100 years

AMAZONE fertilising technology!

AMAZONE 100 1917 – 2017

AMAZONE 100 1917 – 2017

2011
ZG-TS trailed large area spreader

2007
ZA-M 01 twin disc fertiliser spreader

2001
ZA-M Ultra twin disc fertiliser spreader

2001
ZA-M Profis weigh-cell spreader

2001
ZA-M iS twin disc fertiliser spreader

1996
ZA-X Perfect twin disc fertiliser spreader

1989
ZA-M twin disc fertiliser spreader

1983
Trailed ZG-B large area spreader

1980
ZA-U twin disc fertiliser spreader

1979
ZA-F twin disc fertiliser spreader

1977
Jet pneumatic spreader

1966
Trailed ZG 2001 large area spreader

1958
First ZA twin disc fertiliser spreader

1929
HaDeGa worm auger fertiliser spreader

1917
"Michel" first worm auger fertiliser spreader

2013
ZA-TS twin disc fertiliser spreader

2015
ZA-V mounted spreader

2017
ZG-TS 01 trailed large area spreader

100 years

AMAZONE fertilising technology!

100 years young. The fertiliser spreaders from AMAZONE

Our fertiliser spreaders have reached the milestone “100 years young”. Over the course of this century of fertiliser spreading we, at AMAZONE, have pushed the boundaries again and again with new fertiliser spreader ideas and pioneering inventions. In this way, the fertiliser spreaders from AMAZONE have always remained innovative and young. So what started in 1917 with the first AMAZONE box spreader has evolved today, with its pioneering AutoTS concept, into the ZA-TS and ZG-TS fertiliser spreaders with their state-of-the-art technology.

Two years prior to the start of our 100 year journey of fertiliser spreading technology, our great-grandfather and AMAZONE founder, Heinrich Dreyer, had applied for a patent on a worm auger fertiliser spreader in 1915. In those times the yardstick of the industry was still the chain fertiliser distributor which performed well and reliably indeed but had the disadvantage that they were very heavy and expensive. Therefore, only large farms could afford such a spreader, whereas the farmers on the small and medium sized farms, had to spread the fertiliser by hand or they used simple slit spreaders which, however, were only suitable for dry fertilisers.

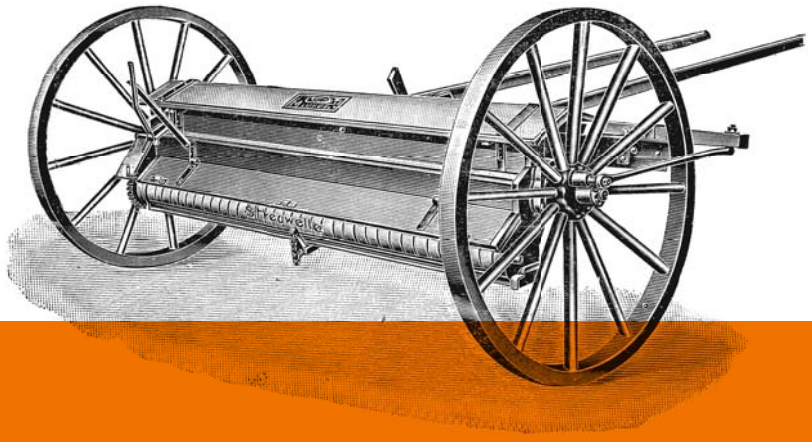
When the worm auger fertiliser spreader from our great-grandfather was introduced to the market, it proved to be a huge step forward because it was able to spread dry and moist fertilisers and was affordable even for those smaller farms. You can learn more about all the subsequent AMAZONE fertiliser spreaders on the following pages of our journey through the 100 year history.

You may be assured that, going forward, we and the AMAZONE team will do everyghing we can to further improve our fertiliser spreading technology. It is our objective that you are able to spread your fertiliser more and more precisely and, in this way, save costs and simultaneously help the environment.

Yours

Dr. Justus Dreyer, Director

Christian Dreyer, Director



1917

Michel worm auger fertiliser spreader

Michel worm auger spreader

Due to the first world war it took some time until Heinrich Dreyer was able to implement the idea of his fertiliser spreader. The AMAZONE worm auger spreaders were then in fact built and sold from 1917 – the start of the 100 year history of success so far.

Heinrich Dreyer named the worm auger spreader after the German “Michel”. The ingenious basic principle of the spreader was a box with an inclined bottom where a toothed “agitator slide” moved to and fro and conveyed the fertiliser underneath to a shutter slide. This principle featured outstanding advantages:

1. No matter whether dry or moist – any fertiliser could be evenly spread without blocking up the spreading units.
2. The spreader was easy to pull and easy to clean.
3. There were only a few components which could be affected by the aggressive fertiliser.
4. Michel could be produced at a low price so that it could be purchased also by smaller sized farms.

