



June 2025 • Vol. 18 No. 5

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FEATURES:

- Excavators...34
- Industrial Cranes...42
- OTR Tyres...62

INTERACTIONS:

- Ashok Chhajer, BKT...68
- Sharwan Agnihotri, HD Hyundai CE...37





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MEGA MRCHINES

From metro tunnellers to 3D-printed bridges, the future of Indian infrastructure may depend on super-sized mega machines — but will terrain, cost, and scale cooperate?

















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Sub@EquipmentIndia.com Tel: 022-31033000

Published by

ASAPP Info Global Services Pvt Ltd, A-303, Navbharat Estates, Zakaria Bunder Road, Sewri (West), Mumbai-400 015. Tel: 022-31033000.

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

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STEADY STRIDES AMID SHIFTING TERRAIN

Real estate is booming and in megapolis like Mumbai which makes up for 50 per cent of the value of real estate market of India at ₹1.5 trillion, it is further accelerating with redevelopment. Urban growth calls for compact equipment as it provides efficiency, and cost-effectiveness, making them ideal for use in dense urban areas and confined construction sites.



In terms of equipment demand, FY25 saw excavators

lead the pack, particularly in the 20 to 35 tonne range for roads and industrial projects. However, smaller equipment categories such as mini excavators suffered due to rural project delays. Regional trends remained mixed — while western India showed strength on the back of real estate and industrial investments, southern markets lagged in the absence of large-scale construction activity.

India's construction and mining equipment sector enters FY26 with cautious optimism. While FY25 witnessed stable performance driven by infra and real estate activity, the coming year is expected to see modest growth. Flat allocations in highways and railways, coupled with rising costs from the implementation of Bharat Stage CEV-V norms, are likely to restrict expansion. Leading companies have already rolled out their BS-V compliant machines, ensuring readiness but adding to pricing pressures.

Looking ahead, the construction and mining equipment industry sees a long-term growth opportunity worth \$45 billion by 2030. However, this potential hinges on resolving structural challenges in underground mining and mineral processing. Despite policy pushes to triple underground mining output, progress is hampered by high startup costs and delayed environmental clearances. Moreover, existing regulations requiring separate leases for different minerals from the same mine continue to hinder operational efficiency. Indian OEMs also face rising competitive pressure from low-cost Chinese imports, which are capturing greater market share. A comprehensive policy framework currently under development aims to address these hurdles. It seeks to boost domestic manufacturing through incentives, improve ease of doing business, and encourage digital integration. Such reforms are essential to achieving the sector's long-term vision and reducing reliance on imports.

Globally, technological innovations are reshaping the manufacturing landscape. HD Hyundai's new smart factory in South Korea showcases automation processes that enhance efficiency and quality. Indian manufacturers are expected to follow suit, adapting advanced manufacturing techniques to meet demand for fuel-efficient machines.

India's auto component sectors' revenue stands at ₹6.14 trillion contributes 2.3 per cent to GDP. It exports over 25 per cent of its production annually. It is expected to reach the \$100 billion export target by 2030 making the sector one of the largest job creators. The majority of the components sold to OEMs are engine components (26 per cent), body/ chassis/BIW (14 per cent), suspension and braking (15 per cent), drive transmission and steering (13 per cent), and electricals and electronics (11 per cent). Major exports are to Europe (\$6.89 billion), followed by North America (\$6.19 billion) and Asia (\$5.15 billion). Currently as per President Trump's order dated March 26, section 232 tariffs of 25 per cent are applicable to autos, auto parts, and steel and aluminium articles.

As FY26 unfolds, India's CE ecosystem stands at a crossroads cautiously navigating short-term pressures while laying the groundwork for long-term structural growth. Despite current headwinds, the sector's fundamentals remain strong, supported by innovation, policy reform, and a gradual shift toward advanced, efficient equipment.

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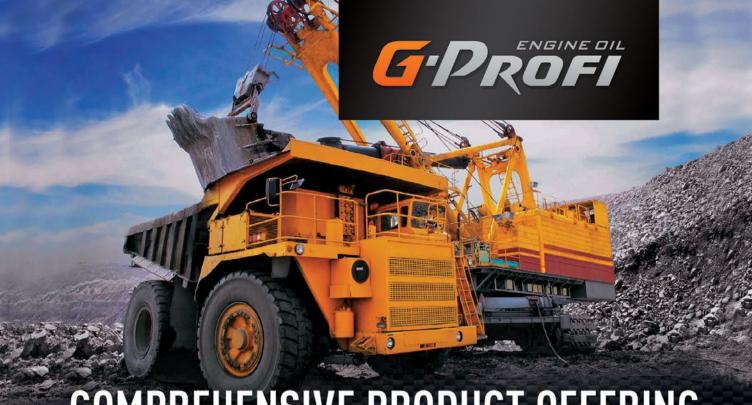
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INSIDE

Cover Story MEGA MACHINES!



From metro tunnellers to 3D-printed bridges, the future of Indian infrastructure may depend on super-sized mega machines — but will terrain, cost, and scale cooperate.

Feature: Hydraulic Excavators

Future Excavated



India's infrastructure boom is unearthing a new era of smart, sustainable, and connected hydraulic excavators powering tomorrow's construction landscape.



"The outlook for hydraulic excavators is promising."
- Sharwan Agnihotri, Head – Mining & Export Business, HD Hyundai Construction Equipment India.



26

34

37

"Our cutting-edge excavators are Made in India." 40
- Satendra Tiwari, Executive Director – Operations, Case Construction.

Feature: Industrial Cranes Lifting India's Future

42



As India builds faster and taller, industrial cranes are emerging as essential, intelligent machines powering the nation's infrastructure, logistics, and industrial growth.



"The crane market is expected to see consistent growth." 46 - Arvind Rishi, Assistant Vice President – Sales & After Market, TIL Limited.

Interaction



"BS-V compliance has increased the cost of backhoe loaders." 48 - Siddharth Chaturvedi, General Manager – Marketing, Tata Hitachi Construction Machinery.



Re-defining Standards for

India's Excavators



Bigger and Better

NextGen - 700CK Series Track Drives

Bonfiglioli has unveiled its latest innovation: cutting-edge Track drives specifically tailored for the demanding Indian excavation landscape. They are designed to enhance the performance and efficiency of excavators operating in India's diverse and challenging conditions.





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INSIDE

Cover Pic Courtesy: Herrenknecht India

Rental

Why Renting Beats Buying

Once a symbol of capability, owning heavy equipment is losing its appeal. With rising costs and complex compliance, contractors are increasingly turning to rentals for flexibility, savings, and simplicity.

Guest Column

Transforming OEM and Equipment Manufacturing

ERP systems are becoming increasingly intelligent day by day. They now leverage historical data, real-time market trends, and even external factors to make more accurate demand and financial forecasts, write YUVRAJ SHIDHAYE.

Report

Trump Tariffs: A Hit or an Opportunity?

55 When Trump's tariff war disrupted global trade, India's construction equipment sector faced challenges—but also seized new export opportunities as global buyers turned away from China and looked toward India.

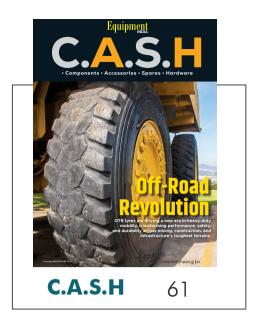
Regulars

Findex	12
What's Up	14
Around the World	22
CASH News	70
Movers and Shakers	74
Tenders	76
Twit-Bits	80

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Special Focus: OTR Tyres

Off-Road Revolution

50

53

62



OTR tyres are driving a new era in mobility, transforming performance, and durability across mining, construction, and infra's toughest terrains.



"The demand for OTR tyres is at an all-time high." 68 - Ashok P Chhajer, Sr. General Manager - OE Sales, (Domestic Market), Balkrishna Industries.

Event Report

Cost Optimisation for Building Durable Roads 57 As India targets the construction of over 10,000 km of highways annually, the question of cost optimisation in road construction becomes increasingly critical. Let's find out some effective ways to build durable roads without comprising on cost, quality, safety, and sustainability.



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SEARCH

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

ORGANISATION	
ACE	56
Ahluwalia Contracts	51
Ammann India	. 16, 28
ATMA	67
Balkrishna Industries	66
BEML	14
Bomag America	23
Case Construction	. 16, 36
Caterpillar	22
CERA	32
Coal India	14
Dimaag	23
DRAIPL	26
Dynapac	23
E.S. Infraserve	14
Express Equipment	51
HD Hyundai CE India	35
Herrenknecht	30
IESC	28
JK Tyre	67
Jungheinrich India	44
Kochi Metro Rail	18
Komatsu	23
Laisa Caasustama	วา

Liebherr	22
Migoo	50
Mycranes	43
Raimondi	23
Raj Construction	51
Sany	22
Tata Hitachi	14, 48
Terex India	28
TIL Limited	16, 43
TreadBinary	54
Trimble	22
VDMA	56
Volvo CE India	16
XCMG Machinery	22
Zquip	22
PEOPLE	
Achyut Ghatak	14
Ajay Malik	56
Amol Sinha	
Anand Sundaresan	28
Andrei Geikalo	43
Anuj Kathuria	67
Arjunkumar N Panchani	50
Arvind Rishi	43

Ashok Chhajer	66
B. Sairam	14
Dimitrov Krishnan	16, 35
Dr Vinay Ranjan	14
Karan Gandhi	51
Manoj Garg	30
Manojit Acharya	44
PM Prasad	14
Pramod B Joshi	5
Raj Saliya	5
Rajesh Nath	56
Rajiv Budharaja	67
Ratan Lal Kashyap	26
RK Chilana	16
Sandeep Singh	14
Satendra Tiwari	36
Satin Sachdeva	32
Shantanu Roy	14
Sharwan Agnihotri	35
Siddharth Chaturvedi	48
SP Rajan	28
Vijay Kumar	28
Vishal Parami	16
Yann Monnet	23
Yuvraj Shidaye	54

COVER STORY:

Backhoe Loaders

FEATURE:

- MHE
- Digitalisation in CE

CASH SPECIAL FOCUS

Attachments

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E.S. Infraserve Wins at Tata Hitachi's Annual Awards

Tata Hitachi hosted the Annual Dealer Awards 2025 ceremony in Hong Kong to honour and celebrate the remarkable achievements of its esteemed dealer network. This prestigious event served as a platform to showcase Tata Hitachi's commitment to fostering strong partnerships and recognising outstanding contributions by rewarding top-performing dealer partners. The event also marked the premiere of the company's latest brand communication, which builds upon the inspiring theme of 'Chalo Desh Banaye'.

In addition to formal recognitions, Tata Hitachi ensured that the occasion was a truly enjoyable and memorable experience for all dealer partners. From thoughtfully planned networking opportunities to engaging entertainment and a vibrant celebratory atmosphere, the event was designed to express genuine appreciation and offer a well-deserved break to the brand's front-line ambassadors.

Apart from the overall performance awards, recognitions were also presented to dealer partners for their excellence in various aspects of business such as sales, attachments, spare parts, marketing, and more. E.S. Infraserve, Indore, was honoured with the award for Best Dealership for FY 2024-25.

Speaking on the occasion, Sandeep Singh, MD, Tata Hitachi, said, "We are immensely proud to



recognise the exceptional achievements of our dealer network through the Annual Dealer Awards 2025. The unwavering dedication and commitment of our dealer partners has played a significant role in our success. We are very happy to recognise and celebrate our achievements together."

CIL Commissions Indigenous Electric Rope Shovel

Coal India has announced the commissioning of India's first indigenously developed electric rope shovel at Nigahi Project of its subsidiary, Northern Coalfields (NCL), in Singrauli, Madhya Pradesh.

The handing-over and commissioning ceremony of this state-of-the-art shovel – manufactured by Bharat Earth Movers (BEML) – witnessed the presence of its PM Prasad, Chairman, Dr Vinay Ranjan, Director (HR); Achyut Ghatak, Director (Technical); Shantanu Roy, CMD, BEML; and B. Sairam, CMD, NCL; and senior management from Coal India, NCL, and BEML.

In his virtual address from Corporate Office in Kolkata, Prasad, described the induction of this shovel into Coal India's HEMM fleet as a significant step towards



Aatmanirbhar Bharat. He also lauded the strong work culture at NCL and expressed confidence that the new machine would be utilised to its optimum capacity.

This 20-cubic-metre (cu m) electric rope shovel features a robust high-tensile bucket and boom design, a fully air-conditioned ergonomic operator cabin, and an impressive annual production capacity of 4.45 million cu m. It is also equipped with real-time monitoring and diagnostics with integrated safety and fault protection systems.

BEML Acquires Land in Chhattisgarh for New Plant

BEML, a prominent public sector undertaking under the Ministry of Defence and a key player in defence and heavy equipment manufacturing, has unveiled a major expansion initiative with the acquisition of land in Chhattisgarh for a new manufacturing facility. According to a regulatory filing dated 9 May, the Chhattisgarh state cabinet has approved the allotment of 100 acres of land to BEML in the Janigir-Champa district. The land has been allocated at a token rate of Re 1 per acre, paving the way for the establishment of a modern manufacturing unit focused on Heavy Earth Moving Equipment.

The proposed facility is expected to significantly bolster BEML's production capacity and reinforce its expanding role in India's infrastructure and mining sectors.



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CASE Rolls out BS V-Compliant Machine

CASE Construction Equipment, a brand of CNH and a leading name in vibratory compactors segment, today announces the rollout of its first BS (CEV) Stage V-compliant machine from its state-of-the-art manufacturing facility in Pithampur, Madhya Pradesh, for the Indian market. The rollout underscores CASE's proactive approach toward environmental responsibility and readiness for the next phase of clean and green construction machinery in India.

This development is a significant step in the company's efforts to align with India's evolving emission standards while delivering cuttingedge, reliable, and efficient construction equipment. With this,



CASE has begun manufacturing its comprehensive line-up of upgraded equipment, which also includes two brand-new vibratory compactors — the 952 NX and 450 NX — along with the enhanced 1107 NX vibratory compactor. The refreshed portfolio also features advanced loader backhoe models such as the 770 NX, 770 NX Magnum, and 851 NX.

Ammann Advocates RAP for Greener Future

Ammann India hosted its asphalt recycling seminar in Mumbai. The event explored the role of cuttingedge recycling technologies in shaping the future of eco-conscious road construction in India. It aimed to address a critical industry need to equip stakeholders with the technical knowledge and strategic clarity to translate sustainability goals into actionable, on-ground outcomes. From insightful keynotes and technical deep dives to engaging panel discussions, the seminar showcased the future of road construction with RAP (Recycled Asphalt Pavement) especially in context with its usage for Indian roads. The event provided a platform to highlight emerging trends.

TIL Marks Manufacturing Excellence

TIL announces the rollout of its 400th Hyster-TIL ReachStacker from its state-of-the-art Kharagpur facility. This milestone, achieved over 14 years since the first ReachStacker production in 2010, further reiterates TIL's manufacturing excellence and its significant contribution to India's material handling equipment sector.

The company's production volumes have grown substantially from just 3 units in the first year to over 50 units annually during 2016-19, demonstrating strong market acceptance and manufacturing capabilities. With a target of producing more than 50 ReachStackers in the next fiscal year, TIL Limited continues to enhance its manufacturing capabilities. The latest model features ergonomic cabins with intelligent monitoring systems.

Volvo CE Onboards Time Equipment as New Dealer

Volvo Construction
Equipment (Volvo CE) India
announced its partnership
with Time Equipment as its
authorised dealer for Delhi
NCR, Haryana, Uttar Pradesh
(including NCL Singrauli), and
Uttarakhand. This strategic
move will strengthen Volvo
CE's customer outreach and
service network in North India.

The Faridabad Dealership Head Office was inaugurated by Dimitrov Krishnan, Managing Director, and Surat Mehta, Head of Product & Retail Management, Volvo CE India. TIME Equipment Directors—Sachin Chilana, Satish Parnami, RK Chilana, and Vishal Parnami, along with their team, were present at the event, marking a significant milestone in enhancing customer experience and service excellence, Volvo Construction Equipment aims to



enhance customer satisfaction by harnessing Time Equipment's established operational excellence, deep market knowledge, and strong customer relationships. Time Equipment will bolster its on-theground presence by setting up dedicated sales offices, parts centres, and service outlets across four key states. A team of more than 110 personnel, including 20 salesmen and 60 service engineers will support the operations. This will make Volvo and SDLG machines, along with comprehensive aftermarket support.



