

Equipment INDIA

India's First Infrastructure Equipment Magazine[®]

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₹150

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SAFETY AT NEW HEIGHTS

Mobile cranes are relatively easier to operate, manoeuvre, and optimise. However they are highly prone to accidents.

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Equipment INDIA

India's First Infrastructure Equipment Magazine

Role of AI and ML in Construction Equipment

As we mark a significant milestone with the **16th-anniversary edition** of **Equipment India**, we are thrilled to present a special commemorative issue that delves into the cutting-edge advancements shaping the future of the construction equipment industry.

Key highlights:

- Exclusive Features on AI and ML Integration
- Expert Opinions and Perspectives
- Interviews of Industry Bigwigs
- Showcasing Innovative Technologies
- Global Industry Trends



16th
Anniversary

Join us in this landmark edition that explores the transformative power of AI and ML in construction equipment.

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INTERIM BUDGET 2024 REINFORCES INFRA INTENTION

Infrastructure remains a key focus in Budget 2024, with the proposal to increase capital expenditure by 11.1 per cent, reaching ₹11.11 lakh crore. However, this was a very minimal enhancement against last year's 35 per cent bump up. Probably the final budget may have a higher allocation. However, this marks the fourth consecutive year of a capital expenditure boost, accounting for 3.4 per cent of the GDP.

Concluding the budget presentation on an optimistic note, the finance minister emphasised the government's commitment to fostering inclusive growth and development.

The latest report from ICEMA reveals a significant 30 per cent surge in sales within India's construction equipment industry, reaching 36,055 units in the third quarter of the current fiscal year. This growth is notable compared to the 27,817 units sold in the same quarter of the previous fiscal year. Domestic sales accounted for 33,135 units, while 2,920 units were exported during Q3 FY24.

Sales statistics indicate a robust performance in specific sectors, with material handling equipment and concrete equipment experiencing a 46 per cent and 43 per cent rise, respectively. Road construction and material processing equipment also showed positive trends, with a 38 per cent and 18 per cent increase in sales, reaching 1,958 and 688 units.

ICEMA President V Vivekanand stressed the importance of maintaining a consistent pace in project execution for the sustained growth of the construction equipment industry.

In the automotive aftermarket, ACMA's Global Automotive Aftermarket Research Report, conducted in collaboration with Ernst & Young, projects significant growth. The Indian automotive aftermarket, valued at \$10 billion in 2023, is anticipated to expand to approximately \$14 billion by 2028. This growth is driven by the rising vehicle parc, currently standing at 340 million, with an expected compound annual growth rate (CAGR) of over 8 per cent for the next five years.

The commercial vehicle space is forecasted to increase from 13 million units to 19 million units by 2028. In the tractor segment, contributing nearly \$1 billion to the Indian aftermarket, the parc is set to grow from 14 million units to over 19 million units between 2023 and 2028.

In its 16th Anniversary Edition in March 2024, **Equipment India** will delve into the transformative impact of Artificial Intelligence (AI) and Machine Learning (ML) on the construction equipment industry. The edition aims to explore how the integration of AI and ML is reshaping the landscape, paving the way for a smarter and more efficient future.

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Pratap Padode

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INSIDE

COVER STORY: MOBILE CRANES SAFETY AT NEW HEIGHTS

22



Mobile cranes are relatively easier to operate, manoeuvre, and optimise. However, they are highly prone to accidents.

FEATURE: CONCRETE EQUIPMENT REVOLUTIONISING CONSTRUCTION

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Concrete construction has evolved significantly, impacting both equipment choices and operational strategies.

INTERVIEW: ASPHALT PLANTS “INDUSTRY WILL SHIFT TO CLEANER, EFFICIENT ASPHALT PRODUCTION.”

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Dheeraj Panda, Managing Director, Ammann India, speaks on the current trends in the Indian asphalt plant market.

FEATURE: COMPACTION EQUIPMENT VISION 2030 DRIVES GROWTH

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The compaction equipment industry in India has witnessed significant technological advancements in recent years. Manufacturers are integrating advanced features, such as GPS technology and telematics, into their machines to enhance precision and efficiency.

REPORT: BUDGET 2024 BOOST ON THE CARDS FOR AUTO COMPONENTS?

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The Indian automotive industry sector has a positive outlook for the upcoming Budget, with expectations for updates on the FAME 3 scheme, PLI sops, and GST revision.

GUEST COLUMN SUSTAINABILITY AND INNOVATION: THE KEY DRIVERS

40



The construction industry is a major contributor to climate change, so there is a growing demand for eco-friendly construction methods and materials. By combining sustainability and innovation in technology, India can create a world-class infrastructure system that can support its economic growth and social progress, writes **VG Sakthikumar**, Chairman and Managing Director, Schwing Stetter India.



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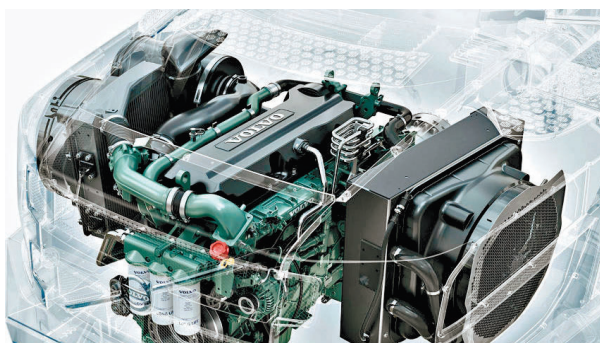
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INSIDE

SPECIAL FOCUS: DIESEL ENGINES POWERING PROGRESS

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The article explores the reasons behind the increasing usage of diesel engines in CE, their impact on performance and efficiency, and the technological advancements shaping the future of construction machinery.

"INDIA IS A CRITICAL MARKET FOR CUMMINS."

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Antonio Leitao, Vice President – Off Highway, Engine Business & Europe ABO Leader, Cummins Belgium.

"THE CPCBIV+ CERTIFIED ENGINES EMPHASISE ON LOWERING CARBON FOOTPRINTS."

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Anurag Pai, Regional Marketing Manager, South Asia, Perkins Engines.

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*QR code application required.



C.A.S.H

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HOW DOES DIESEL ENGINE HELP US

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Whether keeping farms powered or fuelling massive mining equipment, advanced diesel engines are reducing emissions without sacrificing productivity.

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"WE ARE COMMITTED TO STAYING AHEAD OF EMISSION STANDARDS."

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Vasanth Thangavelu, General Manager – Marketing Deployment (Commercial), ExxonMobil Lubricants.

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

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**TOP POPULAR
CONSTRUCTION
EQUIPMENT COMPANIES
IN INDIA**



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DATE: 9th & 10th October, 2024

VENUE: Hall 1 & 2, Jio Exhibition Convention Centre

10th India Construction Festival

The 10th India Construction Festival will be the umbrella event which will have the **RAHSTA EXPO 2024** as part of it will also include the following:

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

PAST WINNERS - 2023



EQUIPMENT INDIA AWARDS



CONSTRUCTION WORLD GLOBAL AWARDS

NOMINATIONS FOR AWARDS:



CWGA

22nd Construction World Global Awards (CWGA) and 12th Equipment India Awards (EIA) nominations are open now!

Please visit

www.constructionworld.in/awards/
www.equipmentindia.com/awards/



EIA

For seeing previous editions of India Construction Festival log onto
www.indiaconstructionfestival.com

For More Information Email us : ICF@ASAPPinfoGlobal.com

CNH celebrates 25 years of New Holland in India

CNH, a global leader in agricultural and construction solutions, proudly celebrates the 25th anniversary of its brand, New Holland in India. Since its inception, the brand has been at the forefront of introducing cutting-edge technological advancements to the country's agricultural sector. It has pioneered the baling technique for crop residue and is a market leader in the segment.

As part of the celebrations, the company showcased its wide range of farm equipment at its Greater Noida manufacturing plant, including tractors, combine harvesters and



balers. CNH also presented its local R&D capability by demonstrating precision technology, including telematics and software apps, developed and integrated across product segments by the India Technology Center.

Narinder Mittal, Country Manager & Managing Director of CNH India & SAARC, said, "As we commemorate 25 years of New Holland's journey in India, we take pride in our commitment to delivering not only cutting-edge technology and superior products, but also in our unwavering dedication to supporting hardworking farmers – the backbone of our nation. We look forward to the next chapter with a renewed promise to bring forth innovation, quality, and service that not only empower our farmers but also contribute to the growth of the Indian economy and communities."

Dana India secures 'Top Employer 2024' accolade

Dana India has announced its recognition as the Top Employer in 2024 by the esteemed Top Employers Institute across 17 plant locations in India. The Top Employers Institute stands as the global authority in acknowledging excellence in People Practices, certifying organisations based on the outcomes of their HR Best Practices Survey. This prestigious accolade reaffirms Dana's remarkable accomplishments in people strategy, work environment, learning, and diversity. With a legacy spanning over 30 years, the Top Employers Institute has certified and recognised more than 2,053 Top Employers in 121 countries/regions across five continents.

SANY India achieves new milestone; exports 1,000 telehandlers to US

SANY India, a leading manufacturer of construction equipment, has achieved a significant milestone in its international expansion journey with the successful delivery of over 1,000 telehandlers to the United States. This achievement positions India as a pivotal manufacturing hub in the company's strategy. The dedicated manufacturing unit for telehandlers boasts an impressive annual manufacturing capacity of 3,000 units, scalable up to 4,500 units, ensuring SANY India's readiness to meet current and future demands in the global market.

Deepak Garg, MD, SANY and South Asia, said "This export milestone is a testament to SANY India's dedication to the 'Make in India' vision



and a proud moment for us. Exporting products to the US is not just a recognition of our current success but also an indicator of our future aspirations in the global market. With our robust manufacturing capabilities, comprehensive supply chain, and unwavering commitment to quality, we are poised for continuous growth and innovation, reinforcing SANY India's leadership in the global construction equipment industry."

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CASE, IIT Indore sign MoU to set up CoE

CASE Construction Equipment, a leading brand of CNH Industrial, has signed a Memorandum of Understanding (MoU) with the Indian Institute of Technology Indore (IIT Indore) to set up a CASE Centre of Excellence at the campus. The association is a part of CASE's CSR initiatives and aims to foster increased collaboration between academics and the industry for exchange of ideas, knowledge enhancement and research.

The MOU was signed by Satendra Tiwari, Head of Manufacturing Pithampur, CASE Construction

Equipment and Professor Suhas S Joshi, Director, IIT Indore in the presence of Dr. Partha Pratim Chattaraj, Sr. Vice President, Alumni & Corporate Relation, IIT Indore. The CASE Centre of Excellence, which is scheduled to be ready by March 2024 will have a range of laboratory equipment for technical assessment contributed by CASE.

Kavita Sah, India CSR Head, CNH Industrial said, "This partnership with the Indian Institute of Technology (IIT) Indore marks a pivotal step toward innovation and collaboration



between industry and academia. As a legacy brand, CASE has been committed to skill development in India at all levels of the industry. With this initiative, we are enthusiastic about equipping the new generation, academia and industries with hands-on learning and the necessary skills and knowledge."

NHAI initiates reforms to boost private investment in toll projects

Implementing sweeping changes in contractual conditions, the National Highways Authority of India (NHAI) aims to attract increased private investment. Under the revised terms, NHAI will incorporate a provision enabling the repurchase of toll road projects if a competing or additional toll road emerges nearby. The finalised adjustments also guarantee the payment of 90 per cent of outstanding loans to lenders in the event of contract termination due to default by contractors or the highway authority, providing reassurance to banks and financial institutions.

NHAI will further enhance transparency by sharing project-specific details and land status with lenders, addressing concerns about project delays arising from land



unavailability. These pivotal modifications to the 'model concession agreement (MCA)' and toll highway projects under the build-operate-transfer (BOT) model are poised to rejuvenate private investment in the sector. NHAI has identified 54 projects valued at over Rs 2.2 trillion, covering a distance of 5,200 km. Recently, it disseminated project details to road builders, financial institutions, and fund managers.

Hindustan Zinc awaits Ministry approval for restructuring

Hindustan Zinc's plan for restructuring its business to establish a minimum of two distinct business entities within the zinc, lead, and silver verticals is awaiting approval from the Centre, specifically from government-appointed directors on the Vedanta-owned company's board.

Arun Misra, CEO and Wholtime Director of Hindustan Zinc, mentioned that the required clearances are expected to be obtained before the upcoming board meeting in April. He stated, "We are collaborating with the Mines Ministry... and most likely, these clearances should be in place before the next board meeting scheduled in April."

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2nd METRO RAIL CONFERENCE

ACCELERATING THE LIFELINE OF URBAN TRANSPORT

28th FEB 2024

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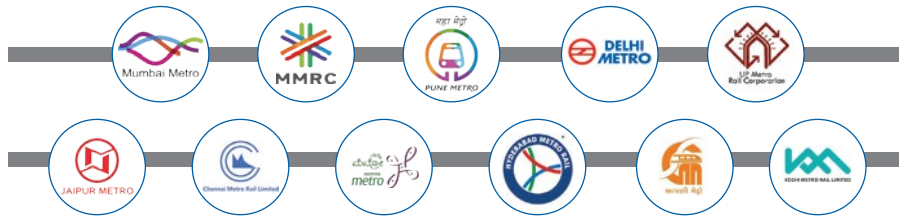
KEY HIGHLIGHTS OF THE CONFERENCE:

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

ANTICIPATED RESULTS:

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

METRO RAIL ORGANISATIONS THAT ATTENDED THE CONFERENCE



OUR ESTEEMED SPEAKERS



Dr E Sreedharan
'Metro Man of India'
Padma Vibhushan



Sanjay Bhatia
Upa Lokayukta,
Government of Maharashtra



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



Vinay Kumar Singh
CEO,
NCRTC



Dr Sanjay Mukherjee*
Commissioner,
MMRDA



Shravan Hardikar*
Managing Director,
Maharashtra Metro Rail
Corporation Limited



Shantanu Goel
Joint Managing Director,
CIDCO



Sudhendu J. Sinha
Advisor (Infrastructure
Connectivity & Electric Mobility),
NITI Aayog



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



Kumar Keshav
CEO, Deutsche Bahn
RRTS Operations
India Ltd.



Mahesh Moroney
Dy Chief Project
Manager, Maharashtra
Metro Rail Cor. Ltd.



Suneet Maheshwari
Managing Partner,
Udvik Infrastructure
Advisors LLP



Karun Raj Singh Sareen
Partner – Major Projects
Advisory, KPMG India



Suyash Trivedi
Executive Director (Civil),
Mumbai Metro Rail
Corporation Limited



Col. Shubhodoy Mukherjee
Chief Executive Officer,
Metro Business of
Reliance Group

* Invited

PANEL DISCUSSIONS:

Panel 1 - Technological Innovations in Metro Rail Infrastructure

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

Panel 3 - Improving Ridership for Metro Rail Network

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Government unveils incentives for 5,50,000 MT green ammonia production

The incentive implementation framework for the production and supply of green ammonia at the lowest cost through a competitive selection process under Mode 2A of the Strategic Interventions for Green Hydrogen Transition (SIGHT) program has been established by the Ministry of New and Renewable Energy (MNRE).

It was announced that direct incentives for green ammonia production and supply would be

provided over a three-year period from the commencement date as per the framework.

The total outlay for the incentive program for the production of green hydrogen and its derivatives under all modes is Rs 130.5 billion.

In the first year, it was specified that the incentive would be Rs 8.82 per kilogram, Rs 7.06 per kilogram in the second year, and Rs 5.30 per kilogram in the third year.



It was also emphasised that the production and supply of hydrogen and its derivatives could not receive incentives under two different modes of the SIGHT programme.

AAI to allocate ₹50 bn for annual capex

The Chairman of the Airport Authority of India (AAI), Sanjeev Kumar has revealed the organisation's plan to allocate Rs 50 billion annually for capital expenditure in the coming years, citing a robust pipeline of projects. Kumar stated that new terminals are being constructed and airside capacity is being expanded at various airports to accommodate additional flights. AAI is also working on an expansion roadmap for Agatti Airport in Lakshadweep.

Kumar mentioned that despite the initial capital expenditure target of Rs 40 billion for the fiscal year 2023-24, AAI had already achieved Rs 34.16 billion by December 2023. He expressed confidence in surpassing the target and reaching a capital expenditure of Rs 50 billion or more. The authority is engaged in



the construction of new terminals at airports in Patna, Leh, Vijayawada, Tuticorin, and has initiated the building process for new terminals in Jodhpur, Udaipur, Jammu, and Rajahmundry. Kumar added that new terminal buildings are also being added to Hubli, Belagavi, and Kadapa airports. Investment proposals for expanding terminal and airside capacities are in the pipeline for Keshod in Gujarat, Agra, Ayodhya Phase-II, Varanasi in Uttar Pradesh, Bagdogra in West Bengal, and Darbhanga in Bihar.

AAI is collaborating with partners to finalise research areas at its R&D centre located at Hyderabad.

Goa mining resumes: Economic boost as operations to restart

Authorities have given the green light to resume mining operations in Goa marking a crucial step towards reviving the state's mining sector. The decision comes after a prolonged hiatus offering a ray of hope for the local economy. With environmental concerns addressed and regulatory frameworks in place the mining industry is poised for a restart. This move holds immense promise for Goa's economic landscape injecting vitality into a sector that has been dormant for an extended period. As mining operations gear up, job opportunities are expected to burgeon providing a boost to employment in the region. The revival of this key industry also underscores the commitment to sustainable practices ensuring a balance between economic progress and environmental responsibility.

