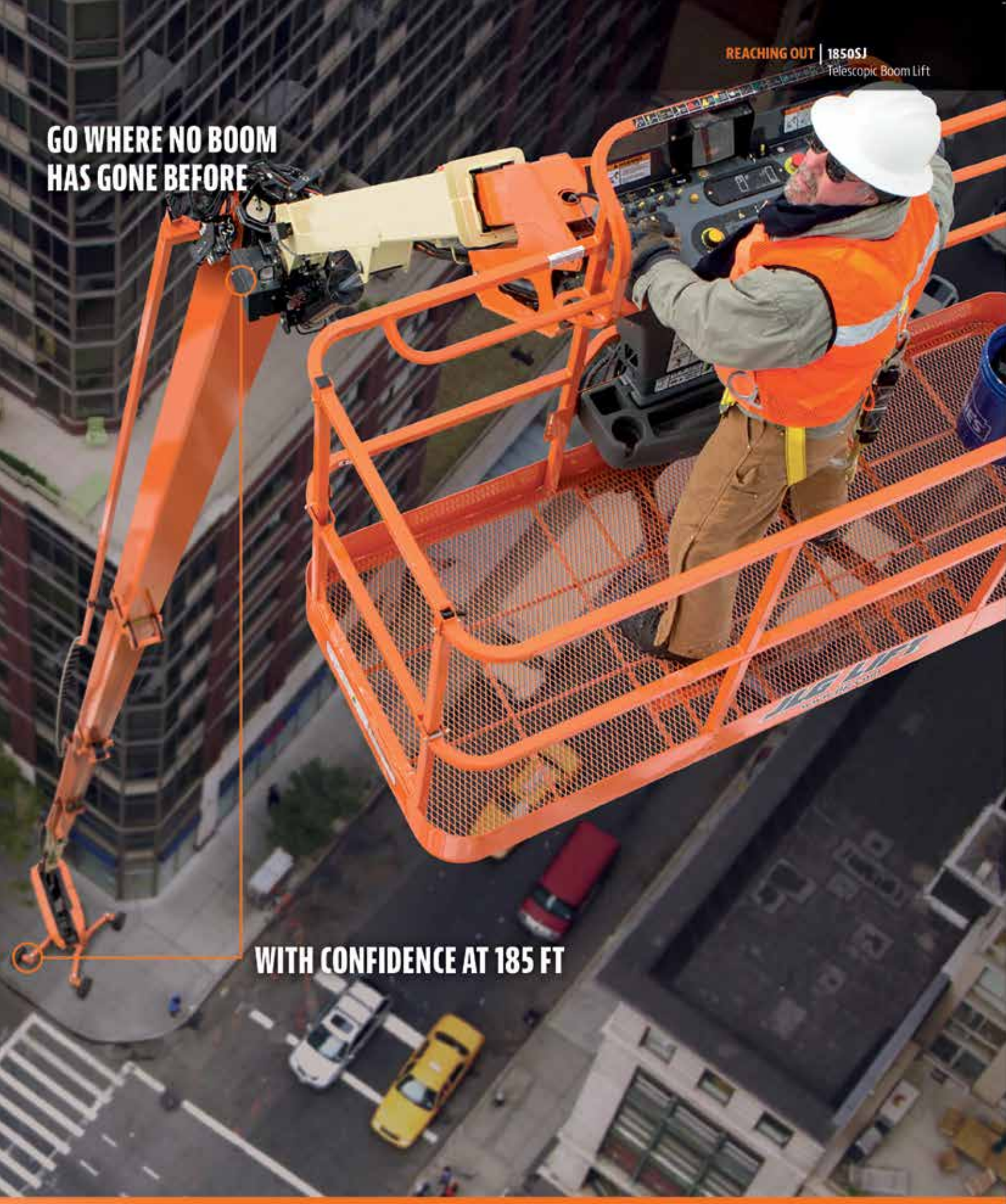

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Mission impossible?

The advent of super-strength, lightweight steels combined with computer aided design has resulted in a new breed of access equipment that is lighter yet has improved performance. Of all the different types of access equipment available, the spider lift must be the most complex, combining an ever greater platform height and outreach from a compact and narrow tracked base capable of travelling through door openings before unfolding its outriggers and often working in difficult, space restricted areas.

