

# The higher hundreds

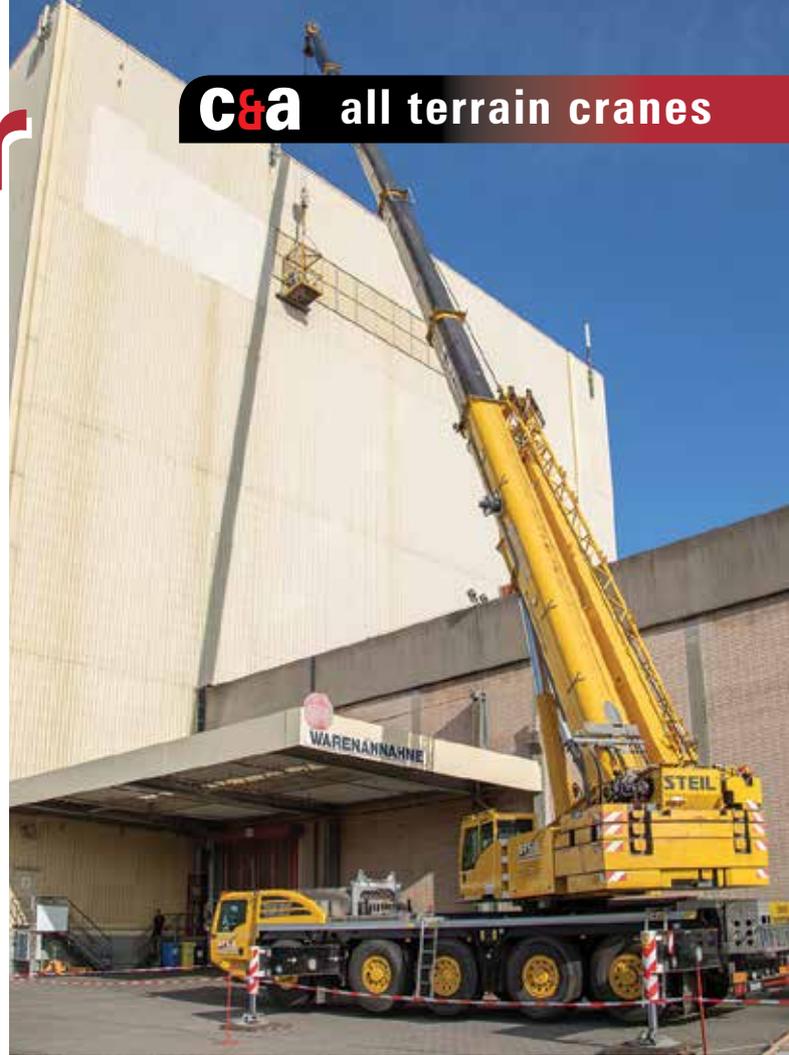
In the second of a two-part report, Will North looks at All Terrain cranes between 130 and 180 tonnes. While some models in this class target taxi crane work, it also marks the point where five axle carriers become standard with most models designed for project work.

In part one we covered cranes between 100 and 120 tonnes, where manufacturers offer almost as many cranes as in the entire 130 to 180 tonne category, although there is no shortage of choice. While most 100 and 120 tonne cranes feature 60 metre booms, these larger machines include a mix of shorter boomed models, such as the 150 tonne 'big taxi' Grove GMK5150 with a 50.8 metre boom, while others have longer booms – including 66 metres on the new Liebherr 150 tonner – launched last month – or 68 metres on the Demag AC 160-5. In addition to the European built

cranes, buyers in the Americas also have access to the new 150 tonne (175 ton) US built Link-Belt 175 | AT.

## Lower Third

At the lower end of the range are three cranes with 60 metre booms: the 130 tonne Liebherr LTM 1130-5.1, and Demag AC 130-5 along with the 140 tonne Tadano ATF 140-5.1. In many ways, they are similar to the 100 to 120 tonne models, and as such are taxi cranes, with the ability to carry a decent amount of counterweight, a key customer requirement. Michael Klein, product manager for Tadano