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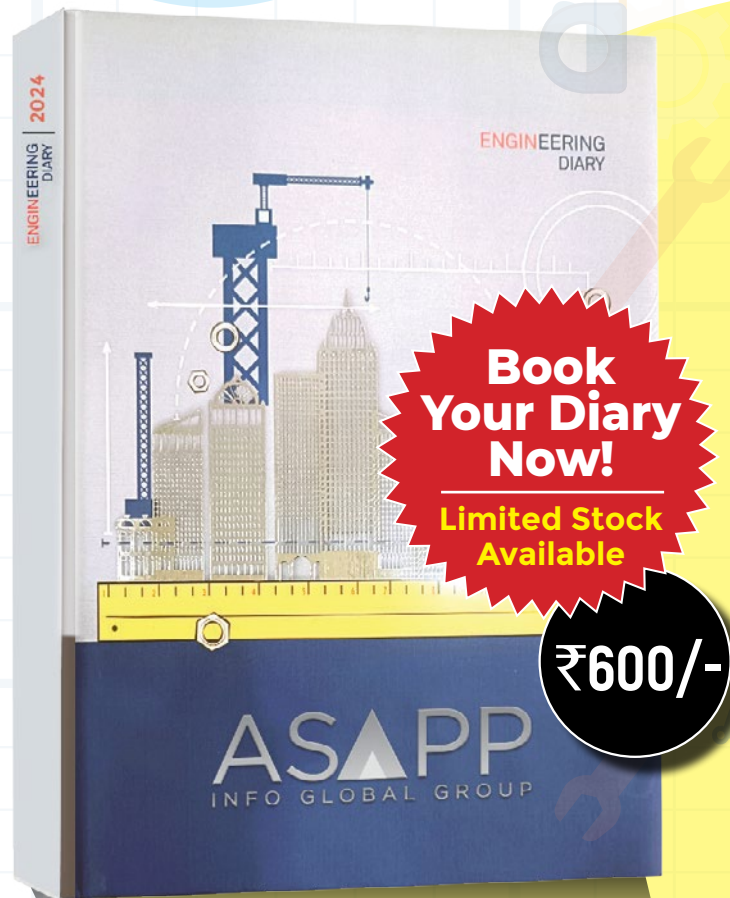


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- Unit Conversion Factors & Conversion Power Tables
- Squares, Cubes, SQ. & Cube Roots
- Circumference & Area of Circles
- Non - Ferrous Metals
- Composition of Metals & Alloys
- Wire & Sheet Gauge
- Weight of Steel, Cast Iron, Materials & Mild Steel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



Tabulated Data Within:

CONVERSION TABLES

Length		Area	
1 inch	= 2.54 cm	1 sq. in.	= 6.4516 sq. cm
1 foot	= 30.48 cm	1 sq. ft.	= 929.03 sq. cm
1 yard	= 0.9144 m	1 sq. yd.	= 0.8361 sq. m
1 mile	= 1.60934 km	1 sq. mi.	= 2.59 sq. km
1 nautical mile	= 1.852 km	1 sq. nmi.	= 3.43 sq. km
1 fathom	= 1.8288 m	1 sq. fm.	= 3.227 sq. m
1 league	= 3.0 nmi.	1 sq. li.	= 9.0 sq. nmi.
1 statute mile	= 1.60934 km	1 sq. st. mi.	= 2.59 sq. km
1 furlong	= 0.125 st. mi.	1 sq. fu.	= 0.0156 sq. st. mi.
1 chain	= 0.0156 st. mi.	1 sq. ch.	= 0.0025 sq. st. mi.
1 link	= 0.0025 st. mi.	1 sq. li.	= 0.000039 sq. st. mi.
1 rod	= 0.00036 st. mi.	1 sq. rd.	= 0.000013 sq. st. mi.
1 perch	= 0.00036 st. mi.	1 sq. p.	= 0.000013 sq. st. mi.
1 pole	= 0.00036 st. mi.	1 sq. po.	= 0.000013 sq. st. mi.
1 span	= 0.00025 st. mi.	1 sq. s.	= 0.000006 sq. st. mi.
1 cubit	= 0.00045 st. mi.	1 sq. cu.	= 0.000016 sq. st. mi.
1 palm	= 0.00011 st. mi.	1 sq. pa.	= 0.000001 sq. st. mi.
1 finger	= 0.00022 st. mi.	1 sq. fi.	= 0.000004 sq. st. mi.
1 thumb	= 0.00045 st. mi.	1 sq. th.	= 0.000016 sq. st. mi.
1 digit	= 0.00011 st. mi.	1 sq. di.	= 0.000001 sq. st. mi.
1 nail	= 0.00022 st. mi.	1 sq. na.	= 0.000004 sq. st. mi.
1 inch	= 0.00025 st. mi.	1 sq. in.	= 0.000006 sq. st. mi.
1 foot	= 0.00036 st. mi.	1 sq. ft.	= 0.000013 sq. st. mi.
1 yard	= 0.00055 st. mi.	1 sq. yd.	= 0.000021 sq. st. mi.
1 fathom	= 0.0011 st. mi.	1 sq. fm.	= 0.000042 sq. st. mi.
1 league	= 0.0033 st. mi.	1 sq. li.	= 0.0011 sq. st. mi.
1 statute mile	= 1.60934 km	1 sq. st. mi.	= 2.59 sq. km
1 nautical mile	= 1.852 km	1 sq. nmi.	= 3.43 sq. km
1 furlong	= 0.125 st. mi.	1 sq. fu.	= 0.0156 sq. st. mi.
1 chain	= 0.0156 st. mi.	1 sq. ch.	= 0.0025 sq. st. mi.
1 link	= 0.0025 st. mi.	1 sq. li.	= 0.000039 sq. st. mi.
1 rod	= 0.00036 st. mi.	1 sq. rd.	= 0.000013 sq. st. mi.
1 perch	= 0.00036 st. mi.	1 sq. p.	= 0.000013 sq. st. mi.
1 pole	= 0.00036 st. mi.	1 sq. po.	= 0.000013 sq. st. mi.
1 span	= 0.00025 st. mi.	1 sq. s.	= 0.000006 sq. st. mi.
1 cubit	= 0.00045 st. mi.	1 sq. cu.	= 0.000016 sq. st. mi.
1 palm	= 0.00011 st. mi.	1 sq. pa.	= 0.000001 sq. st. mi.
1 finger	= 0.00022 st. mi.	1 sq. fi.	= 0.000004 sq. st. mi.
1 thumb	= 0.00045 st. mi.	1 sq. th.	= 0.000016 sq. st. mi.
1 digit	= 0.00011 st. mi.	1 sq. di.	= 0.000001 sq. st. mi.
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1 fathom	= 0.0011 st. mi.	1 sq. fm.	= 0.000042 sq. st. mi.
1 league	= 0.0033 st. mi.	1 sq. li.	= 0.0011 sq. st. mi.

Weight		Volume	
1 lb.	= 453.592 g	1 cu. in.	= 16.387 cu. cm
1 oz.	= 28.3495 g	1 cu. ft.	= 28.317 cu. dm
1 ton	= 2000 lb.	1 cu. yd.	= 0.7646 cu. m
1 metric ton	= 1000 kg	1 cu. m	= 1.35 cu. yd.
1 short ton	= 2000 lb.	1 cu. ft.	= 0.0283 cu. m
1 long ton	= 2240 lb.	1 cu. ft.	= 0.0335 cu. m
1 cwt.	= 112 lb.	1 cu. ft.	= 0.0335 cu. m
1 bushel	= 60 lb.	1 cu. ft.	= 0.0335 cu. m
1 gallon	= 128 oz.	1 cu. ft.	= 0.0335 cu. m
1 quart	= 32 oz.	1 cu. ft.	= 0.0335 cu. m
1 pint	= 16 oz.	1 cu. ft.	= 0.0335 cu. m
1 gill	= 8 oz.	1 cu. ft.	= 0.0335 cu. m
1 fluid ounce	= 1.80469 cu. in.	1 cu. ft.	= 0.0335 cu. m
1 cup	= 8 fl. oz.	1 cu. ft.	= 0.0335 cu. m
1 pint	= 16 fl. oz.	1 cu. ft.	= 0.0335 cu. m
1 quart	= 32 fl. oz.	1 cu. ft.	= 0.0335 cu. m
1 gallon	= 128 fl. oz.	1 cu. ft.	= 0.0335 cu. m
1 hogshead	= 63 gal.	1 cu. ft.	= 0.0335 cu. m
1 barrel	= 31.5 gal.	1 cu. ft.	= 0.0335 cu. m
1 cask	= 15.75 gal.	1 cu. ft.	= 0.0335 cu. m
1 tun	= 252 gal.	1 cu. ft.	= 0.0335 cu. m
1 chaldron	= 36 gal.	1 cu. ft.	= 0.0335 cu. m
1 kilderkin	= 18 gal.	1 cu. ft.	= 0.0335 cu. m
1 peck	= 9 gal.	1 cu. ft.	= 0.0335 cu. m
1 bushel	= 6 gal.	1 cu. ft.	= 0.0335 cu. m
1 quart	= 1.5 gal.	1 cu. ft.	= 0.0335 cu. m
1 pint	= 0.75 gal.	1 cu. ft.	= 0.0335 cu. m
1 gill	= 0.375 gal.	1 cu. ft.	= 0.0335 cu. m
1 fluid ounce	= 0.0625 gal.	1 cu. ft.	= 0.0335 cu. m
1 cup	= 0.125 gal.	1 cu. ft.	= 0.0335 cu. m
1 pint	= 0.25 gal.	1 cu. ft.	= 0.0335 cu. m
1 quart	= 0.5 gal.	1 cu. ft.	= 0.0335 cu. m
1 gallon	= 1 gal.	1 cu. ft.	= 0.0335 cu. m
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1 barrel	= 31.5 gal.	1 cu. ft.	= 0.0335 cu. m
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1 bushel	= 6 gal.	1 cu. ft.	= 0.0335 cu. m
1 quart	= 1.5 gal.	1 cu. ft.	= 0.0335 cu. m
1 pint	= 0.75 gal.	1 cu. ft.	= 0.0335 cu. m
1 gill	= 0.375 gal.	1 cu. ft.	= 0.0335 cu. m
1 fluid ounce	= 0.0625 gal.	1 cu. ft.	= 0.0335 cu. m
1 cup	= 0.125 gal.	1 cu. ft.	= 0.0335 cu. m
1 pint	= 0.25 gal.	1 cu. ft.	= 0.0335 cu. m
1 quart	= 0.5 gal.	1 cu. ft.	= 0.0335 cu. m
1 gallon	= 1 gal.	1 cu. ft.	= 0.0335 cu. m

Temperature	
32 °F	= 0 °C
212 °F	= 100 °C
0 °C	= 32 °F
100 °C	= 212 °F

CONVERTING METRIC MEASURES

Length		Area	
1 m	= 1000 mm	1 m ²	= 10,000 mm ²
1 km	= 1000 m	1 km ²	= 1,000,000 m ²
1 cm	= 10 mm	1 cm ²	= 100 mm ²
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1 m	= 10 dm	1 m ²	= 100 dm ²
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1 m	= 10 dm	1 m ²	

PPS Motors, Tata Hitachi tie-up; inaugurates 3S facility

PPS Motors, a part of the larger dealer network, inaugurated a brand new 3S facility for Tata Hitachi. Through this 3S facility, PPS Motors will be catering to the customers of the construction and mining equipment range of Tata Hitachi. With the opening of this facility, PPS Motors further strengthens its support to the consumers in the region.

By setting up five outlets, PPS will be catering to nine districts with a centralised headquarters in Salem. Strategically located on NH74 in Salem, the 3S facility is easily accessible by Chennai By-Pass. The outlets are located in Erode, Karur, Namakkal, Krishnagiri and Hosur covering all key customer locations and catering to



their needs for service and spares.

Speaking on the Occasion, Rajiv Sanghvi, Managing Director, PPS Motors, said, "We are excited to partner with Tata Hitachi and inaugurate this state-of-the-art 3S facility in Salem. The investments that we have made in infrastructure, manpower and reach is a testament of our endeavor to create deeper and

wider coverage for our customers and provide best in class ownership experience, maximise vehicle uptime and increase profitability.

"Tata Hitachi has remained the market leader in the excavator segment in this territory for several years now. Apart from augmenting our traction in this territory, this integrated facility will also enhance our proximity to our customers. This facility is a testament to our commitment in delivering unparalleled value to our customers. By merging the expertise and resources of Tata Hitachi with the excellence of PPS Motors, we are confident to create a truly exceptional experience for our customers," said BKR Prasad, General Manager – Marketing, Tata Hitachi.

Budget 2024 anticipated to boost urban infra

With Budget 2024 on the horizon, there is widespread anticipation for a significant push in urban infrastructure development. Expectations centre around an augmented capital expenditure outlay, signalling the government's commitment to catalysing growth in the urban sector. Additionally, stakeholders are optimistic about a potential extension of the National Monetisation Pipeline (NMP) timeline, enhancing the scope for strategic infrastructure monetisation.

The envisaged rise in capital expenditure is poised to stimulate key



sectors, including transportation, housing, and utilities, fostering economic growth and employment opportunities. The potential extension of the NMP timeline reflects a strategic approach to maximising the benefits of

infrastructure monetisation initiatives, aligning with the government's vision for sustainable and resilient urban development.

As the government shapes its budgetary allocations, the urban infrastructure sector is poised to play a pivotal role in driving economic recovery and advancing the nation's developmental goals. Stakeholders across industries

will be closely monitoring the budget announcements, particularly those related to capital expenditure and the NMP, as they hold the key to shaping the trajectory of urban infrastructure initiatives in the coming fiscal year.



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XCMG commissions world's first energy loader line



XCMG has inaugurated the XCMG Loading Equipment Research Institute (the "Institute") and commissioned the world's first new energy loader production line in Xuzhou, China. "The Institute will play a vital role in the transformation and upgrade of the industry centered on green, intelligent, high-end, service-oriented, and international development, with the goal of creating a market-oriented technological innovation ecosystem integrating industry, education, and research, propelling original and pioneering positive R&D models, leading the market with technology and quality, and promoting high-quality industry development," said Yang Dongsheng, CEO and chairman of XCMG.

Following the growing trend of sustainable, the sales penetration rate of new energy loaders continues to climb, increasing from 1.8 per cent in February to 5.8 per cent in September in China; and XCMG's current penetration rate has reached 12.1 per cent.

Liebherr to exhibit alternative drives plus at Intermat

From 24 to 27 April 2024 in area Ext 6 C 051 of the Intermat trade show, Liebherr is presenting around 20 machines from the product segments of tower cranes, mobile and crawler cranes, components, earthmoving machinery, material handling technology, deep foundation machines and concrete technology. Not only the static exhibits of products but also a showcase of the range and innovation work of the Group in the fields of digitalisation, drives and service will form the focus of the company's booth at the trade show.

The Intermat in Paris is the trade show for sustainable construction solutions and technologies. In keeping with the motto 'On your site', the Liebherr Group shows that it's always on its customers' side, wherever they are – whether by providing high-



quality machines on the construction site itself or by providing tailored advice, global services and fully comprehensive solution concepts. Visitors to the booth will have the opportunity to get a close look at around 20 different machines spanning the product segments of tower cranes, mobile and crawler cranes, components, earthmoving machinery, material handling technology, deep foundation machines and concrete technology.

Zoomlion delivers 200 earthmoving machinery to Australia, Europe

Zoomlion Heavy Industry Science & Technology sent off nearly 200 units of earthmoving machinery equipment to Australia and Europe on January 8 from its Earthmoving Machinery Park in the Zoomlion Smart City.

The batch delivery is another significant milestone for Zoomlion Earthmoving Machinery Company, as it continues to expand in the

Australian and European markets. In recent years, the company has achieved continued success in major overseas markets by enhancing its product competitiveness, diversifying its product range, and steadily improving product adaptability. This approach has not only boosted global sales but has also significantly raised the brand's profile and influence.

AMH calls for improved safety in non-standard lifts

All Material Handling (AMH) believes that too many non-traditional lifts are still taking place using the wrong hoist rings and eyebolts, creating unnecessary safety risks.

Peter Brettner, CEO,

AMH, said "Whether on a construction site, in a machine shop, or at a manufacturing facility, there are two primary goals: move the load without damaging it; and make it home safely at the end of your shift.

While a sling and some hooks are usually suitable for a standard lift with easy connections such as a

shackle and welded eye or plate, a non-traditional lift like a large motor or a flat gear can be much more challenging.

AMH is adding the Cartec series of lifting points and rotating hoist rings to its product portfolio, ensuring that riggers have easy access to the right tools for the job

when it's a non-standard load. The Cartec 807 series of rotating eyebolts provide a 100 per cent working load limit at any angle allowed by the corresponding user's manual. AMH offers a full line of lifting points ranging from 6 mm all the way up to 100 mm, offering 0.3t to 40t WLL, available in both UNC and metric threads.

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- Economical operation • Easy maintenance



Hamre Equipment joins LiuGong North America dealer network

LiuGong North America welcomed Hamre Equipment to its dealer network. The Chico, California-based company has expanded from material handling equipment into construction equipment since being founded in the late 1980s and has established a foothold in the region.

Hamre Equipment also has international roots, as company CEO Lee Hamre met AmeraMex International in Mexico when Hamre Equipment worked to expand into international markets. AmeraMex International has three business units: Hamre Equipment Inc., Hamre Heavy Haul and Hamre Parts & Service.

After starting as a dealer of forklifts and compact truck loaders, Hamre



Equipment began adding construction equipment to its range of offerings. It serves the industrial construction, intermodal, sales, forestry and transportation industries.

Hamre Equipment President Brian Hamre noted the opportunity to join the LiuGong dealer network has come in two stages, starting in the material handling equipment space six months ago and adding construction equipment products two months ago.

Al Shirawi, HD Hyundai CE tie up

In a groundbreaking move set to redefine the landscape of the construction industry in the United Arab Emirates, Al Shirawi Machinery and HD Hyundai Construction Equipment have officially joined forces. The partnership, marked by a ceremonial signing event, brings together the expertise and pioneering spirit of two industry leaders committed to innovation and operational excellence.

The signing ceremony was attended by Jehseung Yoo, Ambassador of the Republic of Korea to the UAE, Mohamed Abdulla Mohamed Al Shirawi, Chairman of Oasis Investment Company, Jason Byun, Senior Vice President and Head of Overseas Sales at Hyundai Construction Equipment, among other distinguished guests.

Assistedile installs first Raimondi T147 flat-top tower crane in Italy

Official Raimondi Cranes agent of Milan, Monza, and Brianza, Italy's Assistedile Srl., brings its total fleet size to 130 cranes with its newest Raimondi T147 flat-top tower crane.

A Class 110 series crane, the T147 is the 107th Raimondi in the company's fleet, erected for the first time in the country in October 2023. Currently at work in Modena, Italy, on the construction of the new technical and administrative offices of the

country's most renowned automobile manufacturers, Ferrari.

"The deployment of the first Raimondi T147 on this prestigious jobsite represents a milestone for our company. We have of pleasure working on the expansion of Ferrari's headquarters by renting this model to Ediltecnico Restauri, contractor of the project," stated Luciano Friso, Director General, Assistedile.

Friso continued: "Assistedile is

expanding our rental fleet with our first Class 110 flat-top, further increasing our scope and ability to best serve the country's construction sector." The flat-top is freestanding at 42m with a jib length of 45m and a tip load of 3.58t in Ultralift, making it ideal for jobsites of small to medium dimensions. The crane was deployed onsite by Assistedile's operations team with the support of a Raimondi field technician to supervise the installation process.

Ignite adds mini excavator auger to its lineup

Ignite Attachments has expanded its lineup of augers with the new mini excavator 210PH auger attachment. Compatible with the Kubota KX057-5, the attachment can quickly drill vertical holes through

shale, rocky soil, layers of frost, heavy clay and other hard-to-penetrate materials. The standard bit can drill 50" deep, while the optional extended bit can reach depths of 86". The planetary drive uses gears to generate max torque for difficult digging situations. The attachment is ideal for deck foundations.

Seppi M debuts lighter offsetting mulcher for slopes

Seppi M has debuted its newest attachment, the L7 Flex, for mulching along riverbanks and roadsides. A lighter version of its L9 Flex offsetting mulcher, it is compatible with 80- to 160-HP tractors and replaces

the SAV model. The attachment is available in 59-, 69-, 79-, or 89-inch cutting widths. It can shred mulch and bushes up to 2.8 inches in diameter and has a working speed of 1 to 6 miles per hour. The mulcher can be tilted hydraulically during operation and can be raised up to 90 degrees and lowered up to 65 degrees.





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SAFETY AT NEW HEIGHTS

Mobile cranes are relatively easier to operate, manoeuvre, and optimise. However, they are highly prone to accidents.

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Mobile cranes play a crucial role in various industries, from construction and infrastructure development to maintenance and heavy equipment handling. These versatile machines provide the lifting power necessary for a wide range of tasks, making them indispensable on job sites worldwide. However, with great power comes great responsibility, and ensuring the safety of mobile crane operations is paramount. In this comprehensive guide, we will explore the key aspects of safety in using mobile cranes, covering equipment inspection, operator training, site planning, and industry regulations.

Several safety measures are implemented across the industry to maintain a secure working environment. Qualified and certified crane operators are crucial for safe crane operations. Rigorous training programmes ensure operators are well-versed in crane functions, load capacities, and safety protocols.

Routine inspections of mobile cranes are essential to identify potential issues and ensure that all components are in proper working condition. This includes checking the hydraulic systems, electrical components, and structural integrity. Also, advanced load moment indicators and load moment limiters are integrated into modern cranes to prevent overloading. These systems provide real-time data to operators, helping them make informed decisions during lifting operations.

Mobile cranes are equipped with various safety features, such as emergency stop buttons, anti-two block systems, and outrigger load indicators, to enhance overall safety during operations. Before initiating any lifting operation, a thorough site assessment is conducted to identify potential hazards. Adequate planning helps in selecting the right crane for the job and implementing appropriate safety measures.