The most popular working heights of spider lifts have steadily increased over the years from 13 metres to 15 to 17 metres. Two years ago we reported that the 23 to 25 metre spider lift sector was the up and coming sector with several manufacturers offering products of this size range. Last year it appeared the most significant launches were from manufacturers developing lifts between 30 and 35 metres. In terms of user demand - which often tends to lag behind the latest products by a year or two - the 15 to 17 metre machines are currently the most popular, although this is slowly increasing with the usage of 20 metre lifts growing and becoming more mainstream.

Recent product developments - on all size of platforms - include improved basic performance (working height and outreach) as well as making machines easier, safer and more environmentally friendly to use. Single button outrigger set up, power options including lithium ion battery packs and hybrids, advanced remote controls and movement memory all help make this relatively complicated machine more appealing to end users as well as rental companies which are always looking for 'easy to use' machines.

Transport solutions

Increasing fuel and driver rates mean that transportation costs are an increasing concern, particularly as machines with increased working heights are heavier/larger and more difficult to move to and from site. Teupen is one manufacturer looking into providing specialist solutions for transporting its machines. It recently launched another version of its customised 3.5 tonne GVW chassis with modified deck specifically made to carry the 2,950kg 21 metre Leo 21GT. The main advantage of this system is that the lift can self-load and unload using its own spider legs to raise it clear of the truck. The company initially designed the concept for the heavier 3,100kg Leo 23GT but has expanded the range as it sees increasing demand for specific custom-made transport solutions.

Teupen's latest transport solution for the Leo 21GT

Irish rental company Easi UpLifts has also invested in specialist spider transport. It has added a seven tonne Iveco mini articulated tractor unit and a specially designed Veldhuizen trailer for its specialist spider lift division. The company says the custom-built trailer will allow for quick and easy loading operations and has a payload of almost six tonnes as well as offering improved fuel efficiency.

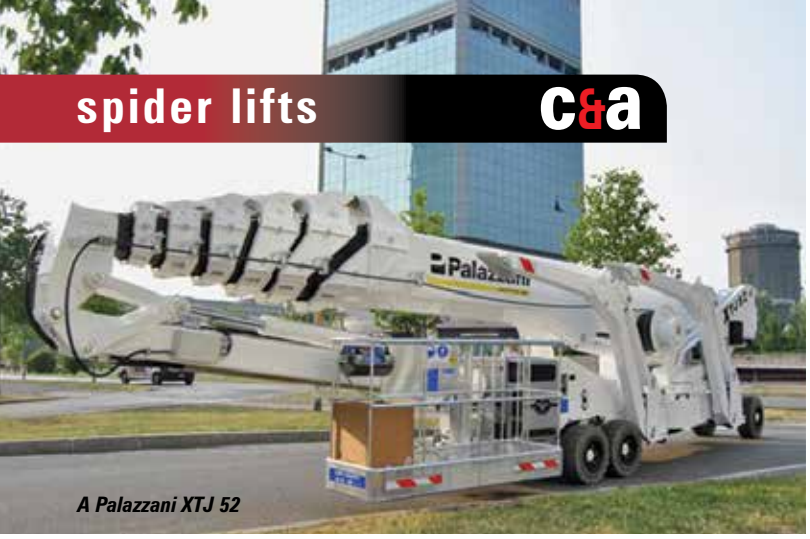
Easi UpLifts' transport manager David O' Keeffe said: "The new Iveco mini artic and trailer will allow us to deliver a high bulk but low weight products such as spider lifts anywhere in the UK cost effectively and this is one way we feel will be of benefit to us and our customers."

Easi Uplift's new chassis and trailer carrying a new 31 metre Omme lift 3150 RJ spider lift

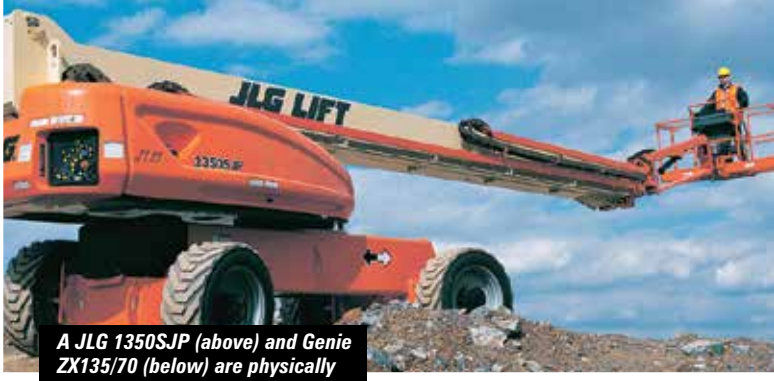
Largest spiders

Despite the general increase in the more popular working heights, the maximum working height of the largest spider has remained roughly the same for some time. Teupen - the first company with a 50 metre unit around eight years ago - was rumoured to be working on a larger spider but although demand is relatively constant for its biggest machines - about five a year - it does not appear to be growing and looks unlikely to see the light of day for some time yet – if ever.

