



Extraordinary Height Larger SWL Ultra-light Design

Subversive Design

Sophisticated European R&D-Intelligently manufactured by Dingli in a new state of the art facility-Global Patent Protection

Subversive Innovation

Innovative technologies such as dedicated axles, overall component downsize, lower counterweight for lower center of gravity and lighter machines, modular design for ease of maintenance and interchangeability of parts.

Subversive Performance(Compared with the same model in the industry)

The maximum working height heights have been increased by more than 2m to 30m on the telescopic Boom Lifts is 30m and 28m the Articulating Boom Lifts. Both models can be loaded into a standard container.

Maximum SWL increased by more than 30% to 450kg on telescopic booms and 320Kg on articulating Boom Lifts.

Maximum Horizontal Reach is increased by more than 1m.

Maximum gradeability is 50%, an increase of more than 20%.

The weight of the whole machine will also be 1 ton lighter.

Subversive Maintenance(Low maintenance costs)

With a family-style modular design, 95% of the parts and more than 80% of the structural components are common across the range.

More convenient maintenance and lower cost of components storage.

Simple to maintain with integrated component down design.

With dedicated axles, the failure rate is lower.

Telescopic Boom Lifts

BT24RT(24m) **BT26RT**(26m)

BT28RT(28m) **BT30RT**(30m)

Articulating Boom Lifts

BA24RT(24m) **BA28RT**(28m)



ZHEJIANG DINGLI MACHINERY CO.,LTD.

No.1255 Baiyun South Road, Deqing, Zhejiang

P.R.C 313219

Tel:+86-572-8681688

Fax:+86-572-8681690

E-Mail:export@cndingli.com

Http://www.cndingli.com



Time to change?

The realisation that the world has to deal quickly with the causes of climate change has taken a while to sink in but has now become the global 'hot' topic which concerns us all. While many disagree as to the degree that various activities effect the warming of the planet, everyone can plainly see the increase in extreme weather conditions over the past few years. This global problem requires a global solution and whilst some countries are doing more than others there is a growing consensus that we all have to do something to tackle and combat climate change.

We have already seen many changes as a result of tighter engine emissions regulations across most of the developed world, in regard to trucks, buses and cars - with even tighter rules in some major cities - and this increasingly applies to construction equipment.

This change has resulted in the massive interest and growth in cleaner, quieter equipment. Some aerial lift manufacturers, rental companies and end users are far more advanced in their strategies than others, but with governments and major clients demanding further reductions in emissions companies increasingly have little option but to join in.

The current preferred solution is to move towards electric or hybrid power packs. While some companies, such as Niftylift, have satisfied this need for many years, the adoption by the global market leaders - due principally to growing customer demand - is accelerating this trend. While electric power has been the standard on small

platforms, manufacturers are now finding ways to install the technology into the larger models in their range, particularly in hybrid form. Leading the way in this area is Niftylift which launched its first hybrid lift in 2011. Last year it launched its third generation hybrid booms with two and four wheel drive models up to 86ft. It has also produced its first pure battery electric version of its 62ft HR21.

Haulotte surprised many with its new Blue Orientation strategy at unveiled at Intermat last year (see page 45), which includes the aim to eliminate diesel engines from its product range by 2028, kicking off the programme with the HA20 LE, the first machine in its new electric/hybrid Pulseo range. Next year it will convert its big RT scissor range, including a new 62ft model.

Rental companies are also starting to move towards zero emission equipment as demand customer pressure increases. Early last year Netherlands based start-up company Hoogwerkt launched a totally different rental model offering

Niftylift leads the hybrid boom market launching its first platform in 2011



C&A hybrid/electric lifts



Hiab's new e-PTO loader crane

high specification lithium battery powered platforms, light enough for customers to collect on standard two axle trailers, with full telematics systems and on-line booking. The initial €20 million investment enabled it to purchase 420 JCB scissors, 150 Hinowa spider lifts and 230 Nifty HR12s along with a number of trailer mounted lifts. A further investment round has resulted in the purchase of Socage Hybrid truck mounted platforms and Hoefflon all electric mini cranes. Developing all electric truck and van mounted lifts has been made easier by the massive investment from the truck and van manufacturers which have been battling with engine emission legislation for many years.

