cranes &access next

Do you receive a hard copy?

Would you prefer to receive your own personal copy of the printed version of **Cranes & Access**? Then register on-line now for your personal subscription. Cranes & Access: The Lifting Professional's magazine. **www.Vertikal.net/en/journal_subscription.php**

Download complete issues

Laptop users: Download complete issues of Cranes & Access or **Kran & Bühne** to read when you have the time. Using the latest version of Adobe Acrobat you can search for specific words or names in the issue or even have your PC read the articles out loud to you while winging your way across the Atlantic (or wiling away the hours on the Motorway!).Cranes & Access: **www.Vertikal.net/en/journal.php**
Kran & Bühne: **www.Vertikal.net/en/journal.php**

Do you read German?

Do you need to keep up to date with what's happening in the German, Austrian and Swiss lifting industries? Then our sister magazine, Kran & Bühne, is the magazine for you. Subscribe now to Germany's leading publication for the crane and access industries and keep up to date with the latest news (published in German). **www.Vertikal.net/de/journal_subscription.php**

Have you registered for email alerts?

When major news breaks in the lifting world, be the first to hear about it ..Free! News bulletins by e-mail straight to your mailbox. Register for **News Alerts** to get major head line news as it happens. **www.Vertikal.net/en/newsletter.php**

Use our on line access and lifting directory

Have you tried our on line Access and lifting directory? Direct links take you to supplier's web sites with one click of the mouse, with 29 product categories and hundreds of the best suppliers, this is a very convenient source guide as well as an easy way to find a lifting company's web site.
English guide: **http://www.vertikal.net/en/links.php**
German guide: **http://www.vertikal.net/de/links.php**

Central European rental companies

The world's largest on-line listing of mainland European crane and access rental companies is available to you now. Just click the link below to go to Vertikal.net/Vermieter where the bi-lingual site will guide you to hire companies throughout Europe. **www.Vertikal.net/Vermieter**

cranes &access Kran & Bühne VertiKal .net

Ready for action

A Kobelco crawler crane at work in Japan

Demand for large lattice boomed cranes is probably at its highest for many years. Driven by the buoyant energy sector - traditionally oil and gas - sales are also benefiting from alternate energy sources, particularly wind power. Mark Darwin looks at the latest developments and applications.

Equipment preferences vary around the world - and cranes are no different. If you are one of those who cannot drive past a crane without at least glancing at it, a few days spent travelling around in Europe followed by the same exercise in the USA will highlight a massive difference.

In Europe, unless you are near a large wind farm or petrochemical facility, you will rarely see a lattice boom crane. On the other hand, in the USA there will be dozens of them - any road job with some form of elevated section will have three or four good sized lattice boom cranes including both crawlers and trucks.

But why such a massive disparity? Road regulations are certainly one explanation. Moving even modestly sized telescopic cranes in many states can require extensive disassembly or the use of multi axle trailing booms or both.

Lattice boomed cranes have of course been designed for stripping and once on site, offer better lift capacities. There are also a lot of older lattice cranes on the market in the USA. Many contractors, not to mention crane rental companies, continue to use and operate cranes that they purchased as long as 30 years ago.

