

# VALTRA TEAM

VALTRA

+ N163 Direct  
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+ World speed record  
**New T Series tops 130 km/h**

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+ Valtra tractors  
**The power behind electricity**

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New N Series

# POWERFUL FOUR-CYLINDER TRACTOR

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EDITORIAL



**A**utumn of 2014 saw the introduction of six cylinder Valtra T4 tractors from 155 hp to 250 hp. Fuel efficient, with transmissions simple and sophisticated to meet every demand. Hydraulics too met operator and equipment manufacturers' requirements and a large cab meant drivers could spend long days in absolute comfort. T4 tractors really did receive an enthusiastic reception from customers, dealers and press alike.

In October 2015 we introduced Valtra N4. Four cylinder machines from 115 hp to 185 hp with the same attributes as T4 but in a more compact package – except that the operator still has a large, comfortable, roomy cab in which to work. First impressions of N4 from the press and dealers have been positive to say the least and on the launch days we received a significant number of orders. We confidently expect a repeat of the T4 enthusiasm.

Valtra continue to lead the rest in many ways. We have the most powerful four cylinder tractor in production, and options are almost limitless thanks to our a la carte range and the Valtra Unlimited Studio.

Completing the Valtra range, at the lower end we have the A Series from 50 to 100 hp while at the top is the mighty S Series taking the Valtra range up to 400 hp.

If you are thinking of changing your tractor, come and talk to us. We know we have something to meet your needs.

Mark Broom  
NATIONAL SALES MANAGER

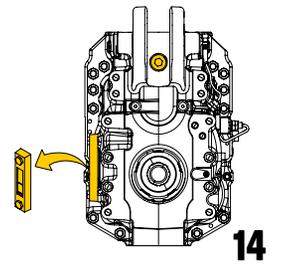


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## New SkyView cab

## Innovation

The new SkyView cab has a panoramic roof

Heated front and rear screens and mirrors

Shock-resistant polycarbonate glass and wiper

TwinTrac reverse-drive system

The metal railing protects the roof from branches and can be used to mount auxiliary lights

# VALTRA EXPANDS ITS RANGE OF CABS

The new SkyView cab on N and T Series tractors is ideal for forestry use and also many other tasks. The SkyView cab features polycarbonate glass and a wiper to the rear of the roof. A metal railing protects the roof edges from branches and serves as a mounting rail for auxiliary lights, and other equipment. Valtra's forest cabs are often specified together with the TwinTrac reverse-drive system.

Valtra now offers a range of cabs for all purposes, including five-pillar cabs cab with door on the left only and six-pillar cabs with doors on both the left and right sides. A window at the front of the cab roof is a popular option for front-loader work on both types of cab. Valtra cabs are now available with almost 7 square metres of glass, ensuring optimal visibility in all directions. •

[www.valtra.co.uk](http://www.valtra.co.uk)

# NEWS



The 1000th fourth generation T Series was handed over to Polish dairy farmers Adam and Emilia Jarnutowski in mid-May, just six months after its launch. Since that time production of the new T Series has continued to increase.

**O**n 22 May, just six months after the launch of the new model, the 1000th fourth generation T Series was handed over to a customer from Poland at the Suolahti factory. The T144 Active was ordered by **Adam and Emilia Jarnutowski** for their dairy farm in north eastern Poland.

“I’m really looking forward to using the new tractor. It will be replacing our John Deere 7800 and John Deere 6800 tractors for all tasks on the farm, including ploughing, planting, manure spreading, mowing, baling and feeding,” says Jarnutowski.

The Jarnutowski’s dairy farm extends to 74 hectares supporting 132 animals, including 70 milking cows. They expect to use their new Valtra for around a thousand hours a year.

Their T144 Active is comprehensively specified. It features a front linkage and PTO, Isobus, pneumatic brakes, an engine block heater, Aires+ front axle suspension, cab suspension, a windscreen wiper that covers 270 degrees, and even a fridge.

The tractor was sold by the local Polish dealer Agrotechnik and Sales Manager **Adam Zaluski** participated in the handover in Suolahti.

The new T Series currently accounts for 48 percent of production at Valtra. The most popular models are the T174e Versu, T214 Direct and T234 Versu. Metallic white has been the most popular colour option, accounting for 28 percent of orders, while red and metallic black has been selected by 18 percent of customers and metallic red by 17 percent. •

## VALTRA UNVEILS SUGAR-CANE HARVESTER IN BRAZIL

Valtra unveiled the new BE1035 sugarcane harvester at the Agrishow in Brazil last April. The harvester is powered by a 9.8-litre seven-cylinder AGCO Power engine producing 350 horsepower.

The new tracked harvester further strengthens Valtra’s position in the Brazilian sugarcane business where for many years Valtra has been the most popular tractor brand.

## TURNAROUND FOR VALTRA

In spring 2014 Valtra launched its five-year Turnaround programme approved by AGCO management and incorporating several dozen projects. The aim has been to improve in all areas of operations.

The key factors for Valtra’s success include growing the attractiveness and recognition of the Valtra brand, further strengthening the product range and offering customers even greater choice with the Unlimited Studio. Strong sales tools and an expanding distribution network will support the company’s growth, while product features, quality and service will remain the basic pillars of customer satisfaction. Valtra is implementing the Turnaround programme in its day-to-day operations.

Practical examples of the results of the Turnaround programme thus far include the fourth generation T and N Series models.

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Valtra is a worldwide brand of AGCO

# S POWERS THE FARM

TEXT AND PHOTO ROGER THOMAS

**T**he Curtis family run several businesses to the south of Bristol including Stanton Wick Farm. The wide variety of soils, produces 750 ha of arable crops and maize and 170 ha of grass leys and permanent pasture for the 300 ewes and the 170 cow suckler herd. Arable enterprises are run by **Mathew Curtis**, cousin **Kevin** handles livestock, both under guidance of their father and uncles. "Its a system that works well, one we enjoy," says Mathew.