PATENT-URKUNDE

Nr. 290492.

AUF GRUND DER ANGEHEFTETEN PATENTSCHRIFT IST DURCH BESCHLUSZ DES KAISERLICHEN PATENTAMTES

an H. Dreyer in Gaste b. Osnabrück

EIN PATENT ERTEILT WORDEN.

GEGENSTAND DES PATENTES IST:

Kunstdüngerstreuer mit in seiner Schräglage einstellbarem Rutschbodeh

GESETZ V. 7. APRIL 1891

ANFANG DES PATENTES: 5. März 1915.

DIE RECHTE UND PFLICHTEN DES PATENTINHABERS SIND DURCH DAS PATENTGESETZ VOM 7. APRIL 1891 (REICHS-GESETZBLATT FÜR 1891 SEITE 79) UND DURCH DAS GESETZ VOM 6. JUNI 1911 (REICHS-GESETZBLATT FÜR 1911 SEITE 243) BESTIMMT.

ZU URKUND DER ERTEILUNG DES PATENTES IST DIESE AUSFERTIGUNG ERFOLGT.

KAISERLICHES PATENTAMT.

Der neue

DÜNGERSTREUER „MICHEL“

MODELL 1927

Vier D. R. Patente

D. R. Gebr.-Muster

Da die berechtigten Forderungen, die der Landwirt an eine Kunstdüngerstreumaschine hinsichtlich Leistung und Haltbarkeit stellen muß, bisher keiner für den landwirtschaftlichen Betrieb brauchbaren Lösung entgegengeführt waren, gingen wir dazu über, dieser für die Landwirtschaft so wichtigen Maschine unsere ganz besondere Aufmerksamkeit zu widmen. Die enge Fühlungnahme mit der praktischen Landwirtschaft sowie die eigenen Erfolge haben uns den richtigen Weg gewiesen; und nun ist es uns gelungen, mit unserm »Michel« etwas ganz besonderes zu bieten.

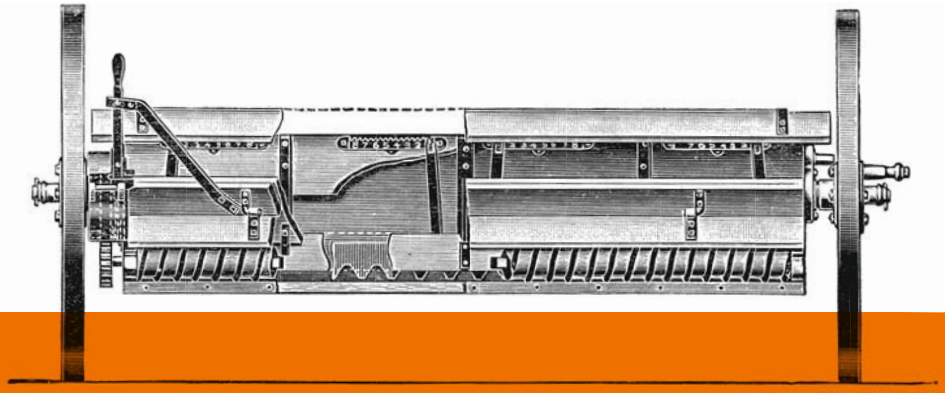
Ein Düngerstreuer muß alle Düngerarten – ob feucht oder trocken – in kleinsten und größten Mengen einwandfrei streuen können.

Der „Michel“ streut alle Düngerarten — ob feucht oder trocken — von 8 kg bis 1500 kg per Morgen völlig gleichmäßig.

Die Hauptteile sind aus Holz – nur die Schieber und die Rippen der Streuwalze sind aus Eisen hergestellt.

innerhalb kurzer Zeit

glänzende Zeugnisse



Michel
Eingetrag. Schutzmarke

Michel worm auger spreader

The name of the spreader then was changed several times: From initially Michel via Hadega, Hedega until it was finally named AMAZONE HDG (Heinrich Dreyer Gaste). It was offered in different widths from 1.5 to 4 m and finally also in a special execution with rubber tyres and a tractor drawbar.

From 1925 the AMAZONE worm auger spreader had in fact started a real trend as even the large farms recognised its benefits and increasingly decided in favour of the AMAZONE. At the beginning of the 1930s the successful development resulted in AMAZONE taking over as market leader in fertiliser spreaders.

