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# SIMILAR BUT TOTALLY DIFFERENT

Whatever the reason, many people still get confused between the increasingly popular mast boom and the self-propelled mast lift. Hopefully, we can not only clarify the differences but also outline the advantages of each, while also covering the latest product launches.

**In a nutshell, the self-propelled mast lift does exactly the same thing as a micro scissor lift, using its extending vertical mast to raise and lower the platform in the same way as a scissor lift uses its folding scissor stack. Just like a scissor lift, it has no outreach apart from perhaps a small deck extension - for mast lifts, this may be up to 500mm.**

For many years, mast lifts had a platform height of 12ft for 5.5 metres of working height - but in recent years this has increased to almost eight metres, covering around 90 percent of the applications for slab electric scissor lifts, at least in terms of working height. Its advantages compared to a small scissor lift is typically more compact dimensions - shorter - although some micro scissor lifts are now almost the same size and have the advantage of not having a mast taking up space in the platform. More importantly, mast lifts are usually lighter, which can be important for reaching upper floors via smaller passenger elevators/lifts. They usually also benefit from a lower step-in height.



The mast boom, on the other hand, is a totally different beast. The only thing it shares with a mast lift is the fact that it uses a telescopic vertical mast to raise the platform. Mast booms also have a jib which allows much more outreach - most models offer between two and four metres - while a few of the larger ones go much further. The other main difference is that the mast boom can slew up to 360 degrees. And while they are almost as compact in terms of overall length, they are of course, far heavier.

Larger models employ telescopic jibs for more outreach, such as JLG's T12E Plus which offers more than six metres of outreach and the Helix 1508a with eight metres. Working heights for the vast majority range from 7.5 to 11 metres, but again, there are one or two exceptions.



*The massive outreach of the Helix 1508*



So although the mast boom shares the same vertical mast technology with the mast lift, the mast boom has more in common with industrial zero tailswing boom lifts, which tend to start at the top end of the mast boom in terms of working height, typically around 11 metres and up, but also tend to be longer, wider and significantly heavier but provide more outreach of around six to seven metres and up. Being physically larger they often have a higher platform capacity but are also more expensive.

## MAST BOOMS

We have covered the history of the mast boom in great detail in previous issues. The product emerged in the USA in the early 1990s but by 1995 the mast boom was very much a French product, after Daniel Duclos made it popular with his Delta Systemes Toucan, which was later acquired by Grove, to become a Grove/Manlift Toucan and then in 2004 by JLG.

## MAST BOOMS & MAST LIFTS



A 2006 Lift-A-Lot Amr40-18 mast boom



A Manitou VJR100 mast boom



The MME30-RJ is essentially a MEC version of Dingli's AMWP11.5-8100

Yes the Toucan name has largely stayed the course, but has not become generic. Haulotte made its own version - the Star 10 - and Manitou followed suit sometime after. Today, there are around 15 mainstream manufacturers of mast booms. More recently, several Chinese manufacturers have joined the party, most notably Dingli, which took the ubiquitous 10 metre model to 11 metres, in the same overall package. It has managed to capture a sizeable slice of the market, while also spreading its adoption.

Having said that, the mast boom market is still relatively small in terms of the number of units shipped each year and the overall working population, especially compared to scissor lifts. But they have completely taken over the bottom end of the industrial boom lift market. And new manufacturers are still entering the sector. Around two years ago, Italian manufacturer Platform Basket decided to dip its toe in the water and launched the Heron 10 model on rubber tracks, rather than wheels. MEC Aerial Work Platforms also introduced its first model, the 11.2 metre MME30-RJ. MEC is, however, owned by Dingli and the new model is based on Dingli's mast boom.

### MAST LIFTS - A PRODUCT FEW WERE ASKING FOR

The history of the mast lift has also been covered extensively by us in previous issues. It originated in Japan in the late 1970s and early 1980s with manufacturers such as Tadano and Aichi offering models with working heights of up to 5.5 metres as a more compact alternative to scissor lifts, driven by limited space in its major urban centres.