Demand drivers

Manish Mathur, CEO – Cranes, Action Construction Equipment, said

“The overall outlook for next couple of years for pick and carry, and medium and heavy-duty mobile cranes is positive. While we expect a sustainable growth on YoY basis, but due to pandemic, we might see some hiccups in between. But clearly, mobile cranes market in India will grow in the next three to four years.”

Said Mathur, “Infrastructure is the very foundation of every strong nation and economy. According to the vision of our Prime Minister Narendra Modi, India is coursed to growing into a \$5 trillion dollar economy by 2024. This can definitely pave the way for the success of the construction equipment industry. Government spending on infrastructure and rapid urban development is at an all-time high. Also, the overall growth of the Indian economy, in the coming years, will further boost disposable income. This will in turn further increase the demand for better infrastructure and development.”

Satin Sachdeva, Founder & Secretary General, Construction



Manish Mathur,
CEO – Cranes,
Action Construction
Equipment

Equipment Rental Association (CERA), feels that the scenario in India is encouraging due to two reasons – first, the paradigm shifts towards buying new cranes from importing used cranes; second, the increase in use of heavy-duty mobile crane in construction, cement, steel, wind and power sectors. “In India, it is the all-terrain cranes, crawler cranes, rough terrain cranes that dominate the market due to their versatility and operation efficiency.”

“The major demand driver for the mobile cranes market is the development of Gujarat International Finance Tec-City (GIFT), which is India’s first operational smart city and international financial services centre,” says **Karan Chechi, Director, TechSci Research.**



Karan Chechi,
Director, TechSci
Research

Added Chechi, “The medium-duty mobile cranes market revenue is anticipated to witness steady growth over the forecast period owing to their load lifting capacity and performance in both small and medium-range operations.”

According to **Subhajit Chandra, Divisional Head – Mobile Crane Division, Liebherr India,** “All terrain dominates the market owing to growth

in the construction sector across India due to his versatility and operation efficiency. Use of heavy-duty mobile crane in Indian industries



Subhaji Chandra,
Divisional Head –
Mobile Crane Division,
Liebherr India

is the sign of increase in investments in construction, cement, steel, wind and power sectors are factors for the market growth. Liebherr make 450T to 1200T capacity all terrain cranes used in wind mills applications, infrastructure sectors, construction of elevated corridors, lifting the chillers and much critical applications in the industry.”

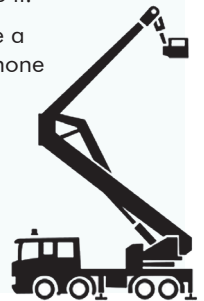
Sachdeva adds, “The market for all terrain cranes and crawler cranes is predicted to accelerate owing to the expansion of cement plants, construction industry, infrastructure projects and the increased business potential of ship building and repair industry. Cranes will be required for the metro project for general erection as well as for heavy lifts involving lifting and lowering of TBM sections through the shafts. Greenfield nuclear power projects are also expected to be a major driver for medium capacity mobile and crawler cranes in the medium term.”

“In India, the demand for mobile cranes is growing rapidly owing to the increasing number of infrastructure projects that have led to the requirements for assembly and lifting. The development is apparent in the industrial as well as the core infrastructure sectors. Mobile crane manufacturers and rental agencies are witnessing an upsurge in demand for medium and high-capacity cranes. Mobile cranes are widely used in India for major industrial applications such as power plants and turbine manufacturing,” adds Chechi.

Adds Chandra, “The government of India is also constructing one of the largest Greenfield airport projects in

10 tips for safe mobile crane operation

- 1** To ensure that our cranes are kept in excellent working order and that your mobile crane operation runs smoothly and safely, here are 10 tips to take note of.
- 2** Always check ground conditions before any lift operation is started. A crane is as good as the ground it is stood on – weather, such as ice or rain can change ground conditions quite quickly, making jobs inefficient or dangerous.
- 3** Take note of any overhead hazards, particularly when you will be operating the crane close to buildings or in areas where there are power lines.
- 4** Be observant of everything that is happening on the site around you, from personnel to other works taking place.
- 5** Before starting the crane, double check fuel and other fluids that may need to be replenished.
- 6** You should also do a full inspection of the crane before each use – checking for any mechanical, electrical, structural or hydraulic issues.
- 7** Ensure that the correct pads and cribbing are used for the lift operation to avoid outrigger fail or a sink. If something doesn't feel right during a lift; stop and reassess the situation, is there a safer way to do the task?
- 8** Never override the computer in a mobile crane.
- 9** Ensure you have carefully read and understood the load charts for a mobile crane before you use it.
- 10** Never use a mobile phone whilst operating a mobile crane. You wouldn't use a phone whilst driving on a car – it's the same thing.



the world named Navi Mumbai International Airport (NMIA). The first phase of the airport will be able to handle more than 20 million passengers annually and the airport will be expanded to handle more than 90 million passengers annually. Thus, the ongoing projects and the growing investment from the foreign players and government side are driving the crane market in the country. Therefore, the market studied is anticipated to grow over the forecast period.”

Said Rishi Sanghvi, Managing Director, Sanghvi Movers, “The country is witnessing a robust demand for cranes, with increasing utilisation and yield, due to ramp up in capacity addition across core sectors. With the

pickup in the capex cycle, the thrust on infrastructure and core sectors, and the resilient Indian corporate houses, we see a strong demand for cranes over the next two to three years. In the thermal power sector, NTPC is executing several ultra mega power projects across the nation. These projects are in the 660 to 800 MW class with a total capacity addition of 9,840 MW. The cement sector is witnessing aggressive capacity addition with greenfield and brownfield expansions of 18.15 MTPA. Similarly, the steel sector is expected to add 13.5 MTPA in Kalinganagar, Bellary and Angul.”

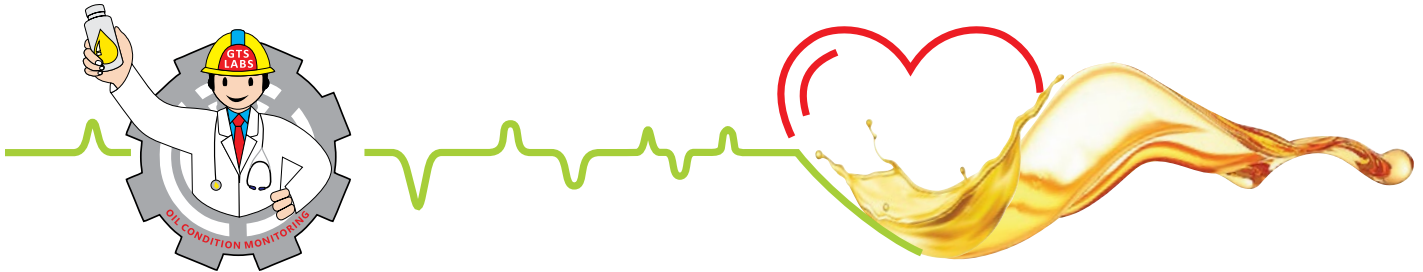
Several expansions, upgradations and new refinery and petrochemical projects are coming up in Barmer,



Rishi Sanghvi,
Managing Director,
Sanghvi Movers



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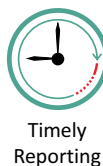
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OIL IN MACHINE IS LIKE BLOOD IN THE HUMAN BODY

Paradip, Vizag, Baruni, Panipat, Vadodara and Mahul with a combined new capacity of 20.6 MTPA. The rapid urban infrastructure upgradation has led to the development of metros across various cities. Moreover, the high-speed railway presents massive opportunities for the construction equipment rental industry. In the next FY, the wind sector will add approximately 2,200 to 2,500 MW, which will create a lot of demand for cranes.

Adds Sanghvi, “Multi utility pick-and-carry cranes are being replaced by equipment such as telehandlers which have many dynamic features. These telehandlers perform well at job sites as they are versatile and therefore have a multi-purpose functionality. They come with a variety of attachments such as the General-Purpose Shovel, Heavy Duty Forks, Bucket with Grab, Crane Hook, Grain Bucket, Power Grab, Man Platform and Drum Handlers, all of which enable the machine to do a variety of jobs on site, which enhance its overall utility. Telehandlers are best suited for congested spaces on sites due to their compact sizes, and their all-terrain features are useful for uneven ground conditions.”

“Pick and carry cranes are well suited to the Indian market and has been there for a long time. The pick and carry concept are very cost efficient in every way like the parts can be locally sourced and made available, its repair and maintenance are easy, operator availability and training are easier. Whereas, heavy telescopic cranes which are widely used in the western countries does not suit Indian cost-oriented market. For instance if a job can be done with one 40 tonne crane or using two pick and carry cranes, the company and hirer would find the latter option a better deal,” said **Akshay Deshmukh, Managing Director, Deshmukh Crane Service.**

He adds, “Adding more features will definitely be value addition to manufacturers, hiree, and end users. It will be a concept like tele handler but

more economical. Recently cranes are coming with manlift basket attachments which are very well designed with hydraulic operations as the end user has to rent out Crane and boomlift. So, if work can be done with single equipment the end user can save and can pass on that saving to hire resulting in getting better rates which is the basic concern everywhere.”

Rental scenario

Rental market for mobile cranes has emerged as a dynamic and crucial component, playing a pivotal role in meeting the diverse needs of construction projects across the nation. The mobile crane rental market in India has experienced significant growth in recent years, driven by factors such as increased construction activities, infrastructure development, and the adoption of advanced technologies in project execution. Mobile cranes, with their versatility and ability to navigate diverse terrains, have become indispensable in the construction landscape.

While the mobile crane rental market in India is thriving, it is not without challenges. Some of the key challenges include the need for skilled operators, adherence to safety regulations, and potential fluctuations in fuel prices. However, these challenges also present opportunities for training programmes, safety innovations, and the development of more fuel-efficient crane models.

The Indian government has taken several steps to promote the growth of the construction and infrastructure sector, indirectly influencing the mobile crane rental market. Initiatives such as the Make in India campaign and ease of doing business reforms contribute to the overall positive sentiment in the industry.

Automation in mobile cranes

As technology continues to advance, the integration of automation in mobile crane operations is becoming

a pivotal aspect of the industry. Automation not only enhances efficiency but also contributes significantly to safety.

Some mobile cranes are now equipped with remote operation capabilities, allowing operators to control the crane from a safe distance. This is particularly beneficial in hazardous or challenging environments.

Advanced telematics and monitoring systems provide real-time data on the crane's performance, health, and location. This data can be used for predictive maintenance, optimising operations, and ensuring compliance with safety standards. Automation technology includes collision avoidance systems that use sensors and cameras to detect obstacles around the crane.

These systems provide warnings or automatically intervene to prevent collisions, reducing the risk of accidents.

LMI systems automate load monitoring and provide operators with real-time information about the load's position and the crane's capacity. This helps prevent overloads and enhances overall safety.

Road ahead

The safe operation of mobile cranes is a multifaceted endeavour that requires a holistic approach, encompassing equipment inspection, operator training, site planning, and compliance with industry regulations. Neglecting any of these critical aspects can result in accidents, injuries, and damage to property. By prioritising safety in every facet of mobile crane operations, businesses can not only protect the well-being of their workers but also enhance the efficiency and success of their projects. Mobile cranes, when operated safely, contribute significantly to the progress of construction, infrastructure, and various industries, embodying the balance between power and responsibility.





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Revolutionising Construction

Concrete construction has evolved significantly, impacting both equipment choices and operational strategies.

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The use of concrete in construction has come a long way and, with it, the choice of equipment.

“Switching from the use of volumetric batching concrete to weigh batching concrete, from M15 grade concrete to M25 and then to M60 and finally today to the M80 grade of concrete, and also from site-mix concrete to ready-mix concrete (RMC) to self-compacting concrete, has impacted the choice of construction equipment,” observes **Suneet Gupta, Concrete Technologist.**

For instance, he points out: “Concrete used to be transported manually; now it is transported mechanically. Compaction used to be



Suneet Gupta
Concrete Technologist.

hand-driven; now, it is vibrator-driven. Hand tools used to help finish a job but now finishing is done mechanically. And where self-compacting concrete is used, the role of

labour has all but been eliminated with enhancement to the quality of the outcome and speed of work. Taller buildings are necessitating boom pumps and, in turn, these are reducing the role of labour.”

Impact of higher grades

Recent revisions to the construction regulatory code, that emphasises durability and quality, and improved access to micro-silica and



Mohit Jajoo
CEO, Shubhashish Homes.

the newest superplasticisers have popularised M60 and higher grades of concrete [in India], says **Mohit Jajoo, CEO, Shubhashish Homes.** “To meet these requirements, the demand for machinery producing precise, consistent mixes has increased. In

response, producers of concrete equipment have created cutting-edge batching and mixing systems that guarantee the highest level of quality assurance.”

Now that high-grade concrete is being manufactured in most metro cities, **Anil K Banchhor, Managing Director & CEO, RDC Concrete,** points out, “The regular pan-type mixer doesn’t work effectively. High-grade concrete contains a lot of

ultrafine materials, mineral admixtures like fly ash and ground granulated blast-furnace slag, necessitating



Anil K Banchhor
Managing Director &
CEO, RDC Concrete

a higher cement weigher capacity in batching plants. Twin-shaft mixers as well as high-capacity planetary mixers are required with bigger cementitious material weighers. So far, only Simem India, Sicoma and Ajax are making planetary mixers of 1 cu m. We need more players to enter this space with higher capacity – 2 and 3 cu m – batch size planetary mixers.”

Also, he continues, “The distribution of cementitious materials and the admixture should be at two points instead of only one for better mixing and a shorter mixing time. At present, mixers have only one dispersal point for cement and water. But for faster dispersion, the cementitious materials and water should each get discharged through two points.”

Another issue is that concrete tends to stick in the discharge hopper, according to Banchhor. “Concrete discharge hoppers should be made of abrasion-resistant material like hardox so that they don’t abrade quickly and last longer. Also, batching plant manufacturers should provide Teflon sheet liners inside cement weighers, aggregate waiting hoppers and in the sand bin to reduce the abrasion and for better flow.”

Operational gaps

We still grapple with the frequent breakdown of essential concreting equipment, particularly pumps and batching plants, rues **Anil Reddy, MD, Concorde**. “Unfortunately, the challenge is intensified by the unavailability of spare parts locally, necessitating their sourcing from other states, primarily Maharashtra. The



Anil Reddy
MD, Concorde

Bridging the gaps: The concrete industry’s wishlist

What is the concrete equipment segment lacking with a view adequately expand to support the construction industry?



Regulatory framework: “High taxes narrowing profit margins and complex regulations are discouraging potential investors from the concrete industry,” says Mohit Jajoo, CEO, Shubhashish Homes. “Decision-makers and industry stakeholders must work together to promote more benevolent tax and regulatory frameworks and encourage investment and growth to close this gap.”



R&D: Fierce competition from Chinese equipment producers and domestic imitations, as well as cost-related difficulties and infrastructure delays, are some other obstacles, continues Jajoo. “Encouraging innovation and R&D across the entire industry would help introduce cutting-edge equipment that can compete on both the price and quality fronts.”



Quality control: Another issue is the use of subpar concrete blocks and unreliable concrete block machines, he adds. “Such actions jeopardise the durability and safety of construction projects and damage the reputation of the industry. Stringent regulatory standards and rigorous quality-control protocols must be enforced to ensure the exclusive use of top-tier tools and materials.”



Skill development: “Labour shortages are another concern, especially considering the demanding and tedious nature of equipment handling,” says Anil Reddy, MD, Concorde. “Establishing training institutions for professionals would help ensure that the workforce is well-equipped to effectively operate and maintain these advanced machines.”

absence of local service engineers adds to delays and disruptions. Also, the cost of boom placers is notably high and the acquisition process is cumbersome. Streamlining the material flow process is also essential, as concrete can sometimes be rigid and manual intervention should be minimal.”

To address these issues, he proposes transitioning from manually operated batching plants to fully automated ones. “Producing only 36 cu m per hour is insufficient to effectively meet the needs of the market. An automated machine would do better.”

To achieve long-term, irreversible improvements in operations, Reddy advocates the introduction of better equipment with enhanced features such as a live monitoring system, GPS in transmit mixers and sensors

QUICK BYTES

- Market size of concrete equipment in India is estimated to increase from 53,000 in 2021 to 158,000 units in 2030.
- 3D printing is one of the newest technologies in the construction industry.
- Higher cement weigher capacity required in batching plants as regular pan-type mixers are ineffective.



to ensure the right ratio of ingredients goes into the mix. "Implementing live monitoring of the mixing process is crucial for safety and quality. Establishing routine quality control checks by a trained team would also help. Batching plant operations should prioritise safety, with frequent visits from local licensed authorities to ensure compliance. Incorporating hydro-cyclone sand washers and increasing pump capacity are steps towards efficiency. The frequent calibration of equipment for accuracy and the manufacturing of robust machines is key for efficient production. Additionally, lowering operation and maintenance costs would significantly help."

Printed concrete

Of late, 3D printing of concrete has entered the industry, says Gupta. "L&T made the first such building (a post office) in Bengaluru and is now building five buildings with the technology in Chandigarh. 3-D

Concreting in small-town India

"The onsite mixing of concrete is still common in tier 2 and 3 towns", says Aditya Ostwal, Managing Director, Dhanshree Ready Mix Concrete. "Initially, users didn't trust RMC because they had no product awareness or knowledge. We have conducted many seminars for contractors, engineers and architects to create awareness. It takes time to make inroads in those areas but the outlook has changed in the past three years. Users are beginning to trust RMC. We used to supply about 200-300 cu m per month in 2020; now, we supply 5,000 cu m per month."

As for the demand for concrete pumps, Ostwal points out, "Moli (mobile + line) concrete pumps, wherein the pump is assembled in the van, make it easier to transport the pump. At present, the concrete pump must be attached to a towing vehicle, typically a *tochan* tractor with the pipeline loaded in the tow vehicle. Prior to moving, the towing vehicle and the pump must be welded, which can pose a traffic safety risk. In future, Moli concrete pumps will definitely become the preferred option."

printing reduces the human resource need to just five or six persons while the building is completed in a matter of days. Of course, specialised printers are needed."

"3-D printing concrete technology is the latest trend in construction technology," agrees Reddy. He feels this innovative approach is particularly

well-suited to affordable housing communities as it delivers cost and time savings compared to traditional construction methods and minimises waste, thereby reducing the environmental footprint of construction projects. Such advancements bode well for the construction industry.





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"THE INDUSTRY WILL SHIFT TO CLEANER, EFFICIENT ASPHALT PRODUCTION."

Dheeraj Panda, Managing Director, Ammann India, speaks on the current trends in the Indian asphalt plant market.

Can you give us a brief introduction to the company? What current trends do you observe in the Indian asphalt plant market? How do these trends impact the development and manufacturing strategies of your company?

The Indian asphalt plant market is currently witnessing trends towards sustainability and environmental consciousness. There is a growing demand for asphalt plants that are fuel-efficient and capable of using alternative and cleaner fuels. There is also a trend of going for plants capable of using recycled aggregates (hot and cold). Additionally, there is an increased focus on incorporating digital technologies for better control



and efficiency in asphalt production.

Globally Ammann spends more than 5 per cent of its revenues on research and development. This helps

us in being always the first one's to introduce innovative products that are both sustainable and environment friendly thus keeping Ammann always ahead of the technology curve. At Ammann the technology platform is adopted across all the geographies while customising the local deliverables.

In asphalt plants, what sets your company apart in terms of technology, quality, and customer satisfaction?

The incorporation of advanced technologies, such as the AS1 control systems for plants, ACE systems for compactors, and asphalt plant burners capable of using alternate fuels, sets the company apart in terms





of technology and innovation. Highest quality standards are maintained to ensure long term machine and plant reliability and deliverables across applications like soil, WMM and bitumen. Customer satisfaction is a priority, as evidenced by the dominant market position we hold in asphalt plants and mechanical pavers. The customers' trust has been built over a period of time with our commitment towards product quality and agility in responses.

