

FARMLIFT THE NEW ALL-ROUND LOADER MAGNUM CVX BRINGING EFFICIENCY **ST. VALENTIN** BUILT WITH PASSION



FINALLY, A SOLUTION TO THE STRUGGLE BETWEEN POWER AND EFFICIENCY.

Puma is the most fuel efficient tractor in its class*. It's all a matter of balance; power and efficiency equals productivity. Or as we like to say APM - Auto Productivity Management.

Puma is constantly assessing what you're doing, adjusting the balance of the seamless CVX transmission and the rpm of the powerful six cylinder SCR engine. We call it Efficient Power. Because Puma sips diesel, but packs an awesome punch.

*At rated speed and max output. Source: Profi magazine tests 5/2013.





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EDITORIAL

SMART AND EFFICIENT FARMING – NEW SOLUTIONS AND INNOVATIONS FROM CASE IH

I DEAR READER,

In this edition, we again look at a broad range of topics – from the Case IH tractor being deployed for research, to the new Farmlift and efficiency increases offered by precision farming, to the European Congress of Young Farmers in January at the European Parliament in Brussels, which we were proud to support.



All of these topics concern sustainability. Although sometimes an overused term in recent times, it reflects one of the most

important challenges of our time. And by supporting the second European Congress of Young Farmers in January 2014, we have indeed made a sustainable investment – an investment in all our futures. After all, who will feed us tomorrow if not the young farmers of today?

These young farmers embodied something that we see every day in St. Valentin too, something that can be depicted quite aptly bys "Built with Passion": A passion born of commitment, trust, and team spirit that results in the quality that our machines stand for. It makes me proud to see the attitude and loyalty of our employees to the company.

And I am also proud to present even more technical innovations in this edition. Again, these focus on real sustainability, more efficiency, more performance, and ultimately, greater benefit to our customers.

I hope you will find this edition of FarmForum just as exciting and varied as I do.

Happy reading!

Gabriele Hammerschmid

Case IH Marketing Director for Europe, the Middle East, and Africa

CASE IH MAXXUM PLOUGHING AWAY FOR SCIENCE IN PURSUIT OF CLIMATE AND ECOSYSTEM RESEARCH

SINCE JUNE 2013, BAD LAUCHSTÄDT NEAR HALLE IN SAXONY-ANHALT (GERMANY) HAS EVEN MORE SCIENTIFIC APPEAL.

It is the only one of its kind in the world: Ten giant steel constructions in which future climate changes can be simulated and their effects can be analysed. The "Global Change Experimental Facility (GCEF)", part of the Helmholtz Centre for Environmental Research (UFZ) in Leipzig incorporates a total of 25 coverable and 25 noncoverable test areas. In designing the facility, the researchers were not just concerned with simulating the effects of climate change, but noting the impacts of land use itself.

I TRACKING THE IMPACTS OF CLIMATE CHANGE AND LAND USE

This is why five of the steel complexes with a total of 25 plots can be covered; as soon as the sun goes down, the sheet roofs and the side walls close automatically. As a result, the night-time temperatures are up to three degrees Celsius higher than the areas in the other five complexes, also with a total of 25 plots, which remain open overnight. In addition to the change in temperature, it also means that different

precipitation behaviour can be simulated – such as increased dryness in summer – and compared with the actual weather conditions at the site. In terms of land usage variants, conventional cultivation, eco-cultivation, intensively and extensively farmed grassland, and sheep meadows can be compared – both coverable and non-coverable in each case.

Dr Martin Schädler, the scientific coordinator of the project is confident: "We will be able to observe the effects of climate change and land



use under relatively realistic conditions." This does not just apply to the growth and composition of the plant stock, but also, for example, the soil life, i.e. the many organisms that help in the composition and breakdown of the topsoil. Even their composition and activity could be subject to greater or less extensive change as the framework conditions change.

I BIG ENOUGH FOR "REAL AGRICULTURAL TECHNOLOGY"

Many plots of land for precise scientific trials are only a few square metres in size. Often this is because there's no other option - and is a disadvantage for many reasons because it's almost impossible to replicate large-area processes on just a few square metres, small areas are more prone to boundary effects and interferences, and because researchers in different disciplines cannot work unhindered on plots that are too small. Without all of these often guite common restrictions, the facility in Bad Lauchstädt offers almost luxurious working conditions. At six metres wide and 24 metres in length, the individual plots are so big that "conventional" agricultural machines can be used. This means that it is possible to use a Case IH Maxxum 5130 as the "agricultural powerhouse", allowing real-life conditions to be replicated as closely as possible rather than the conditions of scientific experiments.

I IN EXCELLENT COMPANY!

As far as the technical equipment of the GCEF is concerned, the Maxxum is in excellent company: Much of the data and information that will be recorded at this site in the coming years will be entered into a self-organizing sensor network developed at the UFZ. This includes a number of small stations that will record elements such as humidity and temperature of the air and ground, and even the radiation intensity. The data is automatically sent to the project's database via a router. "This is a truly high-tech test field for us", enthuses project coordinator Schädler and points out that the observable technology is only the start, and that the remaining technology is buried in the ground or exists in the air as a "data cloud" en route to the nearest router.

I NOTHING COMES CHEAP

A facility like this offers extraordinary opportunities, but it doesn't come cheap: The Federal Ministry of Education and Research (BMBF), and the states of Saxony-Anhalt and Saxony invested some 4 million euro in the GCEF. That's certainly not chicken feed – but then the facility is not just a project that benefits scientists, but will also provide conservationists, agricultural planners, farmers and political decision makers with valuable information. Other than the size of the test plots, what

other than the size of the test plots, what sets the GCEF apart is the planned duration of

many of the research projects. Following the "harmonisation" of all plots in the first spring, in which oats were sowed everywhere, the crops and grass mixes intended for the different usage types were sown in autumn 2013. The sheep for the meadow areas will assume their work as "technical assistants" in spring 2014 – after which point the facility will run for at least 15 years, giving the animal and plant stock sufficient time to develop climate and farming related characteristics.

I FINDINGS FROM THE TEST STAND

The ability of ecosystems to shield themselves from environmental influences often depends on their diversity: The more diverse an ecosystem, the less sensitive it is to clear environmental changes – according to current theory. And such an effect may be completely plausible because more "substitute options" are available in more diverse ecosystems to assume the function and role of any threatened species.

The narrower the range of species, the smaller and weaker this "range of substitutes". The key thing now, however, is to find proof of this and similar effects in the next 15 years. The Global Change Experimental Facility offers the best facilities imaginable to find the answers to this and many other questions!

Photo: UFZ/ André Künzelmann



NEW TELESCOPIC LOADER SERIES FROM CASE IH

CASE IH FARMLIFT – THE ALL-ROUND LOADER WITH EXTRA BENEFITS

CASE IH IS EXPANDING ITS RANGE WITH A TELESCOPIC LOADER SERIES WITH SIX NEW MODELS / FARMLIFT 525 IS A COMPACT AND COST-EFFECTIVE ENTRY LEVEL MACHINE / MODELS WITH LIFT HEIGHTS OF SIX, SEVEN, AND NINE METRES ENSURE PROFESSIONAL MATERIAL HANDLING

Telescopic loaders are needed in many agricultural businesses. As compact, powerful loaders, they can be used for almost all material handling and transportation work. Case IH now offers a telescopic loader series.

The new Case IH Farmlift series consists

of six different models at market launch. With performance ranging from 74 hp (Farmlift 525) to 143 hp maximum power on the Farmlift 635 and 742 models, and with lift heights from 5.7 to 9.6 metres, the series offers the perfect telescopic loader for every

logistics task on agricultural holdings – from the versatile Farmlift 525, specially designed for use in buildings and covered livestock areas, to the powerful Farmlift 935, which can easily handle high heights with large loads.



I EXPERT FOR ANIMAL HUSBANDRY AND SPECIAL CROPS

The Farmlift 525 is a compact and cost-effective entry model with a loading capacity and machine performance specially designed for use in areas such as feed transport on farms with livestock.

It is also ideally suited to logistics work on farms with special crops, or fruit cultivation and vineyards – as an alternative to the front loader.

UP AND AWAY!

The Farmlift 525 offers a maximum loading height of 5.7 metres, and can lift 2.5 tons.

Its low build height of under two metres is a standout feature. With a compact frame and wheelbase of just 2.35 metres, it has an extremely tight turning radius of just 3.40 metres, making it ideal for use in buildings and livestock stables.



I WHEN YOU NEED HIGH LOADING PERFORMANCE AND LIFTING HEIGHT

For farmers and subcontractors who need more lifting power and lifting height, Case IH offers the new Farmlift series from model 632 with 6.1 metres maximum lifting height, 3.2 tons lifting power, and 110 hp drive power (121 hp maximum power).

Five different models offer the right telescopic loader in the upper power segment for any business.





I FARMLIFT 935 – THE TOP MODEL

The Farmlift 935 is the top of the range, and with a 9.6-metre lifting height and capacity of up to 3.5 tons, achieves the best possible productivity and loading performance.

The Farmlift models 632 to 935 are driven by modern, highperformance NEF 4 engines by FPT that meet the Tier 4A emissions standards. These Farmlift models use the tried and tested Efficient Power System from Case IH with an innovative and fuel-saving emissions cleaning system based on an SCR system.

I LOAD GENTLY AND QUICKLY

The modern transmissions are also a technical highlight, allowing not only rapid journeys, but also powerful loading operations, for example with high propulsive force. These models have a 4x3 Powershift transmission or a 6x3 Autoshift function to choose from, which means a maximum speed of 40 km/h can be reached.

