AMAZONE

Large area seed drill **Primera DMC**

Fertiliser Delivery Cart **FDC**

Primera DMC large area seed drill

Precision and speed when Direct sowing, Mulch sowing and Conventional sowing

Agrosalon 2016 Agrosalon 2020

Primera DMC

With the new generation of Primera DMC seed drills – in 3 m, 4.5 m, 6 m, 9 m or 12 m working widths – AMAZONE is offering an outstanding machine for cost-effective crop establishment over large areas. This versatile large area seed drill, in combination with the chisel openers which have been tried and tested 100,000 times over, is used with great success for conventional, mulch and direct sowing.

40 years of world-wide experience in mulch and direct sowing across dry regions

Sowing technology from AMAZONE water-conserving and resource-saving

Every drop counts!
Save water - secure yields

Primera DMC large area seed drill

Direct sowing – Mulch sowing – Conventional sowing

- Working speeds of up to 18 km/h
- Parallelogram-guided chisel openers
- Wear-resistant chisels and hoop ring rollers
- With Exact harrow and Roller harrow

The advantages at a glance:

- Universal seed drill for conventional, mulch and direct sowing
- Intelligent hopper and seed conveying concept for the flexible application of seed and fertiliser
- Large hopper capacity of up to 13,000 l for high outputs
- Easy filling thanks to the large hopper opening – high performance filling augers are available as an option
- Optimum field emergence due to the exact depth control and clean furrow clearance by the chisel openers
- Little soil movement due to the narrow chisel opener – reducing the evaporation losses and making the machine easy to pull
- Maintenance-free bearings on the depth guidance rollers
- Easy operation and control via ISOBUS (optional)
- Easy adjustment of the seed rate, also automatically during operation, in conjunction with the electric metering drive
- Thanks to the TwinTerminal, easy calibration down at the machine is possible

Primera DMC 9001-2C,
9 m working width

The Primera DMC large area seed drill is the result of the uncompromising consideration of demands and desires from farmers themselves.

- 3 m working width, in conjunction with tractors from 80 HP
- 4.5 m working width, in conjunction with tractors from 130 HP
- 6 m working width, in conjunction with tractors from 180 HP
- 9 m working width, in conjunction with tractors from 270 HP
- 12 m working width, in conjunction with tractors from 350 HP
- Fertilising via the seed/fertiliser kit
  (standard on Primera DMC 9000-2C Super, 9001-2C, 12000-2C and 12001-2C,
  optional on Primera DMC 3000/-C, 4500/-C, 60002/-2C and 90002/-2C)

MORE INFORMATION
www.amazone.net/primera

The versatile large area seed drill Primera DMC

Primera DMC 12000-2C, 12 m working width

For flexible arable farming: Primera DMC in working widths of 3 m, 4.5 m, 6 m, 9 m and 12 m

No matter which arable farming system is utilised, the Primera DMC performs excellently under all conditions. With its unique chisel opener, it performs with outstanding quality regarding placement accuracy and seed embedment on ploughed land, on cultivated areas and when direct sowing. This applies even to fields cultivated through non-inversion tillage such as following a green manure crop, or where large amounts of organic matter from the previous crop lie, which can normally cause trouble when sowing. Also inadequate soil tillage, poor incorporation of organic material and bad levelling of the fields can have a negative effect on the performance of the seed placement and the embedding of the seed. The Primera DMC manages all these challenges perfectly. The chisel opener safely clears the seed furrow of organic matter, excellently follows uneven soils and always provides the right coulter pressure, making for the best performance in seed placement and seed embedding. The simultaneous application of fertiliser is available on the Primera DMC as an option. The targeted placement of mineral fertiliser directly into the seed furrow helps the young crop to develop quickly and healthily to reach deeper soil water resources and, in this way, makes them more robust to face heavy drought.

Even germination

Direct sown winter wheat following sugar beet

Conventionally established crop

The high performance seed drill – especially for low rainfall regions and large acreages

The parallelogram guided sowing openers of the AMAZONE Primera DMC with their 'on-grip' DURA chisel tips ensure a clean seed furrow for better soil contact and the most accurate maintenance of the placement depth. The following double roller provides good re-coverage of the seed furrow. Optimum seed/soil contact and accurate placement depth are preconditions for uniform crop establishment.
The REVOMAT overload safety protection ensures a damage-free sowing operation even in stony soils.

The seed is covered up by the hoop ring rollers, the Exact harrow and the Roller harrow. The combined application of seed and fertiliser is available as an option.

The plough cannot be dispensed with in some cases.
The Primera DMC can also be used in this conventional method following some seedbed preparation.

Advantages of the Primera DMC:

- Profitable crop production in times of increasing production costs and changing farm sizes
- Fulfils all environmental considerations and reduces nitrate leaching
- Reduces machinery and operating costs
- Conservation and soil saving cultivation system
- Reduces soil erosion
- Reduces soil water losses
- Stabilises soil structure
- Higher straw degradation and drainage ability

Primera DMC 12000-2C, 12 m working width

System procedure for areas of low rainfall

With the Primera DMC a large farm is able to carry out all these systems at will.

At harvest

Stubble cultivation

1. **Direct sowing**

No soil tillage

2. **Mulch sowing**

Catros compact disc harrows

1. Pass: Working depth approx. 5 cm

3. **Mulch sowing**

Cenius mulch cultivator

1. Pass: Working depth approx. 10 cm

Harvesting the previous crop

Targets for the combine harvester:

- Ideally, the chopped straw should be distributed across the entire cutting width of the combine (plus also the use of a chaff spreader)
- Even stubble length
- Avoidance of wheel marks, soil structural damage and compaction

1. Pass:

(shallow stubble cultivation up to 5 cm)

Targets for stubble cultivation:

- Reduction of soil water loss by interrupting the capillary water draw from the surface soil
- Creation of the optimum conditions for a quick and even germination of volunteer grains and weed residues
- Hasten the straw rotting process

Operational speeds 8 – 15 km/h

– Catros compact disc harrow
– Cenius mulch cultivator or
Ceus disc & tine combination cultivator

Advantages of direct and mulch sowing

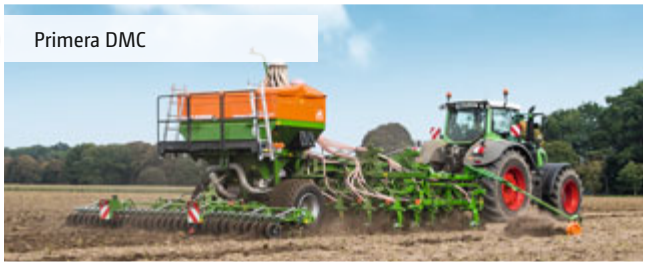
- Savings in operational time
- Savings in fuel costs
- Better practicality
- Reduced water evaporation
- Improved soil structure
- Reduced soil erosion
- Reduction in operating costs

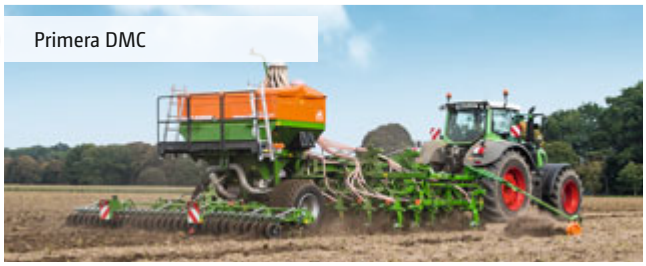
Weed control (chemical/mechanical)

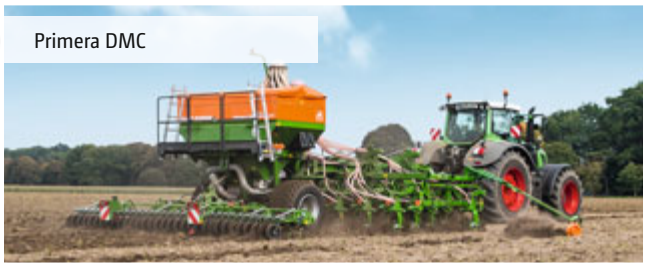
2. Pass: Working depth approx. 5 cm

2. Pass: Working depth approx. 15 cm

Seeding







Seed placement depth approx. 3 – 7 cm

2. Pass:
(Weed control)

Targets for soil tillage
- Intensive and even incorporation of straw residues
- Hasten the straw rotting process
- Mechanical weed control

Operational speeds 8 – 15 km/h
– Catros compact disc harrow
– Cenius mulch cultivator or
Ceus disc & tine combination cultivator

3. Seeding
(Primera DMC)

Targets for sowing:
- An even seed spacing within the row and an even placement depth
- Placement of the seed into a clean, straw-free furrow with sufficient water draw
- Safe closing of the seed furrow and sufficient coverage of the seed with fine soil particles
- Combined application of seed/fertiliser if requested

Operational speeds Primera DMC 10 – 18 km/h

Other techniques: Sowing catch crops directly into the stubble.

