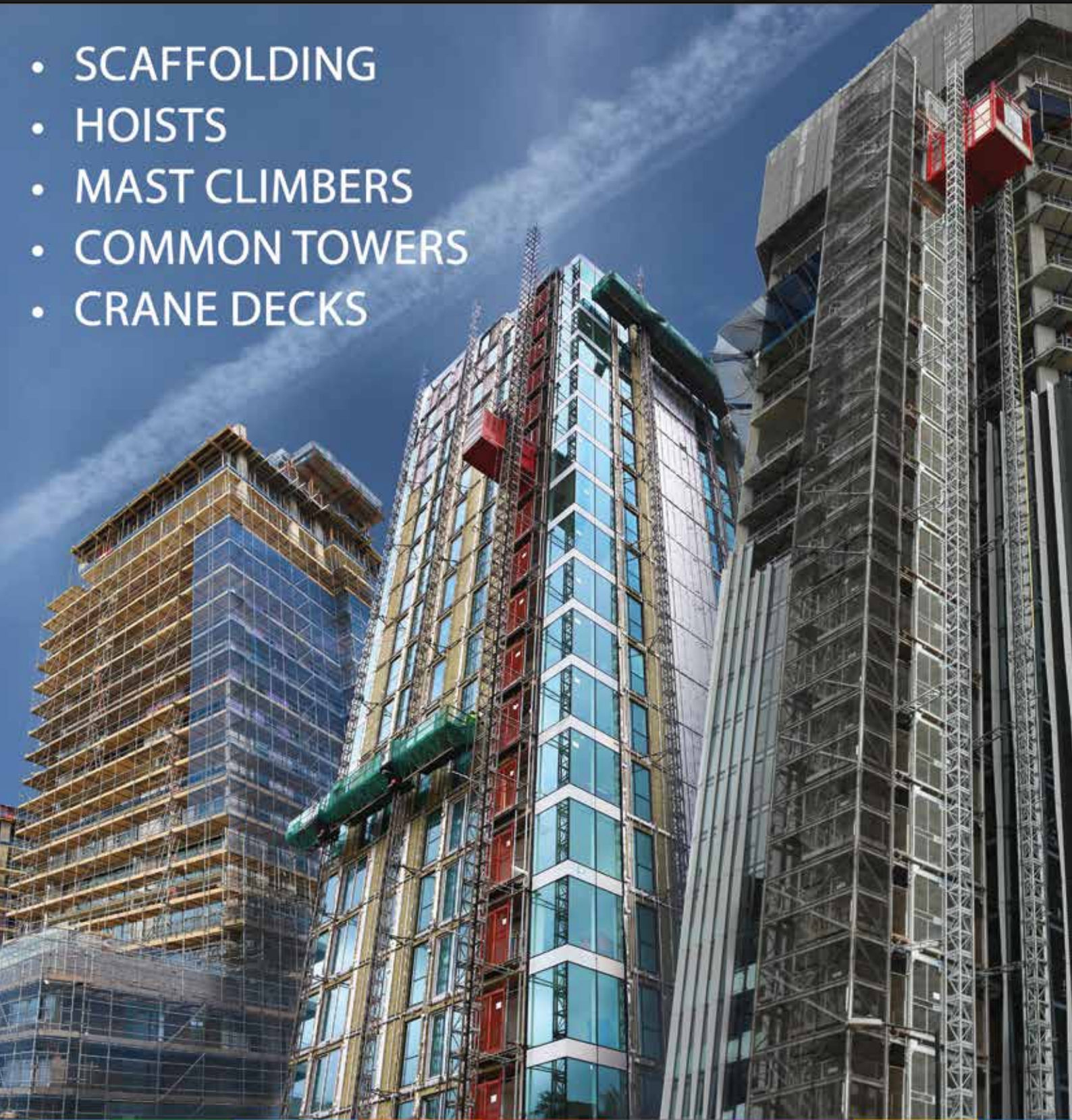


DEFINING ACCESS SOLUTIONS

- SCAFFOLDING
- HOISTS
- MAST CLIMBERS
- COMMON TOWERS
- CRANE DECKS



0333 358 0007



enquiries@brogangroup.com



www.brogangroup.com

 **BROGAN
GROUP**

Tower cranes' innovation revolution

C&A

tower cranes



The tower crane market is probably the most dynamic and interesting of all the crane sectors at the moment. New innovations such as fibre rope, the use of new materials, more sophisticated controls, greater attention to design details and easier transport and set up, look set to transform the market - at least in developed markets. Benefits include increased capacities, greater safety, more economical deployment, easier operation along with a move towards luffing cranes - including hydraulic luffers - giving contractors products better suited to modern construction techniques which are easier to install and operate in cities and confined spaces.

As to the manufacturers, Chinese companies continue to push into a wider range of markets, with Zoomlion possibly leading the way highlighted by its acquisition of German crane company Wilbert to boost its technology, while adding to its distribution and burnishing its brand awareness. The move follows Zoomlion's acquisition of some Jost tower crane designs in 2011. At the same time the

self-erector market continues to develop with several new products from the leading players including Liebherr and Potain.

Fibre the way forward

Fibre rope for cranes has been in development for 10 years or so but it is only recently that manufacturers have started to take it seriously, with two fibre rope manufacturers - Samson and Teufelberger - working directly with

Manitowoc and Liebherr to perfect their products for use in both mobile and tower cranes.

