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Anniversary 2021

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YEAR  
ANNIVERSARY

# THE



# -FACTOR

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## RIISING TIDE

The year 2020 will go down in our lives as one when the world shook, and the ground caved in under our feet. One year ago, on 25th March 2020, India announced a historic lockdown. Businesses, offices, schools, movie theatres, railways, airports all ground to a complete halt. India's GDP fell from a cliff to a heart stopping 23.9 per cent in the first quarter. The stockmarket collapsed to stunning lows. With factories and commercial establishments closed a massive wave of retrenchment engulfed the sectors and migrant labour departed from cities back to the villages. Horrifying visuals of misery threw all to despair.

Real Estate and Contracting dived during the first quarter. Equipment companies focused on deliveries and logistics while production and sales came to a standstill.

*Equipment India*, along with its sister publication *Construction World*, moved into a virtual mode and created an information pipeline for the stakeholders. We held over 40 webinars between 31st March and 31st December and kept the industry informed on what was happening in the industry. Our webinar on 'Construction Technologies Post Covid-19' witnessed great success with over 1,200 attendees tuning in to hear what our esteemed panellists had to say on technologies making in-roads in construction and their multiple benefits, and what's in-store going forward. Similar was the case with other webinars. Check out this link for webinars held <https://www.constructionworld.in/webinar>

The world of construction will undergo a transformation with Covid-19. Construction equipment will now not only have to provide for safety features that it has incorporated so far, but automation would be now an essential feature of the fleet.

The scale and pace of infrastructure projects are picking up in our country. The Union Budget has been favourable for the infrastructure sector in more ways than one. Not only the capital outlay for the infrastructure sector was increased significantly, but also several other expectations were also met. This includes further allocation towards the National Investment and Infrastructure Fund (NIIF) and the setting up of a new development finance institution (DFI). These will augment the financing avenues for the infrastructure sector and can pave the way for increased private participation thereby supporting the overall infrastructure investment. The gross budgetary support towards capital expenditure has been increased significantly to Rs 5.54 lakh crore in







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**BE1800E Electric Excavator**  
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(Bucket 3.1 cum)

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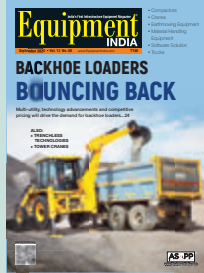
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2021-22 BE (up 34 percent from 2020-21 BE, and 26 percent from 2020-21 RE) with higher allocation towards the infrastructure sector (roads, railways, etc).

The vehicle scrappage policy was passed recently. Union minister Nitin Gadkari termed the policy a boon and said it would lead to a 30 per cent boost to the Indian automobile industry turnover to Rs 10 trillion in the years to come. However, beginning April the BSIV guidelines on emissions kick in which had been deferred on 1st October 2020. So, while the cost burden owing to emission policy has been adverse the vehicle scrappage policy can be a boon. But details are awaited. Coal India has increased its targeted output and mining has been thrown open for the private sector. These are historic changes and will augur well for the future.

The Central government has also provided the capital of Rs 0.45 lakh crore as support for the Infrastructure Pipeline. The increased budgetary allocation and planned capital outlay by the Central government will help increase the pace of infrastructure investment. However, as the investments planned under National Infrastructure Pipeline (NIP) are also dependent on state governments and private sector capex, the overall investment could still fall short of the plan, unless supported by States and private sector participation. Of the total expected capital expenditure of Rs 102 trillion towards NIP, projects worth Rs 42.7 trillion (42 per cent) are already under the implementation stage and about 19 per cent are under development. So, the critical ones are the projects worth Rs 32.7 trillion (32 per cent), which are in the conceptualisation stage – which is where the opportunities lie. Non-conceptualised projects of NIP are a huge opportunity.

There has been heightened focus on energy and fuel efficiency features in infrastructure equipment, with a digital push in the recent times. The equipment market has a great opportunity from a possible turnaround in the infrastructure and mining sectors in the coming years. During the pandemic in 2020 and with the Union Budget 2021-22, the government has indicated its intention of strengthening the economic fabric of the country by enhancing the thrust on infrastructure be it – mining, roads, corridors, railways, irrigation, logistics. Public spending has been ambitiously set to invoke demand. As construction rises, the demand for heavy construction equipment will continue to rise. Our 13th Anniversary Edition discusses more on these aspects. The cover story focuses on where the demand will be coming from for the construction equipment sector. After all a rising tide will lift all boats.

Here's to tiding over the crisis and emerging stronger. Happy reading.

*Pratap Padode*

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\*QR code application required.



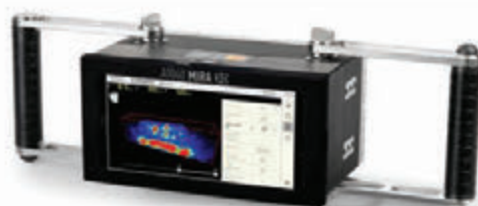




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bauma CONEXPO India is a melting pot of knowledge, deals and networking. We explore what the cancellation of this year's edition means for the industry.

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Heightened focus on infrastructure spend, particularly in the road infrastructure segment has led to a sharp scale up in volumes since July 2020, resulting in +20 per cent YoY growth during July-January 2021 period.

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Rather than exempting certain type of vehicles out of green tax, like alternate fuels like CNG, ethanol, LPG and vehicles used in farming such as tractor, harvester, tiller, etc. the policy should be driven for all internal combustion engine-based vehicles checking for the pollution levels, writes **Prasad Sreeram**.

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Tekla Structures helped Precast India Infrastructures to produce a large number of precast elements, address critical geometries, implement MEP requirements and a lot more, quite easily and well within the specified project timeline.

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**BS6**

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

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## Coal India approves record 32 mining projects at Rs 47K cr

Scripting a record high, Coal India Limited (CIL) has approved 32 coal mining projects in the current fiscal till January 2021, which indicate an estimated incremental capital of around Rs 47,300 crore.

While 24 of the 32 are expansion of the existing projects, the rest eight are new greenfield projects. The combined incremental peak capacity of these projects is projected at 193 million tonne/year (MT/Y). This will be in addition to the already sanctioned capacity of 303.5 MT/Y.

The approval of the projects enables coal companies of CIL escalate their production in the ensuing years. CIL Board and Boards of the respective subsidiary companies have given their nod for the move. The incremental production by FY'24 from the approved 32 expansion and the new



greenfield projects would be to the tune of around 81 MT/Y.

“Such high number, either in terms of projects or capacity addition, has not been cleared in a single financial year so far” said a senior official of the company. CIL is striving to replace the coal imports through its own coal and any increase in domestic production would play a catalytic role in this effort.

Of the 193 MTs/Y capacity, of 32 projects, the three subsidiaries of CIL, South Eastern Coalfields (SECL), Central Coalfields (CCL) and

Mahanadi Coalfields (MCL) at 167 MT/Y between them form the bulk at 86.5 per cent.

SECL with 6 projects at an estimated incremental investment of Rs 18,657 crore accounts for 63.5 MT/Y followed by CCL at an investment of Rs 7,520 crore for 10 projects of 56.6 MT/Y. MCL with three projects would add up to 47 MT/Y at an investment of Rs 14,057 crore. The rest, nearly 26 MTs/Y would be met through ECL, NCL and WCL with the remaining investment between them.

“Concurrently, in tandem with production the company is also strengthening the rail evacuation infrastructure through setting up rail lines, sidings and first mile connectivity projects in the companies from where the majority of the output is expected” said the stated official.

## BEML hands over BE1800D hydraulic excavator to Coal India

As part of “Atmanirbharta” mission, BEML has launched and handed over much-awaited ‘BE1800D hydraulic excavator’ at a function held at KGF; the equipment key was received by Binay Dayal, Director (Technical), Coal India.

The BE1800D hydraulic excavator is ‘Make in India’ equipment; designed, developed and produced in-house at the BEML’s state-of-the-art manufacturing plant in KGF complex. The equipment is driven by powerful and economical BEML diesel engine, which delivers an

immense output of 2 x 354 kW. It is fitted with 10.2 CuM Face Shovel bucket with operating mass of 1,75,000 kg (180 tonneclass hydraulic excavator).

Efficient hydraulic system for increased productivity: Four pump hydraulic system with independent closed loop swing function not only assures smooth compound work equipment movements and travel but also shortens the cycle time.

Effort-free operation: Work equipment controls are simple and light



touch due to the hydraulically assisted control system.

### Jindal Stainless to bear COVID-19 vaccination cost for all employees

Jindal Stainless, India’s largest stainless steel manufacturer, today announced that the Company will bear the total cost of both the mandated COVID-19 vaccination shots

for its entire workforce to ensure their safety and well-being. Under this initiative over 35,000 employees, contractual workers, retainers, and their immediate family members will be benefitted across the country.

Announcing this initiative, Chief Human

Resources Officer, Jindal Stainless, SK Jain said, “Health and safety of our employees and their families have been our utmost priority at Jindal Stainless. This initiative is to acknowledge the dedication of our employees despite the difficulties created by the pandemic. Throughout these

testing times, we’ve been supporting our employees and their families through regular workshops and sessions on physical and mental wellness.”

At plant locations, the company will tie-up with hospitals to arrange vaccination camps for employees and their families.





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## L&T records highest sales of Komatsu PC210-10M0 machine in short time

L&T Construction & Mining Machinery hit a new milestone with the commissioning of 1000th Komatsu PC210-10M0 Hydraulic Excavator recently. At separate events held at customer sites, the 1000th machine was handed over to Somendra Singh and 1001th machine to PNC Infratech by our team.

In less than nine months since its launch, Komatsu PC210-10M0 hydraulic excavator has blazed a trail in the 22-tonne premium segment market with its superior performance and unmatched productivity and achieved leadership position. Its growth is the fastest by any class or any brand of



excavator in the Indian construction equipment market till date!

Agra-based PNC Infratech (PNC) is the leading infrastructure company executing multiple projects of national highways, drinking water supply and Irrigation. PNC is the largest fleet owner

of Komatsu PC210 machines in India. The firm owns over 130 Komatsu PC210 excavators which are deployed in their various projects.

Singh is a reputed fleet hirer and a key influencer in the districts of Etah and Firozabad of Uttar Pradesh. He owns a huge fleet of Komatsu hydraulic excavators, which are deployed for a host of applications.

In engaging the customers on long-term basis and provide market leading initiatives, Komatsu and L&T have jointly designed and launched Suraksha-10000, which provides customers with unmatched benefits on powertrain warranty.

## Delhi Mumbai expressway SPV gets 'AAA' rating

The National Highways Authority of India's (NHAI) fully-owned special purpose vehicle (SPV), DME Developers (DMEL), has received AAA rating from CRISIL, CARE and India Ratings. The SPV is executing the Delhi-Mumbai expressway project. Through this SPV, NHAI has planned to diversify its resource base and develop a project specific sustainable and self-liquidating approach to raise finances.

Delhi- Mumbai expressway is a flagship greenfield project under 'Bharatmala Pariyojna'. The project is being executed under 48 sub-projects, out of which 17 are hybrid annuity model projects (Vadodara-Mumbai segment) and 31 are under EPC model

(Delhi- Vadodara segment). Of these 48 sub-projects, 27 are under construction, 17 are awarded and work to be started and the rest are under process for awarding. The project is scheduled for completion by March 2023, with one of the stretches to JNPT getting completed by September 2023.

The total estimated cost of the greenfield project is about Rs 87,500 crore including land acquisition cost of about Rs 20,600 crore. Expenditure other than land acquisition during construction period will be about Rs 53,849 crore, to be funded through Rs 48,464 crore debt and equity of about Rs 5,385 crore from NHAI, with debt-equity ratio marked at 9:1.



For the project, DMEL's role will be limited to housing the debt and servicing thereof. For the debt, NHAI is extending a letter of comfort to lenders. The concession agreement, implementation agreement and letter of comfort have been finalised. Annuity payments to DMEL will be structured to enable timely servicing of debt and other incidentals. NHAI plans to form similar SPVs for other high value highway/ expressway projects.

## Tata Motors unveils Ultra Sleek T-Series range of new-gen smart trucks

Tata Motors, India's largest commercial vehicle manufacturer, has unveiled its newest range of intermediate and light commercial trucks (1&LCV), the Ultra Sleek T-Series,

designed and engineered to suit contemporary demands of urban transportation. Available in three models – T.6, T.7 and T.9, the all-new Ultra Sleek range is available in varied deck lengths from 10 to 20 feet to adapt to all the required applications. A sleek 1900 mm-wide cabin provides superior driver

comfort yet swift movement in confined city spaces, and smart features provide for easy manoeuvrability. This new-generation range of future-ready vehicles further endorses Tata Motors well acknowledged 'Power of 6' philosophy, of superior vehicle performance, driving comfort, convenience and

connectivity, along with safety – all with lower total cost of ownership (TCO).

The Ultra Sleek T-Series range combines futuristic styling with comfort, provides significantly lower Noise, Vibration and Harshness (NVH) levels, ease of movement on congested and narrow roads.



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## Numaligarh Refinery implements Hexagon's operations management solution

Hexagon's PPM division announced that Numaligarh Refinery (NRL) has implemented j5 Operations Management Solution (j5 OMS) to ensure safe, efficient and compliant operations of its industrial sites. The j5 OMS inauguration ceremony took place at NRL's refinery site in Numaligarh in December 2020.

The event was hosted by NRL and led by Managing Director SK Barua and the rest of the management team, including Director Technical Bhaskar Jyoti Phukan and Director Finance Indranil Mitra. The senior leaders and

the j5 OMS Core Team members from NRL Operations Team were also present.

The inauguration ceremony marks the acceleration of NRL's digital transformation journey as the j5 OMS adoption helps the company create a digital shift logbook and digitalise shift operations. The new j5 OMS combines the data collected by the employees with the information from historians, providing NRL's Operations team with a single source of truth for Operations.

NRL will follow a phased approach for the j5 OMS deployment and has



started the implementation with five refinery units: hydrocracker, solvent de-oiling, power and utilities, diesel hydrotreater and the Numaligarh Refinery Marketing Terminal (NRMT). A refinery-wide implementation of the solution is planned in first half of this year.

## L&T bags significant contracts for its various businesses

The Water & Effluent Treatment Business of L&T Construction has secured EPC orders from the Rural Water Supply and Sanitation Department, Odisha to execute individual Rural Water Supply Projects in the Kendrapada and Khorda Districts of Odisha.

The scope of work includes design and construction of Intake structures, 4 Water Treatment Plants of a cumulative capacity of 105 MLD, supplying and laying transmission and distribution pipelines, overhead service reservoirs, a booster pumping station, house service connections and associated electromechanical and instrumentation works including measuring the input



and output of the quantity and quality of water at each level. The projects will provide drinking water to 12.28 lakh people across 780 villages in Kendrapada and Khorda Districts of Odisha. The business is already executing several other rural water supply projects for the same client.

The business has also secured a

repeat order from the Water Resources Department of Odisha to construct an intake structure and pressure main along the right bank of Bargarh Main Canal of the Gangadhar Mehar Lift Irrigation Project in Bijepur, Odisha on EPC-TurnKey basis. The scope includes design and construction of an intake structure, pump house, pressure main of length 34 Km and associated electromechanical & instrumentation works.

The factories arm of buildings and factories business has secured an order from a leading cement manufacturer in India to construct a 10,000 TPD Integrated Cement Plant in Pali, Rajasthan.

## BKT Tires partners with 7 IPL teams

Balkrishna Industries (BKT Tires), the Indian multinational group and leading global player in the Off-Highway tire market has just announced that it will be sponsoring seven teams in

the upcoming cricket league for Season 2021. BKT Tires will be the Official Tire Partner for Mumbai Indians, Chennai Super Kings, Delhi Capitals, Royal Challengers Bangalore, Kolkata Knight Riders, Punjab Kings and Rajasthan Royals in the forthcoming T-20 League. The biggest off-highway tire

manufacturer welcomes back one of the biggest sporting phenomena to India.

## Eicher observes National Road Safety month

Eicher Trucks & Buses, part of VE Commercial Vehicles Limited,

participated actively in the National Road Safety month from 18th of January till 17th of February across the country. As part of the drive, Eicher organised 400 activities across 19 states, spread in 46 cities, to raise awareness level on road safety among different stakeholders.





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## Largest-ever Liebherr demolition excavator handed over to AWR Abbruch

The German demolition company AWR Abbruch GmbH received the key to the R 980 Demolition during an official handover at the Colmar site. This excavator with its impressive dimensions was developed and produced by Liebherr-France SAS.