The sector began to go international and eventually take off in the early 1990s when UpRight was asked by Japanese rental company Tokyo Rentals to produce a copy of Japanese models. It managed to squeeze a little more working height out of the concept, achieving a working height of 5.85 metres. When the senior buyer from Tokyo saw the prototype, he was upset - he wanted a copy! The unit was reengineered, and UpRight had to decide what to do with the original design, scrap it or try and commercialise it? Although it should have been a TM13, it was considered that giving it that name would completely eliminate the already tough challenge of marketing a new product that had little visible demand, and so the TM12 was born. Naturally, it struggled following its 1994 launch at the ARA - it was a platform no one outside



Today the TM12 is manufactured by Snorkel



A 2006 5.7 metre working height Upright TM12



The 20ft Skyjack SJ20 E

of Japan was asking for! But the breakthrough eventually came in Europe when Swedish rental companies took the new concept to their hearts. That provided some volume and confidence, as the concept spread across Northern Europe and eventually elsewhere. North America was a late adopter of the concept, and the TM12 has always struggled in the company's home market.

When the market began to take off, companies such as Genie and JLG tried to take a slice of the market with self-propelled versions of their aluminium push-around/portable products but always struggled. In the end, JLG simply decided to copy the TM12, and the rest followed suit. The arrival of more blue chip manufacturers helped spread the word, and then a few companies, such as Skyjack, began introducing higher models, 5.5 or 5.8 metres was always slightly too low for some jobs. The 16ft models provide a working height of almost seven metres, from pretty much the same base and have significantly helped to expand the overall mast lift market.

Today, most manufacturers have one or two models in the sector, with Chinese companies such as Dingli making an impact with electric drive, which is now the standard. Working

heights have also moved up another step with 20ft models offering working heights of up to eight metres, while Haulotte introduced a rubber tracked mast lift, the Star 6C in 2020.

### ZOMLION'S NEW MASTS

Manufacturers are continually updating their ranges. Last month Chinese manufacturer Zoomlion launched three new self-propelled models with mast type platform elevation - two mast booms - the 10 metre ZMP08J and 11.2 metre ZMP09J - and the 20ft ZMP06G mast lift. All three feature AC direct drive electric motors and maintenance free batteries.

The ZMP08J is a typical 10 metre mast boom, featuring a five box section steel mast and three metres of outreach with the jib horizontal at an up & over height of 6.6 metres. Maximum platform capacity is



The Zoomlion ZMP08J mast boom

# EXPERIENCE NEW HEIGHTS

# HS21 E & E PRO

## ELECTRIC ROUGH TERRAIN SCISSOR LIFT

- ④ Working height: **21,2 m**
- ④ Load capacity: 4 people **750 kg**
- ④ **4-wheel** steering
- ④ Driveable at **full height**
- ④ **72V** Lithium-ion batteries



200kg. The overall width is one metre, overall length when stowed 2.7 metres, overall height 1.99 metres and overall weight 2,670kg. An ultrasonic collision detector and entrapment safety bar are standard.

The 11.2 metre working height ZMP09J is pretty much the same machine as the 10 metre mast boom, but with an extra mast section to achieve the increased working height. It also has a slightly longer jib, giving an extra 230mm of outreach at 1.15 metres higher than the smaller model. It retains the same 200kg maximum platform capacity and is physically the same size, but is heavier at 2,990kg. Both units are rated for indoor and outdoor use, but with only one person when working outside.

The ZMP06G mast lift uses a flat profile five section aluminium mast for a working height of eight metres. It has a maximum platform capacity of 160kg in the 860mm long platform, which is equipped with a 500mm roll-out deck extension for a 1.36 metre by 760mm wide extended platform. The lift has an overall width of 800mm, an overall length of 1.45 metres, a stowed height of 1.99 metres and weighs 980kg.



*The ZMP06G mast lift*

## RESIDENTIAL BRAVI

Italian low level platform manufacturer Bravi recently launched the 5.6ft Residential 170 self-propelled mast lift designed with residential type job sites in mind. The lift has a maximum working height of 3.7 metres and a maximum platform capacity of 180kg/one person in the 1.9 metre by 590mm platform.

