industries such as construction, telecom, agriculture, retail etc. for adopting new age technologies to improve productivity and transparency. In his current role with L&T construction, he has led the Digital Initiatives at MAHSR C6 ($1 billion project).

POWER UNDER PRESSURE

Hydraulic hoses are the lifelines of construction equipment, powering machines to move earth, lift loads, and shape our urban landscapes.

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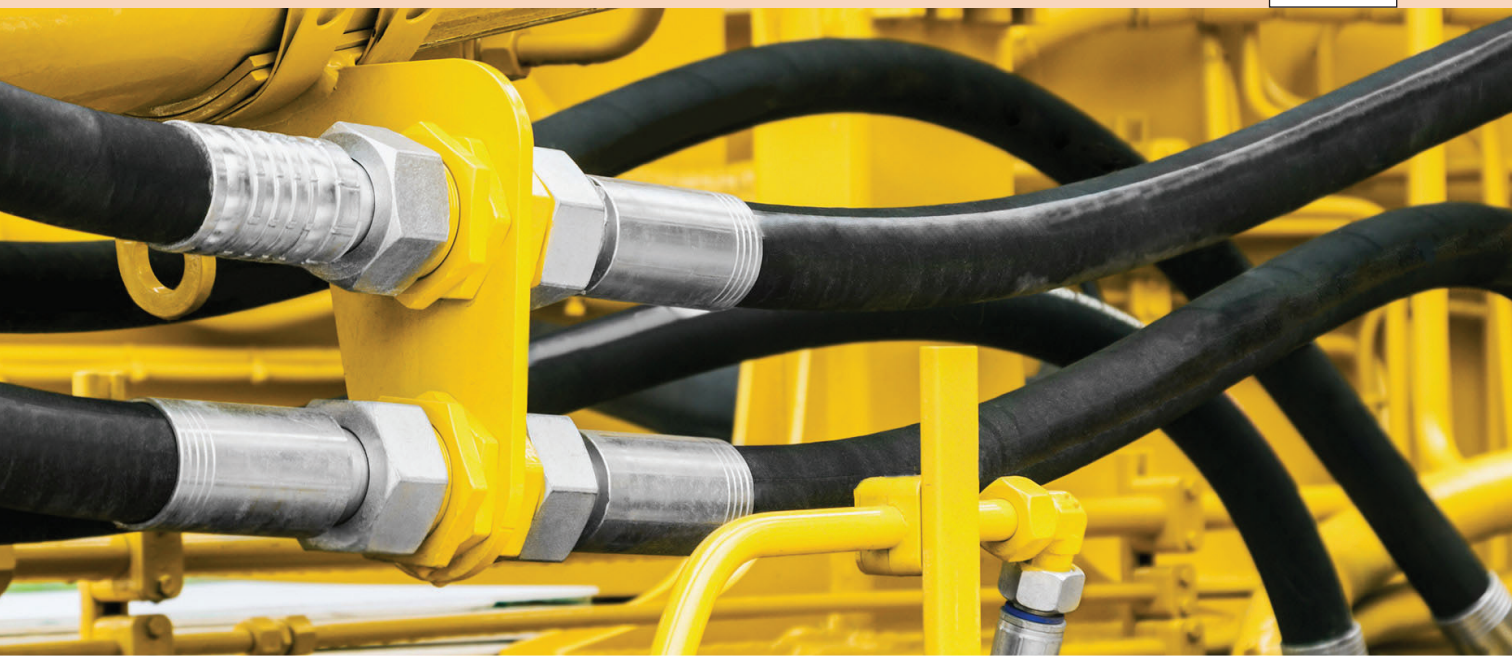

In the vibrant landscape of India's construction sector, the hydraulic hose industry plays a pivotal role in powering and enabling the nation's infrastructure ambitions. As India continues its march towards modernisation and urbanisation, the demand for hydraulic hoses in construction equipment, agriculture machinery, and industrial applications is witnessing steady growth.

India's ambitious infrastructure projects, including highways, metro rail networks, and smart cities, are driving the demand for construction machinery equipped with hydraulic systems. As the government allocates substantial investments in infrastructure development, the need for reliable hydraulic hoses to power these machines is escalating.

With agriculture being a cornerstone of India's economy, the mechanisation of farming processes is gaining momentum. Hydraulic hoses play a vital role in modern agricultural machinery such as tractors, harvesters, and irrigation systems, contributing to increased agricultural productivity and efficiency.

India's burgeoning manufacturing sector, coupled with the growing adoption of automation and industrial machinery, is fueling demand for hydraulic hoses in various industrial applications. From automotive manufacturing to material handling, hydraulic systems are integral to industrial processes, driving the need for high-performance hoses.

With safety and efficiency becoming paramount concerns in the Indian construction and industrial sectors, there is a growing emphasis on the use of high-quality hydraulic hoses that comply with international standards. Manufacturers and suppliers in the Indian market are responding by offering a wide range of certified hoses designed to meet stringent safety requirements.

Competitive landscape

In the highly competitive Indian hydraulic hose market, several domestic and international players vie for market share and customer loyalty. Leading multinational companies such as Parker Hannifin, Eaton Corporation, and Gates Corporation have established a strong presence in India, leveraging their extensive product portfolios, global expertise, and distribution networks to serve diverse industries.

At the same time, domestic

players such as Polyhose India, Super Hoze Industries, and Indo-Maksson Automotive are making significant strides in the market, offering indigenous manufacturing capabilities, localised support, and competitive pricing.

The Indian hydraulic hose market is experiencing significant growth, fuelled by several key factors such as the expanding construction and manufacturing sectors, along with the introduction of advanced agricultural technologies. Additionally, a major driver for the industry is the growing demand for dredging services in both major and non-major ports across the country. The dredging sector's importance is further highlighted by recent efforts to promote local manufacturing through initiatives like Make in India and the government's focus on enhancing the Indian maritime sector.

The Indian market for hydraulic hose is segregated on the basis of product type and industry. Based on the product type, the market is further classified into articulated, reinforced, coiled, and other (corrugated). The reinforced segment is projected to have a considerable share owing to the growing application in various industries such as construction and mining. Based on the industry, the Indian hydraulic hose market is further segmented into agriculture, construction and mining, manufacturing, and others.

The requirement of hydraulic hoses for high-pressure hydraulic oil lines in agriculture, machine tool and construction industry are likely to contribute to the growth of the market.

Emerging trends

Recognising the diverse needs of Indian industries and applications, leading hydraulic hose manufacturers are offering customised solutions tailored to local requirements. From specialised hose designs to localised production facilities, companies are adapting their offerings to cater to the unique demands of the Indian market.

The adoption of e-commerce platforms and digitalisation initiatives is transforming the procurement process in the Indian hydraulic hose industry.

The Indian hydraulic hose industry is witnessing a wave of technological advancements aimed at enhancing hose performance, durability, and efficiency. Innovations such as advanced materials, precision manufacturing techniques, and IoT-enabled monitoring systems are reshaping the landscape, enabling users to optimise hydraulic system performance and minimise downtime.

With increasing awareness of environmental sustainability, there is a growing demand for eco-friendly hydraulic hoses that minimise environmental impact. Manufacturers are investing in research and development to develop hoses made from renewable materials, as well as recyclable and biodegradable alternatives, to align with India's sustainability goals.

The adoption of e-commerce platforms and digitalisation initiatives is transforming the procurement process in the Indian hydraulic hose industry. Online marketplaces and digital catalogs offer customers greater convenience, transparency, and access to a wide range of products, driving efficiency and streamlining supply chain operations.

Safety

Lack of awareness among customers about a hose assembly may lead to premature failure. 'The awareness of the importance of safety in hydraulic hoses has increased significantly and customers are preferring quality products.

Most of the leakages happen at the interface of the hose and coupling, but some people resist changing, preferring local fittings available in the market at cheaper prices over a validated coupling from the manufacturer. Gates offers a high-performance and safe hose and coupling system, which we insist our customers buy to get maximum output and to reduce downtime. It is always preferable to buy fittings directly from hose manufacturers, which are manufactured and validated as per industry standards for leak-free performance.

Conclusion

As India propels itself towards a future of economic growth and industrial progress, the hydraulic hose industry stands at the forefront, powering the nation's infrastructure aspirations and industrial ambitions. With a keen focus on innovation, customisation, and sustainability, the Indian hydraulic hose market is poised for continued growth and evolution. By embracing emerging trends, harnessing technological advancements, and fostering collaboration between industry stakeholders, India's hydraulic hose industry can chart a course towards a more resilient, efficient, and sustainable future.

