

MAT & TIMBER SERVICES



CRANE MATS
OUTRIGGER MATS
TEMPORARY ACCESS ROADS
RAMPS

For all types of cranes under any application - Nationwide and Overseas



TEL: +44 (0) 1264 811005
FAX: +44 (0) 1264 810600

e-mail: info@sarumhardwood.co.uk

web site: www.sarumhardwood.co.uk

MINI CRANE HIRE

DELIVERY ANYWHERE IN THE UK



Battery operated mini cranes

0116 283 4749

office@liftltd.com

www.liftminicranehire.co.uk



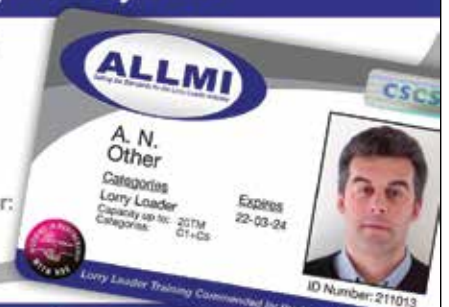
LORRY LOADER OPERATOR TRAINING
Approved by CSCS

Other courses approved by CSCS:

- Slinger / Signaller
- Crane Supervisor
- Appointed Person
- Thorough Examiner

Courses also available for:

- Instructors
- Managers



The Trade Association for the Lorry Loader Industry

Tel: 0344 858 4334 • Email: enquiries@allmi.com

www.allmi.com



STARS RISING IN THE EAST?

The All Terrain crane sector appears to be going through some interesting changes at the moment - the result of several factors including Tadano's acquisition of Demag in 2019 and subsequent integration reducing the number of mainstream manufacturers to three, at the same time some Chinese crane manufacturers are working hard to refine their European All Terrain product ranges.

The amalgamation of two major manufacturers - particularly of different cultures - always raises issues resulting in a period when internal systems, personnel, products, sales and distribution invariably suffer. This has meant that the already dominant All Terrain market leader Liebherr has made further market share gains, as has Grove and some smaller niche manufacturers.

Chinese crane manufacturers, including XCMG, Sany and Zoomlion have been pushing on the door of the lucrative European All Terrain market for more than a decade with little to show for it. More recently they have gained volume for their European products in Russia, thanks to sanctions due to the invasion of Ukraine, as outlined in last month's feature on crawler cranes (C&A issue 25.2). The major Chinese manufacturers have also learnt from their failures, and are introducing models with improved design, technology and quality and are now working on distribution. They are helped of course by long lead times for many

model sectors. At the same time Link-Belt has launched a new All Terrain crane, however this will realistically only be a factor in America. So as Liebherr edges towards a 50 percent market share, the choice of products for the customer has probably increased and the market is arguably more competitive than ever - but only in some capacity ranges.

As we have already seen in the aerial lift market, Chinese crane manufacturers are prolific when it comes to all-new products. As if to prove this to doubters in the past few years they have unveiled three of the world's largest All Terrain cranes and are among the first with electric/hybrid machines - arguably a sign that the innovation gap is narrowing - although their efforts at the top end of the market have arguably had a negative impact on their engineering reputations.

LARGE CAPACITY ATS

Last summer both Sany and Zoomlion launched 2,000 tonne plus All Terrains. Sany began with



The 2,600T multi XCMG XCA2600



Link-Belt 300AT



GOUWEELEEUW

The power of perfection



www.gouweleeuw.com/en

No project too big or too heavy!

Gouweleeuw: The paint shop for vertical transport!



Short lead times



Safe and careful



More than 30 years of experience



Demag CC 8800-1

• Before



• After



• Before



• After



• Before



• After



• Before



• After

Specialized in painting:

- Mobile cranes
- Excavators
- Crawler cranes
- Aerial platforms
- Tower cranes
- Other heavy equipment

We work daily on assignments for leading manufacturers such as:

- Tadano
- Liebherr
- Sany
- Manitowoc
- Kobelco
- Spierings

But of course we also work for importers, dealers and end users (both new and used equipment) such as:

- Global Crane Services
- Allelys Installations Ltd.
- DM Cranes Ltd.
- Osprey Marine Ltd.
- G. O'Brien Crane Hire Ltd.
- Kavanagh Crane Hire Ltd.

Transport service:

If desired, we can take care of transport of the crane. We arrange international transport as well as transport from the port.