French van mounted platform manufacturer Klubb claims to offer the widest range of electric lifts mounted on electric vehicles on the market. And has become an official bodybuilder partner for the major vehicle manufacturers including Renault, Mercedes and PSA (Peugeot, Citroën) co-ordinating the design of electric platforms with their upcoming electric vehicles. The range of Klubb electric platforms currently includes the 10 metre K20 on the Nissan eNV200, the 10.1 metre K20 on the compact Goupil G4 and the K26 on Renault Master ZE. Klubb also says that all

One of Hoogwerkt's Socage Hybrid truck mounted platforms.



hybrid/electric lifts **C&a**

its platforms are now available with a 'green' pack option for installing in diesel chassis allowing the platform to operate on battery power so that the chassis engine can be turned off. Even in the USA - not always noted for its enthusiasm for such 'green' solutions - some market sectors are finding hybrid truck mounts offer a wide range of benefits, and Terex Utilities is benefiting from this growing demand with its Evo range. It makes good sense in that a fairly decent sized battery pack can be installed on a truck, while the batteries can be topped up by the engine as the vehicle travels to the next job. Whilst zero emissions are a principal advantage of such

klubb claims to offer the widest range of electric lifts mounted on electric vehicles on the market



platforms, owners are finding that the silent operation enables better communication between ground crews and those in the platform, while allowing the equipment to be used in urban areas during unsociable hours, or in areas that are particularly noise sensitive, such as hospitals or schools.

Is diesel dead?

Converting aerial work platforms, which are not constantly moving, to hybrid or electric power is relatively easy compared to larger machines, such as cranes, or even telehandlers that are both heavy, travel greater distances and are often used for cycle work. That said manufacturers, such as Spierings with its City Boy, and Manitou or Faresin with their hybrid or all electric telehandlers are working on this matter.

You might easily be forgiven for thinking that the diesel engine has no future at all. However several companies such as JCB do not take that view. It openly admits that larger equipment can only sensibly be powered by diesel engines. A lithium battery pack alone for say a 14 tonne excavator costs upwards



Even the crane manufacturers - such as this Spierings City Boy - are looking at electric power

of £130,000 and then there is the environmental cost in producing it and recycling. It points out that engines complying with the latest standards produce a tiny proportion of the emissions of engines built just 20 years ago. It is firmly of the opinion that there is a place for both electric and cleaner diesel power in the future and claims that its next generation of diesels will be close to zero emissions.

Batteries and drive trains the key

For manufacturers to totally stop using diesel engines battery and drive train development is key. The battery requirement is to

produce more power for longer periods with shorter charging times in a package that is smaller, lighter, safer, less expensive and that can be fully recycled. Currently lithium ion is the buzz word however it has several problems including being expensive, unstable and challenging to recycle. However battery technology is progressing in a similar way to computers 20 years ago with new products such as Lead Crystal



As well as zero emissions owners are finding that the silent operation enables better communication between ground crews and those in the platform



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JLG's electric axle Spicer Electrified e-Axle

batteries beginning to appear. Bauma also showed the increasing investment going into electric and hybrid drive trains for boom lifts and telehandlers. JLG for example is working with Dana to develop the Spicer Electrified e-Axle, which combines a single electric motor drive with a conventional looking off road axle. It also incorporates an Intelligent Load Monitoring System (ILMS) and the intelligent steer system to alert the operator of potential tipping situations and analyse steering angles to improve manoeuvrability, safety and productivity. Italian manufacturer Comer is also looking at this market working with a "major access manufacturer" to develop an axle-based electric and hybrid drive train.

New access developments

We have also seen more new electric and hybrid lifts from Genie, JLG, Airo and Manitou all of which unveiled new electric powered booms at Bauma. Manitou introduced its Oxygen branding on a range of machines, including the all new 60ft 200 ATJ E electric articulated boom. The Oxygen label signifies 'alternative energies and sustainable solutions' as well

as being cost effective. Manitou has taken a different approach to others in that it retains its traditional telehandler type off road axles with drive shafts to a transfer box with one large inboard mounted - and therefore protected - AC electric drive motor rather than four smaller wheel motors. A second electric motor is located in the superstructure driving the hydraulic pump that powers the platform movements.

Genie extended its hybrid range with the 45ft articulated Z-45 electric or FE hybrid drive both with AC direct wheel motor drive, using the same technology as its 60ft Z-60FE. A 51ft Z-51 version should follow shortly.

Chinese manufacturers such as LGMG and Sinoboom and Italian manufacturer Airo are also launching new electric powered articulated booms. LGMG has two articulated booms the 14ft A14J - which feature direct electric drive and traditional eight battery power pack - and the 53ft AR16J. Sinoboom's 52ft GTZZ 16EJ also has direct electric drive and an outreach of 9.37 metres. The new 50ft Airo features direct AC drive, zero tailswing and a new pothole protection system.



Part of the 420 lithium scissor order placed with JCB destined for the Netherlands



The all new 60ft 200 ATJ E electric articulated boom - part of the Oxygen range

Holland Lift, Green in every way



A Holland Lift can be used inside and out, and complies with the most stringent environmental and OHS regulations. Whether you need an electrical, hybrid or a diesel lift, all our power units are low to zero emission. Not only you can do every job with a Holland Lift, but working with a Holland Lift is an unmatched experience in comfort, safety and ease of operation.



HOLLAND LIFT
sustainable at great height

Holland Lift International bv
t: +31 (0) 229 285 555
e: info@hollandlift.com
www.hollandlift.com