1958

ZA the original

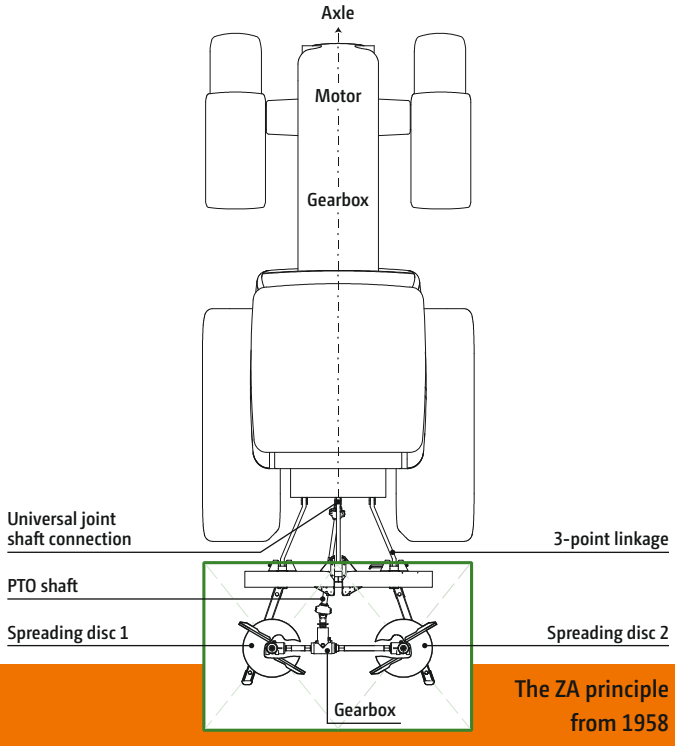
ZA twin disc mounted fertiliser spreader

With regard to the development of the first ZA twin disc fertiliser spreader, rationalisation was at the forefront. So, in the 1950s the worm auger fertiliser spreaders were no longer sufficiently economical because their working width was limited to the relevant machine width. By then, at that time, single disc and pendulum fertiliser spreaders had already conquered a considerable market share in fertiliser spreaders. The problem, however, was maintaining an accurate lateral distribution.

In 1958, Dr. Heinz Dreyer started to develop an alternative. Already after a few weeks he then had the idea of the modern mounted spreader with twin spreading discs. So, Dr. Heinz Dreyer invented the first mounted centrifugal spreader in the world with two spreading discs and named it AMAZONE ZA (Zentrifugalstreuer Anbaumaschine).

The principle of the two discs which compensate each other and always create a symmetrical spread pattern quickly prevailed. The twin hopper, which the ZA has had since its birth, is still today one of its characteristic features. The two hopper tips permit a constant flow monitoring of the two spreading units. In addition, right from the beginning, the ZA featured a direct drive between the gearbox of the spreading discs and the universal joint shaft on the tractor. The 3-point linkage, in conjunction with a gearbox which inevitably maintains constantly the position of the two throwing vane pairs in relation to each other, resulted in decisive progress. With granular fertilisers, the first ZA managed a working width of 10 m. The capacity was 330 l but was soon increased to 400 l. With this sensational invention, AMAZONE started its triumphal march in the sector of fertilising technology. The original ZA has been sold more than 150,000 times in its history.

Inventor of the ZA: Prof. h.c. (SAA Samara) RAS Dr. Dr. h.c. Heinz Dreyer (right) with his son Dr. Justus Dreyer (left).



The ZA principle from 1958

1965

ZA-S – the more precise one

ZA-S mounted twin disc fertiliser spreader

In 1965, the ZA was developed on to become the ZA-S. The main alteration to this spreader, apart from the increased hopper size and reinforced frame, was the outlet apertures. They were designed in such a way, that, at different spread rates, the feed-on point on the spreading disc moved along a pre-determined curve so that, even at varying rates, the spread width was always maintained. This was a decisive advantage in comparison to those then available from the competition. The ZA-S achieved a working width of 12 m and had a hopper capacity of 400 l or 600 l.

1966

The ZG large area spreaders

Trailed ZG large area spreader

Also, in 1966, AMAZONE with its ZG, introduced the first trailed large area spreader to the market. Initially this spreader was available with a 2,500 l hopper which could be increased to 3,500 l by the use of an extension. In 1972, the ZG 8000 followed with a 3,700 l hopper which could be increased to 5,200 l.

On all the trailed spreaders, either a twin disc spreading unit was used or a 6 m worm auger for lime. The ZG hopper had a metal sheet bottom with a scraper bar via which the spreading material, especially lime and lime marl was positively transported to the rear onto the spreading unit.

