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# European ascent

Last year the main talking point in the spider and mini crawler crane market was the emergence of the articulated crawler crane - essentially a mid-range loader crane mounted on a tracked chassis with outriggers. This year is more about 'traditional' spider and mini crawler cranes as manufacturers improve and evolve their products. We take a look at the latest developments and new product releases.

Over the past 20 years or so, two Japanese companies - Maeda and Unic - have dominated the global market for spider cranes as the number of such cranes sold outside of their home market has skyrocketed.

So far most of this increase has taken place in Europe but North America, the Middle East and Australasia have also been discovering the many benefits of this handy lifting tool, as users realise that these seemingly toy like cranes can often do the work previously done by a much larger mobile crane set up some considerable distance away. And despite the rental growth level, the market expansion looks set to continue for some time.

## Jekko on the up

After the two major Japanese companies comes Italian manufacturer Jekko based in Treviso to the north of Venice. The company has been progressing well in recent years as new models come online and it continues to burnish its relatively new-found reputation for reliability. The financial performance

of the company was already on the upward path when Fassi purchased a third of the business three years ago from owner Ormet. Up to this point Jekko was little more than a brand of Ormet - a loader crane sales and installation company which was established in 1972. It was another 27 years before it manufactured its first spider type crane - a 'one off' unit for a glass installation company. The first mini crawler crane was produced for the same company in 2001 and as the concept and interest grew it started serial production of the SLM650 mini crawler in 2003.

The Jekko name was adopted in 2006 in order to differentiate from the hideously unreliable Imai products, which were largely made up of customised spider lifts most often used as roof cranes. That same year - 2006 - it launched the SPD500.

However, while the company produced competent machines it failed to make any significant impact on the market for a while, with the two big Japanese producers hardly noticing them and possibly



The battery powered Eco Unic on low marking tyres



not taking them seriously. Since 2013 however Jekko has been growing in leaps and bounds as it invested heavily in the development of new products, which have been increasingly sophisticated and much improved quality. At the same time it has conducted a highly effective marketing and promotional campaign to generate awareness and build brand recognition, resulting in growth of more than 30 percent year on year. To cope with the increased demand the company expanded production at the end of 2016, when it opened a new 4,000 square metre dedicated assembly building.

In January of that year Ormet incorporated its spider and mini

crawler crane operations into a new company - Jekko Srl - and it is this company that Giovanni Fassi bought into along with Pierluigi Tonon and chief executive Diego Tomasella - each owning a one third share.

The Fassi connection - with its extensive range of loader cranes - was a major factor in the introduction of the first Jekko articulated spider crane - the 15.5 tonne JF545 - in mid 2017. Since then it has added to its articulated crane range with several new models, including the 995kg capacity/eight metre lift height JF30, the 2,500kg/eight metre JF40, the 11.5 tonne/30 metre JF365, and most recently the JF990 - the largest Jekko to date - offering a



Palfinger PCC 115.002 has a 30t maximum capacity

# spider & mini crawlers **C&a**

21.5 tonne capacity and a maximum lift height of 41 metres. The unit was unveiled at Bauma six months ago and will shortly be ready for market.

Giovanni Fassi, perhaps understandably believes that the articulated crawler crane will take over from the traditional telescopic spider cranes. Only time will tell of course, but in the meantime the table below provides an indication of how the Jekko JF40 stacks up in comparison to traditional telescopic spider cranes.

The recently introduced Maeda MC285CWM-3 as well as the two Unic models have been chosen as the closest competitors to the 2,500kg capacity JF40. Maeda's latest version of the MC285 is very similar in size to the previous model but boasts several new features, however it still appears to be outperformed - at least on paper - by the Unic 295.

## Latest Maedas

The latest MC285 obviously includes many features that customers like and wanted as Maeda says that 47 were sold in the first 10 days after its launch.

**The 8.1 tonne Maeda MC815C now has a lot more competition**



## How the Jekko stacks up against traditional telescopic spider cranes

Make Model	Jekko JF40	Maeda MC285CWM-3*	Unic URW-245	Unic URW-295
Capacity	2,500kg	2,820kg	2,400kg	2,900kg
Lift height	8.0m	8.7m	6.3m	8.8m
Max radius	6.8m	8.2m	5.85m	8.41m
O/A Length	2,380mm	2,800mm	2,150mm	2,690mm
O/A Width	780mm	750mm	600mm	600mm
O/A Height	1,820mm	1,470mm	1,320mm	1,375mm
Weight min	1,500kg	1,990kg	1,500kg	1,850kg
Outrigger spread	4.56x4.56m	4.78x4.71m	3.66x3.97m	3.88x3.91m

\*New model

The crane features a five section 8.6 metre boom with a maximum tip height of 9.7 metres and there is the option of a high capacity winch allowing the crane to lower loads of up to 900kg on a single line to 100 metres below ground level. It is powered by a Yanmar diesel with the option to add a removable self-contained AC electric power pack - similar to the Maeda MK1033 - allowing it to work indoors or in areas where noise or emissions are restricted. It has a slew limit setting, a seven inch full colour display and HBC radio remote controls. However the most appreciated feature might well be the multi position outriggers that are monitored by the load moment limiter, with capacities automatically calculated to match the actual configuration.

