

# ZA-TS





# **ZA-TS** mounted spreaders

The high output spreaders from AMAZONE



The ZA-TS mounted spreader is available in hopper capacities from 49.5 cft to 148 cft (1,400 to 4,200 l) and is equipped with the new TS spreading system. The TS spreading system enables working widths of up to 177 ft (54 m) together with excellent border spread patterns, making the ISOBUS ZA-TS spreaders one of the absolute top performing spreaders.

The reliable weighing system, the precise AutoTS, and the ClickTS border spreading systems, the innovative ArgusTwin and Wind Control technologies, and the many other available options make this fertilizer spreader a class apart.



## **ZA-TS**

### precise – quick – convenient

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**①** "The application rate of the weigh cell spreader was always correct. We also liked the lateral and longitudinal distribution."

> (dlz agrar magazine - Long-term test ZA-TS "Wide throwing master" · 01/2016)

• "Anyone who operates in sloping terrain, who has to struggle with widely varied fertilizer properties, or who has to handle very wide working widths with poorly throwing fertilizers will be grateful for this new precision."

## The ZA-TS mounted spreader

More precision. Maximum efficiency.

սթ to 1433 lb/min (650 kg/min)



Working widths of up to

177 ft (54 m)



#### The benefits at a glance:

- Precise spread patterns of up to 177 ft (54 m) working width with up to 128 part width sections
- Maximum work rates with outputs of 1433 lb/min (650 kg/min) and operational speeds of up to 18.5 mph (30 km/h)
- The deep-drawn base hopper without edges and corners ensures the lowest residue and easy cleaning
- Precise monitoring and control of the application rate via the 200 Hz weighing technology and tilt sensor
- Soft Ballistic System pro (SBS pro) for an especially gentle handling of fertilizers and less fertilizer damage
- AutoTS and ClickTS, the disc-integrated border spreading system, electric or manual
- Electrically-driven and fertilizer-protecting agitation system with automatic shutoff
- Automatic adjustment of lateral distribution via ArgusTwin possibly the most convenient way of spreading fertilizer
- Compact, tight-fitting and operator-friendly roll-over hopper cover or simple swivel hopper cover
- Fertilizer Service, top-class quality, unique service with more than 25 years' experience

The benefits at a glance







# Frames and hoppers

Robustness is the key



ZA-TS 2000 Profis Tronic

#### The frames

- **Super frame:** 7055 lb (3,200 kg) payload, Cat. II hitching dimensions and fixing pins.
- **❸ Ultra frame:** 9921 lb **(**4,500 kg) payload, Cat. III hitching dimensions and Cat. II/III fixing pins.

# Outstanding design: mounted spreader with 9921 lb (4500 kg) payload.

#### The benefits

- Iightweight frame design with excellent rigidity
- optimized center of gravity with plenty of space for hitching up
- "For Amazone, their payload of up to 9921 lb (4.5 t) is the highest."

(profi – PracticeTest "Four fertilizer spreaders in comparison" · 01/2016)

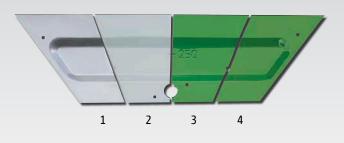
#### The deep-drawn hopper

The base hopper has a volume of 25 cft (700 l). It is deep-pressed without corners, edges, and weld seams - ensuring the continuous and the even flow of the fertilizer. The spreader's design also makes it easy to clean.

#### Benefits of the design

- No corners and edges
- Even and constant flow of the fertilizer
- Less danger of bridging
- Corrosion-resistant
- Simple cleaning procedure





- High-quality multilayer paint finish
  - 1) sheet steel
  - 2) zinc phosphate (galvanizing layer)
  - 3) KTL priming coat
  - 4) top coat

## The extensions

#### In two widths and many sizes

## The narrow option with a filling width of 7.3 ft (2.22 m)



S 1400 extension S 1700 extension



S 2000 extension



S 2600 extension with single folding ladder

#### **Additional hopper extensions**

For a subsequent increase in hopper capacity for the ZA-TS, AMAZONE offers a suitable bolt-on extension for both the S and L base machines.

The wide option

with a filling width of 8.9 ft (2.71 m) and with twin folding ladders



L 2200 extension



L 2700 extension



L 3200 extension



L 4200 extension

The volume of the extension is 21 cft (600 I) for S hoppers and 28 cft (800 I) for L hoppers.

It can easily be filled directly from a tipping trailer or from big bags. Especially when using large loading shovels, the wide L extension is of major benefit.

ZA-TS with L 800 hopper extension



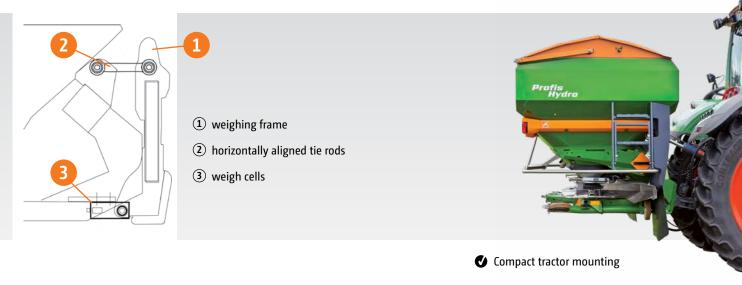


# Profis weighing technology –

The one who weighs, wins!



Weighing frame | Tilt sensor 8 | 9



## No calibration: enter the spread rate and drive off! There is nothing simpler.

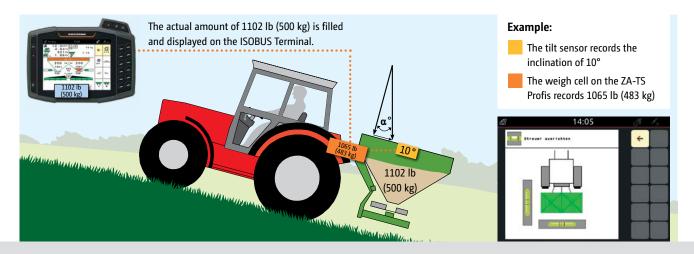
The weighing system provides controlled convenience and more safety, enabling online determination of the different spreading material properties with two 200 Hz weigh cells providing a high degree of accuracy. It automatically compares the actual applied rate with the predetermined rate. Deviations in the flow characteristics, when spreading

blended mineral fertilizers for example, are detected and the spreader is readjusted automatically via the electric metering shutter slides. For field-related nutrient application, for example, the applied rate is precisely documented as well. For a well-balanced nutrient supply, the application rate can be changed at the touch of a button via the ISOBUS terminal.

#### Tilt sensor for extremely hilly terrain

With the Profis, possible changes in the center of gravity are taken into account for the measuring procedure while on the move using the tilt sensing technology. The two-dimensional tilt sensor, which records the angle both at the

front and the rear and to the left- and right-hand side, corrects any measuring inaccuracies that might arise while driving up and down hills or that might occur when driving on sloping ground.



To simplify the process of mounting the ZA-TS onto the tractor in the horizontal position, the angle of the ZA-TS Profis is conveniently displayed in the ISOBUS terminal.



## The spreading disc drive

Mechanical or hydraulic, choose for yourself!

#### **Tronic – mechanical spreading disc drive**

With the Tronic version, the spreading discs are driven by the PTO shaft, with the spreader being protected from overload in all standard machines by a PTO shaft with friction clutch. The input speed from the tractor PTO is transmitted through the central gearbox, resulting in an increased spreading disc speed. This allows fertilization at low engine revolutions across the maximum working width.

With the mechanically driven spreaders, it is possible to switch either 8 or 16 part width sections, depending on the operator terminal.

#### Hydro – hydraulic spreading disc drive

The hydro- hydraulic version enables operation irrespective of the tractor's engine revolutions and at different spreading disc speeds. This saves fuel, while also ensuring highly convenient and price spreading. Furthermore, the spreader operates with different spreading disc speeds while spreading at the border so that, both in the overlap range and also at the field's border, the best possible lateral distribution can be achieved.