A 52m Palazzani working in Beijing



A Palazzani XTJ 52



A JLG 1350SJP (above) and Genie ZX135/70 (below) are physically much bigger and heavier than the equivalant 42/43m spider lift

The 52 metre Falcon - launched by Falck Schmidt (now TCA Lift) in 2010 - assumed the mantle of the largest spider lift but has since been joined by the 52 metre Palazzani Ragno XTJ52 which was launched at Bauma last year. Most of the sales of these very large spiders are made directly to end users - rather than rental companies - specifically to maintain large buildings, hotels or shopping centres which feature a high atrium.

Two new 40 metre platforms

With the growth of the 30 to 35 metre lifts and the tallest 50-52 metre platforms, there has been a dearth of products in between. This will be somewhat rectified with the introduction of two new platforms at Apex later this month - the 42 metre Omme 4200 RBDJ and the 43 metre Palazzani XTJ 43.

Omme's new 4200 RBDJ has resulted from growing global customer demand and is its largest tracked boom to date. The platform uses a seven section telescopic boom and has an outreach of up to 15.2 metres with a 130 degree articulating jib. The boom can be raised and extended simultaneously helping to reach the required height in the shortest possible time. Auto-levelling outrigger deployment and retraction is a standard feature.

The diesel/battery hybrid drive train ensures the 4200 RBDJ is equally suited to work in outdoor and indoor environments.The 400Ah battery pack - which is automatically recharged whenever the diesel engine is deployed - completely eliminates the well-known 'voltage drop' issue, which can significantly impede the operation of a mains-powered machine, even when using a relatively short power cable.

The two speed crawler undercarriage allows the lift to rapidly reach its working position. Weighing 6,805kg the unit can climb inclines of up to 27 percent allowing the platform to work comfortably outdoors in many areas unsuitable for conventional big booms. A Genie 135/70 or JLG 1350SJP straight boom which have slightly higher working heights, weigh more than 20 tonnes as well as being physically much bigger *(see chart)*.

The new 40 metre tracked spiders compared to a Genie or JLG self-propelled boom.

The compact dimensions of the Omme spider lift allows it to gain access into confined spaces particularly with a height of less than two metres and length of 8.90 metres. If required, the basket is easily detachable reducing its length from 8.9 to 8.30 metres.

43 metre Palazzani

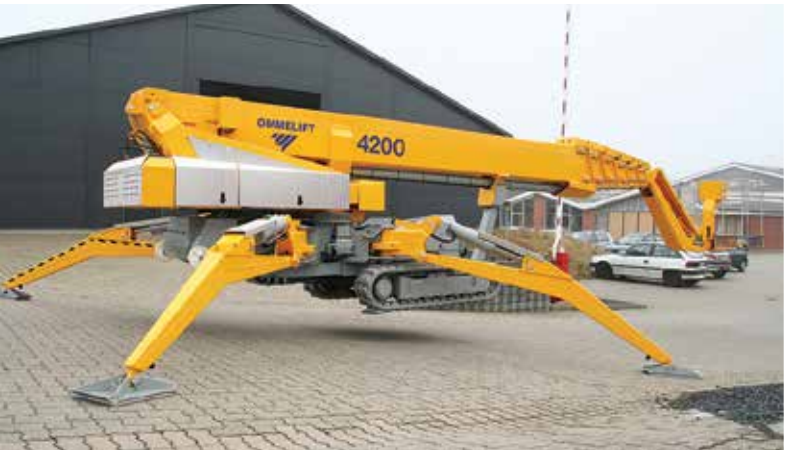
Following the launch of its 52 metre platform at Bauma 2013, Palazzani is also set to introduce its new 43 metre working height ATJ 43 at Apex later this month. The lift replaces the XTJ 42 with slightly increased working height, six section boom and two section jib giving an impressive 19 metres of outreach. Standard platform capacity is 230kg with 330kg optional and the platform measures 2.4 x 0.7 x 1.1 metres with 90 + 80 degree rotation. Travel speed is 1.4 km per hour and gradeability is 40 percent.