*A Liebherr LTM 1160 from Southern Cranes, lifting a 45t MRI Unit for J S Services in Banbury Oxford*

and Demag cranes, says: "The smaller five axle cranes, up to the AC 130-5, can travel with 10 tonne axle loads. This is a big plus in some countries, especially Germany, where it makes it easier and quicker to get transport permits." The AC 130-5 and AC 160-5, launched at bauma 2016, are the latest Demag cranes in this class but have recently been upgraded to Stage V diesels, and the latest ZF TraXon transmissions. Liebherr's LTM 1130-5.1 is even more of a veteran dating back to 2007, since when around 1,500 units have been delivered. Liebherr is now replacing it with the new 150 tonne LTM 1150-5.3. However, the LTM 1130-5.1 will continue to be

available until at least the middle of next year. It can travel with nine tonnes of ballast within 12 tonne axle loads or 22.6 tonnes where 16.5 tonne axle loads are permitted. The crane is also unusual in that it can be specified with Liebherr's LiftCab that elevates the superstructure cab by 8.1 metres to provide a clearer view of the load over obstacles. Liebherr marketing manager Wolfgang Beringer says: "It is not economical to offer LiftCab on all cranes, so we identified three models - the LTC 1050-3.1, LTM 1250-5.1 and LTM 1130-5.1 - where there was enough customer demand to justify offering it as an option." So far, Liebherr has not decided whether to offer it on the new 150 tonner.

## The sweet spot

As you might expect there is a cluster of cranes with a 150 tonne rating, including the all new Liebherr LTM 1150-5.3, along with Link-Belt's 175 | AT and two Groves - the GMK5150 and GMK5150L.

## The all new Liebherr

The LTM 1150-5.3 is, as mentioned, the very latest All Terrain crane, and offers the longest boom on a 150 tonner at 66 metres, in fact

the only crane under 200 tonnes with a longer boom is the 160 tonne Demag AC 160-5's with a 68 metre boom. The new crane offers a broad range of counterweight configurations, with front outriggers removed and no counterweight it can meet 10 tonne axle loads. More usefully perhaps, it can carry 6.2 tonnes of counterweight plus the swingaway extension without exceeding 12 tonnes an axle or nine tonnes if the extension is left in the yard. And for markets where higher axle weights are allowed, it can manage its full 29 tonnes of counterweight as well as the extension.

Liebherr's Christoph Kleiner says: "The LTM 1150-5.3 is a flexible all rounder and will enhance any crane fleet. With the longest boom in its class it delivers outstanding capacities on long booms and radii and can compete with cranes in the 200 tonne class. But also complete plenty of jobs without requiring additional ballast transport, making the crane even more valuable to crane companies."

The LTM 1150 has the same GVW as the LTM 1130 but offers higher capacities. For example, it can handle 12 tonnes on a 60 metre boom - 1.5 tonnes more than its predecessor - or nine tonnes on the fully extended 66 metre boom, making it ideal for erecting tower cranes and radio masts.

The combination of the hydraulic luffing 10.8 to 19-metre bi-fold swingaway extension and a seven metre lattice insert takes the maximum tip height to almost 95 metres, or a maximum radius of 72 metres. The extension luffs from zero to 40 degrees from a pivot height of over 72 metres with the insert in place. A 2.9 metre erection jib and a runner rounds off the equipment list.

The crane uses Liebherr's single engine concept with a mechanical transmission powering the crane upper from the six cylinder Stage V Liebherr carrier engine. It can also be configured for US Tier 4 and Tier IIIA markets. The crane is offered with most of Liebherr's latest tech' including EcoDrive and EcoMode for

*Liebherr's new LTM 1150-5.3's features a 66m boom, the longest on a 150t crane*



fuel efficiency, VarioBase variable outrigger set up, multiple load charts for different wind speeds, and Hill Start Aid, which helps drivers pull away easily on steep gradients.

### Convertible hook block

A new development is a range of adjustable hook blocks that are both light or heavy as needed. Weight plates are attached to both sides of the block so that it can be adjusted to match the application or travel limits. For example, in a three sheave configuration, the new block weighs 500kg but can be quickly

and easily be upgraded to the usual 700kg if necessary.

The new system is available for one to seven sheave blocks and can be used with both 19 and 21mm rope.