The 170 has similar styling and build quality to the company's highly popular 4.9 metre working height Leonardo HD, but weighs 360kg rather than 560kg of the Leonardo, and offers both self-propelled and push around modes. The new model has an overall length of 1.15 metres, an overall width of 667mm and a stowed height of 1.75 metres, at which point it can be driven at its maximum speed of 3kph, or 0.6kph when elevated. The platform can also be equipped with Bravi's 'Solo-Gyps' attachment for drywall panel handling and installation.



*The new Bravi Residential 170 with Solo-Gyps attachment installed*



*The new Bravi Residential 170 in action*

The company said: "The Residential 170 is the first platform specifically designed for residential construction sites. Lightweight and easy to manoeuvre, it can support every phase of the job while ensuring safety, efficiency and comfort in any environment."

## NEW SAFELIFT MODELS

About 18 months ago Swedish low level aerial lift specialist Safelift launched a new version of its five metre working height MA50 low level self-propelled mast type lift, the MA50-R. The company followed this last month with the new 'rental grade' MoveAround MA50-H. Until now, the company has focused on low level mast type platforms with working heights up to six metres aimed at the end user market. Its customer base includes blue chip companies such as ABB, IKEA, Saab, Sandvik and others, while also selling to rental company Cramo.



*The new Safelift MA50-H in self-propelled mode*

As with the original Swedish built MA50, the MA50-R has a working height of five metres, an overall width of 760mm and an overall length of 1.16 metres. The platform dimensions are also the same at 530mm by 760mm with a capacity of 180kg, it also features a low entry level and saloon style entry gate.

The MA50-R is different in that it features a retractable guardrail system that allows the user to reduce the platform dimensions to 530mm x 550mm in order to reach through 600mm by 600mm false ceiling openings.

The three section mast is extended using a single hydraulic cylinder, while power comes from two 12 volt, 75Ah maintenance free batteries. The MA50-R can be driven at full height, and when stowed it is possible to convert it to 'Push Around' mode with the simple turn of a lever, transforming it to a low level push around lift. The machine has overall weight of 331kg.

## MOVEAROUND FOR RENTAL

The MoveAround MA50H is essentially a 'rental grade' version of the MA50-R self-propelled/push-around lift with the ability to easily switch between self-propelled and push-around modes.

The launch of the R and H versions of the MoveAround 50s coincides with the expansion of Safelift's manufacturing facility in Växjö, north east of Malmö in south central Sweden, which has added sufficient capacity to allow the company to be serious about volume sales to rental companies, while also being able to focus more seriously on sales beyond Scandinavia.

The company says that at least 85 percent of the materials and components that make up the new platform are produced in the local area.

The new MA50H utilises a three section telescopic mast with a single hydraulic cylinder extension and internal cabling to the platform, providing a maximum platform capacity of 180kg. The machine has an overall width of 780mm with an overall length of just under 1.2 metres, and an overall stowed height of 1.81 metres. Total weight is 445kg.

It is also packed full of features, not always found on this type of product, including automatic active pothole protection, improved water resistance for cleaning - the company is working on its IP waterproofing certification - the ability to turn in its own length, all-round bumper pads, chassis top forklift pockets/lifting and tie down eyes, maintenance free batteries and onboard charger.



*The MA50-H's three section mast provides a 10ft platform height 5m work height*

Entry to the 540mm by 770mm platform is by a low integral step with a built in light, and full width saloon type spring loaded entrance gates. The platform has a rubber floor mat surface, while standard features include flashing warning lights, a protected joystick controller and mast top and side tool trays.

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### ZMP06G

Work Height: 8m  
Overall Height: 1.99m  
Overall Width: 0.8m  
Gross Weight: 980kg



### ZMP06

Work Height: 7.91m  
Overall Height: 1.99m  
Gross Weight: 1085kg



### ZMP04

Work Height: 5.82m  
Overall Height: 1.72m  
Gross Weight: 900kg



### ZMP08I

Work Height: 10m  
Horizontal Outreach: 3m  
Overall Height: 1.99m



### ZMP05

Work Height: 6.9m  
Overall Height: 1.98m  
Gross Weight: 960kg



ZOOLION AC2200 reserves the right to make technical and/or equipment changes without prior notification.

