



AMAZONE

ACTIVE

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50 years of AMAZONE seed drill combinations



The development of the

When, in 1966, AMAZONE initially developed the seed drill combination, consisting of a reciprocating power harrow and D4 seed drill, it turned out to be not only a new technique but also at the same time, the beginning of a huge success story. This was the first PTO-driven mounted seed drill combination



1966



active seed drill combination

to be in practical use in the field. For the farmer, this innovation was a huge advancement because, by combining the soil tillage and sowing operations, it enabled them to save on the number of passes required yet, simultaneously, significantly improve their sowing performance.



2016: an extensive range

During the last 50 years AMAZONE has sold, in total, far more than 100,000 active seed drill combinations. The current programme includes rotary cultivators and rotary harrows, in up to a 4 m working width, which can be combined with D9 mounted seed drills or the AD, AD-P Special and AD-P Super pack top models. In addition, the Avant front tank seed drill combination is also available, with a rotary cultivator and seed rails up to 6 m working width making them ideal for contractor operation or larger estates.

For sowing on ploughed land the rotary harrow, complete with tooth packer roller and pack top seed drill equipped with WS suffolk coulters are an excellent combination, whereas for mulch sowing, the combination of rotary cultivator, wedge ring roller and pack top seed drill with RoTeC Control disc coulters is recommended.

**AMAZONE – active sowing
both after the plough or
when mulch sowing.**

1966–2016



50 years of active seed drill combinations

In principle nothing has changed regarding the significance of the active seed drill combination system. However, the composition of these combinations, such as the soil tillage and consolidation roller technology, as well as the coulter and harrow systems, has developed enormously. In addition, in recent times, more and more electronic components have been integrated into the sowing side.

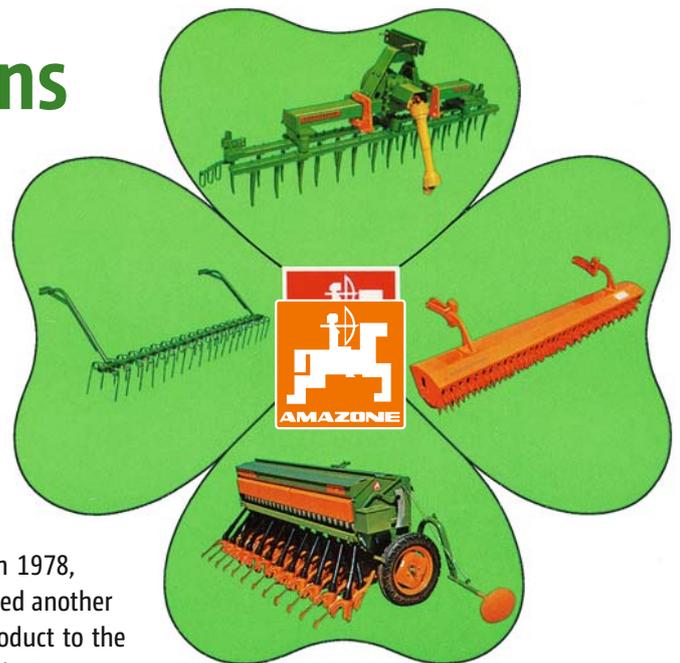
Initially, the PTO-driven reciprocating power harrow proved to be the successful model from the AMAZONE soil tillage range. It was easy to pull and was characterised by its extremely compact design so that it could be conveniently combined with a seed drill without overloading the lift capacity of the pulling tractor. From 1966 through to 2001, AMAZONE sold in total more than 50,000 reciprocating power harrows.

However, there were at times also operational conditions where the reciprocating

power harrow did not perform at its optimum: where there were large amounts of crop residues present, e.g. from an inadequate ploughing operation or after soil tillage without the plough, and blockages could occur. Therefore, in 1978, AMAZONE again introduced another completely innovative product to the market, the KG rotary cultivator.

With their “trailing tines”, any normal rotary power harrow, used in preference to the reciprocating power harrow, had the disadvantage that the rotary action was always trying to raise the machine out of the soil under difficult conditions. The new rotary cultivator, however, was equipped with “on-grip tines” which reliably pulled the machine into the soil even on heavy and stony soils – guiding it at the desired working depth and also

having the capacity to mix in the straw. Also the quick exchange system and built-in stone safety protection for the rotary cultivator’s tines were accepted by end users with enthusiasm. By 1985, AMAZONE had introduced a cheaper rotary harrow to the market as well and thus was able to offer the ideal solution also for cultivating lighter soils.



Advertisement from 1974



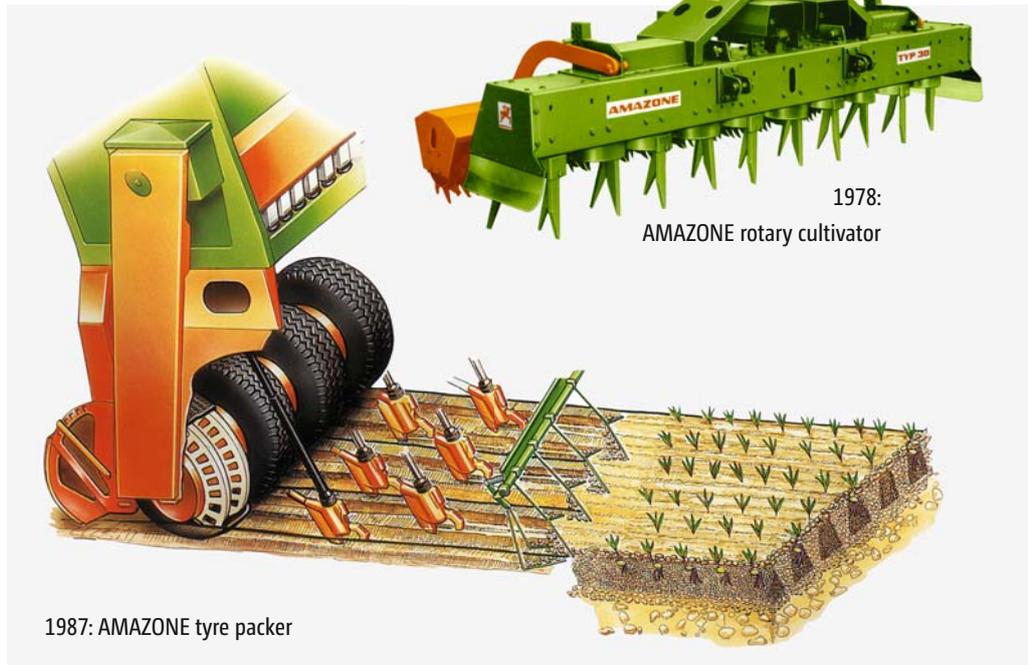
1972: D7 mounted seed drill with RE reciprocating power harrow, rigid tine bars and tooth packer roller



1985: D8-30 Special mounted seed drill with RE reciprocating power harrow and spring steel tine bars

Initially, to improve the centre of gravity of the mounted seed drill behind the tractor, the drill could be raised hydraulically over the soil tillage implement via the “Liftpack” system. And then as an alternative, and in order to further optimise the centre of gravity position, AMAZONE introduced onto the market in 1988 the AD8 pack top seed drill and in 1993 the AD2. The concept of the pack top seed drill is that the seed hopper is mounted on top of the packer roller and is carried by it. With this compact unit of soil tillage implement, packer roller and seed drill, the total weight of the combination could be brought even further forwards towards the tractor.