Would you like to know more about our transport service? Please contact us to discuss the options.



Phone number
+31 (0) 527 252 307
+31 (0) 6128 436 37



Email address
info@gouweleeuw.com



Visiting address
Oudememersweg 14
8304 BH Emmeloord



The Sany SAC 24000T



The two Zoomlion ZAT24000Hs for Huanghua Haibin Lifting

its 2,200 tonne, nine axle unit, which quickly morphed into the 2,400 tonne SAC 24000T, with the first unit delivered to Ningxia Julishen Construction Machinery Group last June. The crane has an 80 metre main boom topped by a 95 metre jib for a maximum tip height close to 180 metres. Maximum counterweight is 270 tonnes. Powered by a Weichai China VI diesel it can travel at up to 70kph and has a gradeability of up to 45 percent. The company claims the new crane can lift 270 tonnes to a height of 100 metres with its super lift device installed. It adds that following such a lift, it can be stripped ready for road travel within 10 hours. Although the first crane went to work on the Zhangjiakou Zhangbei Wind Farm, installing 6.25MW turbines with hub heights of 110 metres, Sany had not released this information publicly, until Zoomlion trumpeted the fact that it had shipped the world's first two 2,400 tonne ZAT24000H All Terrains to Huanghua Haibin Lifting Installing Engineering in Hebei Province.

The nine axle Zoomlion crane was developed specifically for wind turbine installation and according to the company is capable of installing turbines with hub heights of up to 160 metres. Overall length on the road is 22.5 metres, with an overall width of three metres. Power is supplied by a 650hp Daimler diesel with 70kph maximum road speed.

2,600T XCMG

A few months later XCMG announced that it had tested its 2,600 tonne, 10 axle XCA2600 - claiming it to be the world's largest All Terrain



XCMG 2,600t XCA2600



The 220t Zoomlion ZAT2200VE

crane. Its maximum load moment is 5,372 tonne metres with a maximum lift height of 160 metres. Maximum counterweight is 340 tonnes and for turbine work the crane uses a 110 metre long power jib on a 63.7 metre telescopic boom. The crane is 3.5 metres wide and boasts a new patented independent suspension.

XCMG chief crane engineer Shan Zenghai said: "It can be difficult for large cranes to successfully strike a balance between achieving great lifting capability and be capable of traveling around conveniently, especially for those installing wind turbines at heights of 160 metres. To achieve this requires technological innovation and a dedication to customers and their height, accessibility and safety needs."

XCMG has made significant progress in developing high capacity All Terrain cranes from 800 tonnes to 2,600 tonnes over the past 10 years and claims to have sold 126 cranes with capacities over 1,200 tonnes which have installed more than 15,000 wind turbines. Most of these have, of course, been delivered to customers in China.

HYBRID/ELECTRIC ALL TERRAIN CRANES

This past nine months has seen the emergence of the first electric/hybrid powered All Terrain cranes, although Spierings has been pioneering and even perfected, the concept for several years on its self-erecting mobile tower cranes, while Tadano unveiled its all electric Rough Terrain at Conexpo. In China companies like Zoomlion has been working on small all-electric truck cranes for some time, but only recently on All Terrains.

Zoomlion claims to have launched the world's first hybrid - standard chassis/electric superstructure - All Terrain crane, the 220 tonne ZAT2200VE863, with three operating modes: battery electric, AC plug-in and diesel/electric. In pure battery mode it is said to be capable of working for up to eight hours and when operating on an external 380V AC power outlet it recharges the battery at the same time. When the batteries are flat and the crane cannot be plugged in, it can use a generator driven by the chassis engine which provides enough power for crane operations. The crane has an 85 metre main boom and can handle 7.5 tonnes when fully extended.

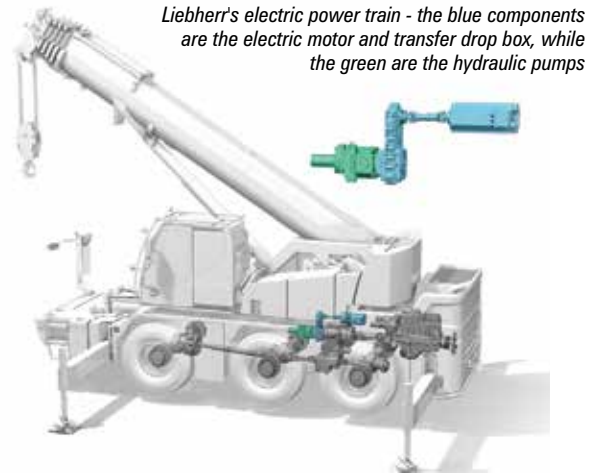
Zoomlion's first fully electric crane - the 25 tonne, three axle ZTC250N-EV truck crane - was launched in 2020. It has a travel range of more than 290km and maximum speed of 90kph powered by a lithium iron phosphate or lithium ferrophosphate (LFP) battery - a type of lithium-ion battery with a longer life and more constant discharge voltage.

