

Valtra Team

Valtra Customer Magazine • 2/2007

New compact N Series models

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Valtra was awarded at
Agritechnica for its innovations



Valtra LHLINK
– turning front linkage

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AutoComfort
– semi-active cab suspension

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TwinTrac
improves
productivity and
lowers costs

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less emissions**
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**Children learn safety
from their role models**
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So far this has been an exciting year at Valtra. We introduced new and updated models in January and since then sales have moved forward significantly.

Importantly, our product planners have been listening to feedback from customers and, in typical Valtra fashion, they've implemented many customer requests. An example of this is the new EcoPower models. Previously the tractor management system was fixed to produce maximum torque at just 1 800 rpm. This was OK for field work – fuel consumption is reduced as was noise, wear and tear and overall running costs. However, if the tractor was required for haulage it sometimes did not live up to expectations, with performance on the road perceived to be down on a standard tractor. This was due mainly to the tractor's low engine rpm and noise level. Well, that's all changed.

At the flick of a switch the operator can now swap between standard and EcoPower modes – and that's true of both the N Series 111e HiTech (124 hp) and the T Series 151e HiTech (159 hp). Valtra EcoPower tractors now offer the best of both worlds; fuel consumption reduced by around 10 % in eco mode plus, full on road performance in standard mode.

I've said it before and it's worth repeating; I now know how pop stars feel when they get a number one hit. All N Series

models continue to sell well and customers report excellent service from machines based on N Classic, HiTech and Advance models. The same applies to T Series. Of course we expected fuel savings from the T151 EcoPower model but other machines with Tier III engines are also returning worthwhile fuel savings, along with excellent performance characteristics, which has been bringing smiles to customers' faces in this very difficult year.

It is also interestingly that comments from customers show that increasing numbers of you are taking advantage of Valtra's build to order system. Developing your own specification from the base models to give you just what you need – no wasted cash on unnecessary features.

The year end is in sight and it won't be long after that before spring work starts up again. With this in mind if you're thinking about changing your tractor early next year NOW is the time to organise a demonstration AND place the order for delivery exactly when you want it. Production capacity at the Valtra factory may have recently been enlarged but, with recent increases in sales, the factory is already working flat out. Don't be disappointed, get your order in now.

Mark Broom

Valtra Team

Valtra Customer Magazine

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"I always knew I wanted to work with farm machinery." Even at the age of 8 Philip Trim would accompany family members to various farms in South Dorset to help. Today, 30 years or so on he runs 15 tractors and associated kit and a fleet of five trucks with four tank trailers, a pair of flatbed trailers and a pair of bulk trailers.

Hands on approach appreciated by customers



At just 19 Philip started out with just one used tractor – 20 years on he runs a fleet of 13 Valtras, a couple of other tractors plus associated equipment, a fleet of trucks and a hay and straw trading businesses.

Philip has a good relationship with his drivers all of which are allocated a tractor, most are personalised with their name.



Sludge injection with both tankers and umbilical systems is an important part of the business.



Ploughing is one of many jobs to fill the winter months.



Most of Philip Trim Contractors operations revolve around silage production on dairy farms.



Philip can handle both pit and wrapped silage.



Philip Trim Contractors also run a fleet of trucks with a choice of tank, bulk and flatbed trailers.



The equipment fleet includes several 12 and 14 tonnes trailers with air brakes for safety on Dorset's rolling hills. Tractors are also equipped with exhaust brakes which have cut maintenance noticeably.

Philip set out in the agricultural contracting business back in 1987 when he sold his car to purchase a well used David Brown 1212. "That first year I worked for a silage syndicate with a push-off buckrake I found in a hedge and purchased for £20." Philip recalls. With the proceeds of the silage work Philip then bought a well used baler and flat eight grab and spent the summer buying, baling and selling straw. Winter came and Philip moved on to the building sites driving a tractor and dump trailer combination.

The second year saw the departure of the David Brown and the purchase of a couple of JD 3130s. "I employed my father and friends on the second tractor and increased my silage work." Year three saw the tractor fleet change again and the introduction of a Case 1255. "At £13,500 that was a really expensive machine. I remember my mother purchased a house for £18,000 that year – makes you think doesn't it." The Case machine was also joined by a pair of Fords. By now Philip had reached the grand age of 21 and had passed his HGV test so that winter he drove animal feed delivery vehicles for a local mill. "That was a really useful job," he recalls. "I met a lot of farmers and made some very useful contacts." Philip also found an old Bomford hedge trimmer and that winter finished up working a seven day week – five days truck driving and the weekends trimming farm hedges. Working hard Philip Trim Contractors were earning a reputation for jobs well done.

In 1992, Philip will admit, he had a bit of good luck. Having invested in a system to inject sewage waste from septic tanks into farmland for water companies he was contacted to do an emergency job for a private contractor. This went well and a year later he was offered a contract injecting brewery waste, a 52 week a year job, in North Hampshire. Philip would also have to find the ground in an unfamiliar area. One thing was certain, operating around 70 miles from base the tackle would have to be reliable.

It was in 1995 that local machinery dealer C J Cox became a Valmet dealer "I purchased an 8200 with TwinTrac to power a reverse drive forage harvester – I had five other tractors at the time but the Valmet was by far the most reliable." Chris Cox also changed the tractor working on the brewery waste injection project for a Valmet and reliability problems ceased over night. "Within 12 months I had changed 3 of my seven tractors for Valmet – one, used to inject creamery waste clocked up 12,000 hours in three years without missing a beat."

As tractors in the Philip's fleet came up for replacement so they were changed to Valmet and in 1996 six of his eight tractors were from the Valmet stable. Assisted by the reliability of the tackle he used, Philip's reputation as a reliable contractor grew as did his work load and today the business operates fifteen tractors, thirteen of which are Valtras. "Two are high powered machines outside the Valtra range but they're still powered by Sisu engines. When Valtra come in with similar powered machines I expect I will move to an all Valtra fleet."

So what are the main operations Philip Trim Contractors carry out in 2007?

Most of the contracting operations revolve around dairy farming requirements. "We've lost a number of clients as a result of the exodus from dairy farming, but those that remain have



Most equipment is kept within warranty.

grown in size and so has our work load." And as dairy farming has evolved so have the operations Philip's tractors undertake. "We prepare land and plant maize as well as harvest it."