The first active AMAZONE combination with a pneumatic sowing system appeared in 1995 with the Avant series. Its peculiarity was the modular-build design with the seed hopper in front but the rotary cultivator and seed rail to the rear of the sowing tractor. Thanks to the pneumatic seed conveyance, up to 6 m wide seed rails could be folded down to a transport width of 3 m. Then already by 1996, the first pneumatic AD-P pack top seed drill combination in working widths of 3 to 4.5 m followed. The compact design, the favourable position of the centre of gravity, a bigger seed tank, centralised filling and the easy seed changeover were their most important advantages.



From cage to wedge ring roller

The story of the consolidation rollers also started together with the development of the active seed drill combination – with the crumbler or cage rollers. They were cost effective and of light design. In 1975 followed, as a development from AMAZONE, the first enclosed tooth packer roller which reconsolidated the soil across the entire working width. In addition, AMAZONE was the first manufacturer to attach the scrapers down below the roller on long, narrow carriers which resulting in the prevention of blockages.

The strip-wise, and thus targeted reconsolidation of the seedbed, was the big advantage of the tyre packer roller, which AMAZONE brought to the market in 1987 as an alternative to either the cage or tooth packer rollers. Besides this strip-wise soil reconsolidation, it was also characterised by its good self-cleaning ability. Equipped with this tyre packer roller and KG rotary cultivator, the legendary RPD DrillStar turned out to be the most-sold seed drill combination for more than a decade.



1993: AD2 pack top seed drill



1995: Pneumatic front packer seed tank and 6 m rotary cultivator with tyre packer seed drill

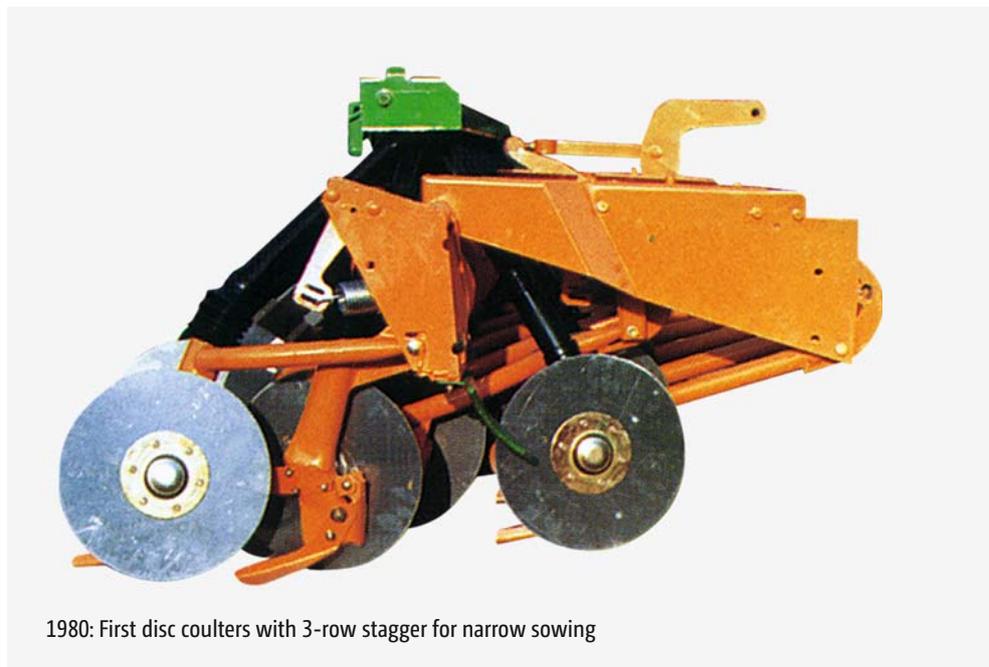
In particularly heavy soils, and with high soil moisture content, however, there was not always enough loose soil left for sufficient coverage of the seed. So, AMAZONE introduced in 1996 the wedge ring roller as the successor to the tyre packer roller. This roller, so to say, can be used as a “sowing insurance” both under dry and also wet soil conditions. Thanks to narrow, hollow rubber rings, the soil is accurately reconsolidated in the seed rows so that the seedling has a guaranteed supply of soil capillary water in dry conditions whereas, at the same time, the zones between the reconsolidated strips are left loose enough to allow any rainwater to seep away.

The concept of the wedge ring roller has been accepted on a wide basis as the most universally-usable solution and is widely recognised by farmers and agronomists alike. As an alternative to the wedge ring roller, AMAZONE, however, continues to offer for the rotary cultivators and rotary harrows the lightweight cage roller, the tooth packer roller as an all-rounder or, for especially heavy soils, the Cracker-Disc roller.

More and more precision from sowing technology

The D4 seed drill, which was implemented within the first active seed drill combination, was already equipped with individually-mounted suffolk coulters and automatic track marker changeover. On all of the subsequent drill series – from the D5 up to the current D9 – many important innovations and detail improvements have been integrated into the sowing technology. Step by step this has resulted in more and more precise seed distribution and placement and in more comfort from the machine operation.

The first important milestone after the D4 came in 1972, with the D7, which had a stepless oil-immersed gearbox, centralised coulters pressure adjustment and the coulters suspension via tension springs. 1972 also was the year when AMAZONE put on the market the automatic tramline rhythm switching. The



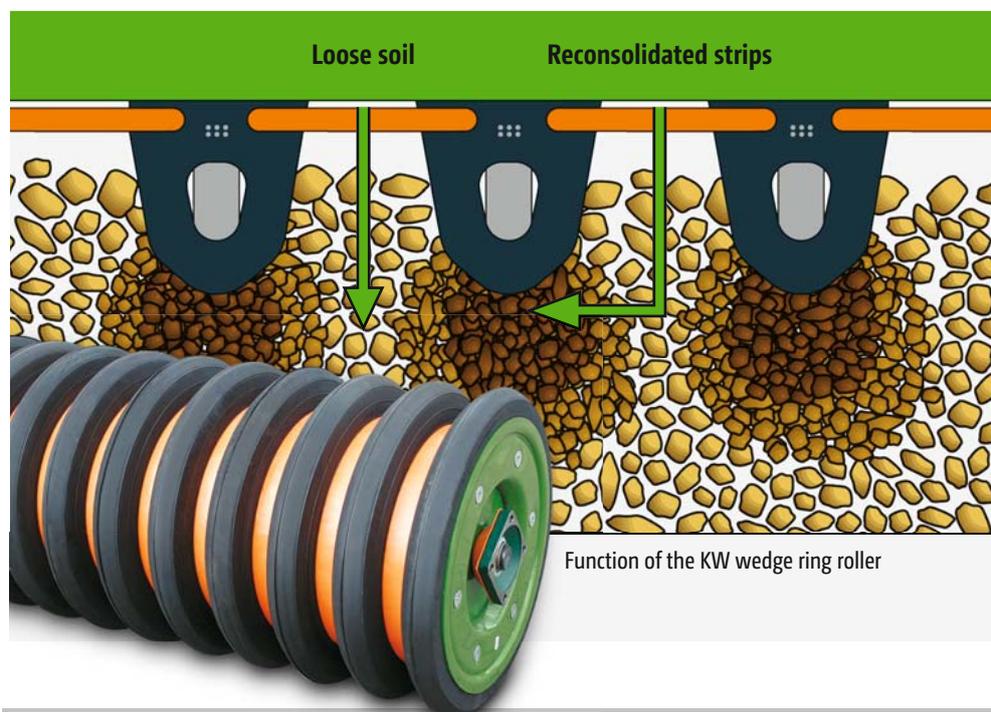
1980: First disc coulters with 3-row stagger for narrow sowing

D7 E-R, which followed in 1980, which was characterised by the possibility of narrow row spacing and which was, for the first time, equipped with roll disc coulters mounted in 3 rows.

