

# Equipment INDIA

India's First Infrastructure Equipment Magazine®

September 2024 • Vol. 17 No. 8

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## FEATURES:

- Demolition...50
- Digitalisation...64

## REPORT:

- Skilling...46

## INTERVIEW:

- PR Jaishankar...60

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# MAKING WAY FOR GROWTH!

Road equipment sales soar 40 per cent to 6,571 units in FY24, highlighting robust market recovery and growth.



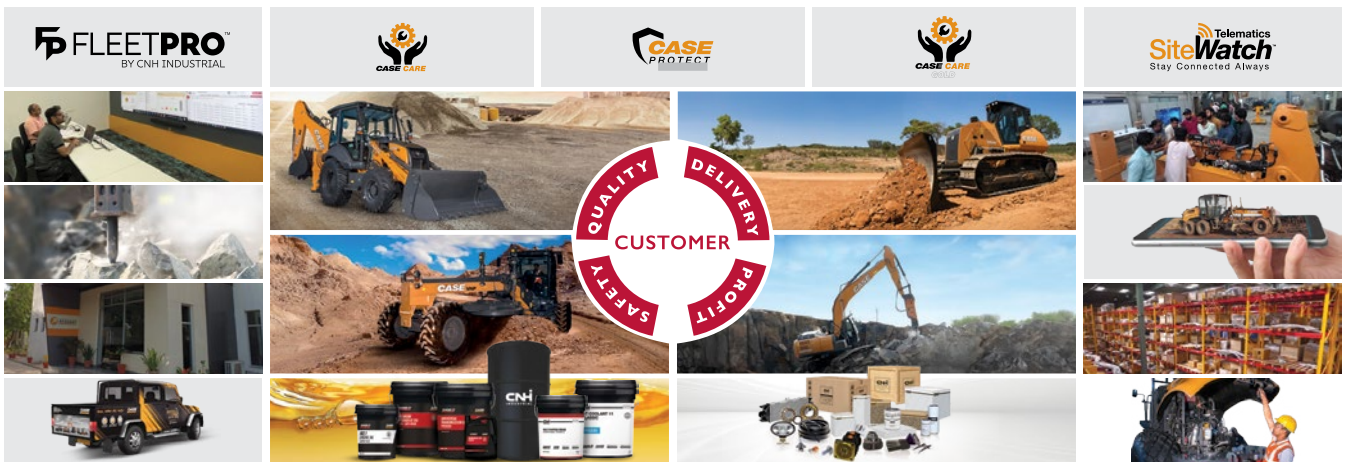
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### 'MAKE IN INDIA' DRIVES GROWTH

As we transition into the second quarter of FY25, the Indian Construction Equipment Manufacturers' Association (ICEMA) has reported a promising uptick in sales, reaching 28,902 units compared to 27,577 units in the same quarter last year. This growth highlights a positive shift, with notable increases in three out of the five key segments of the construction equipment industry for the April-June 2024 period. Specifically, the industry has seen a 5 per cent rise in earthmoving equipment, a 9 per cent increase in road construction equipment, and an impressive 11 per cent surge in concrete equipment.

However, it's crucial to address the nuanced dynamics within these numbers. Earthmoving equipment, which constitutes around 70 per cent of total sales, experienced a significant quarter-on-quarter decline of 31 per cent. This drop is echoed across other segments, with material handling equipment down by 29 per cent, road construction equipment falling by 32 per cent, and concrete equipment decreasing by 19 per cent.

In contrast, Action Construction Equipment (ACE), one of the few notable Indian-origin companies in this sector, has reported a robust 24 per cent increase in consolidated profit after tax (PAT), climbing to ₹84.57 crore in the April-June quarter. This growth underscores the impact of higher income and positions ACE as a resilient player amidst fluctuating market conditions.

The commitment to the 'Make in India' initiative is gaining momentum, as several companies unveil domestically manufactured products. JCB India has introduced its first diesel telescopic boom platform, the T 65D, from its state-of-the-art Jaipur factory. Similarly, Volvo CE India has launched the EC210, a 20-tonne hydraulic excavator tailored for Indian needs, while Kobelco Construction Equipment India has debuted the SK80, an eight-tonne excavator. Godrej & Boyce is also making strides with its new line of lithium-ion battery-powered forklifts, complete with an Indian-developed Battery Management System (BMS), marking a significant advancement in material handling solutions.

Despite the shifting landscape and moderate growth in vehicle sales, the optimism within India's auto component industry remains steadfast. The Automotive Component Manufacturers Association of India (ACMA) highlights ongoing capacity expansions and an emphasis on localisation as key indicators of the sector's resilience.

Looking ahead, the 14<sup>th</sup> RAHSTA Expo 2024, scheduled for October 9th-10th at the Jio World Convention Centre in Mumbai, promises to be a pivotal event. As part of the India Construction Festival, this expo will feature over 100 exhibitors, attract more than 5,000 visitors, and host 50+ speakers. It represents an invaluable opportunity for industry leaders, innovators, and stakeholders to explore, collaborate, and drive transformation.

The nominations for the Equipment India Awards are currently open, and I encourage you to participate in recognising the standout contributions to our industry. For more information and to submit your nominations please visit: <https://equipmentindia.com/awards/>.

As we navigate these dynamic times, let's stay committed to innovation and growth, leveraging every opportunity to enhance our industry's trajectory.



*Pratap Padode*

Follow me on twitter @PratapPadode

Nominate your company by scanning the QR codes below:



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Any mineral production plant faces the challenges of maintaining the uptime of its equipment while reducing the cost of corrective maintenance.



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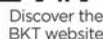
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## GROWING TOGETHER





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# HEAVY DUTY CYLINDER HEADS CYLINDER BLOCKS

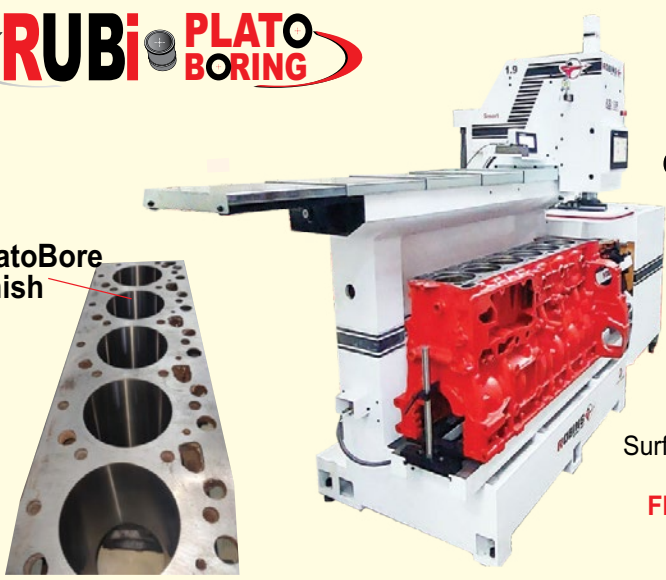
- Seat & Guide Machines
- Surfacing Machines
- Valve Grinding Machine
- Cylinder Boring Machines
- Cylinder Block Surfacing Machines
- Cylinder Block Honing Machines

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# Godrej launches lithium-ion forklift

As India accelerates its infrastructure development and seeks green energy solutions, Godrej & Boyce, a key player in the Godrej Enterprises Group, is once again at the forefront of innovation. The company's Material Handling Business has unveiled a new line of lithium-ion battery-powered forklifts featuring a Battery Management System (BMS) developed entirely in India. This marks the first time an Indian manufacturer has introduced such a solution, addressing a crucial need for self-reliant and secure li-ion battery systems in the Indian



material handling sector.

Lithium-ion technology offers significant advantages over traditional lead-acid batteries, including more than four times the lifespan. Li-ion batteries provide 5,000 charge cycles compared to 1,200 for lead-acid, translating to

lower long-term costs. They also support opportunity charging, produce zero emissions during charging, and require less maintenance. Charging from 20 per cent to 80 per cent takes just 2.5 hours with Li-ion batteries, compared to six hours with lead-acid, and consumes 30 per cent less energy. Additionally, Li-ion batteries deliver up to 15 per cent more runtime for two to three-tonne forklifts and feature a modular design for scalability. Godrej & Boyce intends to extend this technology to other material handling equipment.

## Kobelco CE India launches SK80 excavator

Kobelco Construction Equipment India launched the SK80 excavator in Chennai. The Made-in-India 8-tonne category mid-segment excavator was unveiled by **Takemichi Hirakawa**, MD, Kobelco Construction Equipment India in the presence of channel partners.

The SK80 Excavator boasts of several innovative features like superior technology, advanced hydraulic system, fuel efficiency, operator comfort, durability, maintenance and versatility which set it apart from its competitors and underlines its commitment to sustainability. Coming with a range of attachments, the SK80 Excavator can be easily adapted to perform a variety of tasks – be it digging, lifting or grading. Equipped with Yanmar Engine which reflects Japanese technology, the excavator aims to provide best-in-class performance. The eco-friendly engine reduces fuel consumption and emissions, lowers operational costs and minimises environmental impact. The state-of-the-art hydraulic system ensures smooth and precise operation.

## Wirtgen Group unveils two new Vögele pavers in India

The WIRTGEN GROUP has announced the launch of two new universal VÖGELE pavers, the SUPER 1900-3 G and SUPER 1900-3 P, at a successful event attended by around 200 esteemed customers at Pune facility. The event featured a comprehensive tour of the state-of-the-art plant, insightful technology presentations, and



an impressive exhibit of its latest machinery. The highlight was a live demonstration showcasing its advanced paving technologies.

## Bobcat plans merger with Doosan Robotics to boost autonomous machines

Bobcat is advancing its automation efforts through a merger with Doosan Robotics, facilitated by a restructuring of its parent company, Doosan Group. The merger aims to capitalise on the growing robotics industry and the trend towards automation.

Doosan Group announced that Doosan Bobcat, which has grown through consistent expansion, will now venture into the high-growth robotics industry to capture new growth opportunities and accelerate innovation in its traditional products.

Shareholders were informed on



July 11 that Doosan Bobcat would spin off from Doosan Enerbility, a clean energy-focused division. As part of the merger, Doosan Robotics will acquire Bobcat's shares in a stock swap. If shareholders approve the merger, Bobcat will become a wholly owned subsidiary of Doosan Robotics by the end of the year.



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### Sany India strengthens presence in New Delhi



SANY India, a leading manufacturer of construction equipment, announced the grand opening of its 3,000 sq ft Company Owned, Company Operated (COCO) office in Delhi, which aims to play a crucial role in the company's vision of enhancing customer satisfaction and driving growth in the Indian market. The office is equipped with modern infrastructure and advanced technology to support the company's operations and provide an excellent working environment for its employees.

### CNH India marks production milestone

CNH – a global leader in agriculture with its New Holland and Case IH brands – marks the production milestone of 7,00,000 tractors at its manufacturing site in Greater Noida. The plant produces approximately 2,000 tractor variants, ranging from 35 to 120 horsepower across the two brands. **Gerrit Marx**, the new CEO of CNH attended the milestone ceremony during his recent visit to India – affirming the company's commitment to this market and its continued growth.

Since commencing production in 1999, the site has expanded its capacity to produce 60,000 tractors annually. Currently, the Greater Noida plant manufactures tractors, engines, Power Take Offs (PTOs), and axles for the domestic market and exports to over 75 countries across Asia, Africa, the Middle East, Australia, and North America.



Spread over 60 acres, the Greater Noida plant is one of the most advanced tractor manufacturing sites in the country with some 1,200 employees. The facility prides itself on promoting sustainability, using energy from solar panels installed on its roof, and its ongoing afforestation project that adopts the Miyawaki Project Methodology – namely densely planting a range of native woodland plants.

CNH India operates in the country through its Case IH, New Holland, and CASE Construction Equipment brands, delivering for over 25 years on its promise to provide world-class products from its 'Made in India' operations.

### Hikrobot launches forklift latent Mobile Robot QF-1000

Hikrobot has participated with latest Machine Vision Products and Mobile robots in the 17<sup>th</sup> edition of Automation Expo in Mumbai to display its latest cutting-edge technology and intelligent solutions. On this occasion, Hikrobot has launched the new product Forklift Latent Mobile Robot QF-1000 for the first time in India. It has also displayed Tugging AMR demonstration on the show floor. The event is being organised from 21-24 August at the BEC, Mumbai. The Chief Guest **Subramanian Sarma**, President (energy) and Member of the Board, Larsen & Turbo inaugurated the event in the presence of other dignitaries from the Indian



Automation Industry. Hikrobot provides service to industry and logistics customers, and commit to continually promoting the intelligentisation and leading the intelligent manufacturing process.

The newly launched Forklift Latent Mobile Robot Equipped with both the chassis and forks to combine flexibility with the ability of directly carrying pallet load.

### ACE bags order for forklifts from MoD



Action Construction Equipment (ACE), one of the leading construction equipment manufacturing companies in India, has been awarded with a prestigious order for supply of 285 special forklifts and six rough terrain cranes with 30-tonne lifting capacity from the Ministry of Defence (MoD). This order demonstrates our efforts under the "Make in India" and "AatmaNirbhar Bharat" initiatives of the Government of India.



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# CASE India opens new dealership in Vijayawada

CASE Construction Equipment, a brand of CNH, has expanded its network by appointing a new dealer partner in Vijayawada. The new facility, SEPS (Srinivasa Edifice Power Services), is located in Srinivasa Nagar Bank Colony, Vijayawada, offering a wide range of products along with comprehensive after-sales support and spare parts. The new dealership will also cater to the neighboring regions such as Guntur, Krishna, East and West Godhavari, Vishakapatnam, Vijayanagaram and Srikakulam.

This state-of-the-art facility will offer CASE's full range of construction equipment and deliver a comprehensive customer experience. It will meet customer needs with amenities such as a fully equipped workshop, a training and conference room, availability of genuine parts, a team of skilled sales & service engineers, an upcoming telematics



centre, and a customer lounge.

A global leader in Construction Equipment since 1842, CASE has been present in India since 1989. It has consistently remained a market leader in the Vibratory Compactor segment and a leading player in the backhoe loader segment, since inception. The company produces Made-in-India products in its state-of-the-art manufacturing facility in Pithampur, Madhya Pradesh for the domestic and export markets in over 105 countries.

## Powerscreen team finishes installation in extreme Ladakh conditions



A Powerscreen PT400X Jaw Crusher, 1000 Maxtrak Cone Crusher, and Chieftain 1700 Screen were commissioned to work on a Border Roads Organisation (BRO) project near Demchok, close to the China border, at Umling La, Leh Ladakh (UT). At an altitude of 19,024 feet, this project is at the world's highest motorable pass and aims to produce road construction materials such as Granular Sub Base (GSB), Wet Mix

Macadam (WMM), and aggregates (5 mm, 10 mm, 20 mm).

The site's high altitude presented significant challenges due to low oxygen levels and temperatures, which dropped to -23°C during the project. Additionally, the terrain was hilly with sharp bends and no feasible roads, complicating the transportation and installation of the equipment onsite.

Powerscreen equipment is uniquely suited and reliable in extreme climatic conditions due to its robust engineering and advanced technology, reinforced by rigorous testing and quality materials to withstand harsh environments—including high-altitude conditions.

## L&T to phase out outdated CE

Larsen & Toubro (L&T) is set to gradually phase out outdated construction equipment and increase the use of biodiesel as part of a comprehensive strategy to reduce its long-term carbon footprint, according to Anup Sahay, head of corporate strategy at L&T.

As part of this initiative, L&T aims to replace construction equipment older than fifteen years, with specific targets assigned to various divisions. The company owns 14,000 pieces of construction equipment, primarily powered by diesel fuel, which also drives generator sets on construction sites. L&T operates more than 500 active construction sites at any given time. To address emissions, the company has established two task forces: one to examine diesel use and another to explore shifting electricity use to renewable energy sources.

## BEML, SMH Rail tie-up to meet global rail demand

Bharat Earth Movers (BEML), a public sector enterprise, announced on August 21, that it has signed a Memorandum of Understanding (MoU) with SMH Rail, Malaysia's largest rolling stock manufacturer. The agreement was formalised during an event in Delhi, attended by Malaysia's Minister of International Trade and Industry, **Tengku Zafrul B Tengku Abdul Aziz**. This strategic collaboration between India and Malaysia is set to bolster bilateral relations while addressing the increasing global demand for advanced rail and metro products.

BEML and SMH Rail will jointly focus on the marketing, supply, and servicing of rail and metro rolling stock, targeting key markets in Malaysia, Southeast Asia, and Africa.



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# JCB introduces telescopic boom platform, the T 65D in India

JCB, the world's leading manufacturer for material handling equipment, inaugurated its very first diesel telescopic boom platform, the T 65D in Goa during the Aerial Platform Association of India's (APAOI) conference. The machine offers higher standards of Reliability, efficiency, comfort, and most importantly safety. The machine is manufactured at JCB's state-of-the-art factory in Jaipur.

The machine has a platform

height of 65 ft and 4 inch and has a reach of 56 ft and 6 inch with 450 kg maximum load. The machine is powered by a JCB diesel engine and comes with two work zones. It has an 8 ft platform, and the machine maximum weight is 12,500 kg. It has four-wheel-drive as a standard feature and has enhanced safety features which include the secondary guarding system, crush hazard, which always protects the operator. It offers greater productivity through intuitive



controls, oscillating starting angle, and Joystick ergonomics for fatigue free working.