So along side the T150s, T160s and T170s what else is there on the Philip Trim Contractors plant list? A triple mower, grass tedders and rakes, a self propelled forager with whole crop, maize and grass headers supported by a fleet of 12 and 14 tonne trailers with air brakes. There are seven large square balers supported by a couple of wrappers and a round baler and wrapper. There is also a small conventional baler which Philip keeps busy supplying haylage and straw for horse establishments and, "for those farmers that like a few handy bales about the place." On the muck and slurry side Philip has 3 umbilical injection sets, one tank with shallow tine injectors and five tankers with home built deep leg injectors. Then there is a fairly standard set of cultivation equipment including power harrows and a cereal and maize drill. Most of the equipment is sign writ-

ten with Philip's name and telephone number giving the whole operation an air of efficiency. And as one driver said with a wry grin, "With the boss' phone number on the bonnet we can't misbehave!" What are the production figures from this modern fleet of equipment? This year will see 6,500 acres of grass silage, 650 acres of whole crop and 2,400 acres of maize silage.

As summer progresses and forage harvesting slows down with second and third cuts so Philip moves into buying straw and baling it for sale straight away, or for storing and sale over the winter months. He also has a parcel of land on which he grows maize for sale as cut silage and cereals for sale as wholecrop or as baled straw after combining. All in all 75,000 bales are produced from almost 9,000 acres of straw. As for winter work, any spare time is spent overhauling equipment ready for the coming season. "We have our own workshop and a part time truck mechanic. Tractor drivers are expected to maintain their own machines – each tractor has a regular driver and many have their name on the cab door – and as most of the equipment is kept within warranty we don't have much of a problem – If we do it's the dealer's or manufacturer's and they use our workshop, so time and cash is saved not moving machinery into dealers workshops."

Philip's drivers will tell you they enjoy their work – Philip has few problems recruiting or retaining staff – and their attitude has undoubtedly helped build the business's reputation. They also enjoy driving the Valtra tractors, finding them comfortable over long periods, particularly this spring and summer when work has often continued late into the evening in an attempt to catch up after long periods of unseasonal rain. To celebrate 20 years in business earlier this year Philip held a party at his premises inviting staff – the team is well over 20 strong, customers, suppliers and their families. "We all depend on each other and it seemed the right thing to do." Philip explained simply. "It has also been useful to show the size and depth of our organisation – one of my drivers may turn up with just one machine but customers should know we have much more than just one machine of each type."

Does he intend to grow the operation any further?

The answer is probably not. "Any bigger and I will not be able to keep control of the business on my own and I don't want that to happen – I like to be hands on and I think my customers appreciate that aspect."

■ Roger Thomas

Valtra is positively and proactively ecofriendly

Carbon footprints, global warming, soil compaction, the entrophication of water bodies, genetically modified plants, the conditions for receiving EU environmental subsidies, emissions regulations and clearcutting forests are just some of the many environmental topics that are especially relevant today, also for the agricultural sector. No one working in this industry can bury their head in the sand and avoid these hot issues.

Farmers are faced with increasingly stringent official requirements for protecting the environment, and they are seeking help to fulfil the conditions for receiving EU environmental subsidies, for example. Instead of further increasing the pressures on farmers, Valtra helps them protect their own environments.

In general, efficient and economical operations are also environmentally friendly. For example, work that wastes fuel, fertiliser and time is not only economically inefficient but also damaging to the environment. The same applies to the production and sales of tractors: fast, simple and efficient processes are economically the best and the best in terms of the environment. Sometimes protecting the environment also demands financial sacrifices, but usually the opposite is true.

Valtra tractors feature many technical solutions that protect the environment, such as EcoPower engines, EcoSpeed transmis-

sions, lightweight structures, containers for collecting hydraulic fluid that may leak from couplings, the possibility of using biodiesel and low engine idle speeds. In addition, many features that improve productivity also save the environment. Auto-Guide limits overlap and underlap, which in turn reduces the amount of driving overall. Similarly, the TwinTrac reverse drive system allows the tractor to be used in more ways, literally, which reduces the need to manufacture or purchase redundant machinery.

In addition, the work performed using Valtra tractors can itself protect the environment, such as mowing roadsides, harvesting wood for energy, cultivating sugarcane for fuel or the production of biodiesel. The latest technical innovations that help protect the environment include lowering the noise levels on N and T Series tractors to a record quiet level and increasing the biodiesel mix in the fuel.

Farmers have always been interested in the environment, as they rely on nature to earn their daily bread. Officials, co-operation partners and society in general expect us to be ecofriendly, but in fact we are protecting the environment for the sake of the environment itself.

Environmental regulations have not been a burden for Valtra; instead, we are happy to comply with them. Not only do we respond to these demands, we try to anticipate them by proactively seeking ways to protect the

environment and our natural habitats. One example of the recognition of our ecofriendliness is the ISO 14001 environmental certification that was granted to Valtra Inc. already in 2000.

Recent environmental investments at the Suolahti plant include adopting completely green heat energy produced from burning waste wood, introducing an air pollution unit that burns solvent steam created within the tractor chassis painting unit, and making the colourful paints used for engine covers and cabs water



Burning wastewood is green energy, as growing trees trap as much carbondioxide when they are growing as is released when they are burnt.

T Series

The new standard and optional equipment available on the T Series, such as a reinforced front three-point linkage, U-Pilot headland management system and ISOBUS compatibility, make it even easier for farmers and contractors to carry out tasks using large and complex implements.



soluable. At the same time, protecting the environment requires ongoing efforts and small steps such as doing away with disposable tableware, reducing the number of printouts, and sorting waste into 26 different groups. Together these small efforts can produce major results, such as reducing the amount of waste in two years from 64 to 33 tonnes a year.

■ Tommi Pitenius



Lots of new equipment

The selection of standard and optional equipment available on the T Series has been expanded with new features that further enhance comfort, safety and efficiency.

New cab options to facilitate the driver's work include automatic air-conditioning and electrically adjustable heated side mirrors. Cab suspension is now available on both Advance and HiTech models. Two powerful Xenon working lights are available on the rear corners of the cab to help extend the workday into the night.

An additional filter for the cab air has been made available for extremely dusty conditions. An active charcoal filter can also be specified. The U-Pilot headland management system now comes as standard on Advance models, which also include ISOBUS compatible.

The T171 and T191 models are available with reinforced front three-point linkages, the durability of which has been enhanced

with grease fittings and specially selected materials.