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Bhopal Yard Gets Fibre-Optic Signal Upgrade

The Bhopal Division of West Central Railway has begun operating a state-of-the-art fibre-optic-based signalling system at the strategically important Nishatpura yard—marking a key step in India's transition to smart and resilient rail infrastructure.

Replacing traditional copper wiring the new system offers real-time digital communication between the control centre and trackside signals. It is expected to significantly enhance safety operational reliability and energy efficiency—especially critical in high-traffic areas such as Bhopal where both industrial freight and passenger movement are heavy.

At the core of the upgrade is the Lamp Output Module (LOM), a digital interface that delivers instantaneous signal commands via optical fibre lines. The system includes built-in redundancy should the main line fail an auxiliary connection takes over without delay ensuring uninterrupted visual signalling. Other features include an automatic temperature control mechanism where cooling fans activate only as required to protect components—minimising maintenance and prolonging service life.

Fibre-based signalling also reduces dependence on copper—a resource-intensive material—and supports longer transmission distances with minimal interference. This aligns with Indian Railways' broader shift towards low-carbon digital-first operations. The initiative dovetails with the national goal of



carbon neutrality by 2070 and is a part of Indian Railways' push for modern climate-smart public transport.

Tamil Nadu Railway Projects Get Funding Boost in 2025

Following sustained pressure from Tamil Nadu legislators and public activists, the Union Railway Ministry has more than doubled its allocation for new railway line projects in the State setting aside Rs 3.95 billion for the financial year 2025—up from Rs 2.22 billion in 2024.

This budget enhancement is set to revive nine key railway lines many of which have seen little to no progress for years. Projects such as Chennai–Cuddalore via Mamallapuram Avadi–Sriperumbudur–Guduvanchery and Tindivanam–Tiruvannamalai will now move forward after languishing since their initial announcements—some dating as far back as 2007—due to token allocations of Rs 1000 that kept them on record without advancing them.



A notable beneficiary is the Madurai–Tuticorin via Aruppukottai project which has received Rs 550 million—three times last year's allocation. This comes after a public misstatement by Union Railway Minister Ashwini Vaishnaw who incorrectly claimed the state government had opposed the project a remark he later retracted.

Southern Railway officials maintain that this increase signals genuine progress.

KMRL to Build 12 MW Solar Park in Kasaragod

The Kerala government's Revenue Department has leased 50 acres of government land in Kasaragod to Kochi Metro Rail (KMRL) for the development of a 12 MW solar park. Located in Ambalathara village Hosdurg taluk, this strategic allocation marks a major milestone in KMRL's plan to power its metro network entirely through renewable energy. The land has been leased for 30 years at an annual rent of Rs 3.2 million set at 3 per cent of the land's market value with adjustments every three years. The initiative reflects the state's commitment to sustainable urban infrastructure and supports KMRL's aim to minimise its carbon footprint. As part of the lease agreement KMRL must ensure environmental safeguards. If any trees are felled during construction three saplings must be planted.





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Kerala Floats Tender for 1,000 MWh Battery Storage Project

Kerala is set to make a major leap in renewable energy reliability as NTPC Green Energy Limited has issued an engineering procurement and construction (EPC) tender for a 250 MW1000 MWh battery energy storage system (BESS) at its Kayamkulam facility.

The project is poised to significantly enhance grid stability and support the state's clean energy goals by addressing the intermittency of solar and wind power. The system will be developed in two equal blocks—each of 125 MW500 MWh. Block-1 will be connected to the site's existing 33 kV solar pooling switchgear while Block-2 will interface with the higher-voltage 220 kV

switchyard reinforcing Kerala's transmission capabilities across multiple voltage tiers. With a storage capacity capable of powering tens of thousands of homes for hours the 1000 MWh BESS represents a critical step in Kerala's move towards net-zero emissions. It will help integrate more renewable energy into the grid provide peak load management and reduce the state's reliance on polluting peaker plants.

The EPC scope includes design engineering supply transport installation testing and commissioning. The turnkey approach ensures a single point of accountability streamlining execution



and performance assurance.

Beyond bolstering clean energy integration, the project aims to catalyse broader investment in renewables strengthen energy resilience and support Kerala's long-term sustainability agenda. Once deployed it is expected to serve as a benchmark for large-scale energy storage adoption across India and globally.

Kochi Launches Drive to Boost Sustainable Shipbuilding

India's shipbuilding and marine services sector is on the brink of a significant transformation as Cochin Shipyard (CSL) has partnered with the global maritime giant Drydocks World to establish a network of ship repair clusters throughout the country.

This initiative aims to develop a resilient self-reliant and technologically advanced marine ecosystem in line with India's Maritime Vision 2030. The strategic partnership was reaffirmed during a high-level visit in Kochi earlier this month where both organisations discussed immediate collaboration at the newly established International Ship Repair Facility (ISRF). During the visit CSL showcased its advanced 310-metre dry dock and training facilities setting the stage for long-term cooperation focused on offshore fabrication and



sophisticated repair solutions. As the global shipping industry moves towards greener practices and improved operational efficiency India's ports and shipyards face increasing pressure to modernize. This alliance is intended to introduce international standards into the domestic maritime sector while supporting India's ambition to become a global maritime hub.

The collaboration represents a vital step towards reducing India's reliance on foreign ship repair services thereby lowering costs emissions and turnaround times for commercial fleets.

MRDA Proposes Road Expansion Project in BKC Area

The Mumbai Metropolitan Region Development Authority (MMRDA) has announced its intention to repurpose the underutilized cycle tracks in the Bandra-Kurla Complex (BKC) into additional vehicular lanes. This initiative is designed to increase road capacity and improve traffic flow in one of Mumbai's busiest commercial centres. Spanning 370 hectares, BKC accommodates around 2,00,000 employees and nearly 4,00,000 visitors every day. The recent closure of the Sion bridge has worsened traffic conditions by diverting a large volume of vehicles including heavy trucks onto the internal roads of BKC. The existing infrastructure which was originally created to handle smaller vehicles has been unable to manage the increased traffic load effectively.

MMRDA intends to convert the 2.7-m-wide cycle tracks into additional vehicular lanes.

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Liebherr Produces 10,000th **XPower Wheel Loader**

The Liebherr plant in Bischofshofen is celebrating a major milestone in its history with the production of its 10,000th XPower wheel loader. At the heart of the machine, standard on all Xpower models, is a power-split travel drive produced by Liebherr's trusted partner ZF Friedrichshafen AG. The 10,000th XPower wheel loader is therefore not only a cause for celebration for Liebherr, but also for ZF. The anniversary wheel loader will be put into service at the BERGER Group, which is also based in Passau.

The long-standing partnership between Liebherr-Werk



Bischofshofen GmbH and ZF Friedrichshafen AG has reached an impressive milestone: The 10,000th XPower wheel loader with power-split transmission from ZF rolled off the production line, an impressive testament to the successful collaboration between the two companies.

Sany Net Profit Up 31.98%

Sany Heavy Industry (Sany) announced its 2024 results on April 19, reporting \$10.88 billion in full-year sales and revenue, up 6.22 per cent year-on-year. Net profit attributed to shareholders surged by 31.98 per cent to \$0.84 billion. As international revenue accounting for 64 per cent of its core business revenue, the company continues to show its strong overseas growth.

The company reported a core business gross margin of 26.63 per cent in 2024, marking

.....



a 0.47pp year-on-year increase. Among which, the hoisting machinery contributed the most to the growth, showing a 4.23pp increase compared to 2023.

XCMG Machinery Publishes 2024 ESG Report



XCMG Machinery has officially released its 2024 Environmental, Social, and Governance (ESG) report, particularly highlighting the group's achievements in sustainable practices aligned to global climate goals as well as breakthroughs in clean technologies, digital intelligence, and ethical governance, which positions XCMG as a catalyst of green industrial transformation.

Globally XCMG dominates in lifting equipment, foundation machinery, specialised vehicles, earthmoving, and loaders. The Company expands partnerships with 95 per cent market coverage under the Belt and Road Initiative with localised procurement strategies enhancing resilience. In 2024, clean energy accounted for 13.63 per cent of XCMG's energy consumption, and Scope 1 greenhouse gas emissions have been reduced by 1,02,363 tonne. The digital carbon footprint management platform of XCMG covers 114 core components.

Trimble, B2W Tool Tracks Earthwork Automatically

A new integration between Trimble Siteworks and B2W Track software systems can automate quantity tracking, making it easier for earthwork and civil contractors to compare actual material

production quantities achieved to planned quantities. Devices enabled with Siteworks can precisely measure distances, angles and elevations on job sites. The resulting 3D data sets can be used to assess quantities in terms of linear distances, and areas.

Cat 308 Goes **Electric!**

ZQuip and Leica Geosystems combined forces to develop a prototype compact excavator that has been converted from diesel to battery power and is equipped with 3D machine control. The

modified 8-MT Cat 308 has been tested in France and was displayed at Bauma trade show in Germany. It features ZQuip's battery technology in which batteries can be swapped out and recharged for continuous runtime.



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N BRIE

Raimondi Flat-Tops Drive Construction of Landmark Project

Walls Construction has deployed six Raimondi MRT573 flat-top tower cranes for the development of a landmark mixed-use project in Rathborne, Dublin. Supplied by Irish Cranes & Lifting, the official Raimondi agent in Ireland, these cranes represent the heaviest lifting capacities in the company's fleet and will remain onsite for approximately 24 months until project completion.

Robert Coffey, Director General of Irish Cranes, highlighted the longstanding collaboration between Irish Cranes and Walls Construction.



"We are proud to continue playing a pivotal role in Ireland's large-scale developments and to support one of the country's most prominent construction firms. For this jobsite, Walls Construction selected six of the most powerful cranes in our fleet, ensuring efficiency and precision in lifting operations."

The six MRT573-24t cranes were chosen for their outstanding tip loads and overall performance, particularly suited for precast construction projects that demand high-capacity lifting capabilities.

Dynapac Names Yann Monnet North America President

Yann Monnet, a BOMAG executive, has been brought in to head up sister company Dynapac's North America business. Monnet spent the last 10 years at BOMAG Americas as vice president chief financial officer, leading the company's North American finance team. Prior to that, Monnet spent about 17 years at Hutchinson, where he held positions including finance and supply chain director of North America and finance and administration manager of Mexico.

Komatsu, Dimaag Unveil Charger for Electric CE

Komatsu and a Silicon Valleybased company have revealed an off-road, remote-control electricequipment charger for the construction and mining industries.

The Mobile Megawatt Charging System, designed by Dimaag of California in partnership with Komatsu, can provide fast DC charging of up to 1 megawatt for battery-powered construction equipment. The company says its DC-DC converter is a modular design that enables it to deliver as much as 6 megawatts.



by remote control, and Dimaag

says autonomous control is

an available option.

Ignite's New Tree Puller for Skid Steers

Ignite Attachments has introduced its new tree and fence post puller for skid steers and compact track loaders. The attachment is designed to remove trees up to eight inches in diameter, as well

as brush and fence posts without additional tools or cleanup steps. The puller is equipped with a 2.5-inch bore cylinder, a 1.25-inch rod and a 1.25-inch pin for pulling power and grip strength. There is no need for additional stump grinding or chainsaw work, according to Ignite.

Cat Graders Get New Zero-Adjust Circle System

Three of Caterpillar's popular joystick-control motor graders are now available with a new High-Performance Circle, which delivers increased torque and requires no adjustments for the life of

the grader. The new circle is designed for JOY models of the Cat 140, 150 and 160 graders and replaces the previous open circle and drawbar. The graders range between 179 and 224 horsepower and operating weights of 42,647 and 45,547 pounds.







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COVER STORY

Chandra R Agrawal Infracon. "We're no longer talking about bulldozers and backhoes. We're deploying 800-tonne(t) crawler cranes and 14-metre (m)-wide pavers."

"It's a double-Infracon edged sword," explains SP Rajan, Vice President and Head - Competency Center, RBF Business Unit, L&T Construction. "We've bought machines costing Rs 500 to 600 million each. But unless there are projects of equivalent magnitude, they remain idle. The Indian infrastructure ecosystem isn't uniformly equipped



Kashyap, President - Supply Chain Management, Dinesh Chandra R Agrawal

to absorb these machines. We've seen L&T bring in two big pavers—13 to 14 m wide. But when you try moving that equipment to another project, the next project isn't ready to utilise it. The ground realities don't match the scale of the machines yet."

India's project ecosystem still largely operates in fragmented EPC packages. Amol Sinha, Director -Product and Training, Terex India: "A mega machine needs continuous deployment over long stretches to justify its cost. If there's a delay midstream, the ROI crumbles."

Even in public projects, specifications haven't evolved in tandem with global trends. Anand Sundaresan, Director, Ammann India, points out: "In most global markets, 20-t and 30-t soil

compactors are the norm. In India, we still specify 10-t rollers—technology from 40 years ago."

Financial balancing act

A 600-t crane or a 1000 HP crawler excavator can cost upwards of Rs 200 to 400 million. That's before factoring in logistics, spares, insurance, skilled operators, and downtime costs. So, who's buying them?



SP Rajan, Vice President and Head Competency Center, RBF Business Unit, L&T Construction

"Only large EPC players or pan-India rental giants can take this bet," says Vijay Kumar, CEO, Infrastructure Equipment Skill Council (IESC). "For mid-level contractors, this is a financial cliff."

Buy-back schemes and leasing models are becoming more common. But as Rajan clarifies, "Buybacks are useful, but the rates are low. If I don't account for 75 per cent of the machine cost in my project estimates, I risk a financial debacle."



Amol Sinha, Director Product and Training, Terex India

Rental companies are also caught in a bind. Satin Sachdeva, Founder and Secretary General, Construction **Equipment Rental Association** (CERA), said: "We've brought in equipment like 800-, 1,000-, and even 1,200-t cranes. But it's a huge risk. Unless we're assured of eight to nine months of work in a year, these machines turn into liabilities. Big EMIs, big headaches."

Policy inconsistencies further compound the risk. "We invested in concrete pavers, only to later hear from NHAI that bitumen is acceptable. Suddenly, machines are idle," he adds.





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Logistics and localisation

Even when a mega machine is imported and purchased, it's far from ready for action. The challenges of logistics are often underestimated. Tunnel boring machines (TBMs) tell another story. For the Chennai Metro,



Anand Sundaresan, Director, Ammann India

imported TBMs were disassembled, packed into 20+ trailers, and reassembled at launch shafts.

Some OEMs are attempting localisation to ease this. Herrenknecht now maintains service hubs in India.

In fact, Herrenknecht is set to play a key role in the construction of the Versova-Dahisar Link Road in Mumbai. Herrenknecht will supply two Mixshields, each with a diameter of 15,620 mm, which will make them the largest TBMs in India. The project owner, Brihanmumbai Municipal Corporation, and client Megha

AFCONS' TBM JOURNEY

For the Mumbai Metro Line 3, Afcons imported multiple Herrenknecht TBMs, each costing over Rs 100 crore. The machines bored through hard basalt rock, enabling tunnelling at speeds that conventional methods couldn't match.

TBMs saved Afcons almost 18 months in timelines. But transporting them via Jawaharlal Nehru Port to central Mumbai, assembling them in tight shafts, and getting skilled operators—it was a logistical symphony.

Post-project, the machines were either refurbished and re-deployed or shipped to similar metro projects, improving asset utilisation.

Engineering & Infrastructures (MEIL) rely on Herrenknecht's longstanding expertise. The two powerful Mixshields are optimally designed for the challenging geological conditions

of the region: slightly weathered basalt with a uniaxial compressive strength (UCS) of up to 150 MPa. The overburden of the tunnels ranges between approximately 13 and 23 m. To ensure safe operations under these conditions, the TBMs are designed for a maximum operating pressure of 5 bar.

The machines will be manufactured at Herrenknecht's Chennai plant in India, using core components from Schwanau. Thereby local expertise is strengthened, and transport distances



Manoj Garg, Managing Director, Herrenknecht India

are reduced in an environmentally friendly manner.