- Comes standard with a pressure filter
- The speed of the discs is always maintained and, above all, the option to set different spreading disc speeds is a dream. You really get to know and appreciate the benefits offered by the hydraulic system after having used it"

(profi – "Spreading systems in practice "hydraulic or mechanical"  $\,$  06/2017)



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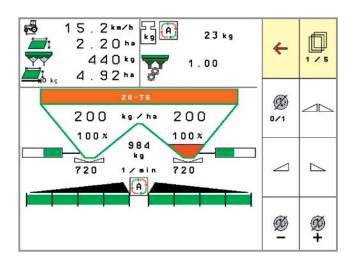
## Reliable in every detail



Low level sensor for the ZA-TS

#### Low level sensor

When spreading on slopes or along the border, one end of the hopper may empty quicker than the other. In order to check each outlet apertures individually and solve this problem, AMAZONE also offers low level hopper sensors. When one side empties prematurely, the affected end of the hopper is indicated in red in the operator terminal so the driver receives an early warning.

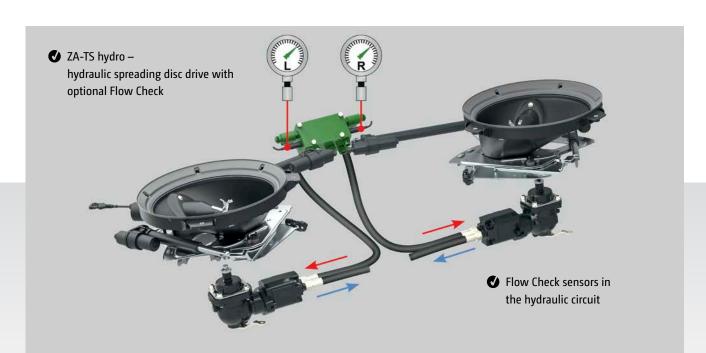


The terminal gives the driver an early warning when one end of the hopper is nearly empty.

#### Flow Check – for monitoring the spreader aperture

With Flow Check, AMAZONE offers a system that continually monitors the shutter apertures for blockage or emptiness. Flow Check ensures that the application rate is the same on both sides or, in case of any deviation, informs the driver of a potential error.

The overall application rate is monitored and regulated by the weighing system. Weigh cells constantly keep the driver informed of the actual fill level in the hopper.





## Soft Ballistic System pro

#### For even gentler fertilizer treatment



#### 4 decisive advantages with SBS pro

Mineral fertilizers require especially gentle treatment to ensure a precise distribution and accurate transport to the crop. Fertilizer that has been already damaged in the spreader can no longer be reliably distributed.

AMAZONE Soft Ballistic System pro is integrated as a standard safety feature. This means that the agitator, metering components, and spreading discs are all optimally harmonized to protect the fertilizer and ensure better yields.

#### 1. Gentle guidance

The electrically driven star agitators in the hopper bottoms ensure even fertilizer delivery onto the spreading discs. The slowly rotating, star-shaped segments of the agitator evenly deliver the fertilizer to the relevant outlet opening. When the delivery system is adjusted, the agitator star rotates as well, so it is always perfectly positioned above the aperture. The agitator switches off automatically when the shutter slide is closed.



Spreading system with delivery system, brush kit, and spreading disc



#### 2. Gentle delivery

The delivery system can control the throwing width adjustment and throwing direction. Furthermore, the working width can be adjusted individually on each side by changing the disc speed. The fertilizer is fed in centrally at a low peripheral speed, resulting in little fertilizer damage. The concentric delivery system adjustment always results in gentle treatment of the fertilizer.

#### 3. Gentle acceleration

With a standard disc speed from 600 rpm up to 900 rpm, the AMAZONE's Soft Ballistic System pro gently accelerates the fertilizer. Even fertilizer types with minimal breaking strength maintain their spreading properties and provide a clean, even spread pattern.

#### 4. Gentle ejection

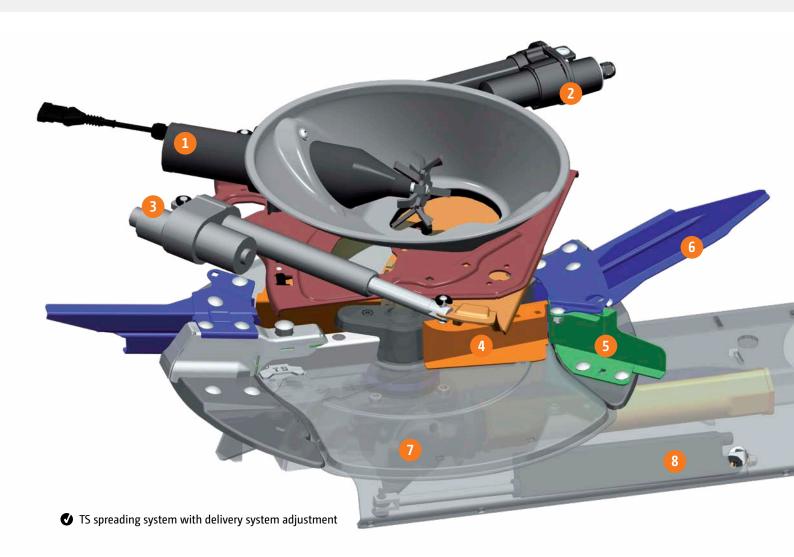
With the AMAZONE Soft Ballistic System pro, as little energy as possible is transferred to the fertilizer for an optimum trajectory and a precise spread pattern. This ensures that the spreading vanes are optimally adjusted to a laid-back position.





## TS spreading system

Perfection in every component, like clockwork



#### Composition of the TS spreading system

- 1) electric agitator drive
- 2) electric setting motor for rotation of the delivery systems
- 3) electric setting motor for fertilizer metering
- 4) delivery vane
- 5) boundary spreading vane
- 6) normal spreading vane
- 7) AutoTS actuation
- 8) electric setting motor for AutoTS, including function check

#### Characteristics of the TS spreading system

- Broad throwing width, maintains double overlapping even at 118 ft (36 m)
- **▼** Integrated boundary spreading system
- ✓ High application rates (up to 23.8 lb/sec or 1433 lb/min (10.8 kg/sec or 650 kg/min))

• "A 12V motor drives the agitator, which rotates at 60 RPM. It switches off when the shutter is closed and it reverses as soon as a foreign object blocks the agitator."

(dlz agrar magazine - Long-term test ZA-TS 3200 Profis Hydro · 02/2017)

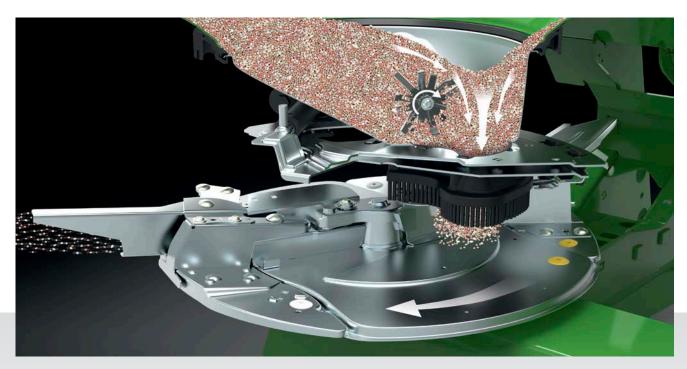


#### The agitator – soft-handling and gentle

The basic function of the agitator is to convey the fertilizer flow actively towards the outlet aperture so that fertilizer can be applied at a constant rate. Fertilizer lumps that manage to pass the sieve are actively broken up by the star agitator running at the bottom of the hopper, especially at low application rates. If foreign objects reach the hopper tip and the agitator is overloaded, the relevant electric motor automatically reverses in combination with the relevant shutter slide and remedies the disturbance autonomously. The perfect teamwork of agitator and shutter slides is apparent on headlands or when spreading in wedges. As soon as one metering aperture is completely closed, the agitator above stops automatically. This keeps the valuable fertilizer from being ground up.