The new T Series continues to offer a range of hydraulics and transmission options according to three model classifications: Classic, HiTech and Advance. Classic models offer mechanical transmission and hydraulics control, and the basic idea is to maintain them as straightforward high horsepower tractors. HiTech models offer electronic transmission control and mechanical hydraulics control. Advance models feature load-sensing hydraulics, and the transmission can be controlled with a single lever.

■ Tommi Pitenius



Automatic air-conditioning, electrically controlled side mirrors and additional cab air filters significantly improve working conditions for drivers.

An N121 Advance with TwinTrac provides the correct combination of power and sophistication to handle the automatic hoe.

TwinTrac improves productivity and lowers costs

Set up in 1991 as lettuce producers, **Intercrop Ltd.**, based at Betteshanger near Dover, Kent now specialises in salad leaves for the retail bagged salad trade. To meet the year-round demands of supermarkets the company operates from two sites in Southern England (Kent and Surrey) and also from farms in Murcia, Spain. UK Production is from the end of April until the end of October and from October to May in Spain. Output is around 10 million kg split roughly 50/50 between the two countries and total turnover in the region of £10 million.

Intercrop specialises in the often more difficult to grow gourmet leaves; those commanding a higher value niche market, rather than commodity crops. To meet contract demands almost 700 ha of land is required, half of which is in the UK; 80 % near the Kent coast and 20 % near Guildford, the remainder in Spain. As a company Intercrop owns very little land preferring share farming in partnership with land owners or commercial rental. Crops including continental lettuces and endive are planted, while spinach, brassicas, herbs, gourmet leaves and micro leaves are drilled, usually at a very dense rate. Only drilled crops of spinach, baby leaf lettuce and herbs are grown at Guildford .

Standard width beds are used with one and two or perhaps three plantings per season on the same land. Molluscicides are applied just once while herbicides are applied pre-planting or emergence and then as required. Fertiliser is placed at planting and later as required. Irrigation is vital, particularly on the sandy soils and water salinity is regularly tested as much of the land along the Kent coast is at sea level.

Intercrop own most of their machinery and the regime quite straight forward; simple tractors haul plant trailers, harvested crop and move irrigation equipment, sophisticated tractors are used for more complex operations. Intercrop's UK operation employs some 35 full time staff most of which are British but includes some foreign workers who have settled in Kent. During the busy season this number is increased by 50 to 60 overseas

students under the SAWS scheme. However, before any are allowed to start work full training is given, with a particular focus on those handling machinery. Field cultivations are carried out along traditional lines up to the forming of standard beds, planting and harvesting. One slightly unusual operation is the use of a Valtra N121 Advance with TwinTrac reverse drive. Fitted with a Garford Robocrop hoe with automatic guidance this combination operates across three beds. Lettuce responds well to soil aeration; the breaking of the cap on both clay and sand soils formed after rain or irrigation. The operation also helps with weed control and is an opportunity to apply liquid fertiliser accurately within the root zone. Previously this operation was carried out by a pair of tool carriers each working across a single bed width. However, these machines became old and potentially unreliable and were initially



The automatic hoe makes considerable demands on a tractor's hydraulic and electrical services.

Familiar and safe A Series updated

Cleaner engines for the A Series

One of the most popular tractors in the Valtra model line-up, the A Series is now being offered with even cleaner and more environmentally friendly engines. The main features of the A Series remain the same, but the engine technology has been upgraded to comply with Tier 3 emissions standards.

– The new engines feature an air-to-air intercooler and a new air filter that is similar to that on N and T Series tractors, in other words considerably more efficient and user friendly than the previous model. The A Series may look the same as before, but quite a lot of changes have been made to the engine, says **Ari Leppiniemi**, Project Manager in charge of the new A Series.

The intercooler is located above the radiator, allowing both cooling systems to receive the maximum amount of clean air while reducing flow resistance. An interesting new option on the A Series is the driver's armrest equipped with a joystick for operating the front loader, as on N and T Series tractors.

The fuel injection on A Series engines remains mechanical and the output is the same. The numbering system for the models is new, however.

– The A72 is a three-cylinder model, the A82 has a smaller four-cylinder engine, and the A92 has a larger four-cylinder engine. The A Series name remains the same. The first number after the A relates roughly to DIN horsepower, while the second number refers to the second generation, explains Leppiniemi.

The A Series has been among the top selling tractor models in both Finland and Sweden for years. The A Series is also very popular in other countries, especially as general tractors on livestock farms and in forests, and as second tractors on bigger farmers.

One of the guidelines is renewing the A Series was to control costs. The goal was to keep the A Series a cost-effective, simple and reliable basic tractor. In this way Valtra's A Series can continue to serve farmers in this period of increasingly strict exhaust emission regulations.

■ **Tommi Pitenius**



Model	hp
A72	74
A82	88
A92	101

More power, less emissions

Four valves and Common Rail technology provide added kick



Sisu Diesel's four-valve Common Rail engines are now more environmentally friendly than ever. Ongoing technological advances mean that the traditional diesel engine continues to improve with each year.

The new four-valve common rail engines available on the Valtra T Series have been widely praised around the world in all kinds of applications. The engines offer more power, torque is available across a wider range of rpm, and exhaust emissions have been reduced.

– The engines comply with EU and US Tier 3/Stage III A emissions regulations. This has been possible by utilising common rail technology, four valves and SisuTronic engine management, says Sisu Diesel Marketing Manager Juha Tervala.

In a four-valve engine, the injector nozzle is situated vertically in the middle of the cylinder with the combustion chamber directly below. This improves the mixing of fuel with air resulting in a 2–3 percent lower fuel consumption than two-valve engines.

With twin induction and exhaust channels, the flow of gases is approximately 25 percent more efficient. This allows the turbocharger to be utilised better while offering cleaner burning. Engine output can be increased as there can be more induction air and the back pressure at the exhaust manifold is reduced.

Having the combustion chamber situated centrally above the piston allows heat to be distributed more evenly than in two-valve engines. In addition, the edges of the cylinder head's channels offer more support in four-valve engines, as a result of which deformations of the head are smaller. The edges also even out temperature variations in the head. In this way a four-valve head also allows power to be increased in relation to the heat load.

Common Rail technology allows the fuel injection to take place in several pulses. Injecting the fuel under high pressure and precisely at the right time allows the engine to react fast to changes in load, increases torque at low revs, softens the engine noise, and evens



out the combustion, which in turn reduces emissions.

