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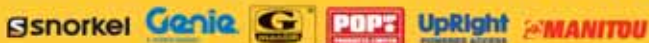
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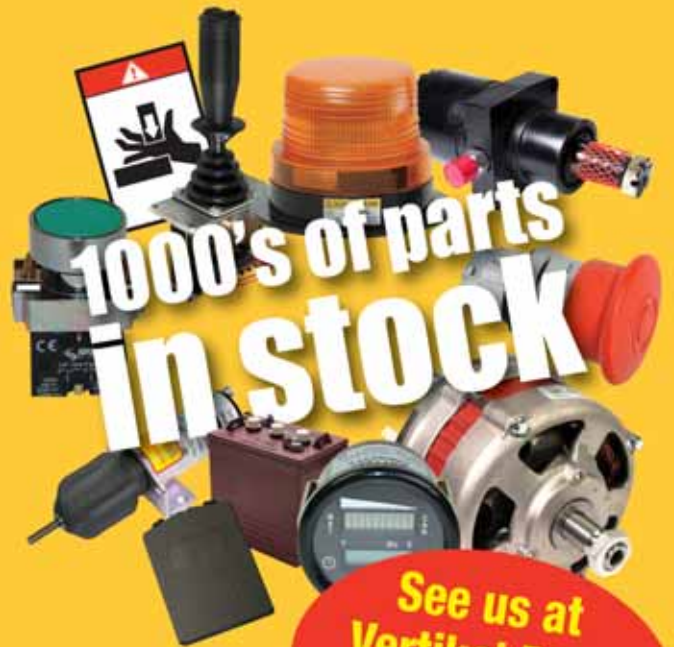


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Market driven

The original Rough Terrain scissors of the early 1970s were relatively lightweight, two wheel drive units with large tyres. They were particularly successful as rental machines being very reliable, easy to transport and operate as well as being cheap to maintain and repair - ideal for both rental companies and users.

Because of their large platforms and decent platform capacity Rough Terrain scissors have increasingly been used for cladding and M&E work on large commercial buildings. By the early 1990s this probably represented more than 80 percent of all applications for these big machines and as a result their utilisation tends to closely follow the ups and downs of the commercial construction market.

The problem with this scenario is that when commercial construction dives there is precious little work for the big scissors and rental rates plunge as a large population of machines chases a shrinking number of projects. When the

market recovers rates for these machines never seem to return to commercially viable levels. In fact if the laws of simple economics worked most rental companies would stop buying this type of lift, supply and demand would slip back into balance and rates would or should rise.

Loss leader

However as always there is more to it than that. Commercial construction - or the building of 'big boxes' - not only employs big RT scissor lifts. Once the steel work is up and the building clad, large numbers of smaller electric scissor lifts and booms are needed. So many rental companies feel that they need to be able to include RT scissor lifts in



A Holland Lift G320 working on a distribution centre in Manchester.

their range in order to 'offer the service' and also establish themselves as the main supplier for the project at the earlier stages and recoup when the profitable smaller machines go to work. The same arguments apply to mid-range telescopic boom lifts that are used for placing the steelwork.

Over the years this feast or famine low rate of return scenario hasn't changed a great deal. What has changed considerably are the products themselves, as manufacturers and rental companies try to find a way out of the conundrum. As a result the market has split up into several different product types. The original RT scissor has an overall width of about 2.4 metres, is around four metres long with platform heights between 32ft and 50ft/10 to 16 metres and a lift capacity of 680kg. This type of machine is no longer as popular as it was, with smaller more compact RTs now increasingly used for non-cladding work, while the 'cladding machine' market has moved towards large, heavy-duty models.

There is also a strong growth trend towards battery electric RT scissors thanks to more efficient drive-trains

and improved battery power and life. These units offer an increasingly attractive antidote to the rising cost of diesel and stricter emission laws, while offering more versatility. Studies have shown that electric machines can cut running costs by up to 60 percent and because they can be used both inside and outside the building utilisation can be increased meaning they are less affected by the boom and bust nature of the commercial construction market. With many of these machines now being equipped with white/grey non-marking tyres they also offer the possibility to stay on site and simply move indoors - after a wash off of course - thus saving on transport and reducing the risk of a change in supplier with a change in machines.