I SIMPLE OPERATION

The operator can control all main functions such as operation of the hydraulics and changes of direction or gear safely and easily at the touch of a finger using the joystick.

EXCELLENT VIEW

All Farmlift models have a comfortable, open and fully glazed cab for an optimum 360-degree view, especially across the upper work area. The Case IH developers have used the tried and tested design details of the Case IH tractor cabs.



SMOOTH TELESCOPE MOVEMENTS

The Farmlift models offer high-performance systems with hydraulics power of up to 120 l/min for powerful lifting. A variable flow pump with a capacity of 140 litres is integrated into the 635 and 742 models.

THE NEW DESIGN PRINCIPLE OFFERS SECURE LOADING PROCESSES AND MAXIMUM STABILITY

The recently developed chassis design of the Farmlift ensures a low centre of gravity and optimum weight distribution. This ensures maximum stability in all loading processes. Thanks to the special design of the telescopic arm, even extreme forces can be handled easily. "Despite the low centre of gravity, the

machine has plenty of ground clearance. The optimum weight distribution between the front and rear axles ensures good traction and perfect handling over ground", says David Schimpelsberger, Product Manager at Case IH and responsible for the market launch of the Farmlift in Europe.



David Schimpelsberger, Product Marketing Manager Case IH

CASE IH IS EXPANDING ITS TRACK GUIDANCE SYSTEM FOR 2014

THE NEW CASE IH XCN-2050 DISPLAY – THE NEXT GENERATION OF PRECISION FARMING DISPLAYS

HIGH-RESOLUTION 12.1-INCH HD MONITOR FOR THE FIRST TIME WITH MULTITOUCH OPERATION / MODULAR DESIGN / ANDROID OPERATING SYSTEM AND QUAD-CORE PROCESSORS FOR MAXIMUM OPERATING SPEEDS / INTEGRATED HD VIDEO CAMERA

With the new XCN-2050 displays, Case IH is expanding its range of modular and mobile track guidance systems. The new XCN-2050 display system is the next generation of multifunctional track guidance systems that impress with a wealth of new functions and developments. The highlight of the new display is a 12.1-inch HD colour monitor with multitouch control. The monitor has a resolution of 1280x800 pixels, meaning it can display maps in previously unattainable clarity and level of detail.

The display also features for the first time multitouch operation, offering the user simple fingertip operation. All the normal functions used in smartphones or tablets, including dragging and enlarging and scrolling of page content, are also available.

I FAST PROCESSORS AND OPTIMUM VIEW

An up-to-date Android operating system also ensures fast and simple operation. The new quad-core processors offer maximum speed, for example when navigating, at start-up, sending signals and for determining current location.

The display was specially designed for daylight operation, and contour information remains crystal clear even with direct sunlight in the cab. Map views can also be switched and enlarged quickly at the touch of a finger. I NEW: MULTITASKING

With the Android operating system, additional software can also be installed to expand the scope of functions, for example with agricultural applications such as light bar displays or the display of additional agricultural information – from weather data and precipitation values to farm-specific location information.

An integrated HD video camera is also mounted on the front of the display for the first time. This means, for example, that software add-on functions can be read and activated easily via QR codes.

The XCN-2050 system has a highly sensitive GNSS satellite receiver for rapid and precise positioning. The receiver can process the new Trimble correction signals including RangePoint RTX and CenterPoint RTX as well as xFill functions and the usual RTK and VRS technologies.



I EASY CHANGE OF OPERATION

The XCN-2050 has a modular design. In addition to the actual display, there is also the new TN 200 module, which houses the GNSS receiver and a highly sensitive system antenna. The receiver module and antenna can be professionally installed in the tractor so that the XCN-2050 display can still easily be used in different tractors and harvesters, allowing for rapid change of use.

All current data is saved in the device, which means the processing operations can be documented. The XCN-2050 display has an internal 32 GB flash hard drive and the data is transferred via USB sticks.



INNOVATIVE SERVICE CONCEPTS AT CASE IH NEW GENERATION OF SERVICE VEHICLES ROLLS OFF THE PRODUCTION LINE

The new generation of service vehicles is in use at Case IH service partners right now. These vehicles were specifically developed for mobile use on agricultural land and contracting businesses, and impress with their modern service and diagnostic equipment.

"When designing the vehicles, our priority was to be able to carry out all essential service and maintenance work on-site in one day, while also being able to perform diagnostics, eliminate faults and make repairs independently without having to rely on the normal workshop equipment. By offering such a high level of diagnostics competence, we want to keep repair times to an absolute minimum, and above all minimise downtimes", says Markus Hülsmann, Customer Service Manager, Case IH. One of the most impressive features is a mobile oil service unit that allows a complete oil service – including disposal and filtering of oil – even on large agricultural machines.

Case IH has also developed "First Time Fix Sets" for the various series that ensure the technician has the right spare part in his pack.

The Case IH Electronic Service Tool (EST) is also integrated in the vehicle. This service tool allows faults to be read out, software statuses can be checked and updated, and parameters can be recorded. The new DATAR tool is also on board. This tool allows signals, pressures and flow volumes to be visualised as graphs. This means the Case IH technician can perform an even faster and more targeted diagnostics. One special function is the fast compression test. The EST also contains over 100,000 solution strategies from the worldwide knowledge database ASIST from Case IH. These are even available to technicians offline.



MORE THAN 150 RTK STATIONS ENSURE CORRECTION SIGNALS CAN BE SENT THROUGHOUT THE RELEVANT AREA

With its own RTK network, Case IH offers correction signals for precision farming applications throughout the relevant area.

Last year, the number of stations, most of which are operated by Case IH dealers, was expanded to more than 150. This allows farmers, subcontractors and machine cooperatives with tractors and combine harvesters to use correction signals throughout the region and to benefit from row accuracy of less than two centimetres. The inclusion of Case IH sales partners and the resulting independence of third parties present a major benefit to farmers and subcontractors because they are assured of the normal excellent service and fast response times during peak times even for precision farming applications.

"Our well-developed network means agricultural businesses can rely on high positioning accuracy in precision farming, but they can also use precise RTK data – without investing in expensive reference stations", reports Martin Schönberg, precision farming specialist at Case IH and coordinator of network expansion in Germany.

I XFILL FOR RELIABLE SIGNALS

Since the turn of the year, there has also been a new safety function in the RTK network, which ensures a more reliable signal. Case IH xFill is a new service for all users of the Case IH RTK network that can be used to provide positional data for several minutes, even if the RTK correctional data flow is not available for technical reasons or if the signal is temporarily lost.

The new xFill function is available as soon as the RTK signal is interrupted. Since there is no delay, work can continue without interruption. It is therefore possible to handle any radio failures or losses of Internet connections, which are a main cause of lost RTK correctional data.

Furthermore, in order for xFill to function, RTK signals do not have to be received for a specific period of time. xFill is ready immediately after the system has been activated and can bridge

RTK signal losses from the first second of interruption for up to 20 minutes.

I MOBILE SIGNAL CONNECTION FOR EVEN MORE PRECISE DRIVING

A further feature of the Case IH RTK network is the inclusion of the mobile radio network and Internet. Both the RTK stations and the tractor are connected to the Internet.

In addition to the actual GPS guidance system, the tractor is fitted with a modem with a connection for a mobile network, which it can use to establish an Internet connection to the data of the RTK stations. It receives corrected data continuously from the RTK stations by mobile radio signal, allowing extremely precise position location and driving accuracy of up to two centimetres. The correction data can also be used by GPS systems of other providers and the Case IH AFS solutions can even be used in third-party products.

MAGNUM CVX IN FARMING BRINGER OF EFFICIENCY: MAGNUM 370 CVX OFFERS CLEAR INCREASE IN PERFORMANCE

FARMER RALF HERZOG FROM DITHMARSCHEN IS ONE OF THE FIRST FARMERS IN GERMANY TO USE A MAGNUM 370 CVX / OPERATING COSTS IN SOIL MANAGEMENT ARE FALLING FURTHER / USING RESERVES IN CULTIVATION



Farmer Ralf Herzog

Farmer Ralf Herzog from Schmedeswurth in the region of Dithmarschen in Schleswig-Holstein is one of the first farmers in Europe to have put a Magnum CVX through its paces and then purchased it shortly after the presentation. The new flagship in the Magnum series – a Case IH Magnum 370 CVX – has now been delivered to the farm. Good enough reason, then, for FarmForum to speak with the farmer about his decision to purchase this large tractor.

Farmer Ralf Herzog is a typical north German business owner. Quiet and relaxed, perhaps even a little reserved, he explains his business concept. The Herzog family has farmed and grown vegetables in the Dithmarschen region for four generations. It is now one of the largest cabbage growing areas in Europe. Farmers here grow white cabbages and other vegetables over an area of more than 2800 hectares. The area also boasts specialists in carrot and potato cultivation.

The farms were originally very small businesses, but over the last few decades have gathered a wealth of expertise, which helps with marketing, but especially in the preparation of vegetable specialities.

Almost all farm businesses are highly specialised. The same applies to the Herzog family business. The entire cabbage harvest is stored in special refrigerated warehouses erected by the family and distributed to Germany's grocery chains via specialised cabbage merchants from February to July.

In addition to their round cabbage crop rotation, Ralf Herzog has two other crop rotations for rapeseed and sugar beet, rounded off in each case with winter cereals.

Much revolves around cabbage when it comes to the technical equipment too. A great deal of manual work is associated with the harvest in particular, but also with storage, and above all, preparing the vegetables for distribution.