The German customer is already familiar with Liebherr demolition machines and in particular owns an R 974 Demolition machine acquired in 2007. This is still in operation today. Since this first project, AWR Abbruch GmbH has also acquired other Liebherr machines including two demolition machines, wheeled excavators and wheel loaders.

### The crawler excavator R 980 Demolition VHHD

The order was developed and executed at the Liebherr-France SAS production site in Colmar, in cooperation with the client. The machine has an operating weight of 190 tonnes, a counterweight of 35 tonnes and required months of study, testing and modifications in order to achieve a result that perfectly meets the customer's expectations.

### Apprentices at the Colmar site finish globe

In addition to the impressive machine, a steel globe made by the



apprentices of the Liebherr-France SAS welding training centre was also exhibited. This achievement represents the international significance and local knowledge of this production site. The globe will then be displayed on the factory tour route in front of three historical models of the production site. Liebherr-France SAS welcomes more than 70 apprentices on its production.

## Potain Hup 32-27 continues to win friends & influence equipment choice

Almost five years on from its launch at Bauma 2016, the Potain Hup 32-27 self-erecting crane continues to gain new fans around the world. This acclaim is largely due to its ability to combine typical tower crane operations with replicating many of the tasks performed by smaller, mobile material handling equipment – reducing costs and eliminating excess traffic on jobsites.

One convert to the concept of Potain self-erecting cranes is PT Indonesia Pondasi Raya (Indopora). Founded in 1977, the Jakarta-based contractor is predominantly engaged



in piling, retaining walls and ground engineering, for projects as diverse as housing, skyscrapers, underpasses and bridges.

Indopora had traditionally rented

conventional tower cranes on larger projects and mobile cranes, rough-terrain forklifts or telehandlers on prefabricated housing projects. But in 2018 the company pursued a new strategy, purchasing a Potain Hup 32-27 on recommendation of Multicrane Perkasa, the local Potain dealer. The crane proved an immediate hit, and it's easy to see why. It features an adjustable two-section mast with a third section that can telescope out from the second to increase working height from 21 m to 27 m with the jib in the horizontal position.

### Six new Grove all-terrain cranes for J&D Pierce

In late November 2020, Scottish steelwork contractor J&D Pierce took delivery of six new Grove all-terrain cranes: two GMK3060L, one GMK4090, two GMK4100L-1 and one GMK5150L model. After a

short commissioning period, Grove service engineers carried out familiarization training with the operators to help them get the most out of the new cranes. J&D Pierce is no stranger to Grove, however. The Glengarnock, Ayrshire-based business bought its first Grove crane in 1997 and has purchased

approximately 12 more units since. Today, every model in its fleet of nine cranes is a Grove.

"What keeps us coming back to Grove is the quality of the cranes and the good relationship we have with the Manitowoc service team," said Derek Pierce, managing director of J&D Pierce.

"Grove cranes have strong loads charts, long booms, are compact on site and operate quickly, which makes them ideal steel erecting cranes," he continued. "Our cranes are on site almost all the time and there is never a lot of downtime — but if we do, on a rare occasion, have an issue."



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## BEML bag orders from Cameroon & Bangladesh

BEML, a 'Schedule A' company under the Ministry of Defence (MoD), received export orders from Cameroon and Bangladesh under Government of India-Lines of credit. The order for Cameroon has been received from the Ministry of Economy, Planning & Regional Development (MOEPRD), the Government of Cameroon for supply of 71 units of construction equipment consisting of bulldozers, excavators, wheel loaders, motor graders and compactors for their Cassava farm project.

The order for Bangladesh has been received from the Ministry of Roads & Highways Department, Government of

Bangladesh for supply of construction equipment consisting of Wheel Dozer for their construction, repair and maintenance of road and infrastructure projects in Bangladesh.

Valuing at around \$23 million, these equipment will be having more than 90 per cent indigenous content and will be manufactured at BEML's KGF and Mysore plants in Karnataka signifying the true spirit of 'Atmanirbhar Bharat' with thrust on going global.

BEML is a leading multi-technology company, which plays a pivotal role in serving India's core sectors like defence, rail, power, mining



and construction by offering world-class products. BEML operates in three verticals viz. defence and aerospace, mining and construction and rail and metro and has state-of-the-art manufacturing facilities located at Bangalore, Kolar Gold Fields (KGF), Mysuru, Palakkad. BEML has very strong R&D infrastructure with a nationwide network of sales and services.

## Construction growth in Nova Scotia on the rise

Construction and maintenance activity in Nova Scotia is expected to increase between 2021 and 2023, driven by strong and broad-based demand across the province's residential and non-residential sectors. This is according to the latest labour market forecast data released by BuildForce Canada.

BuildForce Canada's 2021–2030 Construction and Maintenance Looking Forward report for the province forecasts sectoral employment to remain high through 2026 before receding over the latter half of the scenario period. A rise in construction-sector employment of approximately

10% – or 2,600 workers – is expected to occur over the next few years before employment recedes slightly over the latter half of the decade.

"Construction activity in Nova Scotia was only moderately hindered by the impacts of COVID-19 in 2020, and the negative effects were largely confined to the residential and commercial markets," says BuildForce Canada Executive Director Bill Ferreira. "An anticipated recovery in the residential sector, alongside a ramp-up in requirements related to numerous major health care, educational, roadwork, and engineering projects is expected to

drive a strong expansion in construction employment across 2021 and 2022."

Over the next 10 years, Nova Scotia's construction industry is expected to see the retirement of nearly 8,700 workers – or about 28 per cent of its 2020 labour force.

Based on historical trends, the province's industry could attract as many as 5,875 first-time new entrants aged 30 and younger from the local population over the same period.

"Nova Scotia's population is aging, and its construction industry faces a shortfall of about 3,900 workers over the next decade," says Ferreira.

## Trane Technologies to cut product carbon emissions in half by 2030

Trane Technologies, a global climate innovator, announced that it plans to cut its product carbon emissions by nearly 50 per cent by 2030, and that its ambitious emissions reduction targets have been

validated by the Science Based Targets Initiative (SBTi).

Cutting product emissions in half over the next decade supports Trane Technologies' 2030 Sustainability Commitments, including its Gigaton Challenge to reduce customer emissions by one billion metric tons.

It also supports the Paris Agreement goal to limit global warming to 1.5 degrees Celsius, which will require net-zero global carbon emissions by 2050.

"As a climate innovator, we can make a significant contribution to solving climate change," said Mike Lamach, chairman and chief executive officer for

Trane Technologies. "About 15 percent of the world's carbon emissions come from heating and cooling buildings, and another 10 per cent from global food loss. We are transforming our operations and revolutionising the way the world heats and cools buildings and moves refrigerated goods.



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## Gas liquefaction plants for Russia

At the end of last year, the KAHL Group was commissioned to move a total of six huge heat exchangers for two gas liquefaction plants destined for Russia from an engineering works near the port in Haren on the River Ems to the cargo vessel. Over a period of several months, the individual components had been transported from various production facilities to the Barlage company in Haren. There the components were assembled and the final touches made to the heat exchangers.

The six heat exchangers comprised

- two coolers weighing 658 t and measuring 46.33 x 6.22 x 7.32 m (LxWxH),
- two coolers weighing 429 t and

measuring 29.06 x 5.58 x 7.53 m (LxWxH),

- and two coolers weighing 466 t and measuring 32.25 x 6.42 x 6.95 m (LxWxH).

The KAHL Group was then tasked with the heavy haulage operation of moving the heat exchangers from the assembly plant to the quay, where two heavy-duty cranes (LR 1600) were waiting to lift the heat exchangers into the belly of the transport vessel.

Although the route was only about 800 m long, the challenges were enormous due to the need to negotiate the confined spaces on the journey all the way round the harbor.

For moving the 658 t cooler, the transport team relied on its trusted



heavy-duty modules from the house of Goldhofer in a trailing unit configuration with 2x 12 PST/SL-E axle lines, picking up the giant cargo hydraulically without the use of a crane. The equipment used for the operation was a P 1+1/2 split combination, i.e. with one module divided lengthwise and coupled parallel to a second full module.

## Volvo trains techs for electric machines

Volvo Construction Equipment is training technicians for Loxam, a rental company in France, on how to handle electric machines. Loxam has 18 ECR25 electric excavators in its branches.

Volvo training covers everything from the technical—maintenance, charging systems, and mechanics—to the commercial knowledge required to guide employees, technicians, and customers on the market value, site productivity, and environmental benefits of going electric.

“This is an entirely different

approach to how we would normally engage with dealerships during the sale of more conventional construction machines,” said Volvo’s Sebastien Perusse, sales manager for compact machines, in a prepared statement. “It’s a great opportunity to not only create a new market that is fully equipped and energized to move to electric machines, but also to engage directly with customers and respond to their own unique requirements.”

Loxam recently launched its LoxGreen range of equipment in a bid to rent out more environmentally

friendly electric, hybrid, and natural gas-powered machines—perfectly suited to the requirements of neighboring low emission zones. The Volvo excavators will be part of that LoxGreen rental range.

“We are convinced that the new ECR25 electric excavator will encounter huge enthusiasm from users compared to other electric models,” says Perusse.

The training sessions are intended to provide Loxam with the new skills required to ensure maximum uptime for these electric models.

## European CE industry proves stable and resilient in 2020

Sales on the European construction equipment market went down by 6.4 per cent in 2020. This seemingly modest drop is due to the performance of high-volume light and compact equipment, whose

sales were almost unaffected at -3 per cent. In contrast, heavy construction machinery suffered a 19 per cent fall in sales, in what emerged as a challenging year. Indeed, less expensive machines were sold at almost normal levels during the pandemic, while investment in more capital-intensive equipment

suffered from the economic uncertainty. These economic figures are the result of a combination of anticipated cyclical downturn after years of growth and a slowdown in business activity due to the Covid pandemic. Unlike earlier years, earthmoving equipment, road equipment, concrete

equipment, and the tower cranes business experienced similar market patterns, despite the impact of stronger sales of light equipment.

Presenting the report to the press, CECE President Niklas Nillroth focused on the positive aspects of last year’s results and this year’s expected outcome.







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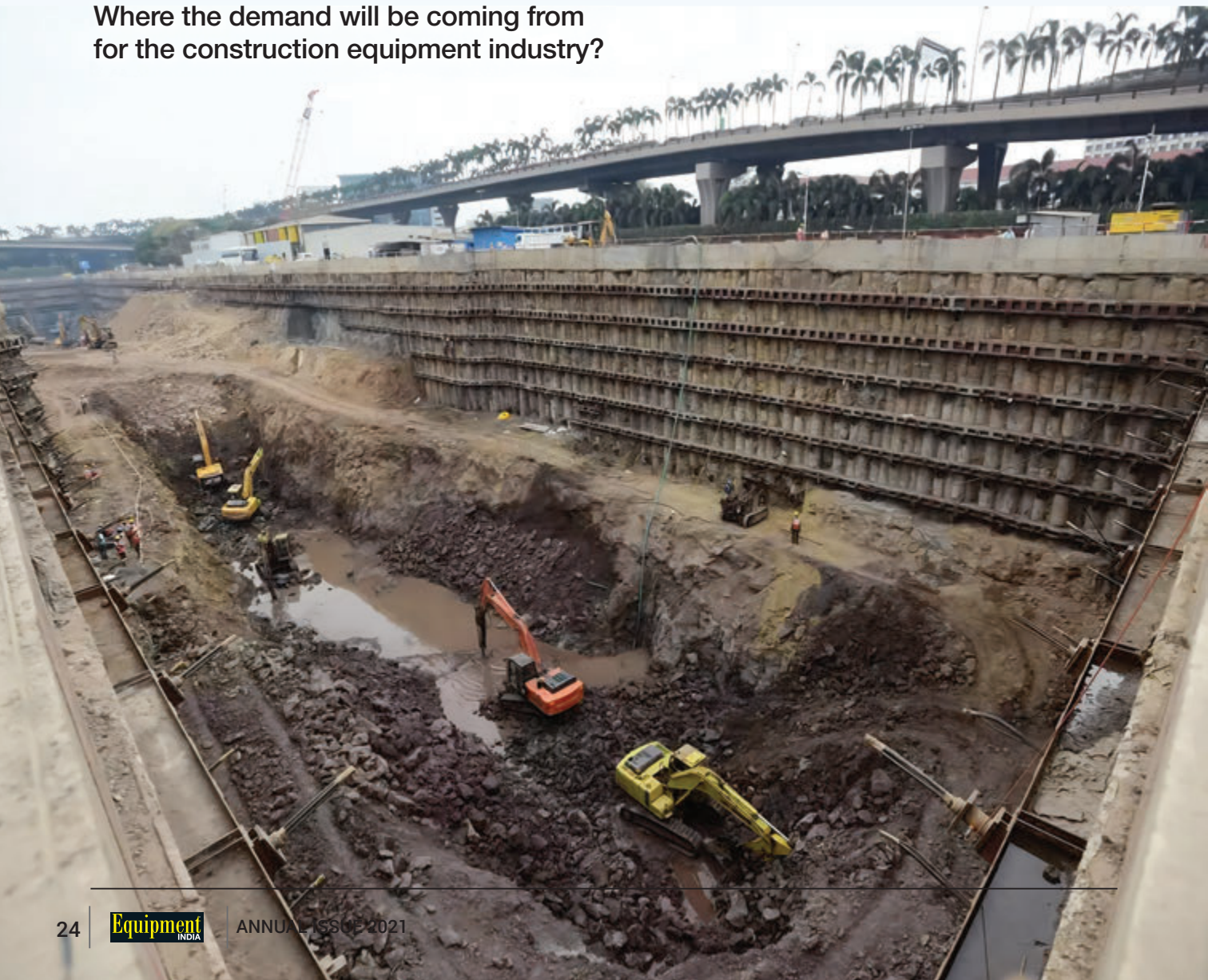


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# THE D-FACTOR

Where the demand will be coming from  
for the construction equipment industry?





**T**he construction equipment market in India is witnessing exponential growth for the last few years. Population proliferation, rapid urbanisation, and increasing government spending on infrastructure projects have increased impetus for various infrastructure developments. Substantial infrastructure investments in highways, railways, airports, ports, and power will drive higher demand for construction equipment. Government spending on the development of roads, metro rails, flyovers, and commercial complexes will further boost the market demand for construction equipment over the next few years.

The recovery in the CE industry has been surprising and sharp since July 2020. While part of the growth is optical, coming on a low base of the year, early recovery in the rural economy and strong road activity have spurred growth in the industry.

A recent ICRA survey with CE dealers indicated a healthy improvement in demand for new machines; the dealers hope to register volume growth for FY21. Overall, healthy funds flow from the Government and ongoing projects are expected to support demand during H2 FY21, after sizeable volume contraction during H1 FY21.

Roads and highways will continue to play a key role in aiding the growth of the CE industry. The government is giving a massive push to infrastructure development by allocating about \$1.4 trillion to be invested until 2025. Also, about \$350 billion is expected to be

invested in road infrastructure in the north-east region during 2020-25.

Creating modern infrastructure and replacing older inefficient systems will be driven with a much higher regard to climate change in the future, especially in the European and North American markets. Increasing urbanisation will also drive market growth – by 2050 close to 70 per cent of the world's population are expected to live in urbanised areas, up from a little over half (55 per cent) today. Big machines don't always work well in inner cities, so one product category we see growing fast is compact equipment, especially mini excavators, and compact tracked loaders. The great unknown is legislation: if emission, noise and transport regulations toughen or harmonise quickly, the replacement cycle away from traditional diesel power combustion engine into new electromobility will accelerate.

**Rajesh Nath, Managing Director, VDMA India**, said, "Private investment in infrastructure is expected to increase from Rs 8.8 lakh crore in the 11th FYP to Rs 26.8 lakh crore in the 12th FYP, with the last year alone of the 12th FYP period (fiscal year 2017) attracting private investment of Rs 8.7 lakh crore. More than 80 per cent of private-sector spending will continue to focus on four sectors: telecom, electricity, roads and bridges, and renewable energy. Private investment in infrastructure is expected to increase from 37 per cent in the 11th FYP to 48 per cent in the 12th FYP. This growth is expected to

be spurred by private players' expected capacity expansion and their ability to provide good quality, timely service while keeping costs low."

Over the next 20 years, it is estimated that \$650 billion investment is required in urban infrastructure. Of this, almost 45 per cent is required for development of urban roads.

To boost urban infrastructure across the country, the government has initiated numerous measures and has allocated almost \$2 billion under Jawaharlal Nehru National Urban Renewal Mission (JNNURM). The government has also launched the Urban Infrastructure Development Scheme for Small and Medium Towns with an outlay of \$1 billion to address infrastructure needs of small towns and cities.