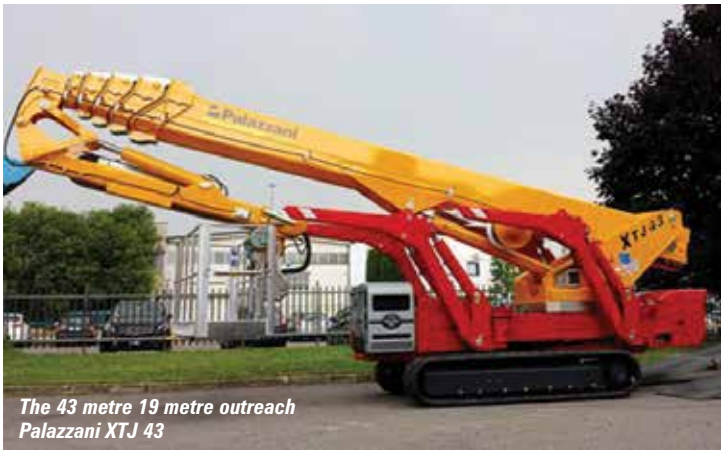
Palazzani says that the outreach is automatically set to match the

How they stack up

	Omme 4200 RBDJ	Genie ZX135/70	Palazzani XTJ 43	JLG 1350SJP	Falcon FS420C
Working height	42.0m	43.15m	43.0m	43.3m	42.0m
Max outreach	15.2m	18.03m	19.0m	24.4m	17.0m
Platform capacity	200kg	272kg	230kg/330kg	450kg	200kg
Over All Length	8.9m	12.93m	*	11.86m	8.25m
Stowed Height	Under 2.0m	3.09m	*	3.05m	2.10m
Minimum width	1.35m	2.49m	*	2.49m	1.22m
Operational width	5.33m	5.03m	*	3.81m	6.54m
Weight	6,805kg	20,502kg	*	20,400kg	8,200kg

**information unavailable until launch*





The 43 metre 19 metre outreach Palazzani XTJ 43

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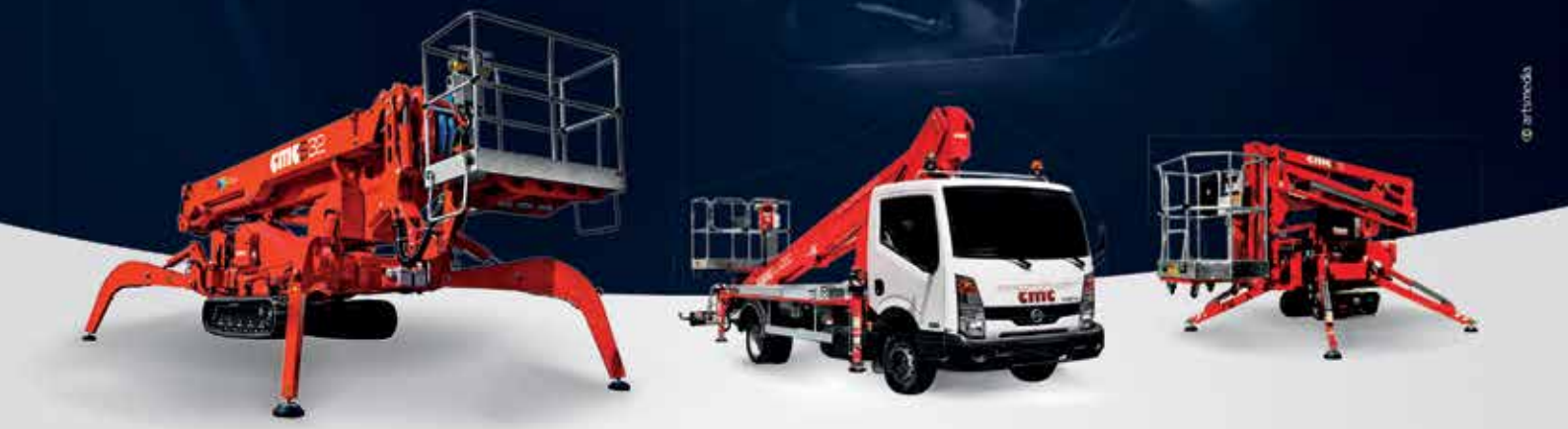

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stabiliser position, while advanced control diagnostics are available via a colour touch screen monitor and an electric power controller provides optimum power. The new radio control allows more than three operations to be performed at the same time thanks to a flow sharing technology.