The vanishing lattice truck crane

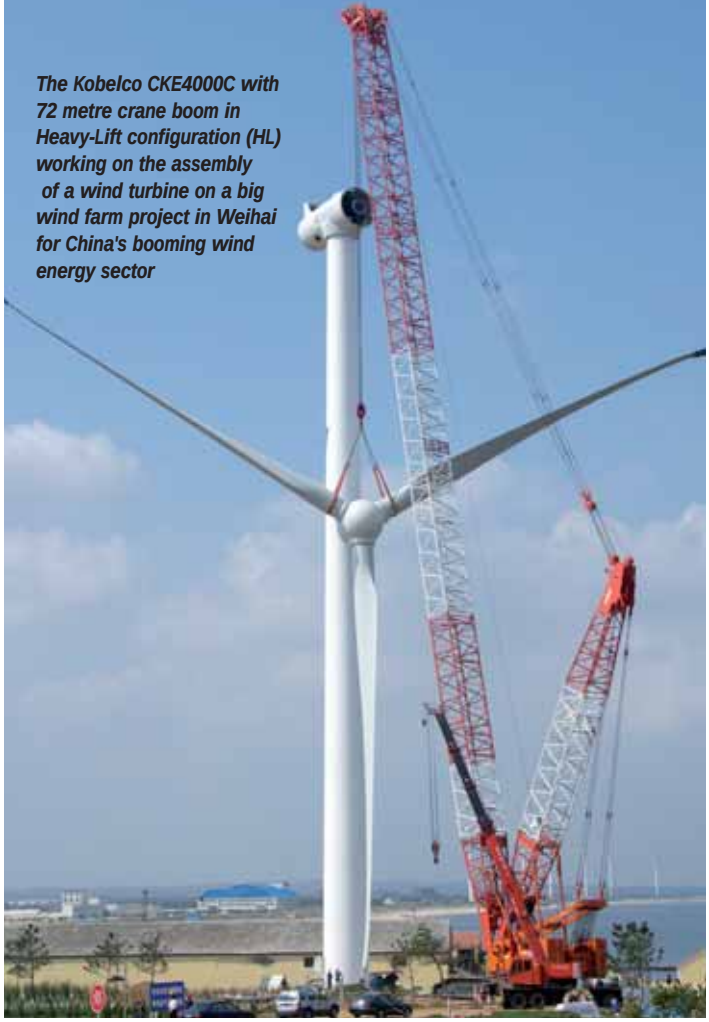
The crane rental industry in Europe tends to be more day to day which simply rules out all but the largest lattice boomed cranes, unless it is for longer contracts where crawlers are making a comeback. The lattice boomed truck mount has all but vanished in Europe. As far as we could ascertain the only lattice truck crane to be sold in the UK or Ireland in recent years has been the Terex TC2800-1 purchased by McNally Crane Hire in Ireland to replace its TC3300. For general crane hire the modern telescopic crane is more flexible, cheaper and faster to mobilise. There appears to be a limited market for the really heavy lifts in the UK, although two of the largest European companies that have developed a speciality in this area - Sarens of Belgium and Mammoet from the Netherlands, have subsidiaries in the UK. The top end of the market has become a very international business with the big cranes travelling round the world to carry out lifts.

The vast majority of lattice boom cranes are now crawlers, although at the top end of the market companies such as Mammoet has taken to commissioning and even designing their own modular ringer cranes some of which incorporate a tracked undercarriage. The main crane producers Demag, Liebherr and Manitowoc all offer large lattice cranes topped out by Demag's 1600 tonne capacity CC12600. The big three might not have the larger lattice market to themselves for much longer though as both Kobelco and more recently several domestic Chinese producers launch ever larger crawler cranes.

Kobelco adds to its range

Kobelco originally entered the crane business through a license agreement with P&H. The Japanese manufacturer learnt fast and began developing its own crawler cranes and now claims to be the world's largest supplier of lattice boom crawler cranes of 250 tonnes with a 40 percent market share. The company is intending to take a similar share of the larger crane market by adding new models such as the new 550 tonne SL6000 that it will launch at Bauma. The first two machines to be completed, one of which will be

New cranes at Bauma



The Kobelco CKE4000C with 72 metre crane boom in Heavy-Lift configuration (HL) working on the assembly of a wind turbine on a big wind farm project in Weihai for China's booming wind energy sector

A new Liebherr LR11350 lifts a 316 tonne fully assembled turbine into place at 120 metres height

Liebherr is showing its latest big crawler crane, the 1,350 tonne capacity LR11350 at Bauma. The LR11350's 228 metre maximum boom and jib combination is achieved using a combination of 114 metre long main boom and luffing fly jib. When erected with a conventional A frame design, the unit can handle boom lengths of up to 102 metres. When equipped with a back mast/derrick boom it can extend this to 150 metres. The maximum 1,350 tonne lift capacity is achieved at a 12 metre radius on a 60 metre long main boom with 42 metre derrick boom and 600 tonne ballast trailer. A suspended ballast system is also available which can be operated via the derrick boom, either without a guiding device at a radius of up to 25 metres, while a guidance device increases the radius to 30 metres.