Additionally, there is a renewed push towards public-private partnerships (PPP) in the sector. Delhi-Mumbai Industrial Corridor (DMIC) is an ambitious Infrastructure programme conceptualised with Japanese government and aiming at developing new industrial cities as "Smart Cities" and converging next generation technologies across infrastructure sectors. Projects worth investment of \$200 billion have already been approved under DMIC. Success of DMIC has prompted many similar corridors including Bangalore Chennai corridor, etc.

**Anand Sundaresan, Managing Director, Ammann India**, said, "The Union Budget 2021 gets a tick mark on all the important boxes. It is very Positive and progressive. With



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announcement of huge investments on infrastructure projects including various road projects and rural development projects. If implemented as planned the construction equipment industry in India will easily reach the market size of over \$25 billion by 2030. This would be three times the current volume.”

Having said that the construction equipment industry would need further support, from the government in stabilising the steel prices and making them available at reasonable price to keep the equipment cost under control.

Also a well-defined vehicle scrappage policy, which was announced recently, can help create an industry of its own with a business opportunity of \$6 billion (Rs 43,000 crore) a year, say automobile sector executives and experts.

It could generate fresh employment and trigger economic growth, and also

act as a critical factor to revive the automobile market that has been hit by a prolonged slowdown, they said.

Finance minister Nitin Gadkari has said this month that the policy would soon be put before the Cabinet for approval. The government expects recycling of metals like steel, copper and aluminium from the scrapped vehicles to help reduce their imports. Getting the roads rid of old vehicles would also help lower pollution and the government’s oil bill, as the new vehicles replacing the old ones would be more fuel efficient.

An HDFC Bank study has estimated the market for vehicle scrappage and recycling at \$6 billion. According to it, nine million vehicles could go off roads by fiscal 2021 and 28 million by 2025, largely comprising two-wheelers. It would reduce carbon dioxide emission by 17 per cent and cut particulate matter in air by 24 per cent. Also, if half the Bharat

Stage-II and III vehicles go off the roads, it would save 8 million tonnes of oil a year.

## Growth drivers

**Growing real estate sector:** The Indian real estate market is expected to be valued at Rs 12,094.2 billion by 2022. With a steady demographic shift propelling its explosive growth, this too will result in a construction equipment demand spike. Predilection towards mechanisation over manual labor is apparent due to its cost-reduction and time-optimisation. Even in scenarios such as repairing sinking buildings, there will be increased demand for backhoe loaders, compaction equipment, crawler excavators, mobile cranes, and wheeled loaders.

**Accelerated public-private partnership projects in India:** India ranks second to China in public-private partnership (PPP) projects. The



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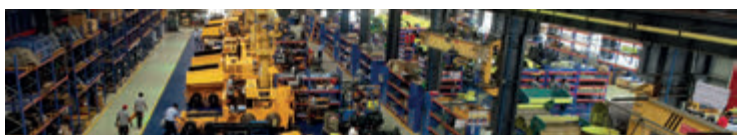
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Ministry of Road Transport and Highways has planned to construct six-lane roads under the Golden Quadrilateral program, which will require an investment of Rs 335.9 billion. The Golden Quadrilateral project, which aims to construct 5,847 km of roadways in the country in order to connect the 4 metropolitan cities to each other, will boost the demand for construction equipment.

Apart from this, the Indian government also plans to build 100 smart cities, for which they have allocated Rs 531.969 billion. This will result in an increased requirement of road construction equipment and earth-moving construction equipment, which in turn will lead to growth in the construction equipment market.

**Increased mining activities:** Staggering growth in the production of coal, iron ore, and other resources has led to the mechanisation of mining activities. This will lead to an increase in the demand for mining equipment such as jaw crusher, ball mill, trapezium mill, vertical roller mill, sand washing machine, crushing plants, mobile jaw crushing plants among others.

**Relaxed FDI norms to boost construction deals:** The government has rolled out several policies to allow infrastructural development in India.

They have relaxed FDI regulations in the construction sector by removing two major conditions related to the minimum built-up area and capital requirement. Moreover, the policy will allow projects under construction to have access to FDI. The removal of the lock-in period of three years will allow more overseas players to invest. Such increase in foreign investments will create significant employment opportunities and demand for construction equipment.

## Recent trends

**Adoption of robotics in the construction industry:** With the pace of infrastructure development in India, greater reliance on robotics technology can help tackle the complexities of megaprojects. According to Velprakash K, National Director at JLL India, bulldozer automation systems and cutting, stacking and packaging materials and welding structural frames using robotics are increasingly becoming a common feature across large, complex construction projects.

Mundane repetitive tasks such as lifting, shifting, unloading materials can be done with automation while achieving greater efficiency. Also, in work environments such as mining or tunneling or places where extreme environments and weather conditions

are highly unfavorable, adopting these technologies makes tasks easier.

**Use of telematics:** CASE, a construction company in 2018, launched an advanced version of its eagle eye telematics solution that was developed with Bosch at the Bauma Conexpo India. It will allow live tracking for the operating machine and assist in geofencing, which will assign a predefined space beyond which machines will stop working. Doing so will alert the user about any attempted theft, device tampering, and unauthorized usage.

**Autonomous construction vehicles:** Several companies are innovating autonomous vehicles like robotic tractors, mining equipment, and specialized non-road vehicles. These are likely to debut in India, even before autonomous cars. For instance, Ati Motors is building an autonomous cargo vehicle that will run inside large factory complexes and can replace manual trolleys carrying heavy parts. Another Bengaluru based company, Flux Auto, is building an autonomous truck capable of working on highways.

## Challenges

Regulatory issues, environmental concerns, and delays in project approval hamper construction projects, and limits the sales of construction equipment in India. Mining activities in Karnataka, Goa, Meghalaya, and Orissa are closed by the order of the Supreme Court of India in 2010. Lack of environmental clearance has caused projects of Rs 2,696.98 billion, to be left in the lurch.

Furthermore, 200 major infrastructure projects have been delayed due to the land acquisition bill. Project bottlenecks lead to an increase in the budget due to unforeseen expenses, a slowdown of work processes as per project timelines among others. This leads in turn delays the execution of projects and restricting construction equipment demand.





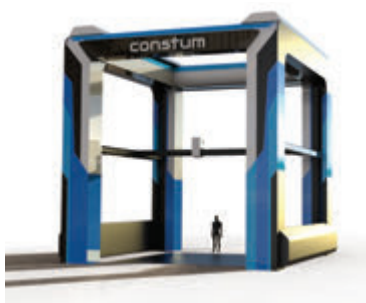


## CONSTRUCTION 3D PRINTER

CONSTUM, is an advanced construction technology, a 3d printer that extrudes mortar and converts pre-fed complex designs into standardized concrete structures layer upon layer, to construct affordable housing shelters on site, exterior or interior wall, or any custom architecture, like modern cottages, bunkers or rehabilitation shelters.



Design & Construction  
of a 3D Printed Bunker



CONSTUM - H1  
Build Size - 6X6X6 m



CONSTUM - L1  
Build Size - 3X3X3 m

### KEY FEATURES:

- Designed & Manufactured in INDIA
- Faster, cheaper & environment friendly
- Greater flexibility in construction design
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- Efficient use of mortar material
- Easy to assemble and operate
- Specialized construction material
- Made to order
- Build size as per construction requirement

Designed & Manufactured By:



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Toll Free No. 1800 121 7666  
Mobile - 8929946500, 9717492421  
Website: [www.morphedo.com](http://www.morphedo.com)  
Email: [make@morphedo.com](mailto:make@morphedo.com)

# "WE SEE HEALTHY GROWTH FOR CE INDUSTRY IN COMING YEARS"

**A**CE is India's leading material handling and construction equipment manufacturing company with a majority market share in mobile cranes and tower cranes segment. In addition to mobile cranes, ACE also offers mobile/fixed tower cranes, crawler cranes, truck mounted cranes, lorry loaders, backhoe loaders, vibratory rollers, piling rigs, forklifts, warehousing equipment, tractors, harvesters and other agri machinery.

**Manish Handa, Vice President & Business Head – Earth Moving & Road Construction Equipment Division, Action Construction Equipment**, speaks on the factors that are driving the demand for the construction equipment industry.

## What is the present size and growth rate of the construction equipment market in India? How construction equipment market has evolved in the last couple of years?

According to our estimates, the market size for construction equipment for FY 2020 was 84,000 units. The Indian market for construction equipment has seen exponential growth. This rise is majorly due to government's push for infrastructural development especially in roads, railways, rural development and industrial projects to name a few.

## How is your company contributing to the sector?

With our yearly revenue crossing Rs 1,200 crore, we are proud to say that ACE, a 100 per cent Swadeshi company, is the market leader in both the pick and carry cranes and the tower cranes segments, holding over



**Manish Handa,**  
Vice President & Business Head – Earth Moving & Road Construction Equipment Division, Action Construction Equipment

60 per cent of the market share in each segment. We believe that the success of the construction industry is the barometer of progress for any nation. And, it's our humble and earnest vision to be part of such a momentous transition for the nation.

## What are the new products and solutions offered?

We had recently launched the NX Series next-gen multi activity cranes. These new NX Series cranes perform multiple tasks apart from crane operations thereby adding versatility and providing multi-purpose utilisation for the users. These types of multi activity cranes with articulated steering are the first in the world and ACE has already applied for the necessary patents for

the entire series.

Our all new rugged and reliable AX124 backhoe loader is powered with highly efficient 76HP and 96HP Kirloskar engines. It is equipped with improved hydraulic pump and advanced structured loader arm with higher breakout force while digging or loading materials, ensuring 10 to 15 per cent higher productivity. Further, it is fitted with globally renowned transmission from Carraro and hydraulic pump from reputed brands and is available in both two-wheel and four-wheel drive options.

These machines have been developed by ACE at their in-house R&D centre with our core proposition of offering value for money products with superior performance and reliability.

## Which factors are driving the demand for the construction equipment industry?

Infrastructure push by government with increased focus in public-private partnership projects and inflow of FDI's in the construction space has been instrumental in driving demand. The government has outlined several road works, building works and smart city development projects. All these will require construction and earthmoving equipment, which will result in the fast-paced growth of the construction equipment sector in India. Further, infra push will be dependent upon accelerating in availability of finance and construction companies emerging with stronger balance sheets.





## How are infrastructure projects driving the demand for construction equipment?

The National Infrastructure Pipeline (NIP) is the key demand driver for the CE industry. Road transport, railways, irrigation, water resources, airports are the key projects covered under the NIP programme. It is expected that infrastructure spending by the government will continue to remain robust in the coming years. The government's focus on infrastructure development is evident in fast pace of road development, which is now touching 33 km per day. However, problems of land acquisition and financing through new models have still not been fully addressed.

## How do you look at the demand diversity in the construction equipment sector?

The demand in this sector has never been homogenous. There has always been a tipping of the scales with certain initiatives and certain regions outperforming the other. With the amount of importance given to nation-building projects through the PMGSY and MGNREGA programmes, it's safe to assume that rural infrastructure development will shape the sector's growth in the coming years.

## What has been the impact of Covid-19 on the construction and infrastructure equipment industry?

The construction and infrastructure equipment industry is among the sectors that have been severely hit by Covid-19 pandemic and lockdowns. Nearly, all construction and infrastructure activities came to a standstill. There was a sharp slump in sales. Several equipment manufacturers even had to temporarily shut down their plants. In Q1, FY21 industry volumes fell sharply to >60 per cent YoY. However, the worst is



behind us and the industry is now recovering. Second half has shown encouraging signs of a pick-up in the CE industry mainly driven by increased infrastructure spending by the government in the past few months and good rural demand.

## With the government focusing on the vision of 'Atmanirbhar Bharat' how it would catapult growth for the CE market?

We are proud to say that ACE is a 100 per cent Swadeshi brand and follows the vision of Hon'ble Prime Minister of "Make in India". The government's Atmanirbhar Bharat initiative will not only facilitate in manufacturing and sourcing of all products locally but will also help in improved collaboration with financial institutions, MSMEs and government regulatory bodies for all sorts of assistance. Better collaborations will further assist in creating better infrastructure, R&D and logistics. All this will make the industry more competitive globally and can help equipment manufacturers to further increase their production capacities in the future.

## Explain the roadmap to success for the construction equipment industry.

Infrastructure is the very foundation of every strong nation and economy. According to the vision of our Prime Minister, Shri 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.

## What is your outlook on the Indian construction equipment market for 2025?

With the strong government push on infrastructure development and outlining of \$1.4 trillion in NIP, we see a healthy growth for construction equipment industry in coming years and expect it to touch 1,40,000 units by 2025.



# "THERE IS A LOT OF PENT-UP DEMAND IN MARKET THAT NEEDS TO BE CATERED TO"

**T**ushar Mehendale, Managing Director, ElectroMech Material Handling Systems (India), elaborates on the company's activities and the market trends post pandemic scenario.

## In the current scenario, how are you dealing with the challenges?

In any challenging situation, it is the company's inherent values that help channelise all the efforts. For us – Trust, Ownership, Customer Focus and Growth are our stated company values. In situations where the outcome is unknown, we believe that if all of us in the ecosystem work under an overarching umbrella of trust, then the path becomes easier. We are proud on our ability to take ownership of the situation and with a clear agenda of customer focus, all our actions are aligned likewise. This allows us to continue growing – be it in our business, in our capabilities to withstand adversities or in our skills for doing something new.

## What is the current market scenario of industrial cranes in India?

In a projects business, the ongoing projects simply cannot be stopped and these need to be completed and taken to their logical conclusion. Hence, when it comes to crane orders for big projects under execution, the orders are still being finalised in the industry. The pandemic had put a pause on the entire activity in the market for a few months. However, the market has almost got back to the pre-pandemic days and business seems to be back to normal.

## What are the latest products



**Tushar Mehendale,**  
Managing Director, ElectroMech Material Handling Systems (India),

## and solutions offered?

At ElectroMech, we have a stated strategy of Cranes & Beyond. In cranes, we work with Abus Crane Systems for the standard range of workshop duty cranes. We work with Stahl Crane Systems of Germany for international projects in the oil & gas industry using their EX product. We also custom engineer and manufacture cranes for steel plants, automobiles, power, paper and a whole host of different industries. We have now extended the ElectroMech brand across allied material handling equipment like forklifts and warehousing equipment through our association with Hyster Yale Group's Yale brand of lift trucks. We have also started a new vertical of aerial work platforms for catering to various sectors within the infrastructure industry. Our tower cranes rental division is also flourishing.

## How are customer preferences changing while selecting the product? How are you meeting these requirements?

Customers are now razor focussed on equipment that is safe and reliable and based on sound design. In the past, customers used to focus only on the price and look at cranes and other material handling equipment as something secondary to their core machinery. However, mature companies have realised the importance of material handling equipment within the entire value stream of their operations and the focus is now more on engaging with a reliable partner that not only has the right product to offer but who is also capable of supporting it with world-class service. Today, we have the widest portfolio of material handling equipment available under one roof in India. Our service promise is something that our customers swear by and something that we are extremely proud of.

## What is the growth trend in the post pandemic scenario?

The global economy came to a virtual standstill and has again restarted. Due to this short term slowdown, there is a lot of pent-up demand in the market that needs to be catered to on a priority. Hence, we anticipate a quick bounce back from the bottom with urgency increasing in the markets to service the customer demands. This is going to create a good tailwind for future growth by getting into a virtuous cycle of growth fuelling more growth. The financially strong companies have been able to withstand these tough times and have now emerged much stronger. The companies which were weak at the beginning of the pandemic have unfortunately become weaker or have even perished. This has caused a shake out in various industries, leading to a lot of cleaning up.





# MINI MACHINES, MAXIMUM DEMAND!

The demand for compact equipment from urban projects is expected to continue.



**C**ompact machines span mini excavators, mini compactors (rollers) and skid-steer loaders. All eyes are on this niche segment in India because demand for compact machines has been growing contrary to the overall declining trend in the construction equipment industry.

Last year, demand for construction equipment was down around 20 per cent while the market for compact equipment was up by 20 per cent, observes **Ramesh Palagiri, Managing Director & CEO, Wirtgen India.**

Palagiri expects this demand upswing to continue, despite the impact of COVID-19, driven by projects in confined spaces and smaller jobs. Some industry experts cite the

shortage of workers as a potential reason for growth in the mini and compact machine segment. But Palagiri points out that expansion in previous years happened irrespective of the shortage of labour.