1972

ZA-E – the bestseller

ZA-E twin disc fertiliser spreader

As the next generation of the ZA family in 1972, the ZA-E left the assembly line for the first time. It featured somewhat "embellished" spreading discs. In this way the now extended spreading vanes were sloped up so that they spread wider and, at the same time, reduced the sensitivity to wind. In addition, the hopper became shallower and the frame stronger. Also the hopper size was increased to a capacity of 1,000 l to ensure an even more efficient operation. Furthermore, the ZA-E could achieve working widths of up to 15 m. For late top dressing AMAZONE also offered a hydraulic lift frame; with which the entire spreader could be raised up high above the crop. From 1978 to 1983 the ZA-E was also available in the "Variant" execution. The "Variant" was a usual ZA-E but with an even larger hopper that was cut out in a special profile so that it could also be loaded from tipping trailers. For operation behind tractors with an enclosed cab, it could be equipped with hydraulic control of the shutter slide apertures. The filling height was just 89 cm.

1976–1998

Jet pneumatic spreader

Jet 1200 pneumatic spreader

In 1976, AMAZONEN-WERKE started the development of a pneumatic fertiliser spreader of which, up until 1998, roughly 1,000 units were sold per year. The reason for this development was that the French company, Nodet had introduced such an implement to the market.

The basic, technical principle of the pneumatic spreader was based on a metering device inside the fertiliser hopper – similar to a conventional seed drill. The metering wheels fed individual pipelines which, via an injector sluice, were provided with air from a separate blower fan. The air delivered the fertiliser to the individual nozzles which were fitted to a boom at spacings of around 1 m and a total width of 10 m to 24 m. This allowed the precise metering of the fertiliser relatively irrespective of wind influences and to distribute it via the multiple baffle plates very evenly on the field. The disadvantage of this principle was, however, that the entire spreader was quite bulky in design and thus was relatively heavy and expensive.

The AMAZONE Jet pneumatic spreader was very shallow, equipped with a large hopper opening and could even be filled directly from a tipping trailer. In working widths of 10 or 12 m, its hopper capacity could be increased from 1,200 l to 1,500 l and 2,000 l by using the relevant extension.

In 1984, the little Jet got a big brother, the AMAZONE Super Jet in working widths of up to 24 m. This spreader not only operated precisely but also very reliably. It was, however, very expensive so that the customers jumped ship when they could purchase an AMAZONE ZA-M twin disc spreaders which precisely spread up to 36 m and were considerably cheaper. Therefore AMAZONE stopped production of the pneumatic spreaders in 1996.

Super Jet pneumatic spreader

1979

ZA-F – the little big one

ZA-F twin disc fertiliser spreader

Another important development step was the ZA-F spreader in 1979 which achieved working widths of up to 15 m. This spreader was equipped as standard with a late top dressing system in the form of swivel blades making the lift frame obsolete. The ends of these spreading vanes could be folded upwards – lifting the entire spread pattern by approximately 0.5 m. This offered the advantage that the fertiliser gently dropped into the grain and the ears were not damaged. In addition the standard machine now featured a very special shape: At a height of just 87 cm and a straight edge at the rear the possibility was given to fill the spreader directly from a tipping trailer with up to 1,200 l of fertiliser. A further improvement was the removable agitator heads so that also urea could be handled very gently. The possibility of half side on/off switching of the spreader was also new.

1980

ZA-U – a new class

ZA-U twin disc fertiliser spreader

The ZA-U which, in 1980, represented a completely new generation of the ZA yet still featured the basic elements of the original spreader. The main characteristic of the ZA-U, however, was the large, wide and shallow hopper involving a good fertiliser flow and a low filling height. The innovations also included the changeable disc system with different spreading discs for different working widths. With wider, extended spreading discs and relevant longer spreading vanes, the ZA-U furthermore was the first fertiliser spreader in the world which achieved an effective working width of 24 m. Also the capacity, extended to 1,500 l, was a decisive advantage of the ZA-U. So, it became the “right spreader” for larger farms. The ZA-U marked innovation and progress, for instance when it came to the slow rotating agitator shaft so that sensitive fertiliser granules were protected. In addition it had “concave spreading discs” which ensured that the fertiliser gently dropped into the plants without damaging the ears of the grain. In addition, AMAZONE also offered for the first time on the ZA-U a border spreading disc allowing for accurate operation right up to the field’s edge. As an alternative to the border spreading disc, a border spread deflector was also available.

ZG-B large area spreader

1983

ZG-B large area spreader

Often it was usual to fill these spreaders with a front end loader. Here it might happen that larger foreign objects, right up to complete rocks, got into the spreading material. In this way the scraper bar bottom was bent and the entire spreader had to be unloaded by hand and then repaired. To avoid such damage, AMAZONE, in 1983, developed a belt floor bottom for the trailed spreader, named since as the ZG-B. The floor belt consists of rubber which wasn't damaged, even by larger debris. However, such floor belts, which are also used by other manufacturers, tend to become misaligned causing excessive wear to the sides. To avoid such damage, AMAZONEN-WERKE developed a frame which automatically keeps the conveyor belt in the centre of the ZG-B hopper. In the course of the years, this solution has proven ideal and up until today it still remains as one of the special advantages of the AMAZONE large area spreaders.