MASTERING HYDRAULIC HOSE SELECTION

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Choosing the right hydraulic hoses is critical for system performance and safety.

With a new hydraulic machine design, or with a machine that has undergone a rebuilding process, there comes the moment when it is time to specify and install the hoses that conduct fluid from point to point throughout the system.

While the main functions of a machine and perhaps the most clever aspects of its design are likely contained within the mechanical works including the valves and actuators, the required hoses are not minor accessories. Careful thought and consideration are needed in order to make the best hose selection.

While the inside diameter and the working pressure rating of a hose are typical factors to start with, the outer diameter and the weight of a particular hose model are often critical on mobile machines.

A press in a factory setting or a mining drill maker may be quite concerned with the expected life of a hose as indicated by the pressure impulse cycle rating. Impulse cycles are sudden on-off pressures that cause stress to a hose. The test is typically conducted with pressure impulses at 133 per cent of the working pressure rating. A rating of 200,000 cycles is considered minimal, with 1,000,000 cycle products available for those who wish to pay for them.

Many readers might be accustomed to selecting a different hose product line for larger-diameter applications. Typically, the working pressure decreases as the hose diameter gets larger within a single product line. A hose manufacturer may also offer a convenient single-pressure option where all diameters within a particular product line have the same working pressure rating.

The types of fittings to be used, the nature of the fluid, abrasion resistance, the flexing cycles of a hose, and a range of installation challenges all add to the list of factors to be considered.

Objective information concerning the properties and construction of the common 100R-series hose can be found in the standard, SAE 517. Recommended Practices for Hydraulic

Hose Assemblies, covered under SAE J1273, provide a wealth of advice on installation and on wear/maintenance issues. If you've seen the Society of Automotive Engineers (SAE) approval markings on hoses and have wondered what they mean, simply purchase the matching standards and practices documents from the www.sae.org website. For those who work with ISO standards, similar documents are available from the ISO website.

Manufacturers have moved to a reinforcement wire with an oval cross-section as opposed to a round, offering additional outside diameter and hose weight savings.

Important words about safety

It shouldn't need to be said that a hose burst failure is always a catastrophic incident. In the best-case scenario, a hose failure might cause production downtime or environmental contamination concerns. In a worse scenario, persons could be seriously injured or even killed.

Using economics as the only or primary hose selection criteria can easily leave human risks at a very high level. A colleague recently contacted me regarding concerns about the pressure ratings of hydraulic hoses in use at the plant where he had just been hired on. He noticed that the normal system pressure was routinely at levels that were slightly higher than the working pressure rating of the hoses. Management assured him that with the known burst pressure rating for the hose at several multiples above the working pressure rating, there was no cause for concern and that the added expense for a higher-rated hose was unnecessary. This is one example of a very poor hose selection process. In this case, safety was being neglected.

Never use hoses regardless of their age if you are aware of incidents of system overpressuring that have exceeded the normal working pressure. Cracked, blistered, or abrasion-worn hoses should never be put back into service.

What is "hose whip?"—Hose whip, (a shorter name for what happens if a hose or fitting breaks, and the hose then flails freely) can easily dismember or kill. Most hydraulic hoses are made up of layers of wire braid and include steel fittings on the end of the hose assembly. Imagine getting hit by a steel cable moving at high speed, and you'll have an idea of the damage a hydraulic hose can do if it breaks away. In the case of compressed fluid, the distance travelled and acceleration rate adds to the carnage.

Correct selection for your application

Whether you are replacing an existing hose, or building a new system, you'll need to select a hose of the correct pressure rating, diameter, and length and with the best material properties for your application. Here are a few factors to consider carefully.

Pressure rating— A hose must be chosen with a maximum working pressure (WP) rating that is at or preferably above the normal maximum hydraulic system pressure. Momentary pressure surges for a hydraulic system are not to exceed this pressure rating. Hose fittings that are rated below the working pressure of the selected hose cause the entire hose assembly to be derated to the lower rating of the fittings.

Hoses typically become heavier for any given length, with added layers of reinforcing wire, as the working pressure requirement increases.

Many of the hose models in the common 100R series have lower working pressure ratings at the larger diameters. Often a -16 (1 in.) hose has a working pressure that is half of the rating for the -8 (½ in.) hose in the same product line. This can be inconvenient and costly for a machine manufacturer. Look for SAE 100R17 series compact hoses to find a constant working pressure of approximately 3000 psi for all available diameters, or consider ISO 18752-rated hoses for a constant working pressure of approximately 4000 psi for all available diameters. Many of the ISO 18752-rated hoses also feature test impulse pressure cycle ratings of 500,000.

Burst pressure is a built-in safety factor for a hydraulic hose. A hose manufacturer verifies the burst pressure in a destructive test. The SAE standard J517 for the common series of 100R hydraulic hoses also categorise leakage and also hose separation from hose fitting, as burst pressure failures. The hose does not have to violently break apart completely to have suffered a burst failure. The burst pressure rating of a hydraulic hose if often 4x the working pressure rating or greater.

Inside diameter—it's very important to use a hose of the correct inside diameter. If the diameter is too small for a given rate of flow, the linear velocity will be too high. Excessive velocity will translate into friction and

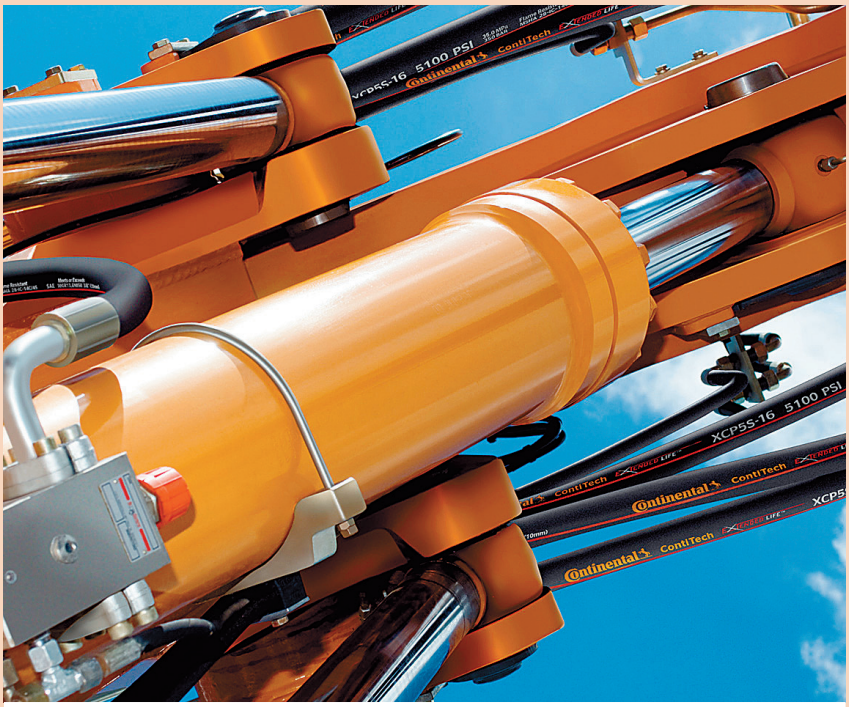
turbulence, which when combined will surely result in noticeably higher system pressure and heat.

Hose manufacturers typically supply a nomograph or a table that allows for the easy calculation of the optimum diameter for a given flow rate and hose length. Long hose lengths require a larger inner diameter to avoid excessive restriction and friction.

Length — correct hose length needs to allow for bending and flexing as a machine moves and articulates, and to make sure that no undue stress is caused at the crimped fittings. A hose that connects in a perfectly straight path from one component to another may shrink in length up to 4 per cent at maximum pressure. Allow this extra length when making up the hose assembly. An excessively long hose adds a restriction to flow, increasing system pressure and reducing system efficiency.

Material — next, considers the conditions that a hose will operate under. The outer layer or cover of a hose can come in a variety of synthetic rubber materials. Some compositions can help with applications where abrasion may occur but may not bend as readily. Neoprene is one popular synthetic cover material that remains flexible across a wide range of temperatures, yet handles abrasion well. Most rubber hoses perform reasonably well from –40°C (–40°F) to 100°C (212°F). Look for the date of manufacture code on any rubber hydraulic hose that you are considering. The maximum shelf life is generally ten years at the most.