The T 65D is exported to developed markets and are an embodiment of JCB's make in India initiative. They are used in construction, cement, oil and gas industries.

## Hyundai Motor India to establish Hydrogen Innovation Centre

Automaker Hyundai Motor is set to establish a dedicated Hydrogen Innovation Centre at an investment of ₹1.8 billion at the Thaiyur campus of Indian Institute of Technology, Madras for research in hydrogen technology. During the Tamil Nadu Investment Conclave held earlier in the day in the city, Chief Minister **MK Stalin** laid the foundation stone for the facility, which is to come up on a 65,000 sq ft plot of land at the Thaiyur campus of IIT Madras, located on the outskirts of Chennai.

The investment of ₹1.8 billion has been earmarked towards the development and construction of the facility. The partnership between



Hyundai Motor India, State government backed investment promotion agency Guidance Tamil Nadu and IIT Madras aims to accelerate hydrogen ecosystem development and adoption in the country. The initiative is in line with Hyundai Motor India's goal of strengthening Tamil Nadu as a hub of automotive innovation and introducing use of alternate fuels.

## HMPL wins bid for Maharashtra road project

Hazoor Multi Projects (HMPL), an infrastructure company, announced that it had emerged as the lowest bidder for a road project valued at approximately ₹2.75 billion in Maharashtra. The project, which will be executed under EPC mode, is set to span a period of 2.5 years. HMPL secured the project from the Maharashtra State Infrastructure Development Corporation (MSIDC) with a bid price of ₹2.73 billion. The project's scope involves widening and enhancement of the road stretch from Paldhi Amalner Dondaicha Nandurbar Dhanora to the Gujarat State Border Road.

## Centre reduces funds for Tamil Nadu rail projects

The Central Government has slashed 70 per cent of the allocated funds for new railway lines in Tamil Nadu for the financial year 2024-25, sparking concerns about the future of various infrastructure projects in the state. This decision could severely impact the progress of several key railway line projects that were



expected to enhance connectivity and boost regional development.

The drastic reduction in funds has

raised alarm among state officials and the public, as Tamil Nadu had been anticipating substantial investment in its railway infrastructure to support economic growth and improve transportation links. The cutback comes at a time when several railway projects in the state are in critical stages of development.





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# Dan Quam appointed Parts Manager at Brokk's Monroe Warehouse

Brokk, the global leader in remote-controlled demolition machines, has welcomed **Dan Quam** as the new Parts Manager for their Monroe, Washington, parts warehouse. Quam will oversee the parts department, manage the receipt and purchase of spare parts for Brokk and Aquajet products in North America, and collaborate closely with Warehouse Manager Noah Acree and Assistant Warehouse Manager Brodie Kohn. His role is



critical to ensuring that Brokk maintains its commitment to same-day shipping for all common parts.

Before joining Brokk, Quam spent

over 32 years at Mi Fluid Power Solutions, a hydraulic and pneumatic parts distributor, where he gained comprehensive experience in various aspects of the business, from customer service to branch management. His understanding of Brokk and Aquajet products, developed over decades, will be invaluable in his new role.

Quam's Monroe warehouse stocks a range of specialty parts for all Brokk models.

## Lincoln Electric acquires Vanair Manufacturing



Vanair Manufacturing, a leading producer of truck-mounted air compressors, generators, welders, and mobile EV

chargers, has been acquired by Lincoln Electric for \$116 million. Vanair, based in Michigan City, Indiana, was originally formed as a division of Sullair Corp in 1972 and became an independent company in 1984.

Lincoln Electric, headquartered in Cleveland, Ohio, is known for manufacturing welding and cutting systems. The acquisition of Vanair is expected to enhance Lincoln's product offerings and market reach.

## Kubota reports 27% growth in North American CE revenue

Kubota's construction segment has experienced significant growth in the first half of 2024, with revenue reaching \$1.6 billion in North America – a 27 per cent increase compared to the same period in 2023.



Overall, Kubota's construction revenue for the second quarter of 2024 was \$1.2 billion, marking a 14.1 per cent year-over-year increase. For the first six months, the company reported a total construction revenue of \$2.3 billion, up from \$2.1 billion in the first half of 2023. Kubota attributed this growth to robust demand in the housing market and government-funded infrastructure projects, though it noted that tractor sales faced challenges due to a stagnant residential market and declining crop prices. Farm equipment and engine revenue also saw an increase, rising 8.3 per cent to \$3.7 billion in the quarter.

### Caterpillar's Q2 2024 construction revenue drops 7%

Caterpillar's second-quarter revenue in its Construction Industries segment fell by 7 per cent to \$6.7 billion, down from \$7.2 billion in the same period last year. The company attributed this

decline to a decrease in sales volume, largely driven by flat dealer inventories during the quarter, compared to an increase in inventory levels in Q2 2023. Overall, dealer inventories across all segments decreased by approximately \$400 million in Q2 2024.

### Four more CE cos join attachments standard

Construction Equipment Group AS (CEG) from Norway, Craig Manufacturing from Canada, Daedong Engineering from South Korea, and Pacific JCB from the United States, have all

become new alliance members. Created back in 2019, the Open-S Standard to create a common open, manufacturer-independent, global standard for automatic quick couplers. It will allow machine owners and contractors the freedom to combine couplers.



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# CNH Industrial to prioritise agriculture as core business

CNH Industrial's new CEO, **Gerrit Marx**, has announced a strategic shift that will see the company designate agriculture as its "core business," while its construction segment will be managed as a more autonomous entity. Marx, who leads the company behind the Case and New Holland brands, stated that the construction business will operate as a "distinct and fairly independent" segment, allowing it greater agility and the flexibility to explore new opportunities within its industry.



"We will continue to leverage synergies between our agriculture and construction segments, but agriculture will remain our primary focus," Marx said. This shift will also enhance the commercial and brand effectiveness of CNH's agriculture business. During the company's

earnings call, Marx further elaborated on the increased independence of the construction segment, noting that the two businesses already operate with separate manufacturing facilities, R&D resources, dealer networks, and sales organisations.

## Sany America appoints David Nicoll as CEO

Sany America has appointed **David Nicoll** as its new CEO. Nicoll brings extensive experience to the role, having previously served as Caterpillar's VP for earthmoving wheel loaders and overseeing multiple brands, including Cat, Perkins, and SEM. Sany America emphasised Nicoll's expertise in working with dealers, highlighting that his global experience will be instrumental in equipping Sany's dealer partners with the tools. Nicoll's career at Caterpillar began in 1998, with roles ranging from marketing supervisor for heavy construction and mining equipment to North America product manager for medium tractors.

## Liebherr invests \$176 mn in new logistics centre

Liebherr is set to build a new \$176 million logistics centre in Tupelo, Mississippi, to serve its North and South American markets. The centre, expected to create 180 jobs by 2026, will be located on a 118-acre site and will feature over one million square feet of building space.



The facility will handle a range of services, including warehousing, distribution, pre-assembly, kitting, repackaging, and export services. Liebherr's investment is aimed at enhancing its logistical capabilities and expanding its business operations on the continent.

"Tupelo is strategically positioned to allow us to efficiently service our clients across the Americas," said Joerg Stroebel, Managing Director at Liebherr-Logistics GmbH.

## Briggs & Stratton names Kristina Cerniglia as CEO

Kristina Cerniglia has been named the new CEO of Briggs & Stratton, after serving as interim CEO earlier this year. Cerniglia stepped into the role following the departure of former CEO **Joe Liotine**

after just five months.

Cerniglia brings a wealth of financial experience, having previously served as CFO and Senior VP at Hillenbrand, and holding various roles at Stanley Black & Decker and United Technology Corporation over two decades.

## HD Hyundai expands excavator line up

HD Hyundai CE North America has added the HX355A LCR, a 35.5-tonne compact-radius excavator, to its lineup of full-sized crawler excavators.

With an operating weight between 35,600

and 36,200 kg, the HX355A LCR fits between the Hyundai HX350A and HX380A conventional-swing excavators. However, the compact-radius allows the excavator to perform jobs within confined areas typically reserved for smaller machines.

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# On the Fast Track

The government's ambitious plan to construct 12,000 to 13,000 km of national highways and award similar contracts presents a major opportunity for the road equipment industry growth.

**T**he road construction industry in India is undergoing a significant transformation, driven by the need for enhanced infrastructure and the adoption of advanced technologies. Despite the promising outlook, the industry faces execution challenges that threaten to slow down progress. According to a recent CareEdge Ratings forecast, the daily road construction rate is expected to drop to 31 km per day in 2024, down from 34 km per day in 2023. This projected slowdown puts the spotlight on best practices and technologies that can maintain the momentum in road construction while ensuring quality outcomes.

One of the key factors in overcoming the challenges in road construc-

tion is the adoption of advanced equipment and technologies. These innovations not only enhance efficiency but also improve the quality of the roads being constructed. Several industry experts have shared insights on how these technologies can be leveraged to pave faster and better without compromising on quality.

## Current trends

Said Sunil Talreja, Vice President – Road Construction Equipment, Road Construction Equipment Division, Action Construction Equipment, "The vigorous growth in highway construction during 2023-24 has positively impacted the demand and sales of road equipment such as compactors, graders, and pavers. There



was a visible surge in demand for efficient, dependable, and cutting-edge machinery amid the government's push for timely project completion. The construction sector, particularly in road building, exhibited a greater reliance on equipment that could handle large-scale projects with accuracy and speed."

He added, "Sales of these machines went up substantially as contractors and developers sought to optimise their operations and meet rigorous project deadlines. Additionally, the drift towards mechanisation and automation in construction has further strengthened the demand for modern road equipment, as it provides more control over quality and efficiency. On the whole, the demand for road construction machinery remained robust, propelled by the sector's expansion and the imperative of keeping up with the rising pace of infrastructure creation."

The sustained expansion of road construction activities affords considerable opportunities for manufacturers and suppliers of road equipment such as compactors, graders, and pavers. The government's efforts on boosting infrastructure, particularly in rural and remote areas, will likely drive continuing demand for high-grade, reliable machinery. There is a need for more advanced and versatile equipment due to the growing intricacies of road construction projects, which frequently involve tough geographical terrain and tight deadlines. To exploit these opportunities, we aim to expand our product line by introducing machines that feature the latest technologies, such as GPS-enabled grading systems and automated compaction monitoring.



**Sunil Talreja**  
VP – Road Construction Equipment, Road Construction Equipment Division, Action Construction Equipment

## Synchronising efforts for efficiency

In the Indian market, skid-steer loaders have garnered significant demand compared to other types of construction equipment, owing to their versatility and adaptability. Said **Shalabh Chaturvedi, Managing Director, CASE Construction Equipment – India & SAARC region**, "Skid-steer loaders offer a range of functionalities crucial for construction activities, including digging, lifting, and material handling, making them highly sought after for various tasks on construction sites. The adaptability of skid-steer loaders to diverse building sites is a key factor driving their demand. Their ability to navigate and operate effectively in confined spaces or areas where manoeuvrability is essential makes them indispensable in many construction projects across India."

In India, the skid steer loader market reported a gain of 11.94 per cent in value shipments in 2022 compared to 2021, along with a 23.54 per cent increase in CAGR in 2022 over the period of 2017. This indicates a sustained upward trend in the adoption of skid-steer loaders within the construction industry.

**Shrinath Rao, Senior Vice President & Head of Transportation Infrastructure at L&T Construction**, emphasises the importance of conducting mock-ups before starting construction. Mock-ups help synchronise material, machinery, methods, and crew, ensuring that all elements work together seamlessly.



**Shalabh Chaturvedi**  
Managing Director, CASE Construction Equipment – India & SAARC region



**Shrinath Rao**  
Senior Vice President & Head of Transportation Infrastructure, L&T Construction

## QUICK BYTES

- **Stone mastic asphalt, being used for the Delhi-Katra Expressway, has more potential to improve the longevity of high-traffic expressways.**
- **Intelligent compaction ensures that extra time and fuel is not wasted in over-compaction.**

Similarly, **Atasi Das, Assistant Vice President at GR Infraprojects**, highlights the need for preplanning the next day's material requirements. This approach

eliminates lags between different site teams, such as the QA-QC team, highway team, planning team, mechanical team, and store department, thereby enhancing overall efficiency.

Weather conditions play a crucial role in the quality of the final pavement. Das stresses the importance of studying weather conditions such as rain, temperature, wind speed, and humidity before paving operations. These factors can significantly impact the paving process and the quality of the laid pavement. To address this, GR Infraprojects has developed an innovative Mobile Construction Quality Monitoring Van. This low-cost solution provides real-time readings of wind direction, wind velocity, humidity, temperature, and more, allowing for immediate adjustments to be made on-site to avoid issues such as rapid evaporation and shrinkage cracks.

The use of state-of-the-art equipment is another critical factor in improving road construction outcomes. Das advocates for the use of slipform pavers equipped with



**Atasi Das**  
Assistant Vice President, GR Infraprojects

automatic texturing and curing capabilities, capable of paving up to 16 m in width in a single go. Continuous operations with these advanced pavers help eliminate unnecessary joint formations, leading to smoother, more durable pavements.

Moreover, Rao shares that L&T Construction uses concrete batching and mixing plants with capacities 25 per cent greater than planned production to ensure timely completion. These plants are supported by chilling plants and insulated storage tanks to maintain the water temperature below 6 degree Celsius, ensuring optimal conditions for concrete setting. The combination of flatbed tippers, wheel loaders, and fog sprayers further enhances the paving process, allowing for consistent and high-quality results.

## Intelligent compaction

Intelligent compaction technology is another innovation that is gaining traction in the road construction industry. Compaction plays a vital role in almost every major construction project,

including those in irrigation. Said **Dimitrov Krishnan, Managing Director, Volvo Construction Equipment India**, "Our products are integral to achieving desired soil compaction levels, contributing significantly to project success. Through increased localisation and value addition, we ensure our products meet the diverse needs of such projects, providing features like forward and reverse compaction options for optimal asphalt rolling performance. When it comes to irrigation jobs, we have soil compactors with both axle drive and drum drive options. The standard machine comes as a axle drive machine



**Dimitrov Krishnan**  
MD, Volvo  
Construction  
Equipment India



Riding on technological innovations and the growing emphasis on sustainability, the road equipment sector is projected to witness key trends over the next 2-3 years.

which is suitable for all soil compaction applications while the drum drive option improves the gradeability of the compactor upwards of 35 deg Gradient."

This technology, which incorporates non-nuclear density gauges, allows for precise monitoring of compaction levels, ensuring that roads are not over-compacted, which can lead to material wastage and increased costs. **Arppan B Ghosh, President – Engineering at Cube Highways Technologies**, explains that intelligent compaction helps optimise the use of time and fuel, making the construction process more efficient.

However, the widespread adoption of intelligent compaction technology in India has been limited, primarily due to the lack of government specifications and guidelines. Ghosh suggests that the government should mandate the use of this technology in road projects to ensure consistent quality across the board.

Material transfer vehicles (MTVs) are another piece of equipment that can significantly improve road con-

struction quality. These vehicles help prevent thermal segregation, which can lead to weak spots and premature pavement failure. By allowing for continuous paving without stopping, MTVs ensure a consistent and smooth pavement surface. Ghosh notes that MTVs, such as those from Wirtgen available in India, are essential for projects where maintaining temperature consistency in the asphalt mix is critical.

## Shift towards eco-friendly construction

Riding on technological innovations and the growing emphasis on sustainability, the road equipment sector is projected to witness key trends over the next two to three years. One of the key trends will be the increased uptake of automation and artificial intelligence in equipment like compactors, graders, and pavers. These technologies will allow machines to execute tasks with superior precision and efficiency, reducing the need for human oversight and minimising errors.

Another important trend will be a move towards green machinery, with manufacturers developing electric and hybrid-powered equipment that mitigates carbon emissions and fuel



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consumption, as industries gravitate towards sustainable construction practices. Said Talreja, “There will also be a rising appetite for equipment with advanced telematics and remote monitoring capabilities, allowing operators and project managers to monitor performance, identify and resolve issues, and make data-driven decisions in real-time. As these developments influence the future of road construction, we are investing resources in research and development to create groundbreaking, eco-friendly, and technologically advanced products as we endeavour to be at the vanguard of the industry.”

The road construction industry in India is also witnessing a shift towards more sustainable practices. Technologies such as cold-mix and warm-mix asphalt are being increasingly adopted to reduce carbon emissions and energy consumption. **Satyanarayan Purohit**, Vice President at **Dilip Buildcon**, mentions that cold-mix technology, which uses emulsions instead of traditional hot asphalt, is now being used in various projects



**Satyanarayan Purohit**  
Vice President,  
Dilip Buildcon

across India. This technology not only minimises carbon emissions but also reduces the energy required for paving.

Similarly, warm-mix asphalt, which can be compacted at lower temperatures, is gaining popularity for its energy efficiency. By combining these eco-friendly methods with high-capacity rollers and thin layers of emulsion, construction companies can achieve precise and efficient paving, further reducing the environmental impact of road construction.

Stone mastic asphalt (SMA) is an-

other innovative material being used in the construction of high-traffic roads and expressways in India. SMA delivers a rougher surface with higher moisture resistance and flexibility compared to traditional bituminous concrete. SMA is particularly well-suited for projects such as the Delhi-Katra Expressway and the Delhi Vadodara Expressway, where the longevity of the pavement is a priority.