#### The benefits of electric agitation

- w two slow-running, fertilizer-saving agitators; turning at just 60 rpm
- that switch off automatically as soon as the shutter slide is closed and can also be switched off on one side, independently of one another
- that reverse automatically when blocked by a foreign object
- active delivery of the fertilizer flow to the outlet aperture

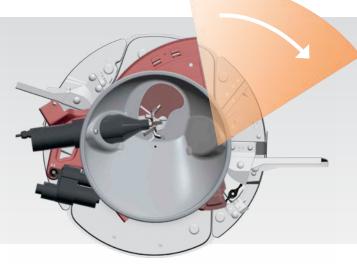


The electric agitators operate independently on the left or right and only when that shutter is opened"

(profi – Practice Test "A comparison of four fertilizer spreaders" · 01/2016)

# The AMAZONE delivery system

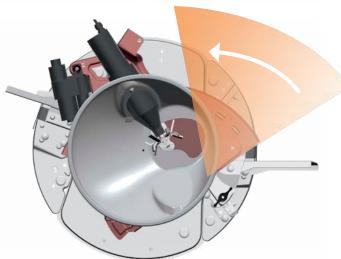
For first-class spreading results



#### Concentric delivery system adjustment

The delivery system gently feeds in the material extremely close to the center of the spreading disc. At this point, close to the center of the disc, the peripheral speed is low. This results in especially gentle handling of the fertilizer. In order to set the spreading unit for different working widths and types of fertilizer, the delivery system swivels (concentrically) around the center of the discs. The distance between the fertilizer feed-in point and the center of the disc always remains the same.

The swiveling of the delivery system provides you with a wide range of possible working widths. Just three sets of spreading vanes cover working widths from 49 ft to 177 ft (15 m to 54 m).



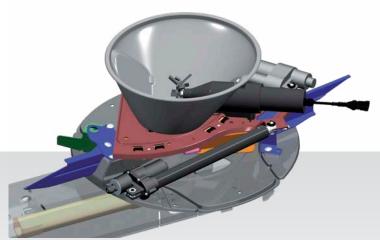
The delivery system swivels around the center of the disc



Every TS spreading unit with electric delivery system adjustment is Argus-ready



Mechanical delivery system adjustment



Electrical delivery system adjustment



Brush unit for a clean delivery onto the spreading discs

## Ultra quick and precise! Electric setting motors

A spreader with high application rates and operational speeds that push the envelope of what is possible in terms of work rates and that, of course, needs to perform extremely precisely, must have setting motors that function extremely quickly and precisely. Particularly when switching on/off automatically at the headland or in wedges, spreading using application maps, or performing continuous on-board monitoring (ArgusTwin and WindControl), the setting motors ensure the highest-level demands are met.

#### Clean transfer – The brush unit

The bristles of the brushes fitted directly to the outlet apertures reach to the upper edge of the spreading vanes, so the fertilizer is safely delivered to the disc.

#### Quantity effect-free metering aperture

If a constant application rate is to be achieved, it is necessary to match the size of the metering aperture to the prevailing operational speed. The shutter slide makes this happen very quickly and sensitively. The kidney-shaped

design of the metering aperture keeps the spread pattern unchanged and precise, even at varying operational speeds, so there is no need to adjust the position of the delivery system.



Stage 1: Hopper aperture slightly open



Stage 2: Hopper aperture half open

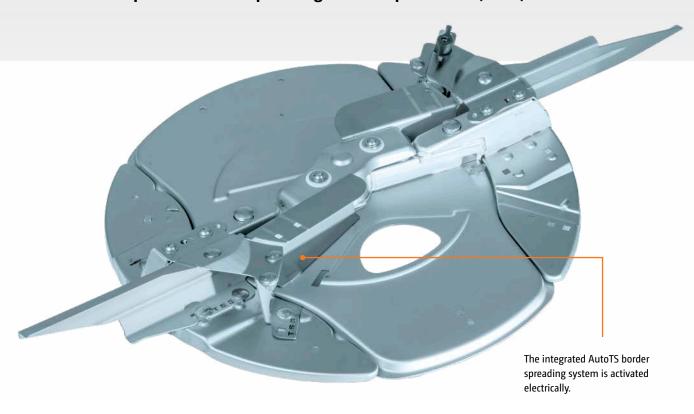


Stage 3: Hopper aperture wide open



## TS spreading discs

For the utmost precision at all spreading widths up to 177 ft (54 m)



## Spreading system made from stainless steel – For a long service life

The entire spreading system of each of the TS spreaders is made from stainless steel to provide a long service life.

The vane change system makes it possible to change the spreading vane tips quickly and easily. The ideal solution, for example, for agricultural contractors.

Between normal spreading and border spreading, different spreading vanes can be activated via the so-called AutoTS system without the need to change spreading disc settings.

## Hard-coated spreading vane

The spreading vanes are coated with special long-lasting antiwear protection. Use of an especially hard metal in the device's construction facilitates this. This finish is produced through a high-speed flame heating process that produces an ultra-hard coating to protect the spreading vanes against abrasive wear. A three-fold increase in lifespan is seen in products treated in this way.

#### Spreading vane sets

- **⊘** TS 1 = 49 ft (15 m) − max. 79 ft (24 m)
- **♥** TS 2 = 69 ft (21 m) − max. 118 ft (36 m)
- $\checkmark$  TS 3 = 79 ft (24 m) max. 177 ft (54 m)

"For different working widths, it is simply a matter of changing the spreading vane set – a very convenient solution."
(profi – Driving impression ZA-TS 4200 Profis Hydro fertilizer spreader– 06/2013)

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# Optimized spread pattern



#### **Normal spreading**

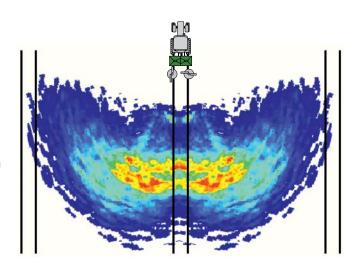
Adjusting the delivery system changes the point where the spreading material is fed onto the spreading disc, thus controlling the spreading width and the lateral distribution. Furthermore, the working width can be customized even more by changing the disc speed.

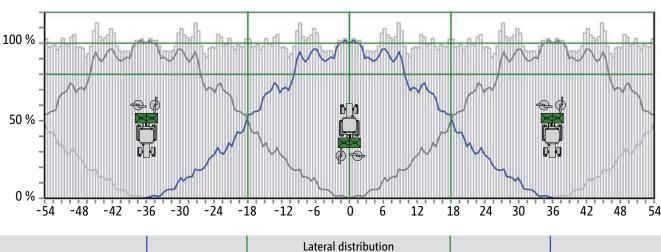
#### Three-dimensional spread pattern

The spreading unit was developed to have three-dimensional spread patterns, in order to achieve perfect lateral distribution of up to 177 ft (54 m) working widths. The large overlap zones ensure a perfect spread pattern and remain significantly more consistent, even when faced with external influences such as a side wind, change in topography, humidity, and changing fertilizer qualities.

## Non-sensitive spread pattern thanks to the multisectional spread pattern

The specific shape and angling of the spreading vanes produce a multispread pattern from the TS spreader unit. This means that the long and short spreading vanes do not influence the spread pattern to either side and an optimum trajectory is maintained.





(working width 118 ft (36 m))

Throwing width 236 ft (72 m)



# Border spreading systems from AMAZONE

Complete control. At any time!



✓ Waterway spreading: highest distribution accuracy up to 3.3 ft (1 m) away from the field's border

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#### Effective and precise – spreading only where the fertilizer is of benefit to your plants

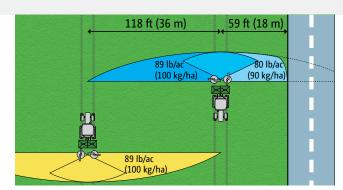
#### Side spreading (yield-oriented setting)

The neighboring field is an area that is used agriculturally. In this case, it is tolerable for a small quantity of fertilizer to be thrown over the border of the field. Fertilizer distribution inside the field boundary is still 80% of the desired application rate at the edge of the field.

### 118 ft (36 m) 59 ft (18 m) > 89 lb/ac (100 kg/ha) 89 lb/ac (100 kg/ha) 89 lb/ac (100 kg/ha)

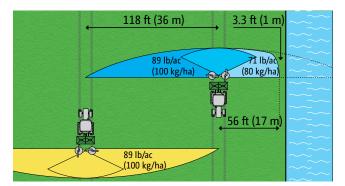
#### **Boundary spreading (environmentally-oriented setting)**

If the field is adjacent to a road or cycle path, it is not acceptable to throw fertilizer beyond the border of the field. The spread rate must be reduced on the border side so that the inside boundary of the field is not over-fertilized. The edge of the field may be slightly under-fertilized. The border spreading procedure complies with fertilizer application legislation requirements.