Water-conserving techniques

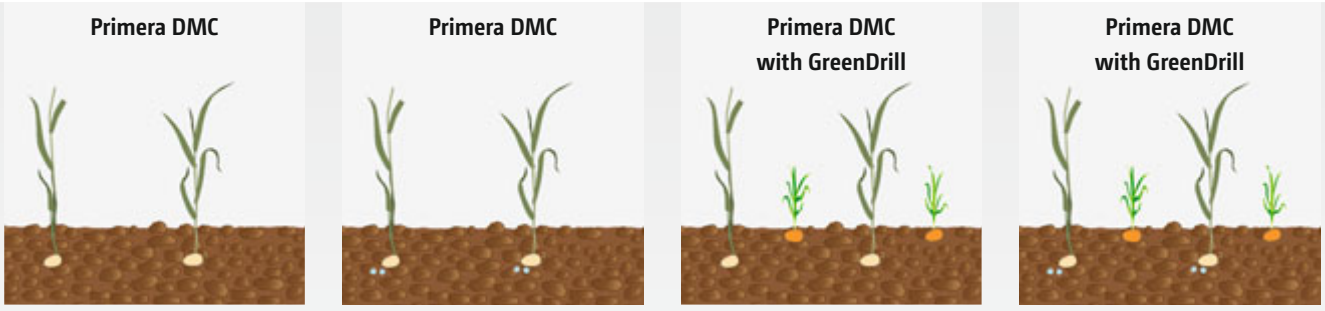
The soil is protected from drying out due to the soil tillage

Sowing catch crops directly into the stubble in **autumn** means:

- Stubble and straw protect the soil from drying out
- Reduced soil erosion
- Cost reduction due to less soil tillage
- Exploitation of the dormancy of the volunteer grains

In this respect, it makes no difference whether it concerns a winter or summer catch crop. These positive effects also become apparent in a summer catch crop, i.e. from harvest until the sowing of the main crop in the autumn.

The Primera DMC can then be used to sow a spring crop directly into the winter-killed catch crop with the chisel openers in the **spring**. The catch crop can be left on the field as protection for the following main crop after being chopped up and/or sprayed. The catch crop not only serves as erosion and evaporation protection but also as a nitrogen fixer and a source of organic matter.



Seed only

Single-shoot:
Sowing seed with fertiliser at one placement depth

Double-shoot:
Sowing two seed types at different placement depths

Double-shoot:
Sowing two seed types with fertiliser at different placement depths

The options

High level of flexibility

In addition to sowing cereals, up to three different materials can be applied in one pass with the Primera DMC depending on the model, e.g. seed and fertiliser in the single-shoot process. Different seed types can also be combined.

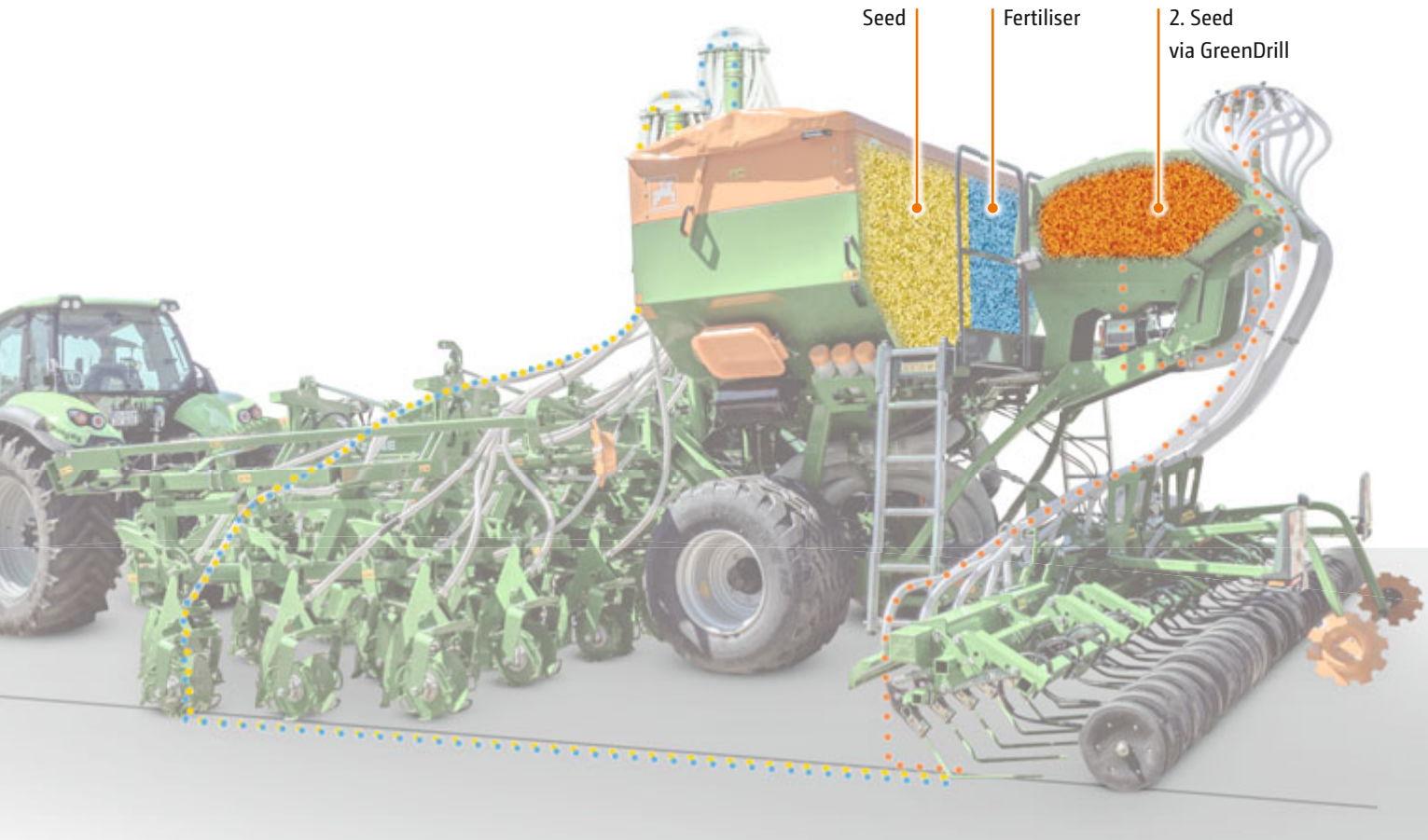
This means that different combinations of catch crops, e.g. legumes and grass seed, can be applied simultaneously. The legumes can be sown deeper as a nitrogen fixer. Fine seeds, such as grass, can be broadcast on the surface via the baffle plates on the GreenDrill. This principle also applies to the sowing of undersown crops! However, two different seed types plus fertiliser can also be applied in this way.

Extremely beneficial

Advantages of the use of undersown crops/companion plants/catch crops:

- Greater biodiversity
- Less soil erosion
- Better protection against moisture loss
- Improved soil structure
- Improved nutrient availability
- Fewer crop protection measures
- CO_2 fixing and humus formation
- Increased photosynthesis

Principle of the conveying system of the Primera DMC with GreenDrill



Judgement from practice ...

Björn Förster (general manager) and Paul Nogatz (responsible for sowing).

Agrarbetriebe Schliebener Land

The Agrarbetriebe Schliebener Land agri-business is located in southern Brandenburg between Berlin and Dresden. In addition to the 1,700 dairy cows kept there, 2,150 ha is under cultivation. Highly heterogeneous soils and low rainfall of around 400 l per year are the challenges. Direct sowing has been practised here for 6 years. Sowing has been carried out with the Primera DMC for 4 years. The goals of general manager Björn Förster are as follows:

- Permanent coverage of the soil with catch crops to protect the soil against evaporation
- Humus formation
- Minimal soil tillage
- Conservation of resources

For Björn Förster, the catch crop is a major crop rotation component. A catch crop is sown directly after combining before almost every crop. Depending on the crop rotation, the main crop is sown directly or into the sprayed off crop via the chisel opener of the Primera DMC. The tines mean that the catch crop stays on the field and protects the soil against drying out and evaporation. Furthermore, the catch crop serves as a nitrogen source and ensures the continuous formation of humus. This not only saves valuable soil moisture but also time and resources!

Primera DMC 6000-2C with GreenDrill 501

Why Primera DMC?

- Extremely high work rates
- Speeds of 18 km/h are no problem
- 70 ha/day at a working width of 6 m
- Placement is very precise at high speeds
- Direct seeder → water-conserving
- Tines do not destroy soil life or the soil structure.
- No blockages. The Primera DMC easily copes with a large amount of organic matter – with a row width of 18.75 cm
- Liquid fertiliser application directly at the openers
- Chisel opener clears the seed channel and places the seed precisely
- No hair-pinning effect – crop residues completely removed from the seed furrow

Paul Nogatz (responsible for sowing) is a qualified farmer and sees the advantages of the Primera DMC:

- Very large seed hopper divided into 3 sections
- No need for stubble breaking or primary soil tillage
- Reduced work time
- Extremely simple operation as a result of easy calibration via the TwinTerminal
- High work rates
- Very precise placement depth due to individual depth control of the coulters
- Optimum use of water – because water is a scarce commodity

"Especially in view of climate change, the Primera DMC supports us with water-conserving sowing. The catch crops mean that we save valuable water and can still achieve a good and uniform placement depth, field emergence and yields through the chisel opener!"