Teufelberger has been working with Liebherr on the SoLITE rope for the past eight years taking the concept to a new level. In North America Samson unveiled its K-100 synthetic rope three years ago which uses Dyneema synthetic fibres and can be for use with mobile cranes, while in the offshore sector MacGregor offers a 150 tonne fully heave compensated knuckle boom fibre rope crane developed in partnership with Parkburn Precision Handling Systems.

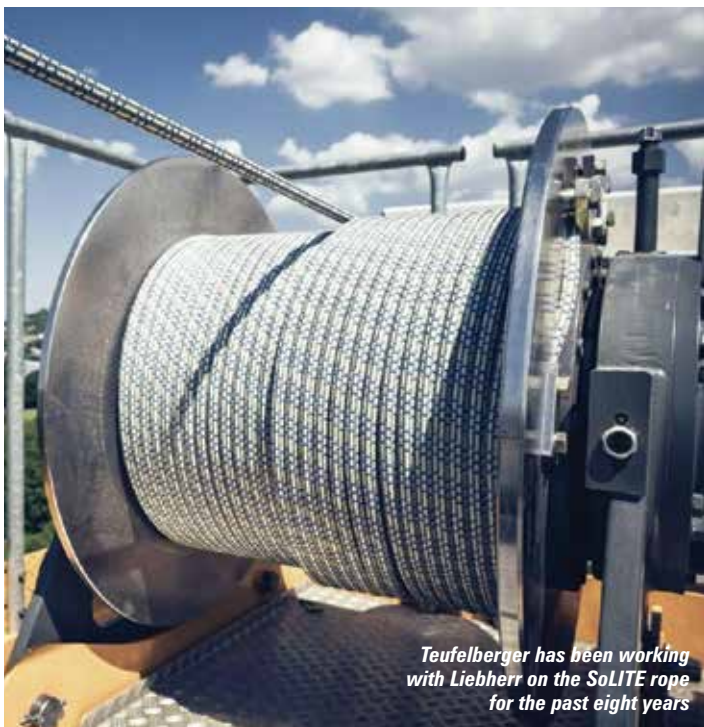
Liebherr has made the new fibre rope a core integral component in four of its new EC-B flat top tower crane range. It is not yet recommending the new rope for retrofitting to its other cranes, saying that ideally the crane should be specifically designed to use the product.

It is hard to argue against the use of fibre ropes in cranes given the huge benefits they offer. The main advantage is of course weight, being 80 percent lighter than steel rope of the same capacity. On a tower crane that translates to a 20 percent gain in jib tip capacity. It is said to have a service life roughly four times longer than for steel rope although it is considerably more expensive. The rope is also much easier to handle and can be fitted by hand without auxiliary reeving winches. It also allows smaller hoisting gear to be specified. Fibre has up to 200 percent higher capacities for the equivalent size and requires no lubricants, resulting in a cleaner, safer crane with less environmental and cost implications. The hook blocks on Liebherr EC-B Fibre cranes are also 50 percent lighter adding to the crane's capacity. Liebherr also says its fibre rope also allows the installation

of a longer jib, rather than all the additional capacity.