In 1999, AMAZONE introduced the first RoTeC disc coulters on the market with their additional depth guidance and cleaning discs; these were designed specifically for mulch sowing. Subsequently the system has been developed yet further resulting in the RoTeC+ and RoTeC

Control coulters and it is this format in which they are currently integrated into today’s active combinations.

With regard to following harrows, development started with just a simple seed harrow and went on, via an individual coulters harrow, to the Exact following harrow – the legendary “all-rounder” and now with the option of the Roller harrow. On current active seed drill combinations, the interaction between the KW wedge ring roller, the RoTeC Control



Function of the KW wedge ring roller

coulters and Roller harrow represents the perfect system for reconsolidation, seed placement and embedment.

For the precise metering of the seed, the mechanical D9 and AD3 machines are equipped with the steplessly adjustable, Vario gearbox in conjunction with a combination of fine and normal seed wheels which allows the precise metering of seed rates from 1.5 kg/ha to 400 kg/ha. As an option, the hydraulically-actuated seed rate control is available which allows the matching of the seed rate to changing soil conditions on the move.

The pneumatic seed drills are an additional example of where there has been considerable development in the accuracy of seed distribution. The recently introduced AD-P Special and Super series, in 3 m, 3.5 m and 4 m working widths, feature ISOBUS communication, electric metering, variable tramline rhythms and many additional functions. Needless to say, the advantages of electronics are of benefit also for improving operational comfort. So, for instance, during operation, the physical steps such as pre-metering, calibration and residue emptying have all been significantly simplified by the use of the TwinTerminal. ■



Vario gearbox (internal view)

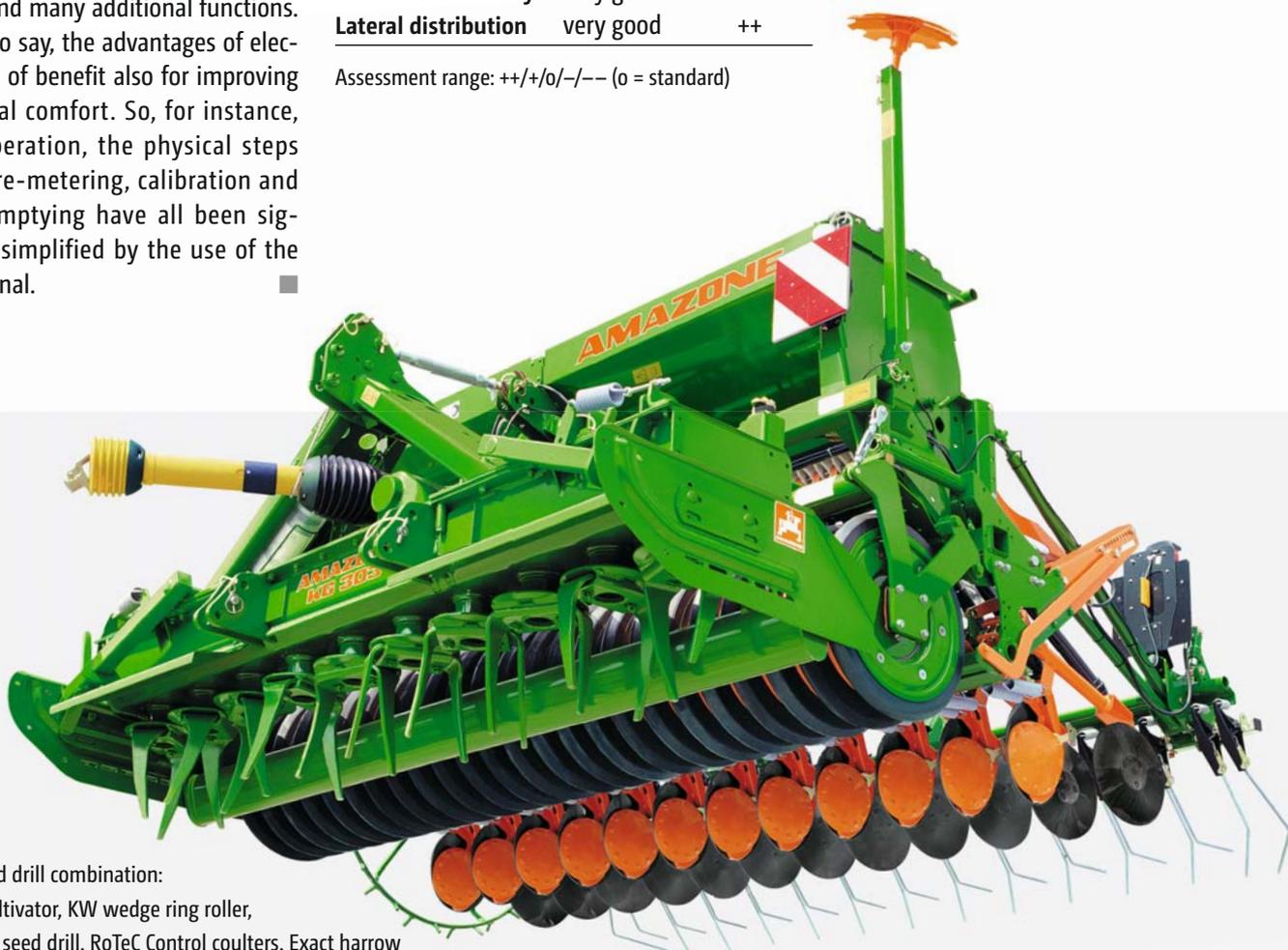


Metering housing with Control seed wheels

DLG FOCUS-TEST (DLG test report 5724F)

Test criteria	Test result	Assessment
Calibration accuracy	very good	++
Lateral distribution	very good	++

Assessment range: ++/+/0/-- (0 = standard)



Modern seed drill combination:
 KG rotary cultivator, KW wedge ring roller,
 AD pack top seed drill, RoTeC Control coulters, Exact harrow



Great Britain:

AMAZONE seed drill combinations on a family-owned farm in North Yorkshire

An overview of Gritts Farm



It was in the late 1980s that the first drill combination was used on Gritts Farm, home to Tim and Ann Vasey near Weaverthorpe, Malton. Then a conventional trailed MF 30 seed drill was towed behind an AMAZONE RE 30 reciprocating power harrow and a tooth packer roller via a bridge link. The farm, which today has 190 ha arable land in cropping, is situated in the gently sloping Wold landscape in the English county of North Yorkshire.