How has technology evolved in asphalt plant manufacturing, and what recent advancements has your company implemented?

Technology in asphalt plant manufacturing has evolved towards greater automation, control, and sustainability. Ammann India has introduced innovations such as burners that can use alternative fuels, IoT technology for asphalt plants, advanced control systems and up to 60 per cent asphalt recycling in India market. These advancements enhance productivity, efficiency, and environmental sustainability.

What challenges do you face in the current market scenario, and how is your company addressing them?

One of the significant challenges we face today is from the local players who offer machines and plants with lower safety standards and many of the mandated environmental norms bypassed. This results in lower cost of goods for them and offering at a lower price for the same products for the customers. Retaining talent in a growing market also is a significant challenge for us.

The cost of some of the key components is also another challenge that Ammann India faces while progressing to become a 100 per cent Aatmanirbhar company in terms of domestic manufacturing. The Government should ensure PLI schemes to component manufacturers specially MSMEs in capital equipment sector which will go a long way in terms of making India a manufacturing hub. We run into lot of price fluctuations in case the components are imported.

Another challenge we face today is the lack of enforceability of the mandated environment, energy usage and safety norms by several

government agencies as many of them are not rightly equipped to administer the regulatory framework.

How is your company contributing to environmental sustainability in asphalt plant manufacturing?

Ammann India contributes to environmental sustainability by introducing eco-friendly equipment and offering plant burners that can use alternative fuels. These initiatives align with the industry's focus on reducing emissions and environmental impact.

What do you envision for the future of asphalt plant manufacturing in India?

The future of asphalt plant manufacturing in India is expected to be characterised by further advancements in technology, increased sustainability, and compliance with stricter environmental regulations. The industry will likely see a continued shift towards cleaner and more efficient asphalt production methods.

We also see a consolidation in terms of the number of players operating in the asphalt plant manufacturing in India.





Vision 2030 Drives Growth

The compaction equipment industry in India has witnessed significant technological advancements in recent years. Manufacturers are integrating advanced features, such as GPS technology and telematics, into their machines to enhance precision and efficiency.

Despite recent challenges faced by construction equipment manufacturers, there remains a positive outlook in the compactor market. India's 'Vision 2030' initiative, aiming to achieve a \$5 trillion economy by 2025 and \$10 trillion by 2030, underscores the importance of developing physical infrastructures like roads, railways, seaports, airports, urban transport, and inland waterways, necessitating the use of compaction equipment.

A report by Off-Highway Research

reveals that 99 per cent of compaction equipment demand in India is met through local production, with imports accounting for only 1 per cent in 2021. The extensive infrastructure plans, especially in the road sector, will continue to drive the compaction equipment market for years, despite an anticipated 8 per cent decline in demand in 2022 due to reduced road laying activities, the implementation of CEV-IV emission norms, and high commodity prices. However, the market is expected to rebound, reaching 5,000 units by 2026.

The introduction of CEV-IV emission regulations for tyred construction equipment in India has impacted machine costs, which have risen by 5 to 7 per cent this year. Additionally, increased commodity prices and inflation have contributed to higher running costs, primarily due to elevated fuel expenses.

Despite these challenges, the report emphasises the substantial amount of work remaining in the road sector, necessitating large volumes of equipment. The industry's growth is contingent on the

government's effectiveness in facilitating project execution and addressing key impediments.

The compaction equipment industry in the Asia Pacific and the Middle East is experiencing dominance due to rapid infrastructure development in countries like India, China, Indonesia, Kuwait, and Qatar. These regions witness numerous engineering and building projects, with governmental organisations focusing on organised facilities in healthcare, transportation, and tourism.

Manufacturers are responding to the growing competition by releasing compaction machine types that are fuel-efficient and require minimal upkeep. They are tailoring machines to suit Indian working conditions, with a focus on performance and productivity maximisation as key concerns for manufacturers of compaction equipment.

Ground-breaking tech

Investments in compaction equipment and related products are primarily directed towards the APAC and MEA regions, where numerous infrastructure development projects are currently underway. The focus on structured facilities like hospitals, transportation, and tourism by government bodies in developing economies has significantly contributed to the growth of the compaction equipment market.

Various companies have introduced new models or upgraded existing ones with advanced features, particularly in soil and asphalt compactors. CASE India, for example, has incorporated in-built safety features and fuel efficiency in all its equipment. Additionally, the introduction of Eagle-Eye telematics, a GPS-tracking system, enhances machine safety by providing remote diagnosis alerts. The Compaction Meter, another innovative feature, analyzes soil density and acts as a defense

mechanism against unseen compaction issues.

Case's compactor range and road equipment boast smart features, including the Eagle Eye telematics system for real-time monitoring of performance, security, and efficiency. The soil compactors offer excellent maneuverability with features such as a 15° drum oscillating angle, 37° steering angle, and a short steering radius. The 1107 Ex compactor, equipped with a 4-pins central joint, ensures reliability in harsh conditions and includes safety handrails for operator convenience. The machines also feature the renowned FPT Industrial engine for faster response time and better fuel economy.

The increasing adoption of telematics, driven by stringent government mandates and consumer preference for connected vehicles, is a notable trend. Telematics aids in reducing operating costs for heavy-duty vehicles, and manufacturers in the soil compaction machines market are offering service contracts and extended warranties. Leading players like John Deere and Volvo have introduced machine monitoring services to align with this trend. This shift towards advanced telematics is expected to gain momentum in the soil compaction machines market in the foreseeable future.

JCB's compactor lineup includes the JCB116 soil compactor, the VMT860 tandem roller, and the VMT330 smaller 3T category tandem roller. Designed exclusively to meet road construction needs, JCB Road Solutions offer a comprehensive range with unique features and a robust structure. Whether a single drum soil

compactor or a vibratory tandem road roller, every JCB Compactor prioritises efficiency and productivity, catering to various compaction work volumes.



Vivek Hajela, Head & General Manager, Construction Equipment Business, Larsen & Toubro

Vivek Hajela, Head & General Manager, Construction Equipment Business, Larsen & Toubro,

QUICK BYTES

- The compaction equipment market is around 4,000 machines annually.
- The market is anticipated to flourish at a healthy CAGR of 6.4 per cent between 2023 and 2033.
- The market growth will depend on the speed of execution of the road projects.

said "L&T had pioneered the concept of vibratory compactors in India with the introduction of Albaret products way back in 1978. Later in 2015, L&T once again forayed into the compactor market with its 100 per cent indigenous effort. The soil compactor, L&T 1190 was introduced first in October 2015, followed by the tandem compactor, L&T 990 a few months later. The L&T 491 mini compactor was introduced in 2017. In order to further expand the range, the pneumatic tyred roller, L&T 2490 was introduced in 2018. All these machines have worked in a variety of applications and around 3000 L&T compactors have been supplied till date."

He added, "We are offering L&T DigiEye as an optional fitment on the L&T compactors. This digital technology helps in tracking the equipment performance, fuel consumed and machine location. The use of telematics by end-users is slowly catching up, but still, actual utilisation is low. Many fleet owners feel the need to monitor the machines remotely. In the CEV-IV compliant machines, this option of L&T DigiEye is offered. compaction meters is another concept that is offered on L&T soil compactors and this helps the operator in knowing

if the desired levels of compaction have been achieved.”

L&T Construction & Mining Machinery reached a milestone in the supply of indigenous equipment with the successful delivery of the 3000th L&T compactor. The roll out of this 3000th machine reinforces LTCEL's leadership in manufacturing indigenously-designed equipment and paves the way for fulfilment of Atmanirbhar Bharat mission launched by the Government of India. L&T has been successful in exporting these compactors to SAARC and African countries as well. L&T compactors, launched in 2017, have fast penetrated the Indian market and are a preferred choice of customers given their excellent quality and reliability.

“To accelerate infrastructure development as well as implement execution and holistic planning to improve logistics efficiency, the government announced the Gati Shakti- National Master Plan in 2021. The focus on infrastructure continued in 2021-22 too. However, the CE industry contracted by 11 per cent mainly due to the impact of change in emission norms for wheeled construction equipment to CEV4,” said **BKR Prasad, Head – Marketing and Product Development, Tata Hitachi Construction Machinery.**

Vogele has been the industry

pioneer for asphalt pavers. It can pave from 1.5 m paving width to a maximum of 16 m. Several innovations like the pressure bars and electric heating of the screed, Niveltronic plus operating concept and ergo plus operator features have been introduced. Hamm compactors are equipped with an isolated operator platform mounted on shock absorbers so that the vibrations are reduced. The operator platform is with antiskid material to ensure operator safety. The engine compartment is closed with FRP hood in Hamm compactors, which reduces the noise levels. ROPS/FOPS requirement is currently not mandatory as per Indian regulations however it can be provided as an option.

Said **Himanshu Sharma, Head – Marketing &**

Corporate Communication, B&R Industrial Automation, “The current innovative trends in this industry are exponentially high, looking at the new buy out strategies and the development of newer machines, changing the old-fashioned way of equipment and inculcating innovations to it, it is very clear the industry

is boosting high. Also, the construction sites have newer projects, developments seen in industrial sector

of manufacturing construction equipment has given new dimensions in manufacturing and in turn the upliftment of urbanisation is rapidly changing the face of the city. It is seen as per recent reports that the growth of the earthmoving equipment market will significantly contribute to the growth of the construction machinery market, which is expected to increase exponentially in coming years. Thus, as the consumer

demand is increasing there has been a significant uplift of market size too.”

Safety in Selecting Compaction Equipment

The top priority in road building is crew member safety. But conventional compaction equipment is about as inflexible as it gets.

Operators sweat down the sloping road shoulders and ditches, risking a rollover but praying for the best as they feel every degree of slope. Although rollover protective structures (ROPS), seatbelts, and personal protective equipment (PPE) like hard helmets have been demonstrated to be effective at saving lives in compactor rollover accidents, they are not very effective for averting a disaster altogether.

Some manufacturers are redesigning the compaction process from the ground up in order to overcome the main challenges



Himanshu Sharma, Head – Marketing & Corporate Communication, B&R Industrial Automation



BKR Prasad, Head – Marketing and Product Development, Tata Hitachi Construction Machinery.



posed by conventional compaction rollers, including risk, excessive maintenance, and limited utility. When considering a new compaction roller, here is what to look for.

Manufacturers' perception that the compaction drum is a source of motion, compaction, and stability all in one has been the main barrier to compaction safety. On the other hand, the safety concern is quickly resolved by moving the drum to an offset arm attachment. The compaction roller can now be linked to graders, compact track loaders, wheel loaders, or skid steers as an accessory. These hosts offer a separate source of power for the compaction drum as well as stability and operator safety due to the offset arm.

With this configuration, an operator is now able to compact level areas as well as run the host machine on flat ground while the arm extends to the farthest, steepest edge of sloping road shoulders and ditches. Improving safety to this extent puts a major dent in workers comp claims, lowers insurance premiums, and increases safety ratings — a necessity to contractors bidding on competitive jobs.

Shifting the drum to an offset arm attachment drastically improves safety, but it can also unlock a host of other benefits.

The onboard engine, transmission, and other connected equipment are no longer present because the compaction roller is now an independent device. Look for an attachment that offers a universal mounting pad and straightforward hydraulic connections for a smooth setup and disconnect to the host machine to further save downtime.

Think about remote-controlled possibilities as well. The operator can make all adjustments from the palm of their hand and without leaving the host machine's cockpit using certain compaction roller attachments that can be quickly attached to the remote.

Typically, aside from a handful of

Challenges in compaction equipment segment

Despite the promising trends, the compaction equipment market in India faces several challenges that need to be addressed for sustained growth.

High initial costs: The capital-intensive nature of compaction equipment poses a significant barrier for small and medium-sized construction companies. The high initial costs of purchasing advanced compaction machinery often deter potential buyers, hindering the widespread adoption of modern technologies.

Limited awareness and training: A lack of awareness and training on the benefits and operation of advanced compaction equipment is a challenge in the Indian market. Many construction professionals may not be fully aware of the latest technological developments or the potential efficiency gains associated with automated compaction. Bridging this knowledge gap is crucial for the successful integration of advanced equipment.

Infrastructure and connectivity issues: Remote monitoring and control systems heavily rely on robust internet connectivity. In many construction sites across India, especially in rural or remote areas, inadequate infrastructure and connectivity pose challenges for the effective implementation of automated and remote-controlled compaction equipment.

Environmental regulations: While there is a growing demand for eco-friendly equipment, stringent environmental regulations can pose challenges for manufacturers. Adhering to emission standards and sustainable manufacturing practices adds complexity to the production process, potentially affecting the cost and availability of compaction equipment.

grease fittings to maintain and clean off debris, compaction roller attachments have no maintenance to speak of — no more oil changes, filters, transmission fluid or any hard parts to wear and break. This can make for 90 per cent less maintenance over self-propelled machines. Cutting out the unnecessary bulk seen with compaction machines also allows manufacturers to design a more compact, versatile machine.

Compaction roller attachments can easily surpass their conventional equivalents in every way during a busy roadwork season. These attachments prevent an engine from lying idle and progressively deteriorating into a surprise repair charge when the next season comes along. But more crucially, offset-designed compaction roller attachments boost crew safety and offer a multipurpose piece of machinery that will outlast any conventional compaction machine in a road crew's fleet. Customers may buy with confidence knowing that they will receive the best possible return on their investment.

Road ahead

Despite recent challenges for construction equipment manufacturers, the industry remains optimistic. Intense competition compels manufacturers to innovate, and the entrance of global leaders is a positive development, bringing the latest technology to the market. Established players in the Indian market are poised to strengthen their positions in the coming years by introducing newer models.

Increased collaboration between construction equipment manufacturers and rental fleet owners ensures that products are tailored to meet customer needs. Despite competition concerns, the global recovery trend instills confidence in investors, leading to continued optimism and the expectation of new investments entering the field. Key players in the compactor market include JCB India, Wirtgen, Hamm, Volvo CE, Escort, Case Construction, Ammann, Atlas Copco, and others.



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BOOST ON THE CARDS FOR AUTO COMPONENTS?

The Indian automotive industry sector has a positive outlook for the upcoming Budget, with expectations for updates on the FAME 3 scheme, PLI sops, and GST revision.



The finance minister Nirmala Sitharaman is set to present the Interim Budget 2024. This Budget, while not expected to introduce sweeping changes, holds significance as a precursor to the broader financial strategy.

Indian automotive industry sector among various segments has a positive outlook over the upcoming budget and has been sharing their suggestions with the government. The Indian automotive industry sector has its expectations grounded on update of potential FAME 3 scheme, PLI sops and revision on GST entry-level two-wheelers. However, the interim Budget is expected to retain a status quo on the GST front on vehicles.



Vinnie Mehta, Director General, Automotive Components Manufacturers Association, said, "I must credit the government for its benign policies especially the PLI and the FAME which have greatly benefitted the automotive ecosystem."

Vinnie further expressed hope that

these policies would further continue to receive generous budgetary allocations from the government. He also pointed out that with reference to GST in the case of EVs, there are a few cases of inverted duty structure. He said, "Some of their components which are being taken up with the GST council."



Vinod Aggarwal, President, the Society of Indian Automobile Manufacturers (SIAM), said, "We are not expecting any special sops from the government. They should not create any sudden disruptions, they should continue with good policies, infrastructure investments, and stability in regulations, and not introduce regulatory norms."



Anand Bang, COO - Sales & Marketing, Tata Motors Finance, said "As India anticipates the upcoming Union Budget, it is noteworthy to recognise the direct link between government-

led infra spending and a flourishing commercial vehicle ecosystem. The demand for commercial vehicles is a crucial metric, reflecting the pulse of the nation's infrastructure development and driving growth for CV financiers, manufacturers, and OEMs. Policy measures and fiscal initiatives needs to continue to orient with infrastructure development, alongside ensuring robust capitalisation in NBFC sector. As NBFCs are emerging as frontrunners in pivoting the nation's economic trajectory, the upcoming budget requires to maintain a strategic outlook for NBFCs, particularly accounting their reach, technological advances, and capabilities in understanding the financial needs of the unbanked and underserved populations to fully tap the entrepreneurial aspirations of India Inc."

Prithvideep Singh, General Manager, Continental Device India (CDIL Semiconductor), said, "The year 2023 has seen a lot of focus from the



government to make India a semiconductor hub. As we step into 2024, the electronics and semicon industry expects a continued strategic focus on this sector. Our expectations are particularly high for the quick rollout of SPECS 2.0 and an expansion of the budget allocated to the India Semiconductor Mission. In addition, we advocate for a balanced distribution of funds. With multiple large projects seeking approval, the allocation will soon run out and MSMEs that are critical to building the semi ecosystem may miss out."

He added, "Simultaneously, we would like to see refurbished wafer fabs get covered under the Indian Semiconductor Mission given India's large demand for discrete, sensors and other active components. Older fabs will be able to serve this large market in India very successfully."

Dr Raghupati Singhania, Chairman & Managing Director, JK Tyre & Industries, said "We're optimistic about the Interim Budget driving sustained economic growth. We expect impressive GDP growth, supported by progressive policy measures for business, investments, and resilience. Focus on last-mile connectivity, infrastructure, and consistent automotive policies would propel sectoral expansion. A robust budget is vital for India's journey to become the third-largest global economy."



S Sunil Kumar, Country President – Henkel India, said, "The Interim Union Budget 2024 is anticipated to provide ongoing policy assistance and PLI schemes to the auto and auto component sectors to encourage domestic production. As India ranks third among the world's largest auto industries, the demand for passenger vehicles, ride-hailing cabs, and electric

vehicles is expected to sustain momentum. Promoting the domestic production of high-performance adhesives and sealants can play a vital role in meeting emerging consumer needs and benefitting the auto industry in the long run. A supportive ecosystem can drive innovation, boost manufacturing, and pave the way for a sustainable future for the Indian auto industry. Henkel Adhesive Technologies is dedicated to contributing to this journey by providing state-of-the-art adhesive solutions that enable lighter, stronger, and more efficient vehicles."



Swapnesh R Maru, Deputy Managing Director – Corporate Planning, Finance & Administration and Manufacturing, Toyota Kirloskar Motor, said, "The proficient and agile handling of fiscal policy issues in the last few years, amidst global volatility and significant geopolitical risks, has successfully shielded the Indian economy from major headwinds. As a result, India has emerged as the fifth largest and the fastest growing major economy globally. The emphasis given to the manufacturing sector through schemes such as PLI and significant focus towards both physical and digital infrastructure along with other measures including efforts to improve the ease of doing business has attracted large inflow of investments. Notably, the automotive sector also saw an upswing."

"Looking ahead, policy stability and continued emphasis on spurring investment and infrastructure development will not only further enhance country's global competitiveness but also lead to growth of the manufacturing and service sector, improve supply chain efficiencies and generate higher employment thereby leading to social gains. We remain confident that the Government will continue its push towards shifting the economy and transportation sector to a greener

future that is less dependent on fossil fuels and include cleaner energy options that are best suited for our country's requirements at scale and in the fastest possible manner. This includes policy support to various technologies that utilises natural and indigenous energy sources such as solar, wind energy, biofuels like ethanol and biogas that will help in the creation of economic wealth within the country there by minimising our import dependency and arresting economic vulnerability."

"Additionally, the education and skilling sectors that capitalises on the country's demographic dividend also need continued support through sufficient allocations that are aligned to the rapidly evolving technological changes. Implementing hi-tech skilling programs that extend beyond geographical boundaries to reach rural markets will be pivotal in addressing the shortage of skilled manpower and ensuring the production of globally competitive products and services."

