

XCMG's big factories investment



XCMG's huge investment in its production factories in Xuzhou since 2010 has left the Chinese construction, quarrying and mining equipment manufacturer well placed to meet domestic and export demand for its wide model line-up. **Mark Andrews** reports.

Xuzhou, located in the north of Jiangsu Province, can lay claim to being China's heavy construction equipment manufacturing capital. Not only are there factories for Lonking and Caterpillar, amongst others, the city is also home to XCMG. The ambitious company has more than 20 factories scattered around the city and is the largest employer.

One of the world's ten largest construction equipment manufacturers, state-owned XCMG is number one in China, but has fierce ambition to improve. At its Chinese R&D facility it employs around 6,000 mainly Chinese engineers. In addition XCMG operates facilities in Germany, the US, Brazil and India which employ almost exclusively local engineers. "We employ more global engineers than any of our competitors" says Dr. Hanson Liu, assistant president of XCMG and general manager of XCMG Imp & Exp. Co. R&D facilities located abroad undertake both new product development and modifying existing products to meet the needs of local conditions and usage. "We are a global company, we have local manufacturing so we have to know the local demand and needs of the customer" explains Liu.

All XCMG factories were updated and rebuilt around 2010. The result is some

of the best use of production technology in the business. The firm uses overhead supply chains like those used in the car manufacturing industry. XCMG claims it is the only construction equipment manufacturer to do so.

The newest XCMG factory opened in 2015 was for the truck manufacturing subsidiary, which is the second largest business area of the company. XCMG says it is the only manufacturer that can produce its own lorries for applications such as telescopic boom lorry cranes and road maintenance trucks. The truck manufacturing subsidiary is also producing XCMG's Hanvan range of heavy trucks, first shown at bauma China 2014 in Shanghai.

XCMG's truck factory produces high end products focused on safety, comfort and economy. Sound proofing means that the trucks' cab noise levels are four to five decibels lower than the industry average. Utilisation of a dynamic system leads to reduced drag coefficient which translates to lower fuel usage and operation costs for purchasers.

Spread across seven buildings, the 2015 opened truck manufacturing site has a capacity of 60,000 heavy trucks and 40,000 construction machinery cabs/year. There is a large degree of automation with equipment such as Jier welding moulds to produce the

ABOVE: XCMG has been investing heavily in its Xuzhou factories since 2010

parts of the cab. Engines ranging in power from 119kW-395kW from both Weichai and Cummins are fitted in the third building to the completed cab. Under new Chinese regulations all engines from April 2016 need to be Tier 3 and where needed Tier 4 (Cummins units) are fitted to meet the requirements of export markets.

Parked outside the heavy trucks factory is a row of the NXG range of dump trucks which first appeared in 2014 with sales to Southeast Asia. They are much cheaper to buy and operate than articulated trucks and can be used for most of the same applications. "It's a revolution for the quarry aggregates transportation. We reinforced the chassis to produce a truck which is like heavy equipment" says Liu. The largest model the NXG5900DT can be loaded to 60 tonnes. At about a third of the cost of articulated dump trucks they have already been bought by MMG and both BHP and Rio Tinto are considering them.

XCMG originally entered the excavator business when it was Caterpillar's joint venture partner in China. When this JV was dissolved, XCMG entered the market on its own. Today they have the most complete range in China, with everything from 1.5 to

XCMG FACTORIES

RIGHT: An XCMG XE3000 crawler excavator outside the Xuzhou excavator factory **BELOW RIGHT:** Robotic welding work at the XCMG excavator factory

400tonne models, with a 700tonne machine under development. In addition to the 160 acre factory in Xuzhou, XCMG has production plants in Brazil and Uzbekistan.

The Xuzhou excavator production facility operated by XCMG utilises a lean production system and there are AGVs (automatic guided vehicle) scurrying around the floor delivering parts to where needed. Ninety percent of the welding work is done by eight robots in one line and in total 41 are employed in the factory. XCMG has invented a line which can be controlled by just one person. On the production line, the left hand side is used for the body, while the right hand side work on the undercarriage before a huge overhead crane marries the two halves. Equipment from well known machinery companies is used throughout. There are 16 machining centres from Pama each controlled by two people – which each cost US\$3million. BASF painting systems are used.

Outside the excavator production site there is an XE3000 crawler excavator which weighs in at 285 tonnes. There is an even bigger 400 tonne class XE4000 currently undergoing testing. The bucket capacity of the latter is 22m³.

XCMG has implemented a number of measures to make production more



environmentally friendly. LNG is now used for welding and the factory roofs have solar panels to generate electricity. Utilisation of modular design has improved overall efficiency. Where possible, riveting and bolting technology has been employed to avoid welding. Overall efficiency of the machinery produced has been achieved by reducing their weight. This has been done by

incorporation of aluminium and composites into the designs which results in both better fuel consumption and also makes them easier to transport.

"XCMG invests heavily in R&D no matter whether the market is good or not because this can increase our competitiveness" says Liu. The company already has a large range and can produce both 30,000 excavators and loaders a year along with 24,000 mobile cranes, in which they have market leadership. Continually they are adding new products to their line up with current additions for ports and access platforms. XCMG sees its main competitors as Caterpillar, Komatsu, Volvo and, in some sectors, Sandvik. The company says it is expanding its offerings to provide strong competition. Already, XCMG says it is aiming a large number of American and European customers for the all-terrain and rough terrain crane range. **AB**