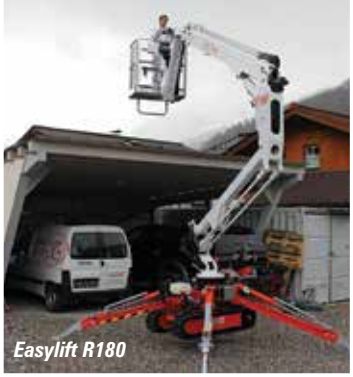
New Bluelift

Other new products include Italian spider lift manufacturer Bluelift which has launched a new C22/11 hybrid model seen at the recent Vertikal Days. Bluelift says the new 22 metre lift "is the first compact spider lift to combine a lithium battery with a petrol or diesel engine". Dual power systems with conventional battery systems and a combustion engine - it says - have been used on the larger lifts but it has never been possible to develop a battery system small enough to fit on a sub 29 metre tracked unit.

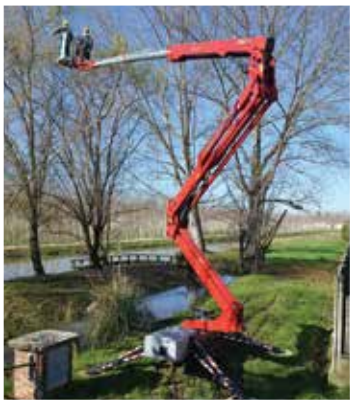
The new lift can be powered by either power source or in 'Hybrid Auto' mode using the patent pending BMS (Bluelift Management System) which selects the most power efficient usage at the time.

For example in Auto mode when lowering the main boom the BMS system automatically selects lithium electric power and when raising the boom or driving (where higher hydraulic pressure is required) it selects the combustion engine. The lithium battery system is also detachable allowing it to be moved from one machine to another.

Other new introductions will see Imer add its 13 metre IM R13 - first seen at Bauma - and commence production this summer although the 23 metre version is on hold, JLG with its 20 metre X20J Plus with 230kg unrestricted platform capacity and Platform Basket with a new 18 metre electric Spider 18.90 PRO-E with lithium ion battery pack.


Easylift R180


Bluelift C22/11



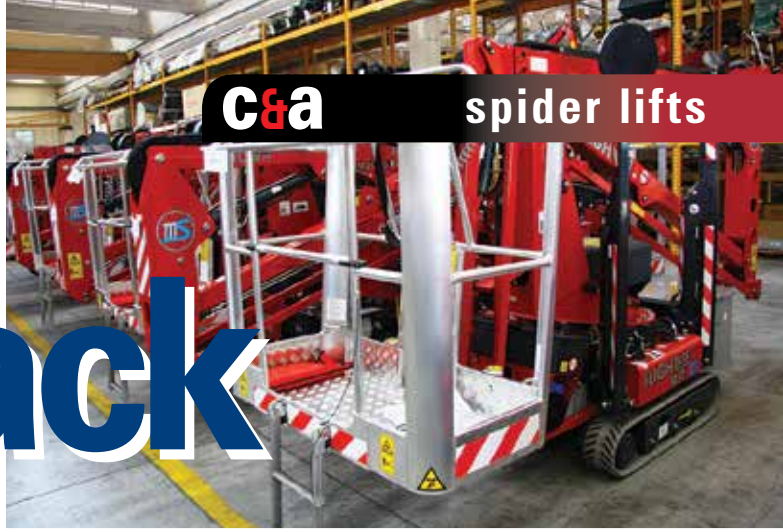

Bluelift lithium battery pack


CMC S32


Falcon FS520C


Platform basket 18.90 PRO E at Vertikal Days

On the right track



Italian manufacturer Hinowa builds more spider lifts than any other manufacturer and has been at the forefront of product development being the first company to launch a Lithium-ion powered machine - a Goldlift 14.70 - at the end of 2009. More recently it has expanded and reorganised its manufacturing facility in Nogara, to the south of Verona. Mark Darwin reports.