Abhishek Chakraborty, Executive Director, DTDC Express, said, "The attention of the government has been largely on enhancing the logistics and supply chain infrastructure in the country. We expect the expansion on the same vision while making appropriate efforts to make supply chains more robust and versatile. In the upcoming interim budget, we look forward to more strategic reforms and allocations to help establish a comprehensive logistics network spread across air, roads, ports, and especially railways to create a dynamic and responsive supply chain."

He added, "While the National Logistics Policy (NLP) is streamlining operations, effective regulatory and budgetary support is required to improve the digitisation of processes and unlock greater efficiencies. India's logistics sector has shown tremendous growth in recent years, with a focus on



relevant technological developments. We anticipate the interim budget to focus on shaping the industry with more advanced technologies like artificial intelligence, machine learning, the Internet of Things (IoT), and blockchain among others to streamline operations and unlock greater value.”

“Above all, we expect the government to continue to focus on development of infrastructure and technology and support the Indian logistics sector. Furthermore, we also expect the Union Budget 2024 to emphasise on eco-friendly measures like using clean energy, reducing waste generation, and opting for fuel-efficient vehicles.”

“The government’s commitment to heavy investments in infrastructure projects, especially in tier-2 and tier-3 cities, is expected to boost the nationwide infrastructure. However, the increase in the price of raw materials such as cement, concrete, steel, etc. is impacting its rapid progress. As we anticipate the upcoming budget, it becomes imperative to address these rising costs strategically, ensuring that the national infrastructure development continues at a fast pace and aligns with international standards. Similarly, in the real estate sector, the rise in property prices, attributed to increasing construction material costs and repo rates, has significantly impacted housing demand,” **Aparna Reddy, Executive Director, AEL**, said.

“Reducing the GST charge on essential materials such as steel, cement, aluminium and bringing the petroleum products such as natural gas, diesel under GST and bringing petroleum products such as natural gas and diesel under GST will relieve pressure on developers and contractors driving infrastructure growth in full swing. This will propel consumer demand in the real estate segment as well. Moreover, the government should encourage and foster domestic production of building materials that

will bolster the self-reliance agenda and generate employment opportunities. A robust domestic production ecosystem will ensure a stable supply chain, ultimately benefiting the entire industry. Further, it is equally imperative to invest in research and development of eco-friendly construction materials and technologies to reduce the environmental impact caused by construction materials. Incentivising the companies that adhere to eco-friendly norms with favourable policies will drive innovation in this critical area,” Reddy, said.

Jitesh Dodiya, Founder & CEO, Griden Power, said, “The electric mobility landscape in India is on the brink of transformation, with the government’s ambitious FAME scheme aiming to accelerate the adoption of electric vehicles (EVs) across the country. A crucial aspect of FAME is the emphasis on building robust charging infrastructure to address the range anxiety that often hinders widespread EV adoption. As we approach the Interim Budget, expectations are high for substantial incentives and support for the development of charging infrastructure. The government’s commitment to enhancing electric vehicle charging infrastructure aligns with its broader vision of a sustainable and eco-friendly transportation ecosystem. The success of FAME hinges on a well-connected and accessible charging network, making it imperative for the budget to allocate significant funds for this purpose. We see the interim Budget as an opportunity for the government to incentivise private sector participation, foster innovation, and encourage collaborations within the industry. Incentives in the interim Budget should extend beyond financial support to include policy measures that simplify the regulatory landscape, making it easier for businesses to invest in and operate charging infrastructure. Additionally, a clear roadmap for the

phased deployment of charging stations, especially in urban and semi-urban areas, is essential to ensure widespread accessibility.”

Raman Bhatia, Founder & Managing Director, Servotech



Power Systems, said, “The EV industry holds a strong potential to revolutionise India’s transportation sector and for the EV industry to flourish there should be a strong push for upskilling and reskilling through centrally sponsored schemes to build a skilled workforce in the evolving EV industry. Sustainable growth in the EV sector is contingent upon technological innovation aimed at reducing costs, extending range, and revolutionising charging infrastructure. This evolution pivots on developing Battery Management Systems (BMS) and nurturing domestic capabilities for battery manufacturing. Significant government funding, directed specifically at charging infrastructure in Tier II and Tier III cities, emphasises open data standards and APIs, fostering interoperability and a resilient software ecosystem. Proposals to reduce GST on lithium batteries from 18 per cent to 5 per cent represent a game-changer, significantly cutting down EV acquisition costs and enhancing overall attractiveness.

He added, “Strategic promotion of ICE+EV hybrid vehicles, especially in the smaller segment, is considered vital for achieving economies of scale. State policies, supported by the Central Government, are anticipated to incentivise this through investment policies and centrally sponsored schemes. The targeted implementation of PLI schemes for EV charging companies remains a key focus. Ongoing support, including tax deductions for EV purchasers and extension of FAME-II subsidies or the potential introduction of FAME-III, underscores the unwavering commitment to a green transition.”



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- 25 Viewpoints of Corporate Captains on Skilling
- Rankings of Construction, Building Material, and Equipment Companies in India

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Government bets on infra

The upcoming interim budget is likely to see higher capital expenditure on infrastructure, in line with the past three years, with a focus on green investment to meet the demand for earlier committed projects, and give a push to growth, create jobs, attract private investments and offset the impact of global uncertainty, said experts.

"The interim budget is a working document and I don't expect a great radical shift in policy. This means that the government will continue to maximise public expenditure on infrastructure, both core and social", said Vinayak Chatterjee, founder, The Infravision Foundation. He said the government needs to continue higher spending on infrastructure if it aspires for gross capital formation on infrastructure to be 8 to 9 per cent of GDP.

According to the Confederation of Indian Industry, rationalisation of subsidies, revenue augmentation and simplification of taxes could allow the government to increase the capex by 20 per cent to Rs 12 lakh crore. While this will be a moderation from growth in the last two years, it compares well with 12 per cent growth in the pre-pandemic period (2015-16 to 2019-20), it said.

"While the government is expected to continue with capex on infrastructure, with a major chunk going to roads and railways, I foresee asset monetisation substantially enhancing the funding for new projects, especially roads", said **Jagannarayan Padmanabhan, global head-transport, mobility and logistics at CRISIL Market Intelligence and Analytics.**



According to Padmanabhan, the ability to take market risks and the willingness of the banks to fund infrastructure projects are the key challenges ahead.

"India is at an important inflexion point and given the current global

Moving beyond infrastructure

Post-elections, the time will be ripe to move beyond infrastructure, with a bold 25-year vision to forge self-reliance in Indian CE Ecosystem. These policies must foster the growth of Indian companies, competitiveness against foreign onslaught, and sustainability of the profit pool in this sector.

- Tariffs on imported engineering goods to make them more expensive compared to locally produced items, like ones we have seen in the automotive industry, enable the indigenisation of technologies and create a level playing, specifically regarding imports from China.
- Providing financial support or preference in govt business to local engg biz to enhance their competitiveness and promote innovation.
- Facilitate the transfer of technology and knowledge from more advanced industries or countries to local engineering businesses.
- Invest in education and skills development programs to ensure a highly skilled and competitive workforce in the CE sector.
- Encourage the development of industrial clusters or special economic zones focused on the CE industry.
- Semi-urban & rural infrastructure-led initiatives must promote entrepreneurship and self-employment opportunities at the grassroots level in the country.

In the upcoming budget, we expect the Government to continue to focus on NIP projects and eagerly look forward to a boost in subsidies for low-cost housing in the next FY. We are also excited by Prime Minister Narendra Modi's announcement about India's intention to bid for the 2036 Olympics. We believe this will be a landmark event that will give a fillip to the Indian infrastructure story.

Shubhabrata Saha, MD & CEO, Ajax Engineering



developments and associated headwinds, the government should continue to lay major thrust on public capex (on physical, social and digital infrastructure) in the forthcoming budget", said the Federation of Indian Chamber of Commerce and Industry.

The government provided a budgetary allocation of Rs 10 lakh crore in 2023-24, Rs 7.5 lakh crore in 2022-23 and Rs 5.54 lakh crore in 2021-22. India aims to become a \$5 trillion economy by 2025.



Rahul Garg, Founder & CEO, Moglix, said, "India is all set to touch USD 4 trillion in real GDP in 2024. The union budget 2024 is likely to sustain the infrastructure spending spree. The full budget in July is likely to see a fiscal

expansion. I expect a greater approved budget for NHAI to reduce borrowing and therefore road development project costs. Also, I expect a higher outlay on local manufacturing of railway coaches for Amrit Bharat and Vande Bharat trains, development of railway stations, airports, and ports. Combined with an interest rate cut by the RBI the budget will be one among a long series of budgets for transforming India's manufacturing and infrastructure sectors and push for India's green transition. The startup revolution in India has taken off in a big way and a select few matured startups have grown sufficiently to go public. The honorable FM may like to consider the simplification of the regulatory framework for IPOs, for startups to leverage the power India's equity markets."



SUSTAINABILITY AND INNOVATION: THE KEY DRIVERS

The construction industry is a major contributor to climate change, so there is a growing demand for eco-friendly construction methods and materials. By combining sustainability and innovation in technology, India can create a world-class infrastructure system that can support its economic growth and social progress, writes **VG Sakthikumar, Chairman and Managing Director, Schwing Stetter India.**

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Infrastructure, investment, innovation, and inclusion are all important factors for economic growth. Some of the trends driving changes in infrastructure are:

- **Digitalisation:** The use of digital technologies, such as the Internet of Things (IoT), artificial intelligence (AI), and blockchain, is transforming the way infrastructure is designed, built, and operated. For example, IoT sensors can be used to monitor the condition of infrastructure assets in real time, and AI can be used to optimise traffic flows and energy usage.
- **Sustainability:** There is a growing focus on building sustainable infrastructure that minimises environmental impact. This includes using renewable energy sources, reducing water consumption, and designing infrastructure that is resilient to climate change.
- **Collaboration:** Infrastructure projects are becoming increasingly complex and require collaboration between different stakeholders, such as governments, businesses, and civil society. This is necessary to ensure that projects are delivered on time and within budget, and that they meet the needs of all stakeholders.
- **Public-private partnerships:** PPPs are becoming an increasingly popular way to finance and deliver infrastructure projects. PPPs involve the private sector investing in and operating infrastructure assets, with the government providing some level of support. As the world becomes more interconnected and complex, the need for resilient, sustainable, and inclusive infrastructure will only grow.

Role of CE in economic growth

The construction equipment (CE) industry is a key driver of economic growth and development. It provides the machines and tools that are essential for building roads, bridges, buildings, and other infrastructure. The industry is also a major employer, providing jobs for millions of people around the world.

The construction equipment industry is constantly evolving, with new technologies and innovations being introduced all the time. These innovations are helping to make construction more efficient, productive, and sustainable.

One of the most important trends in the construction equipment industry is the increasing use of digital technologies. Digital technologies, such as the Internet of Things (IoT), artificial intelligence (AI), and machine learning, are being used to improve the design, construction, and operation of infrastructure projects. For example, IoT sensors can be used to monitor the condition of infrastructure assets in real time, and AI can be used to optimise traffic flows and energy usage.

Another important trend is the growing focus on sustainability. The construction industry is a major contributor to climate change, so there is a growing demand for sustainable construction methods and materials. The use of renewable energy sources, recycled materials, and energy-efficient technologies is becoming increasingly common in the construction industry.

The construction equipment industry is also facing a number of challenges. One of the biggest challenges is the shortage of skilled labour. The industry is facing a retirement wave, as many experienced workers are reaching retirement age. This is creating a shortage of skilled workers, which is making it difficult to complete construction projects on time and within budget.

Another challenge facing the construction equipment industry is the



rising cost of raw materials. The cost of steel, concrete, and other raw materials has been rising in recent years, which is putting pressure on construction costs.

Despite these challenges, the construction equipment industry is expected to grow in the coming years. The global construction market is expected to reach \$17.5 trillion by 2030, and the demand for construction equipment is expected to grow along with it.

On eco-friendly path of growth

Sustainable infrastructure is not only a necessity for the environment, but also a catalyst for socio-economic development. By investing in sustainable infrastructure, India can bridge the gap in socio-economic disparities, create an opportunity for inclusive growth, and help India achieve its economy goals and build a better nation for everyone. Sustainable infrastructure can also generate positive impacts on health, education, employment, and poverty reduction. Therefore, it is imperative that India moves from short-term optimisation to achieving long-term goals and focuses on sustainability as a critical factor in its infrastructure development.

However, sustainability alone is not enough to meet the growing demand and challenges of the infrastructure sector. India also needs to embrace innovation in technology and leverage

the potential of infra-tech and manufacturing-tech to build better and faster. Innovation in technology can help in shaping the transition to a more resilient, efficient, and affordable infrastructure system. It can also create disruption and transformation in the infrastructure industry and enable new business models and opportunities.

Therefore, it is essential that infrastructure leaders focus on investing in innovation and fostering a culture of creativity and experimentation.

Summing up

In conclusion, sustainable infrastructure and innovation in technology are the two key drivers for the development of the infrastructure sector in India. By combining these two elements, India can create a world-class infrastructure system that can support its economic growth and social progress. India can also become a global leader and a role model for other countries in building a more sustainable and prosperous future for everyone.



ABOUT THE AUTHOR
VG Sakthikumar, Chairman and Managing Director of SCHWING Stetter India, is responsible for Schwing's operations in India, ASEAN, and Africa, including general management, operations, sales, and support for the Ready-Mix Concrete (RMC) industry. He has more than 30 years of business experience in the RMC and construction machinery business.



REWINDING UP INNOVATION

With India implementing stricter emission standards for vehicles, the demand for diesel engines for construction equipment is increasing, leading to the development and adoption of more fuel-efficient and environmentally friendly engines.



POWERING PROGRESS

The article explores the reasons behind the increasing usage of diesel engines in CE, their impact on performance and efficiency, and the technological advancements shaping the future of construction machinery.

In the realm of construction, where power and reliability are paramount, diesel engines have emerged as the backbone of heavy-duty equipment. Over the years, the construction industry has witnessed a significant surge in the adoption of diesel-powered machinery, revolutionising the way projects are executed.

Diesel engines have been a staple in the construction industry for decades, owing to their unmatched power and fuel efficiency. Traditionally, construction equipment relied on

gasoline engines, but the need for more robust and fuel-efficient alternatives led to the widespread adoption of diesel power. Today, diesel engines power a diverse range of construction machinery, from excavators and bulldozers to cranes and generators.

Speaking on the salient features of

Cummins engines, **Antonio Leitaó**, Vice President – Off Highway, Engine Business & Europe ABO Leader, Cummins Belgium, said, “We are excited about our products, particularly the engine lineup. We have various options, including a new 10-litre engine designed and manufactured in India. This engine is a state-of-the-art model focusing on fuel economy, efficiency, and overall cost of ownership. Additionally, we offer engines in 15 litres, 6.7 litres, and 4.5 litres, with a focus on meeting industry needs. Our primary focus is on total cost of ownership (TCO) for our customers. We strive to improve fuel efficiency, extend oil change intervals, and provide a robust distribution network across India. This ensures our customers are well-served and can rely on our engines for their diverse needs.”

He added, “Our collaboration with OEMs is centered around the TCO concept. We aim to make integration seamless for manufacturers, ensuring our engines can be easily incorporated into their machines. This not only enhances productivity but also aligns with our commitment to providing efficient and innovative solutions to our customers.”

Says **Anurag Pai**, Regional

Marketing Manager, South Asia,



Antonio Leitaó
Vice President – Off Highway, Engine Business & Europe ABO Leader, Cummins Belgium



Anurag Pai
Regional Marketing Manager, South Asia, Perkins Engines

Perkins Engines, “We recently launched CPCBIV+ certified engines. This aligns with India’s upcoming emission norms, and we are proud to introduce a brand-new product in response to this regulation. The 18.1-litre engine, unveiled on the inauguration day of Excon, reflects our commitment to sustainability and cleaner emissions. The 2806FA-E18TAG1 platform provides excellent cold load acceptance and meets ISO 8528-5 class G2 performance. Steady state stability at constant speed and load achieves ISO8528-5 class G3 performance. This performance makes the 2806FA ideally suited to a wide range of electric power applications. From a stationary prime source of power to a mobile unit serving the rental sector, the 2806FA performs seamlessly, generating dependable power for everything from jobsites to critical installations including hospitals and data centres.”

He added, “The CPCBIV+ is in line with the government’s emphasis on lowering carbon footprints. As technology advances, we understand the need for cleaner energy and emissions. This new engine reduces emissions by almost 50 per cent, covering particulate matter, NOx, and more. We are continually upgrading our products to align with such trends. The CPCBIV+ signifies a significant reduction in emissions, approximately 50 per cent. Achieving this requires structural and design changes, emphasising cleaner emissions through robust after-treatment processes in the exhaust pipeline.”

Starting in the first quarter of 2024, Caterpillar will develop a transient-capable system for off-highway applications. The project will demonstrate how state-of-the-art control systems and electric-hybrid components can help hydrogen-fuelled engines meet or exceed the power density and transient performance of traditional diesel engines.

Caterpillar will serve as the prime contractor on the project, providing

engine research and development as well as system integration. As the project progresses, other industry and academic collaborators will be brought into the program to provide additional specialist expertise. The initiative will be delivered at Caterpillar facilities in Chillicothe, Ill., and San Antonio, Texas.

Unveiled at the CONEXPO-CON/AGG 2023 construction exhibition in March, diesel-powered versions of the Cat C13D engine offer eight power ratings from 456 to 690 hp (340 to 515 kW) with up to 3,200 Nm of peak torque. It provides up to a 20 per cent increase in power and up to 25 per cent more low-speed torque than the previous generation of Cat diesel engines in its power class.

The inline, six-cylinder Cat C13D enables the use of renewable liquid fuels such as 100% HVO, B100 Distilled Biodiesel, and even up to B100 Standard Biodiesel by working with the local Cat dealer*. In addition to using hydrogen, its core architecture is designed for the future development of spark-ignited natural-gas capabilities.

Advantages of diesel engines in CE

Power and torque: Diesel engines are renowned for their high torque and power output, making them ideal for heavy-duty applications. Construction equipment often faces challenging terrains and hefty workloads, requiring robust engines that can deliver consistent performance. Diesel engines excel in providing the necessary muscle to tackle demanding construction tasks.

Fuel efficiency: Fuel efficiency is a critical factor in the construction industry, where projects often entail long hours of operation. Diesel engines are inherently more fuel-efficient than their gasoline counterparts, allowing construction companies to optimize their operational costs and reduce fuel consumption.

Durability and longevity: The

rugged nature of construction sites demands machinery that can endure harsh conditions. Diesel engines are known for their durability and longevity, requiring less maintenance compared to gasoline engines. This characteristic reduces downtime and enhances the overall reliability of construction equipment.

Adaptability to varied applications: Diesel engines are versatile and can adapt to a wide range of construction applications. Whether it’s digging, lifting, or compacting, diesel-powered equipment can handle diverse tasks on the construction site. This adaptability makes diesel engines a preferred choice for construction professionals seeking a multifunctional solution.

Energy density: Diesel fuel possesses a higher energy density than gasoline, meaning it contains more energy per unit volume. This results in more power being generated from a smaller quantity of fuel. In the construction industry, where space constraints are common, the higher energy density of diesel fuel proves advantageous.

Environmental considerations and emissions reduction

While diesel engines offer undeniable advantages in terms of power and efficiency, concerns about their environmental impact have led to increased scrutiny. Diesel engines emit nitrogen oxides (NOx) and particulate matter, contributing to air pollution. In response, the construction industry has been actively exploring ways to mitigate these environmental effects.

Emission standards and regulations: Governments and environmental agencies have implemented stringent emission standards for construction equipment. These regulations aim to limit the number of pollutants released by diesel engines. The adoption of cleaner diesel technologies, such as advanced exhaust after-treatment systems, has become pivotal in meeting these standards.