The use of polymer-modified bitumen in SMA further enhances its durability, making it an ideal choice for expressways that experience heavy traffic. As the road construction industry in India moves towards the implementation of the perpetual pavement concept, SMA is expected to be specified for more projects, ensuring longer-lasting and more resilient road surfaces.

### Overcoming challenges

While the adoption of advanced technologies and sustainable practices is essential for the growth of the road construction industry in India, there are challenges that need to be addressed. One of the primary challenges is the lack of government specifications and guidelines for the use of these technologies. Ghosh







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With the right approach, India can achieve its infrastructure goals and build a road network that meets the needs of its growing population.

and Purohit emphasise the need for the government to take a proactive approach in mandating the use of intelligent compaction, MTVs, and sustainable paving methods in road contracts.

Moreover, the high cost of advanced equipment and materials can be a barrier for smaller construction companies. The government can play a crucial role in providing incentives or subsidies to encourage the adoption of these technologies, ensuring that all road construction projects in India meet high-quality standards.

### The road ahead

The road construction industry in India is at a critical juncture. With the increasing demand for better infrastructure and the challenges posed by execution delays, there is a pressing need to embrace innovation and advanced technologies. By adopting best practices such as mock-ups, preplanning, weather monitoring, and the use of state-of-the-art equipment, construction companies can improve

efficiency and ensure the timely completion of projects.

Furthermore, the shift towards sustainable practices, such as cold-mix and warm-mix asphalt, and the use of durable materials like stone mastic asphalt, will help reduce the environmental impact of road construction while enhancing the longevity of the roads.

The government's role in supporting the industry through specifications, guidelines, and incentives cannot be overstated. By mandating the use of advanced technologies and providing the necessary support, the government can help the road construction industry in India achieve its full potential.

The road equipment market in India is poised for growth, driven by the need for better infrastructure and the adoption of advanced technologies. However, the industry faces significant challenges, including execution delays and the high cost of equipment and materials. By leveraging innovations such as intelligent compaction,

**The road equipment market in India is poised for growth, driven by the need for better infrastructure and the adoption of advanced technologies.**

material transfer vehicles, and sustainable paving methods, the industry can overcome these challenges and pave the way for a brighter future.

As the road construction industry continues to evolve, it is crucial for all stakeholders, including the government, construction companies, and equipment manufacturers, to work together to drive innovation and ensure the successful completion of projects. With the right approach, India can achieve its infrastructure goals and build a road network that meets the needs of its growing population.







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# “We foresee a strong focus on sustainability.”

**Sunil Talreja, Vice President – Road Construction Equipment, Road Construction Equipment Division, Action Construction Equipment, speaks on IoT and digital technologies that are gaining momentum in road equipment.**



**The Ministry of Road Transport & Highways has constructed 12,349 km of national highways in 2023-24 – the second highest achievement. How do you look at the scenario in road construction in 2024-25?**

The government's steadfast commitment to infrastructure development, backed by a host of initiatives like the Bharatmala Pariyojana, reflects that road construction will remain a priority. With the government constructing 12,349 km of national highways in 2023-24, the sector is poised to experience continued growth in 2024-25. This year, we expect to see a further surge in the pace of highway construction, with an emphasis on extending connectivity to remote and underserved regions.

Advanced construction technologies, such as pre-fabricated structures and smart construction techniques, will significantly help in improving project efficiency and reducing construction time. This will not only aid in meeting the ambitious targets set for the sector but also support holistic economic growth by improving logistics and reducing travel time. As the sector continues to evolve, we foresee a strong focus on sustainability, with green construction practices becoming widespread, further powering innovation and growth in the road construction industry.

**How was the demand/sale of road equipment such as compactors, graders, pavers, during this period?**

The vigorous growth in highway construction during 2023-24 has positively impacted the demand

and sales of road equipment such as compactors, graders, and pavers. There was a visible surge in demand for efficient, dependable, and cutting-edge machinery amid the government's push for timely project completion. The construction sector, particularly in road building, exhibited a greater reliance on equipment that could handle large-scale projects with accuracy and speed.

Sales of these machines went up substantially as contractors and developers sought to optimise their operations and meet rigorous project deadlines. Additionally, the drift towards mechanisation and automation in construction has further strengthened the demand for modern road equipment, as it provides more control over quality and efficiency. On the whole, the demand for road construction machinery remained robust, propelled by the sector's expansion and the imperative of keeping up with the rising pace of infrastructure creation.

**What opportunities do you see for compactors, graders, pavers and other road equipment? How are you planning to capitalise on this?**

The sustained expansion of road construction activities affords considerable opportunities for manufacturers and suppliers of road equipment such as compactors, graders, and pavers. The government's efforts on boosting infrastructure, particularly in rural and remote areas, will likely drive continuing demand for high-grade, reliable machinery. There is a need for more advanced and versatile equipment due to the growing intricacies of road



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construction projects, which frequently involve tough geographical terrain and tight deadlines. To exploit these opportunities, we aim to expand our product line by introducing machines that feature the latest technologies, such as GPS-enabled grading systems and automated compaction monitoring.

In order to ensure that customers have access to timely maintenance and spare parts, we also plan to reinforce our after-sales support network. Furthermore, by moulding strategic partnerships with major infrastructure corporations, we can offer custom-made solutions that satisfy precise project requirements. This approach will help us corner a bigger share of the market, thereby establishing us as a principal supplier of road construction equipment in the coming years.

**There are many road projects coming up in the border and hilly terrains. What types of road equipment are in demand for such projects?**

Road construction projects in border and mountainous terrain come with unique challenges, necessitating specialised hardware that can function efficiently in difficult conditions. The demand for rugged, sturdy, and easily manoeuvrable machinery is especially high in these regions. To ensure the precision and stability of road construction in precipitous and rocky landscapes, machines such as all-terrain compactors, which can tackle uneven surfaces and graders with advanced slope control technology, are essential.

Pavers designed to work on narrow, winding roads are also in high demand for projects in hilly regions. The need for such specialised equipment is expected to rise as the



government continues to emphasise infrastructure development in border areas and remote locations. We are continuously upgrading the capabilities of our machines to fulfil these demands, ensuring they can operate optimally in the most gruelling conditions, thus supporting the nation's strategic infrastructure requirements.

**How are the IoT and digital technologies gaining momentum in road equipment in the new normal working conditions?**

The assimilation of IoT and digital technologies in road construction equipment is swiftly altering the industry, especially in a time where efficiency and precision are paramount. These technologies support real-time monitoring and data collection, enabling predictive maintenance and reducing downtime, which is crucial in upholding project timelines. For instance, IoT sensors embedded in compactors can relay data on compaction quality, helping operators make instant adjustments to achieve optimal results.

Similarly, graders outfitted with GPS and telematics can deliver accurate grading, even on rough terrains. These technologies also boost safety on construction sites by giving operators improved control and supervision of the equipment. Digital

platforms that collate and analyse data from various machines can provide key insights for project managers, helping to optimise resource allocation and overall project efficiency. We are working to integrate these innovations into our products as the adoption of IoT and digital technologies spreads, thus making sure our customers reap the benefits of the latest advancements in road building technology.

**What will be trending in road equipment (compactors/graders/pavers) in the next two to three years?**

Riding on technological innovations and the growing emphasis on sustainability, the road equipment sector is projected to witness key trends over the next two to three years. One of the key trends will be the increased uptake of automation and artificial intelligence in equipment like compactors, graders, and pavers. These technologies will allow machines to execute tasks with superior precision and efficiency, reducing the need for human oversight and minimising errors.

Another important trend will be a move towards green machinery, with manufacturers developing electric and hybrid-powered equipment that mitigates carbon emissions and fuel consumption, as industries gravitate towards sustainable construction practices. There will also be a rising appetite for equipment with advanced telematics and remote monitoring capabilities, allowing operators and project managers to monitor performance, identify and resolve issues, and make data-driven decisions in real-time. As these developments influence the future of road construction, we are investing resources in research and development to create groundbreaking, eco-friendly, and technologically advanced products as we endeavour to be at the vanguard of the industry.





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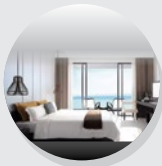
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# “Integration of technology is becoming increasingly important.”

**Siddharth Chaturvedi, General Manager – Marketing, Tata Hitachi, speaks on the key features and benefits of their backhoe loaders.**

The Ministry of Road Transport & Highways has constructed 12,349 km of national highways in 2023-24 – the second highest achievement. How do you look at the scenario in road construction in 2024-25?

The road construction sector in India is expected to maintain its momentum in 2024-25, driven by continued government focus on

infrastructure development. The achievement of 12,349 km of national highways constructed in 2023-24 demonstrates the effectiveness of ongoing initiatives, but it also sets a high benchmark for the future.

For 2024-25, several factors which influence this scenario:

- **Budget allocation:** Keeping road construction a priority for economic growth and connectivity. Enhanced budgetary support will be crucial in sustaining and potentially increasing the pace of road construction.
  - **Technological advancements:** The adoption of new technologies and construction methods could streamline processes, reduce construction time, and improve the quality of roads. This includes the use of prefabricated materials, advanced project management tools, and digital monitoring systems.
  - **Public-private partnerships (PPP):** With the government seeking to leverage private sector expertise and investment, PPP models will play a vital role in scaling up road construction projects. This could lead to faster project execution and better resource management.
  - **Sustainability and environmental concerns:** The focus on sustainable development is expected to grow, with more emphasis on using eco-friendly materials, reducing carbon footprints, and implementing green construction practices.
- Overall, the road construction scenario in 2024-25 is likely to be

dynamic, with a focus on achieving ambitious targets while addressing challenges through innovation and collaboration. The sector is expected to contribute significantly to India's infrastructure landscape and economic growth.

**What opportunities do you see for backhoe loaders and other road equipment? How are you planning to capitalise on this?**

The road construction sector in India continues to present significant opportunities for backhoe loaders and other road equipment, driven by the government's focus on expanding and modernising the nation's infrastructure. There are immense opportunities for backhoe loaders and other road equipment in the coming times related to:

- **Versatility and utility:** Backhoe loaders are highly versatile machines, capable of performing various tasks such as digging, trenching, backfilling, and material handling. Their multi-functionality makes them indispensable in road construction projects, especially in urban and semi-urban areas where space and manoeuvrability are constraints.
- **Rural and urban development:** The push for rural connectivity and urban infrastructure development, including roads, bridges, and flyovers, is expected to drive demand for compact and efficient equipment. Backhoe loaders, with their ability to work in tight spaces and perform multiple functions, will be particularly sought after.





- **Increased infrastructure investments:** With continued investments in national highways, state roads, and rural roads under schemes like Bharatmala and Pradhan Mantri Gram Sadak Yojana (PMGSY), the demand for road construction equipment will remain robust. Backhoe loaders and other machinery like compactors and graders will see sustained demand. The announcement of PMGSY 4 in the recent budget will add to the demand.
- **Technological advancements:** The integration of technology, such as GPS systems, telematics, and automation, is becoming increasingly important. Equipment that offers these advanced features will be preferred, as they enhance efficiency, reduce operational costs, and improve project timelines.

Tata Hitachi offers a full range of backhoe loaders to cater to the market. We have three models SHINRAI Prime SHINRAI POWER4 and SHINRAI Pro for 74 HP and 49 HP backhoe loader markets respectively to capitalise on all the above opportunities.

We will continue to upgrade our products in line with customer needs and unveil new products in the coming years to strengthen our product portfolio to achieve higher sales.

### What are the key features and benefits of Tata Hitachi's backhoe loaders, and in which types of projects are they commonly used?

Tata Hitachi has been offering backhoe loader solutions to the Indian market for more than 20 years. Tata Hitachi offers a full range of backhoe loaders to cater to the market. As explained above, we offer three variants, namely the SHINRAI Pro 49HP backhoe loaders and the

CEV-IV-compliant SHINRAI Prime and Power 4 of 74HP. SHINRAI Prime has multiple variants, like a loader version, an AC version, and a 4WD version. While SHINRAI Power 4 is standard 4WD, it has a 6-in-1 loader bucket, front wider tyres, 0.30 cu m backhoe bucket, a longer backhoe, and loader attachment.

All SHINRAI models are offered with a variety of options, like rear general-purpose and heavy-duty tyres, front wider tyres, standard and 6-in-1 loader bucket, general-purpose bucket, heavy-duty backhoe bucket, trench bucket and ditch cleaning bucket.

The major segment of the Indian backhoe loader market is hiring; hence, fuel consumption is the major criteria. Tata Hitachi's SHINRAI PRIME and Power 4 series boost fuel efficiency with their EHS (Excellent Hydraulic System). SHINRAI Pro comes with a compact engine and variable displacement pump for high fuel efficiency, which is a key selling point for the Indian market.

Apart from low fuel consumption, they also have high bucket forces, dump height, and good reach for customers looking at cost-effective performance and productivity.

The new generation SHINRAI Pro incorporates a new fuel-efficient, reliable engine, an intelligent optimum hydraulic system (OHS) that provides great performance with fuel efficiency by using a variable displacement pump, and expert hydraulic flow optimisation to match high performance at lower fuel consumption. Also, all these machines have tracking features provided through INSITE.

Tata Hitachi also offers a full range of attachments to work across applications like rental work, municipal work, garbage handling, crusher, hopper loading, quarrying, earthmoving, ditch cleaning, trenching, optical fibre laying, pipe

laying, lifting, log handling, loading, unloading, road construction, well digging, and building construction, to name a few. SHINRAI Power 4 is designed for applications where the reach required is high and the terrain is difficult, like hilly terrain and mountainous regions. SHINRAI Prime is a standard backhoe loader suitable for all applications and jobs. SHINRAI Pro is suitable for rental businesses with the lowest ownership and operating costs.

Hence, to meet these varied requirements, we offer a range of attachments like jib crane, forklift, auger, rock breaker, quick coupler, mulcher, ripple tooth, grapple, dozer blade, booster loader bucket, long backhoe arm extension, hedge trimmer, trencher, and bale handler.

### There are many road projects coming up in the border and hilly terrains. What types of road equipment are in demand for such projects?

As far as road projects in border and hilly terrain are concerned, there are two types of requirements. Northern border areas in the Himalayas are in remote high-altitude areas with low temperatures, lower atmospheric pressure, rugged terrain with steep inclines and valleys. Equipment used in road construction in these areas is the same – excavators, wheel loaders, backhoe loaders, compaction equipment, pavers etc. However, all these machines require cold starting facility, higher powered turbocharged engines. Backhoe loaders need to be 4WD so that they can handle the gradients and rugged terrain.

As far as hilly terrain is concerned, traction is very important and hence 4WD backhoe loaders are far more prevalent in these areas. The rest of the equipment remains the same as in normal applications.





# “Our focus is on innovation while increasing localisation.”

**Dimitrov Krishnan, Managing Director, Volvo Construction Equipment India,** speaks on the company's growing focus in the compaction business in India, and how it aligns with their broader goals and vision.

**Can you provide insights into Volvo strategic focus on its compaction business in India and how it aligns with the company's broader goals and vision?**

Our journey into compaction began with the acquisition of the Ingersoll Rand road equipment business in 2007, and since then, we've been actively involved in this market worldwide. Our product offerings span soil compactors, tandem rollers, and pneumatic tyre rollers.

Localisation is a key aspect, with our products boasting varying degrees of localised content. We're well-prepared for future regulatory changes and technological advancements, ensuring our products meet the highest standards.

So, we have the complete range of compaction equipment what the customer wants for the road construction projects. For soil embankment and granular sub base layers, we have the soil compactors that deliver exceptional performance in variety of materials, then for asphalt layer we have double drum compactors, and to finally finish the roads, we have pneumatic tyre rollers, which is our leading product in the market as well.

**How does Volvo CE contribute to the nation's infrastructure development, particularly through its compaction business?**

Compaction plays a vital role in almost every major construction project, including those in

irrigation. Our products are integral to achieving desired soil compaction levels, contributing significantly to project success. Through increased localisation and value addition, we ensure our products meet the diverse needs of such projects, providing features like forward and reverse compaction options for optimal asphalt rolling performance.

When it comes to irrigation jobs, we have soil compactors with both axle drive and drum drive options. The standard machine comes as a axle drive machine which is suitable for all soil compaction applications while the drum drive option improves the gradeability of the compactor upwards of 35 deg Gradient.

**What are the key initiatives and strategies that Volvo CE is implementing to further strengthen its compaction business in India?**

Our focus is on innovation while increasing localisation and additionally to ensure our readiness to meet evolving regulations. We've recently introduced concepts like battery electric powered mini tandem compactors - designed and manufactured in India. These received great attention in the Excon 2023 and Bharat Mobility show recently. Additionally, we're investing in manufacturing excellence and exploring export opportunities. By ensuring our products are compliant with upcoming regulations, such as CEV 5 emissions standards and the new safety standards, we aim to stay ahead in the market.



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# “The market dynamics of skid steer loader is very optimistic.”

**Shalabh Chaturvedi, Managing Director, CASE Construction Equipment – India & SAARC region, speaks on the factors fuelling the growth of the skid-steer loaders market in India.**

**What factors do you think are fuelling the growth of the skid-steer loaders market in India?**

Consumers often seek efficiency without additional costs. The skid steer loader is crafted to cater to multiple tasks simultaneously, eliminating the need for separate machinery purchases. This versatility significantly drives its demand. Moreover, the increase in infrastructural development nationwide further fuels its popularity. By utilising a skid steer loader, large-scale projects can be executed within deadlines without the need for excessive machinery expenditures.