The unit has been designed to make transportation as easy as possible with no section of the LR 11350 exceeding the transport width of 3.5 metres or 45 tonnes. For crawler carriers to achieve this weight, the crawler chains are removed. This is, however, a less time consuming procedure than taking the crawler carriers apart.

Up to six winches can be used for installation and hoisting work. The main hook block for load capacities up to 1350 tonnes has a modular design, consisting of a hook and four roller blocks. This means that it can be used for a variety of applications in the double or single block formats.

on display at Bauma, have already been sold to UK based Weldex in full SHL specification with 84 metre main boom plus 84 metre luffing jib giving a 170 metre tip height.

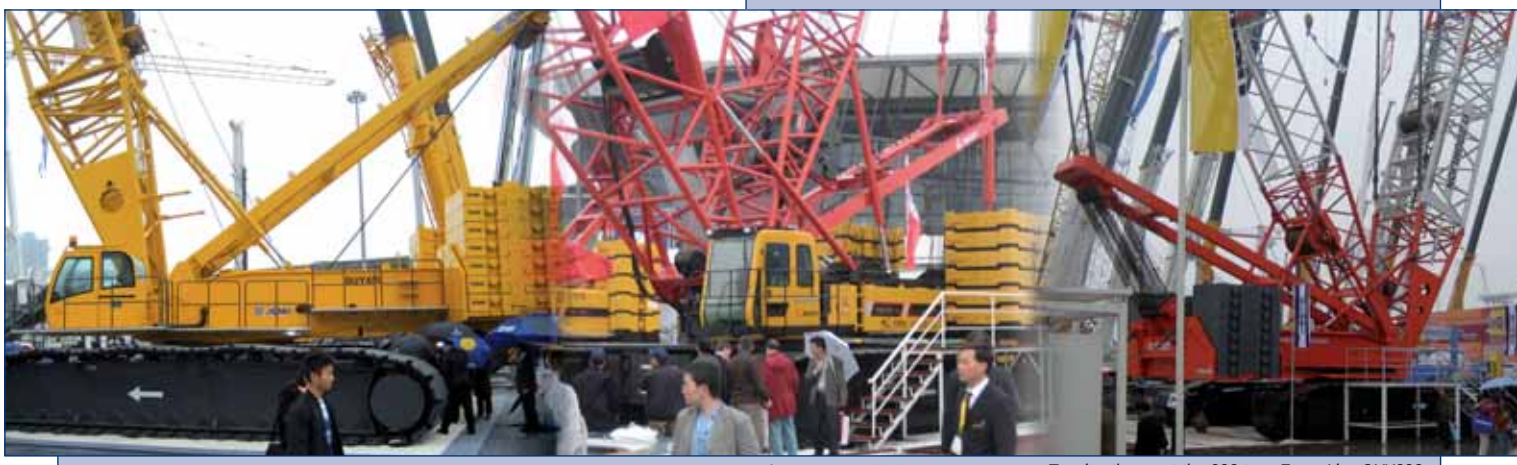
The company is also offering 'custom build' options on existing machines such as the five metre retractable crawlers on its 250 tonne CKE2500-2 for traveling on narrow access roads for the assembly of wind turbines.

China wind

Kobelco's CKE4000C was specially developed for the Chinese market - a rapidly growing market for lattice cranes in the 300 to 800 tonne range. Applications include the construction of power stations, bridges, shipbuilding, and wind farms. In spite of the seemingly rapid introduction of Chinese competitors, Kobelco's cranes are still proving popular with Chinese contractors. In truth the local producers - while having designed and built prototypes of cranes with up to 600 tonne capacity - are not yet ready to produce in any volume. Kobelco heavily promotes its easy transport and erection features such as the boom and jib nesting systems, counterweights designed to stow underneath boom sections and self-assembly systems that completely eliminate the need for an assistance crane.