Feedback from practical use ...

Alexander Kutilin (right), OOO "Geja"

Alexander Kutilin, OOO "Geya" (Zelinniy, Verkh-Marushka, Altayskiy Krai)

"Wheat, peas, soya, buckwheat, rape, barley, oats and lentils are grown on our seed farm on an area of 8,000 ha. We have been using Primera DMC seed drills since 2009, and they are the only machines used to sow these crops. Three of these seed drills are enough to meet all of our needs these days.

We have completely dispensed with ploughing. We use shallow soil tillage and direct sowing across the entire area. Nowadays, many farms in Altayskiy Kraj which focus on increasing yields are converting to minimum and direct seeding methods. The AMAZONE machines are perfect for this.

The Primera DMC seed drills are ideally suited to our conditions: Firstly, this is a universal machine which works independently of soil tillage - from minimal to conventional tillage with the plough. Secondly, the seed drill provides an optimum seedbed. Precise sowing with minimal soil destruction and water retention in the seed layer ensures good, uniform field emergence. Thirdly, the seed rate can be quickly adjusted - which is important for the tractor driver and determines the high work rate: We sow 120 ha of buckwheat, 90 ha of peas or 100 ha of wheat with the Primera DMC in one day. That's an average of about 10 ha per hour.

We have been using the special Fertiliser Delivery Cart in combination with the Primera DMC since 2019. This enables the liquid fertiliser to be precisely and reliably applied at the same time as the seed. This combination is used to carry out sowing and starter liquid fertilisation in a single pass. In addition, the combination of a Primera DMC seed drill with its own granular fertiliser tank and the Fertiliser Delivery Cart can be used for the simultaneous application of liquid fertiliser and granulated mineral fertiliser.

I would also like to say that the use of the Primera DMC seed drill pays off in full when growing different crops - we have been following the trend of increasing yields for several years now, even though the soil and climate conditions in our region are not ideal."

Sergey Borzov, General Director of OOO "Vasilyevskoye" (Stawropolskiy Rajon, Oblast Samara)

"We have a long-term and productive working relationship with AMAZONE. Our initial introduction to the technology behind the brand was in 1991, when we purchased a crop protection sprayer. Incidentally, the machine is still working on the farm. 19 years have passed since then and we decided to utilise AMAZONE technology when updating our machinery. We currently have practically the whole range of machinery that are manufactured at AMAZONE Eurotechnika, the Russian plant: These are precision air seeders and

Sergey Borzov (centre), General Director of OOO "Vasilyevskoye"

Primera DMC, 9 m working width

Primera DMC, 12 m working width

cereal seed drills, cultivators, crop protection sprayers and fertiliser spreaders.

All the technology is adapted to the cultivation method used at our farm. We work on our 10,000 hectares using a conservation cultivation techniue and therefore try to optimally incorporate crop residues. In doing so, we use fewer inputs and so reduced costs. AMAZONE machinery is a perfect complement for our crop production concept. In particular, I would like to mention the Primera DMC seed drill with 9 m working width, which has been working successfully for us for years and provides a high sowing quality with precise depth control across the entire area.

The seed drill has long since paid for itself and works with high reliability.

In general, AMAZONE machinery is very comfortable to work with and the service is extremely good. When problems arise, they are promptly solved by the service specialists within the day. In the event of damage, all components are in stock, and the machinery does not let us down, which is very important in our soil and climate conditions, because every hour in the field counts. On a positive note, we haven't had any serious downtime so far, mostly just wear parts and small things."

Utyamischev Ilnur, OOO "Woronezhskoye" (Gayskiy Rajon, Oblast Orenburg)

"Wheat, barley, oats, lentils, chickpeas and grass are grown on the OOO 'Woronezhskoye' farm. We gave up ploughing a few years ago - we use deep looseners to work without inverting the soil. Some of the fields are cultivated using conservation tillage, and we also have fallow fields.

I am very familiar with AMAZONE machinery. I bought the first machines of this make six years ago - these were UG 3000 crop protection sprayers.

I bought a Primera DMC seed drill with 9 m working width three years ago. We use this with a ClaasXerion tractor (330 HP). We sow cereals, chickpeas and grass with the Primera DMC and achieve good work rates - an average of over 200 ha per day. Another advantage of the Primera DMC: The seed drill solves the problems with fine seeds which many farms are currently experiencing - it is difficult to distribute fine seed evenly, which is why field emergence is often patchy. The Primera DMC copes with this task very well, placing the seed into the ground in an ideal manner and achieves extremely even field emergence."

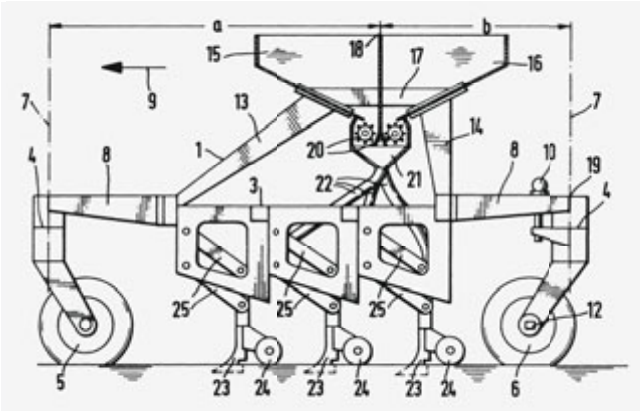
Utyamischev Ilnur, OOO "Woronezhskoye"

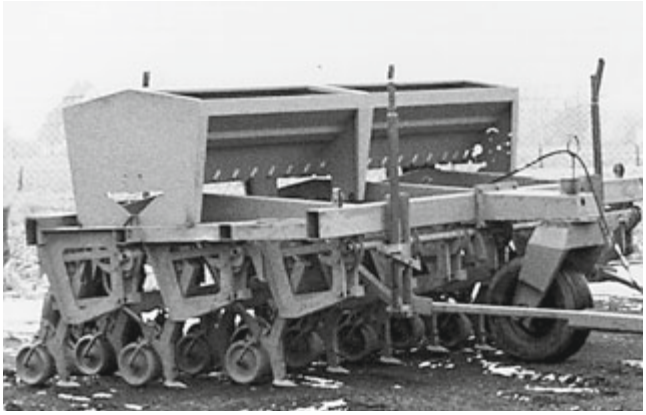
AMAZONE chisel opener

The history of development

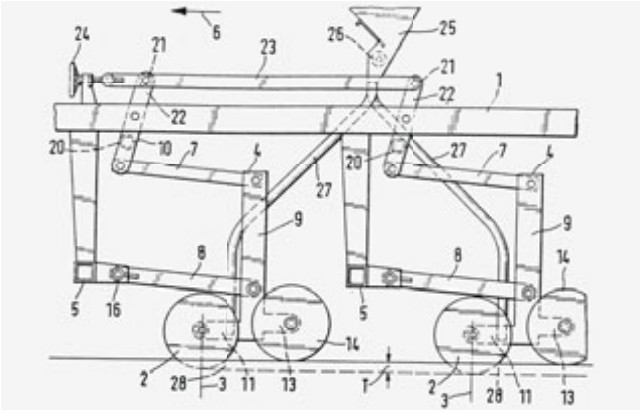
The beginnings of a good idea

Parallelogram-guided openers with v-shaped tools and a depth guidance roller ensure an accurate seed placement into the soil.





Patent drawings from 1975; duck foot coulter



Patent drawings from 1978; disc coulter

The coulter of a seed drill is not only probably the most important and also the most difficult to design but is also the component of a seed drill on which there is the most emphasis – especially in the case of a "versatile seed drill", such as the Primera DMC. The first impressions of working with the prototypes in 1975/76: we had developed a disc coulter while validating the new process. This unit was also guided for depth via a following press roller.

The results with the disc coulter unit were not good enough to meet the AMAZONE standards. The further development of the Amazone chisel opener was stepped up.