“We worked with that first seed drill combination for some years and thought we were well satisfied with it”, Tim Vasey remembers those beginnings, but then, when local AMAZONE sales partner, Wilfred Scruton Ltd. demonstrated what was, at that time, the new pneumatic AMAZONE AD-P Progress pack top drill, the farm quickly switched over to this radically different style of seed drill combination. “It was during that demonstration that my father-in-law said”, commented Mr. Vasey, “that the machine would pay for

itself within the first year due the improvement in seed placement and seed coverage.”

And indeed, that switchover to the new Airstar Progress combination, consisting of KE 302 rotary harrow, the 500 mm tooth packer roller and WS suffolk coulters did radically improve the look of the farm and proved to be an excellent investment. In 2008, the farm changed to a new AD-P Profi pack top seed drill which had a larger seed hopper to further improve the sowing capacity but still stayed with the tooth packer roller/suffolk coulters layout.

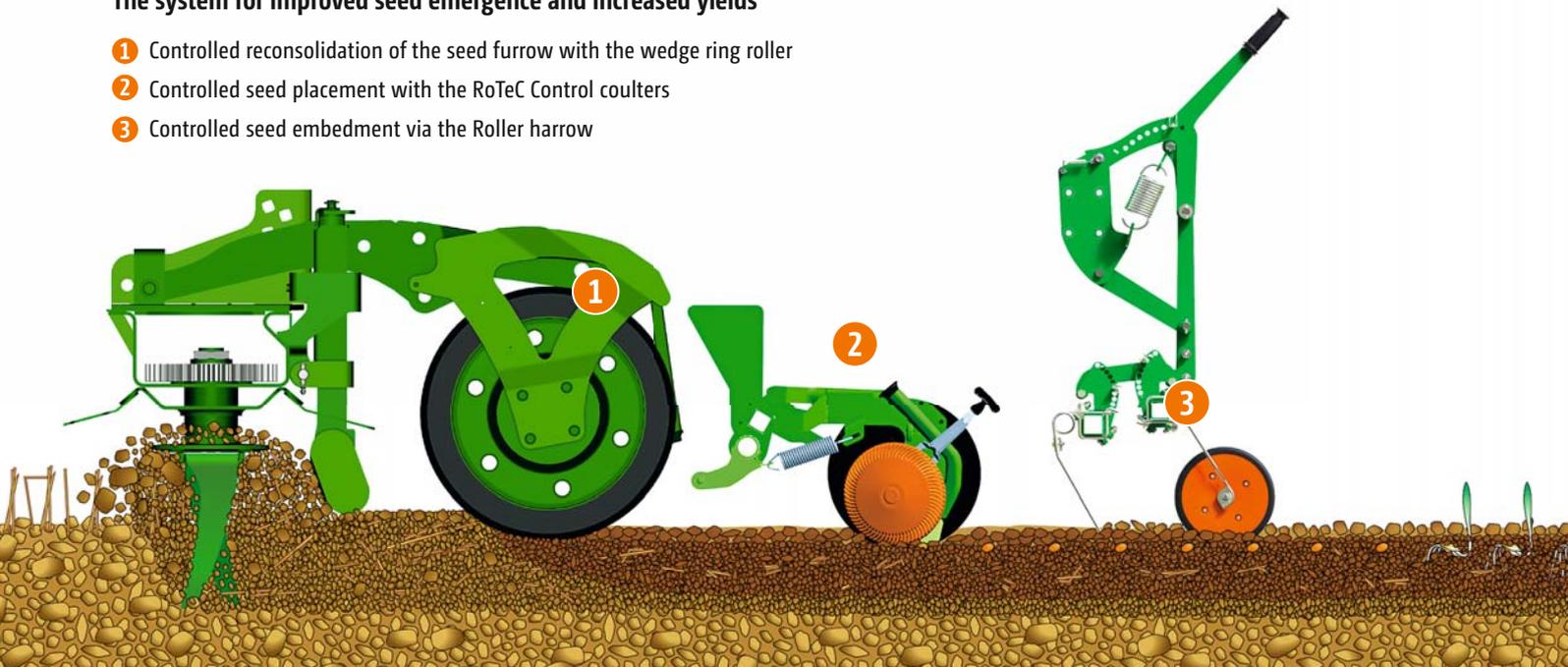
Whereas until recently soil tillage at Gritts Farm was carried out solely with the plough, the Vaseys have now started to introduce minimum soil tillage on some of the fields. “We work these areas initially very shallow with a compact disc harrow, prior to sowing with the seed drill combination. This helps us to control volunteer grain, especially when cultivating wheat after barley or where

- **Altitude:**
60 to 120 m above sea level
- **Rainfall:**
800 mm/year, evenly distributed
- **Soil type:**
Andover Series limestone soil (good drainage property and soil moisture availability)
- **Crop rotation:**
Winter wheat, winter barley, catch crops/spring barley, potatoes grown under contract
- **Yields:**
Relatively consistent approx. 10 t/ha wheat and 8 t/ha barley
- **Additional mainstay:**
Outside contracting with a square baler, grain drying and hedge-cutting

Roller Drill System RDS

The system for improved seed emergence and increased yields

- 1 Controlled reconsolidation of the seed furrow with the wedge ring roller
- 2 Controlled seed placement with the RoTeC Control coulters
- 3 Controlled seed embedment via the Roller harrow



KG rotary cultivator
with
"on-grip tines"



Levelling
board



KW
wedge ring roller



RoTeC Control
coulters



Roller
harrow

we are growing catch crops", co-owner Tim Vasey explains.

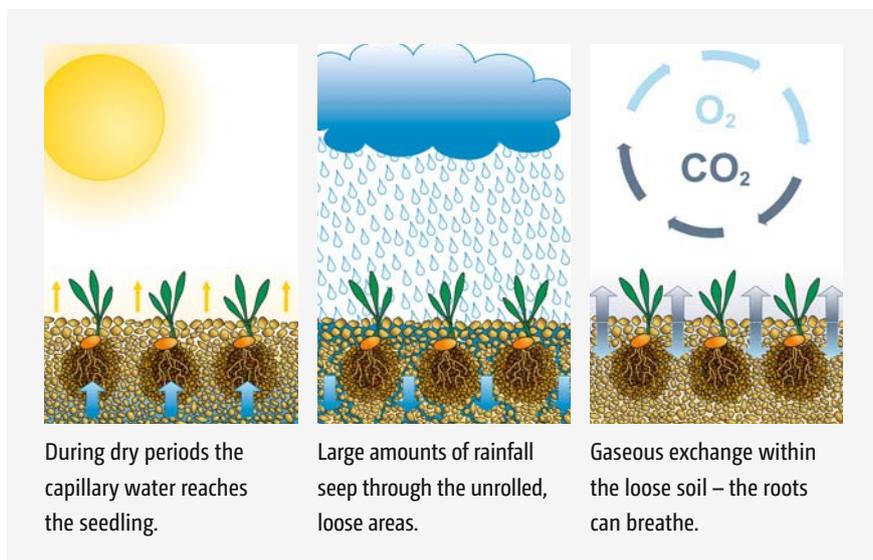
In 2013 the Vaseys purchased from Wilfred Scruton Ltd their current pneumatic seed drill combination from AMAZONE: an AD-P Special with KW wedge ring roller and RoTeC disc coulters. This combination was, for the first time, equipped with a Roller harrow instead of the Exact harrow: "What a difference", enthuses Mr. Vasey "this seed drill combination is much easier to pull and also uses a lot less fuel. The RoTeC disc coulters and the reconsolidation via the wedge ring roller resulted in a now even quicker emergence of the seed. We should really have made this investment much sooner!"