Maeda's new 3.83 tonne MC405CRM-E-3 spider crane is also proving popular, it can lift its maximum capacity at a radius of 2.7 metres, while its maximum radius is 16 metres. The updated model features an EU Stage V compliant diesel to comply with the latest emission standards.

## Higher capacity spider cranes

The world's largest telescopic spider crane - the Unic URW-1006 - has a capacity of 10 tonnes and until recently this appeared to be more than high enough to satisfy general demand in the spider crane market. The big Unic was launched in 2012, and has yet to be topped. Maeda's largest spider crane is the eight tonne MC815C, while Jekko has the eight tonne SPX1280 - its largest telescopic. Hoeflon has also entered this sector with its lithium powered eight tonne C30e.

The problem has always been that demand for larger spider cranes is limited as it crosses firmly into the mini crawler crane market,



**The new 2.82 tonne MC285 has load monitored multi-position outriggers**



which offer a proper slewing cab, a more compact working footprint and decent pick & carry capacities. That said there is clearly some demand for a lighter weight, tracked crane for a range of applications, particularly indoors, on delicate surfaces or on sloping ground etc. In order to satisfy this niche demand a number of companies began teaming up with loader crane manufacturers to mount medium to large articulated/knuckle boom cranes onto tracked chassis. Palfinger was one of the pioneers having provided the support for companies building specials, but it also teamed up with Wemotec in 2010 to create the SMK320.67. While this model offered the reach capacities of larger cranes its nominal capacity was just 6.7 tonnes and was designed more for industrial machinery moving having an AC power pack as well as the regular diesel.

As already mentioned other companies have mounted larger

**The PCC 115.002 is Palfingers largest articulated crawler crane**



versions on tracked carriers, but they were very much one off specials. However it seems that demand has been on the rise for this type of crane, possibly spurred on in the past year or two by the Fassi involvement with Jekko, which has encouraged the development of production machines, creating a new heavy articulated crawler crane



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*The move towards the larger articulated crawler cranes is likely to kill off any prospect of telescopic spiders larger than this 10 tonne Unic URW 1006*

sector. Given the relatively low volumes, using an existing knuckle boom loader crane superstructure makes eminent sense.

This development is likely to kill off any prospect of any new telescopic spider cranes above 10 tonnes although there does seem to be demand for the eight tonne capacity crane. Maeda however says that there has been increased interest and sales of its MC815. One of the major benefits of the smaller spider cranes - up to around three tonnes - is that with an overall weight of less than 2,000kg, they can be transported easily on a two axle trailer behind a 4x4. Once you go beyond that other factors come into play, although ease of transport remains an important factor as does the low ground bearing pressures.

As can be seen in the opposite comparison table the big articulated spider cranes have substantially higher maximum capacities.

There are eight models currently available - the BG Lift CWE525 and CWE525RT, the Jekko JF365, JF545 and JF990 and Palfinger's PCC 57, 71 and 115.002.

The largest Palfinger PPC 115 has a 30 tonne maximum capacity but weighs in at a hefty 33 tonnes.

The new Jekko 990 is the closest with a maximum capacity of 21.5



*The Jekko JF990 can lift 21.5 tonnes and has a 38 metre maximum radius*

tonnes, but offers 5.5 metres more lift height, is 700mm shorter and probably more importantly weighs 13 tonnes less.

### Jekko SPX532 in detail

Jekko says that its new 3.2 tonne SPX532, which has just started to ship is a total design departure from its previous models, and includes a new outrigger system, more sophisticated electronics and hydraulics with new remote controls which it says make it easier to use. Jekko claims that the SPX532 is the largest spider crane that can pass through a standard single door, with

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*The 14.5 tonne capacity BG Lift CWE525*