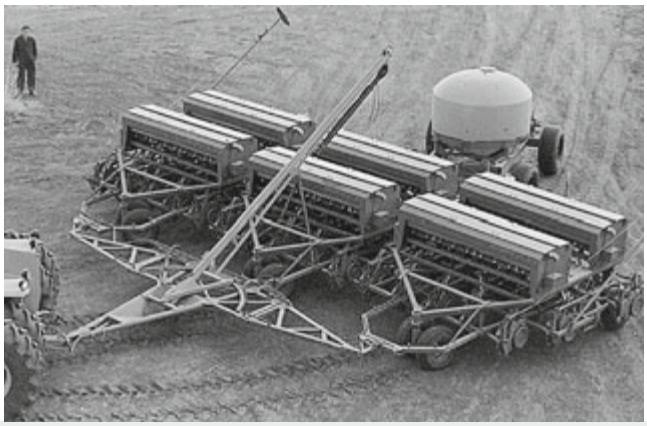
Disadvantages of disc coulters vs chisel openers

However, these initial trials already underlined the disadvantages of using disc coulters in a direct sowing operation and these points are still valid today:

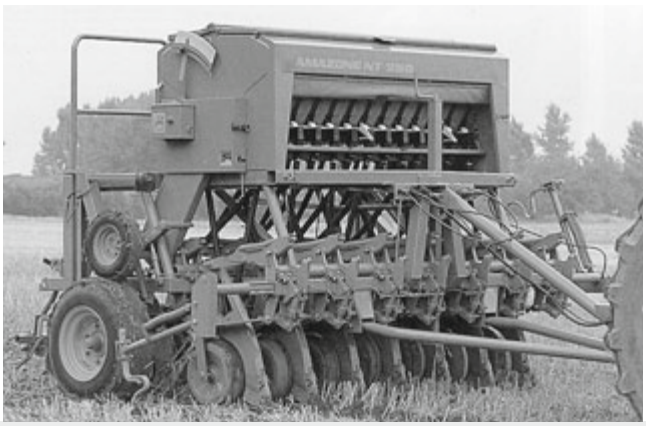
- Necessary coulter pressure of approx. 200 kg per disc = high machine weight.
- Straw will be pressed uncut into the sowing furrow: formation of pockets – risk of infection.
- Shape of the seed furrow: Smooth cut edges – partial seed coverage.
- Dry soil from the soil surface drops into the seed furrow – lower emergence.

The direct sowing system as a new rational system for crop production was introduced to large farms across Europe.

Many farmers have quickly recognised the advantage of the AMAZONE chisel opener system and achieve outstanding yields. The uniform placement depth as well as a clean and closed seed furrow after seed placement are important prerequisites for successful direct sowing and are optimally fulfilled under virtually all operational conditions.



The combination of the AMAZONE chisel opener with the proven metering units from the conventional seed drills led to the AMAZONE NT. This direct seed drill, after several years of hard use in Canada and the USA, was adapted to meet European conditions.



The AMAZONE NT 250 and 300 met the requirements of many farmers, especially in southern Europe and the Middle East. Machines with large working widths were in demand after the opening up of the "Eastern markets".

The AMAZONE chisel opener system

Proven 100,000 times over!

Parallelogram suspension of the chisel openers

Principle of the open "tunnel"

The benefits

1. All the chisel openers are suspended on a parallelogram linkage. Although this is relatively complex, it ensures that the desired sowing depth is maintained at different or changing forward speeds (uphill – downhill, on the headland, under different soil consolidations, etc.) as well as in any soil undulations.
2. The coulters are arranged in four rows with a tine spacing of 18.75 cm or in three rows with a tine spacing of 25 cm and in such a way that continuous open "tunnels" of approx. 75 cm are provided between them. This principle allows a relatively narrow coulter spacing (18.75 cm or 25 cm) for quick blanket coverage of the crop (a full canopy) and yet reduces the danger of blockage by any large volumes of straw at the same time.

The highest field emergence – it all depends on the coulter

- Uniform depth placement
- Optimum furrow clearance
- Highest forward speeds
- Maximum operational reliability

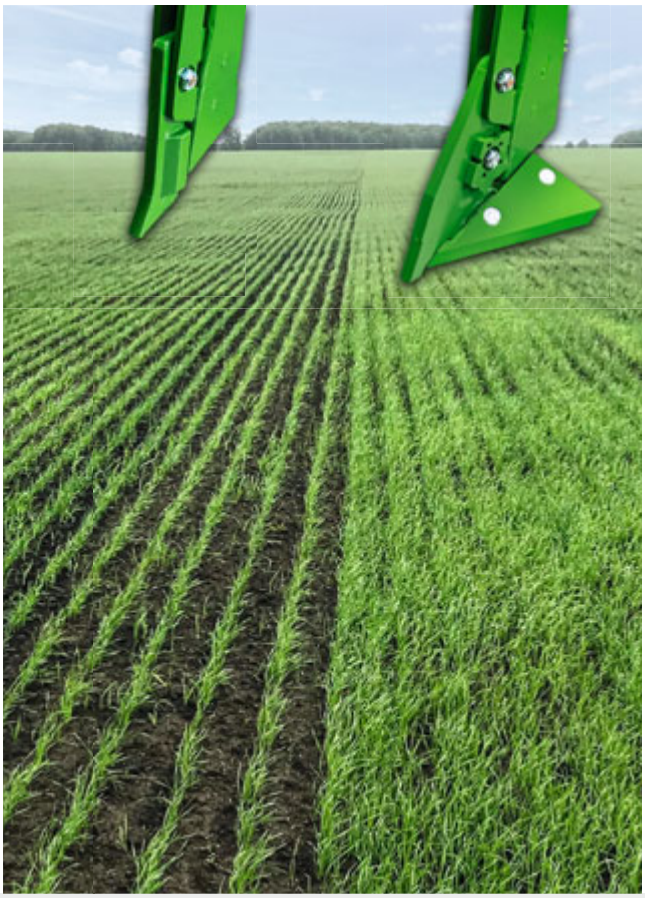
					
Primera DMC chisel variants	Point with one hard metal plate	Point with two hard metal plates	Point for band sowing	Duckfoot chisel with one hard metal plate 150 mm wide	Duckfoot chisel with one hard metal plate 200 mm wide
Direct sowing	Yes	Yes	Conditionally	No	No
Pulling power requirement					
Sowing width	1.5 cm	1.5 cm	5.5 cm	10 cm	10 cm
Effective width	1.5 – 3.5 cm	1.5 – 3.5 cm	5.5 cm	15 cm/ almost full-surface	20 cm/ full-surface

3. The point or "chisel" is protected against wear by a hard metal plate (tungsten carbide cobalt plate) at the front – this means that this point has an especially long life. This is yet another AMAZONE invention which is often "imitated". It is easily recognisable: The AMAZONE chisel opener is the result of years of experience and is simply very good.

   A coulter chisel opener set with 2 hard-faced plates for a longer service life, e.g. for sandy soils, is available as an option.

   AMAZONE also offers a chisel opener set for band sowing across a width of approx. 55 mm for conventional and mulch sowing. This set allows a wider distribution e.g. for increased tillering.

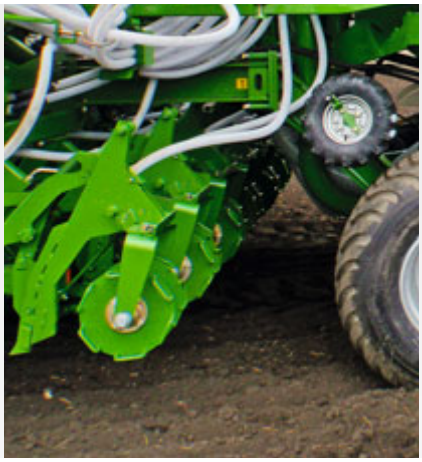
   The duckfoot chisel opener set, in widths of 150 mm or 200 mm, is ideal for the band sowing at a shallow placement of, for example, fibre flax. With a coulter spacing of 18.75 cm, the 150 mm wide duckfoot coulter achieves almost full-surface weed control, whereas the 200 mm wide duckfoot coulter achieves complete mechanical weed control like a shallow cultivator. In this respect, the pulling power required for the narrow duckfoot coulter is less than for the 200 mm wide duckfoot coulter.



Quick canopy closure – band sowing of 10 cm with the duckfoot chisel

Precise depth control of the chisel opener

The coulter units are arranged on longitudinal cross members in four rows, which results in a large distance from one to the other. This ensures good straw passage.