LIEBHERR HYBRID

In April last year Liebherr unveiled a plug-in hybrid version of its 50 tonne LTC 1050-3.1 City-type All Terrain crane, the LTC 1050-3.1E. The crane features a 72kW electric motor and required control system, alongside the standard six cylinder diesel engine. The two power units use the same hydraulic pumps, and the operator can switch between diesel and electric power for crane functions. Once on site, it ideally plugs into a 125 Amp mains power supply in order to fully match the performance of the diesel, but it can also operate on a 63 Amp supply. Alternatively, it



Liebherr's plug-in hybrid LTC 1050-3.1E



Liebherr's electric power train - the blue components are the electric motor and transfer drop box, while the green are the hydraulic pumps

can be plugged into a standalone remote battery pack.

Simplistically, all that is required to convert the standard machine to the E version is the installation of the electric motor module plus the transfer gear that fits between the transmission and existing pumps. The electric version of the LTC 1050-3.1 features the 36 metre telematic rather than the new shorter cable extended boom. Options include the RemoteDrive system to operate the chassis and the elevating cab.

Technical director Ulrich Hamme said: "We want to be able to offer our customers full crane performance even with the alternative electric power unit. The LTC 1050-3.1 still has a conventional engine, powered by diesel or HVO, for driving on roads and for crane operations. However, it also has an electric power unit for crane operations so that it generates Zero emissions."

TADANO GREEN SOLUTIONS

For several years now Tadano has been pushing forward with its Green Solutions initiative which culminated with the launch of the world's first all-electric Rough Terrain crane launched at Conexpo together with the Auxiliary Power Unit (APU) - shown on another Rough Terrain - which operates the air conditioning and cab power supply during standby reducing fuel consumption by 25 percent as well as reducing engine emissions.

At Bauma the company had showed its Hybrid concept on a four axle AT which is at a very early stage of development. It is likely to feature an integrated battery pack powering an electric motor which drives dedicated hydraulic pumps. Recharging can be done from a plug-in connection, a small onboard generator or the

crane's engine and alternator. The crane is said to have the same performance as the straight diesel.

Tadano's long term environmental targets announced in 2021, aim to reduce CO2 emissions from business activities by 25 percent and 35 percent from product use by 2030 leading to zero carbon emissions by 2050.

For its All Terrain cranes currently the changes include the e-Pack remote electric power pack which is powered by a 400V/63A supply although it can be used with a 400V/32A supply with reduced crane power. The pack can either be transported on the back of the crane using a specific transport rack or by using a trailer.

GROVE HYBRID CONCEPT

Grove also introduced its first hybrid concept All Terrain crane - a four axle, 100 tonne capacity GMK4100L-2 - on the Manitowoc stand at Bauma 2022. The crane has a fully electrified superstructure, powered by a generator coupled to the diesel engine, and can also plug into public power supply to charge its 100kWh battery.

XCMG HYBRID

XCMG unveiled a new three axle 60 tonne hybrid XCA60 EV All Terrain crane at Bauma based on the company's existing XCA60 E. The 2.55

metre wide crane was designed with the help of Dutch crane customers and aimed specifically at the European market. The hydraulic system is powered by a 170kW electrical motor, with three operating modes: 1. the chassis engine driving a generator 2. connected to a 32 or 64 Amp AC power outlet for continuous emission free operation with performance matching or exceeding the diesel, and 3. operated electrically without plugging in thanks its 115kWh high capacity lithium ion battery pack.