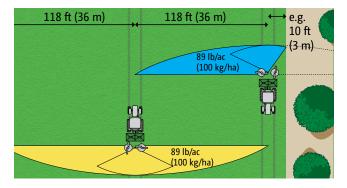
#### Waterway spreading (environmentally-oriented setting)

If there is a waterway bordering the field, the fertilizer decree requires that a one meter perimeter be left fertilizer-free around the waterway when a spreading system is used for application and that a perimeter of as much as three meters be left fertilizer-free when a spreading system is not in use. In order to avoid the over-fertilization inside the field, the spread rate has to be reduced on the field's border.



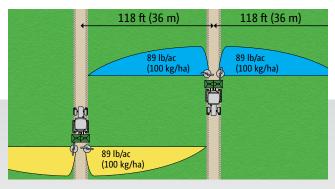
#### Border spreading with the border spread deflector

If the first tramline is situated at the field's edge, half of one side of the spread pattern is shut off for border spreading (environmentally-orientated adjustment). No fertilizer is thrown beyond the field's border and, inside the field, optimum fertilization is maintained.



#### Bed spreading with bed spreading deflector to both sides

For spreading specialist crops in beds to either side of the tractor, AMAZONE offers the bed spreading deflector. It keeps the track virtually free from fertilizer.



### AutoTS + ClickTS

The disc-integrated boundary spreading systems

#### AutoTS – convenient and precise Lateral distribution right up to the field's border

With the disc-integrated AutoTS border spreading system, various different border spreading procedures – side, border or waterway spreading – can be conveniently activated using a terminal in the tractor cab, regardless of which side.



AutoTS - adjustment of the delivery vane for boundary spreading

#### AutoTS - the ingenious principle

A setting motor twists the delivery vane forwards by approximately 10 ° so that, when spreading along borders or waterways, the fertilizer can be delivered via the shorter border spreading vanes. The combination of disc speed and shorter vane ensures that the fertilizer is thrown over a significantly shorter distance without affecting it mechanically.

The design goal for the development of the Amazone ZA-TS was clear: There should be no need to compromise between normal spreading and side, border, and waterway spreading around the field border."

(profi – Spreading devices in practice "hydraulic or mechanical" ⋅ ⋅ 06/2017)



AutoTS – adjustment for normal spreading



AutoTS – adjustment of the delivery vane for boundary spreading

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# Border spreading with ClickTS As an alternative to having the AutoTS system on both sides that can be controlled remotely from the tractor cab, there is now the option of AutoTS just on the one side alongside the

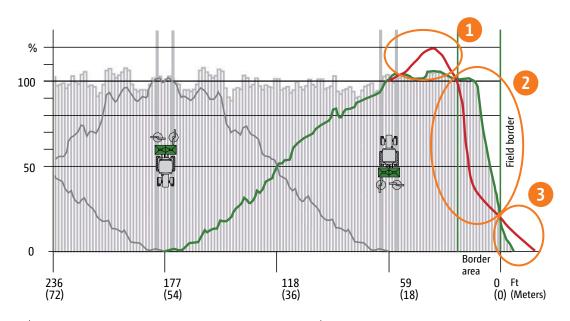
now the option of AutoTS just on the one side alongside the manually adjusted ClickTS on the other. ClickTS can be present on both sides as well.



## Increased yield on the border thanks to AutoTS and ClickTS

The AutoTS and ClickTS border spreading systems generate a steep border spread pattern, thus making it possible to foster optimum growth conditions close to the field's border. A significant increase in yield can be achieved compared to other border spreading systems.

The AutoTS spreading system makes use of automated rate reduction when spreading along a boundary, with adjustment of the spread rate setting in freely-selectable percentage steps. Independent operability of the two spreading discs makes it possible to adapt to changes on one or both sides.



	AutoTS border spreading system	Conventional border spreading systems			
1	Due to the shorter spreading vane, the fertilizer is limited in its spreading width.	The mechanical deflection of the fertilizer causes damage to the granules, which then drop next to the tramline.			
2	The fertilizer is undamaged and optimally distributed right up to the field border.	This amount of damaged fertilizer is then missing from the border area, resulting in under-fertilization.			
3	Due to the reduced throwing speed of the fertilizer, only a few granules fall beyond the field's edge.	Not all the fertilizer granules are mechanically deflected, meaning that some are clearly spread beyond the field's border.			



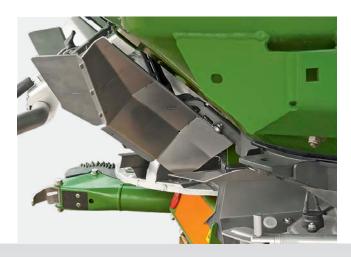
## **Border and bed spread deflectors**

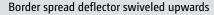
#### **Border spread deflector**

The border spread deflector can be used to spread directly from the field side into the inner field. When the border spread deflector is swiveled, fertilizer is spread only with the field side spreading disc, so any fertilizer is deflected in such a way that it is thrown into the field and behind the tractor, but not beyond the border. The border spread deflector can be utilized on both the left- and right-hand side. The border spread deflector can be activated manually or, as an option, hydraulically from the tractor seat. When swiveled out of work, the border spread deflector has no influence on normal spreading.

#### **Bed spreading deflector**

For spreading on beds to either side of the tractor, the bed spreading deflector provides optimum fertilizer distribution without spreading any material behind the tractor. Telescopic end pieces on the bed spreading deflector can be adjusted for the working width and fertilizer type in order to optimize fertilizer distribution. The bed spreading deflector can be utilized on one or both sides and, similar to border spreading, the bed spreading deflector can be activated manually or, as an option, hydraulically from the tractor seat. When the bed spreading deflector is swiveled upwards, the spreader can be utilized once more for arable farming.







Bed spreading deflector swiveled downwards on both sides with telescopic end pieces.

### **Front Rear duo**

#### A new level of precision



Front spreader with suitable lighting system for travel on public roads

#### Two in one go

For customers who intend to accurately spread two different mineral fertilizers in just one pass, AMAZONE offers the unique possibility of a front-mounted spreader. Unlike the strategy of using blended fertilizers in one fertilizer spreader, this option allows for optimal configuration of each spreader according to the properties of the relevant fertilizer. This enables perfect lateral distribution for both fertilizers. It is also possible to spread with two different application maps.

#### Benefits of front mounting

- Ability to accurately spread two different types of fertilizer in just one pass
- More capacity from the additional hopper capacity, while retaining the benefits of a mounted machine – maneuverability and speed
- "The spreader duo shows its strengths in its precision."
- The combination is maneuverable and efficient with improved weight distribution on the front and rear axle." (agrarheute magazine- test report with the front mounted spreader · 09/2018)

#### Convenient and reliable

A software package that reliably mirrors the functionality of the spreader to achieve the desired results is what makes a "reversed" fertilizer spreader on the front of the tractor work. This enables activation of even normal, side, border, and waterway spreading on the correct side without any problems. Even the optimum switching points for the automatic on/off switching on the headland are matched.



Precise spreading of two different fertilizer types



## **Headland Control**

Optimum lateral distribution on the headland





Perfected headland coverage thanks to Headland Control and the new part width section control

## The problem: Over- and under-fertilization on the headland

Different fertilizers have different switch-on and switch-off points. In practice, the switch-off points are usually only activated when the tractor is turning on the headland. The arc of spread behind the tractor swings round to the side, creating areas that are either over- or under-fertilized.

## Switch-off time on the headland: Without Headland Control

- 1. Spreader switches off too late and is already turning
- 2. Tractor has to drive beyond the headland tramline

Result: Over- and under-fertilized zones are created

#### The solution: Headland Control

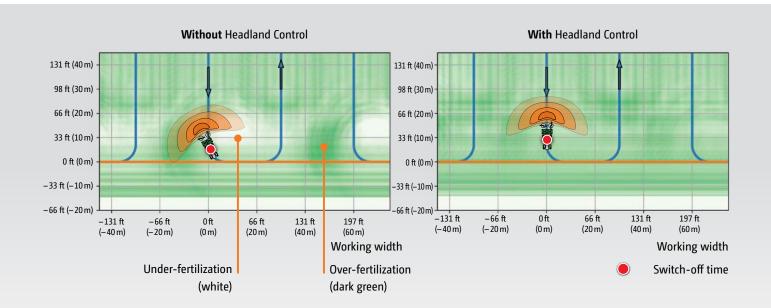
When Headland Control is activated, the throwing width and spread rate are increased on the inner field side, so that the switch-off point is moved towards the inside of the field. Furthermore, the new part width section control, which is now adapted to the shape of the spread pattern, causes the part width sections to be switched off from the outside to the inside when entering the headland. This prevents over- and under-fertilized zones on the headland.

