A Visit to Valtra

Almost 150 journalists from all over Europe, as well as from China, accepted Valtra's invitation to visit their factory in Suolahti, Finland in mid January.

It is widely accepted that if you use a tractor in forestry, then the best choice is probably a Valtra. It is one of the few makes built with forestry in mind, with good protection underneath, and good ground clearance with no parts hanging down that might get caught on stumps.

The fact that they are made like this is no coincidence. Farmers in Finland have a very short growing period – just 160 days or less – and the rest of the year will almost certainly involve forestry work.

Given the demise of the County, it is perhaps surprising that we don't see more Valtras working in our forests. On the continent their versatility is appreciated, and all sorts of attachments – even harvesting heads – can be fitted, making them ideal for use by estates, for instance, who want one machine that is capable of fulfilling multiple roles. In truth, Valtra have not made any attempt to push their machines into forestry in this country, which would only ever account for a small percentage of their sales, no matter how successful they were.

Valtra's history began in the days of post war reconstruction in Finland. Not enough tractors were available to replace the country's 400,000 tough and undemanding horses, and those that were available could not cope with Finnish conditions – snow, very low temperatures, stony fields, and of course forests. The ability to cope with these harsh conditions enabled the company to maintain a high presence in its home market down the decades.

The name Valtra took over from Valmet in 2001, which coincided with the company's fiftieth anniversary.

Valtra is now owned by American company Agco, based in Duluth, Georgia, the third largest manufacturer of agricultural equipment in the world. The $760.8 million acquisition of Valtra from Kone was completed in January 2005. Other makes of tractor owned by Agco include Massey Ferguson and Fendt. The Finns confessed that American ownership came as something of a shock, and initially they feared the company would lose its identity. However Agco have a policy of allowing key brands to retain their individuality, which gives their customers worldwide the widest choice. For instance, engine makes vary from brand to brand: Valtra uses Sisu Diesel, while Fendt use Deutz and Massey Ferguson continue with Perkins.

However, they do draw their acquisitions into the Agco family and impose new ways of working where appropriate. For instance, the manufacturing facility at Fendt was reorganised over Christmas to run on the same lines as the Valtra factory which, according to company president Martin Richenhagen, is the world's most efficient tractor assembly facility.

Other rationalisations being made across the group include merging all the subsidiaries' computer systems into one. There are over 20 different systems across the world at the moment.

And even now Agco are planning more takeovers. They are currently in discussions with the First Tractor Company, the market leader in China. Valtra is already the largest importer of western made tractors into China.

Mr Richenhagen made a number of amusing observations in the course of his address. At the end of an inspiring piece of video which depicted Valtra tractors working round the world, he told us: "It can't get any better than that – French champagne, Finnish tractors and German classical music." This brought applause, at least from the French, Finns and Germans. He went on to say, "In view of that, you may wonder why we need the Americans… Well, someone has to finance all this!"

It appears the lack of culture is something that makes it difficult for him to enjoy living in America. "I must say, I feel a little lost in Florida," was how he put it. However he is optimistic that a degree of refinement is at last beginning to seep into this cultural wasteland.

Martin Richenhagen told us the sad tale of cutbacks he has made since he joined the company… He has sold one of the company's jets (they kept the better one). Let's hope we never have to do that at FMJ.

He also told us he likes to have motivated staff. He mentioned one executive whose 'high maintenance wife' (Susan) ensured that he kept

(Left) Can you tell what it is yet? The drive line will be connected to the middle frame before passing along the assembly line (right). Some 50 tractors make this journey every working day.

working to a standard that would ensure she continued to enjoy the standard of living to which she had become accustomed.

When you are Chairman, President and Chief Operating Officer, it is quite OK to make amusing remarks like this.

The reason for inviting the press was to show off recent investments, totalling €7 million which have been made at Suolahti. These include a new 4000 square metre Engineering Centre and machining centres for transmission production.

The Engineering Centre includes office space for R&D personnel, laboratory facilities for testing in extreme cold conditions, as well as facilities for testing hydraulics, measuring power and acoustics, chassis testing and design work. The centre's cold lab can take temperatures down to minus 25 Celsius. Valtra tractors will have to operate in such conditions in Finland in most winters.

The centre also houses a powerful chassis test bed that can be used to test the durability of tractor chassis structures. The new acoustics lab nearby is a completely quiet and echo-free room used to measure cab and drive-by noise levels. Additionally the facility houses a new design lab.

Altogether around 100 people work in R&D operations at Valtra. In addition, approximately 100 people work full-time on Valtra's R&D projects among suppliers, at universities and research institutes, and engineering partners.