One of the early issues with fibre rope was how to identify when the rope needed replacing. Liebherr and Teufelberger spent years developing and testing the new rope, producing more than 100 prototypes totalling 70,000 metres developing an outer cover layer that protects a load bearing core while serving as a visual indicator of rope wear. The rope gradually darkens in colour over time and then the cover layer becomes tatty, with strands beginning to protrude at around two thirds through its safe working life. When it exceeds the 90 percent wear point, red patches begin to be seen through the worn cover, indicating that the rope will soon need to be replaced.

The four new Liebherr EC-B Fibre flat top cranes include the 240 EC-B 10 Fibre, the 240 EC-B 12 Fibre, the 278 EC-B 12 Fibre and the 370 EC-B 12 Fibre. The company says it will have 16 Fibre models in the market by the end of 2020 and may well be using it on mobile cranes by then.



Teufelberger has been working with Liebherr on the SoLITE rope for the past eight years



The different wear rates of the Liebherr Fibre rope.

Wilbert set to expand

At the end of last year Chinese crane manufacturer Zoomlion took its equity stake in Germany's Wilbert Tower Cranes to 100 percent. C&A talked to Gunter Kronewitter, head of sales at Wilbert to find out more.

Prior to the acquisition Wilbert had gone through several years of financial instability ending in administration. Based in Waldlaubersheim - 80km west of Frankfurt - the family business dates back to 1932 when it was established as a rental company offering construction equipment, mobile cranes and concrete pumps. By the end of the 1980s the company had evolved into a full service tower crane supplier, building its name in the German rental market through a long-term partnership with Wolffkran. The relationship came to an abrupt end in 2003 with Wilbert began building its own tower cranes with the WT 200 e.tronic - its first, in-house flat top crane.

It appeared to have got off to a good start, opening a new production facility in 2008, the same year it launched its new Heavy-Lifter series of luffing jib cranes specifically designed for power plant and industrial construction. By 2010 the group - which included manufacturing, rental and service operations - had produced its 200th tower crane and in 2011 claimed to have revenues of €60 million - it even talked of an Initial Public Offering.

However the market slow down hit hard and in 2013 the manufacturing business - Wilbert Turmkran - was placed into administration although the Wilbert Crane Service and Wilbert rental and tower crane erection divisions/companies were not part of the bankruptcy process. Wilbert Turmkran was saved with a five year finance deal from Chinese automotive manufacturer Nanyang Guoyo. The change also saw the business emerge as Wilbert Tower Cranes. Last year, as the five year deal approached its full



Gunter Kronewitter (L) with chief executive Franz-Rudolf Wilbert

term, Nanyang Guoyo decided not to renew its credit line leaving room for Zoomlion to take over.

"The Zoomlion acquisition will not change anything with the Wilbert brand continuing as before manufacturing and renting tower cranes," said Kronewitter. "Wilbert will remain an independent company within the Zoomlion group but with the secure financial backing we now have the chance to grow our product lines and benefit from Zoomlion's sales and distribution networks."

"Our focus remains on complex construction projects, especially in the structural engineering and power plant sectors. We will continue with our large rental fleet which will help build confidence for companies to buy new Wilbert cranes allowing us to develop a full product range."

New models

At Bauma Wilbert unveiled five new e.tronic flat top cranes. The first in the range - the 12 tonne capacity WT 260 e.tronic - was launched almost two years ago with more than 40 units delivered since then. The latest additions range from the eight tonne WT 180 e.tronic to the 32 tonne WT 720 e.tronic. New features include the 'Comfort Cab', the newly developed round tube tower system, freestanding hook heights up to 100 metres using standard tower sections and 130 metres with the new reinforced



The first in the new e.tronic range - the 12 tonne capacity WT 260 e.tronic - was launched almost two years ago selling more than 40 units



The new round tube tower system allows significantly higher free standing tower and hook heights

tower elements, while maximum jib lengths of up to 85 metres are available in 2.5 metre increments. The new control and drive

technology includes stepless acceleration over the entire speed range, fast acceleration and deceleration of the load without



AVAILABLE NOW

WHEN SUCCESS IS YOUR ONLY CHOICE.