In the Indian market, skid-steer loaders have garnered significant demand compared to other types of construction equipment, owing to their versatility and adaptability. Skid-steer loaders offer a range of functionalities crucial for construction activities, including digging, lifting, and material handling, making them highly sought after for various tasks on construction sites. The adaptability of skid-steer loaders to diverse building sites is a key factor driving their demand. Their ability to navigate and operate effectively in confined spaces or areas where manoeuvrability is essential makes them indispensable in many construction projects across India.

In India, the skid steer loader market reported a gain of 11.94 per cent in value shipments in 2022 compared to 2021, along with a 23.54 per cent increase in CAGR in 2022 over the period

of 2017. This indicates a sustained upward trend in the adoption of skid-steer loaders within the construction industry.

**How do you see the market for skid-steer loaders evolving in India in the next few years?**

Considering, India is a country which can adapt development at a very high pace, the market dynamics of skid steer loader is also very optimistic. It is the largest segment over the forecast period that can be employed in multiple activities like digging, grading, application handling, and trenching. As India is in a surge of urbanisation and the country is preparing itself for Viksit Bharat, there is an upward demand for skid steer loaders as well.

We at CASE recently showcased our skid steer loader SR175B, at EXCON 2023. As the industry is familiarising with the recent trends, we are also ready to strengthen our portfolio, adding value to ongoing mega projects.

**Explain in detail the various products on offer in this segment. What are its salient features?**

CASE India offers the skid steer loader SR175B, an all women production line. This machine sets new standards for efficiency and comfort at the workplace with its remarkable features. The ROPS/FOPS cab offers exceptional visibility, narrow wire lateral protection, and a lowered threshold, ensuring operator safety.



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# Bridging the Skill Gap

Experts agree that Budget 2024 aims for more inclusive growth, focusing on job formalisation, agricultural productivity, and MSME support.



India stands at the cusp of a transformative era in construction and infrastructure development. The nation is undertaking ambitious mega-projects that are reshaping the landscape, from Atal Setu to the intricate Mumbai Trans-Harbour Link. These projects are more than just engineering marvels; they symbolise India's potential and ambition on the global stage. However, at the heart of these grand endeavours lies a critical factor that often goes unnoticed – the skilled workforce that drives them.

The construction industry in India is vast and diverse, encompassing a wide range of activities, from traditional masonry to high-tech construction equipment operations. While the industry is a significant contributor to the country's GDP, it

faces several challenges, particularly in terms of workforce development. A large portion of the workforce is part of the unorganised sector, lacking formal training and certification. This not only impacts the quality of work but also hinders the industry's ability to keep pace with technological advancements.

## Growing demand for skilled labour

The construction and engineering sectors in India are experiencing a significant boom, driven by government initiatives like the Pradhan Mantri Awas Yojana and private investments aimed at modernising the country's infrastructure. This boom has led to an exponential increase in the demand for skilled labour. The

industry is not just building bridges, roads, and skyscrapers; it is laying the foundation for the nation's future economic growth.

"India's ambitious growth trajectory is embarking on major mega projects that were once deemed impossible," says **SP Rajan, VP and Head of Plant and Machinery at L&T Construction.**

"These endeavours are not just engineering feats; they are proof of our potential—our potential of a skilled workforce."

**Vijay Kumar, CEO, Infrastructure Equipment Skill Council (IESC)**, is acutely aware of the scale of this demand. According to Kumar,



**SP Rajan**  
VP and Head of  
Plant and  
Machinery at L&T  
Construction



approximately 1,00,000 pieces of construction equipment are sold annually in India.

Each piece of machinery requires trained operators and technicians to function efficiently, yet the industry faces a significant shortage of skilled workers. “Even if we account for two operators per piece of equipment, we need 2,00,000 operators every year. The challenge is even greater when you consider the technicians needed for maintenance,” says Kumar.

However, much of the current workforce learns their trade informally, often as helpers on job sites. While this method has its merits, it falls short in providing comprehensive training, especially in critical areas such as safety, environmental awareness, and basic troubleshooting. The absence of formal training and certification leaves significant gaps, leading to inefficiencies, higher operational costs, and, most worryingly, compromised safety on construction sites.

“Our journey to becoming a global construction powerhouse is undoubtedly linked to the skill of our workforce,” Rajan asserts. “But this workforce is still part of an unorganised sector that forms the backbone of our industry.”

## Building the future

The need for a skilled workforce has led to a concerted effort by various stakeholders to address the skill gap through targeted training programmes. IESC has been at the forefront of this movement, offering structured training programmes designed to produce well-rounded professionals. These programmes go beyond basic machine operation to include soft skills like computer



**Vijay Kumar**  
CEO,  
Infrastructure  
Equipment Skill  
Council (IESC)

literacy, financial literacy, and effective communication.

“Our aim is to create a workforce that is not just competent but also adaptable to the rapidly changing technological landscape,” says Vijay Kumar. “By incorporating soft skills into our training, we ensure that our operators are not only proficient in their tasks but also capable of growing into more complex roles within the industry.”

IESC’s training programmes are meticulously designed to cover a broad spectrum of skills. For instance, operators are trained to conduct pre-operational safety checks, perform basic troubleshooting, and understand the environmental impact of their work. This comprehensive approach ensures that workers are better equipped to meet the demands of modern construction projects, where timelines are tight, and the margin for error is slim.

## Commitment to skilling

Recognising the critical need for skilled labour, corporate India is playing a vital role in this skilling revolution. Leading companies like Schwing Stetter India and Terex India have made skill development a cornerstone of their corporate strategies. These companies understand that a well-trained workforce is not just a necessity for operational efficiency but also a key competitive advantage.

**S Baskar Babu, Sr. Vice-President – Training and Corporate Communications, Schwing Stetter India**, explains that the company has established a world-class training institute at its factory in Tamil Nadu. “Skill development is embedded in our corporate strategy,”



**S Baskar Babu**  
Sr. Vice-President  
– Training and  
Corporate  
Communications,  
Schwing Stetter  
India

Babu says. “We don’t just stop at selling equipment; we ensure that our customers, vendors, and employees are thoroughly trained to operate and maintain these machines.”

Schwing Stetter’s training programmes are comprehensive, incorporating both theoretical and practical components. The company uses advanced simulators to provide hands-on training in a controlled environment. “Our training institute is equipped with state-of-the-art welding simulators and practical labs. We train not only our employees but also the operators and technicians of our clients,” says Baskar Babu.

This commitment to skilling extends to external partners as well. Schwing Stetter collaborates with state government skill development corporations in Tamil Nadu, Assam, and Uttarakhand, among others, to train unemployed youth in construction equipment operation. The company’s efforts have led to the training and certification of thousands of operators, many of whom have gone on to secure employment with leading construction firms across India.

**Amol Sinha, Director, Product and Training, Terex India**, echoes this sentiment. Terex has developed a robust training programme that covers a wide range of skills, from basic machinery operation to advanced topics like electric mobility and power electronics. “Training is not an afterthought at Terex; it is part of our DNA,” says Sinha. “We understand that the rapidly evolving technology in construction equipment requires continuous learning. Our training programmes are designed to keep our workforce at the cutting edge of technology.”



**Amol Sinha**  
Director, Product  
and Training,  
Terex India

Terex's approach to training is holistic, encompassing all levels of the organisation. "We provide tailored training programmes for different roles within the company, ensuring that everyone, from engineers to assembly line workers, is proficient in the latest technologies," says Sinha. This commitment to continuous learning ensures that Terex remains competitive in a fast-changing industry.

"Our corporate partners like Schwing Stetter and Terex are not just contributing to the economy but are also playing a pivotal role in building a skilled India," Rajan notes. "Their commitment to skilling ensures that our workforce is well-prepared to tackle future challenges."

### Role of technology in skilling

As the construction industry becomes increasingly technology-driven, the role of technology in skilling has become more prominent. Advanced technologies like augmented reality (AR), virtual reality (VR), and connected machines are revolutionising the way operators are trained, making them more efficient and better prepared to handle the complexities of modern construction projects.

Vijay Kumar highlights the importance of integrating these technologies into training programmes. "The machinery we use today is vastly different from what it was even a decade ago. Telematics, IoT, and predictive maintenance systems are now standard features in many types of equipment. Our training programmes need to evolve alongside these technologies to ensure that operators can fully utilise the capabilities of modern machinery," he says.

IESC is already incorporating AR and VR into its training modules. These tools provide operators with realistic, hands-on experience in a



controlled environment, reducing the risks associated with training on live equipment. "AR and VR allow us to simulate real-world conditions, providing operators with the experience they need without the associated risks. This is particularly valuable in a sector where practical experience is crucial," Vijay Kumar adds.

Baskar Babu agrees, noting that these technologies are becoming integral to training programmes at his company. "We have embraced AR and VR as part of our training strategy. These tools not only enhance the learning experience but also ensure that our operators are better prepared to handle real-world scenarios," he says.

**Andrei Geikalo, Founder and CEO, MyCrane,** emphasises the importance of complementing digital tools with traditional hands-on training. "Digitalisation cannot replace real training; it can only complement it. At MyCrane, we ensure that our suppliers have access to comprehensive training materials and industry guidelines. This combination of digital resources and hands-on experience ensures that crane operators on our platform meet the highest standards of proficiency



**Andrei Geikalo**  
Founder and CEO,  
MyCrane

and safety," Geikalo states.

"The infusion of technology has further accelerated the learning curve, empowering workers to acquire new skills rapidly," Rajan observes. "This translates to cost-effective project execution and adherence to stringent timelines, essential for our growth as a global construction powerhouse."

### Overcoming challenges in workforce development

Despite these advancements, significant challenges remain in the skilling landscape. Mobilising candidates for training programmes is one of the most pressing issues. The construction industry has long been seen as less desirable compared to white-collar professions, a perception that deters potential candidates. Moreover, the geographical spread of India's infrastructure projects often requires workers to relocate, a prospect that many find unappealing.

"One of the biggest challenges we face is convincing young people to pursue careers in construction," says Baskar Babu. "Many prefer jobs that are close to home or in urban areas. However, the reality is that most large infrastructure projects are in more remote locations, which makes it difficult to attract and retain talent."

To address this issue, Schwing Stetter has developed a collaborative approach, partnering with local businesses and government agencies



to provide on-the-job training. “By working with local players, we can offer practical, hands-on training that not only reduces costs but also makes it easier to mobilise candidates,” Baskar Babu explains.

The cost of training, particularly for advanced equipment, is another significant barrier. Training a single operator involves substantial expenses, including machine downtime, fuel consumption, and wear and tear on equipment. “Training is expensive, especially when it involves high-tech equipment. But it’s an investment that pays off in the long run,” says Sinha. To mitigate these costs, Terex has adopted a blended learning approach, combining theoretical instruction with practical experience and digital tools like AR and VR.

**Ratan Lal Kashyap, President – SCM, Dineshchandra Agrawal Infracon,**

emphasises the importance of retaining skilled workers. “As the infrastructure sector continues to expand, opportunities for workers to move between companies increase. Retention of skilled workers is a major challenge,” he notes.

To combat this, companies are implementing robust systems for career planning and employee engagement. “We need to ensure that our employees see a clear path for advancement within the company. This is key to retaining talent,” says Kashyap.

“Addressing these challenges requires innovation and collaboration,” says Rajan. “By investing in training and development, we can not only enhance employability but also drive significant productivity across the industry.”



**Ratan Lal Kashyap**  
President – SCM,  
Dineshchandra  
Agrawal Infracon

## The future of skilling in India

Looking to the future, the construction industry in India will increasingly rely on a skilled workforce capable of operating within a highly technological environment. There is a growing consensus among industry leaders that formal certification and licensing of operators, similar to what exists in the automotive industry, are essential for maintaining high standards of safety and efficiency.

**HS Mohan, ex-CEO, IESC,** advocates for the introduction of a licensing system for construction equipment operators. “Just as you need a license to drive a car, you should need a license to operate heavy machinery. This would ensure that only qualified individuals are allowed to handle equipment, significantly improving safety on construction sites,” says Mohan.



**HS Mohan**  
ex-CEO, IESC

The idea of licensing is not just about improving safety; it’s also about professionalising the workforce. “Licensing would give operators a recognised qualification, which could open up more opportunities for them both in India and abroad,” Mohan adds. This approach aligns with the broader goal of creating a globally competitive workforce, capable of meeting the growing demand for skilled labour in international markets.

The international potential of India’s skilled workforce is vast. As countries around the world continue to invest in infrastructure, the demand for skilled workers is on the rise. With the right training and certification, Indian workers could compete for jobs in these markets, providing them with new opportunities and contributing to the country’s economic growth.

Mohan also emphasises the need

for a more integrated approach to skilling, one that aligns with global standards. “There’s a huge opportunity for our skilled workers to find employment abroad. If we can align our training programmes with global standards, we can open up a wealth of opportunities for our workforce,” he says. This would not only benefit individual workers but also enhance India’s reputation as a hub for skilled labour.

## Road ahead

India’s infrastructure boom presents a unique opportunity to build a workforce that is not only ready for the future but also capable of leading it. By investing in skill development, embracing technological advancements, and fostering collaboration between industry and educational institutions, India can create a workforce that is well-equipped to handle the challenges of modern construction. The path forward requires a concerted effort from all stakeholders, but the rewards—both for the industry and the nation—are well worth the investment.

As the country continues to scale new heights in infrastructure, the importance of a skilled workforce cannot be overstated. It is the backbone of India’s growth, driving the nation towards a prosperous and sustainable future. The vision of a “Skilled India” is not just about meeting the immediate needs of the construction industry; it’s about laying the foundation for a stronger, more resilient economy that can compete on the global stage. The journey is challenging, but with the right strategies in place, India is well on its way to becoming a global leader in infrastructure development, powered by a workforce that is as skilled as it is ambitious.



- KARTHIK MUTHUVEERAN



# Breaking New Ground

Demolition equipment, once seen as mere tools for tearing down old structures, has now become a symbol of technological advancement and innovation.



India's rapid urbanisation and industrial expansion have generated a substantial demand for demolition services. From clearing outdated structures to preparing sites for new developments, demolition is a critical component of the country's growth strategy. At the heart of this sector lies demolition equipment, a niche but vital segment within the construction industry. As urban areas continue to expand and

industrial projects proliferate, understanding the dynamics of the demolition equipment market in India, along with its challenges and opportunities, is essential.

Demolition is a process that involves breaking down buildings and man-made structures, but it differs from deconstruction. Each demolition project is unique, requiring careful analysis of the method and equipment to be used.

The selection of construction equipment depends on the project's scale, location, and local conditions.

Demolition projects can be broadly classified into two categories: low-level demolitions, which involve single-story and small structures, and high-level demolitions, which encompass multi-story buildings, large dams, and bigger structures. Different types of building equipment are required for each type of project.



## The growth trajectory

The Indian demolition equipment market has experienced significant growth over the past decade. Factors contributing to this expansion include rapid urbanisation, infrastructure development projects, and the increasing need for modern and efficient demolition techniques. As of 2024, the market is valued at approximately \$500 million, with projections indicating a robust compound annual growth rate (CAGR) of 6 to 8 per cent over the next five years.

With over 34 per cent of its population living in urban areas, India's urban expansion is driving demand for demolition services. High-rise buildings, residential complexes, and commercial establishments are continuously being constructed, necessitating the demolition of older or obsolete structures.

The Indian government's emphasis on infrastructure development, including the construction of highways, airports, and railways, fuels the demand for demolition equipment. Projects like the Smart Cities Mission and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) further highlight the need for efficient demolition.

As industries modernise and expand, outdated facilities often require demolition. This trend is evident in the manufacturing sector, where older plants are being replaced with state-of-the-art facilities.

## Demolition tech

Designed principally for demolition duties, the new EC500 straight boom excavator from Volvo Construction Equipment gives operators an additional 30 per cent increase in pin height over the standard boom. The 25.5-foot straight boom fitted to the EC500 is

## TYPES OF DEMOLITION EQUIPMENT

- **Hydraulic excavators:** Equipped with hydraulic shears and breakers, these versatile machines are commonly used for concrete and steel demolition.
- **Bulldozers:** Often used for clearing debris and preparing sites, bulldozers are essential in large-scale demolition projects.
- **Demolition robots:** These advanced machines are designed for precision work in hazardous environments, such as high-rise buildings and confined spaces.
- **Concrete crushers:** These are used to break down concrete structures into manageable pieces for recycling or disposal.
- **Wrecking balls:** Though less common in modern practices, wrecking balls are still used in some projects due to their effectiveness in demolishing large structures.



As industries modernise and expand, outdated facilities often require demolition.

also equipped with heavy-duty features to withstand the beating it may take on job sites, a powerful but fuel-efficient engine, a demolition-specific cab, and enhanced safety features like an optional remote control that allows the operator to control the machine from a safe distance.

"The EC500 Straight Boom gives customers a new 50-tonne option for larger jobs and perfectly complements our three high reach models as well as our 14-ton to 95-tonne standard excavators that offer demolition-specific guarding and hydraulic options," says **Tony den Hoed, director of demolition**

## strategic accounts for Volvo CE.

Sennebogen plans to expand its existing demolition excavator range downward with the 825 E Demolition. With a reach of 14 m and an emphasis on maneuverability, the flexible machine has been designed to master the common challenges of selective demolition. According to Sennebogen, the machine is well-suited for demolition grabs, demolition hammers or pulverizers as well as for sorting tasks. A telescopic wide-track undercarriage provides stability, while a cab designed for safety can be raised by 2.7 m and tilted by 30 degrees, allowing drivers to work ergonomically.