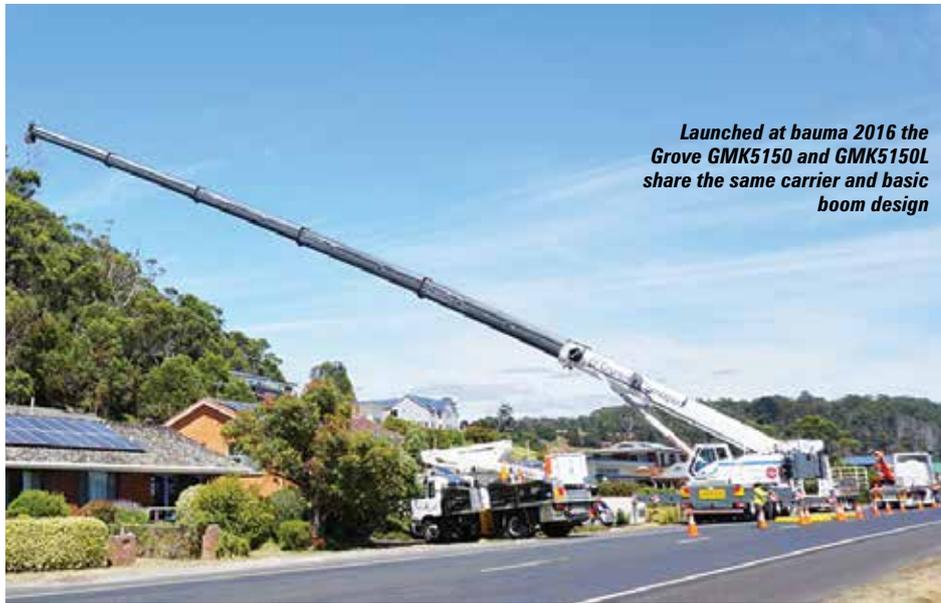
### Grove 150t duo

The Grove GMK5150 and GMK5150L replace 110 and 130 tonne models. All Terrain product manager Florian Peters says: "The GMK5110-1 and GMK5130-2 were the predecessors to our 150 tonne ATs with short and long booms. When we started to develop the GMK5150 and GMK5150L, we had



*The Demag AC 160-5 has the longest boom in the 130-180t range, at 68m, while asymmetric outrigger set up is ideal for tight locations such as erecting this tower crane in Bonn*