Strong. Long. Light. The new ATF 60G-3.

It telescopes loads of up to 40 tonnes. It operates with a radius of up to 44 m on main boom. It drives in a 10 tonne axle load configuration. In a nutshell: The ATF 60G-3 offers you an extraordinarily wide application spectrum which goes far beyond that of the equivalent 60 tonner – guaranteeing an above-average degree of utilization.

And your long-term success. **When success is your only choice: The new ATF 60G-3.**

Find out more about your chances of success at: www.atf60g-3.de/en

Max. Lifting Capacity	Boom	Boom Extension	Max. Sheave Height	Max. Radius	Engine (superstructure)	Gear
60 t	9.5 m – 48 m	1.7 m – 7.4 m	58.4 m	44 m	260 kW (354 HP)	6 x 4 x 6 (6 x 6 x 6 off-road)

hoist rope vibration, which it says reduces stress on the crane while providing smoother operation and extending the life of the hoist rope, new assistance systems including wind start control, brake match, anti-sway and position mode all intended to increase safety and offer more precise operation, as well an easy to setup 3D work area limits, remote data retrieval and a remote diagnostic system.

Round tower system

According to Wilbert, the new round tube tower system allows significantly higher free standing tower and hook heights reducing the number of structural fixing points. The modular system is available in two sizes - two metres by two metres for the T25, T40 and T50 towers and 2.44 metres by 2.44 metres for the T100. Standard length of sections is 6.45 metres and together with shorter elements and adaptors for the T50 and T100 towers, hook heights can be adapted to each site requirement.

The company says that up to eight standard elements can be installed in one shift with its climbing system. Each tower section has a 500mm wide ladder and the partially removeable rest platform allows the easy installation of an internal operator elevator.

Machine platform and track

The newly designed HFU110-80 machine platform includes gearbox, switch cabinet, inverter and control system assembly. The 110kW winch on the larger WT560 and WT720 is capable of up to 240 metres/min with 500kg in two fall mode and up to 16 metres a minute with a 32 tonne load in four fall mode with stepless acceleration from zero to its 240 metres a minute maximum.

Wilbert also offers a range of accessories, including a track system that it says is quick and easy to install. Four track widths are available - six, eight, 10 and 12 metres - using track lengths of seven and 10.45 metres. Curved track is also available.

Zoomlion benefits

The acquisition will also benefit the Chinese manufacturer. Zoomlion said that Wilbert will focus on the higher quality cranes aimed at the western markets while helping improve the Zoomlion tower cranes.

"Wilbert products have great



The Wilbert tower crane track system

potential not only in Europe and America but also the high-end market in China. The two companies will also coordinate their supply chains and utilise each other's resources resulting in lower purchasing costs and common development," said Kronewitter. "Zoomlion is one of the largest manufacturers of construction machinery in China and is looking for access to the European market. We hope to advance the targeted expansion of the business in Germany and internationally."

The Jost designed Zoomlion cranes are built solely for the Chinese market, where the company claims that is now the market leader. It recently added three new fourth generation intelligent Zoomlion flat top tower cranes to the range - the T6515, T6520 and T7525, showing the 12 tonne T7020-12H with 70 metre jib and 2,000kg jib tip capacity at Bauma.

As part of its move to consolidate its position in China, it has opened what it claims is the world's largest intelligent tower crane facility in Changde. The plant took three years to build at a cost of \$115.4 million and aims to comply with Germany's Industry 4.0 standards. It includes 12 automatic production lines, more than 10,000 sensors, 100 industrial robots, 35 unmanned Rail RGV and Automatic AVG Guided Vehicles plus 16 CNC machining centres.