On heavy land is wheat followed by oilseed rape, wheat again, then spring linseed or beans. On light land wheat is followed by barley, oilseed rape, wheat again and around 36 ha of maize. This along with 60 ha of first cut grass goes for silage. "We aim for a second silage cut but that depends on the season and weather." Cereal straw is baled for livestock or sold, rape and bean straw is chopped, linseed straw is burned.

The suckler herd is 160 commercial cows, plus 70 pedigree Simmental and pedigree Limousin cows. "We've bought bulls from France and alongside beef sales we sell breeding animals, particularly pedigree bulls," comments Kevin "We also sell seaman straws." Depending on available livestock and feed around 45 stores are also finished annually. All lambs are sold for meat with replacement ewes purchased as required. "We plant some 40 to 60 ha of stubble turnips either for our own flock or a visiting B&B flock."

Cattle, housed over winter are cleaned out every eight weeks with muck stored until spread. Fertilisers include liquid nitrogen and Fibrophos



Mathew Curtis (standing) and Dave Groves are both Valtra fans: "They're reliable!"

for phosphates, potash and trace elements. Other fertilisers include poultry litter and spent digestate.

Alongside Mathew and Kevin there are five full time staff and six tractors: An N122 and a 104 hp 6550 are employed on livestock duties. On the arable side there is a six month old 370/400 hp S374 that has already clocked up over 1,000. "It's our second S Series and main farm workhorse," comments Mathew.

"It's operated by just one driver, **Dave Groves**. We have a Great Plains cultivator and seeder. There is also a Claydon 6 meter drill and a large square baler." Most importantly, the farm has a reverse drive Pottinger forage harvester with many hectares under its belt. "It's amazing how much work it gets through and how easy it is to drive – Valtra's TwinTrac is much under rated." TwinTrac made sense be-

cause the Curtis family concluded that self propelled forage harvesters only work for a proportion of the year and large tractors like the S Series spend a lot of time in the shed once heavy work is finished.

Working alongside the S Series are a couple of T Series: a five year old T172 has put 7,000 hours on the clock without missing a beat. A new 250 hp T234 has replaced a much used T213. A large reversible plough for the S374 is only used when absolutely required. "We have no set regime for Black Grass. Each infestation is treated individually," explains Mathew.

Good management is key and the Curtis family keep a close eye on trends. No significant cropping changes are planned. Valtra have proven reliable, efficient, inexpensive to run and hold their used value well so there are no plans to make changes there either. •

Brand new N Series

# FEATURES COMPARABLE TO THE T SERIES AND UP TO 185 HORSEPOWER

Valtra is introducing the fourth generation N Series this autumn with many of the same features as found on its big brother, the highly successful six-cylinder T Series.

TEXT TOMMI PITENIUS PHOTO VALTRA ARCHIVE

**ASR helps the driver maintain  
the best possible pulling ratio  
and fuel efficiency.**



The new N Series is once again breaking records as one of the most powerful four-cylinder tractors at 185 horsepower. The fourth generation N Series now has many of the same features as the popular fourth generation T Series.

**T**he new N Series boasts an AGCO Power – Tier4 Final engine producing up to 185 horsepower and 730 Nm of torque. Valtra has been a pioneer in manufacturing high-output four-cylinder tractors. Since 1969 when the Valmet 1100 model was introduced with the world's first turbocharged four-cylinder tractor engine generating an impressive 115 horsepower, Valtra has produced some of the most powerful four-cylinder tractors in the world through its M and N Series tractors.

#### **New cab offers optimal comfort in all working conditions**

The new cab on the fourth generation N Series is the same as that on the new T Series. The cab offers excellent visibility in every direction (with almost seven square metres of glass) and it is extremely quiet (less than 70 db). The cab's comprehensive specifications may include a high-end stereo with integrated woofer, a front windscreen wiper that covers 270 degrees, heated front and rear screens, and a TwinTrac reverse drive system. Customers who do a lot of front loader work may specify an extra window in the roof that offers unobstructed visibility even when the loader is in the raised position.

The N Series is available with either one or a new option two doors. A further new option is the SkyView forest cab, which offers enhanced visibility to the rear and upwards thanks to a large polycarbonate window with wiper. Other forestry specifications include narrow mudguards and a 165-litre steel fuel tank. The standard fuel tank holds 235 litres, the optional size is 315 litres, and the capacity of the urea tank is 45 litres.

### Powershift revolution continues

The fourth generation T Series began the revolution in powershift transmissions by making it possible for the first time, to operate the powershift in a similar fashion to a stepless transmission. The powershift tractors also incorporate a hill-hold feature, a patented hydraulics assistant and ASR traction control to ensure the optimal ease of use, productivity and efficiency for demanding tasks.

ASR represents a completely new innovation in the tractor industry. As in passenger cars, the traction control system limits engine power if the sensors and tyre speed exceed a set level. ASR helps the driver maintain the best possible pulling ratio and fuel efficiency while avoiding damage to the ground.

### A suitable transmission for all tasks

The transmission options on the new N Series are more comprehensive than ever before: HiTech, Active, Versu and Direct. The first three are five-step powerstep transmissions, while the Direct transmission is stepless. The Active, Versu and Direct transmissions also feature load-sensing hydraulics with outputs of 115, 160 or 200 litres per minute. The HiTech transmission comes with a gear pump producing 73 or 90 litres per minute. The hydraulics on HiTech and Active models are controlled mechanically, while those on Versu models are controlled electronically. Up to seven hydraulic blocks are available, four of which may be at the front. The N104, N114 and N124 are available as HiTech models, while the N134, N154 and N174 are available as HiTech, Active, Versu and Direct models. The N104, N114 and N124 may be specified with HiTrol turbine clutches.