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#### With Headland Control

- 1. Headland Control means that the spreader continues to apply fertilizer to the crop when it is on the headland
- 2. The tractor can follow the wheel tracks of the sprayer

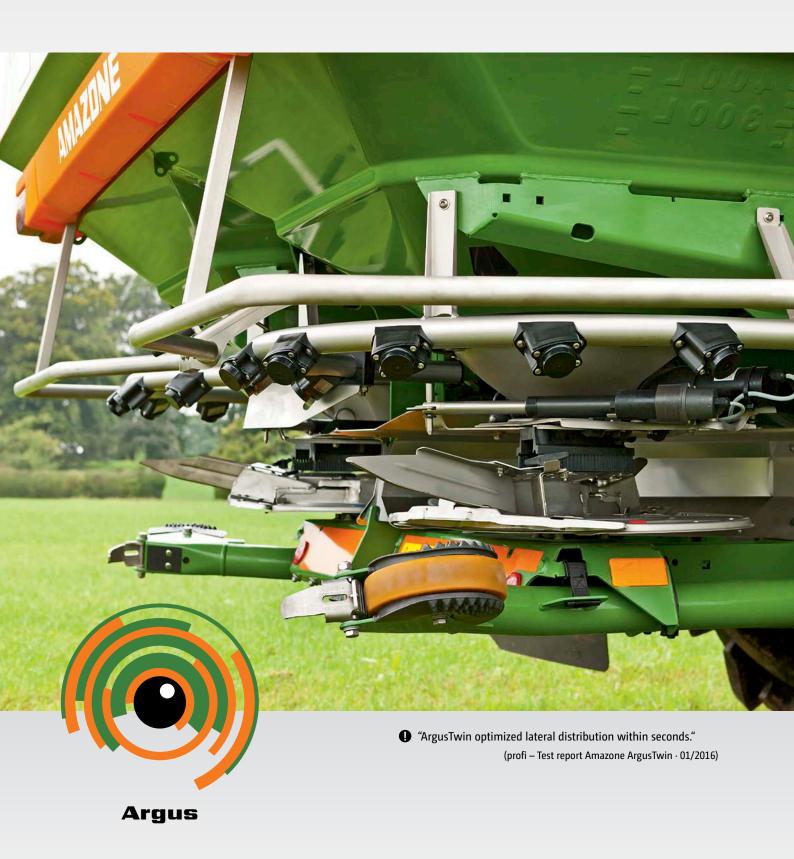
Result: Uniform crops across the headland



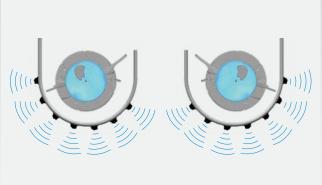


## ArgusTwin

The spreader's eyes – it sees what you don't see!







ArgusTwin is completely integrated into the overall dimensions of the ZA-TS

Independent monitoring of both sides of the spread pattern via 14 radar sensors

## Automatic adjustment to the optimum lateral distribution

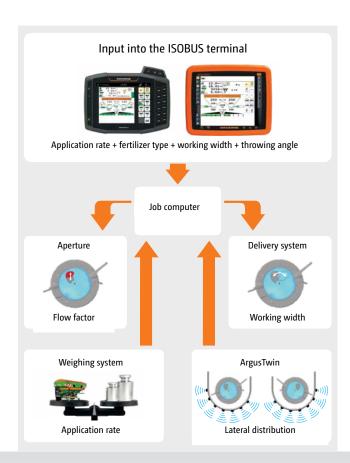
Constant online monitoring and readjustment of the delivery system allows the ArgusTwin system to maintain optimum lateral distribution of the fertilizer. This yields more effective fertilizer use and forms the basis for optimum crop management.

The Argus system, which checks the spread pattern and automatically regulates the lateral distribution, uses radar technology that is less affected by dust and pollution and thus provides reliable results in practice. ArgusTwin constantly monitors, via radar sensors mounted on both the sides of the spreader, the left- and right-hand spread patterns simultaneously and readjusts the electric delivery system independently on each side if necessary.

#### Automatic delivery system adjustment

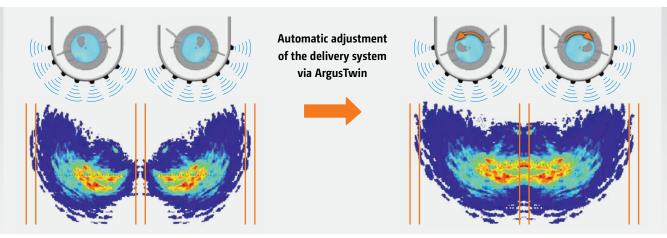
The ISOBUS terminal is used to configure the application rate and any other settings pertinent to fertilizer spreading based on the setting chart. For the Argus system, the spreading chart has been updated to include the throwing angle resulting in optimum lateral distribution. Utilizing this value, ArgusTwin constantly checks whether the predetermined direction of throw for that fertilizer is in fact being maintained by the spreading discs. When the actual throwing width deviates from the "desired" throwing width due to inconsistencies within the fertilizer, worn spreading vanes, slopes in the path of travel, or = starting

and stopping procedures, the spreader autonomously readjusts the setting for the delivery system – and configures each side individually. The only precondition for its use is the electric delivery system adjustment.



The concept of the fertilizer spreader with ArgusTwin and weighing system





The problem in practice – poor lateral distribution, for instance, due to a change in fertilizer properties

The perfect lateral distribution yields evenly established crops, even with changing fertilizer qualities and properties

The system goes live immediately and operates during border spreading as well as in cases where part width sections are switched off and on. In hilly terrain, Argus even provides spread pattern slope compensation by automatically readjusting the delivery position of the fertilizer.

While Argus optimizes the lateral distribution, the optional weighing system maintains the application rate.

#### Top features of ArgusTwin:

- The system is ready for operation immediately
- Positioned directly above the spreading discs
  - the system is located safely between the outer guard tube and the base hopper
  - there are no areas where moisture, dirt, or fertilizer may deposit
- Occupant online monitoring of both spread patterns
- Maintains optimum lateral distribution of the fertilizer, even with varied fertilizer quality
  - · Basis for optimum crop management
  - · More effective use of the fertilizer
- ◆ The system is also active while spreading at the border or if a part width section is switched on or off
- Automatic spread pattern slope compensation achieved by readjusting the delivery system position
- Rigidly attached to the spreader: no moving parts completely maintenance-friendly and wear-free



## **Wind Control**

for areas where wind is always a problem



30 | 31

Both the wind speed and wind direction are displayed in the terminal

#### **Optimal distribution**

In areas that are particularly windy, AMAZONE now offers Wind Control (based on the research of Prof. Dr. Karl Wild, HTW Dresden) as a supplement to the ArgusTwin system. Wind Control constantly monitors the influence of wind on the spread pattern and automatically compensates.

A high-frequency measuring wind sensor mounted on the machine registers both the wind speed and the direction of the wind. The job computer then uses this data, in conjunction with the information from ArgusTwin, to define any new settings for the delivery system and the spreading disc speed and these settings are automatically executed. For side winds, the disc speed to the windward

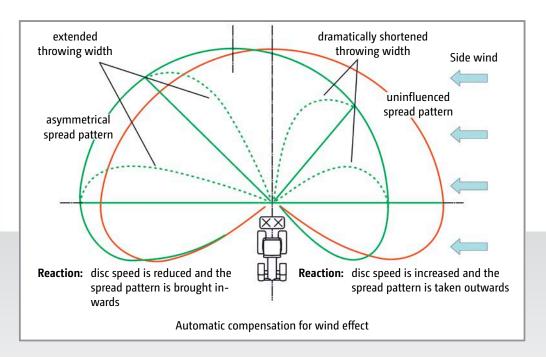
side is increased and the delivery system sped up, while the disc speed on the leeward side is reduced and the delivery system slowed down.

With the aid of Wind Control, larger time windows are created for spreading under the influence of wind.