Chief executive Zhan Chunxin said: "By leveraging our world leading technology, along with the resources and support available to us in the Changde region, we will be the

undisputed world leader in the construction hoisting machinery sector and will develop even better quality and more intelligent products."

Zoomlion says its tower crane business generated revenues of \$739.7 million in 2018 and it hopes that the new plant will help increase this to \$1.48 billion this year.

A Zoomlion and Wilbert tower crane side by side at Bauma



Experience the Progress.



Liebherr crawler cranes – LR Series

- Superior lifting capacities, on-line load chart calculation
- Great variety of boom configurations
- Quick and easy assembly
- Easy and cost-effective transportation

Liebherr-Great Britain Ltd
Normandy Lane, Stratton Business Park
Biggleswade, SG18 8QB
Tel.: +44 (0) 1767-602166
E-Mail: mark.west@liebherr.com
www.facebook.com/LiebherrConstruction
www.liebherr.com

LIEBHERR

New tower cranes at Bauma

This year's Bauma was one of the best for many years in terms of new tower crane product launches so we are covering them here, rather than in the Bauma review on page 89.

Liebherr L1-32 and 125 K

Liebherr expanded its L1 series of self-erecting tower cranes with the addition of the L1-32 which will be available from autumn this year. The crane has a four tonne maximum capacity and a 30 metre maximum radius with a jib tip capacity of 1,000kg. Big brother to the L1-24, the L1-32 has a standard hook height of 21.3 metres and is aimed at the construction of larger domestic properties as well as smaller apartment blocks.

The L1-32 can be transported on a single truck, with five tonnes of basic and 10 tonnes of additional ballast. In order to achieve the maximum capacities, requires a further two tonnes of ballast. The overall base footprint is four by four metres, while the relatively compact tailswing of 2.2 metres keeps it close to the base. Features include Speed2Lift drive and control technology, Micromove fine positioning mode, ABB operating range limiting system, oscillation

damping and wind force moment control. The new radio remote controller includes a full colour display screen.

Liebherr also launched the eight tonne capacity 125 K - its largest self-erecting crane to date - with a maximum radius of 55 metres at which it can lift 1,300kg. Maximum hook height is 65.5 metres, made up of the basic hook height of 29.5 metres plus five tower sections to reach 41.5 metres, while the jib can be luffed to 30 degrees to achieve the 65.5 metres. A Load-Plus function also helps improve capacities.

As mentioned already in the fibre rope section Liebherr has a new eight model range of EC-B flat top tower cranes with maximum capacities from six to 16 tonnes and jib tip capacities from 1.6 to 2.8 tonnes at a radius of up to 58 metres. Four of the new tower cranes are equipped with the new fibre rope developed with Teufelberger.

Liebherr expanded its L1 series of self-erecting tower cranes with the addition of the L1-32



Liebherr also launched the eight tonne capacity 125 K - its largest self-erecting crane to date

Terex CTT 202-10 flat top

The new 10 tonne capacity Terex CTT 202-10 flat top has nine different jib configurations from 25 to 65 metres with a 2.3 tonne tip capacity at 65 metres. The Terex Power Plus feature temporarily allows a 10 percent increase in the maximum capacity under specific and controlled conditions. The crane is also available as the eight tonne CTT 202-8. Three towers can be used - the H20, TS21 and TS16 -

with widths from 1.6 to 2.1 metres.

The cab features a fully adjustable comfort seat and short shift joystick controls as well as built-in heating and air conditioning. A seven inch colour display with anti-glare screen provides the operator with operational and troubleshooting data. The crane's new control system features expanded configuration options including Terex Power Match that gives the operator the choice between operating performance or lower energy consumption.

Depending on tower configuration, the new CTT 202-10 has a maximum under hook height of 76.7 metres. All tower segments are preassembled with aluminium ladders and each jib section features an independent lifeline for working at height. Remote control is an option and the crane is built ready for the installation of zoning,



The new 10 tonne capacity Terex CTT 202-10 flat top has nine different jib configurations from 25 to 65 metres with a 2.3 tonne tip capacity at 65 metres

The new 40 tonne capacity Potain MDT 809 with 80 metre jib - its largest flat top to date



anti-collision systems and cameras as well as the next generation of Terex tower telematics - T-Link - a cloud-based system currently accessible from a PC, with Android or iOS mobile devices available shortly. Information includes wind speed, direction and forecasts superimposed on a crane locator map, real time data on all cranes in the fleet, the ability to review the crane's activity history and access the built-in analytics templates to assess the job site efficiency and parts wear.