I ANY INCREASE IN EFFICIENCY WELCOME

"This is why we need maximum efficiency for our entire farming operations. For years, we have been striving to draw on our reserves. We are interested in any concepts that offer greater performance, for example in fertilisation and maintenance or in plant management – not least in order to free up labour time for the various tasks and possibly for new projects."

But why a heavy-duty tractor like the Magnum 370 CVX on a farm like this? "We rely on our machines having a long useful life. In other words, when we purchase a new product, performance is of utmost importance" explains Ralf Herzog and continues:

I MORE DRIVE POWER NEEDED

"We chose the Magnum ultimately because of



one key event. When installing a power cable, which crossed a large section of our field area, we found compaction levels, some extensive, in soil layers below the tilled horizon. This gave me the idea of further optimising the tillage – for example, reducing the amount of surface that is driven on. However, this requires larger working widths. We also want to loosen the soil over time, up to 60 centimetres deep in places, using a seven-centimetre blade width to loosen root areas in particular. Of course, this is a longer-term measure to improve soil quality. Ultimately, however, one thing is clear: We need more drive power! And that's where a heavy-duty tractor like the Magnum comes into its own."

Herzog cites a number of reasons as to why they chose a Magnum CVX. "Compared to the alternatives, it's undoubtedly a more costeffective solution with an excellent priceperformance ratio. After just the first practical test, we were impressed with the engine performance" says the farmer.

I TRIED-AND-TESTED CONCEPT

"Not only that, but we have had good experience with the brand for years, and are extremely satisfied with the dealer support from Meifort GmbH. These are factors that certainly play a key role when it comes to large tractors. Magnum tractors have proven themselves as top machines in farming for many years. The tried-and-tested frame construction design is very robust, and delivers the necessary working weight to transfer the high performance to the ground", is the unambiguous assessment of Ralf Herzog.

I SPECIALIST IN TILLAGE

Starting in this cultivation season, the Magnum 370 CVX will assume all tillage operations. New tillage equipment was also purchased, such as a deep subsoiler and a new 6-blade plough. "We hope that this will generate greater efficiency, free up more labour and lead to reduced operating costs in our processes. As for free capacities, I'm fairly sure that I will be able to deploy these throughout the business and perhaps even create some "breathing space" for new projects."

MAGNUM CVX – A TOP PERFORMER

"With the new continuously variable drive in combination with Efficient Power, a new dimension in terms of work performance and efficiency is certainly achieved. The engine is as "strong as an ox". There is up to 49 hp extra from the Power Management and up to 35 hp extra from an overload function, so it speaks for itself", says Herzog, a farmer, after his first experiences.

"The continuously variable transmission for speeds of up to 50 kilometres per hour and four mechanical gears also ensure outstanding performance. The integrated inching function, independent of the engine rpm, and active stop control are also very interesting features. I particularly liked the gear switching action of the transmission, for example when accelerating, braking or changing direction, which can be set to three levels – from less aggressive to a sportier mode."

"The tractor is very easy to operate using the multicontroller. Of course, all the other performance parameters of the Magnum are also impressive, for example a rear lifting capacity of 11 tons, and hydraulic capacity of up to 280 litres a minute as well as six electronic auxiliary distributors, which are CAN-bus controlled and ensure ideal performance. The front frame system offers a high degree of versatility in the field. A wheelbase of over three metres ensures directional stability, for example when transporting loads on roads. The fullyautomatic GPS control offers us significant benefits for reducing soil compaction and helps maintain drainage in areas with significant working depths."



I POWERFUL IN THE FIELD AND ON THE ROAD

You have the choice: Have your Magnum equipped with a Full Powershift transmission and the Automatic Productivity Management (APM) which adjusts the gear and engine rpm to actual requirements, or opt for the continuously variable transmission that makes the Magnum the perfect all-rounder on the road and in the field – from 0-50 km/h automatically and seamlessly.

COOPERATION WITH "WELTHUNGER-HILFE" (WORLD HUNGER AID CHARITY): CASE IH IS A "PARTNER FOR NUTRITION"

CASE IH GIVES MORE THEN 50,000 EURO TO SUPPORT WELTHUNGERHILFE PROJECTS AND PROVIDES FARMING EQUIPMENT FOR PROJECTS IN KENYA



Andreas Klauser, COO CNH Industrial EMEA and Brand President Case IH presented a cheque for the full amount to Dr Wolfgang Jamann, General Secretary and Welthungerhilfe CEO at Green Week.

The starting pistol was fired at the International Green Week 2014: Case IH is the first company in Germany able to call itself a "Partner for Nutrition" of the Welthungerhilfe charity. Case IH is supporting the organisation in its fight against hunger and poverty, providing more than 50,000 euro and tractors for an aid project. 45,000 euro alone was provided for the nutrition initiative. The aim is to offer as many people as possible access to adequate and suitable food. The funds provided by Case IH will be used where they are needed most – particularly in regions with barely any public awareness.

The money will not be assigned to any specific project in advance, but used according to the priorities identified by Welthungerhilfe. As part of the nutrition initiative, Welthungerhilfe sponsored projects in eight countries on three continents in 2013.

I CASE IH TRACTORS FOR FARMERS IN KENYA

The Welthungerhilfe projects in Kenya demand both agricultural expertise and the equipment itself. This is another priority in Case IH's work with Welthungerhilfe. On average, smallholding farmers in Kenya farm around half a hectare of land. This means they can barely produce enough food to cover their own needs, let alone grow a surplus that they could sell on a local market to supplement their income. Case IH will provide two tractors and equipment for tillage and haymaking for smallholding farmers in Kenya. Case IH will deliver the technology via its sales and service network in Kenya.

PRECISION FARMING SYSTEMS FROM CASE IH CASE IH AFS ACCUGUIDE RTK GAVE GREAT RESULTS IN THE DLG TEST

DLG TEST AFFIRMS EXCELLENT TRACKING ACCURACY OF THE AFS ACCUGUIDE RTK GUIDANCE SYSTEM / ONLY MINIMAL DEVIATIONS FROM THE TARGET TRACK COULD BE DETECTED EVEN ON UNEVEN GROUND

The AFS AccuGuide RTK guidance system from Case IH impressed in a DLG test with its extraordinarily high system accuracy in a range of just three to five centimetres. The test also shows only very minor deviations from the target track on uneven ground and the testers confirm that the system has a very good longterm accuracy of three centimetres. The Case IH guidance system AFS AccuGuide was used in the DLG test with an AFS 372 GNSS receiver, which was installed on a Puma 160 CVX.

The accuracy of the guidance system was recorded by the DLG testers in the DLG test centre in Groß-Umstadt using measurements with an optical reference system. As well as testing the accuracy, the handling of the guidance system was also tested in agricultural tractors. The testers were impressed by the excellent ease-of-use and clear display of the AFS AccuGuide system.

Since the system also uses the Russian Glonass system in addition to the American GPS satellites, the system had a high availability of GNSS signals. A detailed testing report is available from Case IH dealers and can be downloaded immediately from the Case IH website or DLG website.



NEW QUANTUM FOR ORCHARDS AND VINEYARDS

CASE IH HAS LAUNCHED TWO NEW SPECIALIST MODELS, THE QUANTUM F FOR USE IN ORCHARDS, TOGETHER WITH THE ULTRA-NARROW QUANTUM V FOR USE IN VINEYARDS AND SOFT FRUIT APPLICATIONS.

The three Quantum F models from 88hp to 106hp are designed for use on fruit farms and in other situations which will benefit from their compact dimensions, narrow width, tight turning radius and high power output. Measuring just 1.46m wide on standard tyres, applications range from horticultural work such as spraying, fertiliser application and mulching, to mowing in orchards, sports fields or solar parks.

With 3.2 or 4.5-litre turbocharged and intercooled diesel engines, the Quantum F has a large 90-litre tank, so it can work all day without refuelling, while the horizontal exhaust enables them to operate safely in poly tunnels and under overhanging branches.

Models incorporate a 16F/16R transmission as standard, with the option of a 32F/16R with Powershuttle, 2-speed Powershift and Powerclutch. All transmissions can be specified with up to 44 forward and 16 reverse ratios, enabling these models to operate at speeds from 40kph down to just 300 metres per hour at rated engine speed.

There is a wide range of options including fourwheel-drive, upgraded 1000rpm PTO with Proportional Ground Speed and up to three doubleacting rear remote valves, three optional midmounted couplings and Electronic Hitch Control (EHC). The four Quantum V vineyard tractors, from 78hp to 106hp, share a similar mechanical configuration to Quantum F models, but are even more compact, with a maximum cab height of 2.19m and a minimum width of just 1.19m.

"The new Quantum models have been introduced to meet growing demand from soft fruit and vineyard enterprises for modern, efficient, highlyproductive tractors. With higher planting densities closer to field boundaries, they require tractors with greater manoeuvrability. They are also moving towards regular replacement cycles for key machinery and we believe that there is great potential for the new Case IH Quantum tractors in traditional fruit producing and vineyard regions and beyond."

FARMALL U PRO – NOW WITH NEW SPEC 1

With the arrival of the new model year 2014, the Farmall U PRO brings some exciting developments. It has optimised cab suspension and a new cab frame. Despite the standard cab lining, the tractor has not increased in height.

Optional fittings also include heated mirrors, LED lamps and a modern LED light bar rack for urban use. There have also been some changes to the cab design.

There is a new ergonomic hand rest for the multicontroller. The steering column has been completely redesigned and now allows greater visibility and offers more room.