Herrenknecht is also supplying four specialists for mechanised tunnelling in hard rock for the Mumbai Thane-Borivali Road Link: four single shield TBMs, each with a diameter of 13.28 m for excavating predominantly moderately





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weathered basalt with a uniaxial compressive strength (UCS) of up to 150 Megapascal. Said Manoj Garg, Managing Director, Herrenknecht India, "India is moving at a fast pace with metro now reaching tier 3 cities as well. There is a huge demand for all sizes and types of TBMs in coming vears and India is currently ranked the second-largest TBM market in the world."

Even other TMB manufacturers like Zoomlion and SANY have expanded assembly units, though most of their mega machines are still imports.

Rajan is optimistic but measured: "TBMs are seeing higher adoption. From 3-m machines in cities to 10-m water tunnel systems, we're slowly graduating. But mainstream adoption—especially for cranes or marine equipment—is still a few years away."

Skilling for scale

With mega machines come mega expectations—from precision controls to predictive maintenance.

"We don't have the manpower for a 16-m paver or a 300-t asphalt plant," says Sachdeva. "Even rental companies hesitate because they can't find trained operators." Rajan agrees: "You can bring in a 3 cubic metre (cu m) wheel loader, but if your site still uses 1.7 cu m loaders, you won't get efficiency." This is a critical bottleneck. That's why the IESC has launched programmes for high-capacity crane operators, TBM specialists, and AI-based

"Skilling is not just about safety—it's about efficiency," adds Sundaresan. "An untrained operator

ENABLING THE ECOSYSTEM

The Indian market's cautious stance towards mega machines isn't surprising. But change is underway. For adoption to accelerate, a supportive ecosystem must come into place:

- Innovative finance models: Lease-to-own schemes, insurance-bundled rentals, consortium-based asset pooling, and buyback guarantees could reduce risk for mid-tier contractors.
- Project clustering: If five or six mega projects of the same nature are tendered simultaneously, it creates economies of scale
- Skilling as a priority: India must go beyond basic training and build domainspecific expertise for TBMs, RCDs, marine platforms, and high-capacity compactors. Without trained manpower, even the most advanced machine is iust a showpiece.

burns more diesel, takes more passes, and wastes productivity."

Policy gaps

Another silent barrier are the outdated government procurement norms. "Our codes don't support machines that compact more than 200 mm," Rajan explains. "But impact rollers can handle 900 mm. What's the point of investing in such machines if the project spec won't let us use them?"

Sundaresan says, "We need policymakers to update standards and encourage larger, faster machines. If we want speed, scale, and safety, the system must evolve."

It's not just about machine specs—it's about enabling captive plants, higher-capacity batching systems, and integrating mega equipment into project planning. "We're still selling 260-t asphalt plants in a country building Rs 1,000 billion worth of roads annually," Sundaresan remarks. "In Europe, that's considered a small plant."

Mega potential

While roads and bridges wrestle with adoption, mining is already a stronghold for mega machines.

"Mining cannot afford small machines," Rajan notes. "You need mega excavators, haul trucks, and drill rigs. It's the only way to be viable." Similarly, port and marine

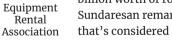
infrastructure is emerging as an untapped opportunity. "There are only 10 players using marine cranes in India," he adds. "We're still placing normal cranes on barges instead of using jack-ups or floating platforms. Marine is the next frontier—but we need bold investments."

Still, even within mining and marine, scalability is capped by project clustering, equipment compatibility, and policy support.

Big machines, bigger questions

India's infrastructure ambition is beyond doubt. But can the ecosystem—financial, regulatory, logistical, and human—grow quickly enough to accommodate mega machines? SP Rajan summarises it best: "I love mega machines. But I can't survive with them." The machines are beautiful, efficient, and futuristic—but without projects of suitable scale, trained operators, updated policies, and flexible finances, they remain underutilised.

With smart cities, mega metros, energy corridors, and port expansions taking shape—India will need these machines sooner rather than later. At bauma 2025, the message was clear: the future of construction is big, bold, and intelligent. For India, the challenge isn't just to import mega machines but to build the ecosystem that lets them thrive.



Satin Sachdeva,

Founder and

Secretary

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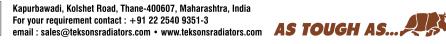


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Future Excavated

India's infrastructure boom is unearthing a new era of smart, sustainable, and connected hydraulic excavators powering tomorrow's construction landscape.

n India's sweeping infrastructure transformation, hydraulic excavators have emerged as the silent powerhouses behind the scenes. Whether it's tunnelling through rocky terrain for metro lines, preparing the earth for highways, or undertaking mining and irrigation projects, these machines are redefining how India builds. But the evolution isn't just in their scale or strength—it's in their intelligence, sustainability, and versatility.

Once seen as simple dig-anddump machines, hydraulic excavators pipeline under the National Infrastructure Plan, annual construction of over 12,000 km of national highways, and a growing number of smart cities and urban transit systems. In this ambitious context, the excavator is becoming not just a piece of equipment,

Growing market

India's hydraulic

excavator market is

currently estimated

to be worth

but a strategic asset.

Rs 12,000 crore. But numbers alone don't tell the full story. What's significant is the expected leap in the number of machines on the ground from approximately 90,000 units today to a projected 2,50,000 units by 2030. That's nearly a threefold

increase in just over five years. This surge is being fuelled by multiple segments urban infrastructure, mining, roads, and irrigation—all of which have unique demands. Urban projects lean toward compact spaces and regulatory



Hydraulic Excavators FEATURE

norms, while road-building and mining demand heavier, highperformance machines. Add to this the expanding role of rentals and organised leasing, and the market begins to look both broad and complex.

The OEM race

The Indian excavator landscape is currently a highly competitive space with leading players such as Tata Hitachi, Volvo CE, Komatsu, L&T Komatsu, XCMG, and Gainwell with Caterpillar each pushing technological and operational boundaries.



Managing Director, Volvo CE India

Tata Hitachi has focused on the urban and semi-urban market with its ZAXIS 38U, a mini zero tail swing excavator, and the SHINRAI Prime backhoe loader. Designed for confined workspaces in cities, these machines boast better fuel efficiency and more operator comfort than previous models. The ZAXIS 38U, in particular, shines in applications such as trenching, landscaping, and foundation work, where precision and mobility are crucial.

Meanwhile, Volvo Construction Equipment has set a new benchmark with its EC210-A, an upgraded version of its popular EC210D model. The new excavator comes with a smart hydraulic system that improves fuel efficiency without compromising digging power. The integration of Volvo's CareTrack telematics system allows real-time monitoring of machine performance, predictive maintenance, and remote diagnostics-features that are particularly valued in remote infrastructure sites. "Contractors need reliable, fuel-efficient machines that also support sustainability goals. Our EC210-A is designed with that in

mind," said Dimitrov Krishnan, Managing Director, Volvo CE India.

Komatsu, through its joint venture with L&T, is banking on automation and machine control. Its PC220LCi-12, recently unveiled in India, comes with the company's proprietary Intelligent Machine Control (iMC), which automates grading and digging operations, drastically reducing errors and improving productivity. On the compact side, L&T Komatsu's new mini hydraulic excavator offers flexibility and ease of use for small contractors working in congested job sites—a growing niche as urban projects pick up steam.

Gainwell, Caterpillar's dealer in India, brought attention to its electrohydraulic excavators and the RM500 Reclaimer at bauma Conexpo India 2024. The electrohydraulic systems replace traditional pilot lines with digital actuators, which increases fuel efficiency and enables more accurate operation. "These machines bring unmatched productivity while significantly lowering emissions and fuel usage. It's a win-win for contractors and for India's sustainability goals."

Chinese major XCMG isn't far behind. At bauma China 2024, it unveiled an impressive lineup of 17 new excavator models. These machines, several of which are expected to make their way to India, are designed with advanced engine technology, multi-functional work modes, and superior operator comfort. They also incorporate IoT-enabled systems for monitoring and control, underlining how even budget-sensitive markets like India are demanding higher intelligence from their equipment.

HD Hyundai Construction Equipment India has taken a firm step forward with a strong focus on mining and exports. According to Sharwan Agnihotri, Head – Mining &

Export Business, HD Hyundai Construction Equipment India, "We are increasing our mining portfolio and expanding in exports. Hyundai machines are known for their reliability, technology and performance. We are enhancing our capacity in India to support both domestic demand and overseas markets." Hyundai's offerings in the mining segment aim to deliver durability and productivity under harsh working conditions—key needs for India's expanding surface mining and quarrying operations.

Trends defining the next-gen excavator

The Indian hydraulic excavator is undergoing a transformation that mirrors global trends, though shaped by local constraints and opportunities. Five major developments are leading this evolution:

Electrohydraulics is one of the

most notable shifts. Machines like Caterpillar's new excavators use electric actuators instead of hydraulic pilot controls, allowing for more precise operations and reducing energy loss. This not only improves fuel



Sharwan Agnihotri Head - Mining & Export Business, HD Hyundai Construction Equipment India

economy but also results in smoother operation, particularly important for fine tasks like grading and trenching.

Telematics and remote monitoring are now standard in machines from major OEMs. Systems such as Komtrax (from Komatsu), VisionLink (Caterpillar), and CareTrack (Volvo) provide real-time data on machine health, fuel use, idle time, and location. This facilitates predictive maintenance and improves machine uptime—vital in large projects where equipment failure can delay work and increase costs.

FEATURE Hydraulic Excavators



While electric excavators are still in their infancy in India, hybrid and low-emission diesel models are gaining traction.

Automation and intelligent machine control (iMC) are also making inroads. Komatsu's iMC 2.0, for example, enables semi-automatic operation by allowing the excavator to adjust its position and operation based on jobsite parameters. These systems reduce the dependence on highly skilled operators, improve accuracy, and cut rework.



Satendra Tiwari **Executive Director** Operations, Case Construction

"The CASE Intelligent Hydraulic System helps increase digging speed while reducing fuel use. Our focus on operator comfort, fast servicing, and strong after-sales support ensures that

customers get the best value and performance on every site," said

Environmental responsibility is becoming a key concern, not just for OEMs but also for contractors bidding on government projects with sustainability clauses. While electric excavators are still in their infancy in India, hybrid and low-emission diesel models are gaining traction. Volvo, Tata Hitachi, and XCMG are reportedly testing battery-electric variants in controlled settings.

Operator comfort and safety have become central design elements. New machines now feature ergonomic seats, touchscreen controls, panoramic visibility, climate control, and noise-reduction cabins. With a growing emphasis on operator welfare and productivity, these upgrades are no longer extras—they are baseline expectations.

Challenges on the ground

Despite the technological advances, several structural challenges remain. First, the cost of advanced machines remains high, mainly due to the import of precision components and electronic systems. While demand is strong, price sensitivity in India forces OEMs to strike a delicate balance between innovation and affordability.

Second, there is a shortage of trained operators who can handle these modern machines. Many OEMs, including Tata Hitachi and Komatsu, have responded by establishing training centres and offering simulator-based programs. Still, upskilling the workforce to match equipment sophistication remains a slow process.

Third, the after-sales service network in tier-2 and tier-3 cities is still underdeveloped. Though some OEMs have begun rolling out mobile service vans and remote

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diagnostic platforms, the availability of spare parts and skilled technicians remains uneven.

Lastly, the construction equipment rental market, while growing rapidly, is still fragmented. Organised rental platforms like Mycrane, Infra Bazaar, and RentHire are attempting to bring transparency and efficiency, offering contractors access to newer machines without large capital investments. However, regulatory support and industry standardisation are still evolving.

The road ahead

Looking ahead, the hydraulic excavator is poised to become more than just a machine. It will be an intelligent partner on the construction site—capable of learning, adapting, and optimising operations in real time.

India's infrastructure ambitions demand machines that can build faster, smarter, and greener. By 2030, it's not unreasonable to imagine excavators that self-adjust to soil conditions, interact with Building Information Modelling (BIM) software, run on clean energy, and automatically order parts or schedule service calls. The excavator of tomorrow isn't just about digging. It's about doing more with less—less fuel, less time, less error. That's the future India needs, and that's the future we're building towards.

India's hydraulic excavator market is at an inflection point. From being rugged tools of brute force, excavators are morphing into smart, sustainable, and scalable enablers of infrastructure growth. OEMs, users, and regulators must now align to create an ecosystem that nurtures this transformationthrough better policies, training, and collaboration. If that happens, the humble excavator might just become the symbol of India's next developmental leap.







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"The outlook for hydraulic excavators is promising."

HD Hyundai Construction Equipment India is one of the leading manufacturers of construction and earthmoving equipment. Sharwan Agnihotri, Head -**Mining & Export** Business, discusses the specific features and benefits that make hydraulic excavators well-suited for the Indian market.

How are hydraulic excavators utilised in various construction and mining applications?

Hydraulic excavators are versatile machinery across the construction and mining sectors, delivering robust performance and adaptability. In construction, they streamline tasks like site prep, trenching, demolition, and material handling with precision and speed. In large-scale mining, these machines tackle tough operations like overburden removal, ore extraction, and haul truck loading. Mining demands often call for excavators over 30 tonne, built to withstand harsh conditions and long working hours. Equipped with a broad range of attachments—from heavy-duty buckets to hydraulic breakers and grapplesthese machines flexibly switch between different tasks, improving efficiency and reducing costly downtime.

How do hydraulic excavators enhance productivity and safety at construction sites?

Hyundai's latest-generation hydraulic excavators enhance productivity through high digging forces, faster cycle times, and precision control via advanced electro-hydraulic systems. These machines reduce manual effort and accelerate task completion, especially in high-

demand job site conditions. Safety is reinforced through features like ROPS/FOPS cabins, anti-restart systems, and intelligent load-sensing hydraulics, reducing operator fatigue and minimising risks. Telematics and remote diagnostics enable real-time health monitoring and predictive maintenance. Hyundai

supports customers with localised service teams, flexible AMC/FMC contracts, on-site repairs, and refurbishment facilities—ensuring maximum uptime, extended machine life, and reduced total cost of ownership.

What specific features and benefits make hydraulic excavators suitable for the Indian market?

Hyundai hydraulic excavators are purpose-built to handle India's tough and varied terrains—from granite quarries in Rajasthan to coalfields in Jharkhand. They feature fuel-efficient engines, reinforced structural components, and optimised hydraulic systems for continuous, high-load operations. The robust undercarriage ensures stability and durability across different soil and rock conditions.

Smart features like Auto-Idle, IPC (Intelligent Power Control), and advanced telematics reduce fuel consumption, enhance operational efficiency, and support preventive maintenance. These machines are backed by site-level service support, comprehensive AMC/FMC plans, and refurbishment solutions. This ensures extended machine life, reduced downtime, and lower total cost of ownership.

How are manufacturers improving fuel efficiency and meeting emissions standards in excavator designs?

Manufacturers enhance fuel efficiency by integrating advanced engine controls with load-sensing hydraulic systems that precisely match power output to operational demands. Hyundai's Intelligent Power Control (IPC) and Variable Power Control

Hydraulic Excavators FEATURE



Automation and telematics are key drivers of enhanced efficiency and durability in hydraulic excavators.

dynamically optimise fuel consumption by adjusting engine and hydraulic flow in real time. This targeted power management, combined with cutting-edge emission control technologies, ensures strict regulatory compliance while maximising machine performance and reducing operating costs.

What role do automation and telematics play in the performance of modern hydraulic excavators?

Automation and telematics are key drivers of enhanced efficiency and durability in hydraulic excavators. Hyundai's Hi-Track and Hi-MATE systems provide real-time machine monitoring, including GPS tracking, diagnostic alerts, fuel consumption analytics, and geo-fencing. These capabilities facilitate proactive maintenance, optimise fleet management, and reduce unscheduled downtime.

Automation technologies enable precise control of excavator functions, minimising mechanical wear,

improving fuel efficiency, and enhancing operator safety by reducing manual interventions in hazardous conditions. These advancements support higher productivity and lower operational costs across the equipment lifecycle.

What are the prospects for the hydraulic excavator market in India?