XCMG claims crane operation for up to four hours with the battery pack. The batteries can also be recharged when operating from an AC outlet or



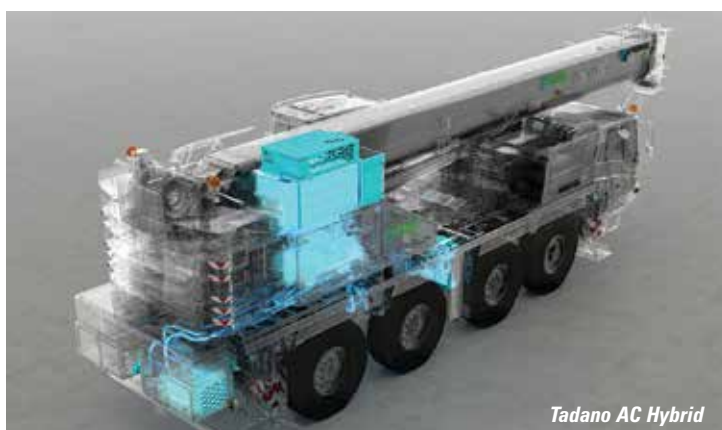
XCMG XCA60 EV



Tadano E-Pack on AC 4.070-2



Tadano's new Hybrid solution



Tadano AC Hybrid



Grove hybrid concept unveiled at Bauma

Great things come in small packages

As a mobile taxi crane, the MK 88-4.1 convinces even on several construction sites per day. With the MK, you are equipped for the future. Outstanding manoeuvrability, very low space requirement and emission-free electric crane operation – these are all the reasons why you will be happy with your MK for a long time to come.
www.liebherr.com/mk

LIEBHERR

MK Mobile Construction Cranes



ALL TERRAIN CRANES

the diesel engine with excess power topping up the battery pack and this includes recharging while travelling.

The 'Dual-Power' drive concept combines power from both the diesel and the electric motor for both road and off road travel, with the electric motor boosting the engine. According to XCMG the combination has been proven to reduce fuel consumption by around 40 percent. In addition, regenerative braking and coasting allows it to generate electricity to top up the battery pack. The crane has a 48 metre, six section pinned main boom, topped by a 9.2 to 16 metre bi-fold offsetable swingaway extension with a maximum tip height of around 66 metres. Standard features include wireless remote controls for outrigger set up, a 10.4 inch in cab touch screen and hoist cameras.

PLENTY OF NON ELECTRIC LAUNCHES

While new electric and hybrid machines generate interest, most crane users still depend on cranes with a traditional drive train and will do for some time to come. All of the manufacturers have been busy, adding and upgrading products with last year's Bauma a focal point for many new product launches.

LIEBHERR

Liebherr's most recent All Terrain launches included the 110 tonne, five axle LTM 1110-5.2 and the 300 tonne LTM 1300-6.3.

The six axle, single engine 300 tonner features an eight section 90 metre main boom but does not support a luffing jib. However, it does offer a range of extensions including the 11.5 to 20 metre bi-fold swingaway that offsets by up to 40 degrees to which two, seven metre lattice inserts can be added between the boom nose and the swingaway which provides a maximum tip height of 121 metres. The new crane comes with Liebherr's latest features including ECOMode, ECOdrive, VarioBallast and updated VarioBase Plus outrigger set up system. It also features a wider - up to 9.4 metres - rear outrigger spread as well as Auto-Ballast. Maximum counterweight is 88 tonnes, designed to provide the maximum number of transport configurations. It can also operate with eight tonnes less ballast than the LTM1300-6.2 without compromising capacities.

Another new Liebherr All Terrain is the second generation 110 tonne LTM 1110 originally launched at Bauma 2019. The new five axle LTM 1110 has a 60 metre main boom and now features Liebherr's latest LICCON3 crane control system - the LICCON2 control system was reaching the limits of its capacity - the latest



generation chassis cab and an 'almost zero wear' ZF TraXon DynamicPerform transmission and oil-cooled multi-disk clutch, which Liebherr says it will install in all of its five axle All Terrain cranes on a step by step basis. The LICCON3 control system features a new software package and programming language as well as a faster databus, more storage space and improved computing power. LICCON3 cranes will also be prepared for telemetry and fleet management systems as standard.

GROVE

Grove's latest addition to its All Terrain line up is the 70 tonne four axle GMK4070L which boasts a 60 metre main boom - one of the longest in its class - it can handle 4.4 tonnes fully extended, or 24.5 tonnes on a 31.9 metre boom. Maximum radius is 46 metres at which it can handle one tonne. A 15 metre bi-fold swingaway extension takes the maximum tip height to 78 metres.