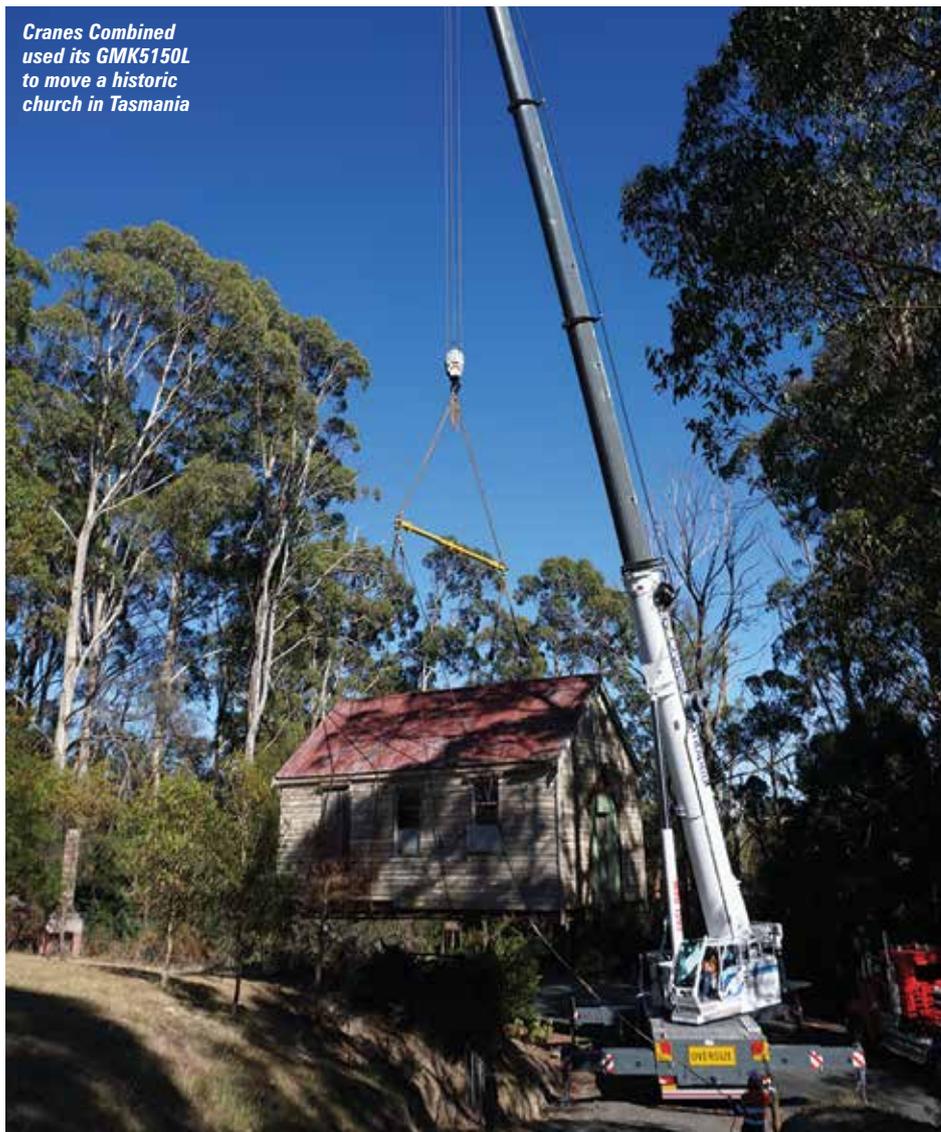


*Launched at bauma 2016 the Grove GMK5150 and GMK5150L share the same carrier and basic boom design*

the same focus, two boom versions and a very compact machine with outstanding taxi crane charts – on 12 as well as 16.5 tonnes per axle. The result was the creation of a new 150 tonne capacity class back in 2016.”

The GMK5150 and GMK5150L are more compact than their predecessors with 20 percent more capacity across the chart than the GMK5130-2. The two cranes share the same Megaform boom

structure, a five section 50.8 metre version on the GMK5150 and six section, 60 metre on the GMK5150L. Describing them as “must have cranes for any fleet”, Peters says: “If you are lifting loads onto high rise buildings, setting up tower cranes or installing antennas, it’s not only the capacity you need but the length and the reach, thus you would rather pick the GMK5150L for these jobs.”



*Cranes Combined used its GMK5150L to move a historic church in Tasmania*

Experience the Progress.



**Great things come in small packages:**

The MK 140 mobile construction crane

- Hook heights up to 94.0 metres
- Radius up to 65.0 metres
- Transport length just 15.97 metres

[www.liebherr.com](http://www.liebherr.com)

**LIEBHERR**

## Top of the class

The three largest cranes in the class - the Demag AC 160-5, Liebherr LTM 1160-5.2 and Grove GMK5180-1 - have longer booms, 62 metres on the Liebherr, 64 metres on the Grove and 68 metres for the Demag.

Demag describes its AC 160-5 as 'one of the most compact cranes in its class'. It is indeed shorter than the others with a 14.5 metre overall travel length, more than a metre less than the Liebherr or Grove.

Josef Waser, of Swiss crane rental company Fanger, recently took delivery of a new Demag and cites its compact dimensions and variable/asymmetric outrigger set up combined with the IC-1 Plus control system as key reasons for selecting the crane. "We expect a lot of work for this crane. Part of that will be down to its compact dimensions, which make it ideal for projects outside the 160 tonne class. For instance, it can go out as a 100 tonne crane when used with a 6.3 tonne counterweight, which also keeps the axle weights under 12 tonnes and eliminates the need for a counterweight truck."

The next crane up, in terms of capacity, is the Liebherr LTM 1160-5.2. While its name suggests a 160 tonne rating it has been upgraded to a 180 tonner. Liebherr put the re-rate down to the additional capacity gained with the VarioBallast system, which allows the counterweight



*The VarioBallast system, on the Liebherr LTM 1160-5.2 boosted capacity from 160 to 180 tonnes.*

cheeks to be extended rearwards, boosting the crane's capacity, or folded into the crane for reduced tailswing.

### Keep it simple

There is a perception that Liebherr, and other German manufacturers, always take the most high tech approach to solve a problem, what might be called a 'vorsprung durch technik' strategy. But that is not always the case, the VarioBallast system on the LTM 1160-5.2 is a case in point. In place of any complicated control systems, sensors or hydraulics, the Ehingen

engineers adopted a far simpler solution. The two attachment points for the counterweight are mounted on a swivel. When configuring the crane, the rigger or operator simply stands below and using a long metal pole, pushes the counterweight cheeks into their extended position or back into the stowed position. While it doesn't allow the ballast to be adjusted during a lift, as is possible on larger cranes, it offers enough flexibility to take on a wider range of jobs than would otherwise be possible.