After taking potatoes into account, currently the annual acreage being cultivated by the seed drill combination amounts to 155 ha. The acreage output of the machine is round about 2 ha per hour, attached to a 190 HP JCB 4190. Due to the lack of spare labour, when the seed hopper is empty, Mr. Vasey takes

the machine back to the farm where he refills it via a telescopic loader from big bags.

The overall judgement of Tim and Ann Vasey about AMAZONE is very positive: "Very reliable machinery, a perfect paint finish and excellent resale values – this also applies to our ZA-M fertiliser

spreader. In addition we like the basic attitude of AMAZONE as, having visited AMAZONE's factories on two occasions, we find it well managed, well run, incredibly tidy and a workforce who love doing what they are doing, that typical German efficiency that makes for good equipment and that pays off for us here" concludes Mr. Vasey. ■



During dry periods the capillary water reaches the seedling.

Large amounts of rainfall seep through the unrolled, loose areas.

Gaseous exchange within the loose soil – the roots can breathe.



Germany:

Investing in a seed drill combination every 8 years

An overview of the Wallmeyer farm



“I am very satisfied with the machine”, this is the judgement of Johannes Wallmeyer Jun. from the Westphalian town of Hamm. We are talking of a 3 m seed drill combination, consisting of KG Super rotary cultivator with KW wedge ring roller and AD pack top seed drill with RoTeC Control coulters and Exact harrow.

When Johannes Wallmeyer Jun. took over the family farm some years ago, the history of the seed drill combination already dated back here over several decades. 32 years ago, his father, Johannes Wallmeyer Sen., invested for the first time in a D7 Garant mounted seed drill with a rotary cultivator and an AMAZONE tyre packer roller. “Before that we still had a combination of an AMAZONE seed drill but on a rotary harrow from another manufacturer”, Mr. Wallmeyer remembers the beginning.

- **Area of arable land:**
200 ha
- **Altitude:**
60 to 120 m above sea level
- **Rainfall:**
on average 700 mm/year
- **Soil type:**
Sand up to heavy loam
- **Crop rotation:**
Winter wheat, winter barley, triticale, maize
- **Yields:**
Winter barley 8 – 10 t/ha, winter wheat 9 – 10 t/ha, triticale 9 t/ha, maize (CCM) 15–16 t/ha
- **Additional mainstays:**
Pig fattening unit with 3200 stalls, production and sale of firewood



KX 3000 rotary cultivator with “on-grip tines”

“The rotary harrow was not bad, but then the rotary cultivator came along. The rotary cultivator was supposed to work on our heavy soils with even more penetration. In fact it was tailor made for our farm and this is why we have always adhered to the rotary cultivator on all the subsequent purchases.” So, after that initial investment, again and again, a new AMAZONE seed drill combination has been purchased on what has been about an 8 year cycle.

Whereas the first combination, however, still featured a mounted seed drill including the “Liftpack” system, an AD pack top seed drill soon followed later: “With the pack top machine, the sowing operation is, in fact, easier, especially for instance when one has to back up into the corners. The centre of gravity also is more favourable because the combination does not protrude so far to the rear.”

Also the tyre packer roller from AMAZONE Mr. Wallmeyer Senior remembers very well. The first two AMAZONE seed drill combinations were equipped with it. “Compared with the tooth packer roller the tyre packer roller was a big step forwards because it turned easily and did not block. However, the tyres could wear relatively quickly in situations of heavy usage but then this was no longer the case with the wedge ring roller.” So, the next two seed drill combinations were equipped with a wedge ring roller.

“Each of these machines always performed well and this is why we stick to them”, father and son are in agreement. “We always plough all of our land”, Johannes Wallmeyer Jun. mentions a further reason as to why the farm relies on an actively-driven combination for sowing, “and we will stick to it in the future to be able to also work our heavy soils.” After the plough on the heavy land, an initial cultivation is carried out with either a rotary harrow or with a spring tine harrow, partially even twice over, prior to the pass with the seed drill combination. At forward speeds of between 5 km/h on heavy and 9 km/h on



AD-P 3000 Special

lighter soils, Johannes Wallmeyer Jun. today works on an average hourly output of 1.5 ha. In addition, in front of the 240 HP sowing tractor, depending on the type of soil, either a Duplex roller or a star dish roller is attached.

In the near future seed drill combination No. 5 will follow. As during the recent years the area of arable land of the

Wallmeyer farm has very much increased, the new combination will be a pneumatic AD-P Special. Again this machine will be combined with a KG Super rotary cultivator but the wedge ring roller the Wallmeyers will, however, replace with a Cracker-Disc roller in order to achieve an even better crumbling effect on their heavy soils. ■



Cracker-Disc roller



Germany:

An advocate of active-driven seed drill combinations

“I am an advocate of the active-driven seed drill combination. Because with a rotary cultivator and a wedge ring roller they can be very flexibly utilised, no matter whether mulch sowing or following the plough” – this statement comes from Friedrich von Schönberg, an end user who knows what he is talking about as, throughout all stages of his professional life, he has enjoyed excellent experience with AMAZONE sowing technology.

Initially on the Schwarzenraben estate in Lippstadt, where he started his career as stand-in manager in 1983, there was a 6 m AMAZONE EV seed drill working and then also, at the next stage, on the nearly 600 ha market fruit farm of Baron von Boeselager in Swisttal-Heimerzheim where Friedrich von Schönberg worked as a manager from 1988 to 2007. Here, in 1988, just after its introduction to the market, a RPD Drillstar tyre packer seed

drill, which was equipped up-front with a KG rotary cultivator, was in use. With this 3 m machine, 450 ha/year was sown. Then, in roughly 2000, the von Boeselager estate finally invested in the first pneumatic AD-P Super seed drill combination with a wedge ring roller. Thanks to the further developments in the technology, and a larger seed tank, this 3 m machine provided the estate with even more efficiency.



1970s: Seed drill combination with EV, 6 m folding to 3 m transport width



AD-P 3000 Super; 3 m working width

Also across the fields of J. & W. Stollenwerk oHG, one of the leading European producers of preserves, there are seed drill combinations from AMAZONE operating. The company runs several agricultural farms where, in addition to the vegetable and fruit crops that are processed in the Stollenwerk factories; the arable crops of winter wheat, winter barley, rape and sugar beet are also grown. Here, Friedrich von Schönberg has been responsible for the total management of the farms since 2007.

Two of the Stollenwerk farms are situated in the new federal states. One AD-P Super in 4 m working width, a Cirrus Activ and a Cirrus 6002, both in 6 m working width, are working here. The AD-P Super is used in fields within a ring fence and achieves a total area of almost 900 ha/year. "I know it is hard to believe but when we are working in shifts then we manage with this machine around 40 to 45 ha per day", Friedrich von Schönberg went on to say.