The PTO has three speeds, and ground speed PTO is available as preferred by forestry and transport contractors.



#### N SERIE MODELS

Model	Standard			Boost			Transmission			
	Hp	kW	Nm	Hp	kW	Nm	HiTech	Active	Versu	Direct
<b>N104</b>	105	77	470	115	85	510	X			
<b>N114e</b>	115	85	500	125	92	540	X			
<b>N124</b>	125	92	550	135	99	580	X			
<b>N134</b>	135	99	570	145	107	620	X	X	X	X
<b>N154e</b>	155	114	610	165	121	660	X	X	X	X
<b>N174</b>	165	121	680	185	136	730	X	X	X	X



**AGCO Power engine is a pioneer in SCR technology**

AGCO Power has implemented an SCR Only strategy since 2009, systematically developing SCR solutions. The result is the most fuel efficient and responsive range of engines on the market.

The N104, N114 and N124 models are powered by four-cylinder 4.4-litre AGCO Power Tier4 Final engines, while the N134, N154 and

N174 models have 4.9-litre engines. The SCR system takes care of exhaust emissions without the need for a diesel particulate filter or exhaust gas recirculation system. The SCR Only system reduces fuel consumption and extends engine life.

Valtra's Sigma Power technology provides ten extra horsepower when the PTO is under sufficient load. In the N174 Sigma+ model the system provides 20 additional horsepower.

All models also feature a transport boost function, which provides extra power when driving on the road.

The N114 and N154 represent Valtra's traditional EcoPower models in which the driver can select between eco and normal mode. In eco mode the engine speed is reduced by 10 to 20 percent and torque is increased. Eco mode reduces fuel consumption by up to 10 percent compared with normal driving modes.

**Easy to use and maintain**

The fourth generation N Series has a turning radius of just 4.5 metres and a wheelbase of 2665 millimetres, making it supremely agile for front loader work and also extremely stable on the road. Ground clearance is an impressive 55 centimetres, making the N Series suitable for forestry operations, snow ploughing, forage harvesting, row crop farming and field work.

The service interval is 600 hours, saving money and allowing uninterrupted work during the peak season. Scheduled maintenance can also be performed faster than before. For daily inspections the driver has to make just five checks, which can be done very easily.

**Many new options**

The N Series is tailor made to the customer's preferences at the Valtra factory in Suolahti, Finland. Hundreds of features and options are available, creating millions of potential combinations. For example, the specification list includes seven different colour options, a pivoting front linkage and an auxiliary heater. Naturally, the new N Series may also be specified with remote telemetry and the AutoGuide 3000 steering assist system. If all of these features and options are still not enough, the customer's tractor can be further customised in the Valtra Unlimited studio, where even the sky is not the limit. •



# VALTRA HELPS LIFE CONTINUE

T144 Direct helps contractor keep working after paralysing car accident.

TEXT AND PHOTO ROGER THOMAS

**M**athew Evans moved from school to college knowing he wanted a life in farming. However, the family farm was too small to support his parents, himself and any future family, so after completing his studies Mathew went to work for a contractor. Then, with some experience under his belt, he purchased a tractor and started working for himself. When Mathew required a new machine in 2008, he looked

around, talked to folk and with not a little Finnish “sisu” purchased his first Valtra.

“I wanted a good tractor, but I also wanted something that was different. With Valtra I got that: reliability, power and economy – they sip diesel. It was different in many ways and it did the business,” Mathew explains.

Mathew’s first Valtra was a T120 from dealers John Bownes Ltd of Winsford, and with it his business

expanded. He employed a driver, **Gethin**, and the number of tractors increased to three.

“There were two of us full time, and I also employed temporary drivers during busy periods,” Mathew adds.

Mathew’s work mostly revolved around the area’s livestock farms.

“We’ve few arable farms here in this part of Denbighshire, and any cereals mostly go either for whole crop forage or the grain is used for



Mathew Evans' T153 driven by Gethin is kept busy year round.



Mathew Evans at the controls of his T144: "I bought a white tractor, it will be ideal for my wedding!"

feed on the farm where it's grown."

Silage from mowing to baling is a common task for Mathew, and either Gethin or Mathew may be found working with a fellow contractor handling buck-raking at a clamp.

"Once the autumn season comes round, I spend a lot of time hedge cutting."

Mathew's tractors may also be found ploughing out old grassland, preparing for a new sward.

### T144 Direct to the rescue

In August 2014 Mathew was involved in a serious car accident that left him paralysed pretty much from the shoulders down. For most, an accident of this magnitude would have spelled the end, but not for Mathew Evans.

"I spent a considerable part of my recovery period planning how I could return to work. With the help of a lot of folk – not least **Laura Heath** at John Bownes and **Andrew Stubbs**, a farmer, contractor and engineer who also runs Valtras, and the staff at Access To Work, who helped with finance – I planned a tractor with a lift that could transfer me from my

wheelchair at ground level and place me into the tractor cab in a position where I could slide from the lift onto the passenger seat and then on to the driver's seat."

Mathew ordered a new tractor, a 170hp T144 Direct, and with the help of Andrew Stubbs, whom he'd met at a Valtra event, a lift was added. Andrew sourced an electrically powered hydraulic lift normally used to drive a lorry tail lift, more than adequate to lift Mathew into the tractor. The lift has its own hydraulic reservoir and can complete 25 cycles before the battery goes flat.

"The hardest part of the project was the linkage that holds the seat," comments Andrew. "The seat must be capable of being positioned beside Mathew's wheelchair, supporting him during the lift and then folding into the cab to allow him to slide onto the passenger seat and then onto the driver's seat."