Although spider lift specialist Hinowa was formed in 1987 by current president Dante Fracca, the company's history dates back to 1950 when his father and partner Mr Coelati started a company called Cofra which built excavators on ex-US army Chevrolet truck chassis that were plentiful in Italy after the Second World War. These machines were popular for post war rebuilding work throughout the country. Based in Nogara, Cofra was sold in 1970 to a larger Italian commercial group and Cosmoter was formed still producing tracked excavators but also building and supplying tracked chassis/undercarriages for other companies to add a variety of different superstructures.

In 1980 Dante Fracca founded his own company dealing with excavators and also garden machinery but just two years later he manufactured his first platform on the back of a tractor. In 1987 Dante formed Hinowa (which means circle of fire), choosing a Japanese, rather than Italian sounding name because of the strong association that Japanese companies had for good design, quality and reliability.

The first machines produced were excavators and mini dumpers and when the company moved to its present facilities in 1992 excavators were still the main product. In 1998 it began distributing aerial work platforms and in 2003 started building spider lifts. The first was the 14 metre, fully hydraulic Goldlift 14.70 which went out of production in 2012 after more than a 1,000 were produced and sold worldwide - to date Hinowa's most successful single model.

Hinowa grew quickly expanding every year up to the crisis of 2008/9 although revenues last year finally returned to the pre-crisis levels. Initially around 50 percent of its products went into the Italian market but over the years this figure has decreased so that today Italy takes just 15 percent of the company's production, with American, Australian and Asian markets rising sharply.

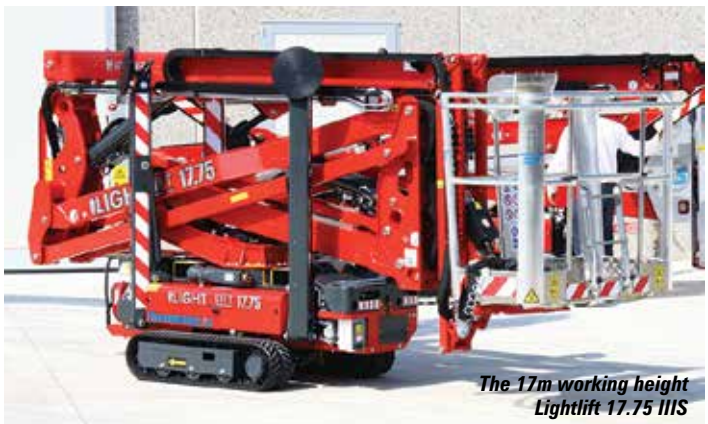
The well organised assembly line

Other products made include mini excavators and mini dumpers

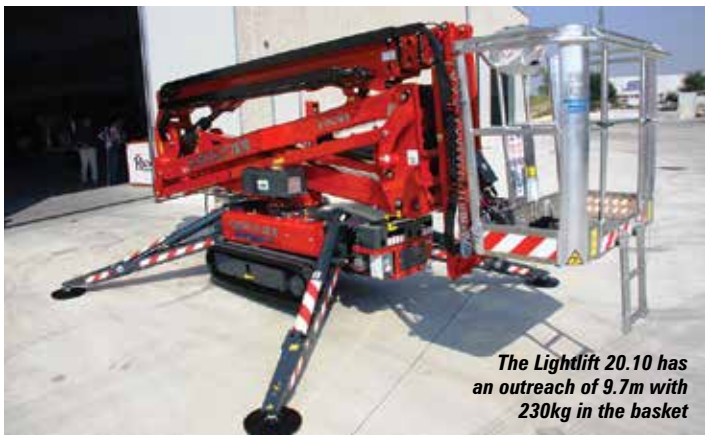
Today the main products are its aerial lifts, which account for 65 percent of production with the rest made up with its mini dumpers and undercarriages. Facilities have also been expanded from the original 2004 building, with the first extension added in 2009 and the latest high tech, eco-friendly extension - built for the 25th anniversary in 2012. This facility will be fully utilised this year with new assembly lines. The Nogara facility now employs 120 and covers a total area of 90,000 square metres, 13,000 square metres of which is covered for assembly work and office buildings.

Although the company designs and builds the prototypes in Nogara, fabrication of the many components is carried out by local suppliers all within a 100km radius, while most painting is carried out at a sub-contractors facility around five kilometres away, although Hinowa can paint special colours in-house if necessary. The main plant therefore concentrates on assembly and final quality inspection.