On the road the GMK4070L can travel with up to 13.3 tonnes of counterweight within 12 tonne axle loads, or 5.3 tonnes on 10 tonne axle loads. In places such as the UK, it can manage 17.8 tonnes of counterweight - just shy of its full 19 tonnes maximum.

Power is provided by a single Mercedes Stage V/Tier 4 Final diesel with Eco mode which can be used in conjunction with the transmission's Fuel Saver mode for improved fuel efficiency. It is also approved for use with HVO diesel. A Telma retarder is incorporated into the driveline. The new crane is one of the first to offer the new Grove CONNECTTM digital platform providing owners with real-time access to fleet data - something that will be rolled out to more Manitowoc crane lines in the future. The MAXbase variable outrigger set up system is optional.

The GMK4070L goes head to head with the new Tadano AC 4.070.2 announced around the same time. While the new Grove has 10 metres more main boom and a greater maximum tip height, the Tadano has a stronger load chart, and may have the edge in terms of roading options.



Grove also used Bauma to launch its new 400 tonne Grove GMK6400-1, unveiled 'virtually' at Conexpo 2020 (and seen at its Wilhelmshaven plant since October 2021) as well as two five axle cranes, the GMK5150XL and Grove GMK5120L

The GMK6400-1 features a five section 60 metre main boom and is now equipped with a new Stage V/Tier 4 Final diesel driving an upgraded hydraulic system. Other features include MegaDrive hydrostatic drive, the Maxbase variable outrigger set up system and CCS operating controls.

The six axle crane can be equipped with up to 79 metres of luffing jib for a 136 metre maximum tip height and Grove's Mega Wing Lift self-rigging Superlift system, which increases capacities by up to 70 percent on the main boom and 400 percent on the luffing jib. The company claims that it can handle jobs that usually require a seven or eight axle crane but with a smaller footprint. It can handle 64 tonnes on the fully extended main boom at a radius of 11 metres, when rigged with the MegaWingLift system - 38 tonnes without.

TADANO

Tadano unveiled its new four axle 70 tonne AC 4.070-2 All Terrain crane at Bauma, with 50 metre six section main boom topped by an 8.5 to 16 metre bi-fold swingaway extension and up to 40 degrees of offset for a 70 metre maximum tip height. A 6.5 metre stubby heavy duty extension option offsets by up to 50 degrees.

The single engine crane has six wheel drive - the second axle is the non-driven - and all wheel steer. It can travel with its maximum 11.9 tonnes of counterweight and full 16 metre extension on board within 12 tonne axle loads, or manage 4.4 tonnes within 10 tonne axle loads, making it a versatile taxi crane. The crane has an overall width of 2.55 metres, an overall length of 11.7 metres, with a stowed height of 3.8 metres.

The crane can handle 7.1 tonnes on the full boom at a 12 metre radius or 7.3 tonnes at 10 metres.





ABOVE AND BEYOND.

THE AC 6.300-1

Take your business to the next level with the Tadano AC 6.300-1. It delivers class-leading reach combined with strength, including the ability to lift 15 t on a fully telescoped 80 m boom. To allow for high versatility, the AC 6.300-1 can be adapted to the needs of a variety of jobs and is the smallest crane in the Tadano AC range with a luffing jib. The HAV and many components are shared with several other Tadano 5-axle cranes – increasing your return on investment and reducing the amount of spare parts you need to have on hand.

ALL TERRAIN CRANES

Maximum radius is 40 metres at which it can lift up to 800kg to a height of almost 32 metres or handle 1.5 tonnes at 38 metres radius.

The AC 4.070-2 carrier shares drive train componentry with the 80 tonne AC 4.080-1 and 100 tonne AC 4.100L-1, all part of Tadano's 'shared component strategy' to provide customers with standardised controls while simplifying maintenance and reducing parts holdings. Standard equipment includes centralised lubrication, the IC 1 Plus system and Flex Base fully variable outrigger set up and monitoring, remote telematics with cloud storage and 'Tadano Support' as well as the Tadano Surround View System with a monitor in the carrier cab that provides 360 degree visibility and graphically shows the maximum possible extension lengths for the outriggers and the counterweight tailswing radius from a bird's eye view perspective. A range of options include being factory equipped to take the e-Pack electric power pack.