Today, with the Valtra tractor in almost constant use, a casual observer could easily be fooled into thinking there's nothing difficult in the design, but that would be a false impression occasioned by the

neatness of the installation.

Valtra Direct tractors can be driven quite comfortably without the use of pedals, but should the clutch or brakes be required, all have hand operated levers attached. Now, once the implement is attached, Mathew can operate just as efficiently as any able bodied driver, although frustration does occasionally show through if help is required to fix an implement problem.

The addition of the T144 to Mathew's fleet now brings the number of Valtras to four: The new T144 Direct, a two year old 99 hp N92 with 2,500 hours, a 155/170 hp T153 also approaching 2,500 hours and a much used but no less reliable 138 hp 8450.

"All the tractors are reliable and inexpensive to run, and the support we get from our dealer, John Bownes of Winsford, is second to none. In truth my initial idea of buying a different tractor just to be different has proven to be the right one. The tractors are excellent, and the support from the company and their dealers first class," Mathew confirms. •

# TECH

Transmission options for the N and T Series

## UNBEATABLE SELECTION



### HITECH

- 5 powershift gears with 4 work areas, creeper gear optional
- Hydraulic output 73 or 90 l/min
- Gear pump
- Same oil for hydraulics and transmission
- Mechanical hydraulic control
- ARM armrest without screen or basic controls on the side panel



### ACTIVE

- 5 powershift gears with 4 work areas, creeper gear standard
- Hydraulic output 115, 160 or 200 l/min
- Load-sensing hydraulics
- Separate oils for hydraulics and transmission
- Mechanical hydraulic control
- ARM armrest without screen or basic controls on the side panel



The range of N and T Series tractors encompasses a total of 12 models in different power categories with four transmission options, making it easy to specify the ideal tractor for all operations.

TEXT TOMMI PITENIUS DRAWINGS MOVYA

HiTech and Active transmissions may be operated also using the side panel without the ARM armrest. This is an easy, simple and inexpensive alternative.

**A**ll N and T Series transmissions are designed and manufactured by Valtra in Finland.

The transmissions on the fourth generation N and T Series are even more robust than previous versions. The fourth generation powershift tractors achieve their top

# ON OF TRANSMISSIONS



## VERSU

- 5 powershift gears with 4 work areas, creeper gear standard
- Hydraulic output 115, 160 or 200 l/min
- Load-sensing hydraulics
- Separate oils for hydraulics and transmission
- Electronically controlled hydraulics
- ARM armrest



## DIRECT

- Stepless, 4 work areas
- Hydraulic output 115, 160 or 200 l/min
- Load-sensing hydraulics
- Separate oils for hydraulics and transmission
- Electronically controlled hydraulics
- ARM armrest

speed at approximately 10 percent lower engine rpm, reducing fuel consumption and noise levels.

All of the transmissions come with a three-speed electronically controlled PTO. The N104, N114 and N124 models may also be specified with a HiTrol turbine clutch.

Valtra's Direct is the world's only

stepless transmission that features drive-speed PTO, separate oils for the hydraulics and transmission, and equal efficiency when driving forwards or reverse.

Valtra's fourth generation T Series began the revolution in powershift tractors. Both T and N Series powershift tractors feature a hydraulics

assistant that shifts to a lower powershift when more hydraulic output is required. In this way the driving speed remains the same while the hydraulic pump maintains sufficient flow. Thanks to their automated features, Valtra's powershift tractors can be operated without using the clutch pedal, just like stepless tractors. •

## New N Series

# JUST FIVE ROUTINE CHECKS

Operators of the new N Series need to make just five routine checks to keep their tractor in perfect running order. Tractor maintenance does not get any easier than this!

TEXT TOMMI PITENIUS DRAWING MOVYA

### COOLANT

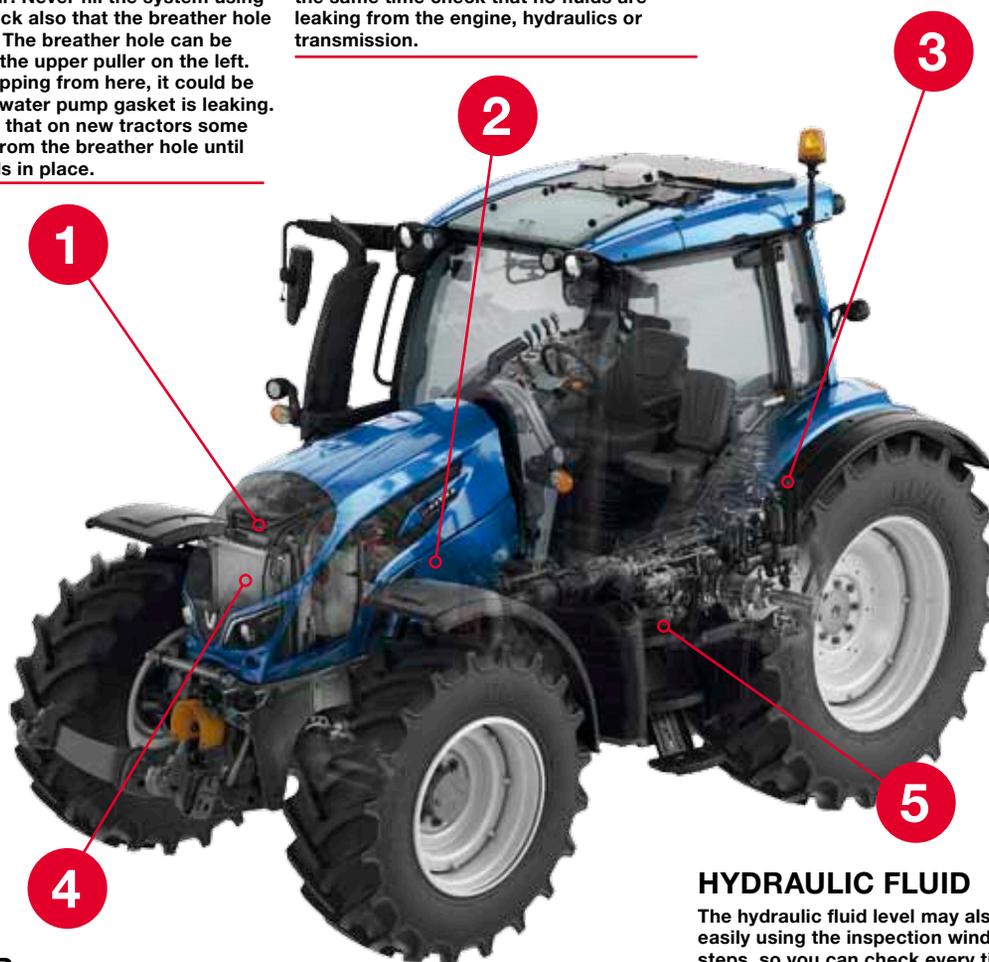
Turn off the engine for a couple of minutes before checking the coolant level. The coolant should be checked when cool, as the surface of hot coolant is higher. Check also the freezing point, especially in autumn. Drain the system and change the coolant every other year. Never fill the system using just water. Check also that the breather hole is not blocked. The breather hole can be found beneath the upper puller on the left. If coolant is dripping from here, it could be a sign that the water pump gasket is leaking. Note, however, that on new tractors some fluid may drip from the breather hole until the gasket seals in place.