Electronics make the engine

The fuel injection technology on the SisuDiesel engines offered on the T Series is supplied by Bosch. However, the SisuTronic engine management that controls the fuel injection has been designed by Sisu Diesel itself. SisuTronic allows many different special functions that can increase working efficiency without the risk of overloading. Electronic engine management also enables many other unique Valtra properties, such as SigmaPower for the PTO, fuel efficient EcoPower engines, the EcoSpeed transmissions, 650 rpm engine idle speed and transport boost.

Reducing exhaust emissions has not made engines worse – quite the opposite, in fact. The new engines are not only more environmentally friendly, they are also more powerful and durable.

■ Tommi Pitenius

In four-valve engines the flow of gases is improved. The combustion chamber is situated centrally below the piston, and the fuel is injected vertically from the top of the piston.



In addition to Pekka and Matti, Barend Huybrechts from Holland was on the podium.

Countdown claims surprise victory at European Championships

The battle for the European Championships in the tractor pulling Pro Stock class that was fought in Herning, Denmark proved to be the most exciting in years. The sled proved such a challenge that after two complete rounds only four tractors out of twenty qualified for the pull off. The all-or-nothing nature of the competition meant there were a lot of blowups as drivers tried to squeeze every last drop of power and a little bit more from their engines.

– This time Countdown performed best, which was admittedly quite a surprise, commented **Matti Herlevi**, the winning driver.

Countdown is the Valtra Shell Pulling Team's fourth tractor that **Pekka Herlevi** has built with the intention of selling. Winning the European Championship must be the best possible advertisement.

Of the team's regular three tractors, Sigma Power driven by Pekka was the strongest, placing second overall. Caesar driven by Matti came in seventh and Johanna's Doris came in eleventh. **Johanna** drove excellently, and her first pull was technically the finest of the entire competition, but the final meters were beyond her reach due to a valve problem.

Rocky from the Netherlands and John Deere from Denmark also qualified for the pull off. Much to the disappointment of the home crowd, John Deere came in fourth, while Rocky managed third. Among the Valtra Shell Pulling

Team's traditional competitors, Rough Justice from the UK also made a mark, having regained its form after a few quiet years. Rough Justice is now driven by **Martin Nicholson's** son **Ted**.

The weather favoured the main event on Sunday in central Jutland. The categories that ran on Saturday had to cope with very strong winds and drizzle, but the Sunday competitions were held under warm and sunny autumn skies. The track was dry and hard, and one explanation for Countdown's success was no doubt the different tyres it ran compared to the team's other tractors. The wide-spaced and high pattern on Countdown's tyres seemed to grip the track better than the more tightly spaced and low tyre patterns used by the other tractors. A total of approximately 20,000 spectators were on hand over the weekend to enjoy the tractor pulling. Over 80 tractors and cars participated in this year's European Championships in eight different categories.

■ Tommi Pitenius



*It was surprisingly Countdown driven by **Matti Herlevi**, that performed best of the team's tractors in European Championships.*



N Series
now available
in the 80–100
horsepower
class



The N Series is now available in the 80–100 horsepower class. The N82 and N92 feature the most spacious cab in their class, as well as 73-litres-per-minute hydraulics and lifting capacity of 4 tonnes at the lifting arms.

New compact N Series models

Valtra is expanding the N Series by offering new models in the under-100-horsepower class: the N82 and N92, the latter of which replaces the old N91.

The powerful N82 and N92 models are all HiTech versions featuring as standard a hydraulic forward-reverse shuttle and a three-step programmable Powershift transmission. Customers who prefer more basic Classic models are offered A Series tractors with the same output.

The spacious cab on the new N Series models is the same as on the bigger output N Series tractors. Visibility forwards has nevertheless been further improved, as the nose on the new models is the same as on

the A Series. The new smaller N Series tractors are extremely agile, as the wheelbase is just 2,535 mm, or 30 mm less than in the larger N Series models. The smaller models are also approximately 200 kilos lighter than the bigger N Series models. Most of the weight has been removed from the front axle, making the new N Series ideal as a front-loader tractor. Valtra's 35 and 45 Series front loaders are recommended. A front linkage can also be specified as an option.



The new N Series models are at their best in front-loader work. Visibility is excellent, the turbine clutch is precise, and the tractor is extremely well balanced when working with bales, for example, thanks to its light nose.



The cab on the new smaller N Series is spacious with excellent visibility.



The N Series can also be specified with a forest cab, a rear gas pedal and a protected fuel tank, making it ideal for forest use.

The lifting capacity of the lift arms is 4 tonnes and the hydraulic output 73 litres per minute. The lifting capacity of the optional front linkage is 2.5 tonnes. For forestry use the tractor can be specified with a forest cab, a rear gas pedal and a steel fuel tank. Valtra's traditional HiTrol turbine clutch is also optionally available.

– Tests have shown that this tractor is ideally suited for the diverse kinds of tasks required on livestock farms, for example. As a front-loader tractor it is unmatched thanks to its excellent visibility, turbine clutch and agility. In forest spec it is compatible with the Valtra 6000 Series forest tractor, and it is also

ideally suited for municipal contracting work, explains Product Manager **Matti Kallio**.

The new smaller N Series models and updated A Series complement each other in the 80–100 horsepower class. The A Series offers the cost efficient Classic option, while the smaller N Series models offer HiTech level user friendliness for customers who prefer a hydraulic shuttle and powershift.

New equipment also for larger N Series tractors

New equipment is also offered for the larger N Series models N101–N141 that further increase comfort and productivity. Automatic

air-conditioning is available on HiTech and Advance models. Electrically controlled and heated side mirrors are now optionally available, as are Xenon lights. Customers can also specify an extra large air filter or active charcoal filter for the cab.

Cab suspension is now available also on HiTech N101–N141 models. U-Pilot is standard on Advance models, which are also available with ISOBUS couplings.

■ **Tommi pitenius**

Roos farm relies on old friends in a new home



When Gijsbert Roos left Holland in 2000, he brought his wife Anja, five sons and a daughter with him to Canada. He also brought an appreciation for Valtra tractors and several of them as well. It is a relationship that has lasted for more than 40 years, says son Bert.

– My grandfather bought a Volvo 3140 in 1964, a 400 in 1968, a 430 in 1970 and a 650 in 1973, says Bert.