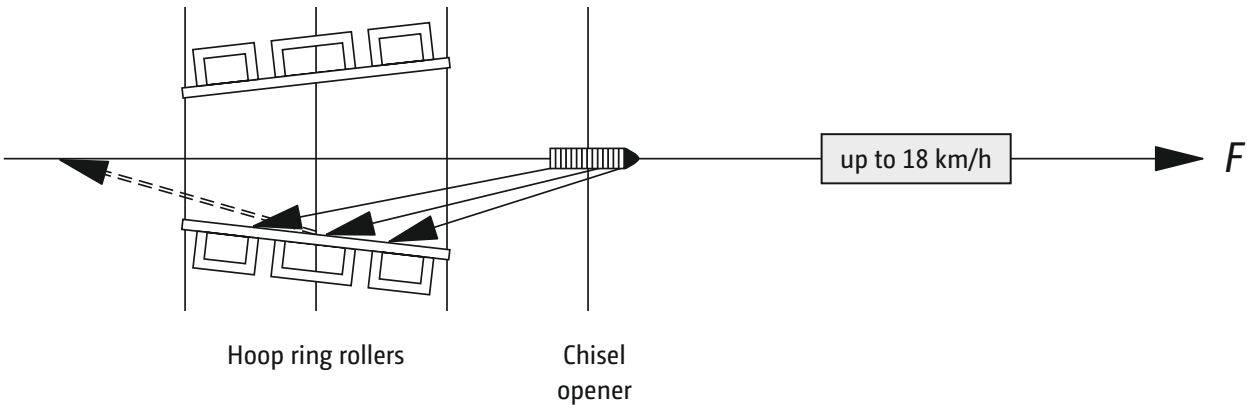


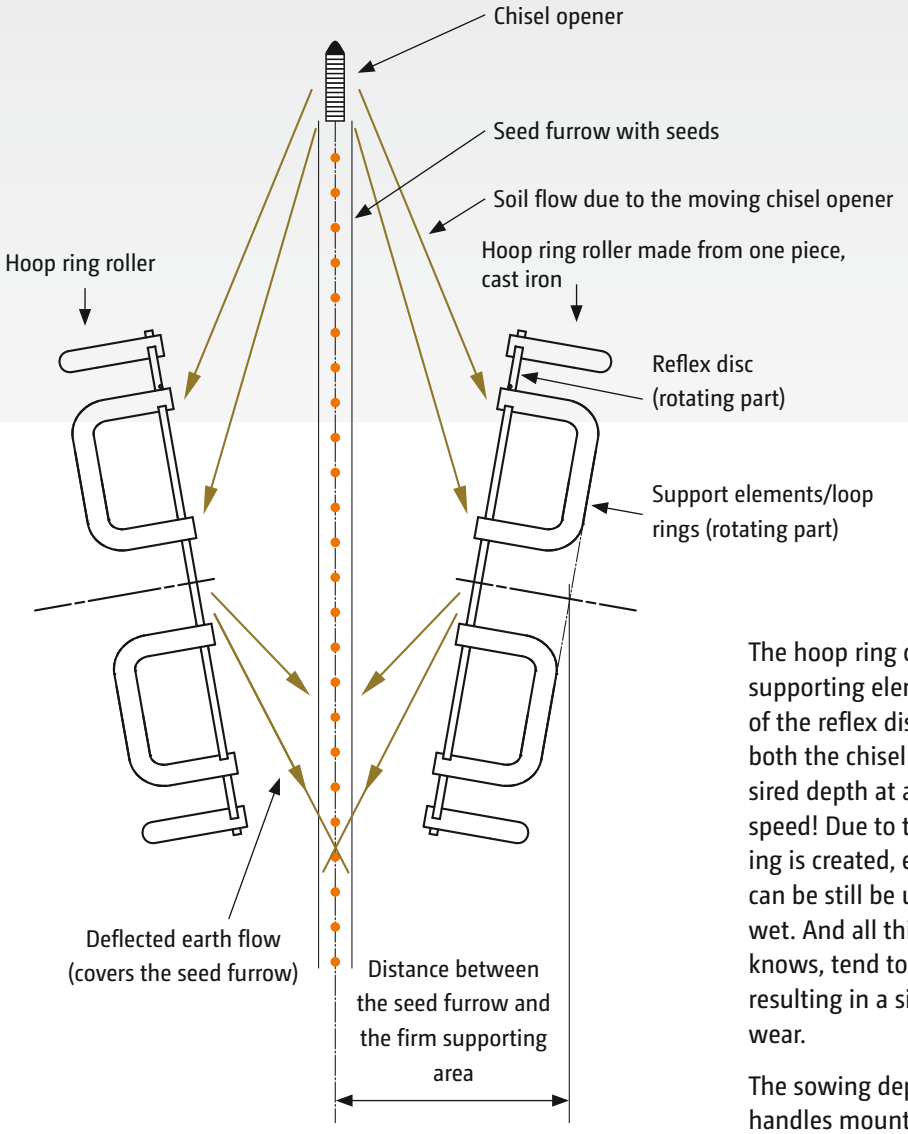
The AMAZONE chisel opener in the transport position (more than 400 mm clearance to the ground)

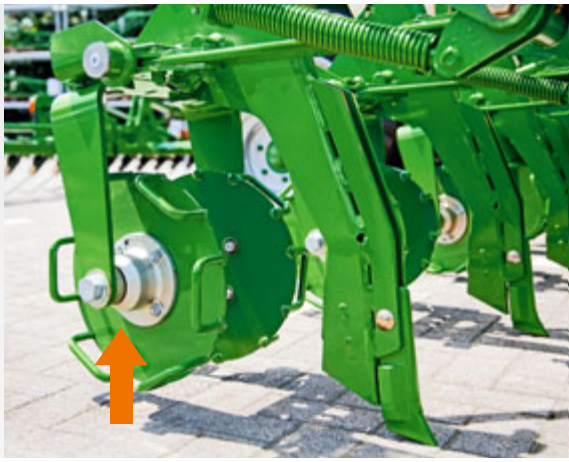
4. AMAZONE moved a huge step forward with the so-called hoop ring rollers on each coulter to the left and right of the seed furrow. These provide individual and reliable control of the depth of each coulter. In addition, the seed furrow is repeatedly closed with loose and finely crumbled soil, even in very wet soils or wet patches. And all this even at forward speeds of up to 18 km/h.
   That means: no matter how much soil is thrown to the side by the chisel opener, the two round discs deflect most of it back over the seed furrow. The angular adjustment of the discs adds a slight pressure from both sides. What the rollers do not manage to bring back in is finished off by the Exact harrow. This also ensures a level field. The Roller harrow brings up the rear and can consolidate the loose soil above the seed furrow if necessary.

   – Good seed/soil contact as a result of the chisel opener clearing the seed furrow.
   – A large amount of fine-crumbed soil in the seed furrow which leads to quick warming of the soil in the seed area.

   ▸ **Perfect germination conditions**







The hoop ring rollers are equipped with extremely durable and maintenance-free bearings, which are also utilised on the Catros.

The hoop ring consists of Reflex discs and the hoops as supporting elements. The hoops fitted to the outer side of the reflex discs are made of **thin** material and guide both the chisel opener and the Reflex discs at the desired depth at all times – irrespective of the forward speed! Due to their especially narrow shape no bulldozing is created, even in **moist soil** – so that the machine can be still be utilised even when the soil is still very wet. And all this **without** scrapers, which, as everyone knows, tend to carry along a mixture of straw and soil, resulting in a significant braking effect and the relevant wear.

The sowing depth is easily adjusted in groups via crank handles mounted centrally on each coulter module – very simple and quick.

Hoop ring roller for mulch and direct sowing

Crank for easy adjustment of the sowing depth with an adjustment lock

Roller for stony ground

Inflated semi-pneumatic wheel

AMAZONE offers a roller for stony ground with maintenance-free bearings and lifetime lubrication as an alternative to the hoop ring roller. This is extremely resistant to stone trapping.

A robust semi-pneumatic wheel can also be used as an option for many operational conditions. This creates a profile for collecting water in very dry conditions.
It stands out because of its excellent self-cleaning effect when used on wet soils. It is also insensitive to stones and has a low tendency to clog. Since a harrow can be dispensed with when using the semi-pneumatic wheel, it is a low-cost alternative to the hoop ring, or stony ground, roller with a following harrow.

5. The REVOMAT overload safety protection:
   if the chisel opener hits an obstacle, e.g. heavy stones or compacted headlands, the upper link abruptly gives way at a defined force. The coulter jumps upwards and immediately returns to the work position. Automatically, super! With obstacles that are hit on the angle in the direction of travel, the coulter just moves to the side – because the entire lower link is not rigid but a long, one-piece spring plate. Also again automatic, super.
6. After the pass, the Primera DMC openers leave an even finish (no grooves or ridges), resulting in, apart from an even field emergence, also practical driving advantages – e.g. for a smooth ride of the combine, the crop protection sprayer (no boom bounce!) and the fertiliser spreader. This applies in particular also to both field ends of the headland.