Alternative fuels and hybrid technologies: The construction industry is witnessing a shift towards alternative fuels and hybrid technologies as part of sustainability efforts. Biofuels, electric hybrid systems, and hydrogen-powered engines are being explored as viable alternatives to traditional diesel power. These innovations aim to reduce the carbon footprint of construction equipment and align with global initiatives for a greener future.

Technological advancements in diesel engines

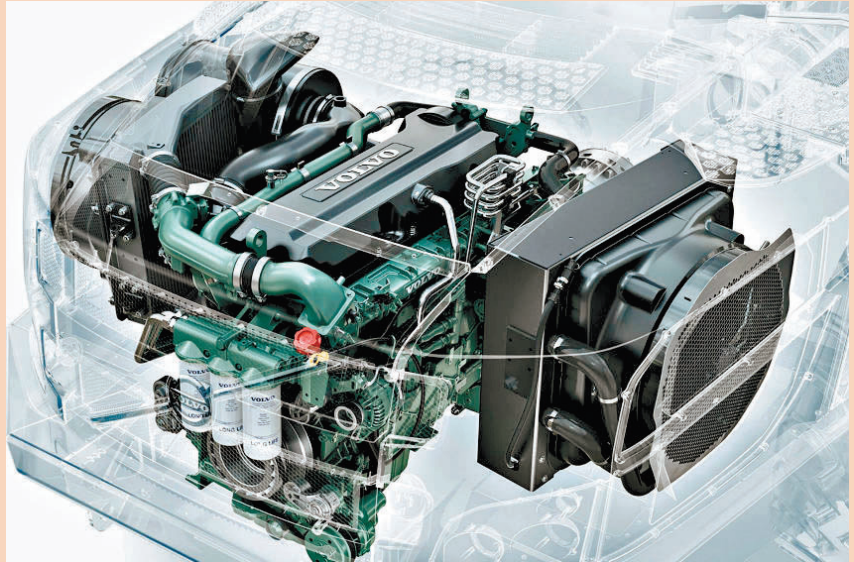
As the construction industry evolves, so do the technologies driving diesel engines. Manufacturers are investing heavily in research and development to enhance the performance, efficiency, and environmental impact of construction machinery.

Advanced engine management systems: Modern diesel engines are equipped with sophisticated engine management systems that optimise fuel combustion, monitor performance, and reduce emissions. These systems contribute to increased efficiency and compliance with stringent emission standards.

Telematics and connectivity: The integration of telematics and connectivity features in construction equipment allows for real-time monitoring and data analysis. Fleet managers can track fuel consumption, engine health, and overall machine performance, enabling proactive maintenance and improving overall efficiency.

Tier 4 and beyond: Emission standards such as Tier 4 and Stage V have driven the development of cleaner diesel engines. These standards mandate the use of advanced technologies, including diesel particulate filters (DPF) and selective catalytic reduction (SCR) systems, to significantly reduce emissions of NOx and particulate matter.

Hybridisation and electrification:



The construction industry is witnessing a growing trend towards hybrid and electric construction equipment. Hybrid systems combine diesel engines with electric motors to optimize fuel efficiency, while fully electric machines eliminate on-site emissions altogether. These innovations mark a significant step towards a more sustainable future for construction machinery.

Future outlook

Despite the numerous advantages of diesel engines in construction equipment, challenges persist. The industry is at a crossroads, balancing the demand for powerful and efficient machinery with the imperative to minimize environmental impact. Manufacturers, in collaboration with regulatory bodies and environmental advocates, are working towards innovative solutions.

Striking the right balance between power output and emissions reduction remains a formidable challenge. Manufacturers are tasked with developing engines that meet the demanding power requirements of construction equipment while adhering to increasingly stringent emission standards.

The rapid advancements in alternative technologies, such as electric and hydrogen-powered machinery, pose both opportunities

and challenges. While these technologies promise cleaner operations, the construction industry must navigate the transition, addressing infrastructure limitations and ensuring the economic feasibility of adopting new power sources.

The initial cost of diesel-powered construction equipment is often lower than that of their alternative counterparts. However, the long-term cost considerations, including fuel expenses and maintenance, may vary. As alternative technologies mature, a comprehensive cost-benefit analysis will play a crucial role in shaping the future landscape.

Conclusion

Diesel engines have been a driving force in the construction industry, providing the power and efficiency necessary for tackling complex projects. As the industry confronts environmental challenges, innovations in diesel engine technology, coupled with the exploration of alternative fuels and hybrid solutions, are shaping a more sustainable future. The construction sector's journey towards cleaner and more efficient machinery reflects a broader commitment to balancing progress with environmental responsibility, ensuring that construction continues to build the future without compromising it.





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"INDIA IS A CRITICAL MARKET FOR CUMMINS."

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Antonio Leitaó, Vice President – Off Highway, Engine Business & Europe ABO Leader, Cummins Belgium, speaks on the company's product lineup and the salient features of these engines.

Please share more information on your product range.

We are excited about our products, particularly the engine lineup. We have various options, including a new 10-litre engine designed and manufactured in India. This engine is a state-of-the-art model focusing on fuel economy, efficiency, and overall cost of ownership. Additionally, we offer engines in 15 litres, 6.7 litres, and 4.5 litres, with a focus on meeting industry needs.

What are the salient features of these engines?

Our primary focus is on Total Cost of Ownership (TCO) for our customers. We strive to improve fuel efficiency, extend oil change intervals, and provide a robust distribution network across India. This ensures our customers are well-served and can rely on our engines for their diverse needs.

Cummins serves a wide range of industries. What would be the total market share in construction space?

Among the many strengths that help us to meet our goals is the balance



we strike between the needs and interests of all our stakeholders, including customers, employees, shareholders, communities, partners and suppliers. Cummins has been one of the leading global power solutions manufacturers for more than 103 years. We have been present in India for over six decades, marked by the successful integration of our global and local technological expertise across a diverse range of off-highway applications. We remain committed and focused on delivering tailored, innovative solutions to cater to the local market and diverse customer needs. This dedication drives us to develop fit for market products - that are not just robust and reliable but

also competitively positioned. Our product portfolio ranges from 4 litre to 15 litre engines to cover the wide variety of construction and agricultural equipment.

How does the company collaborate with OEMs to enhance productivity and the product of the engine?

Our collaboration with OEMs is centered around the Total Cost of Ownership (TCO) concept. We aim to make integration seamless for manufacturers, ensuring our engines can be easily incorporated into their machines. This not only enhances productivity but also aligns with our commitment to providing

“

We strive to improve fuel efficiency, extend oil change intervals, and provide a robust distribution network across India.

”



efficient and innovative solutions to our customers.

How important does R&D play in manufacturing engines?

Research and Development (R&D) is critical for Cummins, with approximately 4 per cent of our turnover dedicated to it. We invest significantly in improving our internal combustion engines, ensuring they meet global standards and emissions requirements. Innovation is key for us, and we strive to develop engines that set industry benchmarks.

What challenges and opportunities do you foresee for components and accessories in the construction equipment market?

While we see challenges, such as the need for substantial investments in innovation and emissions control, we also view them as opportunities. Our diverse product portfolio, including the introduction of new engines like the 10-litre model, positions us well to cater to various segments within the construction equipment market. The key challenge

“

We invest significantly in improving our internal combustion engines, ensuring they meet global standards and emissions requirements. Innovation is key for us, and we strive to develop engines that set industry benchmarks.

”

lies in balancing growth with the required investments.

What are your plans for the next year?

Looking ahead to 2024, we remain optimistic about growth opportunities in India, where we continue to invest significantly, leveraging our position in the market.

While not all products are currently manufactured in India, we are actively working towards expanding our local production. For instance, the 10-litre engine is in progress, and we are investing in manufacturing it in India.

We aim to strengthen our position in the Indian market by producing a broader range of engines locally to better serve our customers.

How important is after-sales support, and what is Cummins' strategy in this regard?

After-sales support is of utmost importance for Cummins. With a history of over 60 years in India, we have a robust network of 18 dealers across the country, ensuring comprehensive support and service. Our strategy revolves around maintaining a strong presence, providing excellent after-sales support to our customers, and continuing to grow and invest in our presence in India.

Any closing thoughts?

I'd like to emphasise that India is a critical market for Cummins. We see the increasing investment in the country as a positive trend, and we aim to support our global customers who are investing in India. Our focus on innovation, customer support, and local manufacturing positions us for continued growth and success in the Indian market.



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"THE CPCBIV+ CERTIFIED ENGINES EMPHASISE ON LOWERING CARBON FOOTPRINTS."

Anurag Pai, Regional Marketing Manager, South Asia, Perkins Engines.

Please highlight any specific product launches or developments Perkins is currently undertaking?

The most exciting development for us is the launch of the CPCBIV+ certified engines. This aligns with India's upcoming emission norms, and we are proud to introduce a brand-new product in response to this regulation. The 18.1-litre engine, unveiled on the inauguration day of Excon, reflects our commitment to sustainability and cleaner emissions.

The 2806FA-E18TAG1 platform provides excellent cold load acceptance and meets ISO 8528-5 class G2 performance. Steady state stability at constant speed and load achieves ISO8528-5 class G3 performance. This performance makes the 2806FA ideally suited to a wide range of electric power applications. From a stationary prime source of power to a mobile unit serving the rental sector, the 2806FA performs seamlessly, generating dependable power for everything from jobsites to critical installations including hospitals and data centres.

What trends are you currently observing in the industry, and how does Perkins align with these trends?

The CPCBIV+ is in line with the government's emphasis on lowering carbon footprints. As technology advances, we understand the need for cleaner energy and emissions. This new engine reduces emissions by almost 50 per cent, covering particulate matter, NO_x, and more. We are continually upgrading our products to align with



such trends.

The CPCBIV+ signifies a significant reduction in emissions, approximately 50 per cent. Achieving this requires structural and design changes, emphasising cleaner emissions through robust after-treatment processes in the exhaust pipeline.

Can you share insights into Perkins' approach to technology and R&D, including annual investments?

I can't disclose specific investment figures. Perkins, being a global company, allocates resources for R&D across various regions. Our focus is on adapting and developing products for different markets. The CPCBIV+ certified engines, for instance, will be manufactured in India, near Bengaluru, with production starting in April 2024.

How does Perkins address the challenges posed by evolving regulations and technologies in the industry?

Perkins has a rich history of navigating emission norms, from CPCB-I to CPCBIV+. This requires

extensive R&D efforts, and our global expertise allows us to bring advanced technology to India. We understand the challenges, and our continuous innovation reflects our commitment to meeting and exceeding regulatory standards.

Can you shed light on Perkins' market share and its position in the industry?

While I don't have the exact market share figures, I can confidently say that Perkins is growing. Our manufacturing facilities are busy fulfilling orders, and our products are making their mark in over 76 countries. The industry's positive response indicates our upward trajectory.

Could you elaborate on Perkins' broader involvement in the energy solutions sector, considering the shift towards electric power and alternative fuels?

Perkins is more than an engine manufacturer; we are a complete energy solutions provider. Our tagline—Together, we power ahead—reflects our focus on sustainability. We are exploring various options, including batteries, hydrogen, and hydrotreated vegetable oil, to cater to diverse energy needs.

Looking ahead, how was 2023 for Perkins, and what are the plans for 2024?

The year 2023 was a fantastic year for us, marked by significant growth in consumption and infrastructure. The CPCBIV+ launch played a pivotal role.





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HOW DOES DIESEL ENGINE HELP US

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Whether keeping farms powered or fuelling massive mining equipment, advanced diesel engines are reducing emissions without sacrificing productivity.



Whether you realise it or not, diesel engines are integrated in the way we eat, commute, and even keep safe. With environmental regulations tightening and pressures from public concern rising, will diesel engines continue to drive our economy? If they do, are we better or worse off for it?

This article will explore the way advanced diesel engines help our world today. We'll break down how the advantages and disadvantages of diesel engines will impact their use going forward.

What are the uses of diesel

in daily life?

Since 1897, diesel engines have shaped our world. To fully understand the importance of diesel, it helps to see just how many industries are powered by vehicles with diesel engines.

On-highway

When most people think of diesel engines, they think of eighteen-wheelers hauling goods down the highway. While this is a common application, many other vehicles rely on the durability and efficiency of diesel engines.

- **Trucking:** The trucking industry relies heavily on four types of advanced diesel vehicles—

vocational, light commercial, medium-duty and heavy-duty:

- o Vocational vehicles include refuse trucks, dump trucks, concrete mixers and other vehicles are high-idle, low average speed applications.
- o Light commercial vehicles like vans, pickup trucks and utility vehicles need the high power-to-weight ratio that diesel engines provide.
- o Medium duty vehicles like box and flatbed trucks require the power to get products where they need to be—on time and without breakdown.
- o When it comes to the icon of

shipping, heavy-duty vehicles thrive with diesel power, some engines with the capacity to provide 565 hp and 2050 lb-ft torque. This includes vehicles from eighteen-wheelers all the way to heavy-haul vehicles.

- **Public transit:** Some transit and school buses depend on the reliability of advanced diesel engines to run each and every route smoothly and efficiently.
- **First responders:** Concern about whether or not their engine will start is the last thing first responders need when responding to emergency calls.
- **Defence:** Whether keeping equipment running on the battlefield or along supply chains, military companies across the globe use diesel engines. See how Cummins Inc. powers the U.S. Army with opposed-piston technology that boosts power and heat rejection capabilities.

Off-highway

You don't have to stay on the highways to see diesel engines in action. Whether keeping farms powered or fuelling massive mining equipment, advanced diesel engines are reducing emissions without sacrificing productivity.

- **Agriculture:** When it comes to helping farmers move food from their fields to our tables, no one knows how to keep their equipment up and running quite like Cummins. The company has powered agriculture for over 100 years with over one million Cummins engines currently running for the world's farmers. Recent innovations deliver higher torque so small tractors and sprayers can conquer even the toughest field conditions.
- **Construction:** When it comes to construction, time is money—so are resources. Advanced diesel engines like the Cummins X12 and X15 increase load capabilities and

use less fuel.

- **Mining:** Advanced diesel engines like the QSK60 offer more uptime and productivity while lowering emissions, keeping mines operating and moving toward a greener future.

Diesel fuel isn't just for powering engines, either. Other uses for diesel fuel include both commercial and residential generators, so you can keep your lights on and equipment running when the grid shuts down.

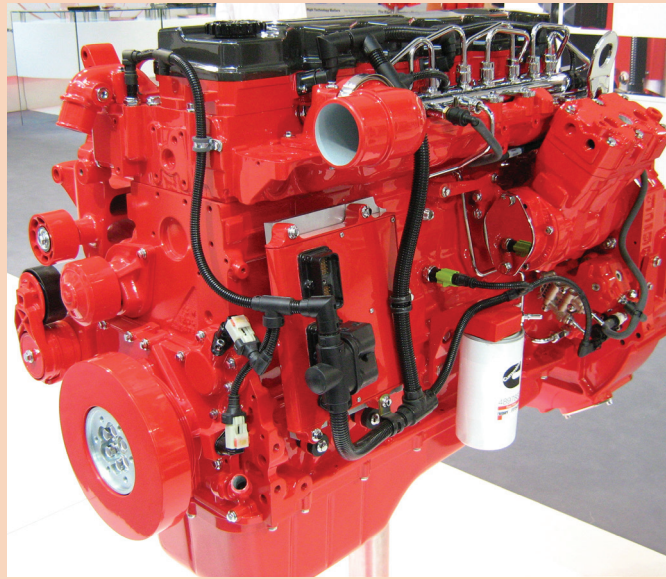
Are engines powered by diesel fuel better than those powered by gasoline? What about compared to other fuel alternatives? These are some of the many frequently asked questions about diesel engines.

Overcoming the disadvantages with advanced engines

Environmental: Does diesel help the environment? It all depends on what you compare it to. Diesel engines are more fuel efficient than gasoline engines, so they release less emissions per mile. But when compared to alternative fuel sources like natural gas and hydrogen, diesel engines pollute more. Through Cummins' Destination Zero mission, Cummins engines are reducing greenhouse gasses and air pollution. How are they doing it? By improving powertrain components, their engines emit less CO₂ (GHGs and NOx) and CH₄. They are also expanding our technology portfolio to support hydrogen, near zero natural gas, and electric power options.

Advantages of advanced diesel engines

- **Reliability:** Who likes turning their key and listening to their engine sputtering before failing to start? Diesel engines are very



reliable, having fewer parts like spark plugs that can break. That also means that maintenance is quicker and cheaper for diesel engines. Diesel engines can also run for over 1,000,000 miles. For example, gasoline engines can run for about 200,000 miles.

- **Efficiency:** While diesel fuel costs more at the pump than gasoline, you get what you pay for. The Audi A3, Volkswagen Jetta and Chevrolet Cruze gas powered models were compared to their diesel counterparts. Diesel engines gave up to 8 more mpg in the city and 10-12 more mpg on the highway. Why does diesel have better fuel economy? It comes down to engine construction—diesel engines use denser fuel and operate on lower RPMs.

Diesel engines are here for the long-haul with help from new, key innovations shaping the engine we know today. With Cummins, you can count on the most advanced diesel engines that make no compromises for functionality or efficiency. Cummins offers dependable engines for various needs, be it reliable eighteen-wheelers, rugged farm equipment or upgraded firetruck fleets.

Article courtesy: Cummins

SAVING FROM UNTIMELY ENGINE TROUBLES

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A decent periodic inspection with an in-depth analysis will allow you to locate the potential problem with the engine before it heads for a major failure.



Our industry runs on mechanical components. Quite literally, and figuratively, they are essential cogs that ensure that our economy is always up and running. Factories and warehouses come to a halt if their machines stop, even for a few minutes, during the day. This makes engines an essential component in the system.

Thus, a routine and timely engine

maintenance regime is essential, to reduce your running costs and prolong the life of your engine. Generally, any engine can break down due to normal wear, which is expected and predictable. However, it can also be abnormal wear that might be the result of improper maintenance or operating techniques, adversely affecting your productivity and operating costs.

To ensure a longer life for the engine and its efficient performance,

it's advisable to plan preventative maintenance schedules and follow regular engine monitoring practices. Here are a few tips that will help keep your engine in excellent working condition, all the while helping you plan for and predict normal wear – and avoid abnormal wear.

Inspections and regular checks

A decent periodic inspection with

an in-depth analysis will allow you to locate the potential problem with the engine before it heads for a major failure. When this is identified, it saves you from major repairs and significant costs later.

The operator should follow a daily routine of visual inspection and operational check of the engine. Engines indicate problems through warning signs like overheating, smoke, power loss or hard start, it's equally important for an operator to understand these indicators and take the necessary actions.

Scheduled maintenance prolongs engine life

To ensure longer life of the engine, regular maintenance is a must. It should be carried out as per the recommended schedules and guidelines issued by engine or machine manufacturers. Sometimes, a missed service interval can affect the performance of an engine, which might not be noticed unless it gets worse or leads to the failure of a vital part.

As performance checks required vary by operating conditions and engine type, it is wise to ensure the checks and frequency are right for your engine. Also, the regular checks that you need to carry out fall into daily and weekly categories, along with regular servicing and specified intervals. Generally, engine checks are scheduled as per the calendar time, or for the hours that the engine has been running. So, the engines in constant use should be checked more often and vigorously than those used less frequently.

Importance of good oil quality

Oil is another important parameter for the smooth functioning of engines. Using poor quality oil for an engine can lead to issues with viscosity, bringing down its life. This can also lead to operational or start-up problems, thermal breakdown, corrosion or major wear.



Generally, all fuels contain some amount of water in suspension. Water in fuel for off-highway engines comes from either condensation within fuel storage, the fuel tank, free water from agitation or poor fuel housekeeping.