In the current atmosphere, **Rahul Shorey, Head Sales, Construction, Tata Hitachi,** believes hirers are unlikely to make any major decision to invest in machinery (unless justified for captive use), much less mini excavators, which is an evolving market. However, in the long term, he expects demand for mini machines to continue to expand faster than the rest of the market.

Let's examine the prospects of different mini machines.

**Compact excavators:** Compact

excavators are similar to regular excavators in structure, with a crawler undercarriage and revolving superstructure fitted with a boom, arm and bucket as the front attachments. However, they differ from regular excavators by being able to perform in an extremely compact space and reach worksites with a narrow approach road—either by being driven to site or transported on a pickup or a mini truck, explains Shorey.

“Sales of mini excavators in India crossed the 1,000-unit mark in 2018,” he observes. “Mini excavators make up 5 per cent of the excavator market.”

Tata Hitachi's mini excavator range includes the indigenously developed 2-tonne TMX20 and the zero tail swing models: the 2-tonne ZAXIS 20U and

the 3-tonne ZAXIS 33U. The zero tail makes the machine more compact and therefore easier to transport and well suited for trenching in confined spaces.

“Indigenous models are better from the service and spare parts point of view—as these are readily available,” opines Shorey.

“JCB’s full range of mini excavators (JCB30Plus, JCB50Z, JCB51R and JCB55Z) is designed and manufactured in India, at the company’s Jaipur plant, for a tropical/semi-tropical climate and arduous applications,” explains Jasmeet Singh, Head, Corporate Communications and Corporate Relations, JCB India.

JCB’s mini excavators fall in the 3 tonne and 5 tonne operating weight category.

“Domestic (made in India) world-class manufacturing gives customers multiple options to choose from and more value-added features such as a pre-fitted auxiliary hydraulic circuit for the fitment of a hammer and auger drill, and a range of different

sized buckets,” adds Singh. “Domestic manufacturing also gives customers seamless serviceability and product support.”

So far, Shorey observes that the use of mini excavators has generally been driven by the high cost of labour in urban and other areas. Therefore, the market is concentrated in the south, largely Kerala, where labour is expensive.

With increasing use, however, appreciation is growing for the compact size of the machine, its higher safety in operation and efficiencies—both in fuel and usage—which in turn is further driving the use of mini excavators. Shorey points to the use of mini excavators even in labour-dominated states like Bihar, which is interesting because, conceptually, mini excavators are built to do work that can mostly be performed only by manual labour. He believes this switch is being driven by the need for speedy, high-quality work, which can be assured by mechanisation.

Among the potential areas of application in the construction industry, Singh lists “urban infrastructure development projects like smart cities, Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and metro rail projects; building foundation digging and multi-storied building projects needing the removal of debris from basements; and industrial projects like oil refineries, ports, steel plants, etc. Municipal corporations/councils and contractors needing compact machines to clean muck from roadside drains would especially benefit from the mini excavators’ unique boom offset feature that facilitates straight-line working without frequent repositioning of the machine.”

“Outside urban areas, there is growing awareness of the utility of mini excavators for tasks like long-distance trenching to lay pipelines for water, sewerage or gas, to lay pipelines along the narrow roads of a village or a







town, to build septic tanks, or for irrigation projects to descend the bank of small canals and scoop out silt,” he adds.

In future, Shorey predicts that the Jal Jeewan Mission, with its motto Har Ghar Jal, will also be a big driver of demand for mini excavators, as in many villages, accessibility to houses for laying drinking water pipes is available only to such machines.

**Compact compactors:** Compact compactors offer a host of features. These machines from Wirtgen group company HAMM offer high gradeability (up to 60 per cent) and maximum ground clearance thanks to the drive provided by modern wheel motors. The modern motors with future-proof technology in HAMM’s compact compactors also ensure extremely low emissions. These are very short, making them ideal for narrow construction sites and

compaction work on rough terrain.

“CASE India’s mini 450 DX double-drum roller has also been designed to work in extreme terrains and operate in demanding situations, hence demand for this machine is driven by infrastructure and urban projects such as roads and highways, bridges and transportation,” shares **Puneet Vidyarthi, Brand Leader, CASE India.**

A few prestigious projects where CASE India’s machines are currently being deployed include Sagarmala, Bharatmala, Pradhan Mantri Gram Sadak Yojna and Trilateral Highway (India-Myanmar-Thailand highway).

Projects in confined spaces and for smaller jobs are drivers for compact compactors, says Palagiri. HAMM’s H-series compactors are high-performance professionals for modern earthwork with a high compaction force. Off-road, their three-point

articulated swivel joint and large slope angle front and back make them extremely manoeuvrable while ensuring optimum driving stability.

As for CASE India’s SR130 skid-steer loader, demand is being driven by urban infra projects. “Its compact structure facilitates work efficiently in tight spaces and boosts productivity,” shares Vidyarthi.

While HAMM compactors are currently imported from Germany, CASE India is manufacturing mini drum rollers at its world-class Pithampur facility for both the domestic market as well as for Africa, Southeast Asia, Russia, the Middle East, etc. However, CASE India’s skid-steer loaders are imported. Greater indigenisation would bring down the cost of this class of equipment and expand demand—something to look forward to.



**Source: Construction World**

# RURAL ECONOMY DRIVING DEMAND

Boosting economic growth is currently a major challenge for the government to achieve its dream of making India a \$5-trillion economy by 2024, writes **Samir Bansal of Off-Highway Research.**



**A**fter a 15 per cent drop in construction equipment demand to 83,470 units in 2019, some signs of recovery were visible at the beginning of 2020. However, due to the Covid-19 pandemic and an unprecedented national lockdown beginning 25 March 2020, sales declined by an estimated 39 per cent in the first half of the year. However, demand for construction equipment recovered at unexpected levels in the second half and monthly sales reached peak levels by November 2020.

Road construction activities have remained strong even in the crisis period, and the Ministry of Road Transport and Highways (MoRTH) alone successfully completed construction of 3,951 km of roads during April-September 2020. It has

achieved the construction of 21.6 km per day even during the pandemic and aims to construct a total of 11,000 km of roads in the financial year ending March 2021.

The rural economy has also been driving sales of construction equipment. A good monsoon, record agricultural production and huge procurement by the government agencies along with a focus on rural infrastructure are all attributable to increasing rural prosperity.

## Dramatic turnaround

After a dismal performance in the quarter ended June 2020, it was expected that the construction equipment market would decline by over 30 per cent in 2020. However, a strong economic recovery and postponement of the implementation

of the new emission standard CEV Stage-IV applicable to wheeled construction equipment to 1 April 2021, resulted in a dramatic turnaround. Sales of backhoe loaders, excavators, pick-and-carry cranes, and road building equipment have recovered much rapidly in the second half of 2020, compared to other construction equipment.

Boosting economic growth is currently a major challenge for the government to achieve its dream of making India a \$5-trillion economy by 2024 (financial year ending March). This would need an estimated investment of about \$1.4 trillion (Rs100 trillion) on infrastructure during 2019-2024.

The report of the inter-ministerial task force to draw National Infrastructure Pipeline (NIP) for each



year has a projected total infrastructure investment of Rs 111 trillion during 2019-2024. As per the NIP, Central Government (39 per cent) and state government (40 per cent) are expected to have equal shares in funding of the projects, while the balance of 21 per cent is expected to come from the private sector. However, the financing of the NIP would be a challenge.

Many infrastructural development projects in sectors such as roads, railways, rural and urban development, airports, power, ports, and real estate are underway in the country. Indian mining sector is also very strong with huge reserves of coal, iron ore, bauxite and various other metal and non-metal minerals. Many ambitious programmes aimed at improving rural and urban infrastructures are being implemented nationwide, which have the inherent potential to boost the construction equipment market.

Apart from infrastructure, industrial development such as the construction of new factories and the expansion of capacity in steel, power, cement, fertilisers, oil refineries and other sectors will have a positive impact on the growth of construction equipment. The industrial sector is

India: Forecast sales of construction equipment, 2020-2024 (in units)

|                         | 2020   | 2021   | 2024   |
|-------------------------|--------|--------|--------|
| Articulated dump trucks | -      | -      | -      |
| Asphalt finishers       | 1,000  | 1,150  | 1,250  |
| Backhoe loaders         | 38,000 | 40,000 | 40,000 |
| Compaction equipment    | 4,300  | 4,900  | 5,500  |
| Crawler dozers          | 325    | 450    | 500    |
| Crawler excavators      | 16,000 | 20,000 | 25,000 |
| Crawler loaders         | -      | -      | -      |
| Mini excavators         | 1,350  | 1,600  | 2,000  |
| Mobile cranes           | 7,500  | 9,000  | 12,000 |
| Motor graders           | 1,000  | 1,200  | 1,600  |
| Rigid dump trucks       | 400    | 500    | 600    |
| RTLs                    | 300    | 400    | 450    |
| Skid-steer loaders      | 500    | 600    | 750    |
| Wheeled excavators      | -      | -      | -      |
| Wheeled loaders         | 2,250  | 3,000  | 3,800  |
| Total                   | 72,925 | 82,800 | 93,450 |
| Annual % change         | -13    | +14    | -7     |

Source: Off-Highway Research

also expected to do well due to programmes such as Atmanirbhar Bharat and Make-in-India with support of recently announced production linked incentive (PLI) scheme.

### Upward trend in long term

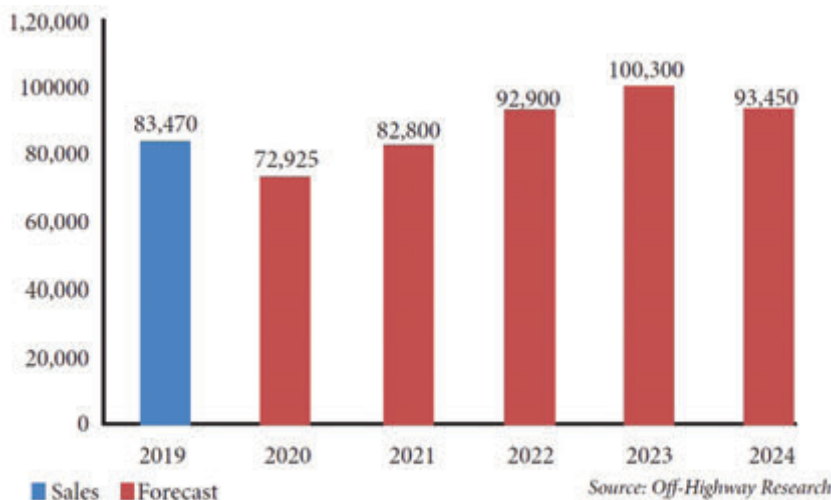
Considering the set of conditions prevailing in the country and other foreseeable factors at the moment, the

market for construction equipment will follow an upward trend in the long term, but with a dip in 2020. Off-Highway Research predicts the market to fall by 13 per cent to 72,925 units in 2020. Sales should increase 14 per cent to 82,800 units in 2021, 12 per cent to 92,900 units in 2022 and a further 8 per cent to peak at 100,300 units in 2023. The impact of the general election will reduce sales of construction equipment by 7 per cent to 93,450 units in 2024.

Sales of all equipment types will rise, except irregularly sold machines such as articulated dump trucks, crawler loaders and wheeled excavators. Structurally, there will not be much change and the market will continue to be dominated by popular products: backhoe loaders, crawler excavators, mobile cranes, compaction equipment and wheeled loaders. Together, these five types of equipment should account for 92 per cent of the market in 2024.



- Samir Bansal is General Manager, India, Off-Highway Research.



India: Sales and forecast sales of construction equipment, 2019-2024 (units).

# DEMAND DIVERSITY IN CE SECTOR

Infrastructure is a silver lining in the pandemic for many States. With the lockdowns in place in most States during 2020 and reduced vehicle traffic, crews continued their road work and were getting more work done than usual.



**D**emand within the global construction equipment manufacturing industry is anything but homogenous, with certain countries and sales regions significantly outperforming others, with a whole host of factors fuelling and suppressing each key market.

Of the key regional sales markets, Europe is showing steady signs of growth, with the UK, in particular, enjoying strong sales numbers. Contrasting the US, China, the nation with the world's biggest demand for construction equipment, has seen domestic sales dip, with many firms now looking to up their percentage of exports against total machine sales.

However, the Asia-Pacific region, with China at the forefront, is still the key region for aggregate demand due

to its huge government-led investment in new transport and other vital infrastructure. In fact, leading independent research tips the region's share of overall global aggregates demand to grow over the next two years. Such a big demand for aggregates tends to go hand in hand with big demand for construction equipment.

The latest construction equipment unit sales forecast from an international construction equipment industry management consultancy offers a positive perspective. Along with Asia-Pacific, respected industry analysts such as OHR, along with national construction-minded associations, are tipping markets such as Africa and parts of South America, especially Brazil, to continue to prosper as governments and private

investors continue to invest big money on new public infrastructure works.

The construction equipment market in North America has been riding a strong economy over the past few years. The segment was due for a slowdown; however, current worldwide economic conditions have caused a rapid cycle to reset in the construction industry. Government is committed to support the demand in the sector by investing heavily into infrastructure. We have yet to see any new level of demand, but we expect to see signs of the new normal in the second half of 2020 and early 2021.

Many of the future infrastructure bills moved to the back burner in favour of help for small businesses. However, infrastructure is a silver lining in the pandemic for many States. With the lockdowns in place in



most States during 2020 and reduced vehicle traffic, crews continued their road work and were getting more work done than usual.

During the economic shut down, construction remained one relatively bright spot, since it was declared “essential” by federal and state officials. U.S. government officials signaled that they are looking to steer even more money to infrastructure projects to help the economy recover from the damage caused by the pandemic, but we have not seen any specific moves in this direction.

Supporters of spending on infrastructure and transportation believe this could help put people to work with dollars guaranteed to be spent inside the United States, while tackling a backlog in maintenance work that acts as a drag on the economy.

The most recent North American construction equipment projection on production shows a decline of 14.2 per cent in 2020 when compared to 2019 volumes. While forecasting a double-digit decline in 2020, we remain rather optimistic on the mid-term view (2021-2023). We expect the market

segment to post a growth rate in 2021 of 4.2 per cent when compared to 2020 and an additional increase of 6.5 per cent in 2022.

When the coronavirus arrived late last year, it profoundly affected most industries, geographies and populations. It has forced most of us to evaluate our established norms and to make changes moving forward.

For equipment and vehicle OEMs, powertrain providers and other component suppliers, surviving the current situation and emerging stronger than before this crisis will require new thinking and strategies. The speed and flexibility in adopting new standards and operations differentiate winners from losers.

The COVID-19 global pandemic has made this year very challenging across most industries. This includes the production of agricultural (AG) machinery, construction equipment and industrial products in North America. The off-highway segments (agricultural, construction and industrial) are all seeing dramatic production declines in 2020 compared to 2019.

Demand for products in most

markets and regions has been weak and will not return to normal in the short term; we have already witnessed this during Q2 2020. This is especially true even for the industries that suffered the least impact in supply chain disruption and manufacturing shutdowns.

February 2020 marked the end of the longest economic expansion in U.S. history, a stretch of 10 years and 8 months, according to the National Bureau for Economic Research. The U.S. economy was due for a slowdown, but the pandemic dramatically sped up the end of the current cycle.

The last few years have been challenging for the agricultural and farming industry in North America. It suffered multiple setbacks in 2019, driven by weather, low commodity rates and trade disputes. Power Systems Research's latest numbers indicate that the agricultural machinery market declined 3.7 per cent in 2019 versus 2018, and we had forecast a recovery to start in 2020.

However, that projected recovery has been postponed and put on hold again, due to the slumping world economy caused by COVID-19.

Currently, we expect the AG segment to follow other industrial and heavy equipment industries. In 2020, we project a decline of 12.5 per cent when compared to 2019. A small recovery is projected for 2021 at 4.4 per cent.

The segment decline rate in 2020 is low double digits, based mainly on already low-level production that took place during 2016-2019. Thus, we will not see 25-30 per cent declines in the AG sector as we witnessed in other market segments. We expect that further changes are due to supply chain channels and ultimate rebalancing of market shares among industry players. The recovery will be slow and steady, but we expect levels of production in 2022 to reach those of 2016-2017.



# "DEMAND HAS STARTED PICKING UP"

**A**nirban Sen, Underground Business Manager Asia Pacific & India, Epiroc Mining, shares more on the demand trends and market outlook for tunnelling equipment. Epiroc Mining offers a wide range of tunnelling equipment for underground mining and underground civil work applications.