If necessary, additional controllers can also be fitted without great expense. To find out more about all the new options, contact your dealer.



ULTRASOUND SENSOR MONITORS GRAIN TANK FILLING CONTINUOUS GRAIN TANK FILL LEVEL MEASUREMENT FOR CASE IH AXIAL FLOW COMBINE HARVESTER

For the model year 2014, Case IH is equipping all axial flow combines with a new technology. Standard equipment will include a continuous grain tank fill level measuring using ultrasound sensors.

Previous fluid level indicators use various physical sensors and switches in the grain tank to display the fill level to the operator. In practice, these systems are often prone to faults and are often inaccurate in live operation due to dirt. The new Case IH system uses a new technology. The fill level is continuously monitored using just one ultrasound sensor. This sensor does not have direct contact with the grain, which means the entire system is very robust and works reliably. The ultrasound measurement provides the operator with very accurate real-time information about the fill level of the grain tank at all times. This system also provides important information for telematics systems. This information can be used not only to aid the combine harvester operator, but also to better govern the tank drainage time, allowing productivity to be optimised in the tank emptying cycle.

CASE IH TRAINING ROUTE – FOR RESEARCH, DRIVER TRAINING AND TRACTOR HANDOVERS "RED POWER ROAD" IN ST. VALENTIN

A MULTIFUNCTIONAL TRAINING AND TEST TRACK EXPANDS THE SERVICE OFFERING AT THE EXPERIENCE CENTRE IN ST. VALENTIN

A training and test track has been commissioned at the Case IH production site in St. Valentin.

The new "Red Power Road" is a training track to be used by the developers based in St. Valentin and for standard tractor tests following the rollout of each and every tractor manufactured at the St. Valentin plant.

"And with our new Experience Power Road, visitors to the plant have an area to test our

tractors under normal conditions such as road driving", explains Christian Huber, CEO of CNH Industrial Österreich at the Case IH production site in St. Valentin.

"Precision farming systems such as track guidance or telematics systems can also be tested under field conditions. These systems are increasingly becoming a feature of our tractors. On-site instruction allows users to become more efficient and confident in using these new technologies" continues Huber.

I TRAINING AND TESTING AND PRACTICAL OPERATION

The route, which comprises a lap of over 1.2 km over an area of more than 10,000 square metres, can also be used to test modern driver assistance and safety systems in the tractors, such as automatic productivity management and the ABS braking system. The site also includes a special field and soil area where the tractors can be tested under real-life field conditions.



Member of the works council Gernot Lehenbauer, Plant Manager Andreas Kampenhuber, Marketing Director Gabriele Hammerschmid, CEO Christian Huber, member of the works council Ferdinand Bogenreiter

CASE IH AND TTEA TSUSHO EAST AFRICA LTD. COOPERATE IN AGRICULTURAL SALES AND SERVICE

In the stable economies of east Africa, including Tanzania, Uganda and Kenya especially, there is rapidly growing demand for modern agricultural equipment – not least in order to handle cultivation operations more efficiently and less resource-intensive than previously, and in so doing, to increase the yield and production efficiency of food production.

For this reason, Case IH is intensifying its sales activities in east Africa. At the beginning of October, the company signed a letter of intent with Japanese company TTEA Tsusho East Africa Ltd., which focused on cooperation in the area of sales and servicing concepts for Case IH agricultural machines, including Case IH tractors and combine harvesters.

TTEA Tsusho East Africa Ltd., with its head offices in Nagoya and Tokyo (Japan), is one of the leading vehicle distributors in north, east and south Africa, handling both passenger cars and industrial and specialist vehicles. The first tractors are to be produced and delivered by Case IH in the course of 2014. The current Farmall A and U series have been adapted to the needs of African agriculture, particularly in the 60-80 hp segment — for instance, in terms of engines and transmission technology.



NEW APPOINTMENTS STRENGTHEN DEALER NETWORK IN HUNGARY

GROWING MARKET DEMAND IN HUNGARY / CASE IH FOCUSES ON BUILDING THE MOST PROFESSIONAL DEALER NETWORK IN THE INDUSTRY

Case IH is markedly intensifying its distribution activities in Hungary. In a move driven by strong market demand, Case IH is pleased to announce a refined and stronger than ever presence in Hungary. "In view of a strong demand and further positive market outlook, we have enforced our network of highly committed importers on the Hungarian market", says Andrew Parsons, Marketing Manager Balkans & Eastern Europe Case IH & Stevr.

"Our mission is to bring value adding agricultural equipment and services to our customers and an essential element of achieving this is building the most professional dealer network in the industry. Professional farmers need professional dealers focused on fulfilling the demands of their customers. That is why we have launched Red Excellence, our network development program", Parsons adds. "Having this in mind, I am particularly delighted to announce the recent appointment of AgroBekes Kft as new distribution partner. Together with AgroBekes Kft and our strong and reliable Hungarian partner Invest Kft, we will continue to strengthen Case IH presence in Hungary", he explains.

I RED EXCELLENCE FOR FIRST CLASS CUSTOMER SERVICE

The focus of the dynamic and challenging Red Excellence Program is to grow the successful and sustainable partnership with Case IH dealers even further and to continuously raise the quality of the service to Case IH customers. The program supports each dealer to identify business areas that need attention and to drive best practice actions for continuous business improvement. "Red Excellence is a key element of our Case IH Strategic Development Plan to fulfil our vision of becoming our customers' preferred partner, bringing them our high quality and innovative products, and delivering best-in-class service support", says Stefan Bogner, Business Director Balkans & Eastern Europe.



Stefan Bogner, Business Director Balkans & Eastern Europe

TIGHT, WELL-CONSTRUCTED BALES

AN LB434 BALER'S HIGH CAPACITY AND TIGHT BALES GIVES AN ARIZONA PRODUCER MORE OPTIONS FOR HAY AND STRAW SALES

With abundant sunshine, ample irrigation water and warm temperatures year-round, farmland around Yuma, Arizona, is challenged to produce two and three crops of vegetables per year. The romaine lettuce, cantaloupes, onions, edible beans, black-eyed peas and other crops John Boelts grows on 1,500 acres spread across several farms in the Yuma Valley help meet North America's appetite for wholesome and nutritious food grown to high and accountable quality standards.



The LB434 baler provides good service access including a sturdy folding ladder to the top of the baler, and large easy-opening service panels. The baler holds 16 balls of twin on each side.

These crops also require rotations every few years to give the land a rest and to keep potential soilbased diseases at bay. Hay crops are a natural choice for rotations. Boelts, who had long relied on a custom operator for his hay operations, decided in 2012 to handle the cutting and baling himself.

"Timing was the main thing," he says. "We were working with a good operator, but now we can make hay totally on our own schedule." Timing is critical, as Boelts had entered a contract to provide hay to a large dairy near Phoenix with specific quality expectations. Cutting and baling at optimum times captures maximum protein and palatability. Large bales are the logical choice for mechanical handling and efficient highway transport. Boelts looked at several large balers on the market, including some models popular with Western commercial operators, and settled on the newest model in the Case IH large baler line: the LB434 large square baler.

I WELL-CONSTRUCTED BALES IN A VARIETY OF CROPS

One reason, he says, is the ability of this baler to produce tight, well-constructed bales in a variety of crops.

"We don't just do alfalfa," Boelts says. "We bale wheat straw, sudangrass and a bit of milo straw, so we were looking for a machine that would work well for all of these crops." He says they demoed other balers with similar features, but settled on the LB434 baler in part for the way it could package these lightweight crops into 1,000-pound bales. "That takes a pretty robust machine, and this does it very well. I've been very pleased," Boelts says. "It's increased our ability to market wheat straw bales because we can get a full truckload of bales," he says.

This new baler has also provided a more competitive option for export of sudangrass. Boelts says sudangrass for export typically works better in small bales, but now, with this new baler, he's able to offer big bales with enough weight for efficient shipping. The LB443's ability to handle light materials as well as heavier crops is a result of its "matched capacity" design in which all systems are sized to work together, efficiently.

For example, the pickup system is the width of the bale chamber to let the crop transition smoothly in the chamber. Heavier-duty, more durable components are used in the LB4 Series balers compared to the previous LB3 Series balers for increased durability and the ability to perform in a wide range of crops. The flywheel in the LB4 Series balers is larger in diameter to maintain a higher level of inertia for smoother operation as loads vary. It runs faster, at 48 strokes per minute, compared to the LB3 Series at 42 strokes. The speeds of other components have been increased as well to provide a bales-per-hour increase of up to 20 percent and increase in bale density of up to 5 percent compared to the LB3 Series.

Throughout, this baler is designed for commercialscale production. Indeed, just for his own use, Boelts has kept the baler plenty busy. Thanks to his area's year-round growing season, during the nine months he's owned the baler, Boelts figures he has produced more than 8,000 bales. "The reliability has been excellent," he says.

Daily service is made easier with a standard central lube system that continually provides oil to drive chains, and an automated greasing system that delivers grease to critical components. "There's a lot going on with this baler; I'm glad it has this automated system," Boelts says. Case IH recommends matching the LB4 Series baler to a tractor of at least 125 PTO hp (150 PTO hp with the optional rotor cutter). During Farm Forum's visit, Boelts was using a Case IH Puma 200 CVT tractor. Rated at 175 PTO hp, it easily handled the baler in the light late-season alfalfa Boelts estimated was yielding about a ton per acre.