The outlook for hydraulic excavators is promising, driven by government infrastructure initiatives, mining sector growth, and rapid urbanisation. Key projects like the National Infrastructure Pipeline (NIP), Smart Cities Mission, and expansions in roads, railways, and power are expected to boost demand. The shift toward mechanisation in mining and rural construction, the rising focus on sustainability, and the increasing demand for fuel-efficient, technologically advanced machines.

According to the Indian Construction Equipment Manufacturers Association (ICEMA), the hydraulic excavator market is set for strong growth, supported by robust infrastructure plans and favourable policies. ICEMA's Vision Plan 2030 aims for annual sales of 2,50,000 units, positioning India as the world's second-largest construction equipment market. This growth is backed by significant government capital expenditure across multiple sectors.

In the fiscal year 2023-24, the CE industry recorded a remarkable 26 per cent year-over-year growth, reaching a record volume of 1,35,000 units. Last vear, the excavator market reached 33,000 units, and Hyundai expects a similar performance this year, with prospects for continued growth in the excavator business.

ICEMA stresses the importance of strengthening domestic manufacturing capabilities, enhancing component localisation, and investing in skill development to reduce import dependence and fortify the supply chain. These strategic initiatives are essential to sustaining industry growth and advancing India's infrastructure and economic development goals.



"Our cutting-edge excavators are Made in India."

Satendra Tiwari,
Executive Director –
Operations at Case
Construction's
Pithampur facility,
discusses the role of
automation and
telematics in
enhancing the
performance of
modern hydraulic
excavators.

How are hydraulic excavators used in different construction and mining applications?

With India investing heavily in roads, railways, smart cities, and housing, there is a growing need for machines that can keep up with tight deadlines and tough job sites. Hydraulic excavators have become essential tools across these sectors. They are used for digging, lifting, breaking, and moving materials in both urban and remote areas. As government projects like Gati Shakti and private developments pick up speed, demand for reliable, highperformance machines is on the rise especially in challenging applications like quarrying and mining, where strength and endurance are key.

Recognising this, Case India has developed machines that are built to handle India's tough working conditions. From helping dig trenches and level ground in urban areas to removing overburden and breaking rocks in quarries, our excavators are made for both construction and mining. Models like the 22-tonne CX220C are known for fuel savings, high power, and lower maintenance. We also equip our machines with

smart hydraulic systems and digital tracking tools to improve safety and reduce downtime. With a focus on efficiency, comfort, and productivity, CASE focuses on excavators that are built to support faster progress across every sector of development.

What are the specific features and benefits that make hydraulic excavators suitable for the Indian market?

Hydraulic excavators play a vital role in India's construction and mining sectors, where machines must perform in tough conditions and deliver high productivity with low running costs. From road building to stone quarries, contractors need equipment that is fuel-efficient, easy to maintain, and built for long working hours. With rising fuel prices and tight project timelines, choosing the right excavator becomes a key business decision.

At Case, we design our machines to meet these exact needs. Our cutting-edge excavator - CX220C and CX220C LC are made in India and built to handle the country's diverse terrains. They feature fuel-efficient engines, advanced hydraulics, and real-time telematics for better control and planning. The CASE Intelligent Hydraulic System helps increase digging speed while reducing fuel use. Our focus on operator comfort, fast servicing, and strong after-sales support ensures that customers get the best value and performance on every site.

How are manufacturers addressing fuel efficiency and emissions standards in excavator designs?

As India accelerates its infrastructure goals, the demand for construction equipment that is fuel-efficient and meets emission norms has grown sharply.

To read full interview: Log in to: www.EquipmentIndia.com







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Lifting India's Future

As India builds faster and taller, industrial cranes are emerging as essential, intelligent machines powering the nation's infrastructure, logistics, and industrial growth.

s India accelerates its pace of infrastructure development—from towering skyscrapers to solar parks and smart cities—few machines are more critical, yet less spotlighted, than industrial cranes. These mechanical workhorses are lifting everything from precast concrete and steel girders to containers and wind turbine blades. More than ever, cranes are enabling

India's transformation from a developing economy to a global economic engine.

But the story of cranes in India isn't just about lifting capacity anymore. It's about intelligent lifting—safer, smarter, more efficient, and increasingly digital. The industrial crane market is evolving fast, with growing d emand from diverse sectors, the rise of online rental platforms, increasing

safety expectations, and new-age automation tools redefining operations.

A boom fuelled by infra

India's industrial crane market is growing in lockstep with its infrastructure ambitions. Flagship government initiatives like the National Infrastructure Pipeline (NIP), Bharatmala, Sagarmala, and Smart Cities Mission are driving

massive investments across highways, ports, logistics hubs, metros, and renewable energy.

"Infrastructure is no longer a sector—it's a national priority," says Arvind Rishi, AVP - Sales & After Market, TIL Limited, a leading domestic crane manufacturer in India. "Whether it's a refinery, a metro viaduct, or a wind power station, cranes are integral. The demand has exploded, and with it, the expectations from machines."

TIL offers a range of solutions tailored for Indian conditions—from compact urban cranes like the HUSKY 620 to robust rough terrain (RT) cranes like the RT 740B, suitable for heavy-lift jobs in oil and gas or mining. With their RT 630C, featuring four-wheel drive and steering, the company showcases innovation aimed at increasing manoeuvrability in constrained spaces.

India's construction boom is no longer confined to metros. Crane deployment is expanding into tier 2 and tier 3 cities, as well as remote industrial corridors,



Arvind Rishi AVP - Sales & After Market, TIL Limited

further diversifying the market. The government's push for manufacturing through initiatives like Make in India and Gati Shakti is also expected to bolster crane usage in industrial clusters and logistics parks.

Rental revolution

While crane ownership has long been the norm for large EPC players, the tide is shifting toward asset-light models, especially among SMEs and mid-tier contractors. Enter Mycrane, a Dubai-based startup that has disrupted traditional equipment procurement by taking crane rentals online.

"India is one of our fastestgrowing markets. Customers can now



Mycrane users, including Reliance, L&T, and Adani Ports, can post requirements, compare standardised quotes, and secure equipment without endless phone calls or site visits. "The ability to compare offers side-by-side, with transparent pricing and verified

documentation, is game-changing," says a senior manager at KEC International, a regular user of the platform. In India,



Andrei Geikalo CEO and Founder, Mycrane

Mycrane has facilitated orders for crawler, rough terrain, and telescopic cranes up to 300 tonne across regions like

Gujarat, Maharashtra, and Rajasthan. The platform has also launched a marketplace for the sale and purchase of lifting equipment including tower cranes, aerial platforms, and accessories—making it a one-stop shop for contractors.

Focus on safety

As crane deployments increase in urban, crowded, and sensitive industrial environments, safety has taken centre stage.

TIL's cranes now come fitted with Load Moment Indicators (LMI). overload limiters, and Glide Slew systems that prevent swing hazards during turns. Advanced telematics and CAN-based control systems enable real-time monitoring and diagnostics. "We're not just building machines; we're building safety ecosystems," Rishi says.

Certifications from testing bodies such as ARAI ensure compliance on multiple fronts—from braking

JUNE 2025 | Equipment |43

FEATURE Industrial Cranes

performance and noise limits to operator comfort and environmental emissions. New cranes now come equipped with redundancy features, fail-safe interlocks, and sensors that warn of potential instability or excessive tilt.

The stakes are high: India has seen multiple crane-related accidents in recent years, particularly in urban construction. In response, regulators are tightening norms, and customers are demanding higher safety standards from OEMs and rental providers alike.

The smart crane era

If safety is the foundation, digitalisation is the accelerator. Cranes today are no longer just mechanical marvels—they are also data-driven machines.

TIL has incorporated telemetry systems that offer operational analytics, predictive maintenance alerts, and location tracking. These features not only reduce downtime

KEY CHALLENGES

Despite its growth, the crane market in India faces headwinds:

- Operational complexity: India's terrain is vast and varied. From coastal corrosion to Himalayan altitude, crane designs must accommodate extreme conditions. Customisation for mobility, terrain adaptability, and load balance is essential.
- High capex and import dependency: Advanced cranes are capital-intensive and often imported. Exchange rate volatility and long lead times affect project costs and schedules.
- Skill shortages: Modern cranes require skilled operators, who are in short supply. While automation helps, hands-on expertise remains essential for safety and efficiency.
- Regulatory pressure: Compliance with global emissions norms, safety regulations, and urban noise restrictions demands continuous innovation posing challenges for smaller manufacturers.

but also extend equipment life and cut ownership costs. "Downtime is the enemy on any jobsite. With datadriven insights, we can prevent failures before they occur," Rishi explains.

Outside India, the shift is even more radical. DB Schenker, one of the world's largest logistics companies, is testing remote-controlled forklifts at its Kassel site in Germany. The drivers are no longer in the seat—they operate the forklifts from a remote workstation, connected via an AI-enabled platform developed by startup enabl Technologies.

While India may take a few years to reach remote crane operation, the groundwork is being laid. Autonomous vehicle navigation, AI-powered load

balancing, and virtual crane simulations for operator training are no longer distant dreams—they're active development areas.



Manojit Acharya Managing Director, Jungheinrich India

Warehouse cranes

Beyond construction, cranes and lifting systems are finding new ground in intralogistics and warehouse automation. Companies like Jungheinrich are leading this vertical, offering integrated material handling equipment (MHE) such as automated guided vehicles (AGVs), high-reach forklifts, and order pickers tailored for modern warehouses.

"Seamless movement from dock to racking system, floor to floor, is



Autonomous vehicle navigation, Al-powered load balancing, and virtual crane simulations for operator training are no longer distant dreams.

where modern MHE solutions shine. We cater to sectors from pharma to FMCG, offering highly customised and scalable equipment," says Manojit Acharya, Managing Director, **Jungheinrich India.**

With e-commerce and omnichannel retail pushing warehouse demand, cranes and vertical lifting systems are becoming a critical component of the supply chain.

The road ahead

Several trends are shaping the future of the crane industry in India:

- **Electric and hybrid cranes:** Although still niche, electricpowered lifting equipment is on the rise. Tighter emission norms and ESG mandates from clients are nudging manufacturers toward low-carbon solutions.
- **Integration of IoT and AI: Smart** cranes that can diagnose faults,

- self-adjust lifting parameters, and communicate with other site machinery are fast becoming the norm. Future cranes may feature machine learning algorithms to optimise lifting operations.
- Modular design and multi-use capabilities: Clients now demand cranes that can handle multiple tasks-lifting, rotating, stacking—without changing equipment. Modular, versatile machines are gaining popularity.
- Digital ecosystem expansion: The success of Mycrane suggests that platforms will expand further—to offer crane certifications, digital training, live tracking, insurance, and financing. Think of it as a digital operating system for lifting logistics.

Elevating India's ambitions

The crane industry in India has

quietly become a backbone of national development. It enables the physical realisation of India's growth aspirations—be it a green energy corridor, a metro rail project, or a massive manufacturing plant.

Yet, this is not just a story of steel arms and hydraulic pistons. It is a story of how machines are getting smarter, safer, and more integrated with the digital world. Companies are shaping a future where cranes are no longer just lifters of weight, but enablers of intelligent construction.

As India rises, cranes will rise with it—not just in height and tonnage, but in sophistication, sustainability, and strategic value. They are no longer hidden in the background of megaprojects they are the silent partners lifting India's dreams, one beam at a time.



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"The crane market is expected to see consistent growth."

Arvind Rishi, AVP -Sales & After Market, TIL Limited, speaks about the evolving demand for industrial cranes driven by the rise in industrial projects in India, and how safety features are increasingly being incorporated into these cranes.

What are the different types of industrial cranes, and what are their applications in construction and manufacturing?

Industrial cranes are essential machinery across various sectors, each designed to meet specific operational requirements. TIL Limited's product range illustrates the diversity of crane types tailored for different industrial needs. Rough terrain (RT) cranes are specifically engineered to operate in challenging environments. For instance, the HUSKY 620 is ideal for urban infrastructure and utility maintenance, offering compact power in constrained spaces. In contrast, the RT 740B is designed for heavy-duty applications in sectors like oil and gas, mining, and large-scale infrastructure projects.

The crane spectrum includes multiple specialised types: truckmounted cranes for highway and construction projects, crawler cranes for stable ground operations, and mobile cranes that offer flexibility across different terrains. Each type serves unique purposes, from precise load placement in confined urban sites to managing massive loads in

> the RT 630C, with its 4x4 drive and four-wheel steering, exemplifies the versatility required in modern construction and industrial environments,

capable of navigating challenging terrains while maintaining exceptional lifting capabilities.

How is the demand for industrial cranes

evolving with the rise of industrial projects in India?

The demand for industrial cranes in India is experiencing unprecedented growth, driven by massive infrastructure development initiatives. National programs like the National Infrastructure Pipeline, Bharatmala, and Sagarmala are creating a surge in crane requirements across multiple sectors. The scale of these projects demands cranes with enhanced load-bearing capabilities, greater maneuverability, and advanced technological features. Industries such as ports, mining, renewable energy, and urban infrastructure are increasingly seeking cranes that can handle heavier loads while maintaining stability and precision. This evolution is particularly evident in India's ambitious infrastructure landscape.

The country is witnessing a significant transformation in construction methodologies, with projects ranging from high-rise buildings and metro rail networks to smart city developments and multimodal connectivity initiatives. These projects require increasingly sophisticated lifting solutions that can operate efficiently in confined spaces, handle complex load requirements, and integrate advanced safety and technological features. The crane market is no longer just about lifting capacity but about providing comprehensive engineering solutions that enhance operational efficiency and safety.

What safety features are being incorporated into industrial cranes?

Safety has become the paramount concern in industrial crane design, with manufacturers implementing multiple



Industrial Cranes **EFATURE**

advanced features to prevent accidents and ensure operator protection. TIL Limited, for example, has integrated several cutting-edge safety technologies into its crane range. These include overload limiters, Glide Slew functionality, and advanced Load Moment Indicators (LMI) that provide real-time electronic displays of critical operational parameters.

Modern cranes are equipped with sophisticated interlocks that prevent overloading, ensuring safer operations. The Factor of Safety (FoS) has been significantly enhanced, with built-in redundancies designed to prevent catastrophic failures. Telematics solutions enable real-time performance monitoring, while advanced sensors and electronic systems provide operators with comprehensive safety information. ARAI certification further underscores the commitment to meeting stringent safety benchmarks, including brake performance, steering control, and noise reduction. The focus extends beyond just mechanical design to creating a holistic safety ecosystem that protects operators, equipment, and the surrounding environment.

How are technological innovations improving the performance and efficiency of cranes?

Technological innovation is revolutionising the industrial crane sector, with digital transformation playing a crucial role. IoT integration, data analytics, and advanced control systems are significantly enhancing crane performance and efficiency. TIL Limited is at the forefront of this technological revolution, strategising to incorporate advanced digital technologies that provide real-time monitoring, predictive maintenance, and enhanced operational insights.

TIL cranes are designed with CAN-based control systems and integrated telematics. The Glide Slew feature represents a significant technological advancement, preventing unwanted load swinging and reducing gear stress. Advanced dynamic braking systems enable smoother load repositioning and minimise unintended displacement. These technologies not only improve operational efficiency but also extend the lifecycle of the equipment, reducing overall ownership costs and enhancing productivity.

What are the challenges faced by crane manufacturers in India?

Crane manufacturers and operators in India face multiple complex challenges. Maneuverability remains a critical issue, with traditional cranes requiring significant operational space. TIL Limited has addressed this by developing rough terrain (RT) cranes with 4x4 wheel drive and four-wheel

The crane market is expected to see growth, with a reduction in import dependence and an increased focus on developing world-class indigenous manufacturing capabilities.

steering, enabling operation in confined job sites. Load mobility presents another significant challenge, with modern construction demanding cranes that can reposition loads safely over short distances.

Environmental constraints, varying terrain conditions, and the need for increased lifting capacities add layers of complexity to crane operations. Manufacturers must continuously innovate to create machines that can operate efficiently in diverse Indian environments, from urban construction sites to remote mining locations. The need to balance performance, safety, and cost-effectiveness while meeting increasingly stringent environmental and operational regulations creates a

challenging landscape for crane manufacturers.

How does the industrial crane market look in the context of India's infrastructure development?