With the models Special, Super and Drive, AMAZONE today offers three different ZG-B large area spreaders – each, from choice, with hopper sizes of 5,500 l or 8,200 l. In their basic version, the ZG-B Special and ZG-B Super are equipped with a universal lime spreading system for working widths of up to 15 m; as an option the OM spreading discs are available for the application of granular mineral fertiliser from 10 to 36 m.

Whereas the ZG-B Drive features a hydraulically-driven floor belt which, like all the other hydraulic functions of this spreader, is controlled via the AMATRON 3 operator terminal. In addition, the ZG-B Drive is equipped as standard with OM 24-36 spreading discs for mineral fertilising and the Limiter border spreading device.

1983

AMAZONE FertiliserService with spreading hall

In 1983 AMAZONE installed, what was at the time, the largest fertiliser spreading test hall in the world. As an innovative fertiliser spreader manufacturer, AMAZONE again was the pioneer on the way to even more precision and environmental protection. For not only was it necessary when developing new technology, it was also imperative that up-to-date spreading charts were always available and competent advice was on hand when it came to critical fertilisers.

In 1992, an especially equipped fertiliser laboratory was added. This meant that in this laboratory the spreading properties of a wide variety of different fertiliser types can be determined even if only small amounts (3 kg) are available.

Most up-to-date fertiliser spreader test hall in the world 1983

Since 1999 the ability to also download the latest settings for fertiliser spreaders via the spreading chart database on the internet at www.amazone.co.uk became an integrated part of the FertiliserService. All the latest spread tests are added to this database so that farmers and agricultural contractors can obtain, up-to-date and free of charge, the right settings which include any new fertilisers or less familiar spreading materials.

1989

ZA-M – the spreader of success

ZA-M twin disc fertiliser spreader

In 1989 a further "highlight" continued the ZA history: the ZA-M became the first fertiliser spreader in the world with an effective working width of up to 36 m and a capacity up to 3,000 l. The ZA-M again set completely new standards in the sector of fertilising technology which is mirrored in the high sales figures that continue until today. The spreading principle of the ZA-M includes different sets of spreading discs with tool-less adjustable spreading vanes. With these spreading discs, named "Omnia-Set", the spreader can be adjusted to suit many different fertiliser types with their varying granule sizes and trajectory properties. From this – irrespective of the type of fertiliser – a spread pattern of particularly high precision always results. In addition, with the "TeleSet" border spreading disc, a more optimised border spread pattern is possible. Over the following years, various further models were introduced: ZA-M I with its so-called trimmers which, at large working widths, prevented the fertiliser to be thrown too far ahead. The ZA-M II, designed for smaller spreading widths, had the same hopper and the same technology as the ZA-M I, however without the guard tube and trimmers. The ZA-M Special with a hopper volume up to 1,500 l featured a newly developed lighter frame construction.

1992

ZA-OC – fertiliser protecting

ZA-OC twin disc fertiliser spreader

For small to medium-sized farms – from 1992 – AMAZONE included the ZA-OC spreader in its programme. With its maximum working width of 18 m, a capacity of 900 l, 1,200 l or 1,400 l and a fertiliser-protecting conical agitator, the ZA-OC in 1992 was the further development of the ZA-F. It included some remarkable innovations, such as, for example, longer spreading vanes, the easily to install "Tele-Quick" border spreading vane and a simple calibration kit.

1995

ZA-M MAX – the master spreader

ZA-M MAX twin disc fertiliser spreader

By end of the 1990s, the ZA-M was once again improved in many details and in 1995 was renamed as the ZA-M MAX. It was the master spreader of the outgoing century. It was tested internationally and was awarded in all tests -carried out by DLG, SJF and IMAG – exclusively as VERY GOOD and GOOD, and in France in 1997 it was even awarded a gold medal in conjunction with the AMASAT-D.A.T. technology. In addition, this spreader already prematurely fulfilled the standards that were later on to become the new European fertiliser decree. Equipped with electronic actuation and control, additionally it was the first fertiliser spreader which could be controlled via satellite. For more modern border spreading, and remote controlled from the tractor cab, AMAZONE then in 1999 developed the Limiter border spreading system and was awarded for this an AGRITECHNICA silver medal.

1996

ZA-X Perfect – small spreader: thinks big

ZA-X Perfect twin disc fertiliser spreader

The ZA-X Perfect is based on the design of the ZA-OC and achieves a working width of up to 18 m. It spreads even smaller granulated fertilisers safely to 18 m and features a hydraulically actuated shutter actuation. The most important parts of the spreading mechanism are made from stainless steel and also the late top dressing device is fitted as standard. Known as the ZA-XW Perfect, this spreader is also available in a narrower hopper for operation in specialist crops, such as vineyards, orchards and hop gardens.