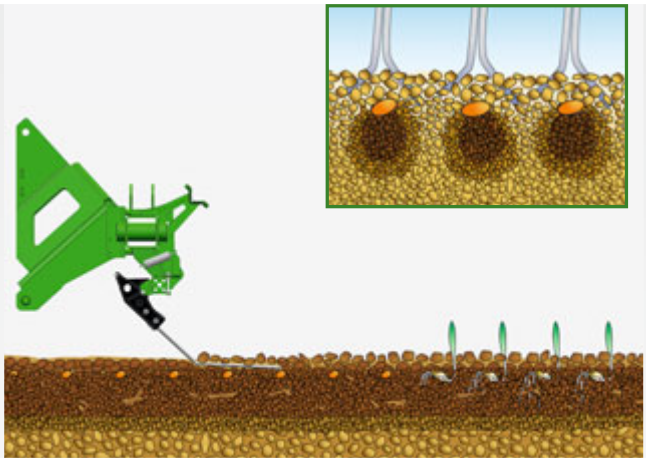
Direction of travel

REVOMAT overload safety protection:
Top link straight ① Chisel opener in operational position
Top link cranked ② Chisel opener "deflected" after hitting an obstacle in the soil

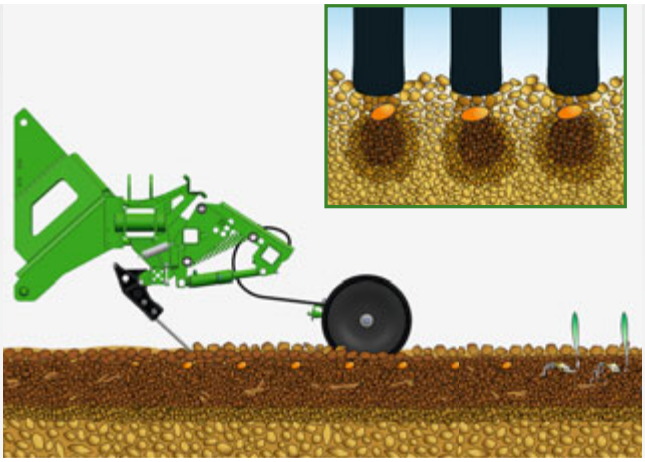
Exact harrow and Roller harrow

Exact harrow and Roller harrow on the Primera DMC

Pre-emergence markers for the Primera DMC 6000-2C



Exact harrow



Roller and Exact harrow

Seed coverage with the Exact harrow

The Exact harrow levels the surface. It works without blockage even with large amounts of straw.
The individually-pivoting, harrow elements follow the ground contours, creating a uniform seed covering, straw-free, even in areas where copious amounts of straw prevail.

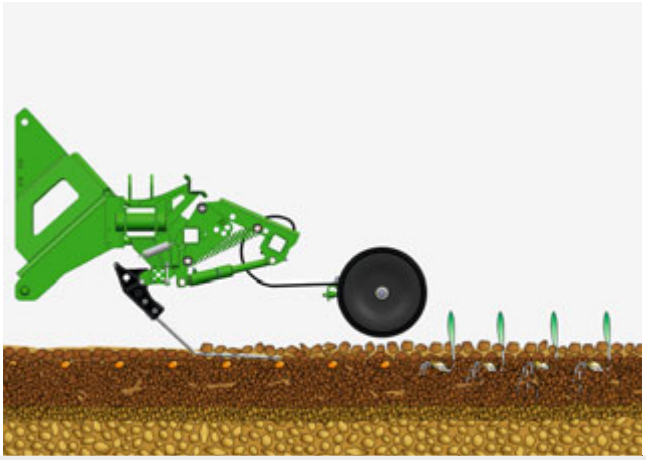
Additional consolidation with the optional Roller harrow

The press rollers on the Roller harrow additionally consolidate the ground directly above the seed furrow. This is recommended especially for light, dry soils when sowing spring crops or rape. The AMAZONE Roller bar can be quickly raised out of work and locked.

Press rollers in damp, sticky conditions

Attention: in moist & sticky soil conditions, practitioners recommend for today's seed drills that use pressure or guide rollers, to isolate these rollers, to dismount them or to lock them in raised condition (out of work). This is only possible, however, if it is not also providing the depth control. The key disadvantage of other systems.

This is the crucial disadvantage of other systems, but with AMAZONE this problem is well solved!



Track markers, braking system, frame, drawbar and front trolley

40 km/h approval for the Primera DMC 3000/-C and 6000-2/-2C

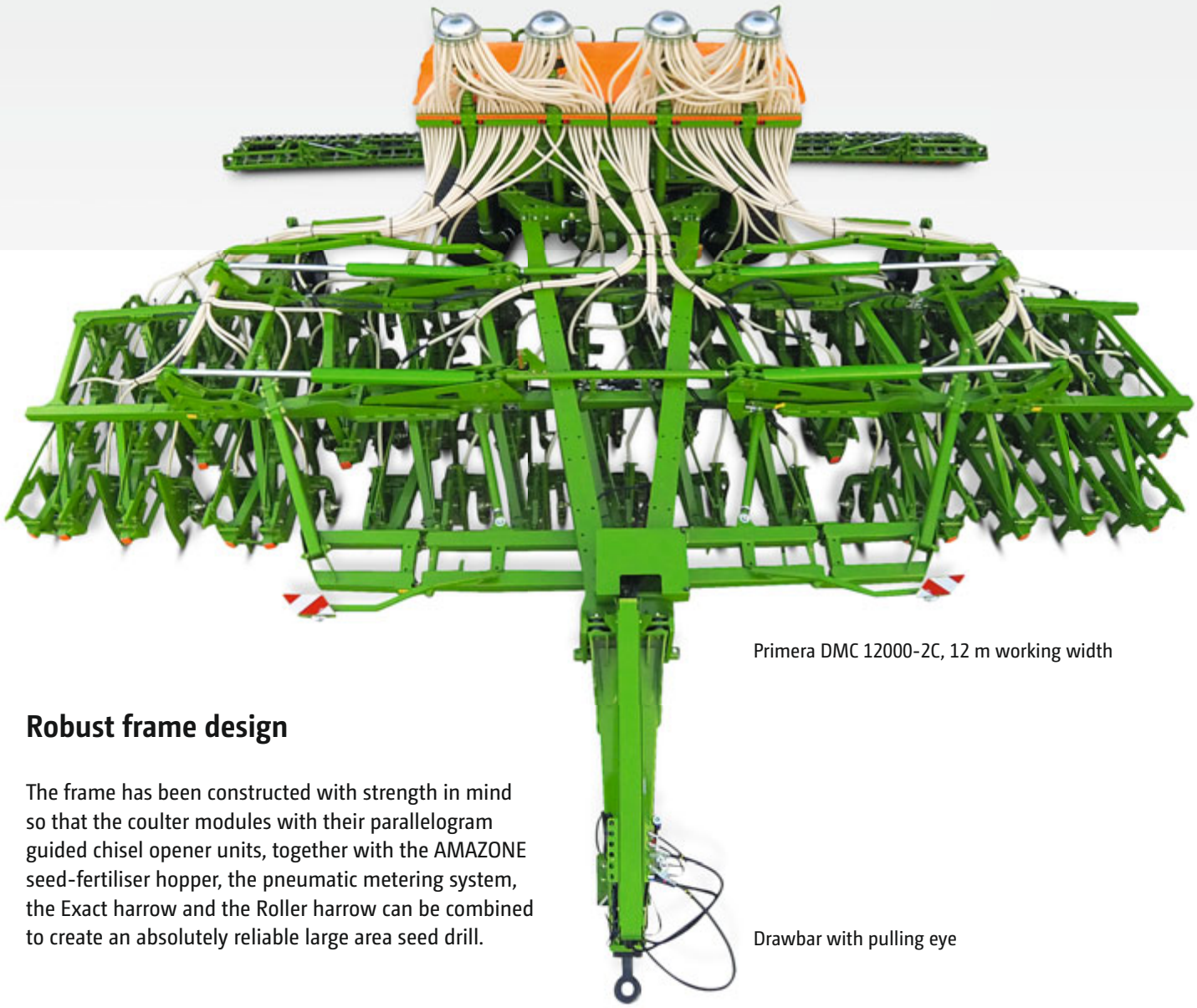
Track markers

Fully-hydraulic actuation of the track markers.

The braking system

Hydraulic braking or twin-circuit air braking systems are available depending on the application.

Primera DMC 3000/-C and 6000-2/-2C:
A 40 km/h approval for quick road transport is possible, depending on the individual country traffic regulations.



Primera DMC 12000-2C, 12 m working width

Robust frame design

The frame has been constructed with strength in mind so that the coulter modules with their parallelogram guided chisel opener units, together with the AMAZONE seed-fertiliser hopper, the pneumatic metering system, the Exact harrow and the Roller harrow can be combined to create an absolutely reliable large area seed drill.

Drawbar with pulling eye

Drawbars for all linkages

The narrow drawbar allows the machine to be turned on the spot without the rear tractor wheels coming into contact with the drawbar. Towing eyes, a ball-type hitch and various cross shafts are available as an option.

Front trolley

A front trolley can be used as an extension for the Primera DMC. This reduces the drawbar load on the tractor by half and is coupled between the tractor and the seed drill.

Hoppers for all farm sizes

Primera DMC 6000-2C with GreenDrill 501

Wide hopper opening for filling by front end loaders and filling augers.

The hopper system – 3 hoppers for all sizes

- **Hopper size from 4,200 l:**
  Primera DMC 3000/-C, 4500/-C, 6000-2/-2C and 9000-2/-2C

  Hopper size from 6,000 l:
  Primera DMC 9000-2C Super and 12000-2C

  Possible division of the hoppers via a partition wall for seed and fertiliser at a ratio of 3:1.