Biggest Potain flat top

Potain launched its new 40 tonne capacity MDT 809 - its largest flat top to date - with 80 metre jib. Potain says the crane is around twice as fast to erect than other 40 tonne cranes, while requiring

less space. It says that it takes three days to install with 50 metres hook height and the full 80 metre jib, thanks to dedicated slinging points on the crane and jib sections assembled either on the ground or

in the air, depending on available space. Jib lengths range from 30 to 80 metres in five metre sections.

A choice of two standard frequency-controlled hoists are available - the 100LVF or 270LVF - or the optional High Performance 150HPL. The winch options give the crane a maximum capacity of 25, 32 or 40 tonnes and 80 metre tip loads of up to nine tonnes. Two fall and four fall configurations are available while a simple in cab button control enables the operator to activate the automatic cable tensioning system - useful for long running job sites where tensioning is required more frequently. Freestanding heights of up to 80 metres are possible with the new reinforced K-mast tower system.

For transportation the slewing mechanism can fit into a standard

container, while the whole crane transports in either 10 or 11 containers depending on the winch option chosen, which Potain claims is four to five fewer than is typically required for a crane of this size. Smart design features to aid shipping include protective packaging for the jib sections and a cab that rotates for transport. The crane also has a new eight metre cross base that offers the same performance as the 10 metre chassis, but only requires one container and is quicker to assemble.

Thibaut Le Besnerais, global product director for tower cranes said: "The MDT 809 is one of the most significant Potain tower crane launches of recent times. Over the past 10 years we have seen growing demand for topless cranes, thanks to their fast assembly and compact design. We have also seen an increase in modular construction, with contractors needing to lift heavier loads. It is clear to us that there is strong demand for bigger topless cranes. But we wanted to be sure that any new model not only satisfied demand for greater

capacity, but also preserved the easy transport, fast assembly and performance of our other topless cranes."

Potain hydraulic luffer

Potain also showed the MRH 125 - the first in its new European range of hydraulic luffers. Pre-production models of the crane, first seen as the MCH 125 prototype at Bauma China 2016, have been on test in Thailand, Australia and New Zealand.

Maximum capacity is eight tonnes, maximum jib length 50 metres with a jib tip capacity of two tonnes. Maximum freestanding height is 57.9 metres while line speeds of up to 118 metres a minute are available with the 50LVF20 hoist.

The Potain MRH 125 is the first in its new European range of hydraulic luffers



FX-Link
Integrated crane-truck connectivity
control

AWC
Automatic Winch Control
control

ACF
Automatic Crane Folding
control

CCD
Cabin Collision Detection
control

IMC
Integral Machine Control
control

GAS
Grabs Automatic Shake
control

FX901
Fassi Electronic Control
control

IoC
Internet of Cranes
service

Day by day, Fassi works towards the future. It does so by focusing on digital and mechatronic innovation, introducing applications and technology to support human operators.

These devices are developed entirely by Fassi and can be activated either remotely or via selector switches and can assist the operator both in terms

of control and safety. Predictive diagnostics, connectivity between machines, control of load handling and cabin safety are just some of the innovative functions available which make the work of the operator ever more important and central.

More about: fassi.com

facebook.com/fassigruspa

The Hup M 28-32 has a maximum capacity of 2.2 tonnes, a 28 metre jib, a jib tip capacity of 850kg and dual steering axles



The crane has been designed for ease of transport and fast erection/dismantling and can be mounted on the standard 1.6 or two metre K-mast towers. Four containers are required to transport the upper portion of the crane, with the counter jib and jib foot traveling as a single package. The VVH hydraulic luffing mechanism and cylinders are pre-connected at the factory reducing assembly time on site, while the unusual seven metre counter jib is simple to connect during assembly. The jib luffs from horizontal to near vertical in two minutes and the out of service radius is 10 metres.