Where weight and space are a concern, as is often the case with mobile machines, look for hoses with a thin-wall inner tube. Advances in synthetic rubber compounds allow for higher wall strength allowing for a final product with a smaller outside diameter. Some manufacturers have moved to a reinforcement wire with an oval cross-section as opposed to a round, offering additional outside diameter (O.D.) and hose weight savings. These smaller O.D. hoses, referred to as compact models in many catalogues, also offer much tighter bend radiuses.



Thermoplastic hoses are generally much lighter than rubber hoses.

Thermoplastic hoses are generally much lighter than rubber hoses. The inner tube of copolyester or nylon is typically braided or spiral wrapped with a synthetic reinforcement fibre instead of steel. Synthetic fibre is also needed for electrically non-conductive (orange cover), aerial lift hoses. In many cases the outer cover of thermoplastic hoses will be polyurethane and provide a longer shelf life than rubber, better flexibility at low temperatures such as –60°C (–75°F), and higher resistance to UV and chemicals.

Thermoplastic hoses are not always available for diameters above one inch.

Conclusion

Using a hose with a working pressure rating that is too low is a very serious safety concern. Always err on the side of caution by choosing a hose with a working pressure rating that provides a safety margin. Burst pressure ratings should never be used to deliberately allow a system to work above the working pressure rating. If you are concerned about pressure surges, look for hoses with a high impulse cycle rating.

When choosing a hose you should consider the pressure rating, temperature range, cover material and bend diameter among other factors. Before assembling a rubber hydraulic hose, clean it internally! Use brackets and supports wherever required to maintain the best hose position, and to avoid unnecessary flexing. Ensure that the hose is never forced into a tighter bend than the minimum radius allowed. Consider thermoplastic hoses for lightweight options and for tighter-than-normal bend radiuses.

Finally, if you are not sure how to objectively sort through the information provided by a sales rep, purchase and read the standards documents (SAE, ISO, ANSI, DIN, etc.) for the types of hoses you are considering.

ABOUT THE AUTHOR:
Carl Dyke is from CD Industrial Group, Inc.

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AI & ML: REVOLUTIONISING BUSINESS OPTIMISATION

In the realm of advanced technology like deep learning, Wipro Hydraulics explores different methods to help understand data better and make accurate predictions.

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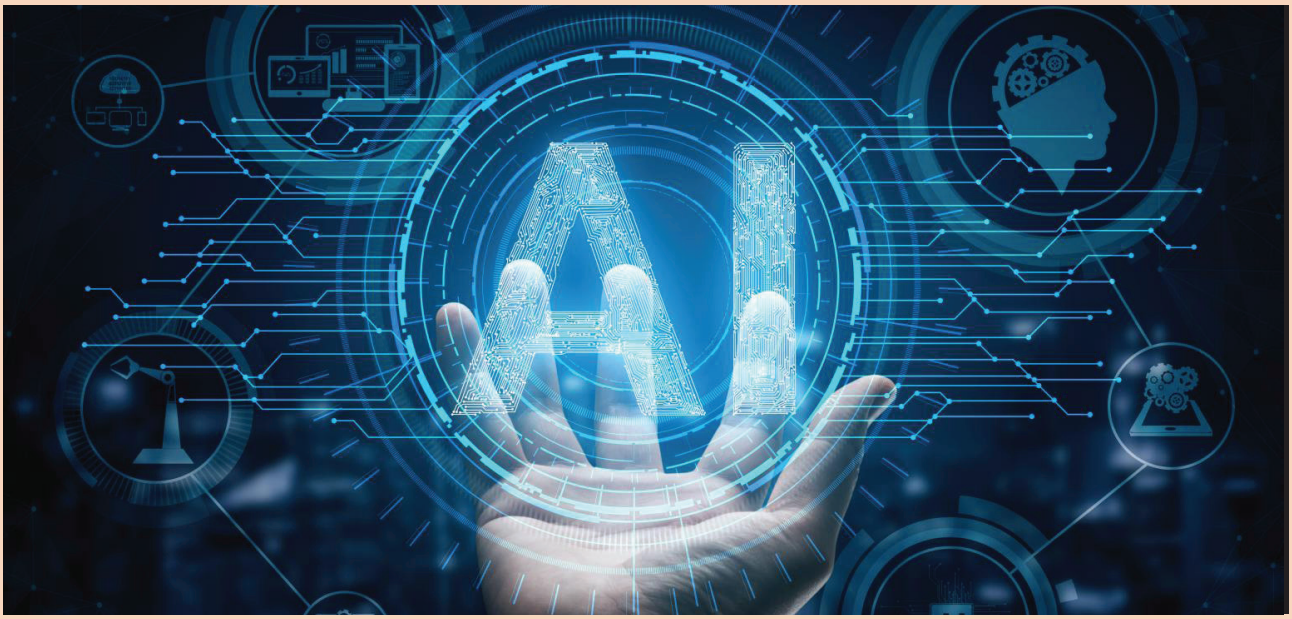

With changing sensor technology, data availability is becoming much more affordable and available on real time basis. This coupled with computing capability, AI and ML is becoming a tool to create pattern and transfer functions for better prediction of the outcome and optimising the process. We at Wipro have attempted and realised benefits in the demand forecasting, engineering, enhancing product features for better product life and in operations to de-skill and better our output. Below are a few use cases.

Demand forecasting using AI

In today's ever-changing business environment, precise sales forecasting stands as a crucial factor for companies striving to optimise resources, manage inventory effectively, and meet customer demands efficiently. At Wipro, we rely on advanced artificial intelligence (AI) techniques, specifically SARIMAX (Seasonal Autoregressive Integrated Moving Average with Exogenous regressors), to forecast customer sales with accuracy and confidence. This entails predicting upcoming three-month domestic sales across various segments like BHL, excavator and tractor domestic sales, customer wise and application wise.

SARIMAX emerges as a robust time series forecasting model, integrating autoregressive (AR), moving average (MA), and exogenous (X) variables to capture intricate patterns and seasonal variations within the data. Unlike traditional ARIMA models, SARIMAX allows us to include external factors—such as economic indicators or marketing campaigns—into our sales forecasts, enhancing adaptability to our business requirements. By analysing sales data from OEMs and other relevant sources, we derive forecasts for the next three months. The algorithm we've developed ensures data cleanliness and conducts initial statistical analysis. Subsequently, it checks for stationarity using the ADF test—a prerequisite for accurate time series forecasting. We then visualise seasonality and trends, ensuring that the residual series exhibits no correlation.

Determining the optimal parameters (p, d, q, P, D, Q) and seasonal period (m) involves iterative testing of all possible combinations to

minimise the root mean square error (RMSE) and avoid excessive differencing or overfitting. The parameters p, d, and q represent the autoregressive (AR), differencing (I), and moving average (MA) components, respectively, in a SARIMA model. They denote the number of lag observations; differences needed for stationarity, and lagged forecast errors in the model. Similarly, capital letters P, D, and Q denote the seasonal AR, differencing, and MA components, respectively, representing the seasonal counterparts of the lowercase parameters. These parameters are crucial in determining the order of the SARIMA model and capturing the seasonality, trend, and cyclic behaviour in time series data for accurate forecasting. This meticulous approach enables us to generate forecasts that inform strategic decision-making and drive business success.

Exploring the capability of AI in design selection

In our pursuit of precision and efficiency in part searching, our team used the power of machine learning, using sophisticated algorithms to develop a robust system. This system identifies components based on known variables while minimising deviations by assigning weights to each deciding parameter.

Our machine learning model carefully analyses various factors, such as dimensions, pressures, and performance specifications, to optimise the search process. By assigning appropriate weights to each parameter based on its significance, our system ensures that selected components closely align with desired criteria. The accompanying app provides a user-friendly interface where users input parameters like pressure and dimensions. Internally, the system determines the best components based on parameter weights, allowing users to make economical choices by considering cost. The underlying algorithm focuses on minimising weighted errors to optimise part selection.

The company's machine learning model carefully analyses various factors, such as dimensions, pressures, and performance specifications, to optimise the search process.

This not only speeds up the search process but also enhances precision, reducing errors and maximising efficiency. As a result, our team confidently navigates part selection complexities, delivering superior products and services to customers while driving innovation in hydraulic cylinder manufacturing.

