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The appear of the of the electric scissor

Compact, inexpensive, clean, quiet and relatively cheap to run, sums up the appeal of the battery powered mini scissor lift. This type of aerial work platform is the most popular form of powered access equipment and dates back to the start of it all in the early 1970s.

Today the vast majority of scissor lifts are battery electric powered and designed for use on smooth solid floors - mostly indoors. Although the majority are in the 19 to 32ft platform height range, with working heights from 7.5 to 11 metres, a trend since the late 1990s has been towards ever higher compact platforms with 14 metre working height models becoming increasingly popular in recent years. The latest manufacturer to join the sector is Skyjack with the SJIII 4740 due for launch at the Rental show.

The 'modern' compact mini scissor began with a choice of 20 and 24ft platform height and two chassis widths of 32 and 46 inches. The latest generation dates back 22 years, when 20 and 26ft models first surfaced, bringing together a number of features such as with pothole protection, swing out equipment boxes, 90 degree over centre steering and thin bonded rubber tyres. As with earlier machines, overall length was around 2.4 metres so they could be stowed sideways on a regular delivery trailer.

The sector then expanded to a 32ft model on the wider 46 inch/1.2 metre wide chassis with an 11.5 metres working height and remained for many years. The next major breakthrough came in 2006 from Italian manufacturer Iteco which upped the ante exhibiting a

prototype 39ft model, the IT12122 with 13.9 metre working height. The company was also the first to introduce electric front axle drive motors to the sector. It had this market to itself for several years before others took it to the masses as the popularity of the Iteco began to spread.

Machines in this sector have a nominal 40ft platform height - 14 metre working height - and an almost identical chassis, scissor arm design and platform as the classic 20, 26 and 32ft platform height, 46 inch/1.2 metre wide electric scissor lifts. They should have an overall length of less than 2.5 metres and weigh in the region of 3,250kg. The result is a compact, tall platform which is easily transported and stored and most important of all perhaps relatively inexpensive due to the fact that they use similar mass-produced componentry as the smaller models.

14 metres is no longer particularly high for a 1.2 metre wide scissor lift, with companies such as Holland Lift and PB building heavy duty models of 25 metres and more. However those machines are totally different beasts, they are much longer,

much heavier and a whole lot more expensive. They are aimed mainly at high warehouse construction and installation applications and have their own specialist market.

Whatever the application it is always better to specify the correct height platform as a half extended scissor lift is not as rigid as one fully extended. There is also likely to be a platform capacity trade-off with a large machine as well being more expensive to rent or buy.

As an aside the only other significant development in the 20, 26, 32ft sector came from Genie with its GS3232 in 2007. This took the 32ft model and put it on the narrower 820mm chassis.

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scissor lifts

But the machine needed to be perfectly level to lift above 22ft and was therefore equipped with four inboard hydraulic jacks with an auto level function. Its limitations complexity and cost - destined it to be a niche machine with only limited locations needing so narrow a chassis which is purely intended for passage through single doorways. With all that said, the machine is still in production some nine years later.

First into the market

As already mentioned the first into the 14 metre compact market was Italian-based Iteco (now part of Imer) with its IT12122. Being the only machine in the sector did make it stand out and helped get the company noticed by new



Genie was the first North American manufacturer to enter the 14m compact market, when it launched the GS4047 at the end of 2011.

customers. In the UK for example Lifterz was one of the early takers in 2008 and by 2010 it had 24 of them in its fleet. Their growing popularity brought Haulotte into the market with its Compact 14 which was launched at Intermat in 2009. It followed the Iteco machine almost exactly but had a shorter platform extension and was 150kg lighter. Critically the lower cost and wider distribution network took the product into the mainstream market.

Genie was the first North American manufacturer to enter the market, when it launched the GS4047 at the end of 2011 - initially only for the European market, due to the apparent lack of demand in the USA and possibly due to the greater regulatory challenges for this type of machine. However since then interest has grown to the point that it introduced an Ansi version last

Other major manufacturers are now joining the party, the latest being Skyjack which is launching its SJIII 4740 at the ARA show this week. Basic specifications are similar to the others, although critically it is the first mainstream company to break the three tonne overall weight barrier, coming in at 2,985kg. A slight trade-off is that the platform height is a few inches lower at 38.8ft, but that is well within the 'margin for error' on this type of machine.

So JLG is the only major North American manufacturer missing from this sector. It still tops out at 32ft, with full specification ES, and Rental Specification RS models in the range. That will eventually change, perhaps at the ARA or Bauma?

One manufacturer not mentioned yet is Italian company Airo which offers



the X14EW which it claims to be fractionally higher than the others, but again is within the margin for error. It does offer the longest deck extension at 1.5 metres, compared to the more typical 900mm but is also the heaviest at nearly 3.4 tonnes.