The demolition equipment market in India is at a crossroads, with significant opportunities and challenges shaping its trajectory.

### Challenges

Despite its growth, the demolition equipment market in India faces several challenges. The demolition industry is subject to stringent regulations concerning safety, environmental impact, and waste management. Compliance with these regulations can be complex and costly. The lack of a uniform regulatory framework across states exacerbates the issue, leading to inconsistencies and delays in project approvals.

Demolition work is inherently risky, involving heavy machinery and hazardous materials. Ensuring the safety of workers and the public requires stringent safety protocols and regular training. The high incidence of accidents and injuries in the industry highlights the need for improved safety measures and adherence to best practices.

Also, the environmental impact of demolition activities is a growing concern. The disposal of debris, especially hazardous materials like

asbestos, poses significant environmental challenges. The industry faces pressure to adopt environmentally friendly practices and technologies, such as recycling and reducing waste.

The high cost of advanced demolition equipment can be a barrier for small and medium-sized enterprises. Additionally, the maintenance and repair of such equipment require specialized skills and resources, which can be a challenge in a market characterised by diverse players with varying levels of expertise.

### Conclusion

The demolition equipment market in India is poised for continued growth, driven by urbanisation, infrastructure development, and technological advancements. However, addressing the challenges related to regulatory compliance, safety, environmental impact, and skilled labour will be crucial for sustained success.

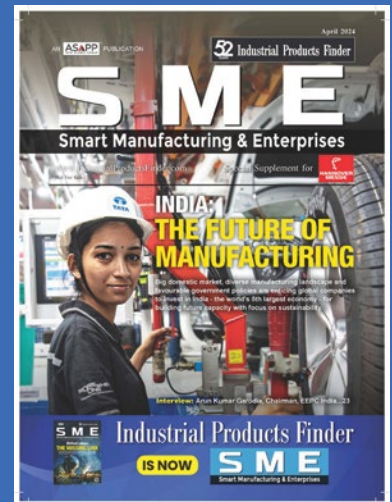
As the industry evolves, stakeholders—including equipment manufacturers, demolition contractors, and regulatory bodies—must collaborate to foster innovation, enhance safety, and promote sustainable practices. By leveraging opportunities for technological advancement and market expansion, the demolition equipment sector can play a pivotal role in India's development and modernisation efforts.

The demolition equipment market in India is at a crossroads, with significant opportunities and challenges shaping its trajectory. As the country continues to urbanise and develop its infrastructure, the demand for efficient and sustainable demolition solutions will grow. By addressing current challenges and capitalising on emerging opportunities, the sector can contribute to India's dynamic growth and transformation, ensuring that the nation's infrastructure is both modern and resilient.





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# “Most demolition equipment in India still comes from abroad.”

**Mohan Ramanathan, Founder Chairman, Indian Demolition Association, speaks on the key trends and developments shaping the demand for demolition equipment in the country.**

What are the key trends and developments shaping the demand for demolition equipment in the country?

India has been predominantly a manual demolition industry, till the 1980s. Most of the demolitions were performed using manual or primitive methods, using sledge hammer and chisels. This trend changed slowly

with the introduction of diamond cutting technology, hand held power tools and later hydraulic breakers. Still most of the demolition equipment is imported into India, and this makes it expensive and is also a barrier for most new entrants. Compared to the world sales of demolition equipment, India contributes only to a very small fraction.







There are hundreds of public utilities like power plants, factories, structures, husing, etc. that have outlived their lives and need to be demolished.

## **What are the most commonly used demolition equipment in India, and how do they compare with international standards?**

The most commonly used demolition equipment are: hand held demolition tools like percussion hammers, hand saws, pneumatic jack hammers, pavement breakers, floor saws, diamond wire saws, diamond core drills, hydraulic breakers on excavators, hydraulic crushers, demolition excavators, etc. Most of

the equipment that are made in India confirm to international standards.

## **How important is sustainability in the choice of demolition equipment, and what are some eco-friendly options available?**

Sustainability, unfortunately, in Indian scenario, does not play a major role in the selection of the demolition method or the associated equipment. Though there are many eco-friendly options available for demolition contractors, finally only price rules in India.

## **How stringent are the regulations governing demolition activities in India, and what role does the association play in ensuring compliance?**

Rules have been stipulated by the government of India but they are hardly enforced. It's the owners who award jobs, must enforce the rules. This is slowly coming, as I see it. Indian Demolition Association (IDA) has plans to educate the stakeholders on the rules and the importance of compliance.

## **Can you elaborate on the training and certification programs available for operators of demolition equipment?**

Currently operator training is given only by manufacturers to their customers, as part of the after sales process. There are no institutes in India that offer training in the field of demolition.

## **Where do you see the most significant opportunities for growth in the demolition sector over the next 5-10 years?**

India has old and crumbling infrastructure. There are hundreds of public utilities like power plants, factories, structures, husing, etc. that have outlived their lives and need to be demolished. The next five to ten years will have great opportunities.

## **How is the association supporting its members in navigating the challenges posed by supply chain issues, or other external factors?**

At the moment IDA is not attempted to enter this area. IDA itself is very young and has great plans for future.





# Preventing Costly Production Downtime in Mineral Processing

Any mineral production plant faces the challenges of maintaining the uptime of its equipment while reducing the cost of corrective maintenance.

**A**s the saying goes, a watched pot never boils. Rather than idling by the stove, gathering the meal's ingredients first can yield a bubbling pot upon your return, enhancing efficiency.

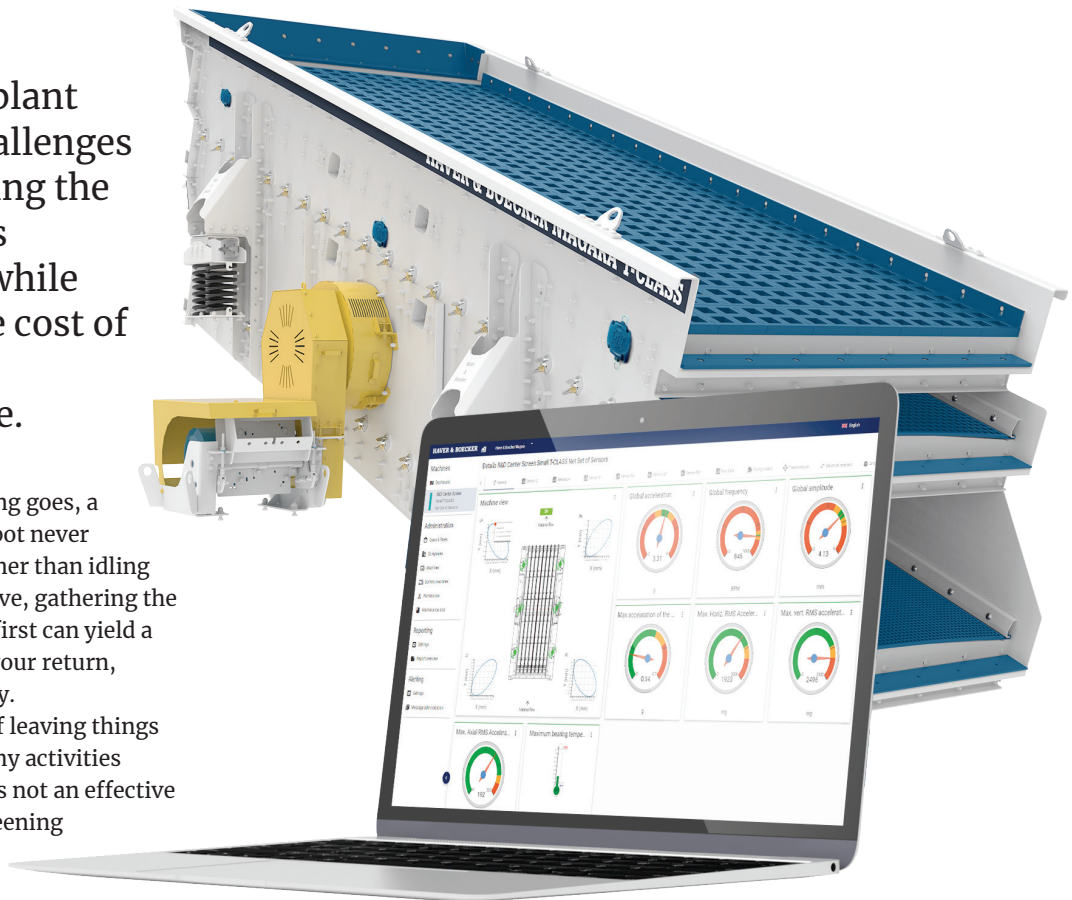
While the idea of leaving things alone applies to many activities beyond cooking, it is not an effective approach to the screening process within mineral processing environments.

Undetected issues with vibrating screens can allow out-of-spec material to pass through in addition to causing further damage over time. Plus, any downtime for repairs can lead to production losses.

It's not viable for operators to monitor vibrating screens all the time. Fortunately, using a condition monitoring system takes this task off their hands, ensuring screens stay healthy without constant attention.

## Proactive Performance over Reactionary Repairs

Any mineral production plant faces the challenges of maintaining



Condition monitoring systems use modern algorithms and artificial intelligence to monitor the health of the vibrating screens on site by forecasting the equipment's dynamic condition, predicting necessary maintenance and providing critical downtime alerts.

the uptime of its equipment while reducing the cost of corrective maintenance. The information that condition monitoring systems provide can therefore be an invaluable asset to quarry and mine managers. However, not all systems are made equally.

Most of the available options on the market are reactive and unable to prevent unscheduled shutdowns and costly reduction in output. This is typically because these systems send only very specific information and often in a format that is difficult for

**Condition monitoring is most effective for 24/7 operations as well as those who process high-priced materials, work in aggressive or hazardous environments or only have a small maintenance team.**



operators to understand.

Condition monitoring systems that stand out from the pack are those that use modern algorithms and artificial intelligence to monitor the health of the vibrating screens on site. These condition monitoring systems use their advanced technology to forecast the equipment's dynamic condition as well as predict necessary maintenance and provide critical downtime alerts. They can identify common types of failures such as lubrication faults, contamination and bearing damage as well as loose or broken structural parts of the vibrating screen body. Over time, a condition monitoring system should be getting "smarter" by using its artificial intelligence to improve the accuracy of the alerts it sends.

Understandably, purchasing any monitoring system can seem like an additional cost on top of other operational expenses. However, it is important to note that a well-chosen condition monitoring system almost

eliminates unscheduled downtimes, significantly reduces corrective maintenance hours and consequently increases equipment performance. Typically, most operations encounter an average of one significant issue each month, with a total of 10–12 per year. In some cases, just one critical alert effectively pays for an entire three years of a condition monitoring system. And when you consider that certain condition monitoring systems prevent critical failure for just 22 dollars per day, it's hard to refute that the investment is worth the reward.

### Diagramming the Diagnostics

While monitoring systems for vibrating screen bearings are common in the market, more advanced options offer 24/7 equipment condition monitoring through permanently installed sensors on both the bearings and the body of the vibrating screens. Although the sensor configurations are customizable, the typical setup involves four body sensors placed on

each corner of the vibrating screen with the addition of two bearing sensors. For larger screens, eight body sensors and six bearing sensors are used. In just one day, it is possible to install sensors on multiple machines in case of a plant stoppage. Since receptors do not require the screen to be stopped, they can be installed any time. Condition monitoring can be installed at any point on the equipment, but the sooner the better is the optional time for quick dividends from the service.

Once installed, condition monitoring quickly gets to work scanning the vibrating screen for deviations that may lead to damage or loss of production. From there, artificial intelligence is used to predict the dynamic conditions of the equipment. For many operations, maintenance time is optimised by noting probable causes of potential failure of the equipment such as loss of stiffness or uneven spreading of material feed on the screen media.



Condition monitoring systems offer 24/7 equipment surveillance through permanently installed sensors that can be installed at any time on the equipment.

Last but not least, customer focus is central to high-quality condition monitoring by providing easily interpreted information every five minutes.

Not only can information be provided continuously, but it can be accessed online and remotely. While these systems are compatible with any Wi-Fi network, integrating data via cable or Application Programming Interface is a good backup in case of any outages. Other benefits of high-tier condition monitoring systems include quality hardware such as industry-leading sensors as well as a long battery life of more than two years, which is noteworthy given the daily use of vibrating screens.

Condition monitoring is most effective for 24/7 operations as well as those who process high-priced materials, work in aggressive or hazardous environments or only have a small maintenance team. Partnering with an OEM-certified technician is a cost-effective first step toward identifying whether such a system is the best fit for your operations.

### All-inclusive inspection

Countless companies have thrown their hat in the ring with a condition monitoring system to gain the business of producers. Some of these companies specialise only in technology with no direct aggregate or mining connections. Others are original equipment manufacturers (OEMs) that serve the industries but have limited coverage or service capabilities after initial installation. Those who rise above are manufacturers with the complete package — the equipment and extensive industry knowledge, an experienced team that offers insight and service to customers and a condition monitoring system with the features those customers need to stay competitive.

Part of the value of condition



A good manufacturer provides a skilled technician that evaluates screening equipment through a detailed checklist, trains personnel on proper installation and operation of condition monitoring systems and works with the customer to develop a preventative maintenance plan.

monitoring systems lies in the service that producers receive from the OEM. Even the best systems require a human element when questions arise, training is required or upon new installation. Considering the history and experience level of a manufacturer when selecting a condition monitoring system will undoubtedly save time and prevent future headaches. Start by looking at whether the company has dedicated experience in the mining and aggregates industries. Then,

determine how long they have been involved in the industry, what their customer service commitment is like and their territory coverage. A global company that has an expansive service team is much more likely to be able to send someone for a consult, to troubleshoot or to install sensors on a new screen you got than a regional company without that depth of personnel.

Having a deep bench and industry expertise is half of the equation, but the technology and condition





The best manufacturer will not just sell you the system but will partner with you to offer a comprehensive evaluation experience for your production plant. Diagnostics are often the first step, which can involve impact tests, vibration analysis and condition monitoring.

monitoring system itself plays a vital role as well. The best manufacturer will not just sell you the system but will partner with you to offer a comprehensive evaluation experience for your production plant. In these cases, an in-depth, eight-point inspection can be provided that thoroughly assesses the efficiency of your operation. Diagnostics are often the first step, which can involve impact tests, vibration analysis and condition monitoring. Impact tests ensure that each machine is properly calibrated to avoid operating in resonance, which can diminish productivity, incur damage to vibrating screens and pose safety risks.

Vibration analysis examines the real-time health of vibrating screens by detecting irregularities. Condition monitoring elevates these results by not just identifying and fixing current issues, but emergent ones. The

remaining steps of the inspection can involve using the manufacturer's expertise in processing equipment, engineered screen media, original parts, rebuilds and upgrades, services, plants and process engineering to inspect customers' screening processes in order to recommend best practices for processing proficiency.

Reputable manufacturers will ensure that all information to install the condition monitoring system is available before the components are shipped so that the customer's personnel can install the system themselves. However, it is always good to consider the presence of an OEM technician to help during that process, not only for troubleshooting reasons but also to register personnel and make certain they all have proper access to and training on the system so they know where to find necessary information.

## Don't let production problems boil over

While a pot on the stove does require an occasional glance, mineral processing equipment needs more immediate attention. Smaller issues like wears or damage to the vibrating screen that are not caught quickly can lead to bigger production headaches — and losses — later on. This is why monitoring systems in line with the latest industry advancements in smart technology are vital for the health of any efficient operation. Finding the right system and manufacturer to partner with can provide the strongest ROI and ensures keeping up with — or beating out — the competition. 🏗️



### About the author:

Thiago Henrique Buoso is a project and sales engineer for Haver & Boecker Niagara's Diagnostics and Aftermarket Department. He has more than 15 years of industry experience.





# “Financiers are interested in sustainable projects.”

**Padmanabhan Raja Jaishankar, Chairman, IIFCL,** speaks about the increase in funding for these projects, the focus on renewable energy, types of infra projects that IIFCL typically finances, the firm's move into affordable housing, sources of funding and the trained manpower scarcity, among other challenges.



The recent Budget places a strong emphasis on infrastructure development and spending. Have you observed an increase in funding for these projects?

The Government has been significantly ramping up its investment in infrastructure, making it a priority in an unprecedented way. This comprehensive approach covers various sectors and is crucial for the nation's growth. However, for these efforts to be fully realised, they must be supplemented by private-sector participation. The scope for growth in infrastructure is vast, given the current economic aspirations and the potential that lies ahead.

How is loan distribution currently structured across different infrastructure segments, and what is the focus on renewable energy?

There's a growing interest among financiers and industry players in renewable energy and sustainable projects. This is a crucial area as we move towards a greener economy. IIFCL has developed a green sustainable financing framework, which outlines our commitment to supporting projects that are environment-friendly and sustainable. We are in the process of finalising a green and sustainable financing strategy, which will provide a more structured and objective approach to financing these projects. Once completed, we will formally announce our plans, which we believe will

significantly impact the market.

Could you shed light on your activities in other infra segments?