AI&ML in de-skilling operation

In the realm of advanced technology like deep learning, we explore different methods to help us understand data better and make accurate predictions. One of these methods, called Artificial Neural Networks (ANNs), is like a complex network of interconnected parts that work together to solve problems. ANNs break down our complex problems into smaller steps, with each step being like a different part of the solution.

In our efforts to improve quality control at ACME grinding machines, our team worked to create a special kind of ANN. This ANN is designed to help us find the best settings for six important offset values that impact the output of the process. We use information from our records to make smart decisions about these settings. By looking at things like rod size, belt use, and the size we want the finished product to be, our ANN figures out the best settings to use.

Through lots of practice and fine-tuning, our ANN learns from the data we give it. It looks for patterns and connections in the information, getting better at making predictions over time. This way, our ANN helps us make sure we're using the right settings to avoid mistakes and produce top-quality results in our grinding operations. This journey shows our dedication to using the latest technology to improve how we work and deliver great products to our customers. Through this we aim at reducing the defects in the produced rod and in turn enhance the quality of our product.

With the initial success in different areas, we are confident in taking AI for not only solving the business problem but get the efficiency from the process.

About the author:

The article is authored by Jugal Prasad, who is Vice President and Head for R&D and Quality at Wipro Hydraulics.

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ERP cloud solutions offer a comprehensive suite of functionalities designed to streamline manufacturing operations, from order management and production planning to inventory optimisation and quality control.

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Maintaining a constant focus on operational efficiency, quality, and customer responsiveness is essential to remaining ahead of the competition in the fast-paced world of original equipment manufacture (OEM) and equipment manufacturing. The need for a comprehensive and flexible business management system has grown as the industry manages the intricacies of worldwide supply networks, changing regulatory environments, and the rising needs of contemporary customers. The engine transforming OEM and equipment manufacturing operations is enterprise resource planning (ERP) cloud solutions. It has been reported that approximately 28 per cent of businesses experienced a favourable return on investment within the first year of implementing ERP software.

Challenges in OEM and equipment manufacturing

OEM and equipment manufacturers grapple with a myriad of obstacles that impede operational excellence. Fragmented systems and siloed data hinder visibility across the organisation, resulting in inefficiencies and decision-making bottlenecks. Supply chain complexities, including managing intricate bills of materials (BOMs) and coordinating with a vast network of suppliers, can lead to delays, quality issues, and revenue leakages. Additionally, adhering to stringent regulatory mandates, such as traceability requirements and warranty management, poses significant challenges.

Power of ERP cloud solutions

ERP cloud solutions offer a comprehensive suite of functionalities designed to streamline manufacturing operations, from order management and production planning to inventory optimisation and quality control. These solutions act as a centralised hub, integrating data and processes across departments, enabling real-time visibility, and facilitating informed decision-making.

Streamlining operations

ERP cloud solutions provide end-to-end visibility into manufacturing processes, enabling organisations to identify bottlenecks, optimise resource allocation, and improve overall efficiency. Advanced planning and scheduling capabilities ensure optimal utilisation of production resources, minimising downtime and maximising throughput. Automated workflows and digital documentation streamline processes, reducing manual errors and increasing operational agility.

Supply chain optimisation

By seamlessly integrating with suppliers, logistics providers, and distribution channels, ERP cloud solutions enable efficient supply chain management. Real-time tracking of materials, components, and finished goods empowers organisations to proactively address potential disruptions and mitigate risks. Furthermore, intelligent inventory management capabilities help maintain optimal stock levels, reducing carrying costs and minimising stockouts.

Regulatory compliance

OEM and equipment manufacturers operate in highly regulated industries, where adhering to stringent quality and safety standards is paramount. ERP cloud solutions offer robust traceability features, enabling organisations to track components, materials, and processes from sourcing to delivery. This ensures compliance with industry regulations, enhances product quality, and facilitates efficient recall management if needed.

Product lifecycle management

Integrating PLM capabilities with ERP cloud solutions enables OEMs and equipment manufacturers to streamline product development processes. From

ideation and design to prototyping and production, these solutions facilitate collaboration among cross-functional teams, ensuring seamless information flow and minimising errors. Additionally, they support effective management of engineering change orders (ECOs), ensuring product configurations align with customer requirements.

Warranty and service management

Effective warranty and service management is crucial for OEMs and equipment manufacturers to maintain customer satisfaction and foster long-term relationships.

ERP cloud solutions provide robust capabilities for tracking warranty claims, managing service contracts, and optimising spare parts inventory. By leveraging predictive maintenance capabilities, organisations can proactively address potential issues, reducing downtime and associated costs.

Collaboration and communication

ERP cloud solutions facilitate collaboration and communication across cross-functional teams, suppliers, and distribution channels. Real-time data sharing and integrated communication tools enable seamless coordination, ensuring everyone operates with the same information and objectives. This fosters transparency, enhances decision-making processes, and minimises costly mistakes.

Tailored solutions for OEM & equipment manufacturing

While ERP cloud solutions offer a comprehensive suite of functionalities, their true power lies in the ability to tailor implementations to address the specific needs and regulatory requirements of OEM and equipment manufacturing sectors. Customisable modules and industry-specific best practices ensure organisations can optimise processes, streamline operations, and maintain compliance effortlessly.

Future trends in ERP cloud integration

As the manufacturing landscape continues to evolve, OEM and equipment manufacturers must be prepared to embrace emerging technologies and industry trends to maintain their competitive advantage. Some key future trends in ERP cloud integration include:

AI-Driven predictive maintenance: AI and ML in ERP cloud solutions will transform predictive maintenance for OEMs. By using sensor data and analytics, these solutions offer early warnings for equipment issues, empowering proactive measures. This approach optimises maintenance schedules, cuts unexpected downtime, and boosts operational efficiency and productivity. A McKinsey report estimates predictive maintenance can reduce machine downtime by 30 to 50 per cent.

Additive manufacturing (3D printing) integration: As 3D printing grows in OEM and equipment manufacturing, ERP cloud solutions must align with these processes. By 2030, 3D technology is anticipated to revolutionise manufacturing, transitioning from prototyping to mass production of parts. The global additive manufacturing market is poised for significant growth, enabling companies to manufacture finished products on a large scale.

Servitisation and outcome-based pricing: Servitisation and outcome-based pricing will reshape ERP cloud solutions, requiring advanced features like service agreement management and performance tracking. According to the latest research by Forrester, 85 per cent of companies in the industrial sector now prioritise business models focused on services and outcomes. OEM and equipment manufacturers can optimise service offerings and pricing strategies with data-driven insights, unlocking new revenue streams and enhancing customer relationships, gaining a competitive edge.

Sustainability and environmental compliance: To address sustainability concerns, ERP cloud solutions in OEM and equipment manufacturing must integrate with environmental management systems. Robust reporting features ensure compliance with evolving regulations. Tracking energy consumption, waste management, and carbon footprint enables data-driven decisions, fostering environmental improvement and meeting regulatory requirements.

Collaborative supply chain networks: ERP cloud solutions will enhance collaboration in OEM supply chains by leveraging analytics, blockchain, and real-time data exchange. This fosters end-to-end visibility, risk management, and joint decision-making. Such collaboration boosts agility, cuts costs, and drives innovation, providing a competitive edge. As per IDC's research findings, by 2026, 55 per cent of the top 2000 global OEMs will utilise AI to redesign their service supply chains.

Conclusion

In the rapidly transforming world of OEM and equipment manufacturing, harnessing the power of ERP cloud solutions has become a strategic imperative for organisations seeking to enhance operational efficiency, improve quality, and drive growth. By addressing the unique challenges faced by the industry and providing a comprehensive suite of functionalities, ERP cloud solutions are transforming the way OEM and equipment manufacturers operate, positioning them for long-term success in an increasingly competitive and technology-driven landscape.

ABOUT THE AUTHOR:

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TAKING CONCRETE **MEASURES**

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One of India's leading construction equipment manufacturers deploys ELGi air compressors to improve energy efficiency and reliability.

A leading construction equipment manufacturer in India sought a solution to transform its fabrication and machining operations without increasing operational costs or compromising quality standards. The company deployed ELGi's air compressors with variable frequency drive (VFD) to effectively address its airflow demands and boost energy efficiency.

The company is a pioneer in manufacturing concrete preparation, placement, transportation, and recycling equipment. They manufacture concrete batching plants, concrete mixers for transporting readymade concrete to construction sites, concrete pumps, truck-mounted concrete boom pumps, concrete-placing booms, tower cranes, self-loading mixers, and concrete recycling plants. The company caters to the requirements of infrastructure developers and also act as an OEM to various cement companies that offer ready mix concrete.