## How is the current demand trend for tunnelling equipment?

In between the demand for tunnelling equipment had gone down, but recently it has started picking up with many civil projects that are coming up in the country. Especially, the government is investing heavily in border road projects like the Atal Tunnel while the Zojila tunnel project has been started now. The government is developing the infrastructure on the border in a big way. The Char Dham project of RVNL is going on which is a big project. Some hydropower projects have also been planned. In mining, our customers have invested in equipment and automation for their operations, taking forward the concept of mine of the future. We are discussing the



**Anirban Sen,**  
Underground Business Manager Asia Pacific  
& India, Epiroc Mining

requirement of equipment for their other mineral operations too. Some mining companies are also planning to modernise their old equipment fleet. All these are opportunities in the making for us and the tunnelling equipment players.

## What are the major tunnelling jobs involved in mining? Which are the equipment used?

As far as tunnelling in underground metal mine is concerned,

the first job when you open the portal is to drive the decline or incline. Driving incline and decline is a tunnelling job done to reach the ore body. Once reached the ore body, you develop the ore body based on your underground mining methodology that depends on various factors like the size and width of the ore body. Once you reach the ore body, you have to develop the levels, sub-levels, crosscuts and other structures. These are also part of tunnelling activities in underground metal mining.

As far as the equipment are concerned, you need to start with face drills i.e Boomers. Then you need low profile dump trucks (LPDT) and load haul dump (LHD). The LHD will take the muck and dump into the trucks and the trucks take it outside the mine. Also there are ore passes available when LHD takes the muck from the ore faces and they dump it into the ore passes. Through the ore passes, it goes to the crusher level and then needs to be evacuated through LPDT etc.

In a nutshell, the basic tunnelling activity in underground metal mining involves development of ramp, development of levels and sub-levels, stock phases, crosscuts and other structures.





### What are the products and solutions from Epiroc for tunnelling applications?

We offer Boomers for tunnelling applications, both in mining and civil works. We have various types of Boomers starting from single-boom to four-boom, bolting machines, LHDs ranging from 4 tonne to 18 tonne, and low profile dump trucks starting from 20 tonne to 65 tonne. Apart from mining, our tunnelling machines are used in underground drilling applications for civil construction of road and railway tunnel projects, hydropower projects and many more. There are many such machines working in India and globally in the underground heavy civil applications.



### How important is proper safety measures in tunnelling operations?

For mining, there are regulations such as DGMS in India. For globally, there is the stringent US regulation of MSHA. Also, generally emission levels need to be controlled in mining operations. Ventilation has to be proper. Machines should have proper safety features. There needs to be the standard features of FOPS and ROPS canopies/cabins as the operators need to be safe. The sound level inside the cabin or the canopy should be equal to or lower than permissible level.

Operators should use proper PPEs while operating the machines.

Our machines are well equipped with the necessary safety features whatever required as per the standard, sometimes over the standard. Our products are being supplied not only in India, but also globally.

### What are the key challenges involved in tunnelling?

The first major challenge involved in tunnelling is geology. If the geology doesn't support your underground tunnelling methodology, then there can be accidents in civil construction

and underground mining. So, initially we need to assess the geology and the nature of the rocks. If you know the geology well, then you can plan your support programme properly like what kind of bolts you need to go for, whether you need to go for shotcreting, or any other challenges need to be checked. In civil construction, land acquisition is a major challenge. Like when you are constructing a dam, you are displacing a lot of land and people. So in land acquisition there are socio-ecological challenges.

Availability of experts is a challenge. In India, you may have the people in big numbers but the lack of trained experts in the field can create challenges. Proper training of the operation and maintenance crew is needed.

Underground mining is a finance intensive project and you need to have deep pockets to start such projects because even if you start the mine, you may start getting the actual ore after three to four years. So in the first three to four years of mine development, you are not earning anything. Thus, sustainability with respect to finance is important.



# "LEADING MINING COMPANIES ARE NOW TAKING STEPS TOWARDS DIGITALISATION"

**A**lok Kumar Verma, Director – Mining Business (India Region), Hexagon Mining, elaborates on the mining scenario in India and how digital solutions can transform the industry.

## What are the major digital solutions offered by Hexagon to the Indian mining sector?

Hexagon is the only company in the world who provides end-to-end 'Life-of-Mine Solution' to mining industry starting from, exploration, mine planning, engineering, production and operations, safety, survey, monitoring, analysing and reporting under its product portfolios of MinePlan, MineOperate, MineProtect, MineMonitor and MineEnterprise. Hexagon provides integrated solutions to mining industry which includes Mine Planning Software, Fleet Management, Machine Control, Reverse Assist, Operator Alert System (OAS), Personal Protect, Collision Avoidance (CAS), Vehicle Intervention System (VIS), and mine monitoring systems like slope stability monitoring radars, vibration monitoring radar, Total Station, scanners, Lidar, etc. In addition, there is an Enterprise solution which helps analyse all the data for proactive decision making.

## Technology adoption in Indian mining sector is very low compared to global markets. What is your experience so far in India?

Mining in India is age old and the industry continued to use traditional methods and technologies. The modernisation and digitalisation is slow compared to the leading mining



**Alok Kumar Verma,**  
Director – Mining Business (India Region),  
Hexagon Mining

countries. While we have come a long way, despite being prominent on global mining map, we are much behind compared to the other major mining nations who have reached to the level of 'Autonomous Operations'. However, with increased focus on mining, recent amendments and changes in related law and policies, and our Prime Minister's vision to

increase digitalisation in mining, there are good subsequent developments in the industry.

Leading mining companies are now serious and showing sincere interest and taking steps towards digitalisation. An Expression of Interest (EoI) by Coal India for engaging consultants to explore scope of digitalisation in some of their large mines over next few years, a similar approach from SCCL and an EoI by NALCO for a pilot digitalisation project of one of their mines and similar initiatives from some of the other private mining companies are positive indications and moves towards digitalisation, which gives an immense confidence that digitalisation process would get acceleration in the country.

## How can digital technologies make mining operations safe and productive?

Mining operations are mostly located at remote places where infrastructure lacks and it is also working 'against the nature'. Mining is





all about exploiting the natural resources by extracting fuel and non-fuel minerals (ore and metals) from the earth. It is considered as one of the most challenging and risky industrial operations as well as has significant impact on environment and nearby inhabitations. Mining operations includes, drilling and blasting, use of large and heavy earthmoving equipment and machinery etc, consumes large amount of energy, which creates unsafe and polluted environment around.

However, mining is backbone of all the industries and contributes significantly to industrial growth of the country. The digital technologies available nowadays, can support every aspect of mining operations to make it more efficient, productive and safe. For instance, a MinePlan Software can help planning 'life of the mine' including design, engineering, production schedule etc. Fleet Management can help real-time monitoring of all equipment operating in a mine for better utilisation and to improve productivity, equipment health monitoring and management, better inventory management, and tyre and fuel management. Reverse Assist can help accurate placement of trucks for loading to improve cycle time, while digital safety solutions can help avoid incidents and accidents-related loss to equipment and workforce.

Various monitoring solutions can help real time monitoring including survey, slopes stability and other safety aspects. In fact, nowadays, technology is available to make any mine completely digital – 'SMART MINE'.

### Do you see the recent policy revivals as an opportunity for technology providers?

Yes, we see a huge potential because of the recent changes in policies and subsequent progress in the industry like coal mining is opening up for 'commercial coal'



production. Further new coal blocks allotments are in pipeline, iron ore blocks have been re-leased or re-allocated. The commercial coal mining and iron ore producing companies will have to be competitive in marketplace and must be efficient, productive and safe. They would also like to match the global operational standards in planning, operations and safety. Hexagon is very positive and excited about these developments and sees a huge potential for 'digital mining solutions' in the country going forward.

### What is your outlook on the mining market in India in the post-Covid scenario?

Mining has significant contribution to India's GDP which is approximately 2.5-3 per cent and its contribution to industrial sector is 10 to 11 per cent. Mining is backbone of any country's industry and India is no exception. Government of India has focused approach to support the growth of mining industry to become 'Aatmanirbhar' and the related developments are quite positive and encouraging. The current developments indicate much better outlook for mining in the post Covid-19 scenario.

### What are your major expansion plans for India?

Hexagon is one of the global

leaders in sensor technology and offers 'Life-of-Mine Solutions'. It is the 'only company who solve surface and underground mining challenges with proven technologies for planning, operations and safety. We are increasing focus and customer base in the country, offering complete range of 'Life-of-Mine Solutions' considering the significant development and growth opportunities in the country.

We are looking forward to building 'SMART MINES' to take Indian mining industry to the next level and match global standards.

### What is your message to the industry on digitalisation?

We would like to recommend and appeal to the Indian miners to explore all possibilities to go for digitalisation in mining operations and appreciate the benefits of taking Indian mining industry to next level and match global standards in terms of productivity, efficiency and safety for better exploitation and utilisation of natural resources. While investing in digital technologies, they should take a holistic perspective, expect return on investment (RoI) in mid and long-term, rather than an immediate or a short-term, to encourage and support this drive as the 'benefits are immense'.



**Note: Views expressed are personal and not essentially of the organisation.**

# "SERVICE SOURCING STRATEGIES WILL LEAD TRANSFORMATION OF INDIAN LOGISTICS ECOSYSTEM"

In the current scenario of Covid-19 impact on the market, KION India is ready with the offering to manage labour shortage and no-contact material handling. **Sunil K Gupta, President, KION India**, shares more on the market trends and the company's plans.

## What is your outlook on the MHE market in the coming years?

Covid-19 has affected business in a wide way at different levels. The situation however, would improve as the market normalises and there is some movement in liquidity. However, there would be an overall upgrade in the retail, logistics and warehousing segment to cater the new opportunities.

Our Indian industry will eventually expect no-contact material handling. There is possibility for a surge in automation – automated material handling equipment to keep workers safe and making it easier for warehouses or factories to support shortage in labour workforce. Installing these machines is simple and easy to modify as per schedule or demand. Our KION portfolio includes such products and we are ready to offer such solutions as per customer requirement.

## How is the warehousing and logistics sector progressing in India?

Currently, the Indian logistics sector is valued at around \$160 billion and was forecasted to grow at 10.5 CAGR during 2019 to 2025. However, with the onset of Covid-19, there



**Sunil K Gupta,**  
President, KION India

would be a breakthrough, and warehousing and logistics sector could be the fastest one to recover.

The industry dynamics may change. There will be advancements in digital technologies as consumer preferences would be changing due to e-commerce and government reforms. Also, there would be a shift in service sourcing strategies which would lead the transformation of the Indian logistics ecosystem.

Provision of infrastructure status to logistics, the introduction of the E-Way Bill, and GST implementation which have been driven by the government will be streamlining the logistics sector in India. Set up of a logistics division under the Department of Commerce, including various technology updates, and development of dedicated freight corridors and logistics parks are pushing the upgrade of the logistics industry.

There were many start-ups in India

which gained a substantial foothold after the onset of e-commerce, and there are several new companies that are gaining traction. Online platforms have increased competition and lowered freight costs with real-time data availability and a transparent value chain. It is imperative for logistics service providers to innovate and adapt to the transforming logistics landscape.

Preference in digitalisation will improve the efficiency and performance in freight management and port operations. Warehouse automation shall be the focus to achieve operational efficiencies to counter supply-chain cost pressures in the industry. Increased investment in infrastructure, last-mile connectivity, and emerging technologies are the topics which are driving the logistics landscape in India.

## How is the material handling equipment segment gaining from the growing warehousing and logistics operations?

In warehousing, the government has taken measures in the last few years, which has led to the transformation to extensive, organised, large area warehouses from unorganised smaller ones. Palletisation of material handling has been focused upon by major medium and large organisations. Big brands have invested in large warehouse spaces to meet the demand which we forecasted for this year in retail.

However, the small industries have started identifying the benefits and started to use smaller equipment. With the increase in industrial growth, rise



in demand of consumer goods and services augmented by increase in disposable income and focus on efficiency and safety, market would be shifting towards automated products and solutions in the coming years. In other countries, organisations have already benefited from these products and have efficiently improved the material handling technique.

Practically, after a certain volume; manual material handling is beyond human control and requires advanced and automated solutions. As much we move towards large capacity warehouses, automated and smart warehouses become vital for efficient operations. With the environment awareness as well as compliances and government push towards green and clean energy, future smart warehouses are likely to be based on non-pollutant energy-efficient material handling equipment. Battery-operated electric



forklifts and warehousing equipment will be the base of automated/smart warehouses and pull the demand of battery-operated material handling equipment.

#### How do you look at the government's policy support initiatives?

The government initiative of the

economic package for MSMEs will definitely drive the small and medium organisations which are associated with the industry in the form of vendors, suppliers, transporters and channel partners and thus bring in the required liquidity into the business to streamline their operations. We are expecting the market to recover with the improvement in liquidity.



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**FOR REGULAR UPDATES**

# CE SECTOR SECURES JOBS IN A DIFFICULT ENVIRONMENT



Globally, sales of construction machinery fell by three per cent in 2020, but the Chinese market grew by 30 per cent, so the global market excluding China actually slowed by 17 per cent.

**T**he general meeting of the VDMA Construction – Equipment and Plant Engineering on 3 March 2021 drew a positive conclusion for the past and current year. Central topics were the economic situation, the importance of the European climate goals 2050 for the industry and the development in relations with the USA after the change of government.

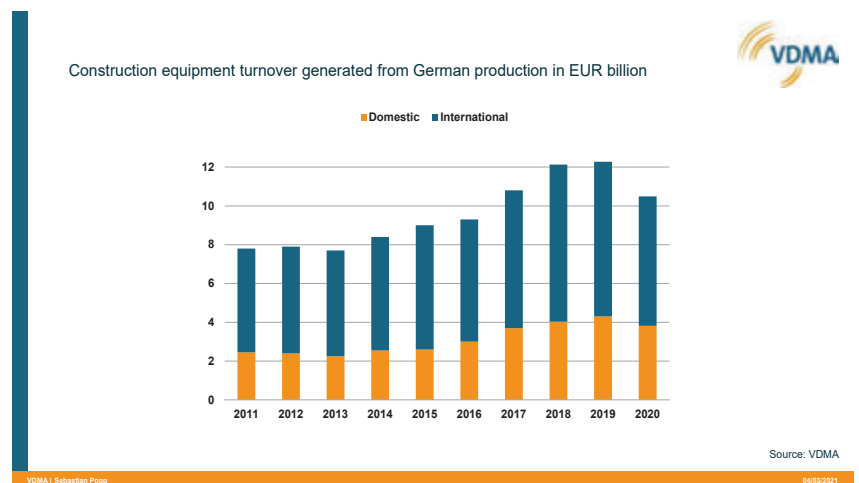
Frankfurt am Main, 03 March 2021 – “We actually got off lightly. If someone had predicted at the beginning of the pandemic that the decline in turnover would only be moderate, we would not have believed it,” summed up Franz-Josef Paus, Chairman of the VDMA Construction – Equipment and Plant Engineering.

Last year, the industry turnover of construction machinery from German production was 10.5 billion euros. This corresponds to a minus of 17 percent compared to the high level in 2019.

The sales volume is comparable to the situation in 2017. The pandemic thus did not have as strong an impact as feared in the middle of 2020.

Globally, sales of construction machinery fell by three per cent in 2020, but the Chinese market grew by 30 per cent, so the global market excluding China actually slowed by 17 per cent. In Germany and Europe, the

compact equipment business was hardly affected, but the large equipment business recorded significant declines due to the higher investments required. In Germany, sales are down seven per cent overall, minus three per cent for compact equipment and minus 18 per cent for large machinery. The fourth quarter of 2020 and the first quarter of 2021





showed increased demand, so the industry can expect an increase in sales in the first half of 2021. However, it will no longer compensate for the declines in 2020.

### Optimistic look ahead

The overall mood is good, the European CECE Business Barometer is at its highest level since the end of 2018. Germany will remain stable at a high level; the European market will recover, and the global market will also grow slightly. At the moment, the economic stimulus programmes are having an effect; in the medium term, there is a risk that the public sector will be able to invest less due to the high level of new debt.

In addition to the higher raw material costs, the biggest challenge from the companies' point of view now is to organise unplannable fluctuations in the work processes. "In some cases, we had to go directly from short-time work to overtime and, in some cases, back to short-time work because deliveries suddenly stopped. In future, we will have to be even more flexible in this respect," says Joachim Strobel, Deputy Chairman of the VDMA Construction – Equipment and Plant Engineering.