Two AT prototypes shown at Bauma included the 50 tonne AC 3.050-1 and the 60 tonne AC 3.060-2 which both use the same chassis. The AC 3.050-1 will have a full power 50 metre boom and will be able to travel within 12 tonne axle loads with its counterweight. Features include Flex Base variable automatic outriggers, Surround View camera system and is designed for Tadano's E-Pack electric power pack. The main boom can also be lowered to five degrees below horizontal for easy reeving. Both cranes are scheduled for production later this year.



Tadano AC3.050-1

The 60 tonner also has a 50 metre pinned main boom, with optional 6.5 metre or 16 metre extension. It can travel with full counterweight or 16 metre extension on board within 12 tonne axle loads or both full counterweight and full extension within 13 tonne axle loads. The AC 3.060-2 has similar features to the 50 tonner including being equipped to take the E-Pack, the Flex Base system, Tadano Surround View camera system.

LINK BELT'S NEW 250T AT

Link-Belt launched the 250 tonne 300AT at Conexpo. The five axle crane has a seven section



Tadano AC 3.060-2 new at Bauma

72.5 metre pinned main boom with a 12.8 to 21.6 metres bi-fold swingaway extension which can be hydraulically luffed. Two 7.6 metre lattice inserts take the maximum tip height to 112 metres. Alternatively, a 2.4 metre heavy duty extension provides good capacities and line separation for two line lifting for applications such as precast wall panels installation.

Maximum counterweight is 73.5 tonnes and the crane can travel with the basic 3.6 tonnes of counterweight on board and not exceed axle loads of 10.4 tonnes.

Power comes from a single HVO ready Cummins X15 diesel with EPA On-Highway and CARB On-Road compliance, driving a ZF Traxon automated manual transmission with integrated retarder braking, and paddle shift controls for easy stop and go on the road.

The full width carrier cab is the same as that on the 175 |AT and includes automatic climate control, Bluetooth radio, phone charging and LED



Link-Belt 300AT

lighting along with an air ride seat with lumbar support. The superstructure cab is equipped with the Pulse 2.0, 10 inch touchscreen display, a large, glazed area with full sweep wipers on the front and top, and strategically placed vents for a quick defrost.

The V-CALC control system now includes variable outrigger positioning, with full asymmetric set up and four beam extension positions - fully retracted, 40 and 70 percent out or fully extended - the SmartStack counterweight detection system also feeds into the system. Other features include wireless remote control for setting the outriggers, superstructure functions and boom extension rigging, as well as comprehensive camera 'Site Vision' package, and the company's premiere lighting package for night time operations.

SANY

Not to be left behind, Sany plans to launch three new European All Terrain cranes in the next year or so, starting with the 60 tonne SAC600E followed by the 120 tonne SAC1200E and the 250 tonne SAC2500E. This follows its 60 tonne crawler telescopic seen at Vertikal Days last month.

Only basic specifications are currently available. The 60 tonne three axle SAC600E has a 50 metre main boom and 16 metre extension, and is powered by a Mercedes E5 diesel, while key components include Kessler axles, Allison transmission and Danfoss/Rexroth/Casappa



An older version of the 250 tonne Sany - the new European version should be seen later this year

pumps. The crane is just less than 12 metres long, 2.55 metres wide and 3.78 metres high. Features include a new generation iCab, while Sany claims it will have the strongest lift chart in the class.

The twin engine, four axle 120 tonne SAC1200E will have a 66 metre main boom, plus 25.7 metres of extensions and 31 tonnes maximum counterweight. It is 2.75 metres wide on the road with an overall length of 14.2 metres but is four metres high. It can carry up to 17.2 tonnes counterweight where 16.5 tonne axle loads are permitted and features a ZF transmission, Kessler transfer case, Kessler axles and the New iCab.

The 250 tonne, five axle SAC2500E will have a 75 metre main boom, twin Mercedes Stage V engines with a new eco fuel system, and feature Kessler axles/ZF Traxon transmission/Rexroth valves, pump and motors. The overall length is almost 16 metres long. It can travel with up to 22 tonnes of counterweight where 16.5 tonne axle loads are permitted.

XCMG

Earlier this year XCMG launched the 120 tonne four axle XCA120E which features a seven section 66 metre main boom, topped by an 11.65 to 18.5 metre bi-fold swingaway extension offsettable by up to 40 degrees. Two 7.1 metre lattice extension sections can be added between the boom nose and the swingaway to achieve the maximum tip height of just over 96 metres while the maximum radius is 60 metres.