The LTM 1160-5.2's standard

counterweight configuration is very simple and includes a 10 tonne base plate. This, Beringer says, makes for simple set up in most markets, but does limit how the ballast can be configured, with its weight spread across the crane's five axles. The 'UK counterweight' system adds just a little more complexity, by having more ballast sections, and a 3.5 tonne base plate, but it enables customers to transport the crane with 3.5 tonnes of ballast within 12 tonne axle loads, compared to zero on the standard package, or carry 22.5 tonnes within 16.5 tonne axle loadings.

The Grove GMK5180-1 is not designed to carry any counterweight within 12 tonne axle loadings, but 21 tonnes is possible for 16.5 tonne jurisdictions. It is slightly older than its competitors, having launched in 2015 - alongside the GMK5250L and GMK5200-1. The three cranes feature a modular design, with the same carrier used for all three models, explaining the GMK5180-1's portlier three metre overall width.

For those owning more than one of these Grove cranes, the counterweight sections can be shared between them, and the more recent GMK5250XL-1 as well as the GMK6300L-1. For national companies, it might be possible to drive the crane unladen from one depot to another to be equipped with locally stored counterweights. Similar compatibility applies to the auxiliary hoist.

*The counterweight is manually extended and retracted*



A large green Merlo telehandler is shown in a warehouse setting, lifting a pallet of wooden crates high into the air. The machine's boom is extended, and the crates are suspended in the air. The background shows the white steel structure of a large industrial building with high ceilings and windows. The text 'PANORAMIC 40.17' is positioned to the left of the machine's boom. Another Merlo telehandler, the ROTO model, is shown to the right, with its boom extended and a platform basket. The text 'ROTO 50.35' is positioned to the right of its boom. In the center, the text 'ALL NEW CONSTRUCTION RANGE' is displayed in large, bold letters. At the bottom, there is a black banner with white and green text, and the Merlo logo and website information.

**PANORAMIC**  
**40.17**

**ROTO**  
**50.35**

**ALL NEW**  
**CONSTRUCTION**  
**RANGE**

**REACH NEW HEIGHTS**  
**WITH THE ALL NEW**  
**ROTO AND PANORAMIC RANGE**

The PANORAMIC and ROTO Range design has inspired the construction market over the years, and is now introducing a new generation of wider cabs, improved cab comfort levels and a multitude of new features. The ROTO range has changed the movement method for telehandlers by introducing the rotating turret system that can rotate 360 degrees without having to reposition the machine. Merlo have skilfully evolved during time with exclusive technological innovations and an unparalleled level of performance, safety and efficiency.

How the models stack up

Make	Model	Max capacity	Boom length	Axles	Dimensions				Axle loads/counterweight	
					Carrier length	Overall length	Width	Height	12t	16.5t
Demag	AC 130-5	130t	59.8m	5	12.17m	14.45m	2.75m	4.0m	10.7t	26.2t
Liebherr	LTM 1130-5.1	130t	60m	5	12.35m	14.81m	2.75m	4.0m	9t	22.6t
Tadano	ATF-140-5.1	140t	60m	5	12.68m	14.90m	2.75m	3.97m	8.3t	21.8t
Grove	GMK5150	150t	50.8m	5	12.58m	14.58m	2.75m	4.0m	10.2t	24t
Grove	GMK5150L	150t	60m	5	12.58m	14.58m	2.75m	4.0m	10.2t	24t
Link-Belt	175   AT	150t	60.1m	5	12.64m	15.60m	2.90m	3.93m	5t	N/A
Liebherr	LTM 1150-5.3	150t	66m	5	12.45m	14.48m	2.75m	4.0m	9t	29t
Demag	AC 160-5	160t	68m	5	12.61m	14.51m	2.75m	4.0m	6.3t	25.4t
Liebherr	LTM 1160-5.2	180t	62m	5	13.69m	15.86m	2.75m	4.0m	0/3.5t**	22.5t
Grove	GMK5180-1	180t	64m	5	13.66m	15.68m	3.00m	4.0m	0	21t

Note: All dimensions on 16.00 tyres \*\*With UK counterweight package.

