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GENERATION

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ELECTRIC ROUGH TERRAIN SCISSOR LIFT

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

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An aerial view of Dingli's facility in Deqing

INSIDE DINGLI'S DEQING MEGAFACTORY

Cranes & Access assistant editor Imogen Campion says that one of the real perks of working in the lifting industry is its international scope, with manufacturers and rental companies supplying cranes and access equipment to every corner of the globe. For a modest sized company such as Vertikal Press - with employees split fairly evenly between Germany and the UK - that creates valuable opportunities to meet international businesses first hand. In turn, these visits help bring back the stories, insight and industry developments that make for a good read in Cranes & Access, Kran & Bühne and on Vertikal.net.

This has meant that since working my first Vertikal Days about seven years ago, and officially joining the team in 2023, my lifestyle has shifted towards spending extended periods overseas, visiting companies we do not have the chance to work with regularly. Two years ago, that took me to India to visit MTandT and Manitou, last year to Italy to see Palazzani and Platform Basket, and most recently to Deqing, China, to visit Dingli.

I ended up in China purely due to the war in the Middle East, which prevented me from getting home after a holiday in Sri Lanka. I redirected to Shanghai where I was 'stuck' for 10 days before boarding a still very expensive flight back to London, which still left me at the wrong end of the country as I live in North Yorkshire... Fortunately, it worked out well because the stopover meant I had the opportunity to visit Dingli. It was my first visit to China, and unlike anywhere else I had been previously.

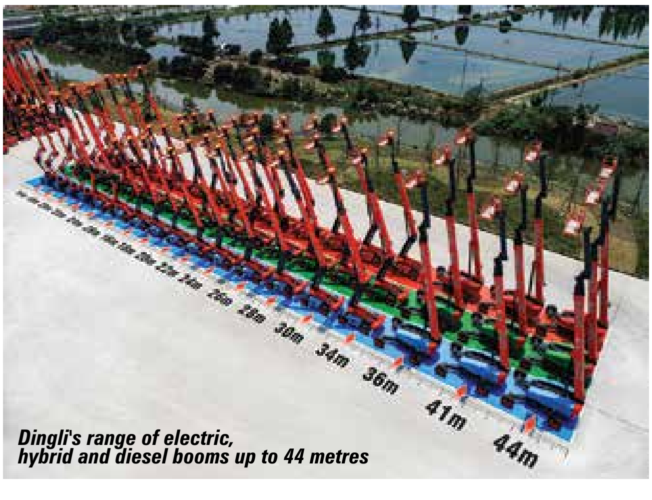
Shanghai was striking for its cleanliness, mostly due to its city-wide ban on diesel and petrol vehicles, while the streets were immaculate, and the waterfront promenade along the famous Bund on the Huangpu River was exceptionally well maintained, framed by the area's remarkable architecture.

70,000 UNITS A YEAR

With that sustainable and clean approach in mind, a tour of Dingli's facility in Deqing - an hour southwest of Shanghai by train - felt very much in keeping with the wider impression of the city. The site, Dingli's only manufacturing facility in China, places a strong emphasis on sustainability, from on site electric car charging ports and a mass of

Shanghai's iconic Oriental Pearl Tower

photovoltaic solar panels on the roofs - which the company says generate 570.46 million kW of power and reduce annual electricity consumption by 17 percent - to skylights in the manufacturing halls and offices reducing the need for artificial lighting. The workshops are constructed with insulated wall materials designed to recover solar and thermal energy and reduce air conditioning demand. It also operates rainwater harvesting systems for irrigation, with captured water reused to keep the landscaped areas and plants watered.



Dingli's range of electric, hybrid and diesel booms up to 44 metres

Boom lifts in production

The company has also moved towards paperless offices using interactive screens, while a green roof garden provides additional planted space and seating for staff. Just as striking was the level of automation, with an automated assembly line and a circular production chain intended to reduce transportation and energy consumption while employees on the ground focus on overseeing and monitoring the work.

Dingli also claims to be the first manufacturer in the industry to electrify its entire range of aerial work platforms and has also added a number of completely oil free slab scissor lifts, replacing traditional hydraulic cylinders with electric actuators. It has also introduced battery recycling technology, integrating battery control elements designed to achieve whole vehicle kinetic energy recovery.

ALL QUIET IN THE OFFICES

With all of this impressive innovation in mind, and the facilities available to staff - including a gym and yoga studio - the site still felt surprisingly quiet. There was plenty going on in the manufacturing halls, but the office buildings themselves were subdued, and at times it felt as though there was more office space than was currently being used. It left me thinking that perhaps the company is expanding its footprint faster than its day-to-day needs require, or the scale of the facility is intended as much to signal its position in the market as it is to serve a purely practical function?

Dingli reception


Oil free electric scissors

THE HISTORY AND GROWTH

When looking at the history of the company, Dingli was founded in 1997 as Hangzhou Dingli Machinery, initially manufacturing forklifts before moving into aerial work platforms in 2003 and shifting its focus entirely to aerial work platforms three years later. In 2007, the first of Dingli's industrial facilities was built in Dequing, covering 45 acres and providing an annual production of 2,500 units. In 2011, the company expanded the site by a further 10 acres, increasing production to 5,000 units per year.

In 2015, Dingli built the third phase of its Dequing facility, increasing the overall site to 180 acres and, the company says, creating Asia's first fully automated production line for aerial work platforms, with capacity rising to 11,000 units per annum.

In 2020, Dingli began the fourth phase of expansion at its Dequing facility, increasing the site to 362 acres. Three years later, it began phase five of its expansion plans, adding a further 60 acres. Today, the company claims a manufacturing capacity of 70,000 units a year, with 3,000 employees on site, while phase six is currently under construction. Dingli says it now takes just six minutes to assemble a small scissor lift and 30 minutes for a large scissor lift or boom lift, with the facility producing roughly 400 units a day with lead times of around 20 to 30 days.