Customer challenge

One of their manufacturing facilities can produce 600+ concrete boom pumps, 3,600 concrete pumps, 3,000 self-loading mixers, and 2,500 excavators per year in a single-shift operation. The new unit is poised to strengthen their commitment to the Indian market, focusing on meeting the needs of the infrastructure boom in India and exploring the export potential in Asian and African markets. The new facility will focus on new product launches and support the progression of engineered products from the prototype stage to serial production. The company required a reliable and efficient supply of compressed air to meet its ambitious goals.

In concrete batching plants, air compressors play an essential role

in producing quality concrete during the batching operation. Complete aggregate, water, and admixture batching happens using pneumatic cylinders and valves; thus, the compressed air supply should be uniform to achieve the desired quality output. Since the batching plant works outdoors, the compressor also is required to work in a dusty atmosphere with minimal operation and maintenance costs.

Role of an air compressor in production

The compressor output connected to the filter regulator and lubricator unit is connected to solenoid valves, which actuates the cylinder and valves requiring a uniform air pressure of 6-6.5 Bar. Since a compressor is used for complete pneumatic operation in a batching plant, which calls for the highest level of accuracy in batching of ingredients to have uniformity and consistency in concrete, the selection of the air compressor and compressor tank is essential to ensure uniform air pressure throughout the batch cycles. The cut-off and cut-in pressure adjustment through the pressure switch ensures the compressor switches ON/OFF in the desired time, thereby increasing the life of piston/piston seals, which helps maintain the operating cost under control.

The criticality of compressed air elements

Compressed air is connected through the FRL unit to operate solenoid valves. The compressor should be able to maintain sufficient air pressure throughout the cycle. Since the batching and discharging of materials happen through pneumatic valves and cylinders, proper functioning of the compressor is critical. Hence, selection and performance should be on par for minimal breakdown times and ensure the batching plant's highest possible productivity.

In the case of concrete pumps, a premium product of the company with flat gate valve systems, compressed air is used for the complete cleaning of pipelines at the end of the concrete.

In this case, the compressor should be able to produce constant air pressure so that pipelines can be cleaned in minimal time, preventing the setting of concrete inside. Minimum cleaning helps achieve minimum operation time and reduces overall maintenance costs.

Solution

The client first teamed up with ELGi in 2012 to deploy reliable, high-speed, economical, and energy-efficient air compressors. The leading concrete equipment manufacturer was looking at solutions to transform their critical fabrication and machining operations without increasing operational costs or sacrificing the high-quality standards they are reputed for. The compressed air would be used for the fastening process, surface preparation, painting, cleaning, cutting and boring machines, and short blasting in the assembly area.

Designed to offer great efficiency, productivity, and ease of use, ELGi's air compressors met the customer needs on three grounds: performance, reliability, and maintenance. It provided compressed air on demand for better longevity and worked perfectly during busy day-to-day operations. From air intake to air pressurisation and air release, it offered a quiet and emission-free operation. By delivering the best-in-class reliability in the batching plant, ELGi's air compressors enabled precise operational concrete automation and ensured a quicker turnaround.

Customer benefits

- The deployment of air compressors with variable frequency drive (VFD) addressed the company's varying airflow demands with high energy efficiency, reducing runtime by two hours and unloading hours by eight hours in a day.
- The ELGi 75HP air compressor helped to save 322 kW/hour energy per day, translating into a significant cost saving of Rs 2,898 per day.
- The VFD installations optimised air flow by varying the compressor's motor speed according to air demand, thus saving energy costs, unlike fixed-speed compressors.
- The VFDs transformed air compressors, traditionally known as power guzzlers, into energy-efficient equipment, bringing down energy costs by as much as 10-15 per cent.

Conclusion

The partnership with ELGi has enabled the customer to focus on enhancing energy efficiency across its production workflow, minimising its carbon emissions, and boosting profitability.

Finolex Cables introduces single core HFFR cables

Finolex Cables, renowned for its cutting-edge electrical solutions, introduces FinoGreen Eco-Safe single core halogen free flame retardant (HFFR) inddustrial cables, placing a paramount emphasis on safety and sustainability. These eco-conscious wires, crafted from recyclable raw materials, emit minimal smoke and contain zero halogens, aligning perfectly with Finolex Cables' unwavering commitment to sustainability. The FinoGreen wires boast low smoke and zero halogen emissions, further enhancing their eco-friendly profile.

Tata Motors opens CV parts warehouse in Guwahati

Tata Motors, India's largest commercial vehicle manufacturer, Friday inaugurated a new commercial vehicle spare parts warehouse in Guwahati. The modern facility is fully digitalised and spans across one lakh square feet, stocking spare parts for the entire commercial vehicle portfolio. The addition of the new facility will enable the company faster turnaround times and easier availability of spares at Tata Authorised Service Stations in the North East. Equipped with world-class infra and safety measures, the facility will unlock greater customer value proposition through digital processes.

The Guwahati warehouse is expected to serve as a critical hub for smarter inventory management at Tata Authorised Service Stations in the region, thereby enhancing service quality and vehicle uptime. The new setup is part of Tata Motors' broader strategy to optimise service and support for its extensive range of commercial vehicles, from sub-1-tonne cargo vehicles to 55-tonne trucks.

ELGi's EG SP range of oil-lubricated screw air compressors

Elgi Equipments, one of the world's leading air compressor manufacturers, has introduced the EG SP (Super Premium), upgrading the world renowned EG Series portfolio of oil-lubricated screw air compressors. These machines represent a notable advancement in compressed air technology, offering customers significant energy efficiency gains of up to 15 per cent, best-in-class warranty and performance, with low life cycle costs in the 90-110kW compressor range.

The upgraded ELGi EG SP units embody newly configured two-stage airends, featuring the proven -V profile, which optimises the overall compression process, resulting in up to 15 per cent savings in specific power consumption. Coupled with low-speed airends and a lighter load on each stage, this ensures extended component lifespan. Aside, the IE4 super premium motors, enable seamless integration of advanced design and cutting-edge technology, resulting in increased energy efficiency.

BKT Tires forges dynamic partnerships with 7 IPL teams

BKT Tires, an Indian multinational company and a global player in the off-highway tyre market is pleased to announce its alignment with seven prestigious T20 cricket teams for the upcoming season of the highly anticipated T20 Cricket league. Alongside its inaugural collaboration with Lucknow Super Giants, BKT reinforces its enduring backing for Mumbai Indians, Kolkata Knight Riders, Punjab Kings, and Rajasthan Royals, marking the fifth consecutive year of support. Furthermore, BKT proudly continues its third consecutive year of partnership with Sunrisers Hyderabad and Gujarat Titans, further cementing its brand presence in the 17th season of India's premier T20 cricket league.

With a rich history of championing sportsmanship and excellence, BKT Tires reinforces its commitment to cricket enthusiasts worldwide by joining forces with these renowned teams.

Mumbai Indians spokesperson said, "Joining forces with BKT Tires is a journey towards excellence fuelled by innovation and performance. Together, we'll pave the way for success, ensuring that every game is met with confidence and precision."

Through strategic alliances with Punjab Kings, Rajasthan Royals, Sunrisers Hyderabad, Gujarat Titans, Kolkata Knight Riders, and Mumbai Indians, BKT aims to amplify its brand presence while delivering unparalleled experiences to cricket enthusiasts worldwide. These collaborations underscore BKT's dedication to engaging with diverse communities and fostering lasting connections through the power of sports. BKT's partnership with T20 Cricket League teams comes as no surprise. Supporting cricket globally, BKT has also been the 'Official Off-Highway Tire Partner' for the KFC Big Bash League (The Australian Cricket League).

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DICV to foray into battery electric market

Daimler India Commercial Vehicles (DICV), the wholly owned subsidiary of Daimler Truck AG (Daimler Truck) announced its foray into the Indian battery electric market with the all-electric, Next-Generation eCanter. The market launch of the all-electric eCanter in India demonstrates the company's first step towards its larger vision to decarbonise its entire product portfolio in the long term. The all-electric eCanter, which marks DICV's foray into India's light-duty truck segment, will be

launched in the market within the next 6 to 12 months.

From a global perspective, Daimler Truck is fully committed to the Paris Climate Protection Agreement.