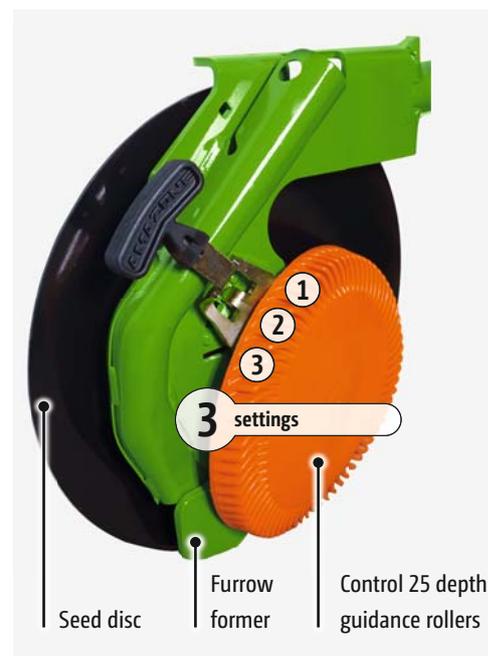
The 6 m seed drill combinations also perform well: on the heavier soils, the Cirrus Activ is equipped with a rotary cultivator whereas, on the lighter soils,

the Cirrus 6002 has its non-powered front cultivation element. Alone the Cirrus Activ has sown almost 20,000 ha over the last ten years.

On the Stollenwerk farms in the Western federal states, an AD-P Super in 3 m working width is used. The capacity of this machine is round about 2 ha/hour and an important pre-condition for this high sowing efficiency, Friedrich von Schönberg understands, is having an efficient seed supply chain. Therefore, the filling of the machines on the Stollenwerk farms is usually carried out directly in the field via big bags and a telescopic loader.

During discussions with regard to the development of the active-driven seed drill combinations, von Schönberg also mentions the wedge ring roller: "At the time, initially the tyre packer roller from AMAZONE was a big improvement compared to the tooth packer roller. When then the wedge ring roller entered the market, this again was an enormous step forward compared to the tyre packer." Therefore, today, all AD-P seed drill combinations on the Stollenwerk farms are equipped with this type of consolidation roller. The same applies for the RoTeC

coulter, "It is important that the coulters run as smooth as possible, all the more important where we are looking to achieve such high acreage outputs. And the coulters contour following is good", the end user says and his overall judgement is also positive: "I can recommend AMAZONE seed drill combinations without a doubt." ■



RoTeC Control coulters, here with Control 25 depth guidance rollers



Austria:

Now on the fourth AMAZONE seed drill combination on the farm



ISOBUS communication, large seed tank, simple conversion between fine and normal seeds and the TwinTerminal – these were the most important reasons why Dipl. Eng. Christian Gepl from Scholach, Lower Austria invested in 2015 in a new 3 m AD-P Special seed drill combination.

With rainfalls of 500 – 600 mm per year, Dipl. Eng. Christian Gepl grows winter wheat, winter barley, sugar beet and maize plus, for greening, cover crops across the farm. In addition to the arable enterprise, the farmer runs a pig breeding and pig fattening unit in a closed system.

achieves hourly outputs of 1.5 to 2 ha at a forward speed of 8 km/h, depending on the field size, whereby the filling of the 850 l seed hopper is always carried out back in the farm yard.

The new AD-P Special is already the fourth AMAZONE seed drill combination on this farm. The predecessors were a D8 with suffolk coulters, a D8 with disc coulters and finally a D9 with RoTeC coulters. In this way Dipl. Eng. Christian Gepl has gained good results with AMAZONE seed drill combinations for many years. His overall judgement: “In general I am very satisfied!”

Heavy soils and hilly terrain are the characteristics of area; with an average field size of between two and five hectares and are mostly cropped via a mulch sowing system. For the farm, mulch sowing provides, above all, a reduction in the degree of erosion on the hilly fields. However, the increased microbial activity in the soil, the improved soil structure and improved carrying ability are the further benefits that also count for him.

This also applies to the other AMAZONE machinery on his farm. So here, in the meantime, it is not only the fourth seed drill being operated, but also the third sprayer, a UF 1201 along with a ZA-M 1501 Hydro Profis, his second fertiliser spreader from AMAZONE. ■

On this particular farm, the AD-P is equipped with a KG 3000 Special rotary cultivator, PW 600 tooth packer roller, RoTeC Control coulters and an Exact harrow. The sowing tractor, a Steyr CVT 150



TwinTerminal 3.0: operation and data input for the automated calibration procedure is now done directly on the machine



France:

Jean-Claude Besnard praises the operation of his AD-P Special

In the French Droue-sur-Drouette, farmer Jean-Claude Besnard grows winter wheat, winter barley, rape and peas across an area of 171 ha. On his fields, with an average size of 18 ha, the soil type differs between sand and clay contents of 40% with a high stone share. 2/3 of the fields are ploughed; the remaining area being cultivated without the plough.

For the sowing operation, Mr. Besnard uses an AD-P 3500 Special. The 3.5 m wide machine was purchased in 2012 and is equipped with a 1,250 l seed hopper, KG Special rotary cultivator, KW 580 wedge ring roller, RoTeC Control coulters and with an Exact harrow.

Usually Mr. Besnard operates the machine, linked to a 170 HP tractor, at a speed of 8 km/h and thus achieves daily outputs of 15 to 17 ha (returning to the farm for filling the machine). Fuel consumption during sowing he estimates at 20 to 25 litres per ha.

“What we especially like about this drill combination is the even seed placement and the exact depth placement”, says Jean-Claude Besnard. There is also praise for the electric metering which allows the remote adjustment of the seed rate on the move! In addition the farmer appreciates the performance of the KW 580 wedge ring roller which reconsolidates the soil in strips: “The way this roller performs is very good, even on changeable

soils, and I like it significantly more than a tooth packer roller.”

His overall judgement of AMAZONE is also positive: “There is a complete range and the level of optional equipment offers individual possibilities for any farm. AMAZONE is well-known for its innovations and has a good reputation and we are also very satisfied with the service.” ■



KG 3500 Super with KW 580 mm wedge ring roller



Poland:

The best price performance ratio of all seed drill combinations

An overview of the Jezierski farm



Farmer Slawomir Jezierski from Poland also reports on his good experiences with his AMAZONE seed drill combination. In Radechnica (in the administrative district of Lublin) he runs a pig breeding and fattening farm across an area of 90 ha and has invested in a new AD-P Special seed drill combination in 3 m working width. This machine is equipped with a KX 3000 rotary cultivator and a KW 580 wedge ring roller.

His decision to favour this machine, farmer Jezierski explains comes from the very good experiences which he has already gained with the out-going machine, a RPD 301 with KG rotary cultivator, tyre packer roller and roll disc coulters. Already with this machine, he appreciated especially, along with many others, the benefit of reconsolidating the soil in strips and the good self-cleaning ability of the tyre packer roller.

According to his opinion, these effects have been increased once more with the KW wedge ring roller on the new AD-P

seed drill combination. “In autumn 2015”, the farmer reports, “I sowed in total 150 ha with this new machine, 60 ha of it in paid work for a neighbouring farm. Especially when sowing rape the soils were extremely dry; however the field emergence across our fields was nevertheless very good. In many other areas of our region, a reseedling was required later, however not with us.”

Farmer Jezierski relates the reliable seed emergence especially to the interaction of the wedge ring roller, which reconsolidates the soil in strips, and the RoTeC Control coulters with their even depth guidance: “In this way the seedlings are reliably supplied with capillary water, even under dry conditions.”