An alternative to the mainstream products comes from the heavy duty scissor lift producers such as Holland Lift and PB Lifttechnik. In an interview with Cranes & Access just over a year ago, Holland Lift's managing director Eline Oudenbroek said that the company was being repositioned to concentrate on larger, innovative, heavy duty scissors from 15 metres and along with hybrid versions. Its smallest

machine is currently the 13 metre HL-130 E12, which while it is 1.2 metres wide is much longer at 3.34 metres, but it does allow for a whopping 1,800mm deck extension and a 650kg platform capacity. As you might expect it is heavy at almost five tonnes.

On the upper end of the height range Holland Lift has a 16 metre working height version of the same machine, the HL-160 E12 although it is even longer at 3.74 metres but has a 750kg platform capacity

How the 14 metre compact scissors compare

now the 14 metre compact scissors compare						
	Working height	Width	Capacity	Deck extension	Length	Weight
Skyjack SJIII 4740	13.8m	1.19m	350kg	900mm	2.40m	2,985kg
Genie GS4047	13.89m	1.15m	350kg	910mm	2.44m	3,260kg
Iteco 12122	13.9m	1.22m	350kg	1,400mm	2.47m	3,315kg
Haulotte Compact 14	13.85m	1.2m	350kg	920mm	2.49m	3,168kg
Holland Lift HL-130 E12	12.7m	1.2m	650kg	1,800mm	3.34m	4,920kg
Holland Lift HL-160 E12	16m	1.2m	750kg	1,500mm	3.74m	7,550kg
Dingli JCPT1412DC	13.8m	1.15m	320kg	900mm	2.48m	2,880kg
Dingli JCPT1412HD	13.8m	1.19m	320kg	900mm	2.48m	2,840kg
Airo X14EW	14m	1.2m	350kg	1,500mm	2.40m	3,365kg
PB Eco S140-12EC	13.8m	1.15m	320kg	900mm	2.48m	2,910kg



and weighs 7.55 tonnes. With German manufacturer H.A.B's future uncertain following its bankruptcy, the only other heavy duty narrow electric scissor manufacturer is PB Lifttechnik. Its compact 14 metre model has an excellent specification and is the narrowest at 1.15 metres, and one of the lightest at 2,910kg.

Last but not least is Dingli which has both hydraulic and direct electric drive versions of the compact JCPT1412 - the only difference being the electric drive motor version is slightly narrower but heavier, however both models win the weight war, thanks to a highly innovative lightweight design of the upper scissor stack which reduces the machine's centre of gravity.



PB's compact 14 metre model (L) has an excellent specification and is the narrowest at 1.15 metres, and one of the lightest at 2,910kg.

New 13ft micro scissors

While Dingli produces a full range of aerial lifts it is currently focusing its export efforts on self-propelled scissor lifts and push-around lifts. The company has made substantial progress over the past few years in terms of design and build quality and is slowly gaining a solid reputation as its distribution network grows. At the end of last year it launched an upgraded version of its 13ft selfpropelled micro scissor lifts - the JCPT0607DCI and JCPT0607DCS.

The two models are almost identical, apart from the fact that the DCI 'industrial' version features smaller rear drive wheels, with casters on the front steer axle for zero degree turning. It is



Dingli launched upgraded versions of its 13ft self-propelled micro scissor lifts - the JCPT0607DCI and JCPT0607DCS.



Both Dingli 13ft models offer a working height of 5.9 metres and a platform capacity of 240kg.

however very much a smooth floor machine, but still features automatic pothole protection and 25 percent gradeability. Most buyers will opt for the more traditional DCS model. Both models offer a working height of 5.9 metres and a platform capacity of 240kg. The 1.3 metre long platform extends to 1.89 metres with the deck extension. Overall stowed length is 1.44 metres with the entrance ladder installed, and 1.29 metres with it removed. The DCS weighs 880kg and the Industrial version 860kg, both models have a CE indoor and outdoor ratings, with the DCS limited to 5.6 metres outdoors and Industrial to 4.5 metres.

scissor lifts



The compact 14m machines have a width of about 1.2m.



Dingli has both hydraulic and direct electric drive versions of the compact 14m JCPT1412.



scissor lifts

Drive for both comes from 400kW DC drive motors - rear wheel mounted on the Industrial and front steer axle mounted on the DCS.

Tough competition

While these new Dingli models look attractive, this sector of the market is increasingly dominated by steel mast-type products from the likes of Snorkel, JLG, Haulotte and Skyjack. The main scissor lift competition is Custom Equipment's Hybrid range so whether it can win business away from these remains to be seen. One misconception is that the micro scissors - such as those offered by Custom and Dingli - are longer and heavier that the mast lifts. The fact is there is very little difference but with the scissors, the platform covers the entire chassis, providing more space, while the mast-type lift loses valuable platform space to the outer mast section.