### ENGINE OIL

Park the tractor on a level surface and allow it to stand still for a couple of minutes before checking the oil level. The dipstick can be found on the left side of the engine. The oil level should be between the upper and lower marks. Add oil if necessary. At the same time check that no fluids are leaking from the engine, hydraulics or transmission.

### TRANSMISSION OIL

Checking the transmission fluid level is very simple thanks to the sight glass on the left side of the PTO. Let the tractor to stand for a couple of minutes before checking to allow the oil to settle. The filler pipe can be found by the top link's attachment.



### RADIATOR

Clean the radiator using compressed air or hosing with water, but do not use a pressure washer. You can also use a soft brush carefully, but be careful not to damage the cells. Radiators open to the front and to the side, depending on the tractor's equipment. If your tractor has air conditioning, remember to tighten the air conditioning radiator in place with two screws.

### HYDRAULIC FLUID

The hydraulic fluid level may also be checked easily using the inspection window next to the steps, so you can check every time you climb into or out of the cab. Before checking, lift the front linkage and lower the front loader and rear linkage to allow the oil to return to the tank. Fluid can be added using the filler pipe at the rear of the tractor. In case of emergency fluid can also be added through the filler pipe beneath the steps, but take extra care to avoid getting impurities in the fluid. Also, check and if necessary empty the overflow tank for the quick couplings.

Jimmy Clydesdale likes the size and comfort of the Valtra T4 cab.

# MASTER OF SEVERAL TRADES

Scottish farmer and contractor makes the most of his Valtra T174 Active.

TEXT AND PHOTO ROGER THOMAS



Tyrie Farm on the Fife coast in Scotland overlooks the Firth of Forth and extends to 55 hectares. The soil is heavy and over half the farm is used for arable crops, mostly potatoes in 2014 and wheat in 2015.

"I am aiming for a mixture of wheat and barley next and in successive years," comments farm owner **James Penman**. The other crop is grass for the single suckler beef herd, mostly on land unsuitable for arable crops.

James took over from his father in 2009. Alongside the farm he runs Penman Plant, a hire company with over 50 machines, from 35-tonne excavators down to 1-tonne machines plus a number of loader backhoes, telehandlers and other equipment. James is also in the process of taking over Meiklem Drainage, a specialist contractor operating throughout much of Scotland.

In 2014 James looked closely at his tractor requirements and decided to change to a 175/190 hp Valtra T174 Active. Some will consider this

a lot of horsepower for a 55-hectare farm, but James' intention is to utilise the tractor in his other businesses when it's not committed on the farm.

"There's plenty of work for it. At the moment we have a lot of kit committed at the new Forth Crossing, and there is a significant amount of work available for the tractor there. The same applies to forthcoming drainage operations, where pipe and other supplies have to be taken on site, and in more remote areas the gravel carts are at or beyond full stretch."

## Power and comfort

There was also a second reason for choosing Valtra: James has field equipment of his own but also hires from neighbours (and vice versa), whose implements were often too big for his previous tractor to handle. This and the machine's age prompted the change.

"I looked at various machines but it really was the Valtra that caught my eye. We had two models

on demonstration from TRP Scotland and eventually I decided on the T174 Active. It really does look the part, and when I got in the cab there was plenty of room – it was comfortable. It was hitched up to some equipment that had made previous tractors struggle and we were off. The controls really were where they should have been – very easy to find."

James also reports that Valtra has a healthy reputation for reliability, as does TRP for service.

"We're quite a way from their depot at Perth, but if Valtra tractors are half as good as their reputation we won't be seeing much of them anyway so that's not a problem."

But it's not James who will be driving the tractor most of the time, on the home farm or on hire; it will be **Jimmy Clydesdale**. What does he think? In truth, much the same as his boss, but for anyone spending a lot of time in the cab he places a lot more emphasis on cab comfort.

"The Valtra, it's great," is his simple comment. •

A photograph showing a Valtra tractor pulling a hook-lift trailer loaded with stacks of green ammunition boxes. The tractor is positioned in a forest clearing. In the background, a large truck is parked. A soldier in camouflage gear is visible on the left, gesturing towards the tractor. The scene is set in a wooded area with tall trees and a dirt path.