According to his opinion, the machine produces a good, even germination as well as the ideal growing conditions for all the crops he sows. Here, thanks to the electric metering drive, consistent seed distribution, even at low seed rates, is ensured – even on small areas such as

- **Area of arable land:** 90 ha
- **Rainfall:** 600 to 650 mm/year, unevenly distributed
- **Soil type:** Soil type III a and b (equal to a field valuation index of 45 to 65)
- **Crop rotation:** Rape, winter wheat, winter barley
- **Yields:** Rape 4.8 t/ha, winter wheat 9 t/ha, winter barley 7.5 t/ha
- **Additional mainstays:** Pig breeding and pig fattening units

the corner of a field. "It almost looks like precision sowing", Slawomir Jezierski confirms.

The AD-P collected some additional plus points also due to its good finish and the compact design. Though the seed hopper has a capacity of approx. 800 kg of wheat seed, the machine is not too heavy for the hydraulic lift capacity of the seeding tractor, a New Holland T6.150 with a 4 cylinder engine and a maximum power of 155 HP. The low oil requirement of 21 l/min. of the hydraulic blower fan drive also is a benefit that counts.

Operational speeds are between 6 and 8 km/h and the fuel consumption is between 9.5 and 22 l/ha. Here the extreme deviation in these values is down to the changeable soil conditions and the abundant hilly terrain.

For operating the AD-P seed drill combination, farmer Jezierski utilises the AMATRON 3 terminal. Here he regards it

as a decisive benefit that he can combine this operator terminal also on his UF 1501 mounted field sprayer and his ZA-V Profis Tronic fertiliser spreader.

In light of his good experiences, the overall judgement of the Polish farmer

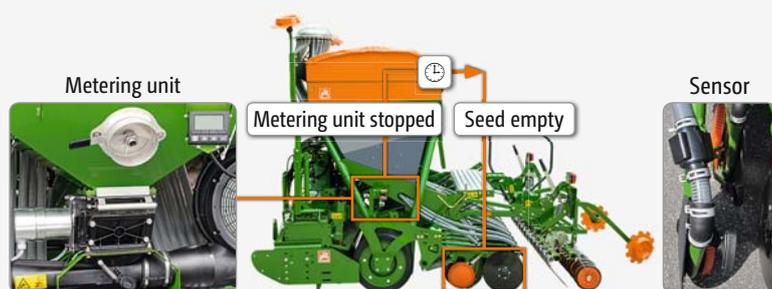
regarding the AD-P is also positive: "In my opinion this machine offers the best price to performance ratio amongst all seed drill combinations." ■



One for ALL!

NEW NOW!

AutoPoint for pneumatic seed drills



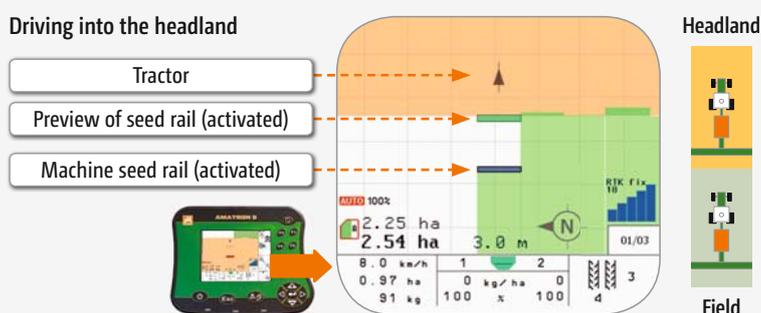
1. Split system: AutoPoint determines the conveying time

Automatic measuring and updating of the conveying time

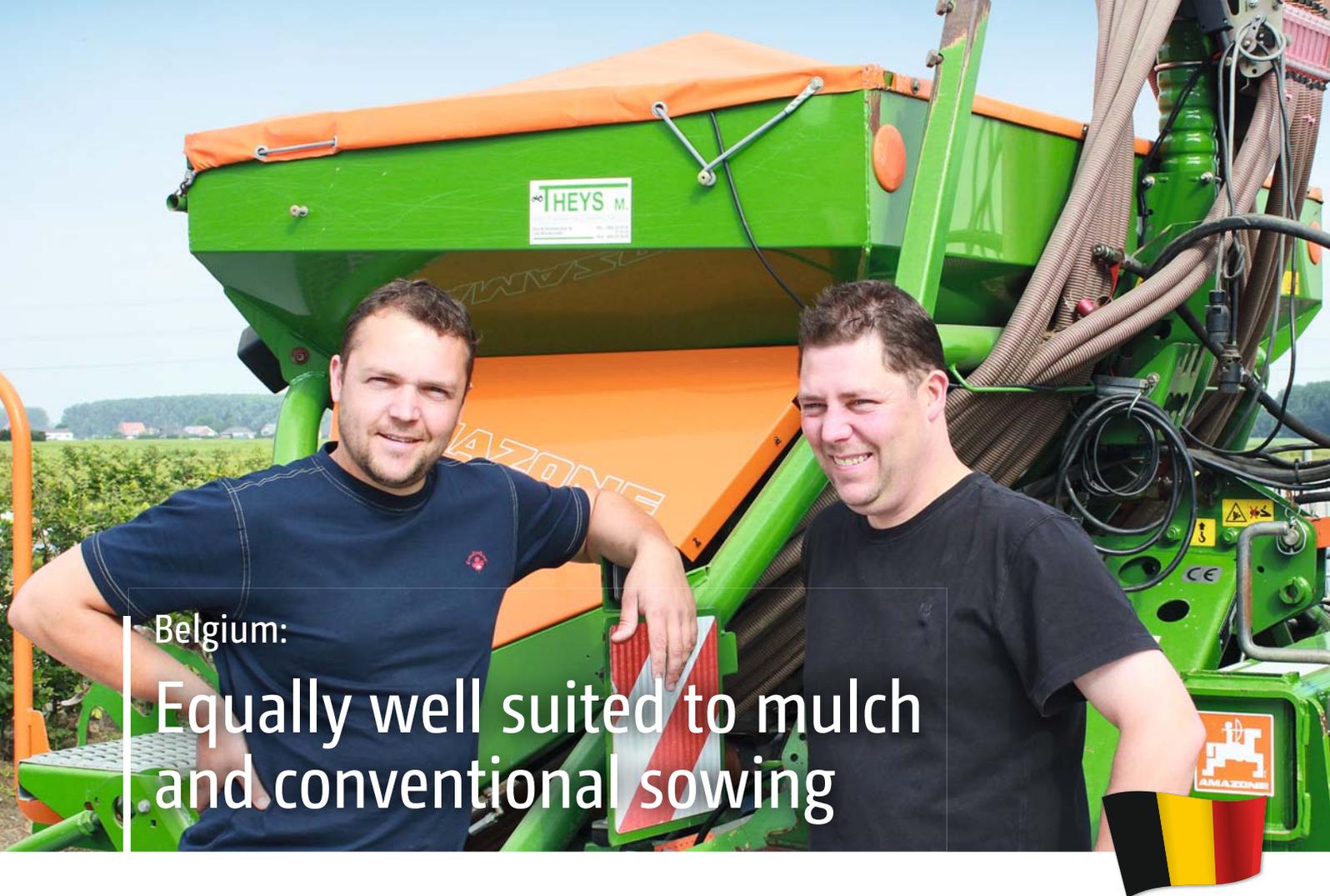
At the heart of the system is a sensor in the coulter that measures the real time delays between the on/off switching of the metering unit and the arrival of the first and last grains at the coulter. The preview times are actively readjusted.