The industrial crane market is intrinsically linked to India's infrastructure development trajectory. With ambitious national projects like the National Infrastructure Pipeline, the demand for sophisticated lifting solutions is experiencing exponential growth. The crane market is no longer a peripheral industry but a critical component of India's economic infrastructure, supporting critical sectors such as construction, mining, ports, refineries, and defense.

India's vision to become a global manufacturing hub is driving significant investments in infrastructure and industrial capabilities. This transformation requires advanced material handling solutions that can support large-scale projects while maintaining high safety and efficiency standards. The crane market is expected to see consistent growth, with a reduction in import dependence and an increased focus on developing world-class indigenous manufacturing capabilities.

What are the emerging trends in the industrial crane sector in India?

Several key trends are shaping the future of the industrial crane sector in India. Sustainability is becoming a primary focus, with manufacturers developing equipment designed to reduce emissions and increase energy efficiency. Customisation is emerging as a critical trend, with manufacturers offering tailored solutions that can integrate seamlessly into specific operational environments. Automation and digitalisation are expected to drive significant improvements in operational efficiency, precision, and overall customer experience in the industrial crane sector.



"BS-V compliance has increased the cost of backhoe loaders."

Siddharth Chaturvedi, General Manager -Marketing, Tata Hitachi Construction Machinery, shares insights on the BS-V transition, backhoe loader demand outlook, and customer support strategies for FY2026.

After a subdued FY 2025 influenced by pre-buying trends, what are your expectations for the backhoe loader market in FY 2026? What will shape the demand landscape?

FY2026 is expected to witness a gradual recovery in backhoe loader sales. With the BS-V transition, the market should stabilise as customers adapt to the new standards. Growth is likely to be driven by continued infrastructure investments, rural development programmes, housing, and irrigation projects. Governmentbacked schemes and enhanced project execution at the state and central levels are also expected to create a steady demand environment.

What upgrades have been implemented in backhoe loaders

To comply with Bharat Stage-V (BS-V) emission norms and the latest safety regulations, backhoe loaders have undergone a series of significant upgrades aimed at enhancing environmental performance, operator safety, and overall machine reliability. On the emissions front, the machines now incorporate advanced engine technologies, including electronically

controlled common rail direct injection (CRDI) systems that enable precise fuel delivery for optimised combustion.

In addition, after-treatment systems such as diesel oxidation catalyst (DOC), diesel particulate filter (DPF), and selective catalytic reduction (SCR) have been integrated to effectively reduce particulate matter and nitrogen oxide emissions. These enhancements not only meet the stringent BS-V standards but also contribute to improved fuel efficiency and lower operating costs over the long term.

From a safety and regulatory standpoint, significant improvements have been made in compliance with updated central motor vehicle rules (CMVR). Operator cabins are now equipped with Level 2 roll-over protective structure (ROPS) and falling object protective structure (FOPS), offering enhanced safety in challenging work environments. Modern braking systems have been introduced for improved control and reduced stopping distances, while redesigned cabins with expanded glass areas, rear view mirrors, and optional cameras enhance operator visibility. Additional features such as mandatory seat belts, ergonomic seating, appropriate lighting, signage, and audible alerts further support safe and efficient machine operation.

Together, these changes ensure that BS-V compliant backhoe loaders not only meet regulatory expectations but also deliver enhanced productivity, operator comfort, and on-site safety.

How has the shift to BS-V impacted machine pricing, and what support



are you offering to ease this transition for customers?

BS-V compliance has increased the overall cost of backhoe loaders depending on the model. To help customers manage this, OEMs are working on cost optimisation across the value chain. We are also offering value-added services, warranty coverage, and efficient after-sales support to ensure higher uptime and better returns on investment.

What strategies are in place to support budget-conscious buyers concerned about the costs of new fuel and electronic systems?

We understand the concerns of first-time and value-conscious buyers. At Tata Hitachi, we are focusing on simplifying technology while maintaining reliability and durability. We are strengthening our service network, ensuring ready availability of spares, and offering training to operators and mechanics. Our approach is to make the transition as seamless as possible with robust support and transparent communication.





BS-V compliant backhoe loaders go beyond meeting regulatory standards by offering improved productivity, greater operator comfort, and safety.

improved fuel efficiency, reduced emissions, enhanced machine diagnostics, and better overall performance. With electronic controls, proactive maintenance is possible, reducing unplanned downtimes. Over time, this translates into productivity, consistent availability, and ultimately better profitability for users.

Are there financing solutions available to help customers manage the higher costs of BS-V machines?

Yes, we work with leading

introduce tailored financing solutions. These include extended tenures, lower EMIs, leasing options, and seasonal repayment plans. Such initiatives are aimed at reducing the financial burden and enabling easier access to BS-V compliant equipment.

What should customers expect in terms of maintenance costs for BS-V machines compared to other models?

While BS-V machines come with additional emission-related components, they are designed for longer service intervals, improved diagnostics and optimised lifecycle cost. We are also offering maintenance packages and AMC plans to help customers manage costs effectively.

How are you equipping operators and mechanics to work with BS-V technology?

Absolutely. Training is a core part of our BS-V rollout strategy. We conduct operator and mechanic training programmes across our dealer network, at customer sites and we have designated operator training centres at both our manufacturing facilities in Dharwad, Karnataka and Kharagpur, West Bengal.



Why Renting Beats Buying

Once a symbol of capability, owning heavy equipment is losing its appeal. With rising costs and complex compliance, contractors are increasingly turning to rentals for flexibility, savings, and simplicity.

ecisions on heavy equipment traditionally used to be based on the duration of the need, with rental contracts being favoured over outright purchases only in long-term projects. Arjunkumar N Pachani, Founder, Migoo, a construction equipment rental company, says "The concept of owning equipment became popular decades ago when India didn't have sufficient construction equipment and funding agencies such as the World Bank and Asian Development Bank wanted to be certain that the contractor being awarded a project had the

equipment needed to implement it."

Much has changed since then. "India now has a lot of EOMs offering equipment as well as homegrown brands, and no shortage," continues Pachani. In the present scenario, he says it makes financial sense for a contractor to rent instead of own a lot of equipment. In fact, he says, "a contractor is actually a service provider, making use of rented equipment as is needed."



Arjunkumar N Pachani Founder,

Eliminate compliance headaches

One of the key advantages of renting over buying is the ability to outsource the compliance headache. "Compliance is now a concern for construction companies, which can be eliminated by using the services of certified employees provided by rental companies," says Pachani.

He cites the example of SCC Infrastructure needing three concrete boom pumps for six months to work on a project that is part of the Mumbai-Ahmedabad high-speed rail corridor. It opted to rent these boom pumps instead of buying them.

"The company opted for a package that included the boom pumps [Ajax make boom placer model A30ZX], a certified driver and an operator," says Pachani. "Certification covered the licence of the driver and the ability of the operator."

To ensure optimal performance of the rented equipment, Migoo provides equipment that is "zero to five years old and covers the maintenance for the rental period".

Focus on your core area

One of Express Equipment Rental & Logistics' major projects involved dismantling and replacing the kiln shell along with plant expansion for a prominent cement company in India. "Initially, the client contemplated investing in cranes and material handling equipment for the three-year project but after a thorough costbenefit analysis, it found that renting would offer significant advantages," says Karan Gandhi, Executive Director, Express Equipment Rental & Logistics.

He explains the decision: Purchasing the equipment would have cost about Rs 7 crore, including taxes, substantially higher than the Rs 3.96 crore rental cost over three years – at Buy or rent decisions are based on various equipment parameters such as its type, life, maintenance cost and operation cost; the period the equipment is needed; the use of the equipment after this period ends; the decision-making organisation's future business plan; and the risk involved in operation and maintenance, according to **Pramod B Joshi**, **Additional General Manager (P&M Head, All India), Ahluwalia Contracts India**. "It is customary for the company renting out the equipment to provide an operator."

Usually, equipment like piling rigs, vibro-hammers, skid steer loaders, dumpers, transit mixers and excavators are taken on rent, he says. "Equipment such as backhoe loaders, hydras, batching plants, tower cranes, concrete pumps, hot-mix plants, motor graders, pavers and soil compactors are normally bought."



Pramod B Joshi Additional General Manager (P&M Head, All India), Ahluwalia Contracts India

As for the numbers, "the monthly rental of any construction equipment is usually 3-4 per cent of its value; the idea is to recover the equipment cost within three to five years depending on the type of equipment," says Joshi.

about Rs 11 lakh per month. Also, the rental agreement came with



Karan Gandhi ED, Express Equipment Rental & Logistics

complete
maintenance
support, eliminating
the maintenance and
repair expenses
associated with
owning heavy
machinery,
estimated to be about
Rs 2 to 3 lakh per
month. Combining

logistics services further sweetened the deal. The timely delivery and pick-up of heavy equipment significantly reduces the cost and challenges associated with transportation and storage.

"Saving the capital cost enabled the client to reallocate its funds to other critical areas of the project, such as workforce expansion and quality materials," says Gandhi. "Besides, renting provided the flexibility to choose the most suitable cranes and equipment, featuring the latest technology, for different construction phases, thereby improving both efficiency and safety."

He points out that the industry is moving towards focusing on core operations, to successfully complete projects on time and within the allocated budget, and reduce the renting company's tax burden because rental payments are classified as business expenses.

Outsource micromanagement challenges

Arcelor Mittal Nippon Steel rented out 20 excavators in 2022, which are still in use and expected to be deployed until 2027 for a steel plant capacity expansion project at Hazira, according to Raj Saliya, CEO, Raj Construction, the heavy equipment rental company servicing



The industry is focusing on reducing tax burdens for renting companies, as rental payments are classified as business expenses, helping to lower overall costs.



Buy or rent decisions depend on equipment type, lifespan, maintenance and operation costs, usage duration, post-use plans, business strategy, and operational risks.

this need.

"These were mostly the Tata

Hitachi 200 model but also a few smaller and bigger excavators for special needs - the Tata Hitachi TMX 20 and Tata Hitachi 70, which work well in confined areas; the JCB 140,



Raj Saliya CÉO, Raj Construction

which is a best-in-class 14-tonne excavator; the Tata Hitachi 350 for heavy soil lifting; and a few long reach excavators with custom-made long boom and stick attachments for deep foundation and piling work," he shares.

Despite needing the equipment for such a long project duration, Saliya says that the company (AM/ NS) preferred to rent out the excavators because of the challenges associated with micromanaging the operations and maintenance of heavy machinery and the people operating them. "It is much easier to rent out the equipment with a driver and operator, with maintenance also included in the package," he says.

"They basically tell us what they expect from the operator over a 10-hour shift and we monitor the operations. We don't need to get involved as long as the work is accomplished as desired. The challenge associated with skilled operators is the lack of a formal way to certify them. This is something the industry still has to work out. Also, there is a lack of experienced mechanics in the industry, and there is also no specific standard way to certify them either. Keeping an excavator in its best shape requires a set of skilled mechanics in hydraulics, engines, welders, etc. We have a full team to service our fleet, which acts as the backbone of our business by ensuring we provide the bestmaintained excavators available in the market."

Saliya says that companies like AM/NS have a policy of outsourcing their heavy equipment needs even for day-to-day operations, not only for expansion projects. An excavator from one of these brands, say Tata Hitachi, would cost about Rs 60 lakh on road, and an operator's salary would be about Rs 25,000 a month, maintenance up to about Rs 15,000, plus of course they would incur the cost of a maintenance team. In contrast, they could hire the Tata Hitachi 200 for Rs 1,70,000 a month. An excavator's life is roughly five years; the rest depends on how well it is maintained.



Transforming OEM and Equipment Manufacturing

ERP systems are becoming increasingly intelligent day by day. They now leverage historical data, real-time market trends, and even external factors to make more accurate demand and financial forecasts, write YUVRAJ SHIDHAYE.

nterprise manufacturing today is grappling with a confluence of pressuresrising customer expectations, supply chain volatility, and an urgent need for operational agility. To stay competitive, original equipment manufacturers (OEMs) and equipment producers must reimagine how their systems function, collaborate, and evolve. One of the most important changes enabling such reinvention is the transition to cloud-based Enterprise Resource Planning (ERP) solutions. These are no longer merely solutions for

handling back-office operations—but potent drivers of innovation, of insight, of expansion. With the global cloud ERP market set to nearly double from \$87.73 billion in 2024 to \$172.74 billion in 2029, it is safe to say that manufacturers are not merely welcoming new technology completely; they are undertaking a new business model.

Turning data into decisions

The key characteristic of the new cloud-based ERP solutions is their ability to integrate the fundamental operational capability with artificial intelligence and machine learning capabilities. With the current ERP solutions, it is now achievable for manufacturers to forecast future problems prior to their occurrence, as opposed to reacting later to problems. For instance, predictive maintenance software within an ERP environment can track the condition of the machine in real-time and predict impending breakdowns—saving time, capital, and unscheduled downtime. Artificial intelligence handles scheduling production and planning production to employ the required assets without over-allocation of

GUEST COLUMN

stocks or letting it sit idle.

On the forecasting front, ERP systems are becoming increasingly intelligent day by day. They now leverage historical data, real-time market trends, and even external factors to make more accurate demand and financial forecasts. With generative AI making interfaces more intuitive, users can now create reports, search for data, or input commands in natural languagereducing training time and increasing adoption across teams.

Keeping up with compliance

For OEMs working in heavily regulated industries like aerospace, defense, or pharmaceuticals, keeping up with compliance requirements is a non-negotiable part of the job. Cloud ERP systems are making this easier by embedding regulatory intelligence directly into the platform.

AI-driven ERP applications are becoming valuable allies for compliance teams—not only by keeping up with ever-evolving standards but also by simplifying the creation of audit-ready documentation. On the security front, built-in features like end-to-end encryption, multi-factor authentication, and zero-trust frameworks help ensure sensitive data stays protected, offering everyone greater peace of mind.

As organisations expand—by moving into new geographies, introducing new lines of business, or onboarding users—cloud-based ERP solutions can scale up with them. Thanks to low-code or no-code tools, customisations that once took months can now be done in days, helping businesses stay agile without getting bogged down by IT constraints.

Making supply chains transparent

Manufacturing depends on the robustness of its supply chain. A

simple minor hiccup—like a raw material shortage, a transportation delay, or a global disturbance can throw production schedules into disarray. Cloud-based ERP software is stepping in and filling the gaps by giving manufacturers a clearer, more integrated picture of their supply chains so that they can respond rapidly and keep the wheels well-lubricated.

The digital transformation of equipment manufacturers and **OEMs** is already taking place, and cloud ERP solutions are at the center of it.

One of the trends that stand out is especially the adoption of blockchain within ERP frameworks. That provides a further level of transparency by logging all transactions in a read-only, tamperevident ledger. Suppliers can now track material and components back to the source, validate quality, and confirm ethical sourcingall within one system.

Moreover, blockchain also facilitates smart contracts that automatically initiate payments or shipments when specific conditions are fulfilled, reducing delays and human error. This particularly comes in handy for OEMs with a large network of global suppliers, where efficiency and trust are essential to maintaining operations in motion.

Empowering teams, wherever they are

Manufacturing is not limited to a single factory or office anymore. Teams are located across geographies, suppliers are in other time zones, and

decision-makers tend to be in transit. That's where the mobility of cloud ERP truly stands out. The systems of today are built with remote access in mind, providing dashboards that are mobile-friendly and real-time information from anywhere. Whether it is reviewing inventory levels, updating an order for production, or working with suppliers, workers can remain connected and make decisions on the flv.

In a country like India, where OEMs typically cut across several cities and are associated with a large number of vendors, mobile ERP solutions bridge the communication gaps and keep all concerned parties—procurement, production, as well as sales—aligned. During times of disruption, e.g., natural calamities or public health emergencies, such flexibility guarantees business continuity.

Looking ahead

The digital transformation of equipment manufacturers and OEMs is already taking place, and cloud ERP solutions are at the center of it. These solutions don't merely digitise processes rather they help connect people, data, and activities in a way that's quicker, more intelligent, and more responsive.

As blockchain, AI, and other emerging technologies become more integrated into ERP systems, those manufacturers that transition now will be more prepared for whatever comes next. In a world where only competition and complexity are on the horizon, cloud ERP gives OEMs the tools to lead with confidence, clarity, and control.