Apart from all the important fertilizer spreader parameters, the user also has the ability to constantly monitor the real-time direction of the wind, the force of the wind, and wind gusting data. In heavy winds that the system is no longer able to compensate for or when wind gusts become too frequent, Wind Control sends an automatic alarm to the driver.



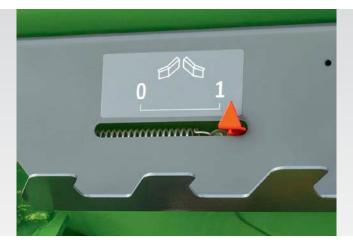
Wind sensor





## Equipment

#### Perfect down to the last detail



Position indicator for the bed spread deflector

#### Safety Set – Integrated as a standard feature

Safety Set, which is fitted as a standard feature, ensures improved safety. The outer guard tube meets the requirements of the accident prevention regulations. Large marker boards to the rear and the lighting equipment ensure more recognizability in road traffic.

#### Roll-over hopper cover

A roll-over hopper cover that can be operated manually or activated hydraulically from the tractor is available for all S extensions and L extensions. It safely covers the hopper access point and maximizes the fill opening when rolled in tight. The roll-over hopper cover can also be combined with the bolt-on S 600 and L 800 extensions.



The roll-over cover is superb: it closes up cleanly, keeps the

water out during a rain shower, and does not interfere with filling operation when open."

#### Position indicator for border spreading systems

AMAZONE offers a specific position indicator to enable monitoring of the border spreading system position from the tractor cab. A mechanical display at the front of the fertilizer spreader allows for convenient monitoring of the system's position during the spreading procedure.

#### Swivel hopper cover

As a less expensive alternative to the roll-over hopper cover, a swivel hopper cover with large sight window can be chosen for the S-extensions.



Swivel hopper cover, in its maintenance position for simpler internal cleaning

Equipment 32 | 33



"The robust rollers (steered at the front) with brakes are swiveled in or out with a bold kick. There is no better way."
(profi – Practice test "A comparison of four fertilizer spreaders" .



Parking set with integrated stands

#### Swivel rolling and parking device

The swivel rolling and parking device facilitates easy hitching to the tractor, unhitching from the tractor, and maneuvering in the yard. The caster wheels can be quickly folded in and out and optimally protected from dirt. They are permanently mounted on the spreader – so no need to search for them between one location and another.

#### **Calibration kit**

The lateral calibration kit is available for the left- or right-hand side and facilitates convenient monitoring of the spread rate without removal of the spreading disc, the lateral calibration kit.

Calibration kit

#### **Parking stands**

As an alternative to the swivel rolling and parking device, a more economical parking set with integrated stands is also available.

#### Ladders that ensure safe access

For optimum access to the hopper from outside, even on the narrow extensions, a ladder is available that can be fitted to the left- and/or right-hand side. For the wide L extensions though, ladders come standard on both sides.





"Even with the ladder, Amazone sets the standard: fitted to both sides, the steps (made from stainless steel!) are well-integrated and do not protrude."

(profi – Practice Test "A comparison of four fertilizer spreaders" · 01/2016)



## **ZA-TS model overview**

Always the right choice



With the tractor ISOBUS base equipment, all the benefits of the ZA-TS can be utilized, even on older tractors.

ZA-TS model overview 34 | 3

# One spreader – so many possibilities

### Decide for yourself!

	Manuse Str.	Electric A-15 To	ZA-IS Profe.	ZA-15 Profes	Adelivery system  ZA-15 Prof.	ZA-TS Profe.	"I'C dellivery System
Electric shutter slide actuation	Х	Х	Х	Х	Х	Х	
Electric agitator	Х	X	X	X	X	X	
Forward speed-dependent spread rate regulation	Х	Х	х	х	X	х	
Low hopper level sensors (optional)	Х	Х	x	x	x	X	
Border spreading via ClickTS (alternative equipment level)	х	Х	Х	Х	Х	х	
Border spreading AutoTS (alternative equipment level)	Х	Х	Х	х	X	Х	
Weighing technology			х	х	X	Х	
Online spread rate calibration			X	X	Х	X	
Tilt sensors (optional)			X	X	Х	X	
ArgusTwin (optional)		X		X		X	
Wind Control (optional)						X	
Flow Check (optional)						Х	
Maximum no. of part width sections	8	16	8	16	128	128	
GPS Switch ready	Х	Х	Х	Х	Х	Х	
Necessary terminal	ISOBUS terminal	ISOBUS terminal	ISOBUS terminal	ISOBUS terminal	ISOBUS terminal	ISOBUS terminal	



## **ISOBUS** –

#### Machine actuation in the digital age



#### One language, many benefits!

Each ISOBUS-enabled machine from AMAZONE comes with the latest technology and almost unlimited possibilities. It does not matter if you use an operator terminal by AMAZONE or an ISOBUS terminal directly installed in your tractor. ISOBUS is a global standard in communication between operator terminals, tractors, and connected implements on the one hand and agricultural office software on the other hand.

#### Can be operated with any ISOBUS terminal

This means that ISOBUS enables you to take control of all your ISOBUS-compatible equipment. Just connect the machine to the relevant ISOBUS terminal and immediately the normal operator interface will be displayed on the monitor in your tractor cab.

#### **Benefits of ISOBUS:**

- This global standard provides a uniform interface and data exchange formats that ensure compatibility even with third-party manufacturers
- ✔ Plug and Play between machine, tractor, and additional ISOBUS implements



# **AMAZONE** – more than just ISOBUS

Improved control, more yield! Precision Farming 4.0

#### Our competence in electronics

To increase operational comfort, AMAZONE implements and operator terminals feature a scope of functionality that goes way beyond ISOBUS standards.

#### The benefits of more than just ISOBUS:

- ✔ Highest compatibility and safety functionality of your ISOBUS equipment
- No additional modules on the machine side. All ISOBUS machinery from AMAZONE comes standard with the necessary ISOBUS functions
- MiniView display with all AMAZONE terminals and additional ISOBUS terminals. See, for instance, the machine data in the GPS view
- The option to use the tractor terminal or a twin terminal solution to separate the functionalities of tractor and connected implement

- ✔ Unique operation concept. Freely-configurable displays and individual user interfaces in the operator terminal
- Up to 3 user profiles can be created. Establish a user profile for every driver or operation!
- Freely-configurable machine operation of, for instance, the folding procedure for the booms of your AMAZONE crop protection sprayer
- Tractor ECU function evaluation
   Automated movement sequences such as automated blocking of the steering axle while reversing
- Integrated TaskController data logger. As a matter of principle, every ISOBUS telemetry solution is available (for example, TONI telemetry from CLAAS)
- Freely-configurable part width sections



# Make the Most of the Options

### Job management and documentation

All standard ISOBUS terminals from AMAZONE can collect and save machine and site-specific data using Task Controller. The collected data can subsequently be used in your Farm Management Information System.

- Easily compile or load jobs
- Process jobs
- Ocument and export the work performed
- Process application maps in an ISO-XML format

### GPS-Maps

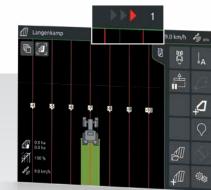
GPS Maps enables uncomplicated part area site specific management, because this software module provides easy use of application maps in a shape file format. Either the target amount of the material to be applied or the target amount of effective ingredient can be directly processed.

- Intuitive system for working from application maps
- Automatic part area site-specific regulation of the application rate
- Optimum crop management via need-oriented application
- Standard on AmaTron 4 and AmaPad 2

#### GPS-Track

The GPS Track parallel tracking aid makes orientation in the field much easier, particularly on grassland or in areas without furrow tracks. It has various track modes such as A-B Line and contour lines. Deviation from the ideal track is graphically shown on the display by an integrated light bar. Thanks to the clear steering recommendations with exact furrow distances, you always remain on track!