As well as the spider lifts, Hinowa still makes tracked mini excavators from 0.8 to four tonnes although development on new models has now ceased, tracked undercarriages with capacities of up to 30 tonnes,



The 17m working height Lightlift 17.75 IIIS



The Lightlift 20.10 has an outreach of 9.7m with 230kg in the basket

tracked mini dumpers from 500 to 2,500kg capacity and 23 interchangeable attachments, battery powered mini dumpers, wheeled loaders, tracked forklifts and a tracked mini-tractor. Hinowa also dabbled in the truck mounted platform market, but has decided to exit this sector.

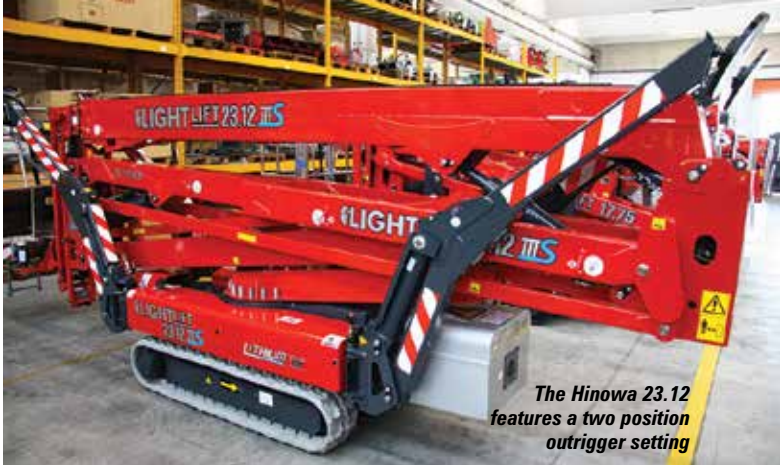
Lean production

Over the past few years the company has been working on the introduction of the Toyota-based lean production system. Under the old system it used to batch-build between five and 10 platforms of the same model. This has been totally reorganised so that machines are now built to order and move down the assembly line to the next station every four hours. Each station concentrates on one area of the machine and this has resulted in a quicker, cleaner and more organised production process. Parts are prepared in a pre-assembly area and all are on hand when required. Hinowa says that using the new system production has increased by 28 percent over the past year, and quality has improved at the same time. Current Hinowa IIIS spider lift line-up includes models from 14 to 23.2 metres with the largest Lightlift 23.12 the only machine with a two position outrigger setting.

The company pioneered the development of lithium ion battery packs, allowing the machines overcoming the space and battery life issues which had previously ruled out a battery power option on tracked lifts. Prior to this electric powered spider lifts were AC mains, requiring a trailing lead to operate. Once charged the lithium battery will last for a full days work and takes just four hours to fully re-charge, but it will reach 80 percent charge in just two hours. The lithium battery does not suffer from the memory effect that afflicts nickel cadmium and nickel-metal hydride rechargeable batteries and will last at least five years, with virtually no maintenance. Performance is very similar to units fitted with an engine and is light and compact, ideal for compact spider lifts.

Latest tracked platforms

The two latest platforms to be introduced are the Performance III S series Lightlift 17.75 and 20.10. The 17.75 IIIS is aimed at the rental market, being easy to operate using a 'one button' automatic outrigger system. The 230kg platform capacity – up from 200kg on previous models – is unrestricted throughout the working envelope. Previous units could only achieve maximum outreach with 120kg. Other features include a new reinforced jib and increased speeds. A telescopic undercarriage - from 798mm to 1,086mm - is standard, and provides improved stability when travelling, without sacrificing the machine's ability to pass through single doorways and narrow openings etc. Overall weight is 2,230kg and the machine is compact at 4.5 metres long and less than two metres high when closed. The outrigger footprint is less than three metres square, while the dual riser design also allows the unit to work flush with walls



The Hinowa 23.12 features a two position outrigger setting

which at full outreach is from a height of four metres to about 10 metres. Maximum travel speed is 3.6kph and power options include petrol (Honda) diesel (Hatz) with the new HD Autorev feature and lithium ion battery. Heavy duty lifting eyes enable the platform to be safely lifted when in the closed position.

The larger 20.10 Performance IIIS has the same IIIS spec as above but with a greater working height (20.15 metres) and 9.7 metres outreach with its maximum 230kg platform capacity. Weighing 2.8 tonnes it is less than five metres long, with the same width and outrigger footprint as its smaller brother. Bigger hydraulic pumps increase function speeds and a sensor on the main boom cylinder reduces the speed at the end of the stroke to provide a smooth 'cushion stop' effect..