**How the larger spider cranes stack up**

Make Model	BG Lift CWE525	Jekko JF545	Palfinger PCC 57.002	Unic URW1006	Jekko JF990	Palfinger PCC 115.002
Capacity	14,515kg	15,500kg	18,200kg	10,000kg	21,500kg	30,000kg
Lift height with jib	32.5m	30m	32m	30.7m	41m	35.5m
Max Radius	29.5m	28m	29.5m	24.3m	38m	23.1m
Radius with jib	29.4m	28m		30.7m	38m	33.3m
Length	5.07m	5.4m	5.9m	606m	6.75m	7.45m
Width	1.85m	1.84m	1.9m	2.0m	2.14m	2.1m
Height	2.77m	2.83m	2.8m	1.45m	3.11m	3.24m
Weight min	15,200kg	13,700kg	20,000kg	14,000kg	20,000kg	33,000kg
Outrigger spread		6.7 x 6.7m	6.9 x 7.3m	6.7 x 7.2m	8.5 x 8.5m	7.6 x 9.0m



*Jekko SPX532's new remote control.*

It is the best performing crane with an overall width of less than 800mm on the market and is particularly well suited to working in the glass handling, industrial maintenance and building sectors. The SPX532 signals an important change in direction in the design and creation of new products. The new machines are not only innovative and

its overall stowed width of 770mm, and total weight for the standard crane of 2,350kg. Overall length is 3.25 metres and overall height just under two metres.

New features include twin lift cylinders for the main boom and a one tonne capacity hydraulic luffing jib providing a maximum lift height of 17.3 metres and a maximum radius of 14.8 metres - unlike previous units it stows on the machine. The spider type outriggers can now move through 90 degrees - previously 45 degrees - and are adjustable to allow the machine to be set up in more confined areas.

Jekko has introduced a new lithium

battery pack, which it claims is the best in terms of lifespan and charging speed. Alternatively, a diesel engine can be specified with a single (220 volt, 2.2kW) or three phase (400 volt 5.5kW) electric motor. Depending on the workplace and requirements, the operator can switch from one to the other. Finally



*The SPX532 remote control showing the outrigger positions.*

Jekko's new J-Connect telematics software is said to improve remote service assistance and self diagnostics with the information available to customer, dealer and Jekko's technical department.

Export manager Alberto Franceschini said: "Thanks to its numerous innovations, the SPX532 has already received significant interest. It is a simple and intuitive machine which makes it ideal for both end users and rental fleets."



*The new 3.2 tonne Jekko SPX532*

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sophisticated but are also easy to use and available to an increasingly wide customer base."

Chief executive Diego Tomasella added: "The SPX532 is the first crane to be updated with the use of sophisticated materials and easily controlled electronics. Our reference markets are primarily Germany, Holland and Belgium, followed by France, Spain, UK, Italy, Asia, the Middle East and America. Expectations are high and the orders already received at Bauma confirm that we are moving in the right direction."

### Hoeflon C30e

Dutch manufacturer Hoeflon has launched the all-new, all electric, eight tonne lithium battery powered spider crane, the C30e, its largest and most highly engineered crane to date. It offers a five section main - or lower - boom, topped by a five section telescopic luffing jib.



The Hoeflon C30e has a five section main boom topped by an optional five section telescopic luffing jib.

The new crane offers a maximum lift height on main boom of around 15 metres and up to 22.9 metres with the five section telescopic jib installed. Maximum capacity on the jib - which can be stowed on board - is three tonnes, while capacity when fully extended to its 21.7 metre maximum tip height is 1,480kg. The main boom can be

luffed over the vertical to 95 degrees or so, at which point the jib can be lowered to horizontal, where it offers capacities ranging from 2,140kg at a radius of around three metres to 900kg at full extension and a radius of around 7.5 metres, both at a lift height of 15.4 metres. Maximum radius with the main boom lowered to the horizontal is 12.2 metres or 20 metres with jib installed. The crane also offers below ground level capacity of about five metres and 830kg.

In addition to its highly interesting load chart, the new crane can pick & carry up to two tonnes, while 360 degree continuous slew is standard, as is its stepless or totally variable outrigger set up system which automatically calculates the load chart based on the actual crane set up configuration selected. It is also a compact machine with an overall stowed width of 1.17 metres, although the non marking rubber tracks extend out and down individually to a maximum overall width of 1.87 metres. The crane can also level up on side slopes and travel on slopes of up to 20 degrees. Overall length is 4.12 metres, with



The eight tonne, lithium powered Hoeflon C30e has a maximum lift height of 22.9 metres with the jib installed

an overall height of two metres. The lithium batteries power the 12kW motor which can be charged via 230 or 400 volt systems, and it is compatible with electric car charging stations. Charge time from empty to full is six hours. The overall weight is around 9,000kg and it has 2,350kg of extendable and removable counterweight.