The building materials plant industry is more heterogeneously positioned, so it is difficult to make precise market estimates. Long-term



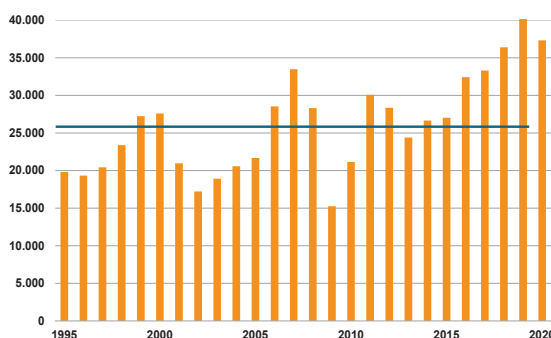
large orders, in part from individual companies, determine the fluctuations in incoming orders and industry turnover. There are different developments depending on the building material. Overall, the industry is on the upswing again after a difficult year in 2020, and the order intake in the first two months of 2021 makes those involved optimistic about the current year. However, there is one decisive statement for the future. "Remote services proved their worth during the pandemic and triggered a digitalisation push. These effects will remain in post-Corona times," commented Hermann Weckenmann, Deputy Chairman of VDMA Construction – Equipment and Plant Engineering.

### European Green Deal 2050 - Challenge for SMEs

Jens Gieseke, CDU Member of the European Parliament and guest speaker at the General Assembly, pleaded in his presentation for a competition of innovations and ideas and spoke vehemently against overregulation and excessive bans in legislation. "One must be clear about the consequences of these serious changes, also in legislative proposals, for industry and the economy. Different technologies and ideas should be in competition with each other; an exaggerated rush to introduce categorical and, in my view, partly nonsensical bans are counterproductive and are more likely to prevent us from achieving the climate targets we are aiming for. At least not without suffering great economic damage." Gieseke advocated the appointment of an SME representative at the EU Commission to facilitate a permanent dialogue between politics and SMEs.

VDMA represents around 3,300 German and European companies in the mechanical and plant engineering industry. This innovative industry is export-oriented and predominantly made up of SMEs, employing around four million people in Europe, including more than a million in Germany alone.

**Germany: Covid impact on 2020 sales was very limited.  
7% market declines, still the second highest level in history**



Units of earthmoving equipment sales, 25-years average, source: VDMA

VDMA | Sebastian Popp

04/03/2021

# BAUMA CONEXPO INDIA CANCELLED!

bauma CONEXPO India is a melting pot of knowledge, deals and networking. We explore what the cancellation of this year's edition means for the industry.



**b**auma CONEXPO India, last held in December 2018 in Delhi, saw the participation of 700 exhibitors from 26 countries. The next edition was initially planned for October 2020 but in light of the pandemic, it was postponed to April 2021. This was welcomed by industry leaders as it gave them time to recover from pandemic-induced disruptions. However, it has now been cancelled.

With increased government focus on infrastructure development and BS-IV emission norms to come into play from April 1, 2021, how will this cancellation affect the industry?

## Industry reaction

"Some meetings of the ICEMA governing council were specially organised to discuss bauma CONEXPO India 2021," shares **Sandeep Singh, President, Indian Construction Equipment Manufacturers Association (ICEMA)**. "The consensus was that many customers would not be able to visit because of COVID-19 and many OEMs were addressing the sudden

surge in demand."

"Participation in an exhibition is difficult as people are still reluctant to travel in the current environment," affirms **Samir Bansal, General Manager, Off-Highway Research**. "Exhibitors were expecting a cancellation or postponement as other shows have also been postponed." And postponement of the event would have meant a clash with other exhibitions.

"We are grappling with market challenges in terms of the supply chain, logistics and sudden increase in demand," acknowledges Singh. "Because of these and uncertainty around customer footfalls, many OEMs suggested a relook. We explained this to the bauma CONEXPO India stakeholders; they understood and decided to call off the event.

## Will this decision hurt the industry?

When such an event gets cancelled, does it affect the industry negatively?

"Under normal circumstances, it would hurt the industry but under these extraordinary circumstances,

companies were expecting this," reiterates Bansal. "Currently, sales are booming for some equipment such as backhoe loaders and excavators owing to lockdown-induced pent-up demand."

"These exhibitions are generally meant to build a brand and spread awareness about the brand, showcase advanced technology and launch new products," explains Singh. "We are grappling with the pressure of the sudden increase in demand, increase in the material cost and delay in shipments of components. Even if we are seeing demand on one side, we are not able to increase our production to that level; this has become a challenge."

"Current demand is not being fully met owing to supply constraints; therefore, cancellation of the show will not have an immediate impact on sales," reasons Bansal. "An exhibition is also an opportunity for manufacturers to launch and showcase new equipment/concepts for the future. Therefore, long-term plans and expectations can get affected, but not immediate sales."

As the industry gears up to embrace BS-IV emission standards, the shortage of some components and supplies is hampering the industry. "We are struggling to see whether we will be able to produce machines for our customers with BS-IV technology," says Singh. "The scenario has changed because of this and has led us to take this call."

Meanwhile, for developers, the cancellation is a missed opportunity to learn about new technological advancements. The expo offers a platform for interaction with the senior-most people and technical team, helping to correlate offerings with



business requirements. “These exhibitions also give us a sneak peek into new construction methodologies, international benchmarks and global best practices,” says Kashyap. “We have many new projects coming in and this forum helps us finalise a lot of machine-based business criticality and requirements. This will definitely be a miss for us.”

“It is customary for my entire team and even the management to visit the exhibition and see the new developments in technology,” echoes **Ratan Lal Kashyap, Senior Vice-President -Procurement, GR Infraprojects.**

“Such exhibitions help us gather information that can be utilised for our future purchase strategy,” agrees **Gaurav Tiwari, General Manager - Mechanical, Dilip Buildcon.**

For his part, Singh believes the cancellation will not have an impact on sales, though it will certainly be a missed opportunity to showcase technology, which may now have to be managed by different means.

### Showcasing products in the absence of bauma CONEXPO

One reason the event was cancelled, according to Singh, is that many customers would have not been able to visit, thus defying the purpose of such an event.

“Companies will now focus on alternate plans, such as direct marketing and local roadshows/ demonstration or displays with a

### “Uncertainty regarding safety & RoI pushed us to take this tough call”

- Bhupinder Singh, CEO, bC Expo India and Messe Muenchen India

#### Why did you cancel the event?

We took the decision after considering all the facts as we know them and our responsibility towards our stakeholders and the global business community. Both uncertainty regarding safety of stakeholders and exhibitors and return on investment pushed us to take this tough call.

#### What has been the impact of the cancellation and the reaction of exhibitors?

The decision came after in-depth consultations with partners and stakeholders across the industry and a comprehensive study of the market. We ascertained that the organisers’ goal to offer all participants optimal conditions for a successful trade fair would be difficult to implement. We thank them all for their constant support and guidance.

#### Will the cancellation have an impact on the industry?

The decision was the need of the hour to protect exhibitors, visitors and partners. We took a sustainable approach over prioritising gains, especially during the extraordinary circumstances posed by the pandemic. We are certain that the next edition in 2022 will happen with much more zest and vigour and many more business opportunities.

limited number of customers,” says Bansal.

In Singh’s view, other means, such as digital technology, online promotion or demonstrations at a particular location, will be alternate ways to promote products.

### Impact on procurement plans

The fact remains that some companies hold on to their procurement orders until they get a chance to visit such exhibitions and carry out a comparative study of products on display.

Adding to this, Kashyap says, “As end-users are also part of this show, civil engineers often visit the exhibition to gauge their utility and other technical aspects.”

While Tiwari affirms that such shows are important for technological exploration, he says the cancellation will

not have a major impact on the procurement plan. “The company will continue with its procurement plans as it mostly procures through one-on-one interactions, not exhibitions.”

From a commercial perspective, Kashyap explains, “We buy equipment depending on the budget. As the expo is a place for display and we have limited time, we don’t necessarily finalise a deal there. The strategy is to look at things, talk to people, ask them for a proposal and call them later to finalise. This visit helps us decide on equipment, but buying comes later.”

“If I need any equipment in the absence of the show, I would call all the competitors for their offers,” adds Kashyap. “Now, as COVID-19 is in control, we have started a few physical meetings. Otherwise, we do many virtual meetings as well.” He believes this is a good opportunity for domestic players to demonstrate their products and get on a par with international players.



- PRAHARSHI SAXENA



# OUTLOOK ON CE SECTOR REVISED TO 'STABLE': ICRA

Heightened focus on infrastructure spend, particularly in the road infrastructure segment has led to a sharp scale up in volumes since July 2020, resulting in +20 per cent YoY growth during July-January 2021 period.



**T**wo critical demand headwinds in the coming quarters are – the continued limited fiscal bandwidth with State governments to invest in infrastructure and the price hikes following the upcoming emission norm change in April 2022.

Ratings agency ICRA has revised the outlook on the construction equipment (CE) sector to 'stable' from 'negative', following strong ramp up in volumes. Heightened focus on infrastructure spend, particularly in the road infrastructure segment has led to a sharp scale up in volumes since July 2020 (+20 per cent YoY growth during July-January 2021 period).

The various underlying factors supporting healthy revival in industry volumes over the last few months are sharp increase in the awarding and execution pace of road construction; increased focus on rural

infrastructure; strong rural volume off-take for equipment on the back of second consecutive good monsoon; improving demand from railway and mining segments and the regular payment flow from the government to contractors.

Demand has also been supported by steady inflows from the Central Government on infrastructure spend, particularly on roads, even though state infrastructure expenditure has been severely curtailed and diverted to the pandemic management.

Says **Pavethra Ponniah, Vice President & Sector Head, ICRA**, "Following a sharp correction in unit sales in Q1 FY2021, CE OEM volumes have recovered sharply since, supporting industry credit profile. Raw material price hikes, particularly for steel, has however had an impact on profit margins. OEMs have and are expected to take further price hikes to pass on these cost pressures."

Two critical demand headwinds in the coming quarters are: the continued limited fiscal bandwidth with State governments to invest in infrastructure and the price hikes following the upcoming emission norm change in April 2022 (sale of vehicles post April 2022 and production post October 2021 to be in accordance with new norms TREM IV).

"State governments are key contributors to the infrastructure activity in the country. Modest growth in SGST collections, delays in receipt of GST compensation, and the reduction in the central tax devolution to the states in FY2020 below the level budgeted by the Government of India, have complicated the liquidity management of the State governments. This could potentially derail the equipment industry, as it slows down infrastructure investment," added Pavethra.





# GREEN TAX IMPOSITION ON COMMERCIAL VEHICLES IN INDIA

Rather than exempting certain type of vehicles out of green tax, like alternate fuels like CNG, ethanol, LPG and vehicles used in farming such as tractor, harvester, tiller, etc. the policy should be driven for all internal combustion engine-based vehicles checking for the pollution levels, writes **Prasad Sreeram**.

**G**reen tax is part of the series of initiatives to get the more than decade old, approximately, 28 million vehicles off the road, which the Central Government floated a draft Voluntary Vehicle Fleet Modernization Programme in year 2016.

According to the concept note, one old vehicle (BS-I) is equivalent 20 new vehicles (BS-IV) and with respect to particulate matter (PM) limit and one old vehicle is equivalent to five to eight new vehicles with respect to HC+NOx and CO, this is a profoundly serious concern and must be addressed on war footing basis in our Large cities.

The interest of the government is to dissuade people from using vehicles which damage the environment and motivate people to switch to newer, less polluting vehicles. It is estimated that the commercial vehicles constitute around 5 per cent of the total vehicle fleet, contribute about 65 to 70 per cent of the total vehicular pollution. The vehicles which are manufactured before the year 2000 constitute less than 1 per cent of the total vehicle fleet but contributes to 15 per cent of the total vehicular pollution.

Rather than exempting certain type of vehicles out of green tax, like alternate fuels like CNG, ethanol, LPG and vehicles used in farming such as tractor, harvester, tiller, etc. the policy should be driven for all internal combustion engine-based vehicles

checking for the pollution levels. Also, the policy should be central driven, if not states could dilute, and smaller cities and towns would become dumping grounds for the in-efficient vehicles.

While green tax is good initiative, unlike the personal vehicles, a lot of the transport vehicles are bread winners and the policy has to carefully adapt broader measures to offer economic support on vehicle upgrades to make them less polluting and incentive to exchange/purchase a newer vehicle. In her Union Budget speech for the FY 2021-22, Finance Minister Nirmala Sitharaman stated that the government will introduce a voluntary vehicle scrapping policy to incentivise people to replace their old vehicles with the new ones, which is a welcome move.

In fact, the government should utilise the funds collected through green tax and other initiative to encourage startups building businesses with non-polluting technologies like EV, fuel cell, compressed air, etc. and fuel the growth of these technologies in the country indigenously through tech collaborations and establish CSIR style initiative in the country.

India a country of billion+ people, we need efficient systems to transport both people and goods, this fights the pollution and reduce the emissions.



New age platform for goods transport like us are optimising the city logistics across the country for greater efficiency, by capacity discovery, efficient goods delivery through route optimisation, reducing dry runs and idle times leading to lower emissions. We also believe city logistics are best suited for EV adaption where the runs are small and extremely start-stop conditions. We are building an EV ecosystem serving as a bridge to the OEMs, transporters and enterprise delivery. If the government could create support in financing and cheaper resources (battery packs and electronic components), EV's prices will come crashing down and market forces will lead the path to greener economy. 



**Prasad Sreeram**, Founder & CEO, COGOS Technologies

# TEKLA STRUCTURES: VERSATILE & ROBUST SOFTWARE FOR PRECAST CONSTRUCTION

Tekla Structures helped Precast India Infrastructures to produce a large number of precast elements, address critical geometries, implement MEP requirements and a lot more, quite easily and well within the specified project timeline.



**P**recast India Infrastructures (PIIPL)—an initiative of Bhathe Raje Construction Company—has gained recognition as one of the most trusted names for all IT sector and industrial building projects as well as for commercial complexes. It was founded in 2010 with a mammoth production facility in Wade Bolhai, on the outskirts of Pune city in Maharashtra. PIIPL's unique production facility is capable of producing various precast as well as pre-stressed concrete elements ranging from small parapet walls to huge slabs spanning 16m to 20m lengths. With its automated steel cutting and bending facility, versatile production yard, and independent installation division with high capacity tower cranes and mobile cranes, PIIPL has emerged as the leading choice for precast production in the construction industry.

## A multi-purpose precast structure for Infosys in Pune

The multilevel car park project created for Infosys on the outskirts of Pune is a multi-purpose building. It has seven levels of two-wheeler parking, an underground water storage facility with

a humungous capacity of 56,67,000 litres, two storeys of restaurants along with an attached bridge to exit the parking facility. The project also involved external development jobs like gas bank rooms, security cabin area, entry gates, etc. The total concrete used in the project was approximately 18,000 CUM with about 1,614 MT of steel.

The entire superstructure is of precast and prefabricated concrete and has been designed for dynamic vehicular loads. A very wide variety of precast elements were used in the project such as retaining and shear walls, columns, hollow-core, double tee and solid slabs, pre-stressed and non-pre-stressed beams, spandrels, non-load bearing walls, etc.

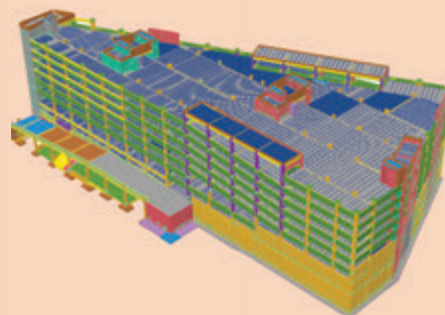
## Erecting a complex, geometry defying structure

The project team at PIIPL faced some very unique challenges right from planning and designing to the execution of the multi-level car park. The geometry of the project area along with the land profile were the two major challenges for the team. Besides that, the inclined grids and multiple uses of the structure at each level proved to be

quite challenging. Pre-stressed beams and hollow core slabs ranging up to 12m were used to reduce the number of columns. Further, the column design was also a critical part as resting beams were not orthogonal to each other.

After the conceptual planning and engineering, the project execution and completion within the scheduled timeline was the next major hurdle. More than 6,500 precast elements were produced, transported and installed, from scratch, in approximately 10 months. The executor had to complete the robust work within the affirmed deadline and any error or frequent reworks could have resulted in an unaffordable delay.

Some of the other complexities involved in the project were the contour







differences, boundary retaining walls, integration of the underground water tank, the difference in levels for restaurant and parking, various ramps, inserts of sleeves, splitting of elements due to weight constraints, slopes in terrace affecting element lengths, heights, etc.

### Tekla Structures: Robust software for precast construction

Tekla Structures helped the PI IPL team to produce a large number of precast elements, address critical geometries, implement MEP requirements and a lot more, quite easily and well within the specified project timeline.