A container load of ammunition is delivered to frontline troops in the forest by a Valtra tractor pulling a hook-lift trailer. When the trailer is unhitched, the same tractor can be used to unload the supplies to a fortified and camouflaged position. Alternatively, the tractor can leave the entire container and its supplies with the troops.

Valtra tractors do military service

# N163 DIRECT TRACTORS TAKE CARE OF ARMY LOGISTICS

TEXT AND PHOTO TOMMI PITENIUS

A couple of years ago the Finnish Defence Forces ordered 106 Valtra N163 Direct tractors for logistic tasks. While the last of these military tractors are still being delivered, the Defence Forces have already ordered more tractors from Valtra, including ten for the Army's engineers. The customer has clearly been impressed by the versatility and ease-of-use of the tractors.



The tractors have already demonstrated their versatility with the Finnish Defence Forces. They can load and unload supplies in the forest, as well as pull containers weighing up to 16 tonnes and handle them with hook-lift trailers. In addition, tractors can be used to snow plough roads, clearing it for other vehicles.

**T**he tractors used by the Finnish Defence Forces are an integral part of the logistics chain. The army's tactics were updated a couple of years ago, with troops being spread out more widely than before. This meant that tractors were given a bigger role in the logistics required by this change. Ammunition, fuel, food and other materials are transported by trucks in containers from military depots to logistics companies. The tractors then transport the containers from the logistics companies to the troops on the frontline.

"Our new tactics and equipment have been tested in numerous smaller and a few larger exercises, and they have proven to be extremely effective. The tractors are even more versatile than we had expected. They have been used to plough roads, for loading and unloading, for clearing snow, for maintaining gravel roads, for fortifications and for pulling loads across different terrain. Other branches of the army, including our field artillery and engineers, are now also interested in tractors," says **Jussi-Petri Hirvonen**, who is responsible for the Army's logistics.

The military tractors have been comprehensively equipped on the

assembly line and in the Unlimited Studio at the Suolahti factory. The specifications include matt green camouflage paint, auxiliary heaters, weapons racks, additional electrical sockets, protected fuel tanks, and tyres with independent tread blocks. The implements used with the tractors include snowploughs, buckets, forklifts and container trailers.

#### **A surprising yet logical choice**

The possibility of using tractors for military logistics was raised in research carried out in the mid-1990s. The idea gained momentum when container trailers became more widely available on the market.

"Initially, the idea of using tractors for logistics caused some amusement, but we nevertheless took a tractor for a two-week test drive and later for half a year. It turned out that the tractor was better suited to the rough terrain than wheel loaders or forklifts, which cannot pull loads and are also quite slow. In addition to various transportation and loading tasks, the tractors can also be used for other duties, such as snowploughing," Hirvonen adds.

#### **No lack of drivers**

Tractors are especially suitable for use by the Finnish Defence Forces,

as Finland has compulsory military service and there are always plenty of experienced tractor operators among the conscripts. Furthermore, in case of mobilisation, additional tractors would be easy to source from civilians.

"All of the conscripts who have undergone tractor operating training have been keen to be assigned as operators and have previous experience with either tractors or other large vehicles. Motivation and skills are not a problem," says Staff Sergeant **Jarno Minkkinen**, who trains the drivers in the Kainuu Brigade.

The experience of the conscripts is also very clear in the quality of their work. **Viljami Linnakallio** does a perfect job with the snowploughing, which is no surprise as he uses the same kind of tractor for snowploughing in civilian life too. **Jonne Väänänen** similarly uses the front loader to load pallets into a trailer, which is no problem as he comes from a farm and is an experienced tractor operator.

Defence forces in other countries are also interested in using tractors. Valtra tractors have been demonstrated, at the NATO Defence EXPO in Münster, Germany, and negotiations have already commenced with potential customers. •

**NOKIAN  
TYRES**

# BEAT THE WINTER



## Nokian Hakkapeliitta TRI

**Nokian Hakkapeliitta TRI is the world's first winter contracting tyre for tractors.** Featuring all new rubber compound, tread pattern and contact profile, Hakkapeliitta TRI arms you with incredible traction and lateral grip – along with less rolling resistance and superior driving comfort. You'll get your job done faster, more economically and more comfortably. Nokian Hakkapeliitta TRI helps you beat the winter.

**[WWW.NOKIANTYRES.COM/HAKKAPELIITTATRI](http://WWW.NOKIANTYRES.COM/HAKKAPELIITTATRI)**





The Valmet 1100-4 was an extreme machine in 1969: 4WD, a four-cylinder turbo engine and 115 horsepower.

## 4WD since 1969

# FOUR-WHEEL DRIVE AGRICULTURAL TRACTORS BECAME COMMONPLACE IN THE 1980S

**A**lthough four-wheel drive technology existed a hundred years ago, it was introduced on tractors only in the 1950s and did not become commonplace until the 1980s. In Europe sales of four-wheel drive tractors grew by almost 10 percentage points a year during that decade, and it was not long before they accounted for over half of all new tractors sold.

Valmet introduced its first four-wheel drive agricultural tractors, the 900-4 and 1100-4 models, in 1969. Five years previously the company had presented a four-wheel drive articulated terrain tractor that was designed primarily for forestry work.

With the arrival of the next 02 model series, four-wheel drive was introduced for the first time on a

larger model, the 1102-4. These models were used primarily for contracting work thanks to their size and features. The turning radius was limited by the location of the universal joint on the side of the chassis frame. At that time rear-wheel drive tractors were sufficient for ordinary farming tasks by using twin wheels and adding weight to the driven wheels, for example using wheel weights or by filling the tyres with a saline solution.

Four-wheel drive was introduced on Valmet's smaller agricultural tractors in the late 1970s. It was first made available on the 702 and 702S models. These were more agile than previous four-wheel drive models, as the universal joint was moved to the centre of the tractor and at the

same time into a more protected position inside the chassis frame. Customers also appreciated the weight of the new models.