New Hup mobile self erector

Potain's third model in its Hup self-erector crane line is smaller not larger and the first with a twin axle steered chassis. The Hup M 28-32 has a maximum capacity of 2.2 tonnes, a 28 metre jib and a jib tip capacity of 850kg. The jib can be luffed to 10, 20 or 30 degrees above the horizontal, providing hook heights of between 20 and 31 metres. According to Potain the new crane is the most compact in its class with an overall transport length of 11.5 metres. It also features permanently installed ballast and onboard battery powered dual steering axles.

The remote control unit features a large colour screen with Potain's Smart Set Up software delivering on screen information and an automatic folding and unfolding of the crane simplifies set up. Like other Hup models, it has Drive Control

functionality with three selectable profiles that vary the working speed of the crane to suit the application, while the micro-speed function delivers slow and high precision hoisting. The first units are scheduled for early in 2020.

Comansa's new 50 tonne flat top

At Bauma Comansa announced an additional model to its range of large flat top cranes - the 21LC1400. Two versions with maximum capacities of 50 and 66 tonnes will be available worldwide from September, both of which are aimed at applications such as Prefabricated Prefinished Volumetric Construction (PPVC) and major infrastructure projects.

The 21LC1400 features a modular counter jib/back mast design to allow for reduced tail swing/slew radii in space constrained jobsites and a new single compact trolley - instead of the usual double trolley system - as the crane will mainly work on projects requiring the maximum capacity for most of the lifts it carries out.

The company also unveiled Quick Set which reduces the set up time for the crane's electronic limit systems from three hours to just 45 minutes, and with fewer people. Quick Set will be available as an option on all LC flat top models and will be of particular benefit to companies that tend to use their cranes on shorter term projects.

A new Cube Cab was on display together with the recently launched 50 tonne 21LC1050 flat top with jib lengths up to 90 metres. The

display crane was sold with full jib and mast to rental company BKL Baukran Logistik for a job in Berlin with contractor Klebl.

Wolfskrann

Major news from Wolfskrann was its new Wolff 133 B hydraulic luffer, which replaces the 100 B. Available in 6.2 or eight tonne configurations the 133 B has a 25 to 45 metre jib extended in five metre increments, with a jib tip capacity of 2.6 tonnes for the smaller model and 2.3 tonnes for the larger. As with the larger 166 B the 133 B can be operated in single or two fall mode.

The modular tower system allows a freestanding height of 95 metres with a two by two metre UV20 tower, while a 1.5 metre square tower is in development.

The smaller model uses the 28 kW, HW 628.1 FU winch with speeds of up to 108 metres a minute. The eight tonne model has the 45 kW electric powered HW 845 FU from the 166 B with a maximum speed of 158 metres a minute. A one piece counter jib is said to be easier to transport and no component weighs more than 6.7 tonnes allowing a smaller crane to be used for erection.

New Arcomet A50 Eco

Arcomet unveiled the eight tonne A50 Eco, its



Comansa recently launched 50 tonne 21LC1050 flat top with jib lengths up to 90 metres