ABOUT THE AUTHOR:



The article is authored by Yuvraj Shidhaye, Founder and Director, TreadBinary.

Trump Tariffs: A Hit or an Opportunity?

When Trump's tariff war disrupted global trade, India's construction equipment sector faced challenges—but also seized new export opportunities as global buyers turned away from China and looked toward India.



President Donald
Trump fired the first
salvo in a global trade
war with a series of sweeping tariffs,
few anticipated the ripple effects it
would have across industries
worldwide. Among the sectors caught
in the crossfire was India's
burgeoning construction equipment
and component market—an industry
that, while not heavily dependent on
US exports, found itself both

challenged and surprisingly poised for opportunity.

In 2018, the Trump administration-imposed tariffs on steel and aluminium imports, later expanding duties to a wide array of goods under Section 232 and 301 of US trade law. These moves targeted key sectors including auto components, electricals, chemicals, and machinery—segments where India had emerging global stakes.

According to Rajesh Nath,

Managing Director, VDMA India, the real impact was felt not in direct exports of Indian construction machinery to the US—which remain limited—but through the significant exposure of India's auto component industry. "Auto components from India's total exports—24 per cent of that goes to the U.S. That's a big hit." He also highlighted companies like Motherson Sumi among those likely to feel the burn.

Even within construction

equipment, many component manufacturers overlap with automotive part suppliers. These dual-use partsranging from hydraulics to



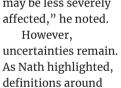
Managing Director, VDMA India

precision castings—faced potential price and volume shocks due to retaliatory tariffs and the subsequent supply chain disruptions.

Components in the crossfire

Anand Sundaresan, Director, Ammann India, provided critical context to the component issue. "When it comes to CKD (completely knocked down) components, duties are still very high in India, irrespective of the origin. But spare parts, which many construction

machines depend on, are taxed based on classification. That may be less severely affected," he noted.





Director. Ammann India

CKD versus spare parts have already sparked tax conflicts-Volkswagen being a recent example—where classification discrepancies can lead to inflated duties or retroactive penalties. In this fluid environment, Indian manufacturers must tread cautiously.

Export dip or opportunity?

Despite the immediate disruptions, not all voices in the industry see doom. Ajay Malik, Head of International Business, Action Construction Equipment (ACE), sees the trade reconfiguration as a windfall. "The reconfiguration of global trade routes has opened up

unprecedented opportunities for Indian exporters, particularly in the high-value construction equipment sector," said Malik.

He attributes this growth in part to global disillusionment with Chinese supply chains—a sentiment echoed by Nath who observed that at Hannover Messe, "a full hall of Chinese exhibitors saw minimal footfall, while Indian booths were bustling." This anti-China sentiment across Europe and North America has created a vacuum that Indian firms are rapidly filling.

The Trump tariff war, though initially viewed as a threat, has inadvertently opened up strategic pathways for India's CE sector.

Malik added, "At ACE, we view this shift as a clear validation of India's rising stature as a dependable manufacturing hub. Bolstered by the 'Make in India' initiative and robust policy support, Indian manufacturers like us are increasingly being seen as agile, quality-driven partners for global markets."

Rising through realignment

While India's construction equipment exports to the US may still be in their infancy, the larger implications of Trump's tariff war lie in how it catalysed a shift in global supply chains. European and North American buyers, wary of overreliance on China and entangled in trade restrictions, have begun seeking out alternate partners. India-with its scale, workforce, and improving ease of doing businessis increasingly in the spotlight.

Indeed, Indian construction equipment exports grew by nearly 25 per cent between 2019 and 2024, according to industry estimates, with new markets emerging in Southeast Asia. Africa, and Latin America. This diversification cushions the risk from US-centric disruptions and



Head of International Business, Action Construction Equipment (ACE)

positions India as a neutral, stable supplier amid geopolitical turbulence.

Despite these gains, challenges remain. Volatile US trade policy, currency fluctuations, and domestic infrastructure bottlenecks can erode some of the competitive advantages Indian manufacturers are currently enjoying. Moreover, while companies like ACE have built a footprint in 42 countries, many small and mid-sized suppliers still lack the scale or capital to pivot quickly.

Even so, the consensus among industry leaders leans toward cautious optimism. As Sundaresan summarised, "The direct impact on our construction machinery exports to the US may be minimal, but the indirect pressures—on components, supply chains, and policy uncertainty—are real. Yet these pressures are also forcing us to become more globally competitive."

The Trump tariff war, though initially viewed as a threat, has inadvertently opened up strategic pathways for India's construction equipment sector. It has accelerated global diversification efforts, spotlighted India's manufacturing promise, and nudged the industry toward greater resilience. As global trade continues to evolve, India's real challenge—and opportunity lies not in shielding itself from disruption, but in leveraging it for sustained growth.



Cost Optimisation for Building Durable Roads

As India targets the construction of over 10,000 km of highways annually, the question of cost optimisation in road construction becomes increasingly critical. Let's find out some effective ways to build durable roads without comprising on cost, quality, safety, and sustainability.



oad construction plays a vital role in infrastructure development, serving as a catalyst for economic growth, improved regional connectivity, and urban development. Since April 2014, India has constructed and upgraded nearly 101,900 km of National Highways (NH). The average annual rate of highway construction from 2014 to 2024 has surged by approximately 130 per cent compared to the 2004-2014 decade. Looking ahead, the Union Government has set a bold goal of building 10,000 km of highways in the 2025-26 fiscal year.

However, despite this rapid

expansion, challenges such as budget overruns, project delays, and environmental impacts continue to affect the efficiency and sustainability of road infrastructure projects. Achieving cost efficiency in this sector requires a careful balance between maintaining quality, adhering to timelines, and staying within budget, all while minimising environmental impact. Contributing factors to rising costs often include inadequate project planning, limited adoption of advanced technologies, and poor resource management. Additionally, while striving to meet global quality standards is crucial, it must be done without compromising

financial discipline.

Hence, there is a need to explore ways to reduce costs across the road construction lifecycle—starting from planning and design to material usage, execution, and long-term maintenance—without compromising on the quality or performance of infrastructure.

Early-stage planning: The hidden lever

According to R K Pandey, former Member (Projects), National Highways Authority of India (NHAI), cost overruns often originate during the planning phase. "Planning and pre-construction activities are the

EVENT REPORT



R K Pandey former Member (Projects), National Highways Authority of India (NHAI)

two foundations for successful completion of a project. Alignment selection, land acquisition, and detailed project reports (DPRs) must be approached with environmental,

and lifecycle considerations in mind," he stresses.

The shift from brownfield to greenfield alignments, as adopted under the Bharatmala programme, exemplifies this strategic mindset. While initial costs may be higher, greenfield projects offer shorter routes, reduced congestion, and lower lifecycle maintenance costs. Similarly, elevated corridors, as opposed to constructing multiple bypasses, could be a long-term solution to land scarcity and urban sprawl.

Highlighting the importance of vertical alignment choices and the need to reassess standard practices such as paved shoulder design, Pandey says, "If paved shoulders are not subjected to the same level of traffic, why must they match the carriageway in design? These are areas where rethinking standards can lead to meaningful cost savings."

Many experts emphasis that cost

optimisation must be approached not as cost-cutting, but as intelligent engineering. "There's a fine line between reducing costs and compromising safety. We need industry and policy



Dr V Ramachandra Director, RASTA – Centre for Road Technology

industry and policy-level mechanisms to ensure innovations in materials and methods are implemented meaningfully," explains Dr V Ramachandra,

Director, RASTA - Centre for Road Technology.

He points out that while the Indian Roads Congress (IRC) accredits new technologies and materials, implementation remains inconsistent. A structured framework for pilot projects, followed by feedback loops and refinement of standards, is essential. "For example, alternative aggregates have been approved, but unless we monitor their field performance, the industry will remain cautious," he adds.

Dr Ramachandra also suggests incorporation of lifecycle cost analysis in tender evaluations rather than relying solely on initial construction costs. "This shift would naturally promote the adoption of durable and sustainable methods over cheaper, short-term solutions," he opines.

The role of independent quality audits

Ensuring quality through third-party quality audits is also essential for building durable roads.

Explaining the value of such assessments, Dr Manoranjan Parida, Director, CSIR-Central Road Research Institute (CRRI), says, "Third-party audits are



Dr Manoranjan Parida Director, CSIR-Central Road Research Institute

akin to safety assessments conducted for metro or railway projects before opening to the public. They ensure compliance and help identify construction lapses early."

He advocates for concurrent audits, conducted during construction instead of post-completion, to enable timely interventions and reduce rework-related costs. "Early detection of defects leads to significant savings, while enhancing durability and safety

of the finished road," he stresses.

This, according to Dr Parida, s particularly important in high-value projects involving multiple agencies, where accountability and coordination can sometimes fall through the cracks.

Private sector perspective: Optimising under constraints

As a long-time champion of Public-Private Partnership (PPP) models, **Dr Sudhir Hoshing, Chief Mentor at IRB Infrastructure**

Developers,

provides a candid assessment of how private contractors navigate optimisation under increasingly rigid specifications. "In early BOT projects,



Dr Sudhir HoshingChief Mentor,
IRB Infrastructure

we had the freedom to design with a 20 to 30-year maintenance horizon in mind. Now, most designs are fixed by the authority or DPR consultants, leaving little room for innovation," he elaborates.

In such cases, material substitution becomes the key lever for cost optimisation. IRB has made significant strides in this direction, with extensive use of fly ash, ground granulated blast furnace slag (GGBS), steel slag, and recycled materials. "We have invested in a recycling plant capable of processing 60 to 70 per cent RAP (Recycled Asphalt Pavement). That's the kind of shift that matters," explains Dr Hoshing.

He stresses that cost optimisation does not mean lowering quality. "A road that fails in two years is a financial disaster. True savings come from building durable assets using smarter processes and materials," he adds.

The lack of flexibility in current procurement models, especially under EPC and HAM contracts, leaves little room for contractors to apply design innovations.
"While PPP
contracts should
ideally follow
output-based
specifications, in
India we often
default to input-



Devayan Dey Partner, PwC India

based design, which constrains innovation," opines Devayan Dey, Partner at PwC India.

Dr Hoshing advocates granting of design latitude to concessionaires, allowing them to apply value engineering techniques. "We're often forced to include unnecessary components like roadside call boxes that are obsolete in the smartphone era. This adds to costs without delivering value," he says.

R K Pandey concurs, suggesting that value engineering and cost optimisation should be mandatory components of DPR preparation. "Every project proposal should include a section justifying why a particular alignment, material, or method was chosen over other alternatives," he stresses.

With environmental awareness rising, there is a growing need to use industrial by-products such as steel slag, red mud, copper slag, and biochar in road construction. CRRI's research has helped develop processing techniques and guidelines for these materials, which are now being trialled across India. Dr Parida cites the Ministry of Steel project co-developed with Tata Steel, JSW, and AMNS that enabled steel slag to be used in trial stretches in Surat and Jamshedpur. "Once these materials are standardised under IRC codes, their use can be scaled nationally," he explains.

Dr Ramachandra adds, "Bottom ash, a by-product of thermal power plants, offers similar potential. We generate about 35–40 million tonnes annually, and up to 50 per cent of it can be used in road layers. But we need guidelines and quality checks in place."

According to him, more composite cements and multi-blend mixes should be used in road construction, as they lower carbon footprints while improving durability.

From environmental ratings to material recycling, many construction companies have taken steps in integrating ESG principles into construction. "In the past three years, IRB Infrastructure has gone from a sustainability rating of 0.7 to 52—among the highest in the industry," says Dr Hoshing.

Apart from material recycling, IRB has implemented water reuse systems in its hot mix plants, installed emission control systems, and designed drainage infrastructure to store and recycle water on-site. "The use of glass fibre reinforcements and steel fibres is also emerging as effective tools to reduce thickness and improve road performance," he highlights.

Experts also feel that there is a need for continual revision of IRC and BIS codes to reflect field learnings. Having right procurement strategies are often considered as the key for improving operational efficiency in road construction projects. Many firms have adopted centralised procurement for all major materials like steel and cement, which leads to bulk discounts and improved cash flow management. "There are also new models where vendors handle procurement and receive staggered payments from contractors, easing liquidity pressure. Equipment rental models with manpower bundles also help reduce capital outlay," elaborates Dr Hoshing.

Dey suggests a three-pronged roadmap for cost optimisation in Indian road construction:

 Design innovation: Empower private players with flexibility in

- design, remove rigid specifications, and promote value engineering during project preparation.
- Supply chain efficiency: Promote use of recycled and alternative materials, optimise procurement models, and reduce dependency on scarce natural aggregates.
- Technology adoption: Embrace digital tools in quality control, project tracking, and asset management to boost speed, transparency, and durability.

Experts agree that the next leap in optimisation would come from digital construction. Pandey predicts a move from mechanised to autonomous construction, reducing errors and improving speed.

AI-driven field inspection—where drone footage, photo annotations, and speech-to-text interfaces help generate real-time progress reports—has the potential to cut down layers of bureaucracy and improving accountability. "Even requests for inspection and quality control tests can now be logged digitally. We are inching closer to real-time monitoring across the board," opines Dr Hoshing.

India stands at a pivotal moment in its infrastructure journey. If innovation, sustainability, and engineering excellence are institutionalised across public and private sectors, cost-effective yet world-class roads can indeed become a reality.

(This article is based on the virtual panel discussion hosted by FIRST Construction Council on the topic of "Cost Optimisation in Road Construction" on May 16, 2025. This panel discussion was organised in association with Construction World, Infrastructure Today and Equipment India magazines.)





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he Indian Off-the-Road (OTR) tyre market is undergoing a defining transformation. Once a low-profile, utilitarian sector focused on basic construction and mining support, the OTR industry is now becoming central to India's industrial future. With advancements in tyre technology, strategic global

realignments, and a sharp rise in demand for high-performance, application-specific solutions, OTR tyres are no longer an afterthought — they are a critical component of infrastructure, mining, and logistics success.

India, armed with a growing domestic market, technological innovation, and global trade

tailwinds, is poised not only to meet internal demand but also to become a hub for exports. From domestic pioneers to emerging innovators, the OTR tyre ecosystem is evolving into a high-value, highperformance arena — one that promises significant returns for those who can match performance with adaptability.



Market momentum

At the heart of India's OTR tyre surge is an aggressive infrastructure agenda. With the Indian government's continued focus on building highways, ports, airports, and mining corridors under initiatives like Bharatmala, Sagarmala, and PM Gati Shakti, the requirement for construction and mining machinery

- Shift to radials and smart tyre tech is underway but not uniform across segments.
- Raw material price volatility and delivery challenges persist.
- Anti-China sentiment and US tariffs are enabling Indian exports.
- Sustainability, recycling, and electrification will shape the future.

has skyrocketed. And every machine — from dumpers and dozers to wheel loaders and cranes — needs reliable, terrain-ready tyres.

Ashok P Chhajer, Sr. General Manager – OE Sales (Domestic), BKT, observes, "The OTR tyre industry in India is benefiting from increasing infrastructural developments and the government's focus on expanding and

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modernising the transportation and logistics sectors. This has led to a surge in demand for high-performance OTR tyres."

Beyond roads and ports, the mining sector — particularly coal, iron ore, and limestone — continues to fuel OTR tyre growth. With India targeting self-sufficiency in coal and boosting



Ashok P Chhajer Sr. General Manager – OE Sales (Domestic), BKT Tires

mineral production, high-tonnage equipment usage has increased, pushing the tyre industry to innovate for extreme conditions.

Changing landscape

The OTR tyre market has evolved dramatically. Earlier, OTR tyres were typically part of larger portfolios of generalist tyre manufacturers, producing a limited range of basic products. That is no longer the case.

Shyam Gyanani, Co-founder and Executive Director, Trident International, says: "Earlier the OTR tyres were made by manufacturers that produced all types of tyres. Today, it is the specialist OTR tyre manufacturers both home-grown and Indian subsidiaries of international players who cater to both the domestic and overseas market."

Machines have also changed.

Modern mining machines
demand tyres that are not only
durable but also application-specific
— different tread patterns,
compounds, and casing strengths.
This change in customer demand is
driving a wider portfolio, with
multiple SKUs needed even
for a single sector.