Platforms such as the new Haulotte Star 6 offer strong competition to the micro

The range of powered access products available for working heights between three and five metres has grown significantly in recent years, with a wide choice of self-propelled or push around lifts. However the vast majority of work at this height is still carried out from a step ladder or small scaffold tower, so there is plenty of room for expansion.

New from Haulotte

Haulotte has become the latest manufacturer to give up on designing a different mast-type lift to the concept introduced by the old UpRight TM12. Its new 12ft Star 6 shown as a prototype at Intermat last April, is now going into production in time for Bauma. Visually it looks similar to the TM12 (now a Snorkel), the JLG ES1232 and Skyjack SJ12. It also includes active pothole protection and indoor/ outdoor rating, saloon-type entry gate and the option of a 400mm roll-out extension. Other features include AC direct drive wheel motors, a multi section telescope system to eliminate chains or ropes, a larger on-board diagnostic screen and both lateral and longitudinal chassis fork lift pockets for easier loading/carrying.

Haulotte has also upgraded its 20ft, Optimum 8 scissor lift, which now has maintenance-free AC wheel drive motors as well as several other new features such as easier swing-out travs for improved maintenance and Haulotte's **ACTIV** screen which provides key operational information and diagnostics. Fitted with automatic pothole protection the platform is certified to work outside in winds up to 45kph. Haulotte is planning two new prototypes for Bauma, might one be a compact hybrid/ electric Rough Terrain scissor lift?



Haulotte Optimum 8.

Snorkel expands range

Snorkel has expanded its small slab electric scissor lift range with two new models, the 15ft and 20ft S3215E and S3220E, both of which will be launched at Bauma. The new models - shown in prototype form at Platformers Days in September - join the current family of four models unveiled at last year's Rental show - the S3219E, S3226E, S4726E and S4732E with 19, 26 and 32ft platform heights respectively.

The S3215E offers a working height of 6.5 metres with a platform capacity of 272kg, while the S3220E has an 8.1 metre working height and 408kg platform capacity. The company says that it expects these models to be particularly popular in Europe where there is an increasing focus is on higher platform capacities.

The two machines share their 32 inch/810 mm wide chassis with the existing S3219E and S3226 and as such feature the twin-door service trays for easy access to key components even in a narrow space. The new lifts also share the same components, upper control box, standard saloon-style entry gates, dual-shear scissor stack design, deck extension, oversized kingpins and gravity-actuated active pothole protection system.

The new models have now gone into production at Snorkel's US manufacturing facility in Elwood, Kansas. The first order - for 10 S3220E and five S3219E - was placed by Germany's Buchtmann Arbeitsbühnen at Platformers Days.

Safety and productivity

As well as new models there have been several other products aimed at improving the safety and productivity of small scissor lifts. Late last year UK-based powered access company Kimberly Rentals launched a secondary guarding system for scissor lifts. Dubbed SkySecure it can be installed on all



The idea is that if an operator is pushed down on the controller his forearm will activate the system.



diesel and electric scissors.

The company says the system has been developed with input from contractors, operators and third party certifiers and subjected to extensive live trials. It features a self-test on machine start up and a spring loaded wrist rest that will stop the machine if activated through pressure applied by the operator. It then sounds a siren and activates a blue emergency beacon.



Airo's 14m X14EW has a 1,500mm deck extension but weighs 3,365kg.





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scissor lifts The Manlift SHU-30. If it is inadvertently triggered it can be reset at height by the operator. The machine's emergency controls can still be used to lower the

platform should it be necessary. Chief executive Geraldine Unsworth said: "The SkyAlarm system we introduced on boom lifts in 2012 has been successfully received by our clients, so it has been a priority

to develop a system that will help prevent incidents of scissor lift crushing. We have extensively tested this new system with our clients and received a very positive response."

The company has also installed a proximity device that can be fitted to scissor lift controllers which automatically reduces the travel speed to slow when the controller is moved outside of the platform. for instance when being used by an operator walking alongside the machine for loading/unloading and passing through a doorway.

Load handling for push arounds

Services has launched a new version of its deckRailXtra materials handling attachment, the DRXmicro which has initially been designed for use with the 11ft platform height

UK-based Aerial and Handling Airo XLP5E push around scissor lift.