- **Hopper size 13,000 l:**
  Primera DMC 9001-2C and 12001-2C

  Pressurised hopper system with four hopper compartments for simultaneous use with seed and fertiliser, with the choice of a ratio of 3:1 or 1:1. The application of two fertiliser types and/or seed types at different rates is possible.

- **Optional extensions:**
  – Primera DMC 3000/-C, 4500/-C, 6000-2/-2C and 9000-2/-2C:
  800 l and 1,600 l (max. capacity 5,800 l)
  – Primera DMC 9000-2C Super and 12000-2C:
  1,200 l and 2,400 l (max. capacity 8,400 l)

- Quick change over from seed to seed/fertiliser application and vice versa.

- Large-area, accessible protective sieve against foreign objects.

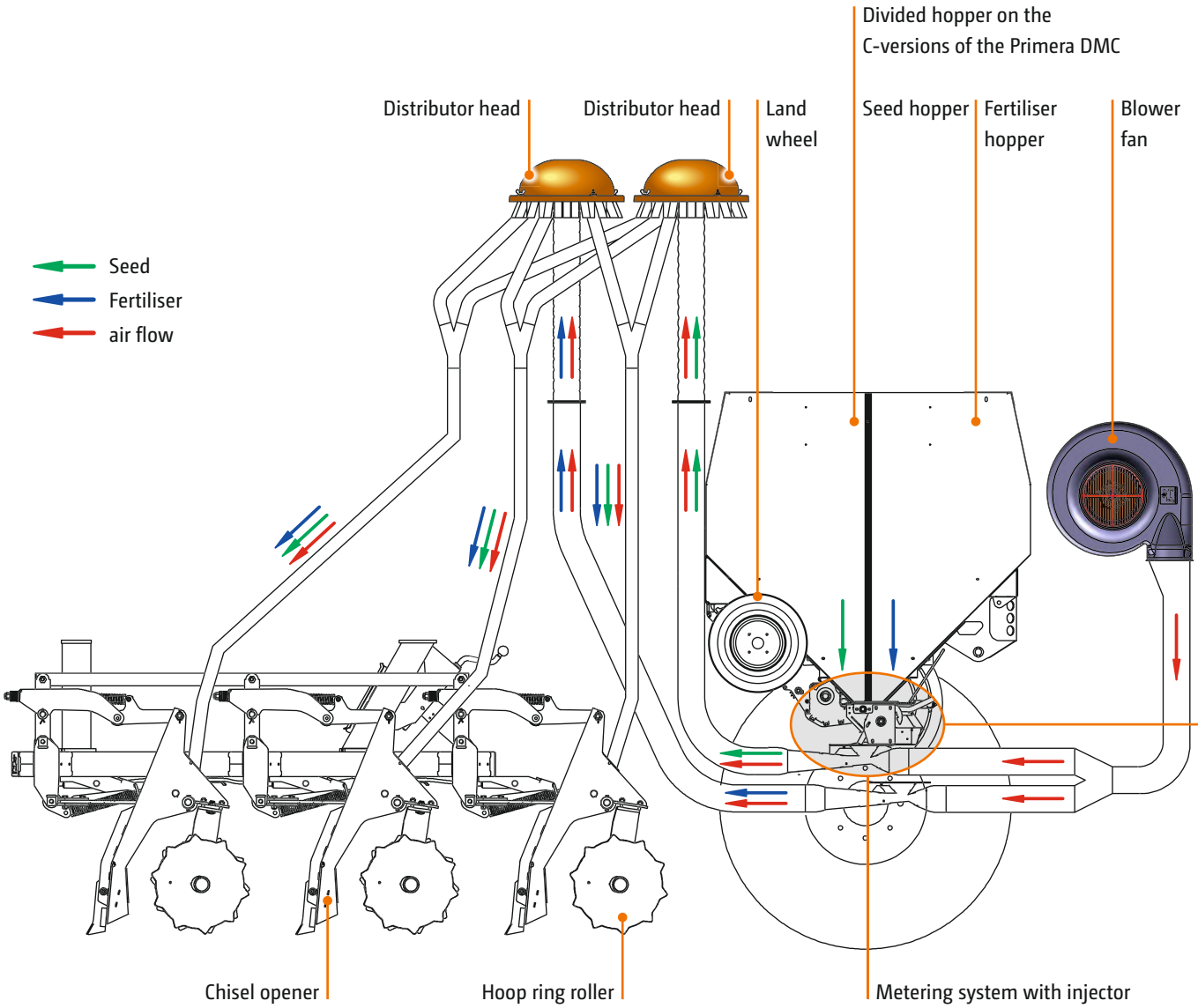
- The hopper cover protects against dust and moisture.

Quick and easy filling via big bags

The pneumatic metering system

für Primera DMC 3000/-C, 4500/-C, 6000-2/-2C, 9000-2/-2C, 9000-2C Super and 12000-2C with open hopper

Principle of function



Example: cassettes for individual metering units:

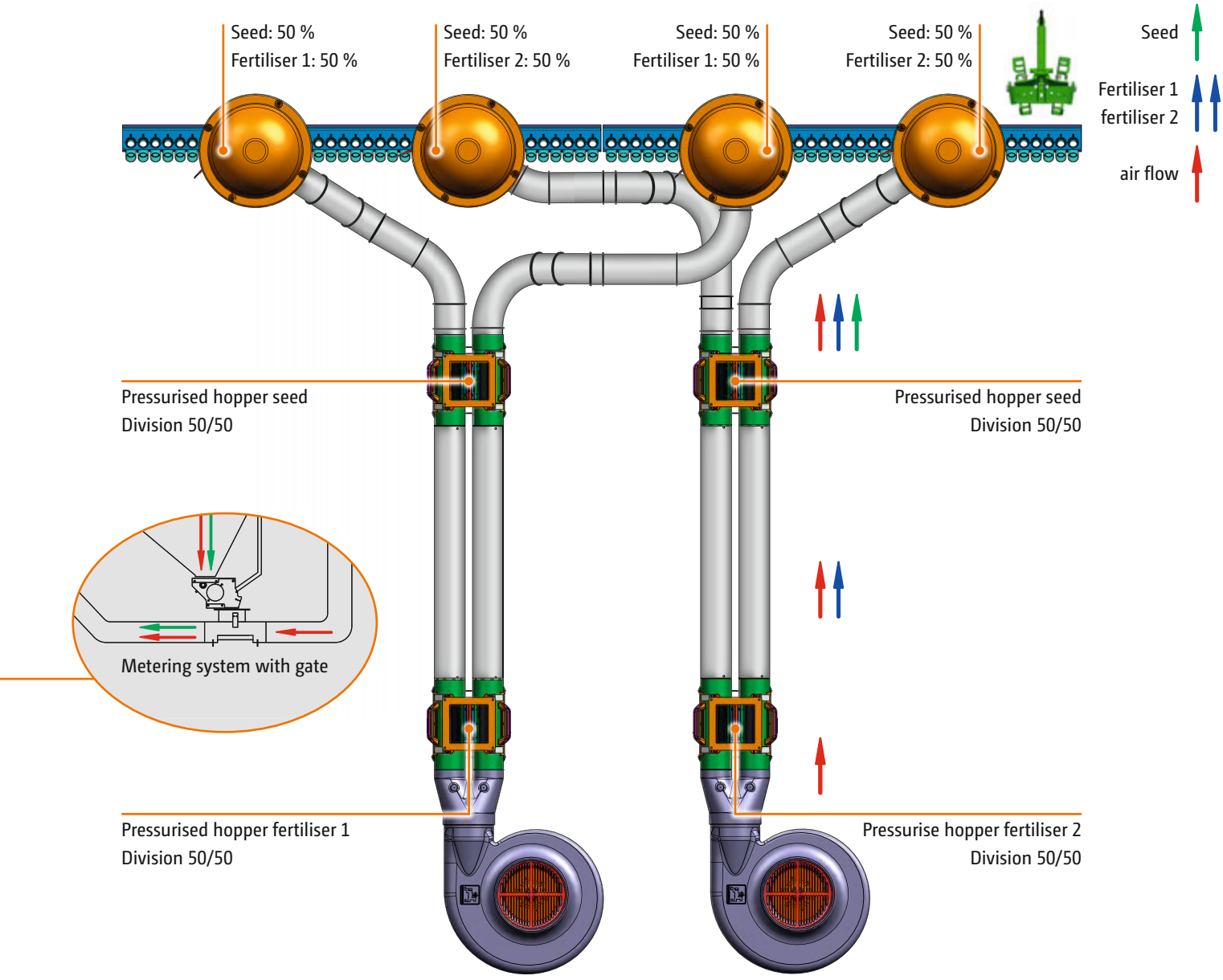
- Metering cassettes for different seed types

20 ccm: e.g. for phacelia, rape, stubble turnips
210 ccm: e.g. for barley, lupins, rye
600 ccm: e.g. for spelt, oats, wheat