Besides renewable energy, IIFCL continues to focus on a wide array of infrastructure sectors. These include roads, highways, bridges and various forms of power and energy projects. While we have a growing emphasis on renewable sources like solar and wind, we also support waste-to-energy projects. Additionally, we are involved in funding infrastructure for airports, ports, urban sanitation, water supply systems, urban transportation and mass rapid transit systems.

Our portfolio also includes

**Affordable housing addresses a critical need for many citizens, contributes to infrastructure development, stimulates economic growth and creates job opportunities.**

projects related to railway stations and other aspects of urban development, reflecting our comprehensive approach to infrastructure financing.

What types of infra projects does IIFCL typically finance?

IIFCL was established in 2006 to support the PPP model, addressing the need for long-term financing in infrastructure development. Initially, it focused on sourcing and providing



long-term funds, with multilateral organisations being a significant funding source. The primary projects financed by IIFCL included greenfield infrastructure projects, particularly in the roads sector, followed by the power sector. As time progressed, the scope expanded to include other sectors like airports, ports and various emerging sectors. Currently, private investments are encouraged to complement public investments in these sectors, with the success of each sector depending on the momentum set by industry-specific programmes and concessions.

**Please share details of your foray into the affordable housing sector.**

We are keen on entering the affordable housing market, which is considered an integral part of the infrastructure sector. Affordable housing addresses a critical need for many citizens and aligns with our broader goal of contributing to comprehensive infrastructure development. Our involvement in this sector will not only support housing needs but also stimulate economic growth and create job opportunities.

**Please elaborate on the specifics of your MoU with GuarantCo.**

The MoU was signed between IIFCL and GuarantCo, a private-sector multilateral arm funded by the UK, Sweden, Switzerland and Australia. This organisation specialises in credit enhancements, offering a range of products tailored to different stages of infrastructure projects. Our collaboration aims to introduce these credit enhancement tools to Indian infrastructure players, providing them with the necessary support to scale up projects. India is currently at a stage where infrastructure financing requires robust credit enhancement mechanisms to manage risks and attract more investment.

**IIFCL sources about 40-42 per cent of its funds from multilateral organisations, which is beneficial for the infrastructure sector due to the availability of long-term funds at cost-effective rates.**

**What are the sources of funds for IIFCL?**

IIFCL sources about 40-42 per cent of its funds from multilateral organisations, which is beneficial for the infrastructure sector due to the availability of long-term funds (20-25 years) at cost-effective rates. Additionally, the organisation relies on the banking system and the bond market for financing, with all borrowings being market-oriented. IIFCL also has equity capital of approximately Rs 100 billion from the Government, contributing to a net worth of around Rs 135 billion.

**What are the main challenges that infrastructure developers face and how is IIFCL addressing them?**

Over the past decade, the landscape of infrastructure development has evolved significantly. Previously, infrastructure projects were mainly concentrated in areas like roads and certain power projects. However, due to a series of government reforms, we now see a more diversified approach, with PPPs expanding into various sectors, including transportation, urban development, and more. Despite these advancements, challenges remain, such as the need for a tri-party agreement involving lenders and the establishment of comprehensive infrastructure laws to ensure the proper enforcement of contract provisions.

The Government is actively engaged in these areas and we anticipate continued improvements in the regulatory and operational environment.

**Do we have enough trained manpower or is that going to be a challenge?**

As a nation develops rapidly and ambitiously, some things naturally progress ahead of time. While we have skilled workers, we need to enhance and expand these skills. This means scaling up at the university, technical and vocational levels. More capacity building is necessary as projects become increasingly multidisciplinary. In 2006-07, major infrastructure projects were primarily focused on roads, with Rs 4-5 billion being considered a significant project size. Today, we have diversified into sectors like mass rapid transit, ports and airports, which involve complex engineering, architectural, IT and digital elements. The goal is to provide better facilities for greater efficiency. With the increasing unit cost and project sizes, and the complexity of multidisciplinary issues – legal, financial or technological – India needs to strengthen its capacities, particularly in its universities, to keep up. There's still much more to be done.

**In a recent speech, you mentioned data centres. Is this an area where IIFCL is also providing funding?**

We recognise the growing importance of data centres as part of the digital infrastructure landscape. We have already sanctioned several projects in this space and are looking to expand our involvement as more high-quality projects emerge. Data centres are essential for supporting the digital economy and we are committed to financing initiatives that align with this objective.





# “There’s high demand for rental equipment across CEQ categories.”

**Vishal Sharma,**  
**Business Partner,**  
**Reach International,**  
speaks on the scenario  
of the rental market in  
the construction  
equipment segment.

**What according to you is the scene of the rental market in the CE segment?**

There is a huge demand for rental equipment throughout all CEQ categories. This is the best time for a rental company in the past eight to nine years, where a rental company gets better rates, timely payments, and maximum utilisation.

This would be the best time for global players to enter the domestic market with international standards. Also, an ideal situation for domestic players to expand their fleet size.

**CE rental is picking up in India. What are the reasons behind this?**

Yes, there is a surge in rental demand for AWP and MHE in India. This is both due to the demand-side and supply-side. After Covid-19 break of almost two years, investment is pouring into all major sectors is it by the government or by private companies.

**How is it better than buying in the construction equipment segment?**

There are extra advantages in getting machines on hire than to purchase. Whether it is a construction of a new factory or airport or another site, or a running plant or a warehouse, timely completion or delivery is the key. And to achieve that, it is a proven fact that rental companies have always outshined. Entrepreneurs like us have always believed in going the extra mile in satisfying their customers with the best service and

high-quality equipment.

Good quality updated equipment and on-time services help achieve timely completion of a project and achieve daily targets. And not to forget the one big advantage of getting equipment on rent is capital expenditure savings.

**How are the latest innovations changing the infra sector? How is your company focusing on this?**

Keeping both environment and cost in mind all big companies have realised that it's time to move towards battery-operated machines. Above and beyond, clients have welcomed the lithium-ion forklift with open arms. It does not just save the environment, but it also saves additional battery costs to a rental company for two to three shift operations. Maintenance-free machine and long-term warranty are additional benefits that our OEM Hyundai is providing.

**How is financing doing for CE?**

I have always believed that equipment financing banks and NBFCs are vital stakeholders of a rental organisation. The last two years have been a rollercoaster ride for all, in the beginning of 2020-21 with low demand and uncertain future financing companies have been a great support with MSME loans and other ECLGS programmes guided by RBI. And within a year there was huge demand if machines, which was again supported by financing companies with funds. Be it LC, domestic credit, suppliers' credit, etc. Banks and NBFCs have products for all. The base is all set for the huge demand for equipment in near future and beyond that too. 🚧



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## Building the Future

How digitalisation is  
transforming the construction  
equipment industry.





# Building the Future

How digitalisation is transforming the construction equipment industry.



**T**he construction industry has long been characterised by its reliance on heavy machinery, manual labour, and traditional practices. However, as the digital age continues to evolve, the construction equipment industry is undergoing a significant transformation. Digitalisation is reshaping how construction equipment is designed, used, maintained, and managed.

Digital technology is drastically changing the way we live, work, eat, shop, consume content, travel, make transactions, and stay connected in our daily lives. Machine Learning, the Internet of Things, Artificial Intelligence (AI), entire industries, from banking to manufacturing, is being upended and disrupted by new-age technology. The same is true for construction. Traditionally reluctant to embrace change, the construction sector is slowly but surely

turning to digitisation, robotics, AI and autonomy to address its challenges and unlock a higher level of growth. This embrace of technology is happening on two fronts — on the assembly line and on the construction site.

On the manufacturing front, construction equipment manufacturers are increasingly adopting Industry 4.0 practices to improve efficiency, streamline operations, and enhance overall productivity. They are automating multiple aspects of the manufacturing process such as welding, painting and assembly. They are also using automated guided vehicles (AGV) and mobile robots for material handling and transportation and harnessing the power of computer-aided design (CAD) and computer-aided manufacturing



**Shalabh Chaturvedi**,  
Managing Director, CASE  
Construction Equipment  
– India & SAARC region

(CAM). These technologies enable the fabrication of automated components and 3D models of machinery, cutting the time and expense of generating parts and minimising mistakes.

**Shalabh Chaturvedi, Managing Director, CASE Construction Equipment – India & SAARC region**, said, “At CASE Construction

Equipment, to cite our example, the manufacturing, research and designing process are all aided by automation on various levels. Our Pithampur facility is designed with cutting-edge automation technologies to manufacture superior-quality products. The automation includes robotics welding which gives welding joints superior strength and robustness. This helps in the repeatability of the same welding, minimises human error and maintains



consistency in quality.”

Another thing about AI in construction is that it can help predict when machines might break down. This means we can fix them before they stop working, which keeps projects running smoothly and saves money in the long run. AI also helps with planning and managing construction projects by BIM technology. This makes projects more efficient and helps them stay on track. Overall, AI is changing the construction game in India. It's making things faster, safer, and more efficient. As more companies use AI in construction, we can expect even more exciting changes in the future.

Caterpillar, a leading manufacturer of construction equipment, has been at the forefront of digitalisation in the industry. The company's Cat Connect suite of technologies integrates IoT, telematics, and data analytics to enhance equipment performance and management. For example, Caterpillar's Equipment Management System provides real-time insights into equipment health, allowing operators to make data-driven decisions and perform timely maintenance.

Incorporating AI and ML into construction equipment is not merely a technological leap; it's a practical move towards optimising performance, reducing downtime, and ensuring safety on construction sites. The feasibility of this integration lies in the tangible benefits it offers, such as improved equipment utilisation, enhanced safety protocols, and significant cost savings through predictive maintenance and fuel efficiency.

**Said Dheeraj Panda, Managing Director, Ammann India,** “For instance, our plant software, though



**Dheeraj Panda**  
Managing  
Director,  
Ammann India



CE manufacturers are increasingly adopting Industry 4.0 practices to improve efficiency, streamline operations, and enhance overall productivity.

not fitting into any conventional AI and autonomous operations philosophies entirely, has begun incorporating ML algorithms to a certain extent. These algorithms are used for automatic in-flight corrections by sampling previous drops from bin gates and predicting in-flight values, thus enhancing accuracy and reducing waste. Additionally, our systems utilise algorithms for First In, First Out (FIFO) operations, adjusting speeds and fuel injection to optimise the process flow.”

Komatsu has embraced digitalisation through its smart construction initiative. The company uses drones, IoT sensors, and cloud-based platforms to monitor construction sites and manage equipment. The autonomous hauler trucks, equipped with AI and machine learning algorithms, can transport materials without human, improving efficiency and safety.

Volvo has integrated digital technologies into its construction equipment to enhance productivity and safety. The company's CareTrack

telematics system provides real-time data on equipment performance, enabling predictive maintenance and reducing downtime. Volvo also offers the Assist range of technologies, including autonomous and semi-autonomous solutions that improve operational efficiency and safety on construction sites.

Several real-world examples showcase the impact of AI-driven construction equipment and predictive maintenance. For instance, a 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.

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," said **SP Rajan**, VP and Head – Plant and Machinery, L&T Construction.

He added, "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."

Shriram Automall India (SAMIL) being India's largest Phygital marketplace for vehicles and equipment offers a number of advanced SaaS-enabled services like Phygital auctions, online auctions, ThePriceX, self-inspection and valuation to enhance the customer experience and satisfaction in the used construction equipment industry.

To address the challenges associated with cross-border transactions, Shriram Automall has introduced the innovative concept of One India One Click – Phygital auction through MySAMIL App. This



**SP Rajan**  
VP and Head –  
Plant and  
Machinery, L&T  
Construction.

pioneering initiative enables customers to seamlessly buy and sell pre-owned construction equipment across state borders with a single click, transcending geographical constraints and simplifying the procurement process. Through this platform, customers gain access to an extensive inventory of pre-owned construction equipment from 120+ automalls across the country, eliminating the need for physical travel and streamlining the transaction process.

**Sameer Malhotra**, Director and CEO, Shriram Automall, said, "The integration of AI and ML technologies marks a significant milestone in the pre-owned construction equipment industry's journey towards efficiency and sustainability. As we embrace these transformative innovations, we propel the industry towards greater productivity, cost-effectiveness, and environmental stewardship. This is just the beginning of a technological revolution that will shape the future of construction in India and drive us towards unparalleled heights of success. As we strive to become better than yesterday, let us embark on this journey of innovation and progress with unwavering determination and resolve."

Said **Dhanraj Kalbhor**, Managing Director, NORD Drivesystems, "We are proactively focusing on energy efficiency and digitalisation. We collaborate with OEMs to understand their requirements and introduce new products. For instance, DuoDrive



**Dhanraj Kalbhor**  
MD, NORD  
Drivesystems

which is a new product having higher energy efficiency (IE5) & it is designed



Despite challenges, the future of digitalisation in construction equipment looks promising.

for automation in smaller sizes airports, and warehouse automation cater to evolving customer needs."

The NORDAC Pro series boasts robustness and considerable strength, which are standard features. Notably, its energy efficiency sets it apart, achieving higher power transmission efficiency. The product aligns with industry trends toward digitalisation, IoT integration, and sustainability, addressing carbon footprint concerns.

## Road ahead

Digitalisation is revolutionising the construction equipment industry, bringing significant benefits in terms of efficiency, productivity, safety, and cost savings. Technologies such as IoT, big data analytics, AI, and automation are transforming how construction equipment is designed, used, and maintained. However, the industry faces challenges, including high initial investments, data security concerns, and resistance to change.

Despite these challenges, the future of digitalisation in construction equipment looks promising. The continued advancement of technology will drive further innovations, leading to even greater improvements in equipment performance and project management. As the industry embraces these changes, it will unlock new opportunities for growth and development, paving the way for a more efficient, safe, and sustainable future in construction.







# POWER WHERE IT MATTERS

## POWER WHERE IT MATTERS.

The Ammann ARS 110.2 Soil Compactor delivers the highest applied force to the ground when compared to competitive products. And that's just the start. The 11-tonne machine provides:

- Varied amplitude settings that make it a great fit for multiple applications
- Rear-axle concept that enables unmatched stability, gradeability, traction and visibility
- An intuitive, reliable dashboard that helps even inexperienced operators succeed
- An optional, easy-to-install padfoot shell kit that offers deep penetration when needed

You'll also see cost savings after the purchase thanks to a fuel-efficient engine, durable components and accessible service points that enable quick maintenance.

The ARS 110.2 is built in India – especially for the Indian market.





# How AI is Transforming Efficiency in CE Industry

In an industry long characterised by stubborn inefficiencies and outdated practices, the advent of AI is poised to usher in a transformative era for construction.

**A**rtificial Intelligence (AI) enabled technologies provide a golden opportunity for construction companies to increase efficiency across their entire value chain as well as delivering projects faster and cheaper. The industry is ripe for further AI adoption – and innovative equipment OEMs are leading the charge.

Construction companies have come up against the same patchwork of problems for decades, including poor productivity and profitability, inadequate planning, budget overruns and project delays. According to one recent report, less than one in three contractors finish projects on time and within budget.

These recurring challenges are often attributed to the fact that construction companies are slow to embrace new methods and technological change. Instead, they cling to more traditional ways of planning, managing and executing projects, which leads to reduced margins for the firms, and dissatisfaction among their clients.

Finally, a new age of digital enablement seems to be arriving in construction, largely driven by revolutionary developments in AI. Companies are beginning to move to the digital age, as technologies arrive that improve performance and efficiency across every part of the construction life cycle.



## The power of AI

AI is an overarching term for how machines can mimic human cognitive functions, such as learning, problem-solving and decision-making. Machine learning is probably one of the most game-changing innovations in AI, where statistical algorithms are used to enable computer systems to learn from data and become better at providing insights as they consume ever more of it.

Many experts agree that AI-based solutions will positively disrupt the construction industry in the next decade. By applying these tools to track and evaluate different stages of the construction pipeline, companies can improve efficiency in ideation and design, streamline complex construction sequences, improve project management, boost productivity and dramatically reduce their costs.

## AI to do better biz

Innovative companies in the technology space, such as nPlan, Sensat and Continuum are working to enhance virtually every cog in the construction project life cycle through AI.

In the past, architects and engineers would spend countless hours creating designs and variations that met all the functional and compliance requirements of their clients.

With generative design, all those frustrating hours are minimised. Instead of all the onerous, manual work, designers use software that is connected to a database of previously constructed buildings. They enter all the parameters for the project, such as space requirements, cost constraints, preferred materials and required building performance into the software. The AI-optimised tool then



analyses all possible combinations and automatically generates design options that meet the specified criteria. The software learns from each new construction project, too, becoming a stronger tool with every iteration.

AI brings further opportunities to eliminate logistical inefficiencies and improve productivity during the construction process.

On sites where technological adoption is limited, up to a third of total project time continues to be spent on logistical headaches such as locating and moving materials, rearranging tasks, and the unnecessary downtime of man and machine. AI-based tools are capable of addressing all those challenges.

The latest wave of AI sees robots and drones working alongside algorithms to detect construction problems faster. Robots autonomously capture 3D scans of a site as construction progresses. The images are fed into a neural network where they're compared with the original building plans and blueprints. The AI tracks progress against the original plan and automatically identifies errors, delays, or transgressions.

When issues are flagged, the project team can react immediately, avoiding the impact of more time-consuming and costly corrections at a later stage.

The AI can even be instructed to make changes to the construction schedule based on any infraction it identifies, automatically informing all relevant stakeholders and in turn increasing the likelihood of the project being delivered on-schedule.