Offices in the Deqing facility

ONE PLANT FOR THE WORLD

Dingli is an exception among Chinese aerial lift manufacturers in that apart from the USA, where it already owns MEC, it has decided not to set up overseas production or assembly plants in order to overcome high import tariffs, preferring instead to invest in its domestic facility and make it efficient enough that it is able to absorb the tariffs.

Young Liu, European business development manager confirmed that its European tariff rate is around 20 percent, considerably lower than most other Chinese manufacturers which average around 55 percent. "Dingli products are high end, we have a good reputation in Europe and Asia, and we do not dump our units or sell them at a


Employees working on the production line


BT44RT

Young Liu

Xu Shugen of Dingli (L) with Gerard Jennings of Hire Safe Solutions

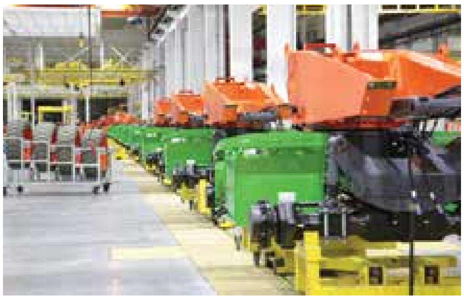
low price, which is why we have a reasonable tariff rate," says Liu.

INVESTING IN ACQUISITIONS

It has, however, invested overseas in order to improve its technology, and as it turned out, made a decent profit from the move. At the start of 2016 it purchased a 20 percent stake in Italian telehandler manufacturer Magni, establishing an Italian research and development centre, along with a local distributor, a majority of Dingli lifts sold in Germany are still branded as Magni. In 2023 it then sold its holding back to Magni for €61.4 million, providing it with a handsome €47 million profit on the deal.

In 2017, Dingli acquired a 25 percent stake in Californian aerial work platform manufacturer MEC for $20 million, the move came shortly after Dingli issued 14.4 million new shares, raising 880 million yuan ($133 million) through a private placement, which diluted founder and chief executive Xu Shugen's holding from 51.7 to 47.5 percent. And then, in 2023, Dingli upped its holding in MEC to 49.8 percent and more recently gained full ownership, providing it with a strong 'domestic' position in the North American market.

In 2020, it took a 24 percent stake in German spider lift manufacturer Teupen, establishing a research and development centre in Germany leading to the launch of three telescopic boom lifts in partnership Teupen, the 112ft BT36RT, the 129ft BT41RT and 139ft BT44RT. The holding in Teupen was sold back to majority owner Martin Borutta in 2024, just before the company was acquired by US truck mounted lift and crane manufacturer Altec.



BECOMING AN INNOVATOR

Over the past few years Dingli has become a significant innovator in the sector, along with others. It led the change in which Chinese manufacturers began to trailblaze aerial lift development, having previously been accused of simply copying. Today the largest boom and scissor lifts on the market are made in China.

Dingli leads the big scissor lift market with a range topped by the 115ft JCPT3730, with a working height of 37 metres which was introduced at the end of 2024. The model is available with diesel, full electric, or hybrid power which it says was developed in partnership with UK rental company Hire Safe Solutions which took the first few units off the production line.

Liu added that the big scissor lift can be manufactured from scratch in as little as a week should a last-minute order come in. "It doesn't matter if we have an order for one 37 metre scissor, or 100, it takes the same length of time to manufacture them due to the production route through the factory, each section handles a different part of the scissor lift."


Production line

CHANGING POWER SOURCES


The hybrid BT44HRT

When talking about power options for all its larger models, Liu says: "The demand for electric and hybrid is increasing, and thankfully we have the largest electric range of aerial work platforms on offer. However, we are not looking to move away from or discontinue diesel, we still have huge demand in the Middle East and the USA. The market in the Middle East is growing incredibly fast."

In China, demand for hybrid and electric machinery is rising as emissions rules tighten, particularly in cities. Diesel powered cranes and aerial work platforms used on construction sites are generally regulated under emissions standards for non-road mobile machinery, alongside local environmental controls. In practice, this means newer machines are expected to meet the latest non-road diesel emission requirements, while older units may face restrictions, especially in major cities and low emission zones. Authorities may also carry out on-site smoke or opacity testing, meaning machines that produce excessive visible exhaust can be restricted or removed from service even if they remain operational. Liu added: "Around 90 percent of construction sites now use electric or hybrid machinery, but hybrid is more expensive, so I'd say electric is the most popular option and it's easy to find a charging facility on site." ■

Top Tips for visiting shows or manufacturers in China

- Use Trip.com for trains - It was the easiest and most efficient way to book tickets.
- Your passport is your train ticket - There is no physical ticket, so keep it handy.
- Buy metro tickets at the station - They are easy to purchase at a machine upon arrival.
- Plan your metro route in advance - Check Google Maps or Apple Maps before travelling so you know which metro line you need.
- Do not rely on cash - Almost nowhere accepts it, so set up Alipay before you go.
- Use Alipay for almost everything - From meals and drinks to shopping, payments are usually made by scanning a QR code.
- Use DiDi for taxis - It is available through Alipay and is China's equivalent of Uber.
- Watch out for airport taxi scams - A typical fare is around ¥180 to ¥250, although trips after 11pm carry a 30 percent surcharge. Be wary of 'official' drivers quoting ¥700 to ¥800 or attempting to hand you off to their mate waiting in a lay-by part way through the journey.
- Hardly anyone speaks English - Make sure to learn some basic phrases!