The Chinese are coming

At Bauma China in November many visitors were surprised to see several big lattice cranes from local Chinese manufacturers that are also starting to export their smaller machines into Europe. Sany showed a 400 tonne capacity SCC4000 with up to 117 metres of main boom, while XMCG, better known for its small truck cranes displayed the 450 tonne unit with a 126 metre maximum main boom. The local effort though, was topped out by Zoom Lion's 600 tonne QUY600 which offers its maximum lift capacity at nine metres and boasts up to 138 metres of main boom.



The XMCG450. *The Sany CC4000.* *Topping them out the 600 tone Zoom Lion QUY600.*

One of Daewon Crane's Model 16000 crawler cranes positioning a turbine blade

Daewon prepared

The wind power business in South Korea is relatively small, but growing quickly particularly as the government plans to increase renewable energy use from two percent to nine percent by 2030. One company already prepared for the boom in wind farm developments is Daewon Crane, South Korea's largest crane rental company, which has three Manitowoc Model 16000 crawler cranes in its fleet.

Daewon is also the nation's leading wind turbine specialist and in the nine months to the end of last year installed 49 windmills, each with a capacity of 2MW. This year, Daewon will manage two major projects installing about 50 windmills.

"We have other crawler cranes in the 400 tonne class, but the Model 16000 is definitely the best for wind turbine erection," said Brent Woo, president of Daewon Crane. "The upper boom point with a 95 tonne capacity is its main feature and makes the Model 16000 the perfect tool for us with a typical lift of up to 85 tonnes at heights up to 90 metres."

The Model 16000 has a maximum main boom of 90 metres and 132 metres with luffing jib. The majority of the wind farms are situated in the mountainous region of South Korea. Daewon handles full installation of the turbines for clients such as Unison and Hyosung.

Daewon also has three 750 tonne Manitowoc Model 18000 cranes which it uses on a variety of projects. The company has close ties with Korean project management giants Hyundai Heavy Industries and Samsung and it hopes these business partnerships will help keep its big cranes busy.

Daewon Crane will erect 50 wind turbines in South Korea this year

Similar but better

Manitowoc is also unveiling a new lattice boom crawler at Bauma, the Model 14000 and expects the new crane to mirror the success of its classic 4100W - one of Manitowoc's landmark cranes. Target markets include commercial construction, bridge building and tunneling as well as work in fabrication yards and petrochemical plants.

The Model 14000 has a lot in common with the Model 4100W as well as new features. The fully hydraulic crane has a 200 tonne lift capacity, 86 metre maximum boom and 113.8 metre luffing jib.

The Model 14000 features MCG's patented Can-Bus and EPIC control system which allows the control of six independent closed-loop hydraulic circuits for optimum performance while lifting. The FACT connection system is also standard allowing easier erection and dismantling.

A computer graphic of the Manitowoc Model 14000.

Extreme conditions

One of the first Liebherr LR11350 crawler cranes past an early test when it survived a fierce storm just prior to erecting a pair of wind turbines near Cuxhaven on the German North Sea coast.

Liebherr's new LR11350 gives an under hook height of 223 metres making it ideal for wind turbine erection

No sooner had the brand-new crane been assembled for the first time when gusts of wind of up to 130 km per hour swept over the site, swirling around the crane's 114 metre boom and 12 metre heavy duty jib.

Unscathed, work resumed and the crane was rigged with a 42 metre derrick boom/back mast, 30 tonnes of carbody ballast, 300 tonnes of superstructure counterweight and 198 tonnes of suspended ballast at a 25 metre radius.

The heaviest component involved lifting a 325 tonne load at 26 metres radius.

The crane's lift capacity allowed the five megawatt 20x6x6 metre wind turbine machine housing to be fully assembled on the ground. The total assembly weighed 316 tonnes, with rigging and cross-beam the total was 325 tonnes which the LR11350 placed at a height of 120 metres, allowing the heavy housing to be positioned in just one hour.