Significant levels of water can cause problems such as corrosion of fuel systems leading to excessive injector wear, filter plugging, sudden engine cooling, reduced energy and lower power. Thus, it is important to drain out the water periodically. Always make sure the fuel storage tanks are sealed correctly and allow settling time after a fuel delivery. Ensure you avoid condensation from warming/cooling and ensure tanks are sealed to prevent rainwater contamination. A little time spent every day draining water from the water separator on the fuel filter can save money on replacing damaged injectors.

Quick daily checkup tips

Operators need to check following daily, as part of good maintenance practice to protect your machine investment:

- Cooling system coolant level
- Air pre-cleaner, empty if necessary

- Engine oil level check
- Fuel system primary filter check
- Drain water from the water separator
- Driven equipment, belts and electrical system check

Walk-around inspection of the machine, especially guards and drive system. Technology has given an added benefit to today's engines, making them tough and dependable. However, it's a must for an operator to carry out daily checks, which should include a visual review, operational inspection, and routine water drain. These checks, backed with in-depth weekly and monthly inspections of your engine, will help flag potential troubles before they lead to major wear. You may already be aware, but if you are in tune with your engine, it will generally give you an advance warning if something isn't quite right. All this will help you ensure a stronger engine life and constant high performance.



ABOUT THE AUTHOR:
Julian Wood, aftermarket product manager at Perkins Engines Company.

BREATHING LIFE INTO PROJECTS

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Air compressors are essential in the construction, maintenance, and repair work at infrastructure project sites.



India's growth in 2023 and beyond will be driven by significant strides in key sectors, with infrastructure development being a critical force aiding the nation's progress. The infrastructure sector in India has experienced considerable growth and development in recent years, driven by a combination of government initiatives, increased investment, and the need to support the country's growing economy. The growth in the infrastructure sector is essential for sustaining economic development and improving India's overall quality of life. As per the India Brand Equity

Foundation, the construction market is expected to reach \$1.42 trillion by 2027, expanding at a CAGR of 17.26 per cent during the 2022-2027 forecast period. This rapid growth is supported by new-generation tools and equipment that enable higher productivity at a lower operational cost. Air compressors, both stationary and portable, play a crucial role in the infrastructure sector, providing compressed air for pneumatic applications. These air compressors are essential in the construction, maintenance, and repair work at infrastructure project sites.

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

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

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

Here are some critical uses of air compressors in the infrastructure sector:

- **Pneumatic tools:** Air compressors power many pneumatic tools used in construction and maintenance work. These tools include pneumatic hammers, drills, wrenches, nail guns, and sanders.
- **Concrete and cement production:** In construction, air compressors operate equipment such as concrete pumps, cement mixers, and pneumatic vibrators. Compressed air helps convey and spray concrete, making construction more efficient.
- **Pavement maintenance:** Air compressors are used for tasks like crack sealing, pavement marking, and road surface repair. Pneumatic equipment is commonly employed for these applications.
- **Road construction and repair:** In road construction, air compressors are used to power equipment such as pneumatic rollers, which are used to compact and smooth the road surface.
- **Bridge construction:** Air compressors are used for drilling, piling, cutting, and maintenance work. They power tools like pneumatic bridge deck vibrators, concrete vibrators, and riveting machines.
- **Tunnelling and mining:** In infrastructure projects that involve tunnels and mining, air compressors are used to operate rock drills, tunnel boring machines, shotcrete machines for concreting tunnel surfaces, and other pneumatic equipment.
- **Cleaning and maintenance:** Air compressors are employed for cleaning and maintaining infrastructure, such as removing dust and debris from construction sites, equipment, and structures.
- **Bridge and dam maintenance:** Air compressors are used to maintain and repair infrastructure such as bridges and dams. They power tools for inspection, repair, and corrosion control.
- **Pipeline construction:** In the

construction of pipelines, air compressors are essential for tasks like trenchless drilling and pipe laying, de-watering, pigging, and sandblasting. They also power pneumatic drilling rigs and other equipment.

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

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



ABOUT THE AUTHOR:

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



ELGi Air Compressors keep noise levels at bay.

ELECTRIC VEHICLES: REVVING UP

For electric vehicles, CY23 recorded significant growth as the sales volume of electric vehicles (EVs) surpassed 1.5 million, a 50 per cent increase compared to CY22. Total EV volume sold was recorded at 1.53 million in CY23 compared to 1.02 in CY22. Growth was driven by the increasing adoption of EVs and several exciting new EV models across segments giving better options.

The overall EV share of auto sales in India has increased to 6.38 per cent in CY23 from 1.75 per cent in CY21, in just two years. Category-wise, 2W and 3W recorded growth of 37 per cent and 66 per cent, respectively, while PV was at 113 per cent and CV at 169 per cent given the lower base.

CY24 looks promising with the industry expecting to surpass sales volume of 2 million in CY24, underpinned by surging demand and sustained government support through incentives. However, investments in the EV ecosystem remain crucial for fostering EVs' massive adoption.

2W and 3W continue to drive EV volumes

The predominant share of EV sales in India is currently held by two-wheelers (2W) and three-wheelers (3W), collectively accounting for 90-95 per cent of the total electric vehicles (EVs) sold in India during CY23. In

contrast, the share of electric passenger vehicles (PVs) stands at 5 per cent, while commercial vehicles (CVs) occupy a minor fraction, falling below unity within the EV domain.

Despite the challenges confronting the EV industry – from insufficient EV charging infrastructure and concerns about battery capacity leading to range anxiety to elevated vehicle prices in comparison to internal combustion engine (ICE) counterparts, and policy revisions such as those witnessed in FAME II – the growth trajectory of EVs persists across various segments. The revision in the FAME II policy during 2023 posed a setback for the growth of 2W and 3W. However, the overall expansion of the EV market remained robust throughout CY2023.

Growth and demand to continue through CY24

The growth momentum is expected to continue in CY24, driven by the government's increased focus on electrification at both the Central and state levels, the potential extension of FAME II, the improving EV ecosystem with a significant increase in charging stations, the envisaged reduction in battery costs leading to the lower total cost of ownership (TCO) compared to ICE, and the development of new

models across categories, thus continuing to drive demand for EVs.

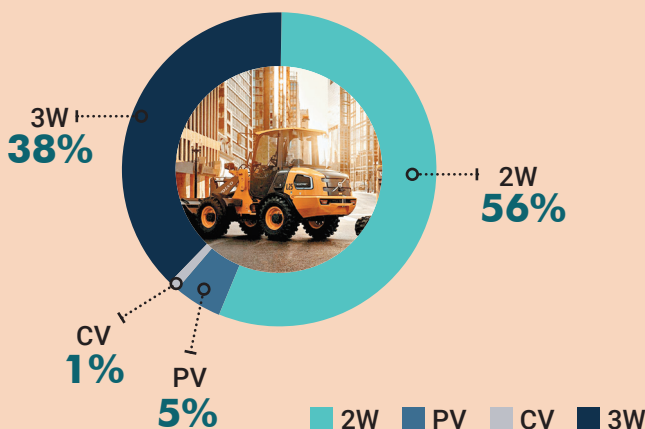
The continuation of the FAME II initiative is poised to bolster the demand for EVs. Increased incentives and subsidies further encourage consumers to adopt EVs, thus driving growth.

An increase in the number of EVs will promote sustainability and reduce carbon emissions, contributing to the government's environmental goals. The massive adoption of EVs can boost battery technology and infrastructure, further enhancing the EV ecosystem. These incentives reduce the upfront cost of vehicles, making them more attractive to consumers. As the industry evolves with new policies like the production-linked incentive (PLI) scheme, it is important to address existing concerns and ensure faster sustainable growth for the Indian EV sector.

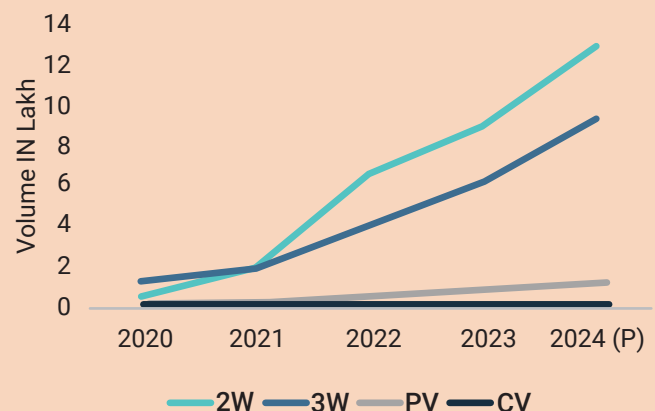
While CY23 was certainly a remarkable year for EV growth in India, demand and growth sustainability look promising even going forward. Continued government support through incentives and investments in bolstering the EV ecosystem remains crucial for the massive adoption of EVs. Breakthroughs in battery technology along with battery swapping and faster charging solutions can significantly boost the adoption of EVs.



CY23: Category-wise EV Sales



Category-wise EV Growth



Source: Centre for Monitoring Indian Economy (CMIE), Vahan, and CareEdge.



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KEY SESSIONS

Session 1

Building India as a Global Manufacturing Hub for Construction Equipment - Challenges & Opportunities

- Current State of Construction Equipment Industry in India
- Global Trends in Construction Equipment Manufacturing
- Government Policies and Initiatives
- Infrastructure Development and Its Influence

Session 2

Robust and Resilient Supply Chain Ecosystem: Driving Indigenization and Global Competitiveness

- Supply Chain Visibility and Collaboration
- Risk Management and Contingency Planning
- Indigenization Strategies
- Innovation and Technology Adoption

Session 3

Tech Advancement; Automation; Digitization; Zero Emissions in Const. Equipment Industry- Disruption & Way Forward

- Automation in Construction Equipment Sector
- Digitization in Construction Equipment Sector
- Zero Emissions and Sustainable Construction Equipments
- Training & Workforce Development

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"WE ARE COMMITTED TO STAYING AHEAD OF EMISSION STANDARDS."

Vasanth Thangavelu, General Manager – Marketing Deployment (Commercial), ExxonMobil Lubricants.

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Could you please elaborate on the key offerings for the construction and mining sector?

In our product lineup, we have a range of high-performance lubricants designed specifically for the construction and mining sector. These products are tailored to withstand severe conditions such as high temperatures, heavy loads, and harsh environments.

One notable product is our Mobil DTE 10 Excel™ Series, a hydraulic oil with high viscosity that extends oil change intervals and improves energy efficiency. Another is the Mobil Delvac 1™ ESP 5W-40, a synthetic lubricant offering fuel efficiency and extended engine life. We also have the XHP series, like the Mobilgrease XHP™ 220 Series, focusing on structural stability in harsh operating environments.

How crucial are lubricants in the maintenance of construction and mining equipment, and how do your products address these needs?

Lubricants play a vital role in the maintenance of equipment in the construction and mining sector. Our products are specifically engineered to withstand the challenging conditions these machines operate in, ensuring longevity, protection, and optimal performance. We work closely with equipment builders, incorporating advancements in technology to meet and exceed the evolving requirements of lubrication in these sectors.

Considering the growth in the



construction and mining sector in India, what role does your company aim to play, and how are you adapting to industry changes?

The construction and mining sector is witnessing significant growth in India. We are actively focusing on this market by aligning our product offerings with the evolving needs of the sector. Our goal is to provide lubricants that meet stringent norms and contribute to the reliable and efficient operation of equipment.

With the industry transitioning from BS-V to BS-VI emission standards, how is your company adapting, and what role does research and development play in this transition?

We are committed to staying ahead of emission standards. Our research and development efforts involve close collaboration with equipment builders to understand their modifications and technological advancements. For instance, we have introduced products like the Mobil Delvac Modern™ 15W-40 Advanced Fleet, designed to meet

low-emission, high-output engines, showcasing our commitment to evolving industry standards.

What additional services does your company provide to cater to customer needs?

In addition to our product range, we offer services such as Mobil ServSM Oil Analysis, Mobil ServSM IIoT Insights, and on-site services like filtration and moisture removal. These services are aimed at providing customers with a comprehensive solution, ensuring the optimal performance of our lubricants.

Could you provide an overview of your company's performance and growth outlook for the future?

We are pleased with our performance, experiencing growth beyond market averages. Our focus on key sectors like mining, steel, and manufacturing positions us well for the future. We see great potential in India and are dedicated to contributing to the country's growth with our performance lubricants.



For more information, visit www.mobil.in/business (Exxon Mobil Corporation has numerous affiliates, many with names that include ExxonMobil, Exxon, Esso and Mobil. For convenience and simplicity, those terms and references to "corporation", "company", "ExxonMobil", "EM", and other similar terms are used for convenience and may refer to one or more specific affiliates or affiliate groups.)

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Tata Motors introduces Turbotronn 2.0 engine

Tata Motors, India's largest commercial vehicle manufacturer, today introduced its technologically-advanced engine, Turbotronn 2.0, to deliver a new benchmark of excellence in trucking. Highly fuel efficient and reliable, this indigenously-developed, versatile engine will power Tata trucks in 19-42 tonne range for multiple applications across categories. Perfectly suited for rapidly growing e-commerce, logistics, parcel and courier segments, the Turbotronn 2.0 engine is designed to address specific needs expressed by customers; offers enhanced driving experience and are engineered to deliver robust performance with inherent benefits of lowering Total Cost of Ownership (TCO). It has been rigorously tested for over 30 lakh km and 70,000 cumulative hours across diverse duty cycles and harsh terrains. Fully compliant with the BS6 Phase 2 emission norms, the Turbotronn 2.0 is



platform-agnostic and offered with Signa, Ultra, LPT and cowl platform and comes with a warranty of six years/six lakh km.

A 5-litre turbocharged diesel engine, the efficient and versatile Turbotronn 2.0 is offered in multiple states of tune ranging from 180-204 PS and engineered to offer a flatter torque curve in the range of 700-850 Nm for better drivability. With longer oil drain and service intervals of one lakh km, its distinctive attributes ensure more vehicle uptime to generate higher revenues.

Introducing the Turbotronn 2.0, Rajendra Petkar, President and Chief

Technology Officer, Tata Motors, said "The Turbotronn 2.0 is one of our most advanced internal combustion engines. Engineered with latest technologies, it enables trucks to cover longer distances in shorter time. Its robust performance and high fuel efficiency has set new industry benchmarks for trucking in India."

As a comprehensive mobility solutions provider, Tata Motors commercial vehicles come with advanced features, efficient powertrains and richer value-additions. Fleet owners benefit from better fuel efficiency, lower operating costs, high vehicle uptime, real-time tracking and analytics through Tata Motors Fleet Edge. Its Sampoorana Seva 2.0 initiative provides unmatched vehicle lifecycle management services, including fleet management solutions, annual maintenance contract and roadside assistance amongst others.

Danfoss, Google tie-up on AI and energy efficiency



Danfoss and Google announced a strategic partnership to make use of the latest advances in artificial intelligence (AI) and promote energy efficient solutions in data centers.

Under the partnership, Danfoss, the Danish multinational engineering group, will use Google Cloud's generative AI capabilities to optimise the customer experience, streamline internal work processes and improve productivity across the organisation. This can be done,

for example, by using gen AI to collect and surface information, automate knowledge, generate product descriptions, and create solutions with chatbots in e-commerce.

As a global leader in energy-efficient solutions, Danfoss is working with Google to implement sustainable cooling systems for data centers and to design systems that reuse the excess heat produced by data centers. Danfoss Turbocor® compressors provide highly reliable, highly efficient solutions when expertly applied by OEM partners and are being installed by Google to improve the energy efficiency and decarbonise heating and cooling systems in data centers.

LAPP India's all-round wires — ÖLFLEX® WIRE MS



LAPP India, a leader in cable and connection technology, proudly announces the launch of ÖLFLEX® WIRE MS, an all-encompassing single core wire designed to revolutionise connectivity solutions across diverse industries and applications. Engineered with precision, these wires are making remarkable impact due to its high performance and reliability, offering versatility and an unique advantage in

its voltage range.

ÖLFLEX® WIRE MS product family signifies all-around single core wires, finding applications across various industries. Its adaptability and versatility make it a preferred choice for different wiring needs across the Asian market. ÖLFLEX® WIRE MS adheres to multiple standards – UL/CSA, EN Standard – making it a versatile choice for a range of applications.

Available in 1.05 (300V), 2.15 (600V), and 2.25 (1000V), ÖLFLEX® WIRE MS caters to diverse voltage requirements.



Hardeep Singh Puri inaugurates Praj's SAF Demo Facility

Hon. Union Minister Hardeep Singh Puri inaugurated Praj's Sustainable Aviation Fuel (SAF) demonstration facility at its R&D centre in Pune on January 20, 2024. Praj has developed a proprietary technology to process agricultural feedstocks for the production of SAF that can be blended with Aviation Turbine Fuel (ATF).

The hard to abate Aviation Industry is one of the largest consumers of fossil fuels and also an emitter of greenhouse gases (GHG). According to the India Brand Equity Foundation 2023 report, the government has set a target to operationalise 1000 UDAN routes and to revive 100 airports by 2024. Thus, India is the third largest and fastest-growing civil aviation market in the World. The low carbon SAF has a



significant role in helping India achieve its net zero goal targets by 2070.

During the inauguration ceremony, Hardeep Singh Puri, Hon. Minister of Petroleum & Natural Gas and Housing & Urban Affairs said, "This facility demonstrating indigenously developed technology for production of SAF is a testament to India's rising prowess in the global bioeconomy. Utilisation of Captive Agri-Resources for the production of Biofuels such as SAF is aligned with the government's goals

towards Atma Nirbhar Bharat and will go a long way in helping India achieve its energy self-reliance by 2047."

Speaking on the occasion, Dr. Pramod Chaudhari, Executive Chairman, Praj Industries said, "Inauguration of SAF demonstration facility is yet another milestone in Praj's pursuit of energy transition through Bioeconomy. Recently, we collaborated with IOCL and Air Asia India to successfully fly India's first commercial passenger flight with 1 per cent SAF produced at our bench scale setup that was blended with ATF. We truly believe in India's potential to be a hub for supplying SAF for the Global Aviation Industry and we stand committed to helping build SAF production capacities."

ELGi boosts AIRLAB Fitness with high-altitude training

Elgi Equipments has enabled AIRLAB Fitness, a Miami-based, cutting-edge fitness studio, to offer strength, conditioning, and HITT classes at altitude, accelerating endurance gains and expediting the recovery process for every customer. The simulated high-altitude training environment is powered by ELGi's EG37 Series screw air compressor within hypoxic air chambers from Australian-based Altitude Training

Systems (ATS), a pioneer in altitude technology.

The compressed air solution addressed AIRLAB's specific needs by providing excellent air composition, stability, and variability to replicate different altitudes and environments. ELGi's UPTiMe promise, and comprehensive, industry-leading warranty plans also ensured reliability, peace of mind, and ease of maintenance, permitting AIRLAB to focus on what they do best.

Kirloskar contributes to Ayodhya Mandir

Kirloskar Brothers Limited has contributed to the Majestic Shri Ram Mandir in Ayodhya with over 100 pumps. Kirloskar Brothers Limited (KBL), a renowned Indian pump manufacturing company, is proud to announce a contribution of over 100 pumps, playing a crucial role in the temple's water management system and fire safety infrastructure.

The pumps provided

by KBL encompass an energy-efficient range, including monobloc pumps, self-priming pumps and pressure-boosting pumps. These pumps will ensure efficient water supply throughout the sprawling temple complex, catering to the needs of devotees and maintaining a serene ambience. KBL has equipped the temple with its firefighting pumps.

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BorgWarner's electrification portfolio at SIAT

BorgWarner presents its latest electrification products at the Symposium on International Automotive Technology (SIAT) 2024, which will be held at the Pune International Exhibition and Convention Center, January 23-25, 2024. BorgWarner will showcase these products in booths 238 and 241 in zone C of the exhibition area. They will demonstrate high-voltage drivetrain innovation, including eMotors, inverters, drive modules, and battery systems. Advanced thermal management products, including high-voltage eFans as well as air and coolant heaters for air and coolant, will also be shown.