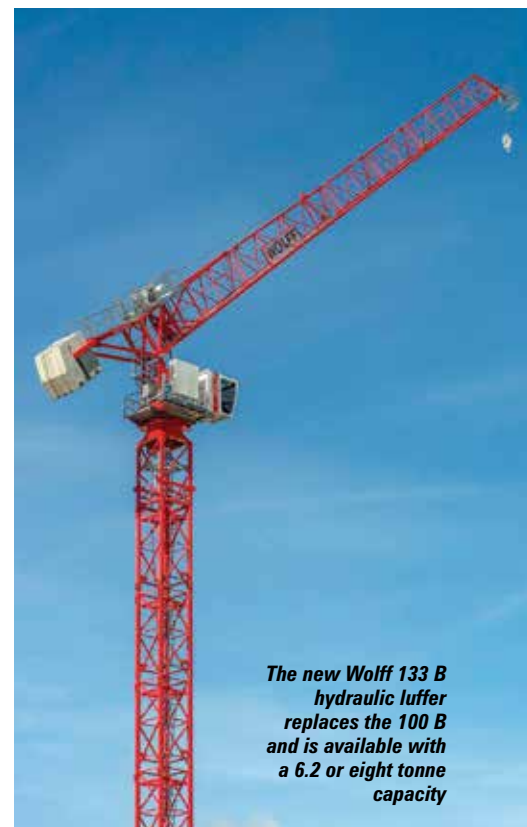


Arcomet unveiled the eight tonne A50 Eco, its largest self-erector crane to date

largest self-erector crane to date, with a 50 metre jib with a jib tip capacity of 1,500kg. Jibs of 29, 35, 40 and 45 metres are also possible and hook heights range from 18.4 metres to 36 metres. The maximum counterweight is 42 tonnes with a tail swing/slew radius of 3.85 metres and a base footprint of 4.8 by 4.8 metres.

Two new FB Gru

Italian crane manufacturer FB Gru launched two 'Fast-Erecting' cranes at the show - the GA138K is a restyled version of the GA138 with a four tonne capacity and 38 metre jib with 1,00kg jib tip capacity. Developed in collaboration with Käppeli Logistik the unit is road



The new Wolff 133 B hydraulic luffer replaces the 100 B and is available with a 6.2 or eight tonne capacity

EVERYTHING YOU NEED TO REACH NEW HEIGHTS



CIT 472-20 Flat Top | Max. lifting capacity of 20 t with 4:1 at the end of the jib.

With a range of features and styles, Terex tower cranes are ready for lifting duties, from small residential areas and crowded cities to infrastructure projects.

Contact us to learn how we can work for you.

www.terex.com/cranes

Ready for

T-LINK

The new Terex remote monitoring and fleet management system.



Ask about our full range of tower cranes.



TEREX®

WORKS FOR YOU.™

towable at 80 km/h. The second was the GA143 with 43 metre jib and four tonne capacity.

Raimondi

Raimondi showed three new cranes - the LR273 luffer, the hydraulic luffing LRH174, and its largest tower crane to date the flat top MRT573. The LR273 has an 18 tonne capacity and 60 metre jib. In standard configuration it can work in two, three and four falls, while a single line extension will be offered as an option. The crane has a choice of two main hoists - 67kW and 86kW - both with optional emergency brake.

The company's first hydraulic luffer, the LRH174 unveiled last year has a 10 tonne capacity, 50 metre jib and 2,250kg top capacity with two falls. The crane can also be used with single line with a maximum capacity of five tonnes and a tip load of 2,476kg.

The reduced out of service radius is 10 metres and like all hydraulic luffers it offers faster, easier installation. The jib and winch are assembled at ground level and raised in a single lift. Luffing the jib to 85 degrees takes less than two minutes. The crane also uses the new generation



The FB Gru GA138K has a four tonne capacity and 38 metre jib with 1,00kg jib tip capacity

Raimondi safety control system.

JASO

Jaso launched its largest luffing jib crane - the J780PA - in two versions, the 75 tonne J780PA and a maximum boom length of 70 metres and the 64 tonne J780PA.64. The first J780PA has started work on The Ribbon project in Sydney, Australia. Assembly was completed in less than three days in a very small and confined space.

Also new is the J1400 which joins the Top Line - H series. It can lift up to 64 tonnes and has a maximum radius of 80 metres. The first model is destined for a project in Singapore. Finally Jaso introduced the JL25 tower crane operator lift.



Jaso introduced the JL25 tower crane operator lift



Bauma was the first chance to see Raimondi's hydraulic luffing LRH174

The Raimondi LRH 174 - the affordable new hydraulic luffer now available

- High hoist speed
- 37kW or 45kW motor
- One fall/two fall
- 6.5m out of service radius
- 2m tower

Available exclusively with Bennetts, UK Raimondi dealer, for sale or hire.

CONTACT US TODAY FOR FURTHER DETAILS

tower-crane.co.uk

01453 811754

office@tower-crane.co.uk