The 120 tonne capacity is achieved at a theoretical 2.5 metre radius, at three metres it can manage 80 tonnes. An MTU diesel drives a 12 forward and two reverse speed ZF 12 TraXon transmission with the three rear axles all driven while all wheel steering and a retarder are standard. The independent suspension system is similar in concept to that used by Grove. The new crane has an overall width of 2.75 metres, while the overall length is just over 14.3 metres. The outriggers have up to five working widths from fully retracted to seven metres fully extended. Maximum counterweight is 33 tonnes. ■



XCMG XCA120E

THE UK LAUNCH OF THE 17M FULL ELECTRIC TELEHANDLER



FOR MORE INFORMATION ON THE FULL RANGE OF GGR GROUP PRODUCTS, PLEASE VISIT US AT: WWW.GGRGROUP.COM
OR CONTACT US ON +44 (0)161 683 2580 (NORTH), +44 (0)1844 202 071 (SOUTH), +44 (0)1698 824 444 (SCOTLAND).

GGR
GROUP



WANT A BATTERY THAT LASTS UP TO 3X LONGER?

YES, WITH TROJAN[®] AES.

The new Trojan AES battery is the positive affirmation of everything you want and need in a Motive battery. It features the best of our proven deep-cycle AGM technology and delivers robust performance in extreme temperatures and conditions, giving this VRLA battery up to three times the cycle life of standard AGM batteries.

Download data sheets and more at trojanbattery.com/YesAES. Say YES to Trojan AES.



MORE INFO



NEW TROJAN AES BATTERY DELIVERS UP TO THREE TIMES THE CYCLE LIFE OF STANDARD AGM



Access professionals want equipment that solves problems and lowers their total cost of ownership (TCO). Operators should consider this when purchasing their replacement batteries. The right battery lets your equipment handle situations that other batteries cannot, particularly in Partial State of Charge (PSoC) conditions.

Battery-powered access equipment is often used in PSoC. But flooded lead-acid and standard AGM batteries are not designed for this. They experience corrosion, sulfation, and possibly early battery failure when used in PSoC. To prevent this damage, these batteries must be fully recharged after each cycle. This takes eight to 10 hours and can leave employees on the clock but idle.

REVOLUTIONISING AGM TECHNOLOGY TO ENHANCE PERFORMANCE

Trojan Battery Company's new premium AES Battery works harmlessly in PSoC, preventing corrosion, sulfation and extending battery life. This adds value to access and material handling equipment, floorcare machines and renewable energy applications.

The maintenance-free battery lasts three to five years and outperforms competitive products in the following vital areas:

- Delivers up to 3x more cycle life than standard AGM and has been validated at 1,200 cycles at 100% DoD vs 400 cycles for AGM.
- Performs in harsh conditions and temperatures ranging from -40° C to +71° C (-40° F to +160° F).
- Has been tested to withstand long term PSoC again and again.

The battery is also engineered to absorb vibration and shock and is protected by a three year warranty.

LASTS LONGER AND STREAMLINES OPERATIONS

Available in 6, 8 and 12 volt models, the battery is an evolution of safe and trusted AGM technology. However, its carbon additive and Deep Cycle Series (DCS) technology prevent damage and allow users to grab opportunity charges during the workday.

The battery maintains steady performance regardless of the state of charge, and it charges faster and delivers longer run times than a flooded lead acid or standard AGM battery.

WHAT SETS TROJAN BATTERY COMPANY APART?

As environmental issues stimulate the appetite for battery-powered equipment, more overseas

battery makers are entering the market. However, these startups may lack the manufacturing expertise and infrastructure of larger, more established manufacturers.

With almost a century of battery experience, Trojan Battery Company helped shape deep-cycle battery technology and remains a major supplier. The company offers:

- Timely delivery and supply chain security with global manufacturing sites.
- A global Technical Support Line with trained employees.
- A network of Master Distributors and Authorised Trojan Dealers.
- A complete portfolio of flooded lead acid, gel, Trojan AES and lithium-ion batteries to meet your needs and budget.

Trojan's AES Battery gives you what you want: affordable solutions that boost productivity, reduce downtime and increase longevity.

Learn more about Trojan AES batteries at <https://www.trojanbattery.info/YesAES/> or find your local Trojan Master Distributor at trojanbattery.com