Over the years the Roos family and farm expanded. Meanwhile, Volvo tractors became Valtra. Gijsbert and Anja kept the Volvo 650 and purchased a new Valtra 655 when they started their own farming operation in 1989. More Valtras followed. In 2000 they traded for an 8150 to take along to Canada.

When the decision was made to relocate to the Brownsville, Ontario area, it was perhaps only natural that Gijsbert wanted to bring a trusted Valtra with him.

– My dad had sold the 650, recalls Bert, Klaas decided he could use it with the new dairy, and we couldn't do without it, so we bought it back.

The Roos family has thrived since their move, and six years later, Valtra tractors are more important than ever to the family and their businesses. Bert, the third oldest, and his younger brother Jan stay busy with custom farming and manure hauling businesses. The youngest son Peter is still in school but helps out as available. The second oldest son Wim runs a local butcher shop, and sister Martine is also in school. Gijsbert and Anja manage the 500-acre cash crop business and oversee the other family enterprises.

– My parents own the corporation and head it up, but it gives us each a chance to get going in farming, says Bert.

And get going they have. In the six years since their move, the Roos family has grown

the custom work into a business that counts between 80 and 90 landlords as clients.

– We offer pretty much a full line of services, says Bert. We do manure spreading, both liquid and solid, as well as tillage, planting, cultivation and forage harvesting. We bale hay, make haylage and also chop corn for silage.

As the businesses expanded, so did the Valtra lineup. The custom business keeps two T190s, two 8950s and an 8550 busy much of the year, with one 8950 moving back and forth from a loader tractor with the dairy to a trailer puller with the custom operation.

One year ago, Bert went back to Holland to attend a friend's wedding. Before he returned home, he picked up an unusual souvenir – another Valtra.

– I went over with the idea of looking at S280s, recalls Bert. When I saw a used one in Belgium that was in good shape, I bought it and shipped it back.



"As the businesses expanded, so did the Valtra lineup."



The big S280 quickly became Jan's preferred tractor for the custom manure hauling. Bert shifts back and forth from tractor to tractor with no clear favorite.

Acres and hours count up fast as the brothers and hired help till about 1,500 acres in the spring. They plant corn, alfalfa, beans and wheat. Every year is a little different, but most years they cover close to 15,000 acres with their corn planter and another 15,500 acres with a drill. Then there is haylage and bales harvested on 1,500 acres three times each season. Fall begins with chopping corn on up to 1,400 acres and ends with plowing 1,000 acres once harvest is over. Manure is hauled and applied in spring and fall.

Applications are also made behind the harvester with each crop of hay

Bert knows the price to be paid if customers aren't satisfied.

– Our customers can go to someone else pretty easily, he says. Valtra durability is what we rely on. We have to get the job done, do it right and do it quick.

– With a season that runs from ground thaw to freeze up, Bert and Jan take advantage of winter months for major maintenance. Everything is gone over carefully. All hydraulics systems are drained and refilled with new filters installed. One chore that is not left for winter is engine oil and filter changes.

Primary maintenance is done in the farm shop, while major repairs, especially warranty work, are carried out by GJs Farm Equipment Inc., their Valtra dealer. Not that owner Gary

Klyn sees much of them in his service department.

– They use their equipment to its full extent, but their maintenance program takes care of it, he says. They have a T190 I delivered a year ago this past April, and they have 15,500 hours on it already.

When the Roos family does trade, Klyn has no problem reselling the used ones.

– I sold one of theirs with 3,500 hours on it to a custom manure hauler, and he would take another tomorrow if it was available, says Klyn. It now has 5,000 hours on it without him spending any more money on it.

While Bert prefers doing off-warranty repairs in the farm shop, he does appreciate Klyn's availability if questions arise.

– You can always get to him after hours or whenever, says Bert. If there is a problem, he is there for you with parts, service or another tractor if needed.

For the most part there has been little need for repair. Even under heavy custom farming use and high hours, little has gone wrong with the Valtras.

– We have 4,600 hours on two tractors each, 3,500 on a third and 8,700 hours on the 8100, he says. The only work we've done on the 8100 was to replace the clutches on the transmission and the PTO. It's a loader and TMR tractor, so that wasn't a surprise.

Valtra versatility has also paid off for the operation, especially when making hay. They run a frontmount, 10-foot haybine with two rear mount units on a T190.

– We can average about 150–155 acres

an hour or up to 350 acres on a good day, explains Bert. We can take out 10, 150 or 30 feet of hay at a time, combine the entire 30-foot cut into a single windrow for haylage or three separate ones if drying it for baling.

– All those trips across the field add up in gallons of fuel used as well. When diesel prices hit all time highs of 70–80 c/liter this past summer, fuel efficiency became even more important.

– We watch our fuel use closely, says Bert. With the Valtras, especially the new ones with electronic fuel injection, if you don't draw many horsepower, you don't use much fuel. When we are pulling trailers, we can go two days on a tank of fuel.

– Bert credits the SisuDiesel engines and Valtra transmissions for both efficiency and power delivery.

– They provide good torque, and they don't give up under load, he says. We've not had major problems with them, and that's pretty good for how hard we run them sometimes.

Bert likes the smooth startups with Valtra and is well satisfied with the speed selections available. He also likes the way the HighShift button on the shift lever reduces the need to use the clutch.

Front suspension on all but two of the tractors is also a big help, says Bert.

– We do a lot of travel between fields, and it gives a nice ride. It also saves on bushings and bearings, he says.

■ Jim Ruen

Valtra was awarded a Silver Innovation Award



Mowing with the new Valtra LHLINK front linkage is easier than ever. The range of adjustments eradicates underlap and overlap and offers a high quality of work.

Valtra LHLINK – new generation front

An increasing number of customers specify a front linkage and front PTO to make the most of their new tractors. However, the technical development of front linkages has been somewhat slow, focusing mainly on increasing lifting capacity. The degree of adjustability has as been limited, as a result of which connecting implements has continued to be somewhat of a chore.

Valtra has responded to this situation by introducing a new generation of front linkage. The innovative Valtra LHLINK front linkage attaches to the tractor's frame by a vertical pivot, allow-

ing the linkage to turn in the desired amount with the front wheels or even independently of the front wheels. In addition, the levelling of the lifting arms in relationship to each other can be adjusted vertically.