The flexible pressurised hopper metering system

for Primera DMC 9001-2C and 12001-2C with enclosed pressurised hopper

Example: Seed and two different fertiliser types – single-shoot process



Optional metering cassettes

7,5 ccm: e.g. for poppies
40 ccm: e.g. for flax, lucerne, oil radish, red clover
120 ccm: e.g. for millet, maize, mustard, sunflowers
350 ccm: e.g. for grass seed, wheat
660 ccm: e.g. for beans, peas, fertiliser
700 ccm: e.g. for beans, peas, soya, fertiliser - only for Primera DMC 6000-2C and 9000-2C with mechanical metering
880 ccm: For high seed rates

Precise mechanical metering drive

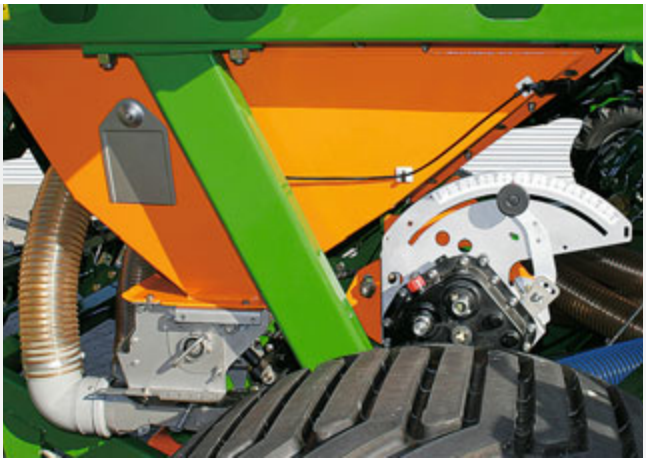
For all Primera DMC

Primera DMC 6000-2C

AmaLog+ in-cab control terminal

Reasonably priced in-cab controller in conjunction with the mechanical metering drive. The AmaLog+ in-cab terminal offers an electronic control and regulating system with electrical tramline control, electronic fill level sensor, hectare meter and monitoring of the seed shaft.

Seed metering



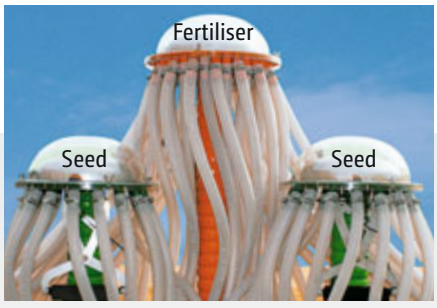
Fertiliser metering

The mechanical metering system for all Primera DMC

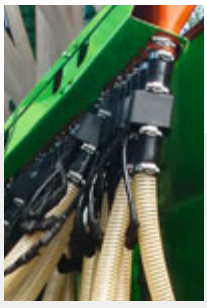
- Three different metering cassettes (large, medium, fine) ensure, as standard, the precise volumetric metering of the different seed and fertiliser types.
- Optionally available: metering cassettes for green manure, maize and sunflowers as well as for peas and beans (see p. 31).
- Quick exchange of the metering rollers without tools.
- Precise sealing of the metering housing by a slide.
- Easy to control, as the metering rollers are arranged in a clearly visible position.
- The seed rate setting is done on the infinitely variable Vario gearbox (maintenance-free) – proven by more than 150,000 – seed rates possible from 2 to 400 kg/ha.
- Tool-less set up of the metering units for calibration.
- Complete emptying of the hopper residues by the opening of a spring loaded flap.
- Sowing of all seeds – including vegetables – without the cumbersome conversion possible.
- All components are maintenance-friendly and arranged with good accessibly.
- Optionally available: additional mounting kit for maize and sunflower seeds at other row spacings (37.5 cm and 75 cm).
- Primera DMC 3000/-C, 4500/-C, 6000-2/-2C and 9000-2/-2C:
  Optional on-board hydraulic system with integrated oil cooling to drive the blower fan.
- Primera DMC 9000-2C Super, 9001-2C, 12000-2C and 12001-2C:
  Only with direct drive of the blower fan from the tractor.

Distributor heads and optional equipment for seed monitoring

Advantages of the distributor heads: outside of the seed hopper in view of the tractor driver. Seed hopper clutter-free and easily accessible. Monitoring the seed-fertiliser flow in the transparent distributor head cover. Optional with seed monitoring.



Distributor heads



Optional seed pipe monitoring

Dust collector

The dust collector reduces the level of dust in the conveying system. This increases the reliability of the tramline control system in the event of heavy dust accumulation and reduces wear in the conveying system.

Electric metering drive and ISOBUS control

for Primera DMC 3000/-C, 4500/-C, 6000-2/-2C, 9000-2/-2C, 9001-2C and 12001-2C

Primera DMC 6000-2C

AmaPilot+ multi-function joystick

Operation via the AmaPilot+ multi-function joystick is especially comfortable. All functions in the work menu can be actuated via the AmaPilot+ or other ISOBUS multi-function joysticks.

AMAZONE AmaTron 4 with 8" touch screen

AMAZONE AmaPad 2 with 12.1" touch screen

AMAZONE AmaTron 4 and AmaPad 2 ISOBUS terminals

Overview metering drives

Drive of the metering	Mechanical drive  **Machine-specific control terminal**	Electric drive **ISOBUS control terminal**	Electric drive with on-board electric power supply **ISOBUS control terminal**
Primera DMC 3000/-C 4500/-C 6000-2/-2C 9000-2/-2C	✓	✓	–
Primera DMC 9000-2C Super 12000-2C	✓	–	–
Primera DMC 9001-2C 12001-2C	✓	–	✓

With immediate effect, AMAZONE offers the Primera DMC 3000/-C, 4500/-C, 6000-2/-2C, 9000-2/-2C, 9001-2C and 12001-2C chisel opener seed drill with fully electric metering and state-of-the-art ISOBUS control.

When equipped with the TwinTerminal 3.0, the Primera DMC is calibrated in no time and the cumbersome climbing up and down from the tractor cab is no longer necessary. The automatic headland control via Section Control (GPS-Switch) or the automatic seed rate matching can be specified as optional equipment, as can automatic track marker control, tramline control and a water hole function for sowing with lifted coulters in wet hollows.

The basic documentation of the work done is stored directly on the machine. For further processing via a farm management information system, the job data can be made available in an ISO-XML format. The Primera DMC, in a 3 m to 12 m working width, can be operated via the AMAZONE ISOBUS terminals AmaTron 4 or Amapad 2. However, any other ISOBUS compatible ISOBUS terminal can be utilised for machine operation.

Primera DMC with electric metering drive and TwinTerminal 3.0

Optional camera system

The optional camera system (only in conjunction with the AmaTron 4 or AmaPad 2 ISOBUS terminals and the AmaCam licence – or an external monitor) provides more safety at the rear in unclear driving situations. The high resolution, antiglare monitor is backlit and can also display two cameras at once.

ISOBUS –

Machine operation in the digital age

MEMBER OF AEF

One language, many benefits!

Each ISOBUS-enabled machine from AMAZONE comes with the latest technology and almost unlimited possibilities. It does not matter whether it is an AMAZONE operator terminal or an ISOBUS terminal directly installed in the tractor. ISOBUS is an internationally recognised communication standard between the operator terminal, tractors and connected implements on the one hand and farm management information systems on the other.

Operation via a wide-range of ISOBUS terminals

Which means that ISOBUS enables you to take control of all your ISOBUS compatible equipment. You only have to connect the machine to the respective ISOBUS terminal and the usual operator interface appears on the monitor in the tractor cab.

Benefits of ISOBUS at a glance:

- This worldwide standard provides a uniform interface and data exchange format that ensures compatibility even with third party manufacturers
- Plug and Play between machine, tractor and additional ISOBUS implements

AMAZONE – more than just ISOBUS

Improved control, better yields! Precision Farming 4.0

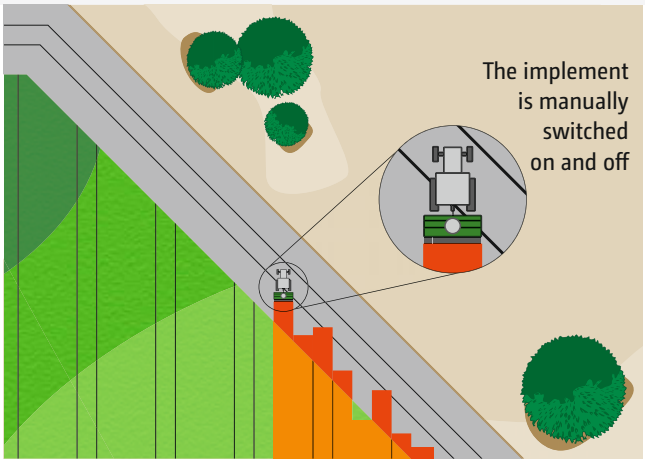
Our competence in electronics

To increase the operational comfort, AMAZONE implements and operator terminals feature a level of functionality far beyond ISOBUS standards.