- The virtual light bar in the status bar
- comes standard for AmaPad 2
- and is optional for the AmaTron 4





GPS Track your parallel driving aid in the field

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## agrirouter –

# The independent data hub for agriculture



### Simple and safe data exchange

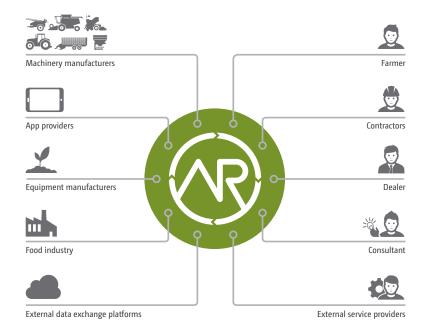
agrirouter is compatible with products and services from different manufacturers and facilitates universal data exchange for AMAZONE. Agrirouter provides a safe and easy way to exchange data between AMAZONE machines, agricultural software, manufacturers and companies.

# Full control – choose for yourself!

agrirouter simplifies data exchange by allowing wireless exchange of job data and application maps between AMAZONE machinery. It simplifies operating procedures, reduces administrative work, and improves profitability. You retain control of the data and decide who gets which data and to what extent.

#### Benefits of agrirouter:

- Simple and easy to use
- Convenient and fast transfer
- Full control of your data
- Data is transferred, not stored
- **▼** Compatible with multiple manufacturers















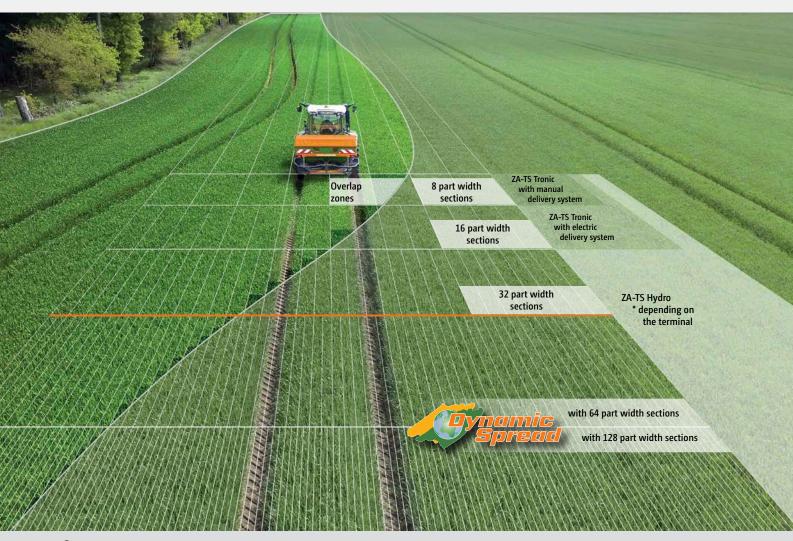




AMAZONE establishes the connection to the ISOBUS machine using the AmaTron 4



# Automatic GPS Switch part-area shutoff with Section Control



• With Dynamic Spread, individual outlying part width sections can also be controlled.

### More precision, more efficiency!

In view of the very large working widths used now, it is important to match the spread patterns. Electric delivery system adjustment on the TS spreading system enables it to react precisely and sensitively in these cases. Even outer part width sections can be easily controlled this way. Individual speed adjustment of the left- and right-hand side discs makes it possible to reduce the spreading width from the far outside to the center, so that optimal

spreading is achieved on wedges with a long and shallow profile and short work areas. This means part width section control. At the simplest level of specification, 8 part width sections can be easily actuated manually (via the operator terminal). Part width section control of up to a maximum of 128 part width sections is possible with a relevant Section Control license on the terminal.

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Part width section control for ISOBUS fertilizer spreaders	ZA-TS Tronic	ZA-TS Tronic	ZA-TS Hydro	ZA-TS Hydro	
	Manual delivery system adjustment	Electric delivery system adjustment	Manual delivery system adjustment	Electric delivery system adjustment	
Spread rate regulation	Х	Х	Х	Х	
Setting the delivery system		X		X	
Matching the spreading disc speed			Х	X	
Number of part width sections  Manual mode via key pressure  Automatic mode via Section Control/GPS Switch	8 In manual and automatic mode	8 In manual mode 16	8 In manual mode up to 128	8 In manual mode up to 128	
		In automatic mode	In automatic mode	In automatic mode	
Possible working widths	49-177 ft (15-54 m)	49-177 ft (15-54 m)	49-177 ft (15-54 m)	49-177 ft (15-54 m)	

#### **Automatic part width section control**

If the terminal to be operated features Section Control, such as GPS Switch part width section control from AMAZONE, the switching of the part width sections can be carried out completely automatically and in relation to the GPS position. Once a field has been configured by the driver they can fully concentrate on handling the vehicle, while the part width sections are switched automatically in wedges and on the headland.

#### Benefits of automatic part width section control:

- Oriver stress relief
- Increase in precision especially at night or at higher
- Less overlap and fewer gaps
- Resource savings
- Less crop damage and environmental pollution
- **①** "With Section Control, the ISOBUS computer takes care of a lot of the work for the driver."

("dlz agrar magazine" - "Test report ZA-TS fertilizer spreader" · 02/2017)

#### **GPS-Switch**

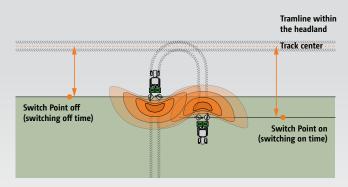
With GPS Switch, AMAZONE offers GPS-based, fully automatic part width section control for all AMAZONE operator terminals and ISOBUS-compatible fertilizer spreaders, crop protection sprayers, or seed drills.

#### **GPS Switch basic**

- Automatic part width section control of up to 16 part width sections
- Optional for AmaTron 4

#### **GPS Switch pro**

- Automatic part width section control of up to 128 part width sections
- Creation of a virtual headland
- Creation of Point of Interests (POI)
- Automated boom lowering for an AMAZONE sprayer
- Standard for AmaPad 2
- Optional for AmaTron 4



#### Switch Point

Switch Point makes it possible to readjust the on/off switching points, depending on the fertilizer type and the working width when the GPS Switch is used. Both values can be taken from the setting chart and entered into the relevant operator terminal.



### **ISOBUS terminals from Amazone**

Intuitive, convenient, better - workday made easy

# From simple to high-tech – everything is possible

AMAZONE offers two particularly convenient operator terminals for your ISOBUS machinery in the form of the ISOBUS-compliant AmaTron 4 and the AmaPad 2. There are application options available in addition to pure machine operation, such as automated GPS Switch part width section control.

- All applications come preinstalled and can be initially tested free of charge
- **▼** Intuitive and clear actuation

# Everything in view with the 2-terminal solution

In addition to operating the AMAZONE ISOBUS machine through the tractor terminal, there is also the handy alternative of separating the functionalities of the tractor and the attached machine and operating them using two terminals. The tractor terminal can continue to control the tractor or display the GPS applications, whereas the additional operator terminal in UT display mode is used exclusively to monitor and control the machine.





Terminal	AmaTron 4	AmaPad 2		
Display	8 inch, multitouch color display	12.1 inch, multitouch-color display		
Mode of operation	Touchscreen and 12 soft keys	Touchscreen		
Interfaces	1 x Ethernet 2 x RS232 (GPS & ASD) 2x USB interfaces	1 x Ethernet 2 x RS232 (GPS & ASD) 2x USB interfaces with WLAN dongle		
Job management and processing of application maps (ISO-XML and Shape)	GPS Maps&Doc * with integrated Task Controller	Task Controller		
Parallel driving aid	GPS Track * with virtual light bar	GPS Track pro with virtual light bar		
Automatic track following	-	GPS Track Auto for the Pantera self-propelled crop protection sprayer		
Automatic part width section control (SectionControl)  Note: dependent on the max. no. of sections of the machine!	GPS Switch basic * with up to 16 part width sections or GPS Switch pro * with up to 128 part width sections	GPS Switch pro with up to 128 part width sections		
Camera connectivity	1x camera connection * with AmaCam automatic reversing detection	2x camera connections *		

ISOBUS | ISOBUS terminals 42 | 43



### **Everything from a single source!**

Thanks to the AUX-N feature, you can operate multiple functions of the machine via AmaPilot<sup>+</sup> or any other ISOBUS multifunction joystick.



#### The belieffts of Amarilot

- Perfect ergonomics
- Almost every function directly controlled via 3 levels
- Adjustable palm-rest
- Freely programmable, individual key layout
- "The joystick rests comfortably in the hand."

  ("dlz agrar magazine" "Test report Pantera 4502" · 02/2016)



The ISOBUS control was developed in-house by AMAZONE and has been designed to be well-organized and easily understandable. If desired, some keys can be freely allocated.