JK Tyre inaugurates 92nd brand shop in India for trucks

Indian tyre industry major and market leader in the radial tyre segment, JK Tyre & Industries inaugurated its 22nd brand shop in Tamil Nadu thereby further expanding their last mile presence in the country. The one-stop solution brand shop – Hindustan Tyres was inaugurated by Sanjeev Sharma, Vice President - Mobility Solutions & Fleet Management, JK Tyre & Industries along with other senior officials of the company. The facility is an amalgamation of Truck Wheels catering to customers holistically. The facility is curated to provide ease of access to its customers providing them with end-to-end solutions for trucks and buses.

Expect capex for EV components to cross Rs 25K cr in next 3-4 years: ICRA

The auto component industry is expected to invest over Rs 25,000 crore in the next three to four years to expand production of electric vehicle parts, rating agency Icra said. EV penetration in the country has reached 4.7 per cent in FY2024, with much of it driven by the electric two-wheeler segment, although e-three-wheelers and electric buses have also contributed to the same.

There has been substantial localisation in traction motors, control units, and battery management systems over the years.

However, advanced chemistry batteries, accounting for almost 35-40 per cent of the vehicle price, are imported, it added.

Engine and drive transmission components would be impacted by the EV transition. EV adoption could also have a bearing on aftermarket demand because of fewer moving parts.

ICAT partners with Twin Health for sustainability

The International Centre for Automotive Technology (ICAT), a leading world class automotive testing, certification under the aegis of NATRiP (National Automotive Testing and R&D Infrastructure Project), and providing quality services to the industry in all the domains of automotive and non-automotive developmentheld its Annual Business Rollout (ABR) recently, showcasing its commitment to not only technological advancements but also sustainability and employee wellbeing.

Lumax-Cornaglia plant ready for CV emission compliance

Geared up with the new state-of-the-art facility spanning about 2.5 lakh sq feet, Lumax Cornaglia Auto Technologies Private is all set to offer market-ready emissions compliance solutions to the Indian OEMs. Following, the successful 16-year of partnership, the Lumax Cornaglia Auto Technologies, a subsidiary between Lumax Auto Technologies and Cornaglia s.p.a., Italy, has expanded its operations by opening a new manufacturing facility at Chakan. LCAT is engaged in the business of providing emission products i.e. air filters, fuel tanks, etc. for both two-wheelers and four-wheelers.

Equipped with a dedicated 7,000 sq. ft. in-house R&D laboratory. The new manufacturing plant is a one-stop solution for the complete vehicle-level emission products requirement of any auto OEM. An initial investment of over Rs 30 crore has been made. With a workforce of over 200 employees, including 30 highly skilled and experienced engineers, this facility will serve the emission products requirements of the Indian auto industry.

BOMAG UNVEILS NEXT-GEN CR SERIES HIGHWAY PAVERS

BOMAG has introduced the CR 1030 T-2 highway-class paver that features multiple design updates to improve operating efficiency and increase mat quality, the company says.

Available for the 2025 paving season, the CR 1030 T-2 comes with several new features including an independent auger/conveyor system and a new human-machine interface (HMI). In conjunction with the updated paver, BOMAG also introduced the new Versa 20 front-mount screed to its line. Aside from some of the technological advances made by the company, BOMAG paving product manager Zach Watson said the update operators were most interested in was the addition of cupholders by the screed controls.

"It's been something that people have wanted for a very long time on the screeds," he said. "Cupholders are huge." Fortunately for operators, BOMAG added much more than just cupholders to the CR 1030 T-2.

New for the CR 1030 T-2 is an independent auger/conveyor system with an outboard auger drive system. The independent control system increases material control flow for operators to reduce material waste and end up with a smooth mat.

Via the new system, Watson said operators can control either the auger or the conveyor independently of each other with a 2 or 4 (optional) sensor control system.

"You can run one side conveyor and not run the auger, or run the auger and not run the conveyor," he said. "This becomes useful to operators when approaching the end of a pass where they can stop the material flow on the conveyor but still feed the augers to maintain a good mat."

The new HMI interface provides operators both driving the tractor and the screed a new feel. The new operation console includes a large 7-inch multi-functional color LCD screen that has touchscreen features for easy access.

NEW HOLLAND EXPANDS COMPACT WHEEL LOADER LINEUP

New Holland Construction's compact wheel loader lineup is expanding with three new C series models – the W60C, W70C and W80C LR.

Engineered for comfort and performance, the new units feature a comfortable cab, technology enhancements, durable components and compatibility with more than 250 attachments to tackle a wide range of tasks, the company says.

"The development of these advanced CWL models was driven by our goal to enhance the operator and owner experience and the need to put more options with more versatility in their hands," says Dan Kakareka, product manager for New Holland Construction North America. "What's also evident with the three new models is how they provide exceptional stability, enabling operators to handle larger loads with ease, maneuver confidently in challenging conditions and enjoy smoother travel, even on rough terrain."

The new models add versatility to the middle and upper range of New Holland's current lineup.

The W60C shares the same frame as the W50C but features a 64-hp diesel engine instead of a 58-hp engine. The added horsepower and Z-Bar boom design make it ideal for landscaping, material handling and snow removal, New Holland says. It weighs 11,904 pounds and has a hinge pin height of 10 feet 4 inches.

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BOMAG'S NEXT-GEN CR 1030 T2 HIGHWAY PAVER

BOMAG, a leading name in road construction equipment, has recently revealed its latest innovations in the form of the CR 1030 T2 highway paver and an upgraded screed. These advancements promise to elevate efficiency and quality in roadbuilding projects.

The CR 1030 T2 highway paver boasts cutting-edge features tailored to meet the demands of modern infrastructure development. Equipped with state-of-the-art technology, it offers enhanced precision and performance, ensuring smoother and more durable road surfaces.

Additionally, BOMAG has revamped its screed technology to complement the new paver. The improved screed enhances versatility and accuracy, allowing contractors to achieve optimal results across various paving applications.

With these innovations, BOMAG continues its commitment to providing reliable solutions for the construction industry, empowering contractors to tackle projects with confidence and efficiency.

OREGON INTRODUCES DIESEL EMISSION LABEL PROGRAMME

Oregon has recently launched a new initiative aimed at addressing diesel emissions in the state. The programme introduces a labelling system designed to inform consumers about the emissions generated by diesel-powered equipment and vehicles.

Under this initiative, certain diesel-powered machines and vehicles will be required to display a label indicating their emission levels. This label will provide valuable information to consumers, helping them make more informed choices about their purchases and encouraging the adoption of cleaner, low-emission alternatives.

The implementation of this program underscores Oregon's commitment to environmental sustainability and public health. By raising awareness about diesel emissions and incentivising the use of cleaner technologies, the state aims to reduce air pollution and mitigate the negative impacts on both the environment and human health.

CAT RELEASES LARGEST TRACK LOADER: THE 973

Caterpillar Inc. has unveiled its latest groundbreaking addition to the construction equipment market: the 973, which stands as the largest track loader available in the industry. This formidable machine is set to revolutionise heavy-duty operations with its impressive capabilities and advanced features.

The CAT 973 boasts a robust design engineered for optimal performance in demanding environments. Equipped with a powerful engine and state-of-the-art technology, it delivers exceptional productivity and efficiency on the job site.

With its spacious cab and ergonomic controls, operators can work comfortably and efficiently for extended periods. Additionally, the

973 incorporates innovative safety features to enhance job site awareness and minimise risks.

This release marks a significant milestone for Caterpillar, reaffirming its commitment to providing cutting-edge solutions to meet the evolving needs of the construction industry. The introduction of the 973 sets a new standard for track loaders, offering unmatched power, versatility, and reliability to contractors worldwide.

MECALAC INTRODUCES TILTROTATORS FOR EXCAVATORS

Mecalac has recently launched an exciting addition to its lineup of compact equipment attachments: tiltrotators designed specifically for its excavators. These innovative attachments promise to enhance the versatility and performance of Mecalac excavators, offering users greater flexibility and efficiency on the job site.

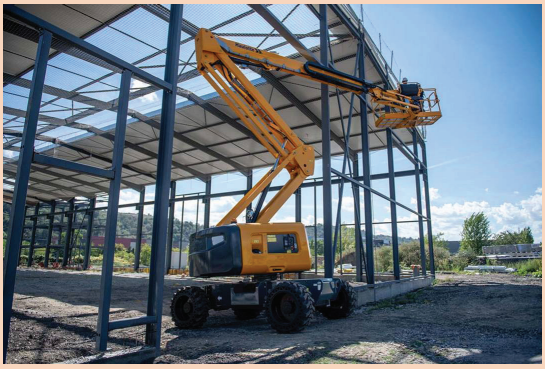
The introduction of tiltrotators demonstrates Mecalac's commitment to providing comprehensive solutions tailored to meet the diverse needs of contractors and operators. By equipping their excavators with these advanced attachments, Mecalac aims to empower users to tackle a wider range of tasks with precision and ease.