### Jekko SPX1280

Jekko has also introduced a new eight tonne capacity crane - the SPX1280 - which is an improved version of the SPX1275. The first units were delivered last month. Maximum capacity has increased by 500kg to eight tonnes, it has a lift height of 27.5 metres, two tonnes pick & carry capacity and reduced footprint of 4.6 metres by 4.6 metres.

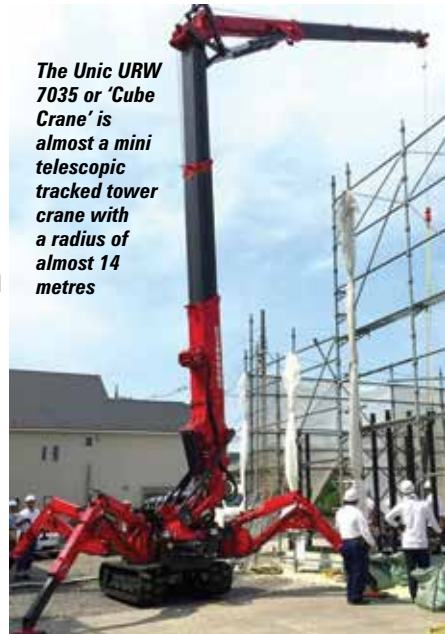
The crane can be used on boom and jib with variable outrigger positions. A new hydraulic system is said to provide more precise function movement and better feel to the operator helped by new radio remote controls and new operating software. Overall width is 1.45 metres, overall length 5.73 metres, and overall height of just over two metres.

The new Maeda CC1908S-1 mini crawler crane has also been included in the above comparison given that it has a similar performance apart from three major areas - it weighs almost twice as much as the others at almost 20 tonnes but has the best pick & carry capacity of 3,500kg and its working footprint is easily the smallest as it does not have outriggers.

### Unic Cube Crane

Unic unveiled its new the URW 7035 spider crane at Bauma, which Unic Cranes Europe has dubbed the

The Unic URW 7035 or 'Cube Crane' is almost a mini telescopic tracked tower crane with a radius of almost 14 metres



'Cube Crane'. The crane features a tracked chassis with spider type multiple position outriggers, but has an 8.5 metre, three section telescopic mast or lower boom, which raises to the vertical and telescopes to a height of around 10 metres. It is topped by a five section telescopic top jib/upper boom, which extends to provide a radius of almost 14 metres with the lower boom at 95 degrees.

With the lower boom vertical - 90 degrees - and the jib, or top boom lowered to horizontal the crane offers a radius of almost 13.3 metres with a capacity of up to 320kg, depending on outrigger position. Maximum tip height is 22.6 metres at which it can handle 960kg at a 2.5 metre radius. Maximum radius as already mentioned is 13.9 metres at which the crane can handle 260kg.

The new crane has 360 degree continuous slew, radio remote controls with dual axis joysticks and full overload system and fully flexible outrigger set up. Overall

### How the new Jekko and Hoeflon cranes stack up

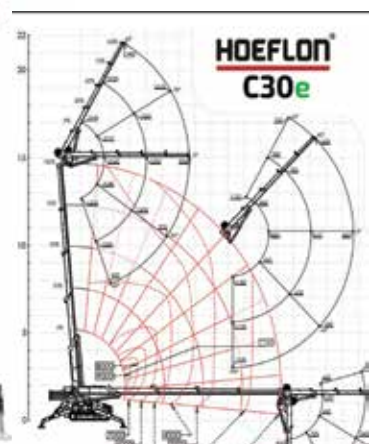
Make Model	Jekko SPX1280	Maeda MC815C	Unic URW-706	Hoeflon* C30e	Maeda** CC1908S-1
Capacity	8 tonnes	8.1 tonnes	6 tonnes	8 tonnes	8.1 tonnes
Main boom lift ht.	19.5m	19.6m	19.5m	15.5m	20.1m
Lift ht - jib	26.6m	25.5m	22.7m	22.9m	26.0m
Max radius	20.2m	18.8m	18.6m	20.0m	19.2m
O/A Length	5.73m	5.9m	5.61m	4.12m	7.37m
Stowed Width	1.45m	1.67m	1.67m	1.17m	2.49m
Extended width	1.45m	1.67m	1.67m	1.87m	2.49m
O/A Height	2.04m	2.49m	2.18m	2.0m	3.02m
Weight min	7,000kg	9,460kg	7,920kg	9,000kg	19,400kg
Outrigger spread	4.60 x 4.60m	6.77 x 6.3m	6.48 x 6.07m	5.08 x 5.08m	3.74 x 2.49m
Pick & carry	2,000kg	1,000kg	N/A	2,000kg	3,500kg

\*Lithium powered \*\* Mini crawler crane



The eight tonne SPX1280 is an improved version of the SPX1275.