2001

ZA-M iS – a new generation

ZA-M iS twin disc fertiliser spreader

In 2001, further improvements to the ZA-M spreader of success followed. The hopper tip with its rotating agitator spirals, the complete bottom assembly with metering shutters, the discs with spreading vanes and the fully enclosing deflector plate on the spreader were from now on made from stainless steel. Thus a long service life, big efficiency and a high resale value were guaranteed. This spreader had the suffix iS for "integrated Stainless steel". The ZA-M iS was available in three sizes: in addition to the ZA-M premiS with a basic hopper of 1,000 l, the ZA-M noviS with a basic hopper of 1,500 l was available. By using extensions, both hoppers could be increased to a capacity of 2,000 l. They featured working widths of 10 m to 28 m. The ZA-M maxiS was available in hopper sizes up to 3,000 l and it was able to spread up to 36 m.

2001

2001: ZA-M profiS

ZA-M Profis – he who weighs wins

2009: ZA-M 1501 Profis weigh cell spreader with integrated weighing system

AMAZONE introduced the ZA-M profiS as its first spreader to be equipped with a weighing system. Today still, AMAZONE calls Profis any spreaders which feature as standard an integrated weighing system for highest accuracy, comfort and safety. With the aid of a weigh cell, any differing properties of the spreading material are determined on-line and with high degree of accuracy. On this basis, the quantity of fertiliser actually spread is constantly and automatically compared with the predetermined rate. Deviations in the flow behaviour, for instance with heterogeneous mineral fertilisers, are detected so that, via the electric metering shutter slides, the spreader can readjust itself automatically. In addition, for a plot-related nutrient balance the spread rate can be accurately documented. This makes calibration obsolete and the applied rate can not only be varied from choice but also be recorded. Thanks to the parallelogram guided frame, any strain on the weigh cell is minimised.

2001

ZA-M Ultra – a new dimension

2010: ZA-M Ultra twin disc fertiliser spreader

In 2001 AMAZONE unified efficiency and the highest precision in the ZA-M ultra iS – for improved distribution accuracy and maximum efficiency. With a maximum working width of up to 48 m and a 3,600 l hopper capacity, new dimensions were opened in acreage outputs. And, with just a few thumb bolts, a weighing system could be retrofitted. The integrated guide system of Trimmer and Limiter provided an optimum limitation of the spread fan during normal spreading and on the border. From 2010 the maximum working width of the ZA-M Ultra was increased to 52 m and had a hopper volume of up to 4,200 l.

Soft Ballistic System on the ZA-M means an especially gentle fertiliser treatment

Mineral fertilisers require an especially-gentle treatment to ensure precise distribution and transport out to the crop over the total working width. Fertiliser which has been already damaged by the spreader can no longer be reliably distributed. As a “Safety” feature, the AMAZONE Soft Ballistic System is integrated as standard into the ZA-M, ZA-V and ZA-TS mounted spreaders. Agitator, metering system and spreading discs are optimally matched to each other. This saves the fertiliser from damage and ensures high yields.

Four benefits with SBS:

1. Gentle guidance
2. Gentle delivery
3. Gentle acceleration
4. Gentle ejection

2007

ZA-M with SafetySet – the guarantee for success

ZA-M twin disc fertiliser spreader

Over the course of the years, the ZA-M has again and again been improved and up until today it is the most sold AMAZONE spreader. In addition to the standard execution of the ZA-M, the ZA-M Profis with weigh-cell spreader and the ZA-M Hydro with hydraulic drive have been available. A large variety of ZA-M versions are offered in hopper sizes from 1,000 l to 3,000 l and spreading widths up to 36 m. The AMAZONE ZA-M with SafetySet and surrounding guard tube and clear, integrated lighting kit offers more safety. Implements mounted behind fast travelling tractors must be clearly noticeable in road traffic. AMAZONE has integrated the strict demands on safety into a modern design.

Most up-to-date fertiliser spreader test hall in the world

2009

Most up-to-date fertiliser spreader test hall in the world

A further milestone is the new fertiliser spreader test hall for research, development and series supervision which opened in October 2009. In the course of the conversion, a completely newly designed test system that included new measuring and evaluation techniques resulted in a vast number of further decisive improvements. So, since then, fertiliser spreaders with working widths of up to 72 m can be tested. The capacity grew to 100 tests/day. Thanks to a 42 m long measuring bar with 84 collecting trays at a size of 50 x 50 cm, each equipped with an on-line weigh-cell, it is possible to analyse both the lateral and longitudinal distribution on fertiliser spreaders. In this way, AMAZONE is able to offer its state-of-the-art FertiliserService to its customers.