He was baling at a brisk 6 to 8 mph, and confident in the baler's performance at that speed based on information from the AFS Pro 700 display. It provides detailed baling monitoring, including chamber load information. "The monitor has 'load ranges' on it to let me know that I'm producing a nice uniform bale," he says. Steering sensors on each side of the pickup monitor windrow position and providing visual steering guidance on the Pro 700 display.

A rotor cutter is a popular option for the LB434 baler, and produces bales with the material cut into short lengths for increased palatability.

"We looked at the cutter options, but between the rotary head on the swather, and the performance of the baler, our dairy customer is satisfied with the overall quality and leaf retention," Boelts says.

The swather he refers to is a Case IH WD2303 swather equipped with a 16-foot disc mower he purchased as part of his move into self-sufficient hay harvesting. In addition to the



John Boelts selected the LB434 baler for its ability to make tight bales from lightweight crops

speed and capacity disc mowers are known for, Boelts says the WD2303 has ample power and, importantly, good air conditioning for the desert heat.

"I can't say enough about this swather," he says. "It's simple, and that powerplant ... we threw 7-foot tall sudangrass at this swather that was yielding 4 tons per acre in 120-degree summer weather, and it performed real well. There were no cooling issues, and the air conditioning blew like ice. This cab is large with a lot of glass, and the air conditioning does fine." Boelts says capable dealer service and competitive CNH Capital financing have both contributed to the positive experience he's had with the baler and the swather.

"We have a great Case IH dealership here," he says. "They've been right out with good mechanics to take care of the few things that have come up. They're well-respected in this area and manage their business the right way to take care of their customers." John Boelts and his partner, Kent Inglett, operate Desert Premium Farms LLC based in Yuma, Arizona.

A BUSY BALER

With a long growing season and the need for good crop rotations to support vegetable crops, John Boelts keeps his baler busy. Here's his estimate of a year's use:

Crop	Average yield	Acres*	Tons
Alfalfa hay	11 tons/acre	325	3,600
Milo straw	3 tons/acre	100	300
Sudangrass	7 tons/acre	400	2,800
Wheat straw	2.5 tons/acre	600	1,500
		1,425	8,200

*Includes multiple cuttings

I SINGLE-MONITOR CONTROL WITH THE AFS PRO 700 DISPLAY

The LB4 Series balers can be monitored and controlled with the Case IH AFS Pro 700 and AFS Pro 300 displays. Both are full-color displays that track baler-specific operations including bale weight, moisture monitoring, and bale density.

The full-featured AFS Pro 700 provides additional information such as baler load monitoring to assure efficient baling in all crop conditions, and the ability to display the specific information you want to monitor during operation. An optional rear-view camera mounted on the baler displays through the Pro 700 screen.

The Pro 700 display can log GPS data onto a USB drive so that you can analyze and map field and bale information using desktop software.

The Pro 700 display works with all Case IH AFS compatible equipment including tractors, combines, pickers, planters, air carts, sprayers and floaters, and can be transferred from one machine to another, saving the cost of having multiple displays. It is backwards compatible to manage any equipment previously fitted with AFS Pro 200 or AFS Pro 600 displays.

Both the AFS Pro 700 and Pro 300 displays provide integrated control of any ISO 11783 VT-compliant ISOBUS implements through the single screen, including non-Case IH implements.



IDENTIFYING PROSPECTS:

CASE IH SUPPORTS THE EUROPEAN CONGRESS OF YOUNG FARMERS IN BRUSSELS

CASE IH IS A SPONSOR OF THE SECOND EUROPEAN CONGRESS OF YOUNG FARMERS – THE COMPANY IS COMMITTED TO THIS ORGANISATION AND WITH GOOD REASON: THE YOUNG FARMERS OF TODAY REPRESENT OUR FOOD SUPPLY, OUR LAND MANAGEMENT AND THE FUTURE OF OUR THRIVING RURAL AREAS – WHICH MEANS EVERYONE'S FUTURE!

The message was more than clear in several contributions to the European Congress of Young Farmers 2014: The young farmers of today are vital for the future supply of food, animal feed and renewable raw materials, for conservation of the countryside and for livable rural areas.

Matthew Foster, Vice President of Case IH, discussed the current situation in agriculture in his welcome speech: "The demands in the agricultural sector are huge: To produce more with less input, in other words, to become more efficient, to maintain high quality standards, while at the same time preserving the environment as far as possible – it's an enormous task. Agriculture – that is, the young farmers of today – needs our support. This is why I'm delighted that Case IH is able to provide awards for the best, most sustainable and most innovative project at this congress." "The industry – and in particular, the agricultural technology industry – must be prepared to support young farmers on their challenging path to the future, for example using modern and high-performance machines for precision agriculture. In addition to all of the technology, however, another aspect is key: we also need to be able to convey the agricultural reality to politicians and society overall. This includes showcasing our achievements and providing good examples – and that's plenty of reason for us to support the European Congress of Young Farmers 2014", said Foster.

Three submitted projects in particular caught the attention of the judging panel, which in addition to Joseph Daul, President of the EVP fraction (European People's Party) and chairman of the judging panel, also included a representative of the European Commission, the European Economic and Social Committee, the European Committee of Young Farmers, and a representative from COPA-COGECA and from Case IH.The contribution from Dániel Bakó from Hungary was awarded 7500 euro as the most sustainable project. Greenhouses for the





Matthew Foster, Vice President Case IH (2nd from left) awards the prize for the best project to young farmer Eric Pelleboer (4th from left).

cultivation of peppers on his farm are no longer heated using fossil fuels, but using geothermal energy, and are very energy-efficient and economically successful. "It's a great honour for me to receive this prize. This should inspire other young farmers to be innovative and to invest – and in so doing, to offer society an insight into modern agriculture" said prize winner Dániel Bakó.

The contribution from Pedro Gallardo Barrera from Spain was awarded 7500 euro as the most innovative project. Contrary to all conventional wisdom in Andalusia, the farmer has been sowing sunflower seeds early for six years, achieving greater yields with less irrigation and plant protection, which at the same time encourages the natural fauna. "Looking back, I have only one piece of advice for young farmers: Trust yourself to develop your own business and do not be afraid to make mistakes from time to time – and then learn from these mistakes. You will certainly reap the benefits" said Pedro Gallardo Barrera.

Finally, Matthew Foster awarded the prize for the overall best project to Eric Pelleboer from the Netherlands for the initiative "Het Eetcafé / The future of our food". This submission impressed the judging panel with its wideranging social commitment and was awarded the prize of 10,000 euro. "We think it is vital to enter into dialogue with the public so that they can see and understand how their food is produced well and responsibly. This is why dialogue is so important for us to show what it is that we farmers do", explained Pelleboer. Finally, Matthew Foster noted: "By supporting this second European Congress of Young Farmers, we can also increase awareness of our brands for agriculture in general and for young farmers specifically. I very much hope that the messages from this event will be heard far beyond the European Parliament and will contribute toward ensuring the future of young farmers – and therefore the future of us all."



Farmer Nils Tiedemann, employee in the plant production department of the agricultural society, is excited about the combination of Quadtrac and high-tech signals.

ACCUGUIDE IN PRACTICE – ACCURATE GUIDANCE EVEN ON HILLS

CASE IH QUADTRAC WITH INTEGRATED PRECISION FARMING SYSTEM ACCUGUIDE IS GUIDED ACCURATELY BY RTK SIGNALS OVER 4000 HECTARES – OFTEN ON A DOWNHILL SLOPE.

The agricultural areas of the farming community of Ruppendorf are spread over 4000 hectares on the edge of Saxon Switzerland in the eastern Erzgebirge mountains.

Cereals, rapeseed, silage maize as well as ryegrass are farmed in this area. In order to handle the tillage and seedbed preparation, the farm relies on the enormous tractive effort of the Case IH Quadtrac. And to increase efficiency even further, the Quadtrac is equipped with a modern AccuGuide track guidance system. Farmer Nils Tiedemann, employee in the plant production department of the agricultural society, is excited about the combination of Quadtrac and high-tech signals.

"We have been using the Quadtrac for all tillage for over a year. In addition to the high tractive effort and excellent comfort, the modern track guidance system is also a major advantage in this tractor design. We chose an integrated AccuGuide auto-guidance system where everything was preconfigured in the plant. Since we need a very reliable correction signal in our farming areas – often on slopes and the edges of forests – the RTK signal, which is also available through the mobile radio network, is enhanced", explains the young farmer.

"Thanks to this type of track guidance system, we can now accurately keep our track with an accuracy of up to two centimetres – regardless of where we are located in the fields.

The combination with mobile radio technology means that we have complete area-wide coverage of track guidance signals. Fixed or mobile stations would not be able to receive such area-wide coverage because our region is so mountainous, which can disrupt signals – however, the mobile telephone network reaches every corner. Before using the RTK system for farming work, we used EGNOS satellites and

Omni*HP/XP to try and maintain as accurate a track as possible, but we never managed more than 10 to 20 centimetres accuracy."

I DOUBLE SAVING POTENTIAL

"Since using the RTK system in our operations, we have made considerable savings. We can now fully utilise the entire working width of the farming equipment and only have minimal overlaps. This means savings both in terms of fuel and in terms of fertiliser and seed. The fuel savings are particularly noticeable: Before we took delivery of the Quadtrac with the precise track guidance system from Case IH, we had to use two tractors for the same work. Ultimately, the two tractors used around 1000 litres of diesel a day; the Case IH Quadtrac on the other hand manages the work of both and can complete the work on less than 500 to 600 litres a day even at full utilisation."