AC drive

One of the changes that is increasingly moving RT scissors towards battery power is the arrival of less costly, more rugged AC drive systems rather than hydraulic or even DC drive motors. The system uses an inverter in the machine's controller which converts DC current from the battery into a three-phase AC current which powers the motors controlling speed and



HAB is now having some success in the UK



A JLG 500RTS



Genie GS4069 DC outdoor/indoor RT 14m scissor lift

acceleration. Advantages are said to include better acceleration, gradeability and faster lift speeds as well as lower running costs and quieter operation. The system also has fewer moving parts using brushless sealed motors resistant to water and dust resulting in lower maintenance costs. Battery life has traditionally been the Achilles heel of DC powered equipment which suffers from decreased performance as the battery loses its charge. However an AC power system offers the control needed to maintain performance - even as battery charge runs low - providing up to 30 percent less energy consumption when compared to conventional equipment.

Typical AC systems can potentially recover battery energy using three forms of regenerative braking. Essentially, the inertia energy that is created by these actions is converted to electrical energy and returned to the battery, extending overall operating times and operating cycles helping ensure that the equipment can work even an extended shift from a single overnight recharge.

Genie taking it mainstream

Genie was one of the first companies to take electric AC drive mainstream, initially on one of its industrial boom lifts, but now has a refined system for its three model range of RT scissors. The 26 to 40ft platform height GS2669DC,

GS3369DC and GS4069DC models, offering working heights of 9.9, 12 and 14.2 metres respectively. The company says that its three phase AC motors are smaller and lighter than equivalent output DC units and 50 percent faster than the older DC scissors and 30 percent quicker than their rough terrain, diesel-engine counterparts and all with zero emissions.

While the GS69DC range only has two driven wheels they claim to be able to travel off-road and climb 35 percent gradients. This is achieved by using an active oscillating front axle which helps keep all four wheels in contact with the ground. The patented full-time oscillating axle automatically senses the terrain and adjusts the axle position to match the ground conditions, regardless of the scissor's elevation.

Two from Snorkel

Snorkel recently launched two new Rough Terrain scissors at Bauma. The S4390RT is a traditional sized machine, while the S3970RT is a compact RT. The company says the S4390RT is the first in a new family of high capacity Rough Terrain scissor lifts for construction applications. Prototypes were shown at Bauma to gauge customer and dealer feedback. Preliminary specifications of the S4390RT include a 43ft/13.1metre platform height, twin 1.3 metre deck extensions giving a 1.82 metre wide by 6.6 metre long platform with a capacity of 680kg. The four wheel drive S4390RT is driveable at heights of up to nine metres and standard features include automatic self-levelling outriggers. Snorkel intends to expand the new product



Snorkel S4390RT



MEC 2659 ES crossover working



The Titan boom can stand away from the building on more stable ground

range with the addition of the 52ft/15.8 metre S5290RT which will share the same chassis, capacity and maximum drive height as the S4390RT with an additional scissor stack to achieve the greater height.

The second new RT from Snorkel has been designed at its New Zealand facility primarily for the Australasian market but will be available in the rest of the world later this year. The compact S3970RT has a platform height of 39ft/11.5 metres, is 1.8 metres wide and 3.3 metres long, has a 350kg platform capacity and a 1.2 metre deck extension. The four wheel drive lift has an articulating rear axle, 350mm of ground clearance and 30 percent gradeability and is driveable at full height.

MEC electric RTs

California-based MEC has been at the forefront of the move towards battery electric powered Rough Terrain scissors, but it also has several interesting and quirky products that fit into the RT scissor lift category - the Crossover, the Titan boom and its version of the UpRight/Snorkel Speed Level. It also has its traditional mid and large scissor models that are now only built to order.

The Speed Level - launched in 2009 - was a virtual copy of the UpRight/Snorkel machines but with some subtle design 'improvements'. In addition to the IC powered models it offers a battery powered version which allows the concept to be used for indoor applications.

The second is the MEC Crossover which is basically a compact slab-sized electric scissor with large lugged tyres and some decent Rough Terrain capability. Available with either 26ft/ eight metres or 32ft /9.7 metre platform heights it has an

overall width of 1.5 metres allowing passage through standard double doors. However it is its platform options that offer the most interesting differential. The offset platform is full width on one side of the machine, to avoid stretching or the need to get the chassis so close to a wall, while on the other side it incorporates a glazing /sheet rack on the outside of the guardrails, but still within the overall width of the machine.