**NOLIM**  
KUNSTSTOFF-FÜR-EN-STIMMELPLATEN BY

All our HMPE 500 products are tested by TÜV Germany

**EUROPEAN MARKET LEADER**  
of outrigger pads and road mats!

SEE YOU AT **12<sup>TH</sup> | 13<sup>TH</sup> Vertical days MAY 2021**

**FREE SHIPPING & DISCOUNT**  
USE THIS CODE IN YOUR EMAIL **VD2021**

T +31(0)13 - 467 0823  
E sales@nolim.nl  
[www.nolim.co.uk](http://www.nolim.co.uk)

**Custom Brakes & Hydraulics**

**CRANE BRAKES OFF THE SHELF**

Save time and money with our OEM brake shoe service exchange scheme

**KESSLER-CO** **KNOTT** **WABCO**  
Bremsen-Achsen

- BRAKE SHOES • BRAKE DRUMS • BRAKE DISCS • DISC PADS •
- WEAR LEADS • BRAKE SPRINGS • AIR BRAKE CHAMBERS •
- EXPANDERS • HUB OIL SEALS • NUTS AND STUDS •

NATIONWIDE, SAME DAY, NEXT DAY SERVICE  
**Tel. 0114 276 7971**  
[www.custombrakes.co.uk](http://www.custombrakes.co.uk)  
sales@custombrakes.co.uk

# American exceptionalism

C&A all terrain cranes

In our last issue, we looked in detail at what it takes for cranes to travel easily on European roads. Manufacturers strive to include as much counterweight as possible within 12 tonne axle loads – 16.5 tonnes in some markets – while working within national permit restrictions, taking note of tighter restrictions in some major cities. While this may be a point of irritation for crane owners and designers, it is nothing compared to the challenges facing their North America counterparts. Will North reports.

Travelling across the vastness of North America has always been a challenge. While driving a crane on the highway is no Oregon Trail, it remains a consistently tough journey for a mobile crane. Over half of the cranes in this class will need to be equipped with trailing booms. The US road network has multiple layers of federal, state and local

municipality regulations, so crane owners try to configure the crane for the most stringent restrictions along the route. When operating in their regional market, they may still face two to three different sets of state/local regulations.

May roading considerations encourage North American crane buyers to consider a Link-Belt? The 150 tonne/175 ton 175 | AT



offers a wide range of roading configurations for North America, which are not always available on European built cranes. Product manager Brian Smoot says US/Canada roading configurations play an important role in the Link-Belt design process. "The key is a flexible design that meets the needs of the broadest number of crane buyers. While many will require a boom dolly, others will travel with the boom over the front, so the boom base section is equipped with standard dolly lugs that trailer manufacturers design to."

Product marketing specialist Andrew Soper adds: "Every day we work with dealers and customers on how to move cranes. Years of experience with moving lattice boom truck cranes and Rough Terrains are invaluable.

There is no single axle limit to hit, instead, we have 50 different state and nine different provincial standards. And that is just the start. The state of Illinois has one regulation. But within the state, the Greater Chicago area has other rules. Our cranes need to work for Illinois, but also do what Chicago requires."

Unlike earlier models, such as the ATC-3210 and ATC-3275, which had single person carrier cabs, the 175 | AT features a full width All Terrain type cab as well as a new superstructure cab. It also features a single engine design and moves away from a two – three-axle split, to a more traditional one-two-two axle grouping.

While the company wouldn't be drawn on which models will come next, it did confirm that at some point the older ATC models will be phased out and those new models will use the same nomenclature and key design elements as the 175 | AT.

## Shrink to fit

It can be costly to move cranes in North America, so versatility in terms of travel configurations can be critical. When Smith Erectors of Markle, Indiana, looked at a new 150 tonne crane, it wanted something big enough for heavy rigging work, but adaptable for easy transport. President Garland Smith said: "We talked for the last year or so about getting this 175 ton (150 tonne) Link-Belt crane to fill a gap we had between the 90 ton HTC-8690 truck crane and 275 ton ATC-3275 All Terrain – both from Link-Belt. We looked at a 110 ton HTC-86110, but realised that, with the transport options on the Link-Belt 175 | AT, we could run it down the road like a 110 ton crane, and as we do a lot of heavy rigging we knew we probably needed the bigger machine."

The company used the new 175 | AT on a bridge replacement project in Berne, Indiana, the crane can run on Indiana roads without a dolly if the counterweight is carried separately. Once on site with counterweight installed the crane lifted the 17 metre/24 tonne concrete beams into place and return to the yard, all in a single day.