**Kapilesh Bhate, Director, PI IPL,** said, “By using precast, we virtually enter the domain of production and assembly. And for that, we need tools potent enough to do extremely accurate detailing of the elements such as their geometry, connections, reinforcement locations, inserts, etc. In case of the MLPL3 project, everyone involved was well aware of the complexities likely to be encountered and were certain that a 2D drafting software like AutoCAD will definitely not do the job, and that we could only trust Tekla—the 3D BIM

software—to make this project a reality and a success. Although acquainting new team members to this platform takes a little time, the available tutorials and self-help videos were of great assistance and the payback in project delivery far exceeds the initial effort.”

The software empowered the executing team to overcome numerous technical challenges rooted in the project and derive a host of benefits such as:

**Collaboration made seamless with Tekla’s single reference model:** At any given time, several detailers, modelers, and checkers were working on the model preparing various details, drawings, etc. Tekla offered a single reference model to the entire team which integrated the changes made in real-time and all the stakeholders, located across geographies, could easily access and analyse it.

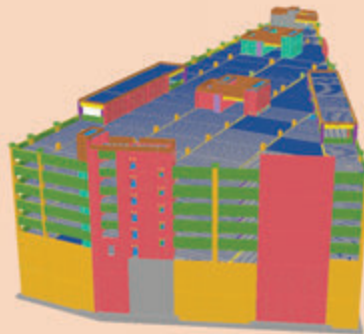
**Obtaining all structural data from the accurate 3D model:** Considering the complexities associated with the MLPL3 project, an accurate, information-rich 3D model was the only resort to achieve efficiency. With Tekla, concrete modeling and detailing were very easy. It helped in the conversion of all architectural and structural drawings into a 3D model with high LOD. For example, Tekla provided exact dimensions of the reinforcing bars in elements in the bar bending schedule (BBS).

**Quickly identifying a particular section of the model with floor layout tool:** The most helpful features of Tekla

Tekla proved extremely helpful in many aspects across the whole lifecycle of the project like the auto-generation of production drawings, the bar bending schedules related to it, the detailed blowouts, etc. This advanced Constructible BIM software upheld the entire project, from conceptual planning of the buildings and infrastructure to, fabrication, construction, and maintenance. With its designing, detailing, and information management capabilities, it enabled the team to identify and eliminate the critical issues (clashes) in the entire process much ahead of the on-ground or on-site construction thus saving huge amounts of time and cost by eliminating rework and material wastage. Last but not the least, various small tools like the floor layout, stair component, etc., were of great help in further enhancing the productivity of the team.

that became the real game-changers for the project team were the floor layout tool for hollow-core slab layout and the quick production drawing generation using cloning of drawings. It helped to design, detail, and identify particular sections, floor-wise, for the entire model.

**Task automation made easy with custom components:** The readily available custom components in the Tekla Warehouse enabled the PI IPL team to modify the model as per the design and project requirement. Reinforcement modeling is usually quite a time consuming task but the custom components feature enhanced the team’s efficiency by empowering them to automate several jobs thereby ensuring timely completion of the project. detail, and identify particular sections, floor-wise, for the entire model.



# ARE IOT & AI JUST A HYPE

Trelleborg is currently focusing the Cognitive Sealing approach on industries and applications in which there is a very high cost of downtime and maintenance.



The internet of things is significantly transforming industries such as automotive, Healthcare & Medical, Energy and Off highway. With rise of unlimited computing power, internet access and economical sensors, physical products turn into cyber physical smart products creating a vast amount of data, but only a section of this data is useful and analysed.

Trelleborg sees more and more customers interested in adding sensors to their hydraulic equipment. This is not only in offshore environments, but also on civil works, like bridges, and industrial equipment like presses. These sensors can not only be used in normal operating conditions to





monitor capacity, speed or force control, but also to collect and analyse data to prevent certain failure modes. This helps customers avoid significant costs associated with downtime, as well the replacement or repair of key components.

In the offshore environment, the components face extreme temperatures and need to survive in saltwater. They are also subjected to a dynamic load spectrum that influences both seals and bearings. Off-Highway industry is exposed to the harshest working conditions, where the components work under extreme temperature and pressure conditions. Even a smallest of components like seal, can bring the machine down and cause operation failure.

### Strengthening the weakest link

As IoT and big data can offer significant benefits in terms of improving product performance, lowering total cost of ownership and extending application life, it is becoming an area of focus in almost all industries. This includes the off-highway industry. In the off-highway industry, keeping equipment availability as high as possible is crucial. Planned downtime needs to be kept to a minimum and unplanned



downtime should be avoided. Therefore, predictive maintenance is one of the big value drivers in the digitization of this industry. Maintenance must not be too late, as this incurs extremely high costs in downtime, nor too early, to reduce maintenance costs overall.

Even though, Trelleborg provides the best sealing solutions possible for even the harshest off-highway applications, the seal is still often the weakest link in a hydraulic system. In the Cognitive Sealing approach, we use artificial intelligence to calculate a health score by analysing sensor data that is captured around the sealing

system. This is done using artificial neuro-networks, an advanced technique used in autonomous driving, for instance. This is needed as you cannot simply look at one sensor signal but must combine the data from different sensors, such as temperature, pressure, and cylinder movement. An algorithm then calculates the health score for the sealing system.

Trelleborg is currently focusing the Cognitive Sealing approach on those industries and applications in which there is a very high cost of downtime and maintenance. In off-highway applications, most maintenance happens on a fixed maintenance cycle and generally the seals are changed in this cycle. However, there is one big trend in the off-highway industry which makes management of the sealing system and monitoring seal health much more important, and that is automation. This is being brought into equipment for mining and excavators, for instance. Without a driver, you need another way to monitor the system with better remote monitoring.

To know more about Cognitive Sealing by Trelleborg Sealing Solutions, visit: [www.tss.trelleborg.com/cognitive-sealing](http://www.tss.trelleborg.com/cognitive-sealing)



# AJAX: REVOLUTIONISING CONSTRUCTION PROCESSES

**A**JAX Engineering is offering truck-mounted, boom pumps of 30 meters, mounted on a 4x2 chassis. Their shorter turning radius makes them most suitable for RMC plants working in constricted city sites or in tight locations. "Concrete boom pumps have been revolutionising the construction of large commercial and residential buildings and structures. The placement of concrete in inaccessible areas has necessitated the use of AJAX boom pumps in the current construction processes. We are promoting our boom pumps to commercial RMC plant owners and to cement companies that are setting up RMC plants at urban locations," informs **Ajay Aneja, Chief Marketing Officer at AJAX.**



Over the last three decades, the need for energy efficiency, higher productivity, easy mobility and flexibility has been the focus to meet growing customer needs. The growing urbanisation, high rise residential and commercial buildings, modern industrial infrastructure and the nationwide rural development programs have resulted in a range of concrete solutions.

Keeping pace with the changing requirements of customers, "We will be soon coming out with a 25m self-propelled boom pump **SPBP 25ZX**, mounted on a 4x4 chassis, and with a 360-degree rotating boom. It is designed for use in housing and infra projects in



restricted spaces; plus, the pump has the smallest footprint in its class that helps in efficient maneuvering and will be able to work in hilly areas and in muddy terrains owing to its excellent manoeuvrability. The product is currently undergoing tests, and, as a unique product, it will be patented by AJAX."

AJAX offers concrete batching

plants in CRB, IRB and IBP series ranging between 20-30-45- 60-75- 90-120 that goes up to 240 cum/hr. For the RMC industry, it is targeting its 30-45-60- 90 cum/hr range of batching plants that churn out varied concrete design mix and are easy to set up owing to its modular design. They come with an option of planetary and twin shaft mixers. The planetary mixers give lower



**AJAX boom pump in action at UltraTech RMC.  
Site: Residential Building, Mysore**





**AJAX transit mixers on BS6 chassis gearing-up for despatch.**

operating cost, better product consistency, and the right homogenous mix while the twin-shaft mixers are robust and heavy built with unmatched speed to deliver high-strength concrete.



**AJAX boom pump in action.  
Site: Commercial Building – Embassy  
Group – Manyatta Tech Park, Bengaluru.**

Says Aneja, “AJAX offers a wide range transit mixers, suitable for 3 and 4 axles, BS6 chassis with a range of RMC capacity. The PTO drive based transit mixers with optimised power utilisation offer increased payload with lower fuel consumption. Designed with built-in strength and durability, the AJAX transit mixers are the perfect choice for all types of construction in rural and urban applications. Customers can choose transit mixers driven by either power take-off (PTO) or slave engines. Since, we are seeing more demand for higher capacity transit mixers, we are offering even an 8 or 10 cum capacity transit mixer mounted on a high-capacity truck chassis with a larger axle configuration.”

The company supports the functioning and maintenance of its plants through its 36 dealers, located pan India, and operating from 100+ locations. A new toll-free call center has been set up for customers’ requirements for parts. The company also provides operator training programmes accredited by NSDC that provide in-depth operation and maintenance training to our customers operators, which in turn

benefits our customers in productivity and reliability of AJAX products.

Informs Aneja, “AJAX has earmarked Rs 100 crore to build a new manufacturing facility and a design center across 20 acres of land in Bangalore, Karnataka. This investment is being done to expand our robust business operations to meet the demands of the construction industry in the future. The new factory will be equipped with the state-of-the-art facilities to design and manufacture the recently introduced products, such as concrete slip-form pavers, boom pumps and the self-propelled boom pumps. The annual production capacity from the upcoming plant for boom pumps and concrete slip-form pavers would be 100+ units and 50+ units, respectively. A further investment of Rs 40 crore is being done at Gowribidanur plant to expand our existing facility that produces batching plants and transit mixers.”

AJAX has a very strong focus on the capabilities needed to succeed in the new market dynamics and meet the challenges and demands. Strengthening its foothold in the concreting equipment market, AJAX would be introducing new products in the forthcoming customer interface platforms to help customers to steer their business with increased speed, greater flexibility and enhanced quality.

AJAX is always geared-to meet the challenges the infrastructure development sectors with competitive advantage and differentiation strategy, to establish itself as a high-efficiency, quality player in the concrete pump category.

**Communication from the management of the company.**

# “WE ARE INDIA’S NO. 1 POWER PRODUCTS COMPANY”

For more than three decades, **Honda India Power Products (HIPP)** has been a leader in the power products industry, engaged in the manufacturing and marketing of portable generators, water pumps, tillers and general purpose engines in India and abroad. HIPP’s **Sr. Vice President for Sales & Marketing, Vijay Upreti** speaks on the key offerings of the company for the Indian market, especially for the construction industry.

## Please share the success story of HIPP with our readers.

HIPP—India’s No. 1 power products company—is a subsidiary of Honda Motor Co., Japan. For the last 35 years, HIPP has been the preferred choice of customers worldwide and has powered the dreams of over five million happy users by “Empowering People, To Do Better!”. Since its inception, HIPP has been the leader in the power products industry, manufacturing and marketing a diverse portfolio of power products at its state-of-the-art manufacturing facility at Greater Noida.

HIPP has consciously made efforts to facilitate mechanisation in construction and agriculture domains by introducing Honda’s legendary four-stroke technology-based products like overhead valves (OHV), engine-powered concrete mixers, vibrators, cutters, surface levellers, soil compactors, stone breakers, and portable water pumps, power tillers, brush cutters for optimal work efficiency.

The trust reposed in us by our valued customers inspires us to



**Vijay Upreti, Senior Vice President – Sales & Marketing, Honda India Power Products**

deliver products and services of the highest quality that are compact, fuel efficient and environment friendly.

## What are the key offerings for the Indian market, especially for the construction industry?

We have a diverse product portfolio for the construction equipment segment. This includes:

- Advanced four-stroke GX engines (1 ~ 22 hp) powering a range of construction equipment like concrete mixers, needle and plate vibrators, concrete cutters, surface levellers, soil compactors and stone breakers, to name a few.
- Portable generators (0.75 ~

5.5 kVA) find usage at construction sites providing portable power for various electric power tools used in construction work besides lighting requirement in remote location or for emergency power back-up.

- Portable water pumps (1.5-inch ~ 3-inch diameter outlet) are often used at various construction sites for various usages ranging from curing of freshly laid concrete structures to de-watering of basements and submerged areas.
- Power tiller (2 and 5 hp) and brush cutters (1 ~ 2 hp) are finding increasing acceptance for site clearance





and de-weeding applications at construction sites.

- Honda lawn mower offers an ideal solution for landscape maintenance in and around construction sites.

Honda four-stroke engines offer clean, durable and portable power ideally suited for construction activities in various terrains, and are accepted globally for the efficiency and convenience they offer for heavy-duty and continuous work requirements of the construction industry.

#### **How your products are different from other manufacturers, what are your USPs?**

Honda has been a market leader in successfully introducing its four-stroke technology-powered GX engines for construction equipment across the world. The USP's of Honda GX Engines are its portability, lightweight construction, durability, and unmatched fuel efficiency so important for continuous and heavy-duty work requirements at any construction site.

Honda GX engine-powered construction equipment like concrete mixers, concrete cutters, vibrators, soil compactors, surface levellers, etc. bring about a remarkable improvement in productivity as compared to the prevailing conventional machinery.

#### **How HIPP is expanding the sales and service network in the Indian market?**

HIPP has carefully nurtured its sales and service network in the Indian market over last 35 years of its successful business operations in the country. Today, with over 600 sales and service outlets in the country monitored by 16 area sales offices, HIPP is very

well positioned to offer its products and services to its valued customers across the country. HIPP has also actively created a network of over 120 Honda authorised service points and about 2,000 rural mechanics with an objective of providing after sales support even in rural areas of the country.

#### **After sales service is an important aspect for every market, how HIPP is tackling this aspect of market?**

HIPP is highly committed to provide outstanding service at an affordable price to its valued customers across markets that it operates in. Today HIPP has the best-in-class retail network in the country, which has been carefully nurtured over last 35 years. Regular training workshops with upgradation of workshop infrastructure to keep up with the evolving technology, mobile service van's offering doorstep service convenience and free service camps have helped HIPP to offer unmatched service support to our valued customers.

#### **India is a cost sensitive market, how HIPP is facing this aspect of market?**

HIPP has always strived to offer technologically-advanced products at an affordable price for its customers and has been able to demonstrate this through the last 35 years of its successful growth in the Indian market. HIPP Products are competitively priced and offer value for money in terms of long trouble-free service life and work efficiency.

#### **Please enlighten us about your recent innovations and research & development (R&D).**

HIPP as industry leader has always been at the forefront in introducing latest technology in the Indian market and is ably supported by HRID (Honda Research & Industrial development) in identifying customer requirements and potential applications by regular market research to catch emerging trends and change in customer needs with rapidly changing business and work requirements. HIPP has led the shift towards petrol run advance four-stroke GX engines for construction equipment, thereby offering unmatched portability, durability and fuel efficiency in daily operations. Our advanced OHV technology based GX engine series powered construction equipment like needle vibrators, concrete cutters and mixers are a result of dedicated R&D efforts over the years and we strive to add to this growing portfolio in the years to come.

#### **What are views on the Budget 2021? What are your future expansion plans for Indian market?**

Budget for 2021 gives a lot of fillip to agriculture and construction industries and will help to boost primary demand in the market. We are already witnessing a growth in the economy primarily driven by the agrarian economy. HIPP is has been part of the Indian growth story for last 35 years and is very optimistic about the future as well. We have planned to introduce new models to strengthen are current product portfolio and also diversify into other business categories in the near future in line with our company vision to "Empower People, To Do Better.!"

# DIGITAL CONTINUITY IN VEHICLE USING OPEN STANDARDS

The automobile industry inclusive of the off highway and mobile machinery are cost sensitive at the same time technology craving industries. To keep pace with technological advancements these industries constantly invest heavily in research and development projects. These projects vary from electronics to mechanics to offer a greater customer experience, performance, safety, security and much more. Communication plays a vital role in vehicles and currently these industries are in search of a next generation fieldbus satisfying all industry requirements along with providing an enhanced performance.

## Importance of communication

In today's age of data and information, it is of prime importance to not only exchange data but also to do it safely and securely. CANopen is widely used in automotive, off highway and mobile machinery for exchanging information. Over the years, the amount of data exchanged has increased exponentially and in the future will continue to grow. With the addition of sensors, IOs, and cameras the bandwidth requirements have escalated. Camera integration on a vehicle was unthinkable a couple of year back. As a feature available in vehicle in the minds of users it has moved from a 'good to have' to a 'must have' feature. CANopen being based on serial communication limits in these bandwidth requirements. Consequently exhausting all available resources, the industry is in search of a next

generation fieldbus, which provides a common backbone for all communication.