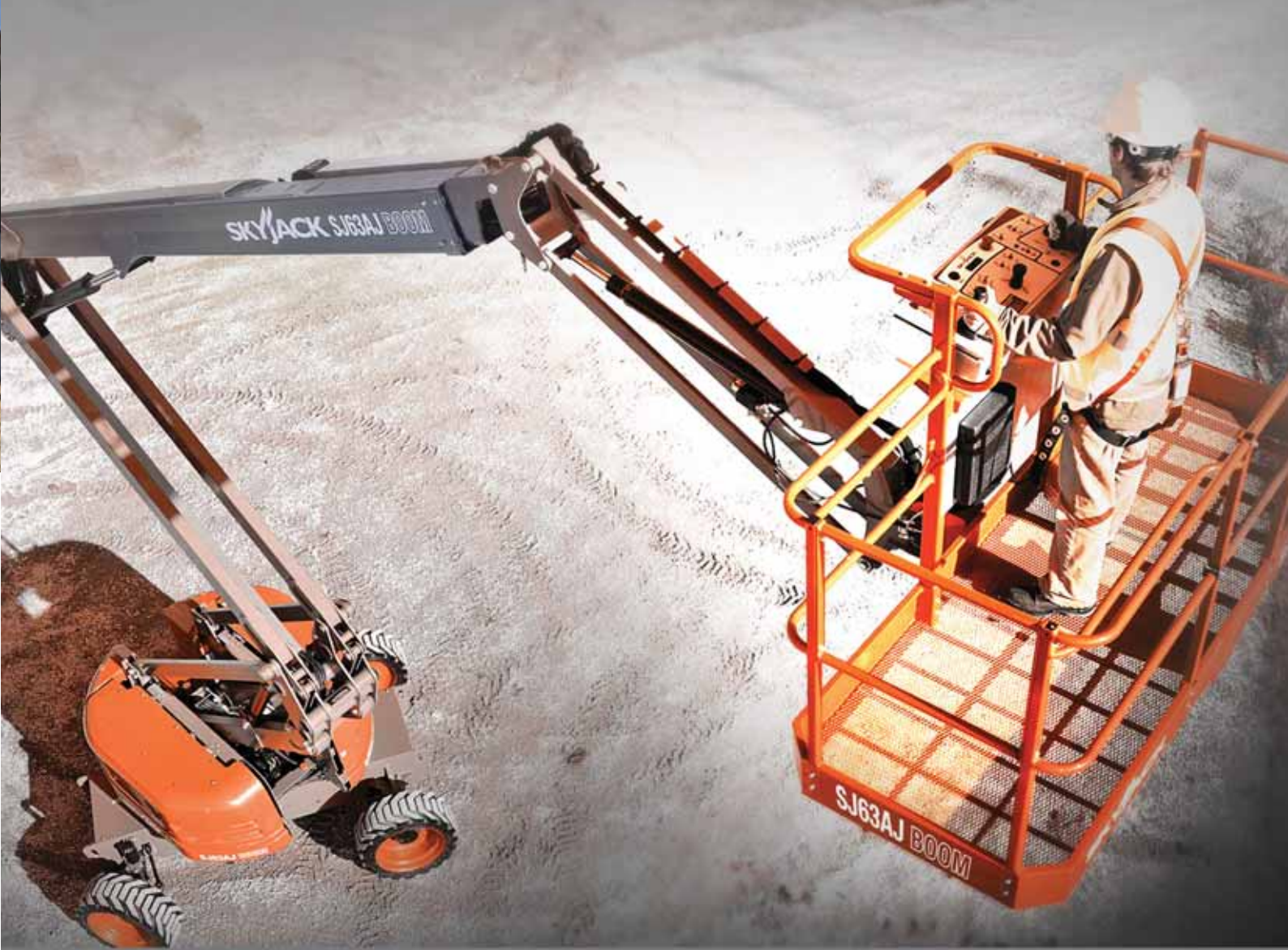
However the most 'quirky' or radical of the three alternatives is the company's Titan boom which is a mixture of a big deck scissor lift with the reach of a telescopic boom with some of the rotation capability and the lift capacity of a small telescopic handler.

Titan boom gets bigger

The Titan concept could revolutionise the way some specific work is performed on construction sites. While the typical RT scissor can cope with a fair degree of rough terrain, its lack of outreach means that when working on external cladding for instance, the machine must work close to and parallel with the new building line which is likely to have been excavated and back-filled during the foundation phase - not the best place for the wheels of a heavy scissor lift to be. A machine like the Titan is able to stand further back - where there is room of course - and use its telescopic outreach and



The Titan 60-S has a 14m forward reach



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A large heavy-duty Holland Lift working in London

platform rotation to cover a large swathe of a façade without needing to move the base machine. The other benefit is that it can be based on more stable ground and the platform can work over low level obstacles.

The first model in the range was the 40ft/12.2 metre platform height Titan boom 40-S capable of handling loads up to 1,350kg in addition to four men offering working heights of up to 14.2 metres. However the company has started production of its new 60ft/18.3 metre Titan 60-S after requests from users in North America to take the concept higher.