One of the latest ideas for the new machines is auto speed control which takes into account ground conditions and track width to set an appropriate travel speed improving stability and safety. The innovative display panel also alerts the owner when the machine is due for a service or when a new version of the control software is available for download. Hinowa's RAHMino system also allows the owner to remotely monitor the machine's location, operation and diagnose faults.

Hinowa 17.75 IIIS and the 20.10 IIIS specifications

	Hinowa Lightlift 17.75 IIIS	Hinowa Lightlift 20.10 IIIS
Working height	17.06m	20.15m
Max outreach	7.5m (230kg in basket)	9.7m (230kg in basket)
Platform capacity	230kg	230kg
Operating weight	2,230kg	2,880kg
Power	Petrol, diesel, Li-Ion	Petrol, diesel, Li-Ion
Outrigger spread	2,884 x 2,889mm	2,922 x 2,925mm
Length	4.52m	5.01m
Width	1,300mm with cage 798mm min	1,300mm with cage 795mm min
Height closed	2.0m	1.99m

First Bluelift Hybrid in Moscow

After unveiling a Bluelift C22/11 Hybrid at MosBuild 2014, the new lift immediately went to work on its first project replacing light fittings at the Jaguar car showroom in Moscow. The platform - powered by a combustion engine and lithium battery - was placed in a tight area of the showroom's atrium, between a spiral staircase and an upper floor. The replacement of light bulbs was much quicker and obviously safer than traditional methods, and the lithium battery pack, meant that the unit could work and move indoors without being constrained by a power cord.


Bluelift C22/11 Hybrid


At work in the Jaguar car showroom, Moscow

Ommelift inspects down-under

An Ommelift tracked platform has helped solve an access challenge on a bridge inspection project in northern New South Wales, Australia. Inspectors needed to view the underside of a road bridge spanning a river but required an platform that was light enough to lower into position with a small mobile crane, while having the ability to drive across and operate on uneven and boggy terrain.

The solution was the Ommelift 2750 RXBDJ battery-diesel hybrid spider lift. Weighing just over five tonnes meant it could be safely lowered off the bridge using a 20 tonne crane, while its ability to drive, set up and work on gradients of up to 35 percent meant that it could easily cope with the soft ground and loose shale, before setting up on the edge of the gravel river bed. The inspectors used large outrigger mats in order to spread the load.

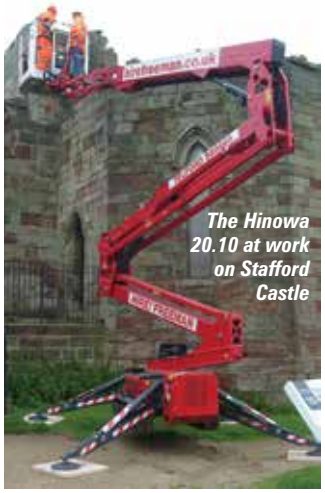
The 2750 RXBDJ is the largest spider lift in Omme's RX articulated range with a working height of 27.5 metres, zero tail swing and 15.5 metres of outreach with an articulated jib for added flexibility. The working envelope enabled the inspectors to access the entire bridge from a single set-up position. Other features include an adjustable travel width from 1.1 to 1.5 metres and variable stabiliser positioning for working in restricted spaces.

Being loaded into position

Working from the gravel river bed

Spider lift makes light work of castle survey

Soft ground, steep inclines and tight spaces presented a significant working at height challenge for a survey of Stafford Castle in the UK's West Midlands, considered one of the finest examples of a Norman 'motte and bailey' earthworks in the UK.



The Hinowa 20.10 at work on Stafford Castle

Sitting on top of a substantial hill the castle is accessible via a perimeter pathway which is just a few metres wide in places, before falling away to a steep drop. In order to inspect the walls for weather damage, the castle rented in a 20 metre Hinowa 20.10 Performance IIIS tracked platform as well as an experienced operator, Alan Howes of Alpha Powered Access Operator Services.

"The Hinowa 20.10 came into its own and easily took the terrain in its stride," said Howes. "The tight space was not an issue and the working envelope ensured the job was done efficiently."

The machine's unrestricted platform capacity of 230kg and 9.7 metres outreach meant that Howes could concentrate on operating the controls while the inspector focused on the castle's stone work.