Construction companies are also using AI-based solutions to improve site safety, security and productivity.

For example, sites are increasingly equipped with AI-enabled sensors, cameras and other connected devices to monitor for hazards and intruders, as well as keeping track of the location

of workers and equipment. The technology enables firms to have an accurate, 360-degree, 24/7 picture of their site. They can quickly spot unsafe behaviour, move man or machine where they're needed faster, and ultimately have a safer and more productive site that gets projects delivered efficiently and safely.

### How is OEMs responding to developments in AI

Construction machines have an essential role to play in keeping sites productive and profitable. So it's no surprise that the OEMs responsible for building mission-critical equipment are harnessing the power of AI in their applications.

Probably the most radical example of AI in action can be seen in fully-autonomous, self-driving construction vehicles, which are already being deployed to global jobsites.

These machines are designed to perform repetitive tasks more efficiently than any human. A technician simply enters the necessary specifications for the job and the machine does the rest. Current AI-enabled machines are capable of doing tasks including demolition, excavation and groundworks, pouring concrete and even bricklaying.

All of this frees workers up to focus on more technical tasks and reduces the overall time required to complete a project. While AI experts contend that the potential of autonomous vehicles can only be fully realised once super-fast 5G networks are in place, the technology is established and primed to transform the construction landscape.

Other, less invasive, but no less effective AI applications are being implemented by machine OEMs. AI-powered sensors, for example, are featured on equipment to help with overall function, operation and efficiency.

### Tech in construction

Sensors can monitor all kinds of conditions relevant to a machine and the job it is doing, including temperature, engine condition, and even data about the materials the machine is working with. Captured data is combined with AI tools to provide analysis and forecast any malfunctions, problems or delays before they happen – in turn preventing costly downtime.

Sensors are also used to assist drivers on technically complex jobs – for example, providing precision in digging trenches to specific depths or improving machine maneuverability on sites where space is limited.

OEMs also incorporate AI technologies to improve site safety. Several manufacturers enable 360-degree vision for drivers by combining cameras placed around the vehicle with the latest AI-enabled object-tracking technology. This enables the machine to detect hazards automatically and alerts the operator, as well as anyone nearby, before there's an accident. Other OEMs, meanwhile, are working to solve problems such as idling equipment and emissions through a variety of AI-driven methods.

### Future of AI

According to even conservative estimates, autonomous machines can boost site productivity by 30 percent while the use of AI, combined with robotics and IoT, can reduce building costs by up to 20 per cent. These studies are difficult to ignore. So while construction has historically adopted new tech at a crawl, many observers see a tipping point coming as companies finally adopt the advanced solutions to reduce errors and overruns, improve safety, and make construction operations more efficient in a dynamic new digital age.

Article courtesy: Perkins





# Fighting Fire with Innovation

The author explains the need for fire resistant hydraulic fluids and their importance within the coal mining industry.

## FIGHTING FIRE WITH INNOVATION



**T**he coal mining industry has long grappled with the danger of fire hazards. Flammable gases and coal dust are inherent features of these underground environments, creating a volatile cocktail that demands utmost caution. While effective in facilitating machinery operation, traditional hydraulic fluids can inadvertently escalate the fire risk due to their flammable nature. The dangers of catastrophic fires and explosions are ever-present, threatening miners' lives, the

integrity of equipment, and the stability of mine structures.

Heavy-duty machines like continuous miners are used to cut through coal seams. Shuttle cars transport the precious cargo amidst confined spaces, and roof bolters secure stability, warding off potential collapses. Load haul dump (LHD) loaders deftly scoop and transfer coal to conveyors within the pitch-black depths. Yet, the criticality of equipment is the harshness of the surroundings—extreme pressures, high temperatures,

moist and dusty air and the constant risk of fire hazards.

In response, the demand for fire resistant hydraulic fluid becomes vital, as these fluids optimise machinery performance and offer a crucial layer of protection against ignition risks in an environment where a single spark could spell catastrophe. These specialised fluids boast a remarkable quality: high ignition temperatures. Unlike their conventional counterparts, fire resistant fluids are engineered to withstand ignition under the extreme

conditions prevalent in coal mines. This inherent resistance reduces the risk of hydraulic fluid-related fires and explosions.

Safety, though paramount, is only one facet of this transformative shift. Coal mines, often nestled in ecologically sensitive regions, can be environmental hotspots due to the risk of spills and leaks from hydraulic systems. While fire resistant hydraulic fluids cannot entirely prevent equipment leakage, their biodegradable nature and compliance ensure they do not threaten aquatic life. Regulatory compliance is another essential requirement that fire resistant hydraulic fluids address. Mining operations must adhere to strict safety standards to safeguard human lives and the environment. The adoption of fire resistant fluids not only aligns with these standards but often surpasses them.

### Enhancing safety, performance & sustainability

Commonly employed in room and pillar mining, the prevailing fire-resistant hydraulic fluids are water-free polyol ester products (HFDu). HFDu fluids are widely recognised as the premier fire resistant option compared to mineral oil, albeit at a higher cost. These fluids are specifically engineered to replace anti-wear hydraulic fluids that rely on mineral oil. This substitution is intended for scenarios where the potential for fire is a concern.





Worker using continuous miner to extract coal underground.



Mine engineers discussing mining operation.

Moreover, these fluids possess the versatility to be employed in hydraulic systems that demand environmental consideration. Importantly, their utilisation is consistent with the overall functionality and design of the hydraulic system.

Formulated from premium synthetic organic esters and meticulously chosen additives, HFDu fluids are entirely devoid of water, mineral oil, or phosphate ester content. These fluids demonstrate outstanding and consistent hydraulic performance, fostering a dependable operational environment. Although the initial investment in these fluids might be elevated, their employment typically translates to an overall reduced ownership cost. This stems from diminished maintenance-related downtime and improved lubrication, curbing energy consumption. Moreover, HFDu products boast an extended fluid lifespan, excel under higher pressure conditions, and elevate the system's overall reliability.

### The experts in fire resistant fluids

Adopting fire resistant hydraulic

fluids is a global phenomenon, resonating through coal mines across continents. These fluids facilitate a shift towards safer, more efficient, and environmentally responsible mining practices. Whether it's preventing catastrophic fires, reducing equipment wear and tear, or enhancing the industry's image in terms of sustainability, the impact of this transition is profound.

In the quest for safer, more sustainable mining operations, fire resistant hydraulic fluids have emerged as an unsung hero, revolutionising an industry long associated with risks and environmental concerns. As coal mines delve into the future, one thing is clear: this revolutionary fluid technology is lighting the path to a safer, greener, and more responsible mining industry.

Quaker Houghton stands as the global leader in ester-based fire resistant hydraulic fluid technology. Leveraging over five decades of experience, the company has been at the forefront of applying these advanced fluids across prominent firms in industries spanning steel, aluminium, mining, automotive,

and power generation. Their exceptional QUINTOLUBRIC® HFDu range presents water-free, fire-resistant hydraulic fluids. These HFDu fluids are meticulously crafted from synthetic and natural polyol esters, boasting remarkable fire resistance attributes.

The QUINTOLUBRIC®, COSMOLUBRIC® and QUINTEX® HFDu offerings are thoughtfully engineered to serve as alternatives to anti-wear, mineral oil-based hydraulic fluids in scenarios where fire risks are prevalent. Accessible on a global scale, they embrace biodegradability and find suitability in hydraulic applications that demand an environmentally conscious approach. Notably, HFDu products adhere to the stringent requirements outlined in various Fire Resistant ISO standards and enjoy the endorsement of FM Global (factory mutual) approval in numerous instances.



#### ABOUT THE AUTHOR:

The article is authored by Kirity Kumar, who is Sr. Business Segment Manager - Commercial at Quaker Houghton

# Towards a Viksit Bharat @ 2047

Critical aspects of the Indian infrastructure sector such as roads & highways development, railway modernisation and infrastructure financing were discussed at the INFRASTRUCTURE TODAY Conclave: Towards a Viksit Bharat @ 2047.

**V**iksit Bharat @2047 represents the government of India's ambitious roadmap to transform India into a developed nation by the centenary of its independence from colonial rule in 2047. The vision encompasses diverse facets of development such as economic prosperity, social advancement, environmental sustainability, and effective governance. INFRASTRUCTURE TODAY organised the conclave, 'Towards a Viksit Bharat @ 2047' to determine the best pathways to follow by the infrastructure sector to make India a \$30 trillion economy. Held in New Delhi on July 18-19, critical aspects of the country's infrastructure such as roads and highways development, railway modernisation and infrastructure financing were deliberated by stakeholders drawn from the government and the industry.

## Plenary Session: Urban Development & Metro Rail

- Municipal accounting modules are underutilised, hindering transparency and resource mobilisation.
- Financial sustainability is crucial for cities, achievable through digital infrastructure and financing initiatives.
- India's unique challenges require



tailored solutions for sustainable urban development.

- Last-mile connectivity is a significant challenge, solvable through EVs, online platforms, and government support.
- Integrated public transportation systems and awareness campaigns can encourage public transport adoption.

## Plenary Session: Roads & Highways - Challenges in Momentum

- ₹2 trillion in foreign capitals are invested in Indian roads.
- Aggressive bidding raises concerns about execution quality.
- A collaborative approach is needed for high-quality feasibility

reports.

- Latest technologies should be incorporated into DPRs.
  - Attention to detail and effective leadership ensure durable roads.
- ### Breakout Session: Airports
- Digital frameworks like BIM are crucial for airport projects.
  - Collaboration and stakeholder management are essential for success.
  - Delays and cost overruns impact project viability, needing swift attention.
  - RCS viability gap funding needs revisiting to improve effectiveness.
  - Airports are ready for new





L-R: Mangal Dev, Director & Head, Hitachi Rail India & South-Asia (Green Energy Mobility); Prakash Gaur, CEO, National Highway Logistics Management; Sanjiv Garg, Secretary General, CILT; Sudeep Shrivastava, ED, Ministry of Railways; Vinod Kumar Yadav, Director Transport, NCC; and U Subba Rao, GM, Integral Coach Factory.



L-R: Vijay Agrawal, MD, Equirus Capital; Athar Shahab, MD, Zuari Industries; Suneet Maheshwari, Partner, Udvik Infrastructure; Shailesh K Pathak, Ex-Director Indian School of Public Policy & Ex-Secretary General FICCI; and Ankit Jain, CFO, Cube Highways.



L-R: Bhargav Jog, Head-Business Development, Dextra India; M Ramesh, GM & Head, Mumbai Ahmedabad High Speed Rail, L&T; Sunil Desai, MD, Dextra India; BR Parthasarathy, Senior VP & Infrastructure Cluster Head, Tata Consulting Engineers; Sanjay Sharma, President of Operations, Dineshchandra R. Agrawal Infracon.



L-R: Vijay Agrawal, ED, Equirus Capital; Dr. Brijesh Dixit, MD, Maharashtra State Infrastructure Development Corp.; Murlee Mohan, COO, Maple Highways; Vikramjiet Roy, MD India & Region Head India, South-East Asia & Pacific, Maccaferri; and Mridul Thottoli, Director Partnerships, LivSYT.

technologies, but process improvements are necessary.

#### Plenary Session: Infrastructure

##### Finance

- Infrastructure finance has shifted from government-led to private sector-led.
- The private sector can't make unviable projects viable; proper planning is essential.
- The government excels at land acquisition and permissions, while the private sector operates assets efficiently.
- New financing models like TOT and InvITs offer investment opportunities.
- Managing risk and maturity is crucial for financial institutions and companies.

#### Plenary Session: Transformative

##### Interventions

- Indian Railways is transforming into a multimodal logistics provider.
- Vande Bharat trains introduce modern technology for faster, comfortable travel.
- Safety measures like Kavach aim to eliminate train collisions and accidents.
- Indian Railways targets net-zero carbon emissions by 2030 through electrification.
- Technology and modernisation efforts enhance safety, speed, and efficiency.

#### Plenary Session: Bullet Train -

##### High Speed Rail

- Bullet Train project progressing well, overcoming initial challenges.
- Collaboration and adaptability are crucial for success in urban areas.
- Project driving capacity building and knowledge transfer in India.
- Innovative technologies and practices adopted to improve efficiency.
- Safety, quality, and sustainability are paramount, with a net-zero carbon goal.



# Wipro Hydraulics acquires Columbus Hydraulics

Wipro Hydraulics, the hydraulic cylinder manufacturing business of Wipro Infrastructure Engineering, is pleased to announce that it has acquired Columbus Hydraulics, a leading US-based hydraulic cylinder manufacturer. Established in 1952, Columbus Hydraulics has built a strong reputation in the hydraulics industry, delivering custom hydraulic solutions for a variety of applications including agriculture, construction, turf maintenance and marine applications.

Commenting on the acquisition, **Pratik Kumar**, CEO, Wipro Infrastructure Engineering & Managing Director, Wipro Enterprises, said, "As a leading independent hydraulic cylinder manufacturer, Wipro Hydraulics has



established a significant presence in all growth markets. This acquisition strengthens our position and enhances our manufacturing capabilities in North America. By integrating Columbus Hydraulics' expertise in customised hydraulic solutions, we aim to provide even more comprehensive offerings to our customers."

Sitaram Ganeshan, President, Wipro Hydraulics, added, "The acquisition of Columbus Hydraulics,

following our recently acquired Mailhot Industries, is a strategic move to accelerate growth in North America. This acquisition complements our product and customer portfolio, allowing us to offer a broader range of hydraulic solutions for varied applications. Our combined skilled workforce will enable us to innovate for the current and future needs of our customers."

Brian Schneider of Northstar Capital, said, "I want to express my gratitude to the Columbus Hydraulics team for their dedication throughout this remarkable growth journey. Wipro is the perfect partner to propel Columbus into its next stage of expansion in North America. I look forward to seeing Columbus thrive under Wipro's leadership."

## DICV inaugurates Mechatronics Lab with transformed efficiency

Daimler India Commercial Vehicles (DICV), a wholly-owned subsidiary of Daimler Truck AG, announced the inauguration of a new state-of-the-art Mechatronics Lab inside its Oragadam facility. This lab significantly increases the efficiency of software architecture verification and validation, and ensures cost efficiencies in the range of 70-80 per cent. Agile methodologies deployed in the lab facilitate rapid identification and resolution of software bugs through a close-loop feedback system. Testing and verification methods that earlier took weeks and months now take days, thereby drastically improving the efficacy of quality and testing processes.

DICV's Mechatronics Lab verifies and validates software feature functionality for trucks and buses that not only meet current safety standards, but also helps Daimler Truck products manufactured in DICV



stay ahead of the curve in meeting future global safety regulations.

**Pradeep Kumar Thimmaiyan**, President of Product Engineering & CTO at Daimler India Commercial Vehicles, said, "Our new Mechatronics Lab signals a transformative phase in our Research and Development operations, ushering us into an era that underscores enhanced agility and breakthrough innovations. Beyond validation, our Mechatronics Lab stands as a hub for innovation, positioning us uniquely on the global stage. Already, the lab is the core of our future electrical and electronic architectures."

## BharatBenz heavy-duty rigid truck launched in India

DICV announced the launch of the all-new range of heavy-duty rigid trucks from BharatBenz in the Indian market. The new range of Rigid, engineered for superior reliability, will be powered by an all-new BharatBenz BSVI-Stage2 6.7-litre diesel engine and will offer new payload applications such as bitumen, bulker, Petroleum, Oil & Lubricants (POL) in addition to a variety of existing payload applications.

The all-new engine in new Rigid range is offered in two configurations with higher horsepower and torque – 250HP and 950Nm and 306HP and 1200Nm, which customers can choose from as per their application requirements. Models in the all-new BharatBenz heavy-duty Rigid range will be available to customers needing 2826R (6x2), 3526R (8x2), 3832R (8x2), 4232R (10x2) and 4832R (10x2) configurations.



## S. Arya is new MD of Cummins India

Cummins India has appointed Shveta Arya as an Additional Director and the Managing Director effective August 8, 2024.

Shveta Arya will take up the full-time role as the Managing Director of Cummins India - effective September 1, 2024, subject to approval from shareholders through a postal ballot.

She succeeds Ashwath Ram, who will continue serving the company until August 31, 2024 (close of business hours). Under his leadership, the company achieved profitable growth and successfully navigated multiple challenges, including COVID-19.

## ABB India turns half of its manufacturing locations water positive

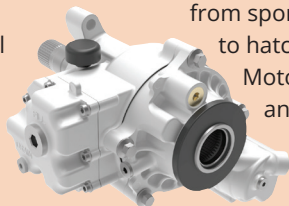
ABB India announced that its Peenya campus in Bengaluru has been certified water positive by the Green Rating for Integrated Habitat Assessment (GRIHA) Council. With this, three out of its six manufacturing locations are now "water positive". Their Peenya campus has a water positivity index of 1.05, demonstrating its contribution towards replenishing a much greater quantity of water for the environment than withdrawals for its manufacturing facilities. Previously, the Nelamangala campus and Nashik Plant 1 had received a "water positive" certification from the GRIHA Council, in association



with The Energy and Resources Institute. In place of simply replacing the amount of water taken from the environment, ABB implemented a systematic approach towards "water positivity" to replenish more water than it consumes at these locations. The approach includes initiatives such as rainwater use, reduction in the use of freshwater, water recycling, and real-time monitoring of water consumption.