CANopen also has a number of variants providing higher speeds. However, Ethernet based communication is the obvious choice, which provides higher speeds and larger bandwidth. Like CANopen it is a manufacturer independent open technology. However, the carrier sense multiple access with collision detection (CSMA/CD) mechanism plagues Ethernet communication making it non-deterministic. This is generally not suitable for achieving a real time communication at sensor level. In addition, it is prone to hacks and security breaches. Apart from determinism, the number of interfaces a manufacturer has to equip their Electronic Control Units (ECUs) grows with addition of features supporting different communications.

With the size of electronics reducing day-by-day and vehicle light-weighting gaining prominence, if the number of interfaces keep on increasing he will not be able to keep pace with the industry demands.

## POWERLINK a logical addition to CAN

Imagine achieving openness, features, determinism and robustness of CANopen coupled with speeds and hardware of Ethernet. This is not a concept but is currently available and used in



mobile and off highway machinery extensively. Ethernet POWERLINK is simply termed as CANopen over Ethernet. It thus combines features of CANopen and standard Ethernet for enhanced performance and bandwidth. Just imagine the benefits a manufacturers gain with this combination, one network for transmitting sensor data, IO data, GUI data and even camera live feeds.

POWERLINK is a communication standard based on standard Ethernet. It is a truly software implementation to achieve deterministic, real time communication with cycle times down to 100µs. It is completely open source and is available free of cost with no license fees, patents and copyrights. As no hardware modifications are required, it is not tied to a particular physical layer used for communication and thus can work with copper cables, fiber optic or even wireless. The technology offers a complete multi-master, media and ring redundant systems which can help in making vehicle available at all times and provide a degree of



safety with redundant ECUs.

### Lighweighting with features and performance

Many would argue that CANopen uses two wires cabling whereas Ethernet uses four wires or POE could use four or eight wires depending on the IEEE standard selected and this increases the weight on the vehicles. In automotive the technology from Broadcom known as BroadR-Reach has gained recognition due to its ability to transmit data and power over a twisted pair cable. POWERLINK communication has been successful tested over this technology with a cycle time of 250µs. Thus, now users can benefit from the wiring of CANopen for POWERLINK and at the same time get advantages of Ethernet based deterministic communication.

The requirements of automotive and off highway and mobile machinery are very diverse. Automotive needs a higher bandwidth for transferring audio and video signals whereas off highway and mobile machinery has a requirement for deterministic and real time communication.

POWERLINK satisfies both these requirements comfortably.

### Safe and secure communication from cloud to field level

In automotive as well as mobile and off highway machinery safety is critical. Humans and vehicles are at stake. In addition to using safety devices it is necessary to have a safe communication in order to guarantee complete safety. Looking at different networks used in automotive and off-highway equipment it is impossible to have separate safety protocols for different networks. Keeping these aspects in mind we have come up with openSAFETY. openSAFETY is the world's first and only TUV certified safety protocol which is fieldbus independent and completely open source. Thus the safe data can be exchanged between field devices or multiple ECUs.

Availability of data is not only necessary when we are in the car or driving it, but it could always be essential to access data in real-time. This is where the connected car or the Industry 4.0 approach is

important. However, we should be aware that data has to be sent securely to the cloud for access over the internet and received securely from the cloud. With OPC UA and OPC UA over TSN, another open source platform independent technology OEMs can guarantee secure transmission of data right from the cloud to controllers and assets.

It is possible to have an application on your phone and gather data from vehicle securely without a possibility of a hack or invasion. This data can be operational data or maintenance data from vehicles. OPC UA over TSN delivers 18 times more performance than conventional solutions. This makes it possible to implement time-critical applications in vehicles as well as for vertical connectivity. Whether fast and centralized or intelligent and distributed, automation solutions can be adapted to needs of various application more easily with OPC UA over TSN. The result is a boost in both productivity and product quality.

### One stop shop for all needs

B&R Industrial Automation makes it easier than ever to implement automation solutions for construction equipment and municipal vehicles as well as for agriculture and forestry applications. B&R has been relying on open source connectivity for years providing connectivity interfaces and software for CAN, J1939, POWERLINK, OPC UA and OPC UA over TSN. With complete hardware and software solutions for mobile machinery, B&R is a one stop shop for all the automation needs of OEMs manufacturing off-highway and heavy equipment.

**Communication from the management of the company.**



**Intelligent safety functions and extremely short response times are the key to a whole new realm of possibilities for the safe operation of outdoor equipment and mobile machinery.**

# SHRIRAM AUTOMALL – THE POWER OF CHOICE FOR CONSTRUCTION EQUIPMENT



and equipment during a daylong physical bidding event titled 'Utsav' at 100 locations across the country recently. The 100 auctions held at 100 locations had over 11,400 inventories tagged, including construction equipment and commercial vehicles from SAMIL's clientele like banks, non-banking financial companies (NBFCs), insurance companies, original equipment manufacturers (OEMs) and their dealerships, vehicle aggregators, rental and leasing companies, transporters, contractors, dealers and even individuals. More than 20,000 customers like vehicle aggregators, transporters, contractors, dealers and individuals from over 400 cities visited their nearest Automall to get their desired vehicles and equipment, making SAMIL Utsav,

**S**hriram Automall India Limited (SAMIL), an ISO 9001:2015 certified company, is India's first-ever service provider to offer a well-organised and transparent platform for the exchange of pre-owned vehicles and equipment. SAMIL, being a part of Shriram Transport Finance Company and MXC Solutions India, offers its unique services across the country. Every month, SAMIL conducts more than 5,000 bidding events through its well-structured physical and digital platforms, making it India's largest offline and online vehicle transaction platform.

When it comes to pre-owned construction equipment market in India, SAMIL is the most trusted name. The market for used equipment is highly unorganised. In such a scenario, SAMIL stands apart as an experienced, safe, reliable and efficient company that has improved the purchase

capacity of people in the construction industry by providing them with a wide range of used construction equipment at fair prices.

SAMIL is all geared up to garner a large share of the anticipated demand from domestic as well as international markets. It has a keen understanding of customer needs and is equipped to offer customised solutions and equipment that meet their requirements. From helping buyers in inspecting the vehicle onsite to enabling them to connect with the company from any location, SAMIL has various platforms to serve its customers for easy acquisition and disposal of construction equipment. Over the time, SAMIL's initiatives have transformed several machine operators to owners.

SAMIL, on its 10<sup>th</sup> business anniversary event, generated business worth more than Rs 130 crore and sold over 5,600 vehicles







unbiased and efficient platform for all kinds of verification. The brand is established with an objective of providing wide range of verification services including people, documents, finance, assets and more. It is a technologically-advanced process and platform created with the expertise of market leaders with trained, dedicated field team and extensive coverage.

**Sameer Malhotra, Director and CEO, Shriram Automall India Limited (SAMIL),** said “We are

delighted to conduct such a grand event like SAMIL Utsav on completion of our decade long journey with over 100 Physical Bidding Events in a single day across India which proved to be a life-time experience for all our stakeholders. SAMIL Utsav truly depicts why we are the largest and best solution provider for pre-owned vehicles & equipment in India. We would like to thank all our clients and customers who made SAMIL Utsav a grand success.”

He further added “SAMIL has a great deal of experience in designing products in e-auction space. We strongly believe that this is the best way for us to satisfy the needs of our partners in India and around the world and we are seeing very strong recovery trends in demand of used vehicles and equipment and price realisation are getting better. The success of 10th SAMIL UTSAV is a true example of that. While the whole nation has gone through tough times, Shriram Automall has always outshined. As a company we are growing both organically and inorganically.”

**Communication from the management of the company.**

the grand and historic event for SAMIL. More than 125 construction equipment worth Rs 9.25 crore were sold in this one day event.

Some of the types of equipment offered by SAMIL include:

- ▶ **Earthmoving equipment:** Backhoe loaders, excavators, tippers
- ▶ **Mining equipment:** Dump trucks, excavators, dozers
- ▶ Concrete equipment like mixers and drum rollers
- ▶ **Road building equipment** like pavers, loaders and motor graders
- ▶ **Material handling equipment** like cranes and forklifts

A few of the major clients include banks, NBFCs, OEMs and dealerships, captive finance companies, rental companies, contractors and retail customers.

SAMIL offers:

- ▶ Unique and transparent physical bidding platform at 100+ locations
- ▶ Digital platforms for bidding
- ▶ Sourcing of equipment from domestic and international markets

- ▶ All kinds of equipment under one roof
- ▶ End-to-end trading counter management
- ▶ Fair price realisation
- ▶ Powering OEM-driven exchange programmes for dealerships

Besides offering a transparent auction platform, it also provides assistance in varied support services like:

- ▶ Finance
- ▶ Documentation
- ▶ Logistics
- ▶ Parking

**SAMIL, on this grand occasion, also launched three new brands:**

**ThePriceX.com:** Used vehicle and equipment pricing tool backed up by the 10 years of excessive and expert experience of SAMIL. ThePriceX will be useful to all the leading banks, insurance companies, NBFCs as well as OEMs. It's a scientific and insightful approach towards price discovery. Users get the data driven results on basis of lakhs of successfully transacted vehicles over the past 10 years.

**Veriisure:** A transparent,

# SAFE INCLINATION MEASUREMENT EVEN UNDER DIFFICULT CONDITIONS



**T**he inclination of a mobile machine can be decisive in many applications. Tipping over must be avoided in any case. The new inclination sensors of the JD series from ifm electronic can help here – even under difficult conditions.

At Bauma, the biggest trade fair for construction machinery in the world, ifm electronic presented their new dynamic inclination sensors of the JD series. They are for example used for the detection of inclination angles and positions of mobile machines. Typical applications are the horizontal levelling of platforms or the boom measurement on wheeled excavators. Especially for mobile machines conventional inclination sensors often reach their limits. Vibration, impact or external

acceleration of the machine, which may occur during starting or braking, may lead to faulty measured values.

The inclination sensors of the JD series do not have this problem. They use a 3D gyroscope as well as a 3D acceleration sensor. A six-axes IMU (Inertial Measurement Unit) with intelligent sensor fusion filters determines the precise inclination values on this basis. The data of the gyroscope correct the influences caused by acceleration, vibration or impact. This is why the quality of the signals provided by the JD sensors is very high even under extreme environmental conditions.

Different versions of the new inclination sensors are available so that they can be mounted horizontally as well as vertically.

They reach a static precision of  $\pm 0,3$  degree and a dynamic precision of  $\pm 0.5$  degree in moving systems. The inclination sensors of the JD series have a robust housing made of aluminium injection moulding. They are shock-resistant up to 100 g and meet the IP67, IP67 and IP69K protection ratings. Together with the wide operating temperature range from -40 degree Celsius to 85 degree Celsius they can be used under extreme conditions and always provide precise measured values. An integrated CANopen interface is used for the transfer of the measured values and also for the parameter setting of the sensors. If required, an integrated terminating resistor can be activated via software.

**Communication from the management of the company.**



# EPIROC BOOMER M20 – THE WORLD'S FIRST FACE DRILL RIG



**W**ith protected hydraulics, sensors and cables, Epiroc's new Boomer M20 is designed and built to minimise unplanned stops and maximise uptime and performance in highly demanding operations. This is the next generation in underground mining.

A challenging part of underground work is the everyday wear and tear on hydraulic hoses. Falling rocks and debris and the continuous wear against tunnel floor and walls means constant hose repairs. The Boomer M20's heavy duty hose-less boom design minimises unplanned stops for hose repairs, which keeps the rig up and running even in the toughest conditions.

"The Boomer M20 has been developed in close collaboration with key customers and is the result of extensive research and real-world testing. This is the perfect choice for mining houses and contractors that want to out-drill the competition through innovation", says Niklas Berggren, Global Product Manager Face Drilling Equipment at Epiroc.

High precision and performance

are ensured thanks to on-board automation features, tele-remote capabilities and digital drill plans which give higher reliability and quality of the full drill cycle. By utilising High Performance Development, the Boomer M20 allows the operator to adjust and download drill plans directly at the face which eliminates the need for adjustments on the surface.

"With digital drill plan handling, drill rounds will be longer, more precise and give far less overbreak. We have seen total cost savings of up to 25 per cent and up to 40 per cent productivity increase", says Berggren.

The Boomer M20 is designed with safety in mind; thanks to several features the rig secures a safe working environment for operators. "Safety has been with us since day one. It's our top priority and we have made great efforts in improving safety for operators with this rig," Berggren says.

Through teleremote capabilities, operators can drill from a safe distance away from hazardous areas at the tunnel face and keep production going also over shift changes.

Thanks to the multi-functional joysticks operators can keep their eyes on the task at all times. The unique cabin is designed to give optimum visibility and thanks to noise and vibration dampening materials the noise level is kept as low as just 65 decibels. The safe bolting platforms are another great advantage because this avoids any operation under an unsupported rock.

## Battery driveline option

Epiroc continues the charge towards electrification in underground mining and the new Boomer M20 comes with a battery-electric driveline option. A battery-powered Boomer M20 brings additional savings on health, maintenance, ventilation and cooling.

"With the on-board charger, the operator does not need to plan for charging, as it automatically takes place while connected to the grid for drilling. Thanks to the high-capacity battery, Boomer M20 has a fantastic driving range, and there is nothing to disturb the drift cycle", says Berggren.

## Mining from a new perspective

To really highlight the fantastic innovation, a spectacular campaign video has been produced, with a scenic backdrop that will take your breath away. The Boomer M20 is balancing on its innovative, robust booms, on a mountain top. Breathtaking without a doubt. Epiroc's President and CEO, Helena Hedblom, is fronting the new innovation in the campaign video.

"We are in this for the thrill of solving the real problem. For the adventure and energy found in new perspectives. The Boomer M20 is another great example of how we make a difference through innovation", says Helena Hedblom.

# MORETTI ADDS THIRD GROVE ALL-TERRAIN CRANE TO FLEET

Italian construction company Moretti has added a third Grove all-terrain crane to its fleet, a GMK4100L-1. During the handover, Roberto Zucchi, sales manager at Manitowoc Italy, presented a handover key to Evangelista Zampatti, CEO of Moretti.

The 100 t capacity four-axle crane offers best-in-class load charts from an extremely compact format. The 60 m main boom has seven sections and features the MEGAFORM boom design, which enhances its stability and strength and optimises the weight to make it even more powerful.

With a vehicle width of just 2.55 m, the GMK4100L-1 can easily travel to even the most confined inner city job sites. In taxi configuration, it can carry up to 6.7 t of counterweight with 12 t per axle, while the MEGATRAK independent suspension ensures excellent maneuverability. The



four-wheel drive and all-wheel steering ensure superior steering both on- and off-road when terrain becomes more challenging, eliminating tire wear and stress on the non-steered axles.

Italian company Moretti was founded by Vittorio Moretti in 1967 as a small construction firm. Since then, the

company has grown to become a major player in the manufacture and assembly of prefabricated reinforced concrete and laminated wood – both in Italy and beyond. Its sites in Erbusco, Lombardy and Balocco, Piedmont produce up to 300 m<sup>3</sup> of concrete and 50 m<sup>3</sup> of wood a day. It employs 230 people.

# MANITOWOC MCT 185 TOPLESS CRANE

The Asian range of Potain topless tower cranes built at Manitowoc's Chinese facility in Zhangjiagang continues to evolve rapidly in response to rising customer demand for the transport, assembly and performance advantages these units offer. With the launch of the 8 t capacity MCT 185, customers now have a greater choice than ever before, allowing them to select the perfect topless Potain model for any application. Designed with urban and infrastructure projects in mind, the new model shares the same advantages of easier transport and assembly, as well as high efficiency, productivity and reliability, that are the hallmarks of other Zhangjiagang-built MCT models,



stretching back to the launch of the first units back in 2012.

The crane boasts an impressive 65 m jib, yet the entire upper works of the MCT 185 can travel in just five containers thanks to its intelligent, compact design. Each crane section benefits from minimized component dimensions and weight to simplify

assembly, as demonstrated by the shorter, simpler ballast shape on the counter-jib. This section is available in two lengths – 13.5 m for use with a 30 m - 45 m jib, or 16 m for the 50 m - 65 m configuration. This choice in configuration allows projects to plan crane positioning more efficiently, a useful feature as jobsites become more congested.

For assembly, users can choose from Potain's existing 1.6 m (L46) and 2 m (L68) mast sections, both of which use pinned joints for fast, easy connection. Also available is the newly introduced 7.5 m-high S46JR reinforced basic mast for taller setup, with freestanding heights for the MCT 185 stretching up to 59.2 m.





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