The Hoeflon C30e has many similarities to the Unic Cube Crane.



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# spider & mini crawlers **C&a**

stowed width is 1.5 metres, overall length when stowed of 3.89 metres and an overall height of 2.39 metres. Overall weight is 8,650kg. Power comes from a Kubota diesel, with a three phase AC electric motor available for indoor applications.

The new crane has many similarities in its range diagram to the new Hoeflon - almost creating a mini telescopic tracked tower crane - but is more specifically tailored to working in tower crane configuration and therefore possibly less versatile. It will be interesting to see the take up of both cranes and how quickly they are adopted.

## Two more Gruniverpals

Those that attended Bauma may have spotted a more unusual range of pick & carry cranes from Italian company Gruiverpal Tranchero. It launched two new cranes which may be of interest for those looking for something a bit different.



The GB 300 is a compact crane for picking & carrying loads up to 300kg

The GB 300 is a compact crane for picking & carrying loads up to 300kg. Weighing just 950kg it uses a small electric motor driving a single rear wheel. Measuring just 1.4 metres long by 820mm wide and 1.6 metres high it has a maximum speed of 40 metres per minute and can travel up a three percent slope with its 300kg maximum load. Hook heights range from just 200mm to 3.2 metres with 180kg at full extension. 150 degree boom slew is optional.

Its second new crane is the electric, four wheel drive 12.5 tonne Minidrel 125B 4x4 TR with a newly designed boom, the company claims that it offers 40 percent more capacity than cranes of a similar size. Weighing 12.6 tonnes it has a footprint of 3.61 by 1.85 metres. Maximum lift height is 7.2 metres and maximum working radius is six metres.

## Mini crawler cranes

Over recent years the mini crawler crane has taken a lower profile to the more popular spider crane. However for Maeda it has been an area



Maeda's most popular mini crawler crane is the 4.9 tonne CC985



Launched at Bauma the Maeda CC1908S-1 can lift 8.1 tonnes a maximum lift height of 20.1 metres or 26 metres with jib

of growth, it says that users are starting to appreciate its smaller working footprint, a good pick & carry capacity and a comfortable operator's cab.

Maeda's most popular model is the 4.9 tonne CC985, which has a lift height of 16.5 metres, while an extension takes that to 20.2 metres. Pick & carry capacity is two tonnes, while the rest of the chart is in static mode with 360 degrees continuous slew.

Maeda showed its new CC1908S-1 at Bauma and says that shipments should begin in April 2020. The CC1908S-1 uses the same boom as the MC815 spider crane and can lift 8.1 tonnes at a radius of 2.7 metres. It has a maximum lift height of 20.1 metres or 26 metres with the jib installed, a 19.2 metre work radius and 3.5 tonne pick & carry capacity. Options include a blade, 1.5 tonne hydraulic luffing jib and a two tonne capacity searcher hook.

Although not quite zero tailswing the crane features a fully enclosed air conditioned cab with link type sliding door, a 10 inch touchscreen monitor display, boom slew limit setting, a 360 degree view camera system and monitor, extra wide roof window with standard sun shade and visor. Power comes from a Yanmar EU Stage V and EPA Final Tier 4 compliant fuel efficient Diesel driving a hydrostatic transmission. Other details include a two speed winch, 6/4/2 fall hook block, tilt sensor/alarm and anti-slack device. Overall width is 2.49 metres and the crane has an overall weight of 19.9 tonnes.



Another alternative is the Böcker RK36/2400 with a 36 metre lift height and 2,400kg maximum capacity

## How the Unic 'Cube' crane and Hoeflon C30e compare

Make Model	Unic URW-7035	Hoeflon C30e
Capacity - max	960kg @ 6.44m	8,000kg @ 3.5m
Capacity @ max lift ht.	960kg @ 21.17m	1,480kg @ 21.3m
Kg @ max radius	260kg @ 13.99m	460kg @ 15.7m
Main boom	3 section 8.43m	5 section 12.8m
Max main boom angle	95 degrees	95 degrees
Hydraulic jib	5 section 12.42m	5 section 7.8m
Up and over height	10m	15m
Length	3.89m	4.12m
Width	1.5m	1.17m
Height	2.39m	2.0m
Weight	8,650kg	9,000kg
Outrigger spread	4.11 x 4.10m	5.8 x 5.8m
Power	Diesel - Kubota 400V AC Electric	Lithium battery power
Extra Counterweight	N/A	2,350kg
Slew	360 degrees continuous	360 degrees continuous
Pick & Carry	No	2,000kg



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