## BorgWarner lands BEV cross differential contracts with 3 OEMs

BorgWarner has secured contracts to supply its electric cross differential (eXD) to three major OEMs, including GAC Motor, a Global East Asian OEM, and a Global OEM based in Europe. The companies will incorporate BorgWarner's eXD technology on both rear- and front-wheel-drive battery electric



vehicle (BEV) applications ranging from sports cars to premium sedans to hatchbacks. Production for GAC Motor is currently underway, and production for the other OEMs will begin in 2026. BorgWarner's eXD is part of its electric torque management system (eTMS) portfolio, which offers a range of products that intelligently control wheel torque to increase stability,

provide superior dynamic performance, and improve traction during launch and acceleration. High torque from the motor in electric vehicles (EVs) leads to limitations and challenges in vehicle performance since the application of torque to individual wheels remains unsupervised. The eXD system can effectively increase driving safety in an energy-efficient way in difficult driving conditions.

## BKT's advanced tyre solutions for mining

Balkrishna Industries (BKT) will participate at the 17<sup>th</sup> edition of the International Mining and Machinery Exhibition (IMME). Organised by the Confederation of Indian Industry (CII), this prestigious event will be held from October 23 to 26 at the Science City Exhibition Ground, Kolkata.

As one of the most prominent players in the off-highway tyre industry, BKT is all set to showcase its 'Bharat Ka Tire' extensive product portfolio which are 'Built in Bharat; Built for Bharat and Building Bharat',

featuring cutting-edge solutions tailored to meet the diverse needs of the Indian mining sector. Attendees of IMME 2024 will have the unique opportunity to connect with the BKT team at OD5 and witness first-hand the state-of-the-art technology that defines BKT's latest offerings.

With over three decades of expertise in the Off-Highway tyre segment, BKT is recognised as a leader in innovation and reliability. At IMME 2024, BKT invites attendees to visit Booth OD5.

## My Eicher App reaches significant milestone

Eicher Trucks & Buses has been setting benchmarks in providing a connected ecosystem to its customers through 100 per cent connected vehicles supported by industry first uptime centre and first-of-its-kind next-generation fleet management app, My Eicher. Successfully serving, 1,15,000 customers across India, MyEicher now connects over 2,75,000 trucks and buses to Eicher's Uptime Center.



# Komatsu Unveils New Demolition Excavators

**K**omatsu, a leading name in construction equipment, has been offering four demolition excavators across Europe for over two decades. Now, the company is expanding its reach to North American contractors.

At a recent Demo Days event for its dealers, Komatsu introduced the PC490HRD-11, a high-reach excavator with an impressive maximum height of 104 feet and the innovative K100 automatic boom change system.

In addition to the PC490HRD-11, Komatsu is also launching three other demolition models: the PC290LC-11, PC360LC-11, and PC490LC-11. These models vary in weight from 67,120 to 107,497 pounds and are designed for demanding demolition tasks.



While the PC490HRD-11 is a high-reach model, the new PC290LC-11, PC360LC-11, and PC490LC-11 feature straight-boom designs. These models offer a reach that is 22 per cent to 26 per cent greater than standard excavators, making them well-suited for challenging jobs. They come equipped with enhanced protection

features including heavy-duty revolving frames, under guards, bucket cylinder guard, boom light protection guards, and reinforced attachment linkage.

Operators will benefit from advanced in-cab touchscreens that allow for customised operation by programming flows and pressures for up to 15 attachments.

# XCMG Unveils XE60G Mini Excavator

**X**CMG, a leading Chinese construction equipment manufacturer, has introduced its new G Series excavators, designed with the motto "Gearing toward the Future". This series marks a significant leap forward from the previous C and D Series models.

The G Series reflects XCMG's latest advancements, featuring over 50 core technology improvements, including enhanced all-condition power matching and PIC feed-forward control.

The debut model of the G Series is the XE60G mini excavator, tailored for a range of applications from municipal projects to landscaping tasks. The XE60G comes equipped with an electronically controlled main pump, flow matching capabilities, and three intelligent work modes, allowing operators to optimise



performance based on jobsite conditions. The excavator's undercarriage boasts larger track rollers and double-arm supporting carrier rollers, which enhance its carrying capacity. It also includes a standard 0.31-cubic-yard bucket.

For demanding applications, the XE60G features a high-strength boom and arm with a reinforcing rib at the arm's end section to increase durability. The cab is constructed from high-strength steel using one-piece stamp molding, providing superior impact, bending, and torsion

resistance. Operators will benefit from a new suspension seat, which, combined with the cab's shock absorber, reduces vibrations by 50 per cent. The cab also includes pull-down sunshades to keep the interior cooler and block UV rays. The upgraded heating and cooling system offers 25 per cent more airflow and a 20 per cent improvement in cooling efficiency compared to previous models. Additional features include larger folding walking pedals for increased comfort and easier-to-clean floor mats. Maintenance is simplified by a three-piece metal hood with a wide opening for radiator cleaning, and the fuel tank has a capacity of 34.3 gallons. Safety features include a hydraulic lock on the dozer blade to prevent accidental drops in case of a hose burst, along with an optional integrated alarm light and electronic buzzer system.



# World's First Commercial Electric Backhoe Loader!



**C**ase has launched the world's first commercial electric backhoe loader, the 580EV, marking a significant milestone in the construction equipment industry. Originally unveiled as a concept called Project Zeus in 2020, the 580EV has undergone extensive refinement based on contractor feedback before its market debut on August 14.

Brad Stemper, Case's product management lead for North America, emphasised the company's approach: "Rather than simply retrofitting a diesel machine, we rethought every aspect to maximise energy efficiency."

The 580EV is built on the foundation of the 97-horsepower 580 Super N, Case's most popular backhoe model. It matches the diesel version in performance, including loading and digging capabilities and breakout forces, while offering the advantages of reduced noise and zero emissions. The electric backhoe can use the same attachments as its diesel counterpart.

Powered by a 400-volt, 71-kilowatt-hour lithium-ion battery system, the 580EV offers 4 to 8 hours

of operation per charge, depending on usage. It charges from 0 per cent to 100 per cent in 7.5 hours and from 20 per cent to 80 per cent in 4.4 hours. The backhoe is equipped with a J1772 Level 2 automotive-style charger, compatible with public charging stations for vehicles. To address concerns about battery performance in extreme temperatures, Case has incorporated an advanced thermal management system to ensure reliable operation in both hot and cold conditions.

The 580EV features two independent electric motors: one for the PowerDrive transmission and another for the hydraulic pumps. This separation allows for efficient control of the loader hydraulics and ground drive, ensuring quick cycle times and smooth material loading without clutching.

Stemper noted that the electric backhoe delivers instant peak torque without the power lag typical of diesel engines.

The 580EV also includes an Extendahoe for increased dig depth and reach, ProControl for swing damping, and Case's PowerLift/PowerBoost system.

# HD Hyundai Unveils Largest Excavators

**H**D Hyundai has launched its most powerful excavators to date, the 82-tonne HX800A L and the 100-tonne HX1000A L, designed for heavy-duty earthmoving, mining, and quarrying tasks. The HX800A L is equipped with a 528-net-horsepower Perkins 2506J diesel engine, offering a maximum digging depth of 23 feet 4 inches and a reach of 38 feet. It delivers a crowd force of 72,300 pound-feet and a bucket breakout force of 75,400 pound-feet. The larger HX1000A L features a 620-net-horsepower Perkins 2806J diesel engine, with a maximum digging depth of 23 feet 10 inches and a reach of 40 feet 9 inches. It boasts a bucket breakout force of 98,767 pound-feet and an arm crowd force of 88,846 pound-feet.



Both models come with a standard arm configuration but offer additional boom and arm options to suit different excavation needs. The HX800A L supports buckets ranging from 4.5 to 7 cubic yards, while the HX1000A L is compatible with buckets from 7 to 8.9 cubic yards.

These excavators feature three selectable power modes—power, standard, and economy—along with an integrated smart power control system that adjusts engine power and hydraulic flow based on real-time performance.

## Case Expands Electric Lineup



**O**n the heels of introducing the world's first electric backhoe to the market, Case has followed up with a new electric compact excavator and electric compact wheel loader.

The new models bring the

company's battery-powered lineup to five construction machines.

Both the new CX25EV mini excavator and CL36EV compact wheel loader are scheduled to be available soon, the company says. They match the performance of their diesel

counterparts but with no emissions and less noise, according to Case.

They join the electric 580EV backhoe launched recently, as well as the electric CX15EV mini excavator and the SL22EV small articulated loader, which have already launched.

The 1.5-metric-tonne CX15EV mini excavator was Case's first electric machine to hit the market, rolling out at ConExpo 2023.

Coming soon is the more powerful CX25EV at 2.5 metric tons. Case says it can be hauled with a pickup truck and trailer and is a good choice for urban and crowded construction sites.

As with the other electric machines, its low noise and zero emissions make it ideal for sensitive sites, such as hospitals and schools, as well as overnight and indoor work.

## HD Hyundai Releases Two Largest Excavators for Heavy-Duty Digging

**H**D Hyundai has introduced its largest excavators yet, the 82-tonne HX800A L and the 100-tonne HX1000A L, for earthmoving, mining and quarrying applications.

The HX800A L is powered by a 528-net-horsepower Perkins 2506j diesel engine. It has a maximum digging depth of 23 feet 4 inches and a maximum digging reach of 38 feet. HD Hyundai places the excavator arm's crowd force at 72,300 pound-feet and the bucket breakout force at 75,400 pound-feet.

The HX1000A L is equipped with a 620-net-horsepower Perkins 2806j diesel engine. Its maximum dig depth is 23 feet 10 inches. The maximum dig reach is 40 feet 9 inches. It has a bucket breakout force of 98,767 pound-feet and an arm crowd force

88,846 pound-feet.

While the specs above refer to the standard arm configuration, additional boom and arm options are available for both excavators to match the material being excavated.

The HX800A L pairs with buckets with a capacity of 4.5 to 7 cubic yards, while the HX1000A L supports buckets with a capacity of 7 to 8.9 cubic yards. HD Hyundai has given both models three selectable power modes — power, standard and economy — and an integrated smart power control system that monitors the excavator's real-time performance and automatically adjusts the engine power and hydraulic flow to match the application. Operators also have independent control of two hydraulic pumps to improve the pump flow rate

according to the attachment type. Hyundai has designed the cabs with Level 2 FOPS protection, advanced vibration-damping mounts and seats with air suspension, selectable heat and adjustable armrests.

The standard All-Around View Monitoring Camera gives operators 360-degree visibility of the jobsite. The system includes Intelligent Moving Object Detection, which alerts operators when people or objects come within 16 feet of the excavator.

Operators can access control menus, power settings and auxiliary hydraulic settings on the eight-inch monitor. The audio system includes an AM/FM radio, a USB-based MP3 player, Bluetooth and a built-in microphone to answer calls while operating.







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## CONVEYORS



### 1 | Gujarat State Electricity Corporation

**Details:** Tenders are invited for various routine, preventive and breakdown maintenance works of conveyor system at coal handling plant of WTPS on as and when required basis.

**Submission date:** 9 September 2024

**Location:** Kheda, Gujarat

**Tender value (Rs):** 4,426,342

**Contact:** Chief Engineer [C & O], Galteshwar, Dist: Kheda -388239, Gujarat. (HR Damriya, SE(T/S),  
**Mob:** 09925210844, **Email:** wtps.setech@gmail.com

### 2 | Madhya Pradesh Power Generation Company

**Details:** Tenders are invited for supply, dismantling, erection, testing and commissioning of existing hydraulic rail clamp assembly for ThyssenKrupp make stacker cum reclaimer of conveyor 8A installed at 4x210 Mw CHP I at SGTPS MPPGCL Birsinghpur.

**Submission date:** 9 September 2024 **Location:** Jabalpur, Madhya Pradesh

**Tender value (Rs):** 8,437,000

**Contact:** Er. K. B. Bilthare, Chief Engineer (Gen), Block No.9, Shakti Vidyut Nagar, Rampur, Jabalpur-482008, Madhya Pradesh. T: 0761-2702615, F: 0761-2665805 |

**Email:** mppgcl@mp.nic.in, **Web:** www.mppgcl.mp.gov.in

### 3 | National Aluminium Company

**Details:** Tenders are invited for support service for smooth operation of cable belt conveyor system of NALCO Mines, Damanjodi.

**Submission date:** 6 September 2024

**Location:** Damanjodi, Odisha

**Contact:** N. Srinivasa Sudhakar - GM(E), T&C Department, Mines Division, Damanjodi-763008, Odisha. M: 09437028234, **Email:** nissankararao.sudhakar@nalcoindia.co.in

## CRANES



### 4 | South Western Railway

**Details:** Tenders are invited for supply of EOT crane.

**Submission date:** 18 September 2024

**Location:** Mysore, Karnataka

**Contact:** Senior Divisional Material Manager (Sr. DMM), DIV, Mysore, Karnataka

### 5 | West Central Railway

**Details:** Tenders are invited for supply, installation and commissioning of EOT crane 25 t.

**Submission date:** 17 September 2024

**Location:** Rewa, Madhya Pradesh

**Contact:** Principal Chief Materials Manager, Rewa, Madhya Pradesh

### 6 | Banaras Locomotive Works

**Details:** Tenders are invited for supply of LT wheel for EOT crane.

**Submission date:** 11 September 2024

**Location:** Banaras, Uttar Pradesh

**Contact:** Principal Chief Materials Manager, Banaras, Uttar Pradesh

### 7 | North Eastern Railway

**Details:** Tenders are invited for supply, installation and commissioning of EOT crane.

**Submission date:** 12 September 2024

**Location:** Gorakhpur, Uttar Pradesh

**Contact:** Dy Chief Materials Manager/Depot, Gorakhpur, Uttar Pradesh



**8 | Uttar Pradesh Rajya Vidyut Utpadan Nigam**

**Details:** Tenders are invited for miscellaneous electrical maintenance of battery and battery charger, dcdb, lighting maintenance and street lighting eot crane and hoist etc. 1 x 110mw, ctps , https kasimpur, aligarh for two years.

**Submission date:** 10 September 2024

**Location:** Aligarh, Uttar Pradesh

**Tender value (Rs):** 2,526,990

**Contact:** Er. Vikas Sharma, Superintending Engineer, O and MC IV, DTSP, Harduaganj Thermal Power Project, Kasimpur, Aligarh, Uttar Pradesh. **Mob:** 09412753134

**9 | Kolkata Port Trust**

**Details:** Tenders are invited for setting up of floating crane facilities to increase lightening / topping up of cargo and container at Diamond Harbour in the limit of Syama Prasad Mookerjee Port.

**Submission date:** 16 September 2024

**Location:** Kolkata, West Bengal

**Contact:** RS Rajhans-Traffic Manager, Subhas Bhawan, 3rd Floor, Syama Prasad Mookerjee Port, Kolkata-700043, West Bengal. **Email:** tm@kolkataporttrust.gov.in

**DOZERS****10 | Junagadh Mahanagar Seva Sadan**

**Details:** Request for quotation for supply of front end loader, hydraulic tractor trailer, jetting machine, wet garbage collection van, hearse van, dead animal van, hydraulic van, towing vehicle, water tanker.

**Submission date:** 3 September 2024

**Location:** Junagadh, Gujarat

**Contact:** Municipal Commissioner, Junagadh Municipal Corporation, Swami Vivekananda, Azad Chowk, MG Road, Junagadh-362001, Gujarat

**DUMPERS****11 | Urban Development Department Chhattisgarh**

**Details:** Tenders are invited for supply of hopper tipper dumper.

**Submission date:** 4 September 2024 **Location:** Pandatarai, Chhattisgarh

**Contact:** Chief Municipal Officer, Pandatarai, Chhattisgarh

**12 | Gandhinagar Municipal Corporation**

**Details:** Tenders are invited for supply of hopper tipper dumper.

**Submission date:** 10 September 2024 **Location:** Gandhinagar, Gujarat

**Contact:** Deputy Municipal Commissioner, Urban Development and Urban Housing Department, Gandhinagar, Gujarat

**13 | Urban Development and Urban Housing Department Gujarat**

**Details:** Tenders are invited for supply of hopper tipper dumper.

**Submission date:** 12 September 2024

**Location:** Botad, Gujarat

**Contact:** Rathod Jayrajibhai Rupsangbhai-Chief Officer, Botad Nagarpalika, Botad, Gujarat

**14 | Municipal Council Nainpur Jabalpur**

**Details:** Tenders are invited for supply of hopper tipper dumper.

**Submission date:** 9 September 2024

**Location:** Nainpur Jabalpur, Madhya Pradesh

**Contact:** Chief Municipal Officer, Urban Development and Environment Department, Nainpur Jabalpur, Madhya Pradesh



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## Case Construction Equipment India

Our Annual Dealer Conference 2024 in Goa, themed 'Stronger Together', was a tremendous success. A big thank you to our Dealer partners for their invaluable participation. Together, let's continue to build on this success!



## Vijay Kumar

Volvo CE, India lends support to our training partner, the Indian Institute of Infrastructure & Construction (IIIC), Kollam, Kerala in running their Excavator Operator Training programs with a Volvo Excavator. Prof B Sunil Kumar Director, IIIC, seen here with MD, Volvo CE, D Krishnan and his team, on the occasion of the machine handover in Bangalore. Many thanks to Volvo CE India for this commendable gesture and looking forward to a fruitful partnership and a major contribution to the skilling ecosystem in our industry.



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