The press were also shown round the factory. This produced 10,386 tractors last year, and is staffed by something over 300 employees. The site at Suolahti also houses a transmission factory of similar size. In it all parts are manufactured with the exception of gears.

The main factory performs final assembly only. Unlike most tractor factories, which churn out hundreds of tractors hand over fist, at Valtra they are only ever made to order. It will take seven or eight weeks to receive your machine, assuming the order backlog is six weeks at the time of order. First however you will have to specify exactly what you want from Valtra's 'à la carte' selection system which the company says offers up to half a million different combinations.

The factory is full of good ideas: last year each employee contributed on average 1.5 ideas, and these were rewarded financially.

One good idea which we observed on the way round was the use of internet cameras. These enable suppliers to monitor stock levels remotely, and to replenish them as necessary.

Another unusual idea which came to our attention in the course of the factory tour, though perhaps not thought up by the factory staff, is the fact that recent Valtra models are fitted with plastic hoods.

Once the tractors reach the end of the production line they are driven round to the testing facility, where they spend a full hour having all their functions checked over – several hundred in all.

As mentioned, Valtra tractors are powered by Sisu Diesel engines, and a visit to the engine factory was included in the itinerary. Sisu Diesel makes exclusively off-road engines, and these are used in a wide variety of applications, including forestry machines – most famously Valmet and Logset.

Like Valtra, Sisu Diesel is part of the Agco group. They became the company's fifth owner in ten years.

End of the line: a completed tractor is driven away for testing.

As may be expected, engines of all shapes and sizes were to be seen throughout the factory. A large proportion of the manufacturing is carried out by robots – busy machines that pounce on parts as they pass and perform all manner of operations on them.

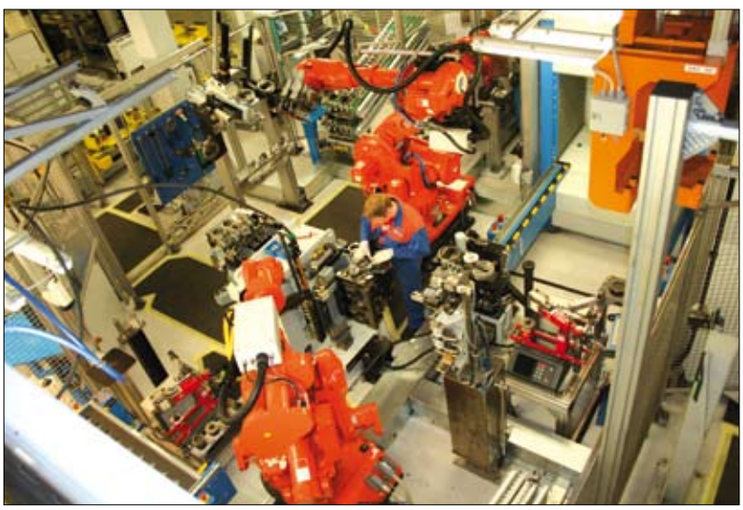
It is almost reassuring to know that these occasionally require human intervention, for a little fine tuning. There was even one occasion, when a robot actually dropped a part. Such displays of fallibility are the exception, however, and production proceeds at pace. It is thought that last year's production will equal the company's highest ever at around 27,000 units.

There are many considerations to exercise the mind of a manufacturer of internal combustion engines at the moment, compliance with Tier 3 emission regulations being a major preoccupation. The new Citius family of 3, 4 and 6 cylinder common rail engines, ranging from 60 to 400 hp, has been devised to meet this standard.

The company has also devised special wet cylinder liners with mid support, which have many advantages including the fact that only one standard piston is needed, and this is replaceable without machining.

One challenge on the horizon is that of bio-diesel. The use of 100% biodiesel, meeting particular specifications is approved by Sisu Diesel in their tier 0, tier 1 and tier 2 compliant engines. No modifications are needed to the engines, but engine oil, oil filter and fuel filter change intervals are halved.

Although environmentally friendly, bio-diesel is challenging to work with: it solidifies at -12 to -14 degrees, and is aggressive, eating its way through paint as well as some rubber and plastic. It is also not suited to common rail engines, in which it can be used at concentrations of 20% or less, dissolved in mineral diesel. This will no doubt change as technology advances… as was the case with all the other challenges down the years.



The Sisu Diesel engine factory: humans may still be found in this robot inhabited area: in fact (on the right) one has had to intervene to do some 'fine tuning'. The door of the cage is open, cutting the power, and the orange robots, normally like large manic birds, stand immobile until the human vacates the area.