"BorgWarner's electrification portfolio is well represented at this year's SIAT Expo," said Sudhir Kumar Chawla, Managing Director of BorgWarner Emissions Systems India. "SIAT is an opportunity for visitors to



gain insights into BorgWarner's vision for electrified mobility and see our latest products and technological advances."

High-voltage product development dominates the BorgWarner booth. The latest 800V inverter uses Viper silicon carbide power modules that optimise conduction and reduce switching losses by up to 70 per cent versus silicon-based technology.

Bridgestone ME wins Tyre Tech Award

Bridgestone Middle East, a global leader in sustainable mobility and advanced solutions, secured the renowned Tyre Technology Provider of the Year Award at the Truck and Fleet ME awards. This achievement marks the third consecutive win for the company in the same category. The key objective of the award ceremony, which was held in The Ritz Carlton, JBR, Dubai, was to recognise the remarkable milestones achieved by companies and their contributions to support the truck and fleet sector.

Bridgestone's achievement signifies its commitment to ensure continued innovation and excellence, as exhibited through the vast line-up of its cutting-edge products and services. The company developed these cutting-edge technologies to address unprecedented requirements of the sector for safe and economical transportation solutions.

Elgi bags 10-year contract from Siemens to supply compressors

Air compressor manufacturer Elgi Equipments has signed a contract with Siemens to supply compressors for 10 years. Elgi MD Jairam Varadaraj told The Hindu on Friday that the deliveries would start next fiscal. The company is not new to supplying compressors to Indian Railways. However, the contract with Siemens, signed last month, is the first one with a private company that would supply locomotives to the railways.

Elgi will supply 2,400 sets of air screw compressors with dryer package



and 1,200 auxiliary compressors. It will also maintain the compressors for 35 years from the date of supply.

"We, so far, supplied piston compressors [for the railways]. Now

we will supply screw compressors," he said. "The company needs additional capacity only for design and development and it has done it already," he added. Elgi would work with Siemens in development, prototype validation, testings, etc., before rolling out the compressors for installation. "It [the association with Siemens] is in a primary stage. We are hoping that with this association... If we are able to meet their global standards in India, there will be more opportunities," he said.

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JCB'S PLATINUM PRO BACKHOE MODELS

To celebrate 70 years of backhoe production, JCB has revealed limited-run Platinum Editions of its 3CX and 4CX models.

Only 70 anniversary models will be manufactured. JCB says the 3CX and 4CX Platinum Pro will feature servo excavator controls, Powerslide, air conditioning and bi-directional auxiliary flow hydraulics.

The machines will also be decked out with limited edition platinum decals and grill badge and platinum-coloured wheels. Inside the cab, the carpet will don an embroidered graphic and the upgraded seat material and steering wheel centre cap will feature 70th anniversary branding.

Each machine also comes with a plaque, and customers will receive a special platinum gift pack with the backhoe loader. Though there has been some debate over the years, JCB claims company founder Joseph Cyril Bamford CBE invented the backhoe concept by combining a lightweight backhoe with a Major Loadall tractor loader. The first JCB model was manufactured in 1953, creating a single machine which combined a front shovel and rear excavator arm.

It took 20 years for JCB to build 50,000 backhoes, but under the leadership of Chairman Anthony Bamford, more than 900,000 have been produced. The company's



backhoes are manufactured in the UK, India and Brazil.

Lord Bamford said: "The backhoe loader is an incredibly versatile machine, and thanks to continued innovation and evolution, it remains just as relevant today as the day it was first invented. The JCB backhoe loader remains one of the most popular pieces of construction equipment in the world, and it has a very exciting

future ahead of it."

Since its inception in 1953, JCB has continued to develop and enhance its backhoe loaders, with turbocharged engines, powershift transmissions, all-wheel drive and extending dipper arms.

Today, the product line includes the skid steer-based 1CX, the all-wheel steer 3CX Compact and the larger 4CX and 5CX equal-sized wheel machines.

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LIEBHERR'S NEW LTR 1150 CRAWLER CRANE



Liebherr's new LTR 1150 telescopic crawler crane has 50 per cent more lifting power than the company's LTR 1100, but it can be transported just as easily as the smaller crane, the company says.

The crane, which has a 150-metric-tonne lift capacity, is also the first with Liebherr's VarioBase system, "which determines the optimum load capacity in real time depending on the fixed track width and the variable rotation angle."

The LTR 1150 is geared toward construction sites where lifting in many places is needed, such as industrial-building construction. It can move up to 34.6 metric tonnes into position. And the 173-foot boom

can be hydraulically extended to 272 feet with a hydraulically adjustable double-folding jib and telescopic boom extensions, the company says.

The cranes can also be used for wind turbine assembly on wind farms.

The LTR 1150 can be transported on a single lowboy trailer with the tracks on at a width of 11.5 feet with a total weight of 60 metric tonne.

Weight can be reduced to 38 metric tonne by removing the tracks and reducing the width to 9.8 feet. The tracks can be removed by jacking up the crane with four swiveling cylinders. The trailer can then be positioned under the crane. Two tracks can each be hauled on the same semi-trailer. They weigh 11 metric tonne each and combined are 8.4 feet wide.

The crane also features AutoBallast that enables the entire ballast process to be completed at the push of a button, the company says.

The crane is designed to be easy to set up, requiring two hoists for the central ballast and another two hoists for the slewing platform ballast.

The new VarioBase increases safety and enables higher load capacities, Liebherr says.

The system comes in handy especially during lifts over the corner of the tracks when track width is reduced.



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VOLVO LAUNCHES 2 NEW COMPACT EXCAVATORS

Volvo Construction Equipment is bringing two new compact excavators to North America, the 3.7-metric-tonne EC37 and the 4-metric-tonne ECR40.

The two new models will replace the EC35D, ECR35D and ECR40D in Volvo's lineup.

The new EC37 and ECR40 have the same platform and components but differ in swing radius. The EC37 has a conventional tail swing; whereas, the ECR40 has a short tail swing radius.

They both run on Volvo 24.8-horsepower diesel engines, which do not require diesel particulate filter to meet Tier 4 Final emissions standards. The new engines are now equipped with an ECO mode. They

also feature auto engine shutdown as well as auto engine idle. Auto engine shutdown cuts off the engine when it idles for more than 4 minutes when stationary and not in gear. That increases fuel efficiency 10% and reduces maintenance costs, the company says.

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and reduces maintenance costs, the company says.

Volvo gave the compact excavators load-sensing hydraulics for smoother movement. A hydraulic thumb is optional and can be operated by the proportional roller on top of the joystick. Other optional features include a float blade and LED work lights. Volvo says it also increased the stability of the EC37 and ECR40 with a new, longer undercarriage with longer contact between the tracks and the ground to reduce "the rocking chair effect" some compact excavators have.

As for service, Volvo increased greasing intervals to 50 hours. The engine and rear hood openings were also made wider for easier access.



KOMATSU'S LARGEST MOTOR GRADER, THE GD955-7



Komatsu's new GD955-7 marks its largest motor grader for the North American market.

With a 50 per cent increase in operating weight over its predecessor, the GD955-7 weighs in at 104,323 pounds, which enables it to increase the blade's downforce pressure and stability, the company says.

It can handle such tasks as building and maintaining haul roads for truck fleets of 100 tonne and up at quarry and mine sites and other hard-packed road surfaces.

"With significant increases in operating weight, blade downforce pressure and working travel speeds, this new size class motor grader will be a smart choice for increased efficiency on our customer's mine sites," said Joseph Sollitt, Komatsu Ltd. director of mining support equipment.

Redesigned front and rear frames

help withstand bending forces and torsional loads to reduce maintenance costs and increase durability.

The grader runs on a 426-HP Komatsu engine, standing out from its previous model due to its faster working travel speeds.

Compared to the previous model, the GD955-7 offers up to a 33 per cent increase in productivity with the standard 18-foot moldboard and a 46 per cent increase with the optional 20-foot moldboard.

With its direct-drive transmission and the controllability of a torque converter drive transmission, the GD955-7 is applicable for trained operators of all experience levels, according to Komatsu. It is also capable of completing a variety of tasks, including maintaining and building haul roads.

Despite the increase in size, the

GD955-7 can execute tight U-turns on a standard 100-tonne class haul road without the need to fully cut the wheel or course correctly.

According to Komatsu, the long wheelbase and large, 27-degree articulation angle allow a tight turning radius and provide maneuverability for narrow haul road applications in confined spaces and around obstacles.

The cab is outfitted with an air-suspension heated and ventilated seat designed to dampen mechanical vibrations. Designed with a hexangular shape, the cab, along with an integrated control console layout, provide improved visibility to the moldboard.

To further enhance visibility, there are strategically placed mirrors and KomVision, which provides a bird's-eye view around the grader on an in-cab monitor.

WIRTGEN LAUNCHES SECOND-LARGEST COLD PLANER

Wirtgen has launched its second-largest cold planer, the W 220 XFi, designed for a range of operations such as pavement removal, surface layer rehab and fine milling.

The 83,334-pound cold planer has a milling width of 7 feet 3 inches and milling depth of 1.15 feet. Milling width can be extended as far out at 12 feet 6 inches with Wirtgen's Multiple Cutting System. The drum assembly is designed for fast drum changes to different widths.

The planer, which weighs in behind Wirtgen's 93,256-pound W 250 Fi, runs on an 853-horsepower John Deere engine, which is specifically designed for cold milling. It can run at full power at only 1,500 rpm and

"delivers high torque under all load conditions," Wirtgen says.

The engine meets Tier 4 Final emissions standards without needing diesel exhaust fluid.

The W 220 XFi comes with Wirtgen's Mill Assist machine control technology. In automatic mode, it achieves the most efficient and cost-effective operation, the company says. The system automatically adjusts engine and milling-drum speed, as well as the traction drive, water system and advance rate. Along with increased efficiency, Mill Assist reduces the workload of the operator and reduces carbon-dioxide emissions, pick wear and noise, according to Wirtgen.

A new Level Pro Active leveling system within the machine-control

system automatically sets height and machine position for precise milling, the company says.

The in-cab display will even show the machine's carbon emissions through the Wirtgen Performance Tracker Milling. WPT also can produce a report to show the amount of carbon emissions on an entire project, as well as other key data, for jobsite analysis and documentation, according to Wirtgen.

The cold planer has three operating modes: ECO, performance optimised and milling pattern quality. "This makes it possible, for example, to predefine the required milling pattern quality incrementally from coarse to very fine at the press of a button," the company says.



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Submission date: February 12, 2024

Location: Kheda, Gujarat **Tender value (₹):** 4,999,244

Contact: Chief Engineer [C & O], Wanakbori Thermal Power Station, Ta:Galteshwar, Dist: Kheda-388239, Gujarat. Tel: 02699-235522, Fax: 02699-235607 | Email: wtps.ceg@gebmail.com, www.gsecl.in

2 | Madras Fertilizers

Details: Tenders are invited for the procurement of belt, heat and oil resistant (hor) conveyor

Submission date: February 09, 2024 **Location:** Chennai, Tamil Nadu

Contact: DGM-Materials Management, Manali, Chennai-600068, Tamil Nadu. Tel: 044 25945316 / 25945318 | Email: mgrmaint@madrasfert.co.in/ mgrmaint1@madrasfert.co.in

3 | North Central Railway

Details: Tenders are invited for the supply of chain roller conveyors.

Submission date: February 29, 2024

Location: Jhansi, Uttar Pradesh

Contact: Principal Chief Materials Manager, Subedarganj, A-Block GPO Complex, INA, Prayagraj-211015, Uttar Pradesh

4 | West Bengal Power Development Corporation

Details: Tenders are invited for biennial contract for manual picking of stones, boulders, shale etc. from running conveyor and deck plates of CHP, under CHP(O) Dept. STPS.

Submission date: February 15, 2024

Location: Purulia, West Bengal

Tender value (₹): 26,366,654 \ **Contact:** General Manager, STPS, Purulia-723146

CRANE

**5 | West Central Railway**

Details: Tenders are invited for supply, erection and commissioning of 5 ton jib crane as per Annexure-i.

Submission date: February 09, 2024

Location: Bhopal, Madhya Pradesh

Contact: Deputy Chief Material Manager/CRWS, Bhopal, Madhya Pradesh

6 | North Eastern Railway

Details: Tenders are invited for supply, installation and commissioning of (supply, installation and commissioning of EOT Crane 25/5 tonne at Coaching Depot Chhapra.)

Submission date: February 15, 2024

Location: Varanasi, Uttar Pradesh

Contact: Senior Divisional Materials Manager, Varanasi, Uttar Pradesh

7 | North Eastern Railway

Details: Tenders are invited for supply of set of hydraulic filter for 140 tonne crane.

Submission date: February 12, 2024

Location: Varanasi, Uttar Pradesh

Contact: Senior Divisional Materials Manager, Varanasi, Uttar Pradesh

8 | Eastern Railway

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

Submission date: February 26, 2024

Location: Kolkata, West Bengal

Contact: Principal Chief Materials Manager, Kolkata, West Bengal

9 | Eastern Railway

Details: Tenders are invited for supply of procurement of EOT crane, capacity 10 tonne

Submission date: February 22, 2024

Location: Kolkata, West Bengal

Contact: Principal Chief Materials Manager, Kolkata, West Bengal

10 | Eastern Railway

Details: Tenders are invited for supply, installation and commissioning of EOT crane, capacity: 10/5 t with 40 m dsl as per attached specification.

Submission date: February 12, 2024

Location: Kolkata, West Bengal

Contact: Principal Chief Materials Manager, Kolkata, West Bengal

DUMPER**11 | Urban Development And Urban Housing Department Gujarat**

Details: Tenders are invited for supply of hopper tipper dumper (v2) (Q3) Qty: 2

Submission date: February 8, 2024

Location: Saputara, Gujarat

Contact: Dy. Collector, Notified Area Office Saputara Dist. Dang-394720, Gujarat

EXCAVATOR**12 | Home Department, Government of Chhattisgarh**

Details: Tenders are invited for supply of Poclain machine (excavator with rock breaker) (Q3)

Submission date: February 12, 2024

Location: Naya Raipur, Chhattisgarh

Contact: (Manish Kumar Sharma) Director General of Police, Police Headquarters, Naya Raipur, Chhattisgarh

13 | National Mineral Development Corporation

Details: Tenders are invited for hiring of one excavator/Poclain ex-210 or equivalent on hourly basis at FOD area to attend various works during peak production period, benching works and to facilitate and increasing production of sp-5 and miscellaneous works.

Submission date: February 9, 2024

Location: Bacheli, Chhattisgarh

Tender value (₹): 4,216,848

14 | Manganese Ore India

Details: Tenders are invited for purchases of float major components (spares) for Komastu Pc450 excavator

Submission date: February 06, 2024

Location: Nagpur, Maharashtra

Tender value (₹): 3414000

Contact: R P Sharma, MOIL Bhawan, 1A Katol Road, Nagpur-13, Maharashtra. Mob: 07741865438

FORKLIFTS**15 | Andaman Lakshadweep Harbour Works**

Details: Tenders are invited for design of 2 nos 5 tonne forklift for multipurpose use including empty container handling at dry dock, Port Blair

Submission date: February 07, 2024

Location: Port Blair, Andaman and Nicobar

Contact: Deputy Chief Engineer (Mechanical), Mohanpura, Port Blair-744101, Andaman and Nicobar

16 | West Central Railway

Details: Tenders are invited for supply of diesel operated forklift capacity 3 tonne

Submission date: February 14, 2024

Location: Bhopal, Madhya Pradesh

Contact: Deputy Chief Material Manager/CRWS, Bhopal, Madhya Pradesh

17 | Security Printing And Minting Corporation of India

Details: Tenders are invited for procurement of electric forklift for water mark paper handling

Submission date: February 10, 2024

Location: Nashik, Maharashtra

Contact: Chief General Manager, Jail Road, Nashik Road, Nashik-422101, Maharashtra

18 | Hindustan Aeronautics

Details: Tenders are invited for supply of 640-pa0021, pneumatic tyre tyre size: 28 9 15 for ace make forklift, model no: af-30d (q3), 640- pa0022

Submission date: February 07, 2024

Location: Koraput, Odisha

Contact: Sukhoi Engine Division Sunabeda-2 Koraput District-763002, Odisha

LOADERS**19 | Municipal Corporation Bikaner**

Details: Tenders are invited for maintenance of backhoe loader machine

Submission date: February 05, 2024

Location: Bikaner, Rajasthan | **Tender value (₹):** 14,000,000

Contact: Commissioner, Nagar Nigam Road, Kirti Stambh Bikaner, Bikaner-334005, Rajasthan. T: 0151-2226902, F: 0151-2226906

in Sany India



Sany India has won "Best contribution to India's Infrastructure Development" at the Outlook Business Icons Awards 2023. Mr. Sanjay Saxena, COO - Sales, Marketing and Customer Support was presented with the award in the gracious presence of Shri Kapil Mishra and Actress Kriti Sanon. For us, technology is the driving force behind progress, and this recognition underscores our commitment towards shaping a better India. Our constant focus on innovation has also earned us accolades for Best Seller in the Truck Crane, Crawler Crane & Piling Rig categories at the Equipment India Awards. With over 30,000 on-ground machines, a network of 42 dealers, and 260 touch points across India and South Asia, our fleet is at the forefront of progress, actively contributing to India's infrastructure development.

in Anand Sundaresan

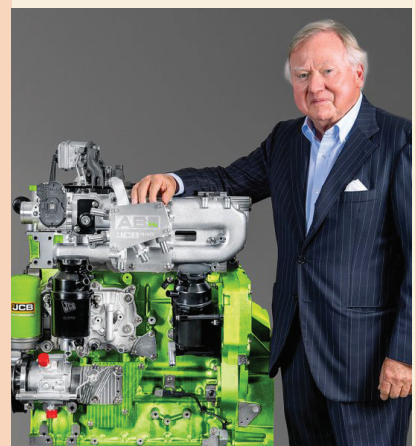
Yet another innings has come to a close. I am laying down my office as MD of Ammann India Pvt. Ltd, and handing over the baton to Dheeraj Panda, a long-term industry colleague. Of course, I will continue with Ammann on the Board. I would like to take the opportunity to thank my colleagues, customers, suppliers, industry colleagues, and industry association colleagues (with whom I will continue to interact), my family, and all my well-wishers. The last 3 1/2 years have been a fantastic and satisfying experience with challenges through Covid, substantial steel price increase, and input cost increase, through which we survived and grew. Working with the team at Ammann India, Ammann family, the Ammann Senior team worldwide, the Ammann Board of directors & very closely with our group CEO Hans Christian Schneider was a pleasant experience. The entire atmosphere fostered a friendly environment, encouraging open discussions, and exchange of ideas.

X Tata Hitachi



It was an absolute privilege to welcome Mr. Azim Premji, esteemed Chairman of Wipro at our booth at EXCON'23. We extend our sincere gratitude to Mr. Azim Premji & the dignitaries for their visit and encouragement towards our innovative strides in electric excavation technology.

X JCB India



This is a historic landmark for many industries, particularly the construction and agricultural sectors which JCB has supplied for nearly 80 years." said Lord Bamford, as he calls on industry leaders to get behind the Government's call for evidence: <http://brnw.ch/21wG9Rf>.

X Schwing Stetter India

#2023 was not just another year at #SCHWINGStetterIndia; it marked our Silver Jubilee - #25years of Passion and innovation and shaping a sustainable future. Explore our journey in this special highlight reel from 2023. From groundbreaking products to impactful community initiatives, we're not just building equipment – we're shaping a better future, together.





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