Radial vs Bias

A significant evolution within OTR tyres is the gradual but decisive shift from bias to radial construction.

Radial tyres offer multiple advantages — longer tread life, lower rolling resistance, improved fuel economy, and better heat dissipation. These benefits are increasingly attractive to fleet operators looking to reduce operational costs and downtime.

"The growth trend of radial tyres in OTR has been steadily increasing," notes Chhajer. "While bias tyres still hold a significant share due to their robustness and cost-effectiveness

in certain applications, we are expanding our range of radial tyres to meet growing demand."



Shyam Gyanani Co-founder and Executive Director, Trident International

Still, the adoption of radials is uneven. High-

speed applications such as long-haul dump trucks and cranes have embraced radialisation more quickly, whereas segments like forklifts, backhoes, and port equipment continue to favour bias tyres for their rugged simplicity and lower cost of ownership.

Innovation at the core

The future of OTR tyres is not just stronger rubber — it's smarter rubber. One of the most noteworthy developments in recent years has been the integration of smart technology into tyre systems. JK Tyre is leading this charge with its Treel system, a smart tyre pressure and temperature monitoring solution (TPMS) tailored for OTR applications. This technology allows real-time monitoring, improving safety, reducing downtime, and significantly enhancing fleet productivity.

"Our latest OTR tyres are engineered to excel in the most challenging terrains," says Anuj Kathuria, President, JK Tyre. "We are committed to setting new standards in tyre technology and enhancing productivity in OTR industry."

Trident has also introduced its SMARTIRE system, a patented solid tyre performance monitoring technology that tracks wear, usage, and pressure data, helping operators plan proactive maintenance and reduce risk. Additionally, Trident's use of non-directional tread patterns (patented in the US) and reinforced foam compounds (that lower carbon footprint by 35 per cent) show how Indian manufacturers are using product innovation to create differentiation.

New launches across the board

Recent product launches across India reflect the industry's renewed focus on performance, application fit, and durability.

JK Tyre unveiled a wide range of OTR tyres at Bauma Conexpo India 2024, including the VEM 63 L5, VEM 99D E3, VEM SMOOTH L5S, JET LIFT, and MPT 117. These tyres cater to loaders, wide body dumpers, haulage trucks, forklifts, and self-loading mixers, offering features like extradeep tread, sidewall protectors, silica-based compounds, and high load capacity. CEAT Specialty launched the Minemax X3, a mining tyre designed for extreme load and terrain conditions. ZC Rubber debuted its new OTR range at international expos, while Triangle presented an expanded portfolio featuring its new TPMS system.

Bridgestone showcased products with its Enliten Technology in India, focusing on fuel efficiency and extended life, indicating growing R&D localisation even by international players.

Export acceleration

India's OTR tyre market is not just about meeting domestic needs

— it is becoming a global exporter.

"Global anti-China sentiment and the 'China Plus One' factor have greatly helped Indian players," says Rajiv Budhraja, Director General, Automotive Tyre Manufacturers' Association (ATMA). "With passenger car radial (PCR) tyres providing better returns in the European and North American markets, companies like Michelin and Pirelli are focusing on the West. This has opened avenues for local innovation to be scaled for exports."

Indeed, Indian
OTR tyre
manufacturers are
ramping up
exports, especially
as trade
restrictions and
tariffs hit Chinese



Anuj Kathuria President, JK Tyre

suppliers. The US has imposed anti-dumping duties on Chinese tyre imports, while several global buyers are looking to de-risk from a single source supplier — offering a perfect opening for Indian firms with strong quality and cost propositions. Add to this the closure of OTR units by global majors — like Goodyear's sale of its OTR business to Yokohama — and it's evident that India has a real chance to become a global supply chain hub for OTR tyres.

Challenges in the path

Despite the positives, the OTR tyre industry must navigate its share of hurdles. Chief among them is the volatile cost of raw materials. Natural rubber, carbon black, steel cords, and petroleum derivatives are all essential inputs — and their global prices remain unpredictable.

"There are challenges due to fluctuation in raw material prices and supply chain disruptions, particularly from geopolitical events," says Chhajer. These pressures, combined with increasing

KEY TRENDS SHAPING INDIA'S OTR TYRE MARKET

- Radialisation: Increasing shift from bias to radial tyres for durability and efficiency
- Smart tyres: Adoption of TPMS and connected solutions for better performance tracking
- Export growth: Boost from global anti-China sentiment and tariff advantages
- Sustainability: Innovations in recycling, foam-filling, and green compounds
- Electrification: Early focus on EV-ready tyre solutions for mining and construction
- Customisation: Rise in application-specific patterns, grades, and sizes

input costs due to environmental regulations and logistical issues, make price control difficult.

Moreover, the need to maintain low total cost of ownership (TCO) is forcing tyre makers to strike a fine balance between performance and affordability.

Sustainability and recycling

Sustainability
has become a core
tenet of product
development and
branding. While
recycling large OTR
tyres remains a
challenge due to
their size and
composition,



Rajiv Budhraja Director General, Automotive Tyre Manufacturers' Association

progress is being made. Companies like Tyrecycle have opened recycling plants overseas, and in India, solutions like retreading, foamfilling, and alternative compounds are gaining attention. Trident's low-carbon-footprint compounds and solid tyre solutions offer long-term value with minimal maintenance and waste. However, policy support and end-of-life tyre (ELT) infra are still in early stages in India — representing an area ripe for investment

Emerging opportunities

and innovation.

Electrification of construction and

mining equipment is emerging as a disruptive force. EVs bring different weight distributions, torque characteristics, and thermal demands — all of which impact tyre design.

"Electrification will present both challenges and opportunities," notes Gyanani. "The ability to innovate and rapidly prototype new compounds and tread structures will be key to success." While EV penetration in heavy equipment is still nascent, early movers in tyre innovation will benefit from partnerships with OEMs and early adopters.

Poised for takeoff

India's OTR tyre sector is no longer an ancillary or support industry — it is becoming a key driver of industrial performance, both at home and abroad. With a potent combination of domestic demand, global opportunities, and technological innovation, Indian manufacturers are not just catching up — they are setting benchmarks.

"Innovation is no longer optional," says Gyanani. "It's the only way to survive and thrive in this rapidly evolving sector."

As the sector prepares for the next phase of growth — driven by exports, electrification, and smart mobility — India is well-positioned to become a global leader in OTR tyres.





"The demand for OTR tyres is at an all-time high."

Ashok P Chhajer, Sr. General Manager – OE Sales, (Domestic Market), Balkrishna Industries, speaks on the most significant innovations in OTR tyre technology that are improving performance and durability.

How are technological advancements improving the performance and durability of OTR tyres?

Technological advancements are significantly boosting the performance and lifespan of OTR tyres through several innovations. Enhanced rubber compounding provides superior cut and heat resistance, resulting in extended tyre life. Reinforced casing designs improve structural strength, reducing damage from concussion defects. The adoption of tyre pressure monitoring systems (TPMS) enables real-time monitoring of tyre pressure, helping maintain optimal conditions and prevent premature wear.

What are the future opportunities for OTR tyre manufacturers in India?

The demand for OTR tyres is at an all-time high, and it's being driven by several key factors.

First, infrastructure
development has taken centre
stage, especially in India. The
government's increased
spending on large projects has
led to a surge in heavy
equipment purchases, which, in
turn, has boosted tyre demand.
Second, the mining

sector is experiencing a major expansion. Improvements in mining sector will lead to in tyre requirements. The rising need for raw materials like coal, iron ore is pushing mining companies to invest in better equipment, including durable, high-performance OTR tyres. Coming with new machines in mining and with new tyres requirements.

Another important factor is the "Make in India" initiative. The push for local manufacturing is reducing dependence on imports, encouraging innovation, and enhancing competitiveness within the domestic tyre industry.

So, when you combine all these factors, it's clear that the OTR tyre market is expanding.

Can you highlight the most significant innovations in OTR tyre technology?

One of the most notable is the use of advanced radial construction, which enhances load distribution and provides better traction and puncture resistance. BKT has also focused on developing specialised tread designs that resist wear and tear, particularly in harsh conditions like rocky or muddy terrains. Another significant advancement is in tyre compounds-BKT has introduced high-performance compounds that improve heat dissipation and extend tyre life. Usage of RFID technology for tyre traceability and TPMS system for tyre pressure monitoring.

Additionally, self-cleaning tread patterns and reinforced sidewalls contribute to enhanced durability, making tyres more suitable for demanding construction applications.

C.A.S.H SPECIAL FOCUS: OTR TYRES

What role do OTR tyres play in reducing maintenance costs and improving productivity on-site?

OEMs and end-use customers have a variety of requirements that they expect their tyres to meet. They must be able to travel over a wide range of terrain and withstand use in harsh operating environments, among other things. Hence BKT continually focuses its efforts on improving rubber compounds and tread patterns. By doing so, we ensure better performance in various applications, improve comfort for equipment operators and minimise unplanned downtime.

Maintenance of tyre care practices also plays a significant role. More importantly, we have dedicated teams of field engineers, who actively collect customer feedback and work with the R&D team on ensuring better quality products and addressing any issues. Tyres are integral to any OTR equipment design as they ensure mobility and productivity. The wrong selection can greatly impede an end-use customer's ability to get their work done. Hence, we collaborate with OEMs both local and global, to design and manufacture high-quality tyres that cater to various regions, areas, terrains, and applications while increasing the life and experience of

What are the key characteristics of OTR tyres?

Tyres that offer superior durability and reliability to ensure

consistent operations in extreme conditions. High-performance tyres are essential to support heavy mining equipment while delivering high load carrying capacity, fuel efficiency, and extended life cycles. As mining companies emphasise stability, they require tyres that can minimise equipment downtime and maintain operational efficiency as well as safety. Most importantly, less heat development during operations.

prompt issue resolution. BKT addresses these trends by offering advanced tyre solutions equipped with smart technology for real-time performance tracking, ensuring optimal performance and stability while providing the comprehensive after-sales service that mining operations require.

What are the current trends in OTR tyre design and materials?

BKT has introduced several innovations in tyre design for the mining sector, particularly in ALL-STEEL RADIAL tyres.
Our latest radial OTR tyres are engineered to provide enhanced durability, better load distribution, and longer service life. We've also

incorporated smart tyre
technology that allows for
real-time monitoring of
tyre health, enabling
operators to track
pressure, temperature,
and wear levels. These
advancements help
reduce downtime,
optimise performance,
and improve safety in
mining operations.

How do manufacturers address the challenges of operating OTR tyres in India's rugged terrain?

BKT proposes these challenges through continuous innovation for India's rugged terrains. It involves offering customised tyre solutions that are engineered to meet the specific demands of rugged terrains. This includes changes in rubber compounds to enhance performance characteristics such as cut resistance and heat dissipation depending on the terrain type. These terrainspecific changes ensure that the tyres deliver optimal durability and performance.



Additionally, after-sales service has become a critical factor for optimum tyre performance and end users looking for partners who provide continuous support through tyre performance monitoring, maintenance support at site, and

the tyre.

Atlas Copco Launches Reman Equipment Programme in India

Atlas Copco has announced the launch of its Reman Equipment Program in India, an initiative designed to restore used compressors and engines to their original performance standards. The main objective of the programme is to extend the operational life of the equipment, reduce total cost of ownership, minimise environmental impact through sustainable practices and to provide customers with reliable, high-quality refurbished equipment. The company delivered its first restored compressor under the

programme and is ready to deliver customised high-quality solutions to meet future industry needs.

This programme stands out with its ability to offer refurbished equipment that matches the performance of new units at a fraction of the cost. Customers benefit from significant savings as they do not have to purchase new equipment, reduced downtime with faster turnaround times, and get access to upgraded technology and extended equipment lifespan with reliable performance. Industries such as construction,



mining, water well, oil and gas will benefit from this initiative, with access to robust and dependable compressors designed to meet their specific operational demands.

Proposed Safeguard Duty on Steel Imports a Concern

The Indian construction equipment (CE) industry, currently valued at around \$9.5 billion, stands as the thirdlargest in the world, following only the United States and China. The sector plays a pivotal role in enabling infrastructure development across the country by supplying advanced, high-performance machinery required for building roads, bridges, railways, and urban infrastructure efficiently and cost-effectively.

Steel is a critical raw material in the manufacture of construction equipment, forming the backbone of heavy-duty machines used across multiple sectors. Various grades of steel, including specialised highstrength and high-tensile steel, as well as pipes and tubes, are essential for the structural and functional components of construction equipment. Notably, many of these high-spec materials are currently not manufactured domestically and are required to be imported to meet production needs. In this context, the ongoing discussion regarding the



imposition of a 12 per cent safeguard duty on imports of non-alloy and alloy steel flat products by the Directorate General of Trade Remedies (DGTR) has raised serious concerns within the CE industry. A sudden restriction on imports could severely affect downstream industries such as construction equipment manufacturing by limiting access to critical raw materials, particularly where domestic production does not meet the required technical specifications or volumes. Any disruption in the availability or affordability of these materials will directly impact manufacturing timelines and equipment delivery, and slow infrastructure execution across the country.

TrucksUp, Indian **Oil Partner**

TrucksUp has announced its strategic collaboration with Indian Oil Corporation (IndianOil) to introduce the XTRAPOWER-Fleet Card, a comprehensive fuel and fleet management solution customised for the logistics industry. This partnership marks a significant step toward digitising and streamlining fuel payments and fleet operations for logistics service providers across India.

Under this collaboration, TrucksUp and IndianOil have signed an MoU to enable fleet operators, small logistics businesses, and corporate customers to leverage the benefits of the XTRAPOWER-Fleet Card Program. With this initiative, TrucksUp aims to enhance operational efficiency, transparency, and cost-effectiveness in fuel and fleet management.

The XTRAPOWER-Fleet Card Programme is a trusted and widely adopted solution that empowers fleet operators with a secure, convenient, and digital method to manage fuel transactions and fleetrelated expenses.

JK Tyre Expands Retail footprint in Rural India

In a strategic move to redefine its distribution network, JK Tyre & Industries, a leading name in the tyre industry, unveiled its 'JK Tyre Steel Wheels' in Farrukhnagar, Haryana as part of the company's focused expansion into rural India targeting towns with populations of one lakh or less. The company will be kicking off the Rural expansion programme across Haryana, Bihar, Uttar Pradesh, Maharashtra, Tamil Nadu and Telangana over the next three months. The initiative will be scaled up with a nationwide rollout later this year.

Designed as a one-stop destination for tyre-related needs, the centre showcases the entire range of JK Tyre products across segments. Customers can benefit from best-in-market pricing, industry-leading warranties, and value-added services including tyre changing and wheel balancing.

Bridgestone India Expands Hyderabad Network

Bridgestone India, part of the Bridgestone group, a global leader in tyres and rubber that provides solutions for safe and sustainable mobility, has further expanded its Flagship Select Store network by launching additional four new Select outlets in Hyderabad. With 46 stores now in Hyderabad, these stores are designed to transform the tyre buying and servicing experience by addressing the evolving needs of Indian consumers.

Powered by a premium network, the Bridgestone Select Stores provide an interactive journey that empowers customers to make informed decisions about their tyre choices. The store also offers demonstrations to customers to understand the impact that each of the tyre services provides and helps customers get the best of their tyre.

"Hyderabad is an important market for us, and we're proud to expand this pioneering concept of Select stores in the city. Bridgestone is committed to



provide superior Products and Services to customers in line with its mission of serving society with superior quality. We've led in enhancing customer experience, and these stores will help customers in Hyderabad to make informed tyre choices tailored to their needs. It also offers our dealers a unique, differentiated format to drive more walk-ins. As tyres are the only point of contact between a vehicle and the road, the store is designed to offer customers premium products, services, and an elevated buying experience through its exclusive network." said Hiroshi Yoshizane, the MD, Bridgestone India.