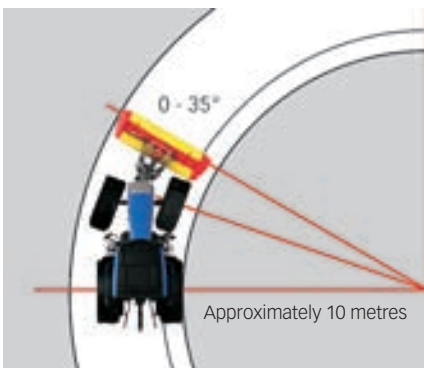
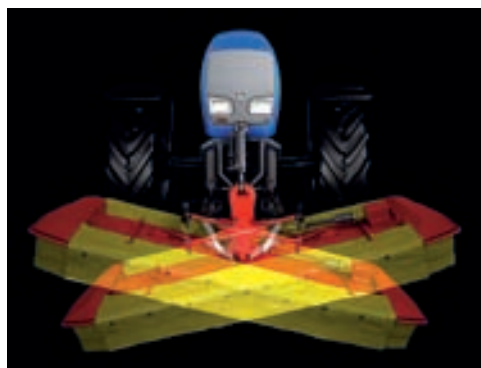
These innovative solutions provide the lifting arms with a considerably higher degree of freedom, making it easier to attach implements while also increasing safety. Implements and implement combinations at the front and rear can be turned while still using their entire width without overlap or underlap.

A front linkage that turns in relation to the front wheels is a great advantage when attaching front mowers and mowing combi-

nations at the front and rear, for example. Valtra's front linkage can turn a mower at its full width within a turning radius of 10 metres. This is possible because the implement applies Ackermann's steering geometry, whereby a line drawn from the implement crosses a line drawn from rear wheels at the same point as lines drawn from the front wheels.

Four modes to suit your work

Four control modes are available for adjusting how the front linkage turns. In the first mode the front linkage turns fully independently of the front wheels. In the second mode the front linkage turns in relation to the front wheels, and the ratio between the turning angle of the front linkage and the steering angle of the wheels can be adjusted infinitely. In the third mode the front linkage operates as above, but the central posi-



◀◀ ***There is no mechanical torsion bar between the lifting arms. The cylinders are equipped with linear transmitting the position to the electronic control unit. After levelling the cylinders are locked together hydraulically.***

◀ ***The basic idea is to apply Ackermann's steering geometry. However, there are four control modes to cover all different situations.***



at Agritechnica exhibition in Germany

linkage

tion of the front linkage can be varied in either direction. The fourth mode is designed especially for operating front and rear mower combinations, allowing a higher turning angle for the front linkage than for the wheels.

This range of adjustments eradicates underlap and offers a high quality of work. The same steering principle can also be applied to the operation of municipal brushing implements. Since the implement follows the turning radius, less lateral loads are put on the implement. The flexible front linkage does not restrict in any way the use of the PTO, as the universal joints are located around the pivot centre.

The position of the lifting arms in relation to each other can be adjusted hydraulically, after which the position is locked hydraulically. There is no mechanical torsion bar between the lifting arms, which saves space. The cylinders are equipped with linear transmitting the position to the electronic control unit.

Valtra LHLINK front linkage has been developed together with the major Finnish parts supplier LH Lift Oy and Afcon Oy, an agricultural and forest technology R&D company. The front linkage has been designed for N Series tractors, and test marketing will begin in 2008.

■ Hannu Niskanen

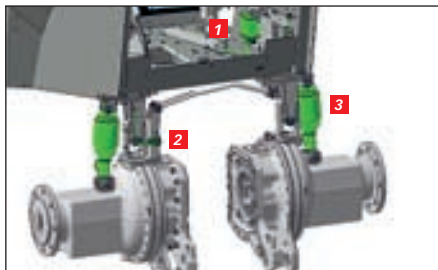
New semi-active cab suspension

AutoComfort enhances comfort



Cab suspension on tractors has become increasingly popular, but so far all cab suspension systems have been "passive", meaning that the spring and dampening settings have been made on the basis of specific design criteria. The end result is always a compromise. Cab suspension that is good on the road may not be the best off the road.

Valtra has therefore developed a semi-active cab suspension system that automatically adjusts to different driving conditions. The system consists of electronically controlled shock absorbers, a position sensor and a control unit that is connected to the tractor via a CAN bus. The system can adjust the stiffness of the shock absorption every two milliseconds according to movement data from the position sensor and information about the driving situation from the CAN bus. For example, the CAN bus provides information about the position of the shuttle and braking, allowing the system to react against bouncing.



Valtra's AutoComfort cab suspension system consists of an electronic control unit (1), a position sensor (2) and a combination air spring/CDC shock absorber (3). CDC stands for Continuous Damping Control.

The system can be set on automatic or manual on the panel inside the cab. The suspension elements include air springs that maintain a steady height regardless of the load. The semi-active cab suspension system will be available as an option from the beginning of 2008 on Valtra's T Series 151e–191 Advance and HiTech models. When ordered with AutoComfort, the Aires front axle suspension includes automatic height control, which further enhances driving comfort while minimising the use of compressed air and antifreeze.

Improving driving comfort is extremely important, as the Valtra T Series is popular among contractors and on big farms, which are affected by the EU Vibration Directive for salaried employees. AutoComfort helps Valtra's customers reduce vibration levels. Even farmers not affected by the directive will appreciate the enhanced comfort.

■ Hannu Niskanen



The AutoComfort control panel is located in the right-side B-pillar in the cab. When the switch is in the centre position the damping is automatic. When it is in the lower position the system is manual and the degree of damping can be adjusted by the knob.

Equestrian Contractor a new service for country dwellers



With post driver on the rear and stakes and wire on the loader there is little reason for other machines to come onto the land. James' M120 fitted with a loader and grassland tyres is ideal for fencing work

If you have any doubts that British agriculture has fundamentally changed in recent years, a visit to countryside surrounding our major cities, particularly London will soon change that. Here the landscape is changing with large arable fields being split and returned to the smaller enclosures of yesteryear. But its horses that are grazing these confined acres, not cattle and sheep. As houses of all types are turned into highly desirable residences it seems one highly equally desirable feature is a stable, or failing that one close at hand. In the wake of these changes has come a new service provider; the Equestrian Contractor.

James Jolliffe – Fencing and Equestrian Contractors, established for over 5 years is based near Wendover in Buckinghamshire. James started work as a tractor driver after leaving school. He then progressed to owner driver, subcontracting to his ex employer before striking out fully on his own. Today he and his team will handle just about anything the horse owner requires. This ranges from simple paddock maintenance; rolling, harrowing, topping to the complete development of a new riding establishment with stables, riding arena, paddocks, jumps and fences.