At the start of the 1980s Valmet introduced a three-cylinder four-wheel drive model: the 602-4. The tractor's turning ability was increased by using smaller wheels, allowing the four-wheel drive tractor to turn in tighter spaces.

A year later Valmet introduced its new red tractors. While the very smallest of these, the Valmet 504, was only available with rear-wheel drive, while the larger Valmet 905, 2005 and 2105 were only available with four-wheel drive. Alongside other tractor manufacturers in Europe, Valmet now offered four-wheel drive across the range for the first time. •

The 2600-cubic-metre digester with the bund ready for one of the new digesters in the foreground.



# POWER FROM THE LAND

Valtra tractors help generate electricity on a Welsh farm.

TEXT AND PHOTO ROGER THOMAS

**L**ocated in the shadow of the Black Mountains in Wales, Great Porthanel Farm produces electricity for the national grid. The 700-acre farm is owned by the **Jones** family and run by sons **Paul** and **Gary**. Trading as G P Biotec Ltd, the farm's digesters and first generator were commissioned in February 2013, and its second generator went online in March 2015. Today the farm produces 1 mega watt of electricity which is sold on contract to the national grid.

To produce material for the digesters, the farm cultivates some 630 acres of whole crop (wheat, oats & barley), hybrid rye, maize and grass, all of which is used for silage. The remaining area, which is unsuitable for silage machinery, is used for grazing. An additional 200 acres

of whole crop and maize is grown under contract, some of which is cut and delivered from the forage harvester by the grower, while the other half is harvested by G P Biotec.

These crops are ensiled both in a clamp and as wrapped bales, totalling approximately 10,000 tonnes. The silage and food waste from various sources in Wales and beyond are fed into a 2600-cubic-metre digester, where the material is mixed, chopped and passed through a 12-millimetre screen every hour for around forty days depending on what is fed in.

"As the system digests the material it reduces in volume: dry material can go down by quite a bit, wetter material reduces less. The volume in the digester is automatically topped up to the optimum level," Paul explains.



Some of the 10,000 tonnes of silage stored ready for the digestion process.

After forty days the material is automatically transferred to a second 3000-cubic-metre digester for a further 40 or so days. Gas from both digesters is bled off to a storage tank and then used to power the two generating sets. Electricity from the generators is fed into the national grid while heat is used to keep the digester tanks at the optimum temperature



The C P Biotec team with Gary and Paul centre.



The C P Biotec fleet with the latest acquisition, a Valtra S374 on the left with a seven furrow plough.

and to pasteurise the digestate, the material remaining after the anaerobic digestion of the biodegradable feedstock.

Once pasteurised, the digestate is then ready for spreading on adjacent farmland. Initially this material is stored in what amounts to a slurry lagoon before being put on the land. It is then either spread directly from the lagoon for nearby land or delivered by truck to nurse tanks for spreading on more distant fields. Farmers within a ten mile radius who have the digestate spread on their land pay contractors rates for the spreading.

A planning condition prohibits G P Biotec from selling the spent material. G P Biotec does, however, analyse the nitrogen, phosphorous and potassium (N, P & K) values of the spent digestate, and consultants may do the same on the receiving land and arrive at the optimum application rate. Spreading is normally done five days a week, but the plant has storage capacity for 14,000 cubic metres of spent digestate to cope with periods when the land is unfit for spreading or when spreading is not allowed, usually mid winter.

Interestingly the anaerobic digestion process does not significantly alter N, P & K levels but does reduce odour levels. Gary admits the

odour from food waste was initially a problem for a short period, but the company worked closely with Natural Resources Wales and together they rapidly rectified the problem.

Today very little food waste is stored on site, and odours from the site and field spreading operation are pretty well nil.

#### **Well worth the money**

To get all this work done, Gary, Paul and their team rely on a fleet of Valtra tractors. The farm purchased its first Valmet back in 1996, and almost 20 years of operation in various farming conditions has proven the tractor's reliability.

"I still regret selling that first 8150," comments Gary, "but it did have over 11,000 hours on it!"

With a continuous production system to support, reliability is of paramount importance.

"We can't simply turn the system off if a field machine breaks down," says Paul.

"Valtra tractors are no cheaper than any other brand, but they do hold their resale value very, very, well – you get what you pay for and we feel that what the Valtras give us is well worth the money," Gary adds.

Today the fleet consists of a new 370/400hp S374 from Valtra dealer Edwards and Farmer that is used

mainly for ploughing with a seven furrow reversible or for slurry injection, a 280 hp S280 purchased with a few hours on the clock that is used mainly for slurry spreading with a dribble bar, and a further six T Series. These were purchased new or used depending on what was available at the time, the new ones from Edwards and Farmer and the used machines sometimes from other sources.

All of the farm's tractors carry out a variety of tasks according to the season and work load. These range from ground preparation and drilling to silage trailer hauling, working in concert with a contractor's forage harvester, hauling and spreading the spent material.

The ground work has already commenced on the installation of two further 2600-cubic-metre digesters at the farm. G P Biotec Ltd is also interested in developing a cleaning system for the gas so that it can be sold directly into the gas grid, for which there is a handy main passing through the farm. Another scheme would allow them to supply heat to a development planned for land adjacent to the farm. This is one type of diversification that could have a number of different outcomes, and Paul and Gary are keen to investigate them all. •



The power of the Valtra T234 engine was increased through software changes, while the top speed was increased by changing the planet gears on the rear axle. For the world record attempt a few of the lower powershift gears and ranges were used to accelerate fast enough.

Valtra tractor sets new world speed record

# NEW T SERIES TOPS 130 KM/H



Earlier this year Valtra and Nokian Tyres working together set a new world speed record for tractors: 130.165 km/h.