ZG-TS trailed fertiliser spreader

2011

The new ZG-TS large area spreader

At AGRITECHNICA 2011 AMAZONE introduced its first spreader with the innovative TS spreading system on it – the ZG-TS large area spreader. The outstanding peculiarity of the TS spreading system is the integrated AutoTS border spreading system: For normal spreading with large throwing widths and for border spreading with one-side reduced throwing widths this system activates different throwing vanes without having to change the spreading discs.

The TS spreading unit, however, not only impresses by its precision, but also by its outstanding performance statistics, such as, for example, application rates up to 650 kg/min at working widths up to 54 m. In addition the ZG-TS can be comfortably operated via the ISOBUS operator terminals, for example, AMATRON 3, CCI 100 or AMAPAD and is, like the ZG-B spreaders, from choice, available in hopper sizes of 5,500 l or 8,200 l. In this way the ZG-TS is an extremely efficient large area spreader for the quick and precise application of mineral fertilisers on large farms or in a farm overlapping situation.

2013

ZA-TS – the spreader with Top Speed

ZA-TS twin disc fertiliser spreader

At SIMA 2013, AMAZONE presented for the first time the ZA-TS mounted fertiliser spreader. This is a high-tech spreader that supplements the range of mounted spreaders at the top and explores new dimensions regarding precision, efficiency and operational comfort: The biggest models manage application rates of up to 650 kg/min and hourly outputs of up to 50 ha. Like the ZG-TS trailed spreader, the ZA-TS is an ISOBUS spreader and equipped with the innovative TS spreading unit and the disc-integrated AutoTS border spreading device.

Thanks to the modular design, eight different ZA-TS models with hopper sizes between 1,400 l and 4,200 l are available and thus, for any farm and any contractor, there is a ZA-TS in the optimum size. All ZA-TS are equipped with a 700 l deep-pressed base hopper without corners, edges or welded seams. This ensures the constant and even flow of fertiliser and at the same time eases the cleaning of the hopper. The difference between the models is the size of the hopper extensions and the strength of the frame.

The working width range between 15 m and 54 m is covered by the ZA-TS spreaders with shallow spread patterns with large overlap zones. This means multiple overlap and any errors in distribution are extensively avoided. At the same time, the integrated AutoTS spreading system allows the creation of very reliable, steep border spread patterns and thus optimum growing conditions right up to the field's border. In addition, the TS spreading unit can be very comfortably adjusted to different working widths and fertiliser types via its electrically-adjustable delivery system.

All the ZA-TS models are available in either a Tronic version with mechanical PTO drive, or as the Hydro with hydraulic spreading disc drive. In addition, all ZA-TS spreaders feature ISOBUS regulating electronics. Thanks to ISOBUS they can be operated either with one of the AMATRON 3, CCI 100 ISOBUS or AMAPAD terminals from AMAZONE or any other ISOBUS terminal. From choice the spreaders can be ordered with or without a weighing system. The weigh-cell spreader can be equipped additionally with a tilt sensor.

The new high output spreaders ZG-TS and ZA-TS with Top Speed

2015

ZA-V – a spreader for all situations

ZA-V twin disc fertiliser spreader

With the ZA-V, AMAZONE then introduced, at SIMA 2015, an additional high class fertiliser spreader. The ZA-V is designed for working widths from 10 to 36 m, operational speeds up to 30 km/h and acreage outputs of up to 33 ha/hour. Thanks to its ISOBUS communication, the weighing technology and many other innovations, even the ZA-V is one of the most up-to-date fertiliser spreaders in its class.

Also this range offers a wide choice of eight models with hopper sizes between 1,400 and 4,200 l which are equipped again with that 700 l deep-pressed base hopper without corners, edges and welded seams. The newly developed ZA-V spreading unit with V-Set spreading discs also results in an especially precise lateral distribution. Irrespective of the spread rate the spread pattern is maintained at all application rates and all forward speeds. Setting up to different fertiliser types is done quickly and simply via the QuickSet vane setting system.

Also new is the Limiter V^{+}, an electrically remote controlled border spread system for the ZA-V spreaders. This border spreading system can be adjusted very sensitively via the operator terminal between side, border and water course spreading without the driver having to leave the tractor cab.