Key equipment includes two Valtra tractors: an M150 and an M120 with loader. Other equipment includes two heavy tipping trailers,

a plant trailer and a couple of 360° excavators – one 6 tonne and one 10 tonne. There is also a fair selection of agricultural tackle; five furrow plough, toppler, harrows, sprayer, mower, tedder and conventional baler.

– We make something like 14,000 hay and 5,000 straw bales each year. Some of these come from client's fields some from James' own land; he grows cereals on some 75 ha. Finally there is a post driver and a couple of 6.5 m hedge trimmers – one with a saw blade.

– We trim hedges for a wide variety of clients; local councils – all the way into London – the Environment Agency, farmers and land owners. He also subcontracts to a sports ground contractor specialising in schools work. James admits that some of the hedge cutting is not the most profitable side of his business, but with most of his horse related work dependent on the vagaries of the economy, he feels hedge trimming does at least provide a steady source of income.

When deciding on the make and models of his new tractors James had a number of reasons for 'going Valtra'.

– When I moved to Valtra last autumn one reason was to reduce our fuel bill. We also wanted something powerful but more compact than our previous six cylinder machine. The new tractors had to be powerful enough to handle heavy trailers yet compact and



Shorter four cylinder Valtras are highly manoeuvrable yet powerful enough to handle large plant trailers.



Hedge cutting brings in a steady income but is not the most profitable operation.



James Jolliffe – hands on management from the comfort of a Valtra cab.

manoeuvrable enough to get around in our client's yards, especially the older ones.

Is James happy with his choice?

The answer is, – Yes on all counts. James also feels comfortable with his local Valtra dealer, Browns Agricultural Machinery Co. Ltd., only a short distance away at Chesham.

– They have a good reputation and if there's a problem it can be easily sorted. Not that Brown's services have been required, apart from a minor windscreen wiper hiccup. And of course they're also competitive. Comprehensive tractor specifications are a further reason for choosing Valtra.

– We sometimes have to travel considerable distances, often with heavy loads. Our tractors have 50 kph transmissions, Aires front suspension and air brakes. Program-

mable hydraulics are also an advantage with several pieces of equipment.

And looking towards the future where does James Jolliffe see his business developing?

– That's difficult to gauge, competition is increasing and who knows what the future will bring. Right now it seems the best way forward is to offer a wide ranging service – what the customer wants we will do – or arrange. A one stop shop. We will also turn our hands to non equestrian activities if necessary. Weather permitting James currently has a large landscaping contract to complete. Whatever the work you can be sure his Valtras and the other machines will be kept hard at work.

■ Roger Thomas

Valtra gets wedding party

to the church and reception on time



Darren and Cheryl Willey on their wedding day.

Daren Willey is, by his own admission, tractor daft so when deciding on transport for his wedding back in mid June a tractor was top of the list.

"The wife wasn't keen at first but I told her – no tractor, no wedding and she quickly came round!" With a T150, 8150 and 8950 on the dairy farm he runs in partnership with his father and brother it was natural Daren should choose a Valtra and, he turned to Hexham dealer **David Henderson** who supplied a T151 – suitably polished and ribboned.



Chauffer David Henderson in the seat of the T151 – the bride, groom and guests travelled on a trailer behind.

Children learn safety from their role models

Working safely yourself is the best way to avoid injuries to children from tractor accidents. Agricultural machinery should not be used anywhere where children usually play. Veli-Matti Tuure, Research Director at TTS Research in Finland, emphasises that tractor work should be postponed until later if it is not possible at the time to keep an eye on one's children.

– Safe working habits must be consciously learnt, and they should be adhered to systematically. Children learn from their role models, Veli-Matti Tuure says.

Safety risks can be assessed by looking at things through the eyes of a child.

– A good way of identifying risks is to simply walk around your own property and make a list of all the dangers you come across, adds Janne Karttunen, a researcher at TTS.

In Finland alone several fatal, many serious and hundreds of other accidents involving children and young people occur each year. Accidents most frequently occur when a child or young person is helping out on the farm, watching the work being done or playing. According to research carried out by TTS, around 60 percent of farm accidents involving children under the age of 15 occur during the growing season. The majority of these accidents involve boys.

– Implements and farm equipment are the most common immediate causes of accidents involving children and young people. The majority of serious accidents involve children under the age of five who are not yet aware of the dangers, Tuure says.

Fewer accidents

The number of tractor accidents causing injuries has on the whole declined. This is partly due to the decreasing number of farms, but also to the increased awareness of safety issues by the new generation of farms. The



Never leave a child unaccompanied in the cab or on roads even for a moment.

proliferation of tractor safety cabs has also played a role.

– The ideal solution would be to have an air-conditioned safety cab with a special seat for children, perhaps even with a safety belt, Karttunen reckons.

Children should not spend excessive amounts of time even in the newest cabs, as the noise levels are too high for young ears.

Technology is no replacement for driver awareness and precautions, of course, but the increasing safety of modern tractors is also helping to enhance child safety. For example, an alarm that is activated before starting the engine provides a warning that the tractor is about to move. The automatic reverse buzzer that is optionally available on Valtra tractors works in the same way.

– Before getting out of the tractor the driver should engage a gear, apply the hand-brake and remove the keys from the ignition. Implements should also be lowered, Karttunen points out.

Careful maintenance of machinery and safety equipment is also essential for preventing accidents. The best place to store machinery is in a lockable garage to prevent children from using tractors and implements as climbing frames and hiding places. Fixed outdoor machinery should have sufficient protection around it and safety equipment.

– Additional tractor wheels should also be stored in such a way that they cannot fall on top of children, Karttunen adds.

Safety first – even when you're busy

Tuure encourages farmers to ensure that they have sufficient resources during the busy season. Safe working habits are easily compromised when there is a lot of work to do.

– Properly organising your farm work helps promote child safety. Subcontracting work and hiring extra labour during peak seasons, as well as running tractors and harvesters fitted with air-conditioning, can help reduce fatigue and allow you to maintain your focus on safety factors, Tuure points out.