Top benefits:

- **GPS-Switch**
 - Automatic control of the metering system
 - Precise start and stop of the sowing procedure on the headland
- **Automatic determination of the conveying time via AutoPoint**
- **AutoPoint driver assistance system**
 - Previews the seed rail to assist in the optimum driving behaviour
 - Selection of the correct speed
 - Maintaining the speed in the relevant range



2. Split system: AutoPoint driver assistance system



Belgium:

Equally well suited to mulch and conventional sowing

“ADF Delestrain et Fils” is the name of the company of the brothers Sebastien and Gaëtan Delestrain. The business is situated in Escanaffles, about 65 km west from Brussels, and includes an agricultural farm and a contracting business. In total the Delestrain brothers run around about 400 ha of arable land of their customers and on their own farm.

All the fields are intensively cultivated and so the crop rotation consists of potatoes, beet, chicory, vegetables, cereals and linseed. One key point is that the soils are very different because they change from loam via sandy loam through to sand. In some places also heavy clay soil prevails.

Depending on the previous crop and the soil and weather conditions, soil tillage is handled flexibly: In cases where it is very wet, they plough whereas, in dry conditions, mulch sowing is utilised. “For these conditions our AD-P 303 Super is exactly the right seed drill combination”, the Delestrain brothers report. They pur-

chased the machine in 2007 and it is equipped with a TL 302 deep loosener, KG rotary cultivator and KW 580 wedge ring roller. It is used for drilling cereals and catch crops and currently operates on an area of around about 260 ha per year at “ADF Delestrain et Fils”.

When operating in a mulch sowing system, the Delestrain brothers additionally equip their 220 HP tractor with a front cultivator. Furthermore the deep loosener legs on the seed drill combination are set to a depth of 30 cm. This system combination requires plenty of power



and so the tractor has a fuel consumption of 30 to 32 l/hour at an operational speed of 8 km/h. When used after the plough – and without the front cultivator – the fuel consumption drops to about 20 l/hour. The average area output of the seed drill combination is 1.8 ha/hour.

“Irrespective of the system the seed always emerges quickly and evenly”, the Delestrain brothers consider this as a decisive benefit of the AD-P for their conditions. Above all, they attribute this to the reliable and even depth guidance of the RoTeC coulters. Also the hydraulic coulters pressure adjustment shows its strengths, because the coulters pressure can be easily matched on the move to the changing soil conditions. The hydraulic blower fan drive is also an additional benefit. Because, in this way, the tine speed of the rotary cultivator can be matched to differing soils, irrespective of the seed rates.



“No matter, whether heavy or light soils, whether conventional or mulch sowing – the machine is very flexible in operation”, Sebastien and Gaëtan Delestrain summarise in their judgement of the AD-P.

Additional strengths are for them, apart from the precise seed placement, above all also the simple handling and operation of the seed drill combination. ■

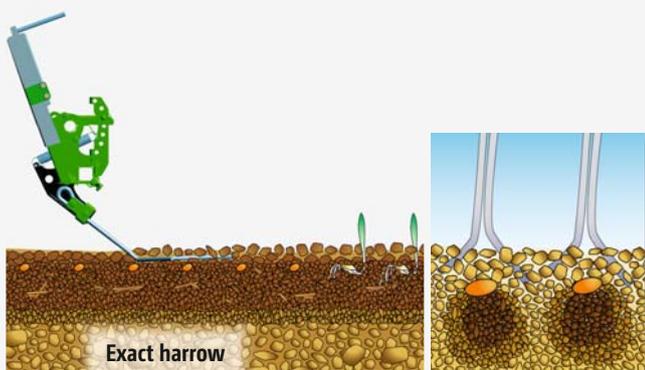
ITS YOUR CHOICE!

Exact or Roller harrow

Exact harrow

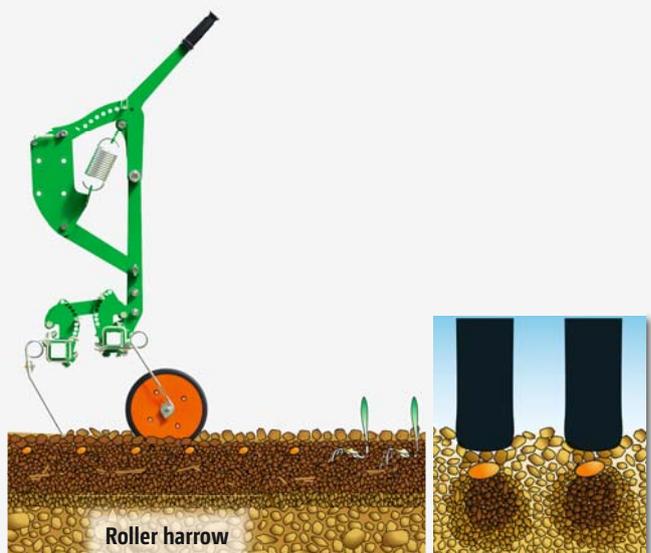
The Exact harrow levels and covers the open seed furrow as well as functioning blockage-free even with large amounts of straw on the surface. With its individually swivelling harrow elements, it matches the soil undulations and provides an even seed coverage both on fields without straw and also on areas where large amounts of straw prevail.

The harrow pressure is adjusted mechanically by resetting a pin. With the hydraulic harrow pressure adjustment, a minimum and maximum value is pre-determined by inserting pins. Thus the harrow pressure and the coulters pressure can be quickly matched on the move to changing soils via just one tractor control valve.



Roller harrow

The Roller harrow additionally presses the soil above the seed furrow resulting in optimum germination conditions. This is recommended especially for light, dry soils when sowing spring cereals or rape. The result is an erosion preventative, undulating surface profile. Of special advantage is that the roller pressure can be adjusted completely independently from the coulters pressure for the optimum set-up.



Sowing technology for large area operation

On farms with heavily-changing soils, the 3-point linkage mounted, active seed drill combinations have established themselves as an efficient and cost-effective sowing method. Especially in small fields, the manoeuvrability of these seed drill combinations also has to be emphasised. This applies for sowing both after the plough and also for mulch sowing. On the other hand, farms that attach great importance to efficiency, and who want to transport large quantities of seed, are increasingly focusing on the use of trailed sowing technology.

Special soil and climatic conditions require also specific sowing systems that combine seed with mineral fertilisation as a starter application.

For this, AMAZONE has also the optimum solution within its range. This begins with the Cirrus large area seed drill combinations that utilise a non-powered soil tillage system and come in working widths of 3 to 6 m. These are equipped up-front with a 2-row compact disc harrow and perform, when compared to an active combination, with higher work rates. For even higher acreage outputs, the Citan solo seed drills in working widths of 6 to 15 m are the better alternative. With this system, however, the preceding soil tillage has to be carried out in a separate operational pass.

Another machine for cost-effective production on large areas is the Primera DMC in working widths of 3 to 12 m. With its parallel-guided chisel openers it is especially well suited to mulch or direct sowing as well as for sowing after the plough. Furthermore, with the 6 m wide Cayena tine seeder, there is also available the appropriate technology for working on hard and stony soils and in dry regions. ■



Cirrus



Citan



Primera DMC



Cayena

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