MORE EFFICIENT THRESHING – THE NEW 3050 VARICUT HEADER

WORKING WIDTH INCREASED TO 12.5 METRES / INTEGRATED REEL ENSURES OPTIMUM VIEW / CASE IH FIELD TRACKER WITH FOUR GROUND SENSORS ENSURES CONTOUR ADJUSTMENT / IDEAL HEADER FOR CONTROLLED TRAFFIC FARMING (CTF)

With the trend towards ever larger working widths and in order to optimise the high threshing performance of the new Case IH combine harvester model, Case IH is expanding the tried and tested VariCut 3050 header series for harvest season 2014. With its new 12.5-metre wide header, the VariCut series has been rounded upwards.

"This header allows the high threshing performance of our current combine harvester series to be utilised even better and to further increase efficiency", explains August von Eckardstein, Product Marketing Manager for harvesting technology at Case IH in Europe. In addition, the new 12.5-metre VariCut header is an ideal header to be used for example in 12-metre wide Controlled Traffic Farming (CTF) systems, which are being used more and more even on large European farms.

I NEW TECHNOLOGIES

Short or long crop dividers and rapeseed knives are also available as options. The table length can be varied by up to 57 centimetres and allows ideal adjustment to various crops. The hydraulic reel is also able to operate in front of and below the knife level.

A patented reel shield prevents the knife and the reel from coming into contact, particularly when the header floor is extended or retracted.

The angle of the reel tines can be adjusted easily from the side without the need for tools. The tried and tested VariCut system ensures high speed stability of the engine as well as the threshing and cleaning system.

I NEW MATERIALS FOR OPTIMUM CROP FLOW

The guides for the retractable fingers are now made from highly durable polyethylene with improved wear properties, a new geometry and extended service intervals.

The Field Tracker System has also been optimised. The header now has four ground sensors for optimum adjustment to slopes or uneven surfaces.



"The new header not only ensures the best possible machine utilisation of our Axial-Flow series combines, but also offers new ways towards sustainability and soil protection, not least thanks to fewer traverses, shorter turning time, and – in combination with our well-proven track option - significantly less ground pressure", explains August von Eckardstein.





TRACTOR CONSTRUCTION IN ST. VALENTIN: DEMANDING THE HIGHEST STANDARDS **"BUILT WITH PASSION": MAKING THE IMPOSSIBLE POSSIBLE**

No.5

CASE IH DEMANDS THE HIGHEST QUALITY, PERFORMANCE AND RELIABILITY IN THE DEVELOPMENT AND PRODUCTION OF ITS MACHINES. TO ENSURE THAT THESE HIGH STANDARDS ARE TRANSLATED TO THE PRODUCTION OF TRACTORS, THE WORKFORCE IN THE EUROPEAN HEADQUARTERS OF ST. VALENTIN LIVES BY THE MOTTO "BUILT WITH PASSION". FARMFORUM WANTED TO FIND OUT WHAT THIS MEANT IN PRACTICE.

It's the ongoing desire to find out and try new things, improve things and make them easier to use, which is why we are thankful for technical developments and innovations. But high-quality and high performance products such as the tractors developed and built in

EXPERIENCE IIIIIIIIIIII

St. Valentin in Austria can only be possible when people strive to do their best. It is down to every individual and their commitment, reliability and accuracy. However: Ultimately, it's also the team – the togetherness – that ensures "certain quality".

"We greatly value reliability! But reliability isn't an attitude that can be given as an order; it has to be state of mind", says Alexander Rauch. In the plant, Rauch works in tractor assembly; in his free time, he works as a voluntary fireman. "We have one goal in life, one mission", he says.



And: "We constantly present ourselves with new challenges – with the clear aim of overcoming them – something of which we are proud."

René Haselsteiner also regularly finds in his professional and private life that safety and quality are closely related. As a climber, he is dependent on the life-saver during pursuit of his hobby: If an accident should happen on the mountain, then he can – must – be sure that the life-saver has noticed and will prevent a possible fall. And the same is true for his work in the tractor manufacturing plant in St. Valentin: noone wants to stand out because of an error, but it's good for everyone to know that employees such as Haselsteiner "have the safety rope firmly in their hand" in quality control at the end of the line.

I FARMER AND TECHNICIAN

Although agricultural technology is only one part of the chain that results in a sufficient and safe supply of high quality food, its contribution is indispensable.

Franz Haider, a passionate farmer, understands this. He not only manages his dairy farm, but also works in the construction department in St. Valentin. As a designer of hydraulic pumps for example, he knows exactly what requirements the individual components must meet in later real-life use, as well as the importance of a smooth, efficient and reliable operation. Over and over again, the agricultural equipment from Case IH shows the desire to make the world a better place: with steady supply, the protection of the environment and responsible use of natural resources – day after day, year after year. Such achievements are only possible where there is a willingness to learn something new every day and to pass on and share what has been learned again and again.

I LEARNING AND SHARING

Team leader Peter Märkinger also shares this philosophy: in the factory in St. Valentin, he instructs colleagues in different work processes, in process optimisation and with regard to important quality characteristics. And in his spare time too, sharing skills also plays a key role in his life – he is a passionate coach of a youth football team. "No-one is born a master, but you can learn a great deal", he says with conviction.

Tugger train driver Gerhard Kronsteiner, who is a rally driver in his spare time, also shows that you need to "pull out all the stops" if you want to achieve your goals. In the plant, he delivers the necessary components to the individual work stations using an electric trolley. "Deliver at the right time" is his motto – and that's true not just for component replenishment in the plant, but also for his top speed on the track. On the test stand in the factory, Christian Wörndl satisfies himself that everything works fine on the finished tractors. And he does exactly the same at the beginning of the harvest at the wheel of his own Case IH axial-flow combine harvester. "We believe in our products because we know what's inside them", the sound technician states. "Notonlydowebuildourmachines, wealsouse them. We want to get into them and we want to find out for ourselves how they fare in real-life situations." Ernst Bierbaumer is also responsible. The international champion in Western riding has been truly "calibrated" to accuracy and precision from his hobby. As a test driver, he thoroughly checks the new tractors in the St. Valentin plant virtually at the very end of the chain. "All of our machines undergo multiple quality checks because quality is our top priority - and far beyond the normal standards", says Bierbauer, describing a commitment that applies not just to his work, but also his hobby.

This passion of the Case IH employees is crucial to ensuring that tractors and other agricultural machinery are perfect. And this passion is the driving force in repeatedly tackling new challenges – and to be satisfied only with achieving the absolute maximum. As with the other sites of Case IH, the staff at St. Valentin work with pride and conviction – with passion – contributing to the excellent reputation of the agricultural engineering of Case IH.



Roy and Sam Steward's tractor fleet is formed solely of St Valentin-made Case IH Puma, Farmall and CS machines.

TECHNOLOGY WITHOUT COMPLEXITY

CASE IH TRACTORS HAVE LONG BEEN A FEATURE OF THE STEWARD FAMILY'S FARMING OPERATION IN SUFFOLK, EASTERN ENGLAND, WHERE THEY PROVIDE THE POWER TO PRODUCE COMBINABLE CROPS, SUGAR BEET AND HAY ACROSS 600 HECTARES OF LAND.

Case IH tractors have long been a feature of the Steward family's farming operation in Suffolk, eastern England, where they provide the power to produce combinable crops, sugar beet and hay across 600ha (1,500ac) of land. A dealership on their doorstep, a good relationship with its knowledgeable area sales manager, and St Valentin-made machines that have proven themselves in quality, reliability and resale value are just three of the reasons why Roy Steward and his son Sam have stayed with Case IH as their business has grown with the gradual addition of more land.

But over the past decade, three purchases in particular – their first tractor with CVX continuously-variable transmission, their first Axial-Flow combine, and their first tractor equipped with a diesel exhaust fluid (DEF/ AdBlue) system – have added a fourth reason to that list: the cost savings that Case IH design concepts have brought to their business. The Stewards now have more than ten years' experience of the advantages of CVX, having bought their first tractor with the transmission, a CVX 1170, back in 2003. With a total of three CVX models currently heading up their fleet, it's evident the easeof-operation and fuel efficiency benefits have more than proven themselves, and in combination with the DEF/AdBlue systems fitted to the latest tractors, which have further enhanced that fuel economy, the investment in the CVX transmission over a powershift has clearly been warranted, reckons Sam Steward.

"We've dealt with the Framlingham branch of our local Case IH dealer, Ernest Doe and Sons, for many years, and salesman Graham Goodwin has always been a good source of advice," he says.

"When the CVX tractors were first introduced, he explained to us the advantages the

transmission offered, using the minimum of engine rpm to achieve the forward speed needed for a particular job, and as soon as we began using our CVX 1170 we could see the benefits."

Today, all of the farm's main tractors are equipped as such, with a CVX 160, a Puma 215 CVX and a Puma 225 CVX heading up the fleet. The tractors' fuel economy is as good as anything on the market, believes Sam, and the addition of DEF/AdBlue exhaust gas treatment on the farm's newest tractor in that trio, the Puma 215 CVX, has further enhanced its frugality.

"The Puma 215 CVX is our first tractor with a DEF/AdBlue system, and I've been really surprised at exactly how much less fuel it uses, even when on heavy work. For instance, when we've been working down ploughing with a 6m power harrow, the 215 has used as much as eight litres per hour less. On



While the Pumas handle the heavier work, Farmall and CS tractors are preferred for lighter tasks, says Sam Steward.



A 50km/hr top travel speed that's achievable at just 1,500rpm, even with a trailer behind, is reckoned to be a big benefit of the CVX transmission.

top of that, on lighter work the AdBlue tank needs filling only every third diesel fill."