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*The 400mm extension*

### LGMG DECK EXTENSION

Chinese manufacturer LGMG has added a 400mm deck extension option for its 12ft M0407TE mast lift. The model was initially unveiled at Bauma in 2022 and has a 5.78 metre working height and a maximum platform capacity of 230kg. The regular platform is 1.33 metres by 750mm, but the new option takes that to 1.73 metres with 133kg capacity on the extension. The overall stowed length is now 30mm longer at 1.39 metres, while the weight has increased 5kg to 840kg. The overall width remains at 760mm with a closed height 1.69 metres. The standard M0407TE will continue to be available.

### TOUCAN STILL GOING AFTER ALL THESE YEARS

As mentioned earlier the JLG Toucan models can trace their roots back to the very start of



*Smallest in the Toucan range, the 8.2 metre T8E*



*The Toucan T10E*

the commercial mast boom development when the model was made and distributed by Delta Systems in France. The company was purchased by Grove in 1998, with JLG buying it from Manitowoc as a going concern along with the original production facility in Tonneins, France in March 2004. JLG recognised it as the jewel in

crown of the Grove Manlift product line, the whole of which it acquired just before Bauma 2004. Today the range is extensive, including seven mast booms with working heights from 8.2 to 12.65 metres - the T8E, T8E-L, T8E-XL, T10E, T10E-L, T12E and T12E-Plus. The latest addition is the T8E-XL which has a larger double entry

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platform, compared to the standard T8E.

The Toucan base design remains largely unchanged since introduced in the early 1990s - well proven you might say - incorporating a heavy duty forklift style mast topped by an articulating jib. The T8E, T8E-XL and T10E standard models can accommodate two people in indoor and outdoor applications. The lighter T8E-L and T10E-L versions are suitable for two people indoors and one person outdoors. More specifically, the T8E-L weighs less than two tonnes and fits inside many passenger elevators. The T10E-L weighs less than three tonnes and can be conveniently transported with a 3.5 tonne capacity trailer.

Of the two largest models, the T12E has a two section telescopic jib and reaches a maximum working height of 11.83 metres, while the T12E-Plus features a three section jib and a maximum working height of 12.65 metres.

Toucan mast booms are now equipped with AC direct drive wheel motors and can be driven at full height. A high commonality of components helps simplify servicing and fleet management.

#### MAKING INROADS FROM A STANDING START

A relatively recent entrant to the aerial work platform market is Italian manufacturer Gromet, which introduced its first Axolift low level mast lifts in 2021. Based in Veneto in Northwest Italy the fabrication and metalworking business had produced components and fabrications for other companies for a good number of years but decided to enter the market in its own right, starting with a push around platform using a separate facility from its fabrication plant located on the other side of its hometown. A self-propelled mast lift - the 10ft Elift 3.0 - with a working height of 4.95 metres soon followed. It has an overall length of 1.23 metres, is 770mm wide and offers a maximum capacity of 180kg - one person and tools - and has a 4kph drive speed when stowed or 2kph when the platform is elevated. Overall weight is 380kg.



The Elift 3.0 was upgraded last year, the changes included improvements to the three section box section mast with low friction ball bearings replacing nylon wear pads, and a hydraulic oil collector in the base in case of any oil leaks. The control box was relocated to a better position and improved with a new, easier to use operator friendly joystick controller, while the electrical system has been refined and updated for improved performance and serviceability, with better protection for the drive motors. Finally, platform descent was changed to powered, rather than relying on gravity, and all powered machines now include AGM maintenance free batteries as standard.

#### LOCALLY MANUFACTURED

Having invested heavily over the years in the

latest laser cutting, bending and robot welding equipment, the company produces the vast majority of the machines in-house - a distinct advantage in the current world economic climate, when supply chains are compromised.

More recently the company has expanded and rejigged its product range and facilities, while stepping up the expansion of its distribution network, adding dealers in the Netherlands, the UK, Ireland and France - where in December it won its first order from France's largest rental company Kiloutou, along with Lithuania, Poland, Norway, Spain, and, more surprisingly, India, where it has longer term plans to manufacture locally in partnership with truck mounted lift manufacturer Gemini. ■

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