The multifunction display can also be freely selected."

("agrarheute" magazine- "Test report Centaya seed drill": 06/2018)



### AmaTron 4

Manager 4 all



# Easy and convenient operation as intuitive as your tablet

Why not handle a terminal as intuitively as a tablet or a smartphone? With this in mind, AMAZONE has developed the highly intuitive and user-friendly AmaTron 4, which offers a noticeably smoother operational process, especially when it comes to job management. The AmaTron 4, with its 8"multitouch color display meets the highest standards and offers maximum user-friendliness. A swipe of the finger or use of the app carousel allows for quick movement between applications and the simple, clearly structured operating menu. A useful MiniView, a freely configurable status line, and a virtual light bar make the use of the AmaTron 4 particularly clear and convenient.

#### **Benefits of AmaTron 4:**

- Automated full image mode when not in operation
- Practical MiniView concept
- Operation via the touch display or via soft keys
- Especially intuitive and user-friendly
- **▼** Field-related documentation
- ✔ Practice-oriented and intelligent menu guidance
- Day-night mode

Comes standard with:

### GPS Maps&Doc



Automated AmaCam reverse driving recognition that gives direct access to a reversing camera and prevents dangerous situations

Machine operation (UT, Universal Terminal) in day-night mode

ISOBUS | ISOBUS terminals 44 | 45

### AmaPad 2

The ultra convenient way to control agricultural machinery



# The new dimension of control and monitoring

AmaPad 2 from AMAZONE is a particularly high-quality operation terminal. The 12.1" multitouch color display is particularly convenient and meets the highest demands on Precision Farming. The operation of AmaPad is carried out solely via touch.

With the practical "MiniView concept", applications that aren't being actively used at that moment, but that need to be monitored, are clearly displayed at the side. When necessary, these can be enlarged via "finger swipe". The option to customize a "dashboard panel" with displays chosen by the user completes the user experience.

GPS Switch pro part width section control, GPS Track pro, a high-end parallel tracking aid with virtual light bar also come standard.

#### Benefits of AmaPad 2:

- **♦** Large 12.1" multitouch color display
- **▼** Extended MiniView concept
- Automatic GPS Track Auto track guidance makes it possible to upgrade to automatic steering.
- Day-night mode

Comes standard with:

GPS Maps pro GPS Track pro GPS Switch pro



# **Spreader Application Center**

Exemplary advice - for over 25 years

### The settings are crucial!

With the Spreader Application Center, AMAZONE offers even better customer service. In addition to the already well-established fertilizer laboratory and spreading hall, the Spreader Application Center now also includes the areas of "Testing and Training", "Data Management" and the relevant "Knowledge Transfer".

The two last areas have benefited from restructuring in order to meet the needs arising from the increased globalization and digitalization of agriculture. The aim of the Spreader Application Center is to offer the customer even better fertilizer application service.



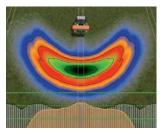




Spreading hall



**Testing and Training** 



Data management and knowledge

### Fertilizer Service – You can contact us at:

The Fertilizer Service works beyond limits. Because regardless of whether your fertilizer spreader is 5 or 50 years old, we will always be by your side with competent and reliable assistance.

Internet: www.amazone.us

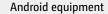
E-mail: duengeservice@amazone.de

Telephone: +49 (0)5405 501-111

WhatsApp: +49 (0)175-488 9573

Also available via an app for iPhone and other smartphones.







iOS equipment

# Only when properly spread can your fertilizer be worth its weight in gold

The AMAZONE Fertilizer Service closely collaborates with well-known manufacturers of spreading material worldwide to be able to provide you with the best setting values as quickly as possible. AMAZONE is the name for precise spreading charts, worldwide.

Depending on the area applied, a theoretical gain of 100 to 1,000 euros per hour can be achieved with a perfectly adjusted fertilizer spreader."

("agrarheute" magazine - Set out the trays and earn money - 02/2019)

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# **EasyCheck**

Precise spreading made easy!

# Digital, mobile test kit for the easy optimization of lateral distribution

Instead of testing trays, such as those found in the normal mobile test kit, the EasyCheck system consists of just 16 lightweight test mats made from rubber and the EasyCheck app for smartphones. The test mats are positioned at predetermined distances from the tramline. Then the relevant tramline is spread and the mats with the fertilizer granules laying on them are photographed. The app then automatically compares how much fertilizer has been collected on each test mat and sets the results of the individual rows to an average. In cases where the spreading results are not optimum, the app suggests readjustments for the setting of the relevant fertilizer spreader.



The new EasyCheck rubber mats from Amazone offer many advantages here. They are smaller and easier to handle." ("agrarheute" magazine - Set out the trays and earn money - 02/2019)





### **Technical data**

ZA-TS		1400	1700	2000	2200	2600	2700	3200	4200
Working width		49-177 ft (15-54 m)							
Hopper volume		49.5 cft (1,400 l) 60 cft (1,700 l) 71 cft (2,000 l) 78 cft (2,200 l) 92 cft (2,600 l) 95 cft (2,700 l) 113 cft (3,				113 cft (3,200 l)	148 cft (4,200 l)		
– with S 600 hopper extension		71 cft (2.000 I)	81 cft (2,300 l)	92 cft (2,600 I)	-	-	-	-	-
– with L 800 hopper extension		_	-	-	106 cft (3,000 l)	-	124 cft (3,500 l)	141 cft (4,000 l)	-
Payload Super frame Ultra frame	Super frame	7055 lb (3,200 kg)	7055 lb (3,200 kg)	7055 lb (3,200 kg)	7055 lb (3,200 kg)	7055 lb (3,200 kg)	7055 lb (3,200 kg)	7055 lb (3,200 kg)	-
	Ultra frame	_	-	-	9921 lb (4,500 kg)	-	9921 lb (4,500 kg)	9921 lb (4,500 kg)	9921 lb (4,500 kg)
Filling height without ro	Iling & parking device	3.7 ft (1.13 m)	4 ft (1.23 m)	4.3 ft (1.31 m)	4.3 ft (1.30 m)	4.9 ft (1.49 m)	4.7 ft (1.42 m)	5.1 ft (1.54 m)	5.8 ft (1.76 m)
Filling width		7.3 ft (2.23 m)	7.3 ft (2.23 m)	7.3 ft (2.23 m)	8.9 ft (2.72 m)	7.3 ft (2.23 m)	8.9 ft (2.72 m)	8.9 ft (2.72 m)	8.9 ft (2.72 m)
Total width		8.5 ft (2.55 m)	8.5 ft (2.55 m)	8.5 ft (2.55 m)	9.6 ft (2.92 m)	8.5 ft (2.55 m)	9.6 ft (2.92 m)	9.6 ft (2.92 m)	9.6 ft (2.92 m)
Total length without weighing system		4.9 ft (1.48 m)	4.8 ft (1.46 m)	4.8 ft (1.46 m)	5.1 ft (1.55 m)	4.8 ft (1.46 m)	5.1 ft (1.55 m)	5.1 ft (1.55 m)	5.5 ft (1.68 m)
Drive		mechanical (Tronic)/hydraulic (Hydro)							
Weighing system		optionally with Profis weighing system							
Regulating electroni	cs	ISOBUS communication via AmaTron 4, AmaPad or any other ISOBUS terminal							
Lower hitch	Super frame	Cat. II hitch dimensions and fixing pins							
	Ultra frame	Cat. III hitch dimensions, fixing pins Cat II or III							
Tractor valves required	ZA-TS Tronic	Not necessary, (1 d/a valve for hyd. rollover cover)							
	ZA-TS Hydro	1 s/a valve + pressure-free return or load sensing for drive (oil capacity 18.5 gal/min (70 l/min)),  (1 d/a valve for hyd. rollover cover)							
Min. weight (with spreading van	e set TS 2)	1038 lb (471 kg)	1058 lb (480 kg)	1078 lb (489 kg)	1188 lb (539 kg)	1164 lb (528 kg)	1224 lb (555 kg)	1263 lb (573 kg)	1510 lb (685 kg)

Illustrations, content, and technical data are not binding! There may be deviation in technical data depending on the equipment involved. The illustrations may deviate from the requirements for local road traffic regulations.

### ZA – the spreader





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