After erecting the first turbine, the crane had to relocate to the next site some 300 metres away. The 1,150 tonne crane travelled the 300 metres fully rigged, with its superstructure counterweight in place. Tracking its way steadily along the coast, the crane was ready for to carry out the second lift a day and a half later.

The latest in crane technology presented at bauma 2007

- **Terex Demag AC 100/4** – the most powerful four-axle, 100 t crane – only 2.55 m wide.
- **Terex Bendini RC 60** – RT crane with new boom: 40 m, five segments.
- **Terex PPM TC 40 L** – three-axle truck crane with 40 t lifting capacity and 47 m tip height.

Plus additional innovations in all-terrain cranes, tower cranes and truck cranes.

moving forward

bauma 2007 · April 23 - 29
Booth F7, 704/705

www.terex.com

Tokyo at night

One of Japan's largest specialist contractors Uchmiya Transportation and Engineering Co. used two of its large fleet of Kobelco crawler cranes to install bridge beams on the new elevated 'Wangan Line' expressway in Tokyo.

The machines - a 750 tonne capacity model 7800 and an 800 tonne SL13000 (in super heavy lift configuration) - had to cope with difficult, windy conditions for the night-time lifts which involved the placement of complete 39 metre long pre-fabricated bridge sections each weighing up to 250 tonnes.

The lifts were made even more difficult by the confined space and limited tail-swing area in the congested urban location between the expressway and an open road. Uchimiya has some 28 Kobelco cranes, all large-capacity units, which are used on projects throughout Japan from power plant construction to bridge building.

Uchmiya had to cope with difficult conditions when placing 250 tonne bridge sections in Tokyo

Hub height world record

Record-breaking truck lattice boom Liebherr LG1750 stood almost 180 metres high to erect the turbine

A new world record was set at the end of last year near Cottbus in Germany, with the erection of a wind turbine with a 160 metre hub height. Measuring 205 metres high to the tip of the blade, the turbine was erected by Hanover-based crane company Nolte's eight axle Liebherr LG 1750 lattice boom truck crane rigged with almost 180 metres of boom and jib.

The crane erected the lower segments of the tower - weighing up to 100 tonnes each - using its 91 metre main boom. A 77 metre luffing jib was then fitted to place the upper tower components. The framework alone contained 350 tonnes of steel.

The turbine, with hooks and lifting tackle totalled 61 tonnes and was lifted at a radius of 35 metres. It took 15 minutes to hoist the 2.5 megawatt hub to its final 160 metre height.

In order to install the three 111 tonne blades the LG1750 luffing jib was extended by further seven metres to 84 metres. This was the first time this type of crane has been assembled in such a configuration of 174 metres hook height.

PTC IV for Mammoet

Netherlands based lifting specialist Mammoet is currently building its fourth PTC heavy lift lattice boomed heavy lift ringer crane at its yard in Schiedam, Rotterdam. As with its three previous PTC cranes, currently working in the Middle East and Canada, the PTC IV will be named after a member of the Dutch royal family, once it is completed the new crane will be christened Alexia joining Beatrix, Maxima and Amalia.

The first lift for the MSG50 in Saudi Arabia

The detailed specification for Amalia has not yet been revealed, but it will have a double stacked boom, most likely with 200 metres of main boom and jib. The crane will be fully modular and transported in standard 20ft and 40ft shipping containers with features that allow fast set up with the minimum of reeving.

The company says that due to the use of the containers no special transport is required to move the crane and that the number of trucks required are no more than for a crane half its size.

Mammoet also operates three MSG full ringer type modular cranes with capacities in excess of 3,000 tonnes. The first units, built in 1998 has a load moment of 75,242 tonne/metres. With up to 177 metres of boom and jib. As with the PTC cranes the MSG 50 and 80's feature a twin main booms structure with twin derrick booms.

Mammoets PTCII - Maxima - at work in a Brazilian refinery