TEXT TOMMI PITENIUS PHOTO VALTRA ARCHIVE

The record was set on 19 February on the Vuojärvi road runway between Rovaniemi and Sodankylä. The tractor used to set the record was a fourth generation Valtra T234 on Nokian Hakkapeliitta TRI tyres: 440/80R28 at the front and 540/80R38 at the back. The tractor was driven by none other than four-time World Rally Champion **Juha Kankkunen**, who is also a farmer.

“I’ve done top speed tests with various cars before, but this was first time I tried with a tractor – and we set the world record immediately! The tyres and tractor performed great, even if the track conditions

were rather challenging,” commented Juha Kankkunen after setting the record.

The record was set in snowy conditions along a 2330 metre stretch. The speed was measured over a 50-metre timed stretch with a running start. The tractor had to be driven in both directions within an hour. The official world record time was the average of these two runs.

Valtra is the northernmost tractor manufacturer and Nokian Tyres the northernmost tyre manufacture in the world. Valtra tractors are famous for their performance in extreme conditions, including freezing tem-

peratures, as well as for their stability on the road. Valtra was also one of the first tractor manufacturers to offer 50 km/h transmissions when countries began allowing these speeds in the early 1990s.

Nokian Tyres developed the world’s first winter tyre for cars back in 1934. Two years later it introduced the Hakkapeliitta brand, which has since stood for the best in winter tyres. Ten years ago Nokian Tyres was also the first manufacturer in the world to introduce tractor tyres with independent tread blocks, and in 2014 it introduced winter tyres for tractors. Hakkapeliitta TRI tyres feature an all new rubber compound, tread pattern and contact profile for ultimate grip and control in snowy conditions. •



Order items from the Valtra Collection for delivery direct to your home by visiting our online store at [www.shop.valtra.com](http://www.shop.valtra.com)  
The Valtra Collection is also available at Valtra dealers (items in stock may vary).

Check out the Valtra Collection: [www.shop.valtra.com](http://www.shop.valtra.com)

**Valtra** Collection



**SOFTSHELL JACKET £ 67,94**

Multipurpose outdoor jacket with hood. The sleeves, hood and back are made of flexible softshell material, while the front is quilted nylon with a thin padded lining. The hood and hem width can be adjusted using the flexible drawcord. Contrasting colour piping on the inside of the hood. Velcro adjustable cuffs. Reflective print on the back. Zipped pockets on the sides. 96 % polyester, 4 % elastane. Black and gray.  
Men's sizes S-XXXL 42704002-07  
Women's sizes S-XXL 42704012-16

**CARD WALLET £ 31,70**

Stylish and convenient card wallet. Access your most important cards without having to open the wallet. Metallic closing mechanism with magnet. Valtra logo. Leather. Black.  
42701402



**FLASHLIGHT £ 17,35**

Aluminium flashlight with three functions: red flashing lamp on side, main lamp and zoomable CREE lamp. 12 white LEDs and 5 red flashing LEDs. Magnet at end for attaching flashlight securely to metal surfaces. Comes with 2 x AAA batteries. Valtra logo engraved on the side. Comes in a gift box.  
42702050

**THERMOS BOTTLE £ 26,80**

Capacity 1L. Drinking cups at both ends. Pouring handle on side and removable shoulder strap. High-quality stainless steel. 5-year warranty.  
42601556



**WORK GLOVES £ 9,06**

Durable professional work gloves. Palms made of softshell material with a breathable 3-layer water-resistant membrane. Silicon webbing ensures a firm grip. Outside made of 100 % nylon. Soft acrylic fleece lining. Velcro fastening on wrists.  
42701302-06

See us online: [valtra.co.uk](http://valtra.co.uk)

**Valtra** Models



### N4 SERIES

MODEL	MAX. HP/NM
N104 HiTech	105/470
N114e HiTech	115/500
N124 HiTech	125/550
N134 HiTech	135/570
N154 HiTech	155/610
N174 HiTech	165/680
N134 Active	145/600
N154 Active	165/720
N174 Active	185/730
N134 Versu	145/600
N154 Versu	165/720
N174 Versu	185/730
N134 Direct	145/600
N154 Direct	165/720
N174 Direct	185/730

### N3 SERIES

MODEL	MAX. HP/NM
N93 HiTech	99/430
N103 HiTech	111/465
N113 HiTech	130/530
N123 HiTech	143/560
N143 HiTech	160/600
N93 HiTech 5	99/430
N103 HiTech 5	111/465
N113 HiTech 5	130/530
N123 HiTech 5	143/560
N123 Versu	143/560
N143 Versu	160/600
N163 Versu	171/700
N123 Direct	143/560
N143 Direct	160/600
N163 Direct	171/700



### T SERIES

MODEL	MAX. HP/NM
T144 HiTech	170/680
T154 HiTech	180/740
T174 HiTech	190/900
T194 HiTech	210/870
T214 HiTech	230/910
T234 HiTech	250/1000
T144 Active	170/680
T154 Active	180/740
T174 Active Eco	190/900
T194 Active	210/870
T214 Active	230/910
T234 Active	250/1000
T144 Versu	170/680
T154 Versu	180/740
T174 Versu Eco	190/900
T194 Versu	210/870
T214 Versu	230/910
T234 Versu	250/1000
T144 Direct	170/680
T154 Direct	180/740
T174 Direct Eco	190/900
T194 Direct	210/870
T214 Direct	230/910



### A SERIES

MODEL	MAX. HP/NM
A53	50/196
A63	68/285
A73	78/310
A83 HiTech	88/325
A93 HiTech	101/370



### S SERIES

MODEL	MAX. HP/NM
S274	300/1300
S294	325/1390
S324	350/1500
S354	380/1590
S374	400/1600



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