The DRXmicro can support loads up to

The company is planning to market the combined aerial work platform and material handling attachment as the IPAV - or Industrial Push Around Vertical - with a corrosion resistant zinc finish on the platform and the chassis as standard. With a 5.3 metre working height the lift offers a full 250kg platform capacity, including the DRXmicro attachment, which weighs just 10kg. The attachment has a rated carrying capacity of 40kg and the rear support arm swings out of the way in order to allow entry into or out of the platform.

The company said: "Having studied the low level market for some years we noticed there is no option for users of such equipment to safely restrain and support materials. By integrating the new DRXmicro with the Airo XLP5E we have created an entirely new concept for the industry."

The company already has two other material handling devices in the deckRailXtra range - the DRXmulti and DRXplus - both can be fitted to other compact lifts.



US-based Manlift Manufacturing offers the SHU-30 attachment that can be swapped with a standard roll-out deck extension on a 19ft Genie GS1930, to offer a 750mm step up (Single Hop Up-30inch) for use to gain access through false ceiling panels etc.

Wurlitzer scissor stack appeal

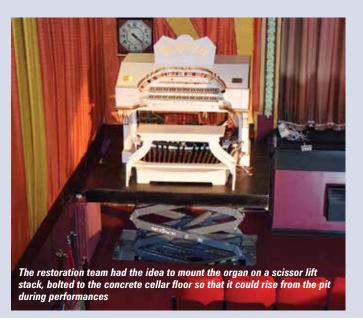
At the end of 2014 an appeal went out on Vertikal.net for a second-hand scissor stack to be used for a good cause. A restored cinema - the 85 year old Royalty Cinema in Bowness-on-Windermere in the English Lake District - was one of the few cinemas in Europe with a working and regularly used Mighty Wurlitzer theatre organ but it needed something extra...

The restoration team had the idea to mount the organ on a scissor lift stack, bolted to the concrete cellar floor so that it could rise from the pit during performances recreating the early movie-going experience of live and often improvised accompaniment.

The restored 1927 Wurlitzer theater organ weighs around 250kg, so they were looking for a unit with around 350kg capacity. It also measured about 1.5 metres square with the seat, so the platform needed to be around that width with a lift height of around three metres or so.

Prayers answered

Within a few hours the call for help was answered by both Skyjack and UK access rental company Nationwide Platforms. The two companies quickly agreed to work together on the project with Skyjack donating a modified SJ3215 DC electric scissor lift as part of its 30 for 30 partners campaign, which celebrates the company's 30th year in business. Nationwide Platforms called on its service engineer Steve Reeves and fleet controller Colin Waterfield to design and build a custom power unit and hydraulic control system suitable for the organ's smooth ascent and decent.





Nationwide modified the scissor lift, using only the scissor stack and then manufactured a new base plate weldment to bolt the unit to the concrete base and attached a large false wooden floor to a top plate weldment, on which the organ sits. Once operational the customised scissor lift was thoroughly tested and calibrated, then dismantled and transported to the cinema. And following a tricky installation beneath the cinema floor it was then re-tested and the operating speed re-calibrated.

Nationwide Platforms regional director Andrew Briggs said: "The project was more challenging than first thought but was far too interesting not to pursue, and if this group could rebuild the Wurlitzer then the least we could do was make it rise."

A group of volunteers spent five years restoring the large pipe organ which now has all the bells and whistles needed to produce a wide range of sounds from bird calls to the clopping of horses' hooves. And as the 'Flying Wurlitzer' - as it has been dubbed - is now a device for lifting people, it required inspection and certification so that it complies with all relevant directives and standards. This service is being provided free of charge by notified body, Powered Access Certification.

"It has been a unique occasion that saw two completely independent companies from the access sector contact us looking to contribute to our charity events," said Paul

Adorian, managing director of the Association for the Independence of Disabled People (AID), which was launched in 2014 to help raise awareness of the needs of severely disabled individuals. "We are expecting a full-house in the 400 seat theatre on the opening night as so many will be looking forward to seeing the 'Flying Wurlitzer', and we have several surprises lined up for guests."

"The Wurlitzer will be unveiled at a special charity movie night in the coming months, where all funds raised will go towards funding a new drug trial which if successful, will significantly improve the lives of those with Motor Neurone Disease", said AID founder and chairman Ruth Adorian, who herself was diagnosed with Motor Neurone Disease in 2007.

"We are delighted to be a part of this worthwhile project," added David Hall, project and business development manager for Skyjack. "It's great to see this come to life and I am sure it will draw a lot of attention and funds for the charity."

"This has been a great opportunity for industry to get involved with charity and we are delighted with Skviack and Nationwide Platforms' involvement with the project. allowing the Wurlitzer to finally be used in its original glory, elevated during films to provide live entertainment," said Paul Adorian,

The Association for the Independence of Disabled People welcomes donations to their worthy cause and can be found at www.disabledday.org.