With features designed to improve maneuverability and control, Mecalac's tiltrotators enable operators to achieve optimal results in various applications, from digging and trenching to landscaping and material handling.

HAULOTTE UNVEILS ROUGH-TERRAIN ARTICULATED LIFT

Haulotte has introduced its latest innovation to the aerial lifting equipment market: the HA61 RTJ Pro rough-terrain articulated lift. This new addition to the Haulotte lineup promises enhanced capabilities and performance in demanding job site conditions.

The HA61 RTJ Pro is specifically designed to excel in rough terrain environments, providing operators with the versatility and stability needed to tackle a wide range of tasks. With its articulated boom and rough-terrain capabilities, this lift offers increased maneuverability and access to hard-to-reach areas, making it ideal for construction, maintenance, and industrial applications.



Equipped with advanced features and safety enhancements, the HA61 RTJ Pro prioritizes operator comfort and efficiency. Its robust design and innovative technology ensure reliable performance and productivity, even in challenging working conditions.

Haulotte's launch of the HA61 RTJ Pro reaffirms its commitment to delivering high-quality, reliable aerial lifting solutions tailored to meet the evolving needs of the industry. This new addition to the Haulotte fleet empowers operators to work more efficiently and safely, ultimately contributing to the success of their projects.

HEM CONCRETE PAVER FOR WIDER THIN-OVERLAY PROJECTS

HEM has expanded its lineup of thin and ultra-thin overlay concrete pavers with the new SFP1800. Designed for bridge deck overlays, patch and repair and whitetopping projects, the SFP1800 has a standard paving width of 10 feet. By adding or removing extension kits, it can adjust to widths up to 18 feet. The pan can also be reduced to an 8-foot width.

It can be used to overlay ultra-high-performance concrete (UHPC), polyester, polymer concrete or synthetic reinforced concrete. The SFP1800 comes standard with rubber tracks for easy movement around the jobsite. It can also be fitted with steel crawler tracks and a traditional paving package, including a longer pan, internal vibrators, and a larger auger

for PCC projects slip-formed up to eight inches deep or for fill-in or formed paving to deeper depths.

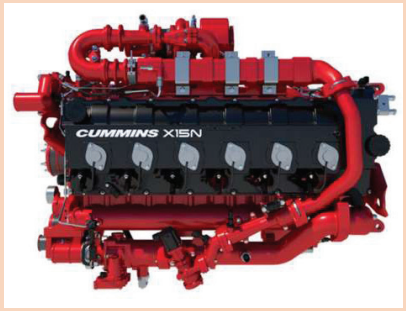
The 18,500-pound paver is powered by a 118-HP engine. It comes equipped with a direct-hydraulic drive with proportional controls for speed variability. The maximum speed is 30 feet per minute. Automatic or manual steering is available on both sides of the paver.

HEM offers a full line of concrete paving equipment, including grade trimmers, placers, placer-spreaders, pavers, and joint sawing equipment.

CUMMINS' NEW X15N NATURAL GAS ENGINE

Cummins' new X15N natural gas engine will soon be available for three models of Peterbilt heavy-duty trucks, including its popular 567 work truck. Orders for the new engine, which will also be available for Models 579 and 520, are scheduled for production in the third quarter, according to Peterbilt.

"The X15N is optimised for weight, space and durability making it ideal for short-haul, long-haul, refuse and construction customers requiring a larger displacement engine that also significantly reduces emissions," Peterbilt says. Cummins calls the X15N an "industry first" as a large-bore natural gas engine for heavy-duty trucks and says it delivers performance



similar to diesel.

It weighs less than the company's 15L diesel engine and "significantly reduces emissions," Cummins says. The engine can meet EPA and CARB regulations in 2024 and 2027, with carbon-dioxide and nitrogen-oxide emissions "90 per cent below current EPA standards." It can operate on renewable natural gas for further emissions reductions.

The X15N has a horsepower range of 400 to 500 with torque ratings of 1,450 to 1,850 pound-feet. It achieves a 10 per cent increase in fuel economy compared to Cummins' natural gas engine, the ISX12N, according to Peterbilt.

The X15N is part of Cummins' fuel-agnostic strategy launched earlier this year with the X15 platform.

The models have common components below the head gasket. Cummins says the X15N "integrates seamlessly with existing service networks and practices, leading to a high level of parts commonality as new platforms enter the market."

HITACHI'S NEW ZW310-7 WHEEL LOADER HITS THE MARKET

The 27-tonne loader is part of the new ZW-7 series and includes several features designed to boost operator comfort to improve productivity. The loader will be available in either a base or premium model.

Hitachi says the ZW310-7 loaders reduce operator fatigue and provide a pressurised, quieter cab and integrated console for easier-to-reach, seat-mounted controls. Both base and premium models include a standard fully adjustable, heated air-ride seat that incorporates a seat-mounted armrest with ergonomic electric-over-hydraulic controls. The armrest and controls adjust forward or reverse to accommodate operators of varying sizes. An 8-inch LCD monitor is designed for navigating the menu quickly.

In addition, both versions of the ZW310-7 have approach speed control, which gives the operator control of the top speed selected during loading for faster and more efficient operations, the company says.

With a payload checker, the new machines allow the operator to weigh and log material moved. This allows trucks to be loaded more accurately, and the system on the ZW310-7 loaders will warn operators when the bucket is overloaded, improving safety.

Additional updated features include improved traction with a limited-slip differential and a four-speed powershift transmission and lockup torque converter.

COMPACTORS

1 | Urban Development Department Uttar Pradesh

Details: Tenders are invited for supply of portable compactor 16 cu m, hook loader mounted on 28 tonne gvw chassis.
Submission date: May 14, 2024
Location: Kanpur, Uttar Pradesh
Contact: (Amit Singh Gaur) Incharge of Workshop, Kanpur, Uttar Pradesh

2 | Uranium Corporation of India

Details: Tenders are invited for mechanical maintenance jobs like replacement of conveyor belts, belt fasteners work, replacement of pulleys and maintenance of DE system.
Submission date: May 7, 2024
Location: Tummalapalle, Andhra Pradesh
Contact: DGM(MILL), Tummalapalle, Andhra Pradesh

3 | National Aluminium Company

Details: Tenders are invited for supply of heavy-duty conveyor belt rating-nn 1,600/5, heavy duty conveyor belt rating-nn 1000/5.
Submission date: May 8, 2024
Location: Damanjodi, Odisha
Contact: Arbind Kumar Singh, Alumina Refinery, Damanjodi - 763008, Odisha

CRANES

4 | East Coast Railway

Details: Tenders are invited for supply of periodical over hauling (poh)/reconditioning repairs of 120 tonne break down crane no. 10227 located at Koraput (Odisha) of Waltair division.
Submission date: May 15, 2024
Location: Waltair, Andhra Pradesh
Tender value (₹): 2,885,100
Contact: Senior Divisional Mechanical Engineer, Waltair, Andhra Pradesh

5 | South Central Railway

Details: Tenders are invited for hiring of 10 tonne capacity road mobile crane for Iohsick line activity at coaching depot TPTY.
Submission date: May 9, 2024
Location: Guntakal, Andhra Pradesh
Tender value (₹): 1,700,636
Contact: Senior Divisional Finance Manager, DRM Office , Guntakal Division, Guntakal, Andhra Pradesh

6 | Northeast Frontier Railway

Details: Tenders are invited for comprehensive annual maintenance contract of 14

EOT cranes of Katihar new sick line, DEMU Car Shed at SGUJ, ROH/NJP and sick line of Katihar Division for three years.
Submission date: May 8, 2024
Location: Katihar, Bihar
Tender value (₹): 2,502,326.49
Contact: Senior Divisional Mechanical Engineer, Katihar, Bihar

7 | Northern Railway
Details: Tenders are invited for supply of telescopic boom crane of minimum 175 tonne with 1,750 tonne-metre capacity.
Submission date: May 8, 2024
Location: New Delhi, Delhi
Contact: Principal Chief Materials Manager, New Delhi, Delhi