■ Johanna Summanen

Things to remember how to promote child safety

- ***Maintain your tractor and service it regularly.***
- ***Store your machinery in a lockable garage.***
- ***Do not remove protection.***
- ***Keep mirrors intact and clean.***
- ***Keep windows and doors closed when a child is in the cab.***
- ***Never leave a child unaccompanied in the cab or on roads even for a moment.***
- ***Do not keep children in cabs too long. Even the newest cabs are too noisy for children.***
- ***Do not take a child with if a PTO-powered implement is attached to the rear of the tractor.***
- ***Do not take a child with when working with dangerous substances.***
- ***Children should not sit in scoops or on top of seeding machines or haystacks.***
- ***It is not safe to climb on tractors, even when they are locked.***
- ***Always turn off engine between jobs and remove the key from the ignition.***
- ***Keep the tractor in gear and engage the handbrake when parked.***

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A variety of leaf crops are grown under irrigation. Fleece and netting help prevent pest and hail damage.



Harper Adams University College student Tom Channing on third year industrial placement gets to grips with TwinTrac controls.

... from page 8

replaced with a conventional tractor with front linkage for the hoe. This combination proved cumbersome on headlands difficult for the driver to monitor and, when exiting fields onto public roads, potentially dangerous. Intercrop management discussed various options and visited Valtra at Suolahti before deciding to purchase a N121 Advance with TwinTrac. Today this reverse drive combination is working well; manoeuvrable and with slow forward speeds, good vision and easy operation it is liked by

drivers. Ideally the crop is hoed at least twice with liquid fertiliser – Calcium Nitrate – applied on both occasions. Additional treatments with the hoe are beneficial if time, conditions and rate of growth allow but additional fertiliser is not usually applied. Depending on the plant type mature crops are harvested mechanically or by hand by student gangs before being chilled and despatched to supermarket packers.

Once the UK season is complete the Valtra and hoe will be loaded up and, along with other specialist equipment, transported

to Spain for the winter season's operation. Despite the time of year Murcia remains hot and the ideal climate for the various crops is achieved by carefully selecting a site at the correct altitude. Operations in Spain are similar to the UK but the hoe will be modified to cope with lifting and relaying drip irrigation pipes as the unit progresses across the field. With the winter growing season over the Valtra N121 will return to the UK for the next summer season.

■ Roger Thomas

Missed the school bus and faced with a long walk?

Not a problem faced by teenager **Matthew Wrayford** from South Devon. Matthew simply borrows dad's Valmet tractor – provided it's not needed on the farm. The sixteen-year-old is currently studying for his GCSEs and hopes to go on to agricultural college. Nothing like the real thing to beat those mums chauffeuring their kids around in Chelsea tractors.



Valmet 1502

The tandem tractor that was ahead of its time

The idea for developing a tandem (bogie) tractor was born in the late 1960s, when Valmet wanted a tractor in the 120–150 horsepower range as part of its modular family. The resulting tractor was rather remarkable looking, with an innovative cab that was wider at the top than at the bottom. This solution offered a cooler cab under the shade of the oversized roof. Air-conditioning units were rare and expensive at the time.

The real sensation, however, was that the large rear wheels were replaced by a pair of tandem wheels. The Valmet 1502 was, to say the least, an interesting tractor. Without any springs (suspension) whatsoever it offered an even ride. In 1975 there were no 40-km/h tractors, but the tandem (bogie) tractor came very close. The secret to the smooth ride was the tractor's weight distribution and positioning of the driver. All the tyres were the same size, and the weight was distributed relatively evenly over the six wheels.

An invention that was patented at the time involved positioning the driver at the centre of gravity formed by an equilateral triangle running from the front axle's (pivoting point) suspension to the bearing points of the tandem axles. The amount of swaying (vertical movement) at this point was the least.

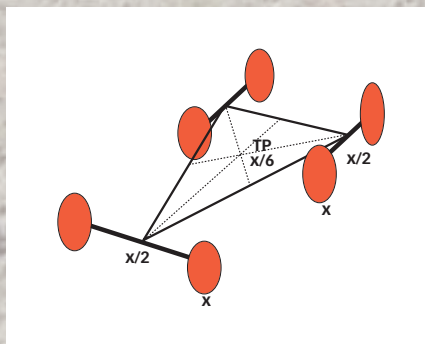
Smaller wheels were more balanced than larger wheels in terms of both mass and centring, which improved driving dynamics. The specific (natural) frequency of the Trelleborg 500-22.5 tyres was achieved at 34–35 km/h. At these speeds the tractor bounced a little, but the ride evened out again as the speed increased.

Thanks to the tandem Valmet we can now enjoy Sisu Diesel's six-cylinder engines. The Linnavuori engine plant developed its 6.6-litre six-cylinder 611 CS engine, which provided the base for all of today's SisuDiesel engines. The turbocharged engine developed 136 horsepower (DIN).

The transmission was developed from the Valmet 1102's transmission, with 16+4R synchronised gears. The tandem (bogie) was a true masterpiece. At the centre of the tandem (bogie) at the swing bearing was a planet wheel that allowed a "balanced tandem", meaning that when (developing maximum tractive effort)



The Valmet 1502 was an impressive sight. The tractor offered improved pulling capabilities and steering properties with a propelled front axle. Since appropriate agricultural tyres could not be sourced, the tractor used 13.6-24 double wheels.



The chassis of the (bogie) tandem tractor is essentially an equilateral triangle with three double-armed levers at the ends. If any of the wheels comes across a bump with a height of x , it is halved at the bearing point of the doubled-armed lever, creating a movement of $x/2$. The centre of gravity of the triangle is situated where the central lines intersect, and geometry tells us that this is two-thirds of the distance from the top of the triangle along the central line. A movement of $x/2$ at this point creates a vertical movement of only $x/6$ compared to the height of the bump.

pulling the weight of all four wheels was the same. Normally when the wheels grip, the tandem tries to lighten the front wheels.

The Valmet 1502 was introduced around four decades too early. The tractor's chances for success were spoilt by the energy crisis and the attempt to use the same (bogie) tandem for forest machines with a load capacity of up to 12 tonnes. The tandem was used in forest machines manufactured by such companies as Pinomäki and Rovaniemen Konepaja. This led to the (bogie) tandem becoming over-specified and overweight. According to the original design and the intended tyre size, the weight of the tractor would have been five tonnes. With these smaller specifications the system would have worked fine.

The Valmet 1502 was ultimately relegated to tractor history. Foreign journalists continue to show interest in this intriguing model, requesting photos and technical information on a regular basis.

■ Hannu Niskanen

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