The new machine, which will have its international launch at Vertikal Days this month, offers the same 1,350kg platform capacity, while its four section heavy duty boom provides a 20.3 metre working height, coupled with a whopping 14.6 metres of forward outreach when the stabilisers are set, plus three metres to the rear. The outreach differentiates the Titan from a scissor lift although its platform size and capacity clearly allow it to work on the heaviest of Rough Terrain scissor lift applications. Maximum drive height is 12.2 metres while four wheel

A Skyjack SJ9241 RT



How the Holland Lift compares with the H.A.B and Kreitzler

| | Holland Lift Megastar G-320DL30 | H.A.B S320-25 D4WDS | Kreitzler KIB 25/315 |
|------------------------|---------------------------------|---------------------|----------------------|
| Platform height | 31.7m | 30m | 29.5m |
| Working height | 33.7m | 32m | 31.5m |
| Weight | 31.2 tonnes | 29 tonnes | 19.5 tonnes |
| Platform size (closed) | 6.6 x 2.8m | 6.2 x 2.45m | 6.5 x 2.0m |
| Platform extension | 3.0m | 2.1m | No: 3.5m traversing |
| Platform capacity | 1,000kg | 900kg | 1,000kg |
| Gradeability | 35% | 30% | 14% |
| Lift time | 240 sec | 125 sec | Not Specified |
| Length | 7.02m | 6.2m | 7.2m |
| Width | 2.98m | 2.55m | 2.49m |
| Travel height | 3.63m | 4.15m | 8m |
| Engine/power | Diesel | Diesel | Diesel |

drive and steer provide a 40 percent gradeability. A major advantage of the telescopic lift mechanism is that closed platform height is just two metres.

Large heavy-duty scissors

When Holland Lift introduced its 32 metre Megastar G-320DL30 4WDS/N in 2007 it was in a class of one because the larger machines in the Liftlux range had been rationalised by JLG. However over the last few years a number of other manufacturers have entered this market and launched large scissors that while they may not be bigger, are certainly in the same class.

The heavy duty scissor lift emerged from Holland and then Germany in the early 1980s driven by a number of Dutch rental companies and large end users prepared to pay a substantial premium for a more rigid product that offered an improved platform capacity and better reliability and durability. Holland Lift obliged and the new products quickly found a ready market in Germany. Heavy duty scissors began to carve out a space for itself other markets such as France and the UK in the mid 1990's particularly with the arrival of greater lift heights. With the Dutch and German markets still representing a huge slice of what is still a niche market sector it is no surprise that it is supplied almost entirely by Dutch and German manufacturers. Holland Lift is still the dominant player, but is now under increasing pressure from companies such as PB Lifetechnik and particularly H.A.B.

While the big Holland Lift and JLG/Liftlux machines created an ultra heavy duty class of Rough Terrain scissor lift, the heavy duty sector has blossomed over the years to include high narrow and

mid-range product sectors, not to mention track mounted models. The Megastar G-320 - with its platform height of 104ft/ 31.7 metres and a 1,000kg platform capacity even on its three metre deck extension - is still the largest scissor lift readily available - just. Measuring seven metres long and just less than three metres wide it was originally sold just as a diesel powered unit but is also now available with battery electric power, which offers similar performance to its diesel cousin. The company also introduced a slightly narrower 2.8 metre wide slab version of this massive machine - the G-320EL28 4WDS/N. The first units were shipped last year to a customer in China for power station maintenance work. While the narrow machine uses slab tyres, it still retains four wheel drive and steer and all of the other features from its Rough Terrain brother.

However for the first time in many

A Kreitzler KIB 25/315 with 3.5m sliding deck





PB Liftechnik has a range of RT scissors up to 17.5 metres

years there is now another manufacturer in the 100ft/30 metre heavy duty scissor lift market. German manufacturer H.A.B has both a narrow (1.39 metre wide) electric slab machine and the 2.55 metre wide, 6.7 metre long S 320 - 25 D4WDS with four wheel drive, self-levelling jacks and 30 percent gradeability. Weighing 29 tonnes it has a platform capacity of 900kg and a 6.2 x 2.5 metre deck with 2.1 metre extension - providing an 8.3 metre long extended platform - more than enough for the longest cladding

panels or sprinkler tubes. Another long standing German producer is Kreitzler which builds platforms and specialist access equipment. It offers two large scissor lifts with platform heights of 29.5 metres and still claims to offer the biggest of them all the 35.3 metre KIB 25/373 - although it has not built one of these in at least 10 years and may struggle to do so without a total redesign. All models have four wheel drive and four wheel steer, but with low gradeability are only suited to

concrete slab applications. The much lighter weight (19.5 tonnes for the 29.5 metre diesel version) of the KIB 25/315 may be as a result of a traversing platform - the whole 6.5 metre by 2.0 metre platform able to move forward by a maximum of 3.5 metres - a concept that while popular with big scissor lifts in the late 1980s and early 1990s has all but vanished.