On other tasks it's the ability to allow the transmission/engine controller to find the minimum engine rpm required for the job in hand that's the major fuel-saving benefit of the CVX transmission, says Sam.

"When ploughing with a five-furrow reversible, I can work down at 1,800rpm, and when drilling with our 4m Vaderstad cultivator drill the tractor happily ticks along at 14-18km/hr at 1,400rpm, while providing just the right amount of power to keep the drill fan running at the right speed. And on the road, when moving between fields or hauling trailers, I can travel at 50km/hr at just 1,500rpm."

While the two larger tractors can happily carry out the same tasks, being of very similar power, as a rule each has distinct seasonal tasks. In the late summer and autumn, the main task for the Puma 225 CVX is primary cultivation with a 3.3m Quivogne Tinemaster combination cultivator, working down at 20-25cm (8-10in). The same tractor is also used to operate a 6m power harrow.

Where the land requires or is more suited to it, a Quivogne Pluton mounted one-pass cultivator is used on other areas of the farm's ground, with both the Puma 225 CVX and the Puma 215 CVX sharing the duties with this implement. Drilling, carried out with the 4.8m Vaderstad Rapid, is the preserve of the Puma 215 CVX. Meanwhile, some of the land, such as that for sugar beet, requires the plough for its seedbed formation, and hauling the farm's five-furrow is the job of the CVX 160.

The farm's main tractors focus chiefly on cultivations, with the Stewards preferring smaller machines for trailer work, fertiliser spreading and other tasks where a lighter footprint is important and low fuel consumption is again the benefit. It's St Valentin-built Case IH tractors that also meet these needs, though.

"We've run Case IH CS tractors for many years, and at one time had a number of CS100 and CS105 models," explains Sam. "There are still two CS105s in our fleet, and these are used mainly for jobs such as haulage, rolling, topping and working with a 4m power harrow. "But we recently replaced our oldest CS tractor, a CS100, with our first of the new Case IH Farmall U range, a 115 Pro. Although it hasn't really been worked hard yet, I've been really impressed with it. It's very well built, and the new cab is particularly good." It's not only the tractors in the Steward machinery fleet that are red, but the farm's switch to Case IH Axial-Flow combines has been relatively recent. The same cost savings from Case IH design concepts are already making themselves apparent, though.

"We'd used another make of combine for many years, but our salesman had been trying to get us to switch for some time," explain Sam

"In the end, once we tried an Axial-Flow it was the simplicity of the design that sold the idea to us. With only the one rotor for threshing and separation, there are very few moving parts.

"In 2010 we bought our first machine, a 7088, and I was really impressed with the help that the dealer ensured we got from Case IH in terms of product training to get the best from the combine.

"Having taken on more land, we've since traded that up to a 7230, which arrived in time for last harvest. The 230 series machines are even easier to service and operate than the 88 series, and that means that not only do we save on time in the mornings, but we also get going quicker in the field. As with the CVX transmission, when it comes to running costs, both of those things mean that the investment we've made should save us money in the long term."



Case IH Axial-Flow combines are among the simplest to both service and operate, Sam Steward believes.

GREEN ENERGY IN AGRICULTURE

THE HOLLO FAMILY'S FARM AND HOUSEHOLD IN SERBIA ARE HEATED BY BIOMASS FROM SOY BEAN CROP RESIDUE. COMPARED TO CONVENTIONAL FORMS OF HEATING, THIS IS CHEAPER, CLEANER, BETTER FOR THE ENVIRONMENT AND PROVIDES ENERGY INDEPENDENCE.

The Hollo family has a long farming tradition. Robert Hollo began working on a farm at the age of five, and now he shares and develops his work together with three sons: Robert, Roland and Ronald. To make their business more efficient, they split activities. One son is in charge of animal husbandry, the second takes care of crop production and the third oversees mechanization and commercial aspects. The first company they have established is ZZ Nagyret, which consists of twenty cooperative members and has now been working successfully for 10 years. The second firm "Hollo Company d.o.o." was established two years ago and specializes in business trade, such as distribution of premix for pigs and fertilizers, and the purchase and storage of grain. The average repurchase is about 21,000 tons of grain per year. These two companies today have 30 employees. The Hollo family has 500 hectares but they work with 380 subcontractors, covering 3500 hectares of land. The Hollo family believes that it is possible to expand and take on new things all the time. The main thing required is the dedication and diligence of employers. Besides these two companies, they also own "Hollo Farm d.o.o.", which produces Dutch breeds of gilt pigs for "TOPIGS", annually producing around 3000 animals. An interesting fact is that the Hollo family has the biggest boar in Serbia, which is







I THE MAGNUM 250

is used for baling with the Case IH LB433R and for tillage with a Pöttinger Servo 65-6 six-furrow plow.

about 500 kg and has almost made it into the Guinness Book of World Records.

A few years ago, in order to reduce costs and provide cheaper energy, they used bales of soy bean crop residue to warm the pig farm and households. Guided by this, they asked about experiences in other countries and managed to find a strategic partner in the Czech firm BPI (Bridge Power Investments). Robert said that the normal technique of burning crop residues is the worst and most damaging method of disposing of excess crop residues. In comparison to conventional forms of heating, biomass heating is cheaper, cleaner, better for the environment and provides energy independence.

For a project of this proportion, access to superior mechanization is necessary. The Hollo Family has chosen Titan Machinery, a company from Novi Sad, and this decision has produced great benefits for both sides and a long-term partnership. The Hollo family's machine park houses the following Case IH equipment: JX 95, Puma 155 and Magnum 250 tractors, and the LB 433R baler with a rotor-cutter. What is more important is that they are very satisfied with the efficiency and reliability of their Case IH machines at work, their comfortable cabins, and their highly competitive quality.

IALL-ROUND SATISFACTION

Furthermore, the Case IH machines have an excellent ratio of price and performance and because of that, the family decided to purchase six sets more. The Titan Machinery company provides service and spare parts, so the Hollo

family can have all their equipment serviced. They have no worries as to the delivery of important spare parts being delayed, or what to do if their tractor stops in the middle of the night.

Robert Hollo says that they have made significant savings in fuel consumption, particularly compared to competitive mechanizations that they had previously used. The fact that Case IH tractors are used with the correct implements and used in operations for which they were designed is what makes them so effective.

Case IH equipment helps them create the best agricultural conditions for their business and collect crop residues that allow them to manufacture straw pallets.

This project contributes to the employment of 70 people from the Odžaci and Sombor areas. Farmers who sell crop residues will have extra income and lower processing costs. This means that these two municipalities have saved around 2,500,000 euro, while Serbia could receive income from direct exports of 9,000,000 euro per year.

Robert Hollo said that he is very happy that a company like BPI recognized their potential and the potential of all people who own land in Serbia. BPI has invested for the straw pallets to be exported to EU countries, confirmed by the fact that contracts have been signed for exporting straw pallets for the next ten years. The Hollo Family and BPI believe that this project is their future and they have now agreed for another 5 or 6 such plants to be built in Vojvodina.



I PUMA 155

is used to transport large rectangular bales. It has a special selfloading and unloading side car, Inuma 56 (the only one in the whole of Serbia), which can carry 16 pallets of 120x90x250cm with an individual average weight of 500kg, used for seed bed preparation.

AGRICULTURE IN THE SUSTAINABILITY DOCK: WHO IS RESPONSIBLE?

WHAT IS THE PUBLIC IMAGE OF FARMERS? WHOSE FAULT IS IT IF THE IMAGE IS SOMEWHAT NEGATIVE? HOW MUCH CRITICISM IS JUSTIFIED – AND HOW SHOULD FARMERS DEAL WITH UNJUSTIFIED CRITICISM? FARMFORUM DISCUSSED THESE QUESTIONS WITH AGRICULTURAL AND POLITICAL SCIENTIST PROF. CHRISTIAN HENNING OF THE UNIVERSITY OF KIEL.



I FARMFORUM:

Prof. Henning, the media often uses strong images clearly assigning blame to farmers. They refer to a "sick system" with dioxin, avian influenza and pesticides in food, they talk about "fertilising everything until the sea is dead" or "crime – the farmer's confession". Industrial agriculture is increasingly being used in the media as a scapegoat for environmental failures. What are your thoughts?

I CHRISTIAN HENNING:

We all know that there have been some developments in agriculture that are questionable from an environmental perspective. But – and this is an absolutely crucial "but": if I as a farmer deliberately do something questionable or even something prohibited, then I have to face the appropriate criticism. If I do not cross such boundaries, then I have to make it clear that this criticism does not apply to me.

Following an Emnid survey from March 2012 consumers across the board would surely want "more responsible" handling of animals and the environment by farmers – however individual consumers may understand this. In terms of the public image, however, farmers still have it pretty good: in third place after doctors and teachers – and ahead of the police, researchers, politicians and even journalists! So the situation isn't too bad.

I FARMFORUM:

How would you characterise the relationship between agriculture and sustainability in this context?

I CHRISTIAN HENNING:

On this matter, we need to remember that land use is primarily about the provision of high quality food, which gives rise to a number of co-products, including for instance public sustainability products such as climate protection, nature protection, water protection, biodiversity, animal welfare and food safety. This is interesting, not least because in terms of climate protection, agriculture is both the affected party and the trigger. There are emissions from the soil – such as nitrous oxide or carbon, which is released during the decomposition of organic matter as a result of tillage – and there are emissions from livestock, which account for most of the agricultural emissions at around 71%.