Also the ZA-V spreaders can be supplied as weigh-cell spreaders with or without an additional tilt sensor. Four alternatives are available for the operation of the ZA-V. As a step up from the hydraulically-actuated metering system, the EasySet terminal is available from which all the basic functions of the spreader can be set and actuated electrically from the cab. Additional setting possibilities and a forward speed related rate regulation are offered via the machine-specific AMASPREAD^{+} operator terminal. The next step up is the TRONIC version which can be operated via an ISOBUS terminal from AMAZONE or any other ISOBUS compatible terminal. This version also includes an 8 fold part-width section control. The top model is the ZA-V Profis Hydro with hydraulic disc drive, 16 fold part-width section control and Profis weighing technology.

2016

DynamicSpread dynamic part-width section control

Right from the beginning, the new ZA-TS and ZG-TS ISOBUS fertiliser spreaders featured, as standard, multiple part-width section control. This control can be actuated either by hand or automatically via Section Control software. Initially a maximum of 16 part-width sections could be automatically actuated in combination with the AMAZONE GPS-Switch Section Control software. For users who want to spread with even more precision in wedge-shaped fields, short work and around obstacles, AMAZONE launched onto the market in 2016 the

2015

ArgusTwin – the eye of the spreader

ZA-TS twin disc fertiliser spreader with ArgusTwin

At AGRITECHNICA 2015, AMAZONE introduced the automatic ArgusTwin spread pattern monitoring, a radar technology with far reaching improvements for operational comfort and performance quality. ArgusTwin can be utilised both with a mechanically-driven ZA-TS Tronic or ZG-TS Tronic and with a ZA-TS Hydro or ZG-TS Hydro with hydraulic spreading disc drive.

In practice this technology functions in such a way that first the fertiliser type, the application rate and the working width are entered via the ISOBUS terminal. Specifically for the Argus system, the setting charts were supplemented by the throwing angle value that gives the optimum lateral distribution.

During the spreading operation, ArgusTwin permanently compares, with the aid of 14 radar sensors, whether the predetermined direction of throw of the fertiliser from the spreading disc is being maintained. In case the actual direction of throw, due to unevenness of the fertiliser, worn spreading vanes, driving on slopes or start and stop procedures deviates from the "saved" direction of throw, the ZA-TS spreader re-adjusts on its own, and individually for each side, the setting of the delivery system so that, even with changing fertiliser properties, an optimum lateral distribution is ensured.

DynamicSpread: 64 or 128 fold part-width section control for ZA-TS

AMAPAD ISOBUS terminal for ZA-TS

DynamicSpread dynamic part-width section control for the ZA-TS Hydro and the ZG-TS Hydro. The basis here is newly developed software for the job computer of both fertiliser spreaders. In combination with GPS-Switch and the AMATRON 3, a CCI 100 terminal or AMAPAD from AMAZONE, the new software is able to control 64 or 128 part-width sections resulting in a dynamic matching of spreading width and application rate.

With 64 or 128 part-width sections, DynamicSpread reaches far beyond the actual ISOBUS standard, although this high number of part-width sections is always possible with the AMAZONE terminals. The ISOBUS terminals of other manufacturers possibly can only utilise a smaller amount of part-width sections. The most important advantage of DynamicSpread dynamic part-width section control is the higher precision and thus the saving and even more environmentally-friendlier application of fertilisers.

2017

The new generation ZG-TS 01

ZG-TS trailed large area spreader

With the new ZG-TS models, 7501 and 10001, in hopper capacities of 7,500 l and 10,000 l, AMAZONE has set new standards in trailed fertilising technology at AGRITECHNICA 2017.

The ZG-TS, with its TS spreading unit, features DynamicSpread part-width section control with the possibility to control up to 128 part-width sections in wedge shaped fields. In addition, the spreader can be equipped with ArgusTwin, the automatic spread pattern monitoring, as well as WindControl.

The ZG-TS 01 is equipped with a steering axle capable of a maximum steering angle of 28°. With a track width of 1,800 mm and a tyre width of 520 mm, true-track following is still possible. As soon as the spreading disc drive has been deactivated and a speed of 25 km/h is exceeded, the steering switches off automatically to ensure safe road transport at speeds of up to 60 km/h.

The signal from the on-line weighing function is intelligently utilised though for several functions and so, not only does it serve to supply a constant on-line calibration of the application rate but it is also used for intelligent fill level management and a safe braking force compensation at higher transport speeds.

For the fill management, the amount necessary for the remaining area and the optimum load distribution is determined.

The brake force regulation is carried out via an electronic braking system (EBS). Here the brake force is constantly and automatically determined by the weighing system depending on the quantity in the hopper. This results in very sensitive braking across all load levels.

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MI6468 (en_GB) 10.17

AMAZONEN-WERKE H. DREYER GmbH & Co. KG
P. O. Box 51 · 49202 Hasbergen-Gaste/Germany
Phone +49 (0)5405 501-0 · Fax +49 (0)5405 501-193
E-Mail: amazone@amazone.de
www.amazone.de · www.amazone.co.uk