Fellow German manufacturer PB Liftechnik has a wide range of scissors but only four in the Toplift 19 4x4 range which are 1.93 metres wide and have working heights from 13.25 metres to 17.5 metres.

If we compare the big HAB to the Holland Lift it is lighter and more compact but has a platform height that is 1.7 metres lower. Although the HAB has a good platform size - over eight metres when extended - it is slightly smaller, with a shorter extension and 100kg less platform capacity, but lift speed is significantly better. Given that the smaller machine is not that much easier to transport, the choice between these two machines will come down to price, availability and preference to supplier.

Holland Lift changes

As a company Holland Lift has come through the recession in good shape, at least in terms of revenues and maintaining a solid order book. Having built the UK into its largest export market - in co-operation with Russon Access in which it eventually acquired a 50 percent stake - the downturn in the market and subsequent difficulties culminated in Russon Access going into administration at the end of last year which has had something of a knock on effect on Holland Lift in terms of lost revenues and bad debts. To cut a long story short, the changes at the company led to an investment by ProDelta Investments - the company which owns Riwal and Hovago - and then a full acquisition earlier this year as it acquired the shares of former director and majority shareholder Menno Koel. He then left the company in order to give the new owner free reign to introduce new strategies and procedures that it hopes will take the company into a new growth phase.

The new managing director Thom Sijs says he is initially focusing on

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the company's production and supply chain issues in order to add production capacity and reduce the traditionally long lead times for a Holland Lift product. Once this stage is accomplished then he plans to step up marketing and export expansion again. The company deliberated about exhibiting this

year at the UK's Vertikal Days and decided that it was not quite ready and is in discussions with various dealer prospects.

A body blow for the company prior to the take-over and probably the main reason for the final demise of its UK distributor Russon Access

was the failure to secure a large order from the UK's leading access company, Nationwide Platforms.

Rather than go with the expected, Nationwide invested for the first time in 25 H.A.B scissors. Four new models have been purchased including narrow, indoor use scissor lifts with working height of 15.2 metres - ideal for accessing areas through doorways and lift shafts. The other HAB models set to enter the fleet include 22.5 and 28 metre diesel scissor lifts selected for their 750kg platform capacity and ability to drive full height. The latest units also benefit from a shorter wheelbase.

JLG and Liftlux

For many years Liftlux was the main competitor to Holland Lift. JLG acquired the business in 2004 from Manitowoc and transferred production to its plant in Belgium. However having reviewed the market potential it decided to rationalise the line, which ran from 17 to 32 metres to focus on just three Liftlux diesel scissors - the 203-24, the 210-25 and the 245-25. JLG also has its regular line of RT scissor lifts - the 2.39 metre wide, 12 metre working height 3394RT



Just three LiftLux scissors are currently available up to 24.5 metres



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Skyjack continues to have success with the dual deck SK9250

with 1,050kg capacity, the 15.1 metre, 680kg capacity 4394RT and the compact 570kg capacity 1.75 metre wide 260MRT.

Other developments

Skyjack virtually created the big deck cladding market in the 1980s with versions of its 40 and 50ft machines with dual deck extensions. It continues to have success with its big SJ 9250 dual-deck scissor lift, that now fits between the full size scissor lifts and heavy duty models. Recent updates include the 14.5 metre working height 681kg capacity SJ 8841 and slightly wider 17.1 metre working height SJ 9250 which are both now driveable at full height.

Imer/Itesco added the IT14220E with a two metre deck extension at the front and one metre at the rear at Bauma. Haulotte has updated its compact RT range, with the

Compact 10DX and Compact 12DX adding a new Tier IV Kubota engine and new stronger outrigger design which can be deployed and retracted by one switch.



Iteco IT 14220E



Noblift scissors at Bauma

Another potentially new factor is the arrival of Chinese producers, which have so far concentrated their exports on small electric scissors. RT models will surely be next in line? China's largest manufacturer Dingli has two RT ranges – the 1.73 metres wide compact models with

10 and 12 metres working height, and the 2.27 metre wide RT range with working heights to 18 metres and capacities from 680 to 1,000kg. Other Chinese companies are also starting to export so watch out for companies like Mantall and Noblift that also produce RT scissors.

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