8 | Hindustan Aeronautics
Details: Tenders are invited for supply of hydraulic mobile crane as per IS 4573.
Submission date: May 8, 2024
Location: Bengaluru, Karnataka
Contact: (Prabhakar Chavan) SM (IMM) - ASC, Security Gate No.30, HAL Airport, Airport Services Centre Division, Vimanapura Post, Bengaluru-560017, Karnataka. T: 080-22312127

9 | Southern Railway
Details: Tenders are invited for supply of Goliath crane 5 tonne capacity with CAMC
Submission date: May 24, 2024
Location: Perambur, Tamil Nadu
Contact: Deputy Chief Material Manager/CW, Perambur, Tamil Nadu

10 | North Eastern Railway
Details: Tenders are invited for supply, installation commissioning of EOT crane capacity 25/5 tonne including all accessories.
Submission date: May 15, 2024
Location: Varanasi, Uttar Pradesh
Contact: Sr. Divisional Material Manager, Varanasi, Uttar Pradesh

DUMPERS

11 | South Eastern Coalfields
Details: Tenders are invited for supply of 300 tonne capacity tyre dismantler machine suitable for tyres up to 240 tonne dumper.
Submission date: May 8, 2024
Location: Korba, Chhattisgarh
Tender value (₹): 44,322,405
Contact: Ritesh Kumar Gupta, Dipka Area SECL ,PO Dipka, Dist-Korba-495452, Chhattisgarh

Terex Corporation

We are delighted to announce the appointment of R. Mark Cox as Senior Vice President Corporate Development. Joining the Terex Executive Leadership Team, Mark brings a wealth of experience with more than 28 years of experience in corporate development, strategy, mergers and acquisitions, and joint ventures with high-growth and Fortune 500 companies.
Welcome to Terex, Mark.

LiuGong India

Proud moment for LiuGong for receiving bulk order for Dump Trucks DW105A from Sushee Hi-Tech Projects Pvt Ltd. First lot of the order was flagged off jointly by the top management of LiuGong & Sushee from our plant.

Sany Group

SANY All-Terrain Crane SAC6000T7's Inaugural Lift at a Wind Farm in the Western Cape, South Africa. With a robust lifting capacity of 600 t, the SAC6000T7 is equipped with a 7-section 90.1m main boom, superlift system and 143t counterweight, ensuring stability and precision in every lift. Powered by dual Mercedes Benz Stage III engines, its adoption of ZF transmission and Kessler axles further enhances its reliability and maneuverability, allowing it to navigate the challenging terrain.

JCB India Ltd

We are delighted to announce the opening of our Regional Office in Bengaluru. Inaugurated by JCB India CEO and MD, Deepak Shetty, it underscores our commitment towards further enhancing our Sales and Service support to our Customers and Dealers in the Region. The inauguration took place with the JCB India team and four Dealers from Karnataka, Trident JCB from Bengaluru, PRN JCB from Hubli, Advaith JCB from Mangalore and Sri Sai JCB from Gulbarga. Together we look forward to being a part of the Infrastructure growth story in the Region and continue to remain close to our customers.

Schwing Stetter India

We're proud to share that Schwing Stetter India, a cornerstone of Indo-German excellence, recently hosted a key meeting for the Southern Region Council & German Business Group of the Indo-German Chamber of Commerce at our Global Manufacturing Hub in hashtag#Tamilnadu. The presence of esteemed leaders such as Ms. Michaela Küchler, Consul General of Germany in Chennai, and Mr. Ranjit Pratap, Chairman for the Southern Region IGCC, highlights our role in strengthening the bonds between Germany and India.

Atlas Copco

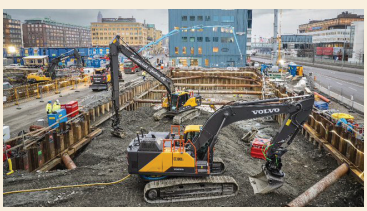
Why do mining professionals in India choose our electric compressors?
The answer lies in the total cost of ownership. We Indians prioritise value, and our electric units offer substantial long-term savings. Investing in an E-Air portable electric air compressor means smarter spending, cutting energy and maintenance costs for better profitability.

Ammann India

We are thrilled to announce the delivery of yet another AFT 500 Tracked Asphalt Paver to a valued customer near New Delhi! This advanced machinery will be put to significant use on the prestigious KMP Expressway.

Volvo CE

After two years, multiple collaborators and pioneering electric technology, we are proud to reveal the results of our E-Worksite project. Together with @NCC_AB, Gothenburg City and other leading players we proved the viability for urban electric sites.



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Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India

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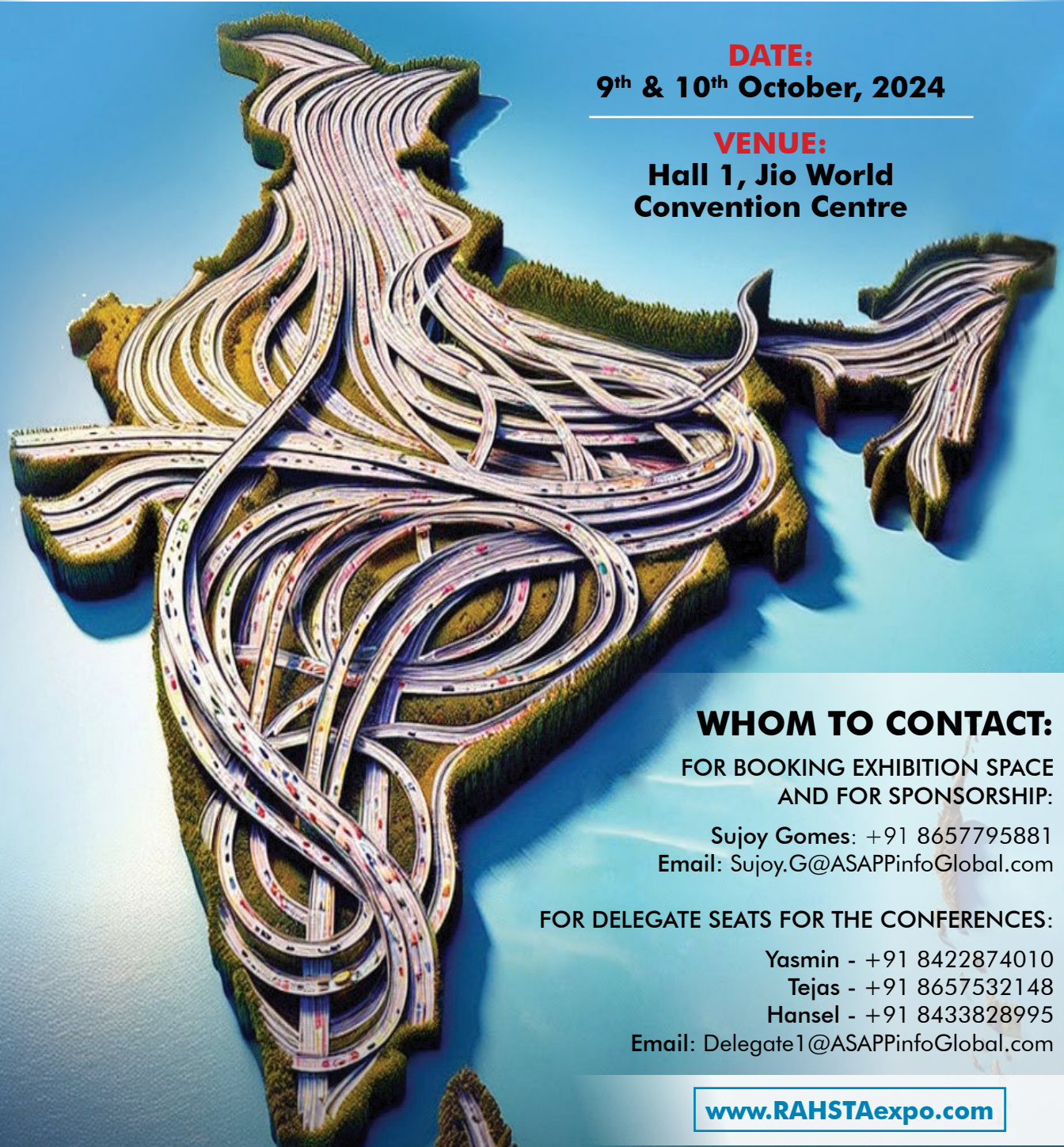

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