DICV Demonstrates Resilience in Challenging 2024

Daimler India
Commercial Vehicles (DICV)
reflected on its resilient
performance in 2024.
Despite the Indian
commercial vehicle market
experiencing an overall ten
percent decline due to
macroeconomic challenges,
elections, erratic monsoon, and
sectoral uncertainties, DICV
strengthened its core operations and
laid a strong foundation for sustainable
growth through a firm commitment in
innovation, sustainability, quality, and

While an overall market recovery was anticipated post-election, the demand in the Indian commercial vehicle industry remained subdued across several key sectors. Despite



facing this challenging market environment, DICV achieved its highest ever annual bus sales of around 2,200 units, representing a 10.5 per cent YoY growth driven by replacement demand and the expansion of transportation solutions.

DICV bus exports also increased by 65.9 per cent to about 1,000 units, reflecting growing global demand for high-quality and made-in-India buses. Customer service revenue rose to Rs 1,381 crore, marking a 27.8 per cent increase over the previous year, while aftermarket revenue grew 18 per cent year-on-year. Collectively, both segments now contribute a significant share of the company's top line with their strong performance in 2024.

Dhoot Transmission Appoints Nitin Kalani as Group CFO

Dhoot Transmission Group (Dhoot), a leading manufacturer of automotive components, announced that it has appointed Nitin Kalani as its Group CFO. He will report to the Founder Chairman and Managing Director, Rahul Dhoot. Dhoot group had recently secured a strategic growth investment from Bain Capital, a global private investment firm and Kalani is the first hire post this transaction. Kalani has 21 years of experience across diverse industries with organisations such as Greenply, Varroc Group, Credit Suisse, RPG Group, Rabobank and Tata Motors. Prior to joining Dhoot, Nitin was associated with Greenply Industries as its CFO.

JUNE 2025 | Equipment | 71

customer-centric solutions.

COMMUNICATION FEATURE

HAMM HAMESHA ROAD SHOW **FLAGS OFF**

Road show flags off from Pune to connect with retail customers nationwide.



he HAMM HAMESHA Road Show was officially flagged off on 15 May from the Pune factory by Ramesh Palagiri, Managing Director and CEO, Wirtgen Group India, along with the leadership team.

The event marked the beginning of a nationwide journey

starting from Karnataka, aimed at enhancing engagement with retail customers and partners across India.

During the ceremony, Palagiri emphasised, "This road show represents our commitment to reach retail customers. By taking our products and services directly to different states across India,

we're demonstrating that HAMM is truly "HAMESHA" - always there for our customers and close to our customers."

The road show will highlight the latest CEV Stage V models of HAMM compactors, including both soil and tandem variants. Attendees will have the opportunity to experience the machines first-hand.

With over 125 years of experience in soil and asphalt compaction, HAMM, the German manufacturer, leads the industry with its advanced technology. The compactors feature a patented three-point articulation joint and a fuel-efficient Eco Mode, combining stability with sustainability.

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Case Unveils Remote-Control Electric Loader Concept

Case introduced a concept electric, remote-controlled compact wheel loader at Bauma that eliminates the traditional operator cabin.

The eCWL 12EV can be operated remotely from a "dedicated control lounge," enhancing flexibility and enabling operation in extreme conditions and inclement weather. This innovation also supports accessibility for operators with physical impairments, marking a significant step toward industry inclusivity.

The loader integrates a perception system that collects real-time data to improve operational efficiency and accuracy. It also includes semi-autonomous functions for automated digging and dumping.



The concept was developed by CNH Industrial's Design team in partnership with its Vehicle and Electronics Department and several technology partners. CNH is the parent company of Case.

"With Impact, Case continues to push the boundaries of mechanical engineering, investing in smart and safe technological solutions that address the needs of an ever-evolving industry," the company said.

Manitou Debuts New Telehandlers Including Tallest Rotating Model

Manitou unveiled three new telehandlers at Bauma for the North American market: its tallest and most powerful rotating, all-terrain model and two new electric high-lift telehandlers.

The company also showcased a prototype hybrid electric-hydrogen fuel cell rotating telehandler at the trade fair in Munich, Germany.

MRT 4070 Rotating
Telehandler: This is the tallest in
the Vision+ range. Despite its size,
it is compact enough for confined
job sites and has a simplified setup
process. It has a 130-foot lift
height, 88-foot reach, 7-tonne
load capacity and runs on a



211-horsepower diesel engine with a continuously variable transmission. Applications include construction, maintenance, roofing, and steel or timber installation. It will arrive in the U.S. in early 2026.

MT 1440e and MT 1840e
Electric Telehandlers: Designed
for agile movement on and
between sites, they feature
63-kWh lithium-ion batteries
capable of lasting a full workday.
The MT 1440e lifts up to 46 feet
and the MT 1840e up to 59 feet.
Both can handle 4 tonnes
and offer a 42-foot outreach.
Their U.S. debut is planned for
mid-2026.

Vögele Launches Compact Paver for Narrow Projects

Vögele introduced the nextgeneration Super 800-5 P-Tier mini class paver at Bauma, with plans for a US launch in 2026.

Tailored for narrow construction jobs, the machine features adjustable operating widths between 1.6 and 11.5 feet using extending screeds AB 200 and AB 220. The paver measures 6.7 feet in height, 10.1 feet in width, and 16 feet in length. It continues Vögele's alignment with John Deere's tier strategy.

The 6.4-tonne hopper includes hydraulically adjustable walls and foldable sections for better visibility and material handling. The machine allows for a paving layer thickness up to 7.9 inches and offers asymmetrical



screed settings for work along walls.

Additional features include an enhanced operator platform, integrated storage system with tool and drink holders, coat hooks, a 24-volt socket, and an adjustable

ErgoBasic control console with machine data display.

Vögele also integrated its Auto Grade Basic system into the paver's controls, offering precise operation similar to larger models in its range.

Wirtgen Boosts Milling Power with New W 250 XF



Wirtgen has launched the W 250 XF milling machine in the US, featuring enhanced horsepower, quicker drum changes, and integrated automation. Compared to the 2010 W 250, the new model offers 21 per cent more power via a dual-engine system with 18-litre John Deere 6180HD engines delivering up to 1,207 horsepower. Despite its power, the machine is fuel-efficient due to optimised torque curves.

It holds 343 gallons of fuel and 1,188 gallons of water, with a top travel speed of 3.3 mph and milling speed up to 288 feet per minute. The unit weighs 111,774 pounds and measures 9.3 feet in width, 54.6 feet in length, and 15 feet in height with the conveyor fully raised.

The Mill Assist system optimises engine output for either cost-efficiency, performance, or surface quality. The Wirtgen Performance Tracker documents jobsite data and emissions, simplifying invoicing.

The Level Pro Active system provides full sensor feedback to the control panels, supporting automatic features such as lift-over manholes for smoother operation.

CONVEYORS



1 | National Aluminium Company

Details: Tenders are invited for supply of conveyor belts.

Submission date: 5 June 2025

Location: Nalco Nagar, Angul-759145, Odisha

Contact: Jagdish Arora, Director (Project & Technical), 6742300245, Dirpnt@Nalcoindia.Co.In, Off Add-Nalco Bhawan, P/1, Nayapalli, Bhubaneswar, 751013, Odisha, Phone No-6742301988. Mob:

8986880462

2 | Punjab State Power Corporation

Details: Procurement of different types of rollers for 1200 mm and 1500 mm conveyor belt.

Submission date: 5 June 2025 Location: Rupnagar, Punjab

Contact: Vishal Kumar Rattan, Junior Engineer/Civil, Off Add - The Mall, Patiala, Punjab, India,

147001, - Phone No- 9646106835. Mob: 9646865000

CRANES



3 | East Central Railway

Details: Supply, installation and commissioning of jib crane hoist (cap-1.0 t) at CEW/Harnaut.

Submission date: 4 June 2025 Location: Harnaut, Bihar

Contact: Pramod Kumar, Executive Engineer, Off Add - East Central Railway, Hajipur, Vaishali,

Bihar Pin-844101, Phone No-6122301327. Mob: 8235280248 / 9904176803

4 | Military Engineer Services

Details: Comprehensive maintenance of EOT hot crane including load testing, repairs, and

replacement of worn-out parts at NSTL.

Submission date: 7 June 2025 Location: Nstl Visakhapatnam

Contact: N/A

5 | Water Resource Department

Details: Premonsoon repair and maintenance of seven radial gate, gantry crane of Bham medium

irrigation project under W.R. Division Khandwa

Submission date: 6 June 2025

Location: Office Of Executive Engineer Lm And E/M Dhar

Contact: Vinod Kumar Dewada, Engineer in Chief, Encwrbpl@Mp.Nic.In, Off Add- Jal Sansadhan

Bhawan Bhopal (M.P) - 462003, Phone No-7552552646. Mob: 9424504651

6 | Bharat Earth Movers

Details: Construction of main storage shed, bonded warehouse, office building, toilet block, electrical works, crane installation and commissioning work at eastern side of production hangars at Bangalore complex.

Submission date: 9 June 2025

Location: Beml Limited, Bangalore Complex

Contact: Manish Kumar, Manager, Procurement, Materials And Outsourcing, Off Add-23/1, 4Th Main Rd, Sampangi Rama Nagara, Bengaluru, Karnataka 560027, Phone No-8022222730. Mob:

9878717261 / 7827668579

7 | Western Railway

Details: Supply of double girder EOT cranes.

Submission date: 9 June 2025

Location: Churchgate, Mumbai, Maharashtra

Contact: Yogesh Sharma, Executive Engineer, Off Add- Station Building, Vitthaldas Thackersey Marg, Opp. Churchgate Wr Station, Churchgate, Mumbai, Maharashtra 400020, Phone No-

2222002590. Mob: 9001033369 / 9868862558

EARTHMOVING EOUIPMENT



8 | Military Engineer Services

Details: Surface dressing/levelling, compacting and strengthening of runway edges by earth filling, rolling, drain cleaning, and replacement of DTGM tapes locator boards and illuminated link boards at AFS Yelahanka.

Submission date: 9 June 2025 Location: Yelahanka

Contact: Nazim Hussain, Addl Asst Director, Off Add- No 113/B, 5Th Cross, 2Nd Stage, Yeshwanthpur Industrial Area, Phase 1, Yeswanthpur, Bengaluru, Karnataka 560022. Mob: 8800894489

9 | Uttar Pradesh Power Transmission Corporation

Details: Cost estimate for repairing and painting of 220 kv C.T., C.B., C.V.T. junction boxes, isolator/earth switch mom boxes, etc. at 220 kv switchyard, 400 kv substation Motiram Adda, Gorakhpur.

Submission date: 12 June 2025

Location: Ee 400 Kv S/S Motiram Adda, Gorakhpur

Contact: Pankaj Saxena, Superintending Engineer, Webmaster@Upptcl.Org, Off Add-11Th Floor

Shakti Bhawan Extension, Lucknow, Phone No-5222288388. Mob: 9415902780

10 | Public Works Department

Details: Maintenance of road from Mohanpur-Bamitia Road to Krishnanagar BSF camp during 2025-26, including pothole repair, patching WBM, recarpeting, earth filling with allied works (l-0.68 km).

Submission date: 5 June 2025 Location: Mohanpur

Contact: Dilip Kumar Baidya, C.E., Cepwd11@Yahoo.Com, Off Add- Nabanna, 8Th Floor, Hrbc Building, 325, Sarat Chatterjee Road, Mandirtala, Shibpur, Howrah, Phone No- 3322143161.

DUMPERS



11 | North Eastern Railway

Details: Supply and commissioning of diesel hopper tipper dumper.

Submission date: 5 June 2025

Location: Dy Chief Materials Manager/Depot, Gorakhpur, Uttar Pradesh

Contact: Panna Lal, Dy. Chief Engineer, Civil Engineering, Off Add- 11, National Highway 29, Betiahata, Gorakhpur, Uttar Pradesh 273001, Phone No-5512201041. Mob: 7068264197 /

9868104646

12 | Urban Development and Urban Housing Department Gujarat

Details: Supply of hopper tipper dumper for garbage (Q2).

Submission date: 5 June 2025

Location: Viramgama Prashantkumar Ashvinbhai, Nr. Vegetable Market, At-Vanthali, Gujarat Contact: Dikpalsinh K Parmar, Section Officer, Phone No-7923251029 So-S-Ud@Gujarat.Gov.In, Off Add-Karmyogi Bhavan, Block-1, Ground Floor, Sector No: 10/A, Gandhinagar, Gujarat-382010, Phone No-7923257574.

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Indian Cement Review	5400	810	4590	Titan Duffle Bag MRP ₹ 2150 + Century Laptop Backpack MRP ₹ 2,450
Industrial Products Finder	5400	810	4590	Titan Duffle Bag MRP ₹ 2150 + Century Laptop Backpack MRP ₹ 2,450
The Indian Textile Journal	5400	810	4590	Titan Duffle Bag MRP ₹ 2150 + Century Laptop Backpack MRP ₹ 2,450
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in JCB India

Get ready for JCB India Auction No. 95 — a golden opportunity to own trusted JCB machines at unbeatable prices. Bidding closes on Tuesday, 10th June 2025. Viewing is strictly by appointment on working days, from 26th to 30th May and 2nd to 6th June 2025, at JCB Ballabgarh, Pune, and Jaipur plants.



in VG Sakthikumar

It was a privilege to host the Thuringia business delegation from Germany at our Concrete Mixer facility—where we proudly export machines from New Zealand to Cuba, Africa to Asia. What made the visit truly memorable was the depth of our conversations—on skilling, women empowerment, CSR, our Global



Capability Center, and India's rising role as a global sourcing hub. Engaging with leaders from scienova GmbH IAB Weimar, State Development Corporation of Thuringia - LEG Thuringian Agency for skilled personnel marketing and German Consul General Dr. Kathrin Misera-Lang reminded me of the strength that comes from open, forward-looking dialogue.

We reflected on Schwing Stetter India Stetter India's journey—from a humble start as a subsidiary of a German Mittelstand company to becoming a key player in the global concrete equipment space. Today, we're proud to support German technology companies entering India—helping bring cutting-edge innovation to India, and supporting Germany's global manufacturing goals.

in Kobelco Construction Equipment India

We're proud to announce the grand opening of Progressive Motors and Equipment, Kobelco's new authorized dealership in Guwahati, inaugurated in the esteemed presence of our distinguished senior management team and valued customers. This milestone marks a powerful extension of



our North East territory- Assam, Mizoram, Manipur, Nagaland, and Meghalaya—strengthening our presence and deepening our commitment to the region's growth.

Step into a world of cutting-edge machinery, trusted expertise, and unwavering service commitment—now available at an all-new location.

in Schaeffler

Schaeffler India Ltd announces results for first quarter, ended March 31 2025. Amidst dynamic market conditions, Schaeffler India Ltd demonstrated sustained growth in key financial indicators.



in Dynapac India

We are pleased to announce our new channel partnership with Innovative Infra & Mining Solutions Limited (IIMS) - CKA Birla Group Headquartered out of Hyderabad for the Southern India, expanding Dynapac sales and service capabilities. This collaboration marks an exciting milestone in our commitment to deliver top-tier road construction equipment solutions across Southern India.





The 17th edition explores the imperative need for specialised training and development in an industry increasingly defined by technological complexity and innovation.

Focus Areas:

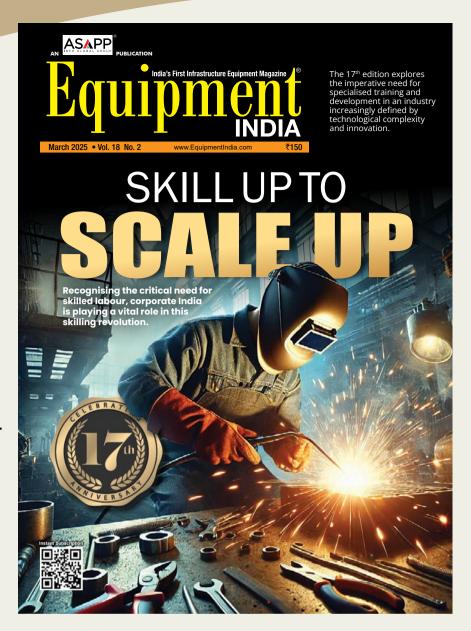
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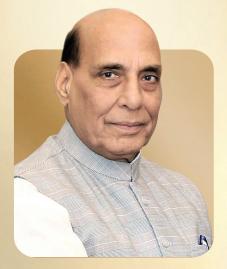


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