A crucial question is: Can these emissions be prevented – or are they unavoidable even with good professional practices? The ploughing up of grassland must be viewed critically: between 2003 and 2009, we lost around 226,000 hectares of grassland. The preservation of old grassland is an effective measure for temporary carbon storage – as such, further ploughing up of grassland can hardly be called sustainable.

And in terms of the national nitrates balance, it should be noted that since 2000, we have not achieved overall sustained reduction and have failed to reach our targets. We see a similar picture for the target of "19% HNV areas" (High Nature Value) and in the targets for the EU Water Framework Directive. This means that key sustainability objectives that were set for agriculture have not been achieved.



I FARMFORUM:

What does that mean for the status of agriculture? Is it justifiably in the "sustainability dock"?

I CHRISTIAN HENNING:

If we're talking about the industry as a whole, the answer is clearly: No! We also need to include consumer behaviour as a key determinant of sustainability. In a functioning market, consumer preferences for private goods govern land use. High meat, energy and land consumption in industrialised countries therefore undoubtedly has negative effects on sustainability goods such as climate protection and environmental and nature conservation. Market failure with respect to the supply of sustainable goods is therefore essentially a result of complications on the consumer side, that is, a lack of information or even wrong information and external effects, but not a consequence of immoral behaviour or even profiteering on the agricultural supply side.

This is not to say, however, that an assessment of operating standards and conduct may in individual cases lead to negative judgements. But if an individual case is to be appraised negatively, and I stress this, then this does not reflect on the industry as a whole!

FARMFORUM:

Professor Henning – can or should politicians address this issue?

I CHRISTIAN HENNING:

If I respond with a resounding "Yes", then that would be just as wrong as a resounding "No". As so often, the truth is somewhere in the middle. First, classic regulation does not work for global environmental goods and open economies. On top of this is the fact that "greening" depends on the actual costs. The public acceptance of a "mandatory sustainability" is largely determined by the associated costs and public appraisal. In my opinion, this means that the future shaping of sustainable land use will be a complex task, requiring sound knowledge of the interactions between economic and ecological systems. This also means the public must assess the interactions that exist between global and local public goods while also assessing the quality of life in rural and urban areas.

A realignment of the concept of sustainable agriculture can only happen within broad social discourse, but also requires a legal framework that effectively governs the guidelines of actions to be taken. Finally, one thought is particularly important: a social discourse can only be productive and effective if it is conducted on the basis of factual relationships. Provocative headlines such as "greed and corruption of farmers" or "the perfect world and idyllic small family farms" do nothing to contribute to solving the sustainability problem. Instead, we need "political heads" who will form a credible social discourse and negotiate a workable compromise. These include interest groups (NGOs) - and agriculture should also be actively involved in this process.

I INFORMATION. MEDIEN. AGRAR E.V. Assessment of reports about agriculture Question: How do you assess the media coverage of domestic agriculture?



CONTROLLED TRAFFIC FARMING PROMISES BIG BENEFITS

BELVOIR FRUIT FARMS IS SEEING BIG BENEFITS FROM THE INTRODUCTION OF A CONTROLLED TRAFFIC FARMING (CTF) SYSTEM ON ITS HEAVY-LAND FARM IN THE VALE OF BELVOIR IN LEICESTERSHIRE, ENGLAND.

With 2200 acres of heavy clay land in the Vale of Belvoir to manage, Keith Challen is very particular when it comes to timeliness of operations and does everything he can to minimise compaction. Quite simply, he has to. Such is the unforgiving nature of the land that anything not drilled by the end of September is likely to stay that way.

Prior to joining Belvoir Fruit Farms three and a half years ago Keith ran a whole farm contracting business, Farm Eco UK Ltd, a collaborative farming venture between four individual farms totalling some 3000 acres. It was there, eight years ago, that Keith introduced an 8m CTF system and when he came to the Vale of Belvoir the nature of the soils meant that it was prudent to do the same.

"The land here has always been well managed but the heavy nature of the soil means that the structure is very fragile. If you go in with big machinery at the wrong time you would squeeze all the air and life out of it, then have to spend a lot of time and money putting things right. The large fields are well suited to CTF, so to me it made perfect sense and the owner took that view too." The business has a long history of using tracks and flotation tyres to minimise compaction. The introduction of powerful steel-tracked Caterpillar D6 and D8 tractors in the 1960s revolutionised what was possible on the heavy-land farm and in 2001 that theme was brought up to date with the purchase of a new Case IH Quadtrac 440, which is still in use today. Working only from the first week in August, after the oilseed rape has been harvested, until 25th September when the last of the wheat is in the barn, the tractor has accumulated just over 5,000 hours during the last 13 seasons and been totally reliable, with no money spent on it save for routine maintenance.



145 YEARS OF MIN-TILL

"The last time the land here was ploughed was in 1968 and since then it has been min-tilled," Keith explains. "Despite two very wet winters we have been able to maintain soil structure and keep the crops growing, which has resulted in very good yields. We struggle to achieve high proteins, so all our wheat area is into Group 4 feed varieties. This can be difficult land to farm, but if you get it right it delivers big yields. We average 10.4t/ ha of feed wheat, which can easily rise to 12t/ ha or 13t/ha in a dry year, while the oilseed rape averages 4.3 t/ha.

"Given the huge advances in machinery in recent years, particularly the introduction of RTK GPS systems which are accurate to 2cm, I saw great potential to take all the good work that had been done in the past to the next level by introducing CTF. The starting point was to look at when we caused most damage to the soil and being all combinable crops on a wheat and oilseed rape rotation it was clear that combines and grain trailers were the main culprits.

"Having analysed what we were doing throughout the year I worked out what I would like to see happen and developed a plan for the introduction of CTF based around our machinery replacement schedule. Operating a 12m CTF system would obviously be the most efficient, but on this land we would not be able to pull a 12m cultivator, so the system had to be based on 6m and 12m modules. The other key point was that until last year no combine manufacturer offered a true12m header, one that could achieve a full 12m cut, so I wasn't prepared to invest in new machinery or spend money adapting what we had until that had been sorted out."

Having previously operated a Claas Lexion 580TT with a 9m header, Keith got to hear about a 12.5m Case IH header that was being developed and was able to trial a prototype during the 2013 harvest. Fitted to a full specification 570hp Case IH 9230 Axial-Flow combine, it measured 12.42m wide and provided a true 12m cut, enabling him to advance plans for the CTF system.

"Changing to another make of combine was a big step, but having spoken to other farmers who use Axial-Flow machines and seen a 9230 in action it was apparent that it would be able to do everything that we wanted. The performance and sample quality gave me the confidence to take the next step towards introducing a 12m CTF system. Another major factor was that Case IH was able to offer a 10.8m unloading auger, which gave the necessary clearance to run a new farm-built chase bin underneath, so we could unload on the move and maximise output. It includes a pivoting spout which makes it easy to adjust the flow of grain and get an even fill.

I THE AXIAL-FLOW 9230

"The 9230 is very simple in terms of its concept and very efficient because the combination of RTK GPS and the 12.5m header allows us to keep the machine full, so it operates at maximum capacity for more of the time, allowing us to achieve more output using less fuel and in less time. In 2013 we harvested 2200 acres of wheat and oilseed rape in just 178 hours, averaging 150 acres a day and 65-70 tonnes per hour, day in, day out, with spot rates of up to 90 tonnes per hour. It is the most comfortable combine I have ever operated and the residue management system does an excellent job of chopping and spreading the straw, which is important because 80% is incorporated and the rest sold to a neighbouring farm.

"At the moment we work on 36m tramlines and at 12m wheel centres, which is where we set our A and B lines. Our Horsch cultivator and oilseed rape drill both operate at 6m and our main Simba Freeflow drill at 7.2m, although we are currently reconstructing it in our farm workshops to work at 12m.

"Using common wheelings means that we know where the compaction is and can alleviate any problems. Previously, wheelings and tracks



Keith states. "We currently operate two other tractors, 180hp and 390hp Fendt models. The larger model will be replaced by the second Quadtrac, while the smaller Fendt will be changed for an equivalent Case IH Puma CVX."

covered 70% of fields, but now it is probably now down to 30%, so there has been a great improvement. I am hoping that this reduction in wheelings will allow us to cultivate at shallower depths, which will reduce our costs and help to keep blackgrass seeds as close to the surface as possible, making them easier to kill."

"The introduction of GPS enables machinery to operate to optimum potential, so efficiencies have never been better, but for us the key to an effective CTF system is the sub-2cm accuracy of the RTK system and we harness its potential through the Case IH AFS 600 and 700 systems. It's too early to say how the introduction of CTF will impact on yields and profitability over the longer term, but I am very pleased with how crops are looking this year, as it has been very wet."

Looking ahead, Keith is currently considering the purchase of another Case IH Quadtrac, a more powerful 600hp model, to provide the power to pull wider equipment. Worth more to the farm than its trade-in value, the existing Quadtrac 440 will be retained as the additional horsepower will provide added security in the event of a wet autumn.



PUMA. WHY SETTLE FOR TWO CVT RANGES WHEN YOU CAN HAVE FOUR?

Puma's CVX models achieve the best fuel economy in their class*, thanks to the efficiency of their Continuous Variable Transmissions. Using double clutch technology and four ranges on most models, you have variable, seamless power at your fingertips in each stepless range.

And whatever your task, Puma automatically picks the optimum transmission ratio and engine rpm - we call this Efficient Power. It saves money, leaving you to concentrate on the job in hand. And maybe wondering why some more expensive tractors have just the two?

*At rated speed and max output. Source: Profi magazine tests published May 2013. Four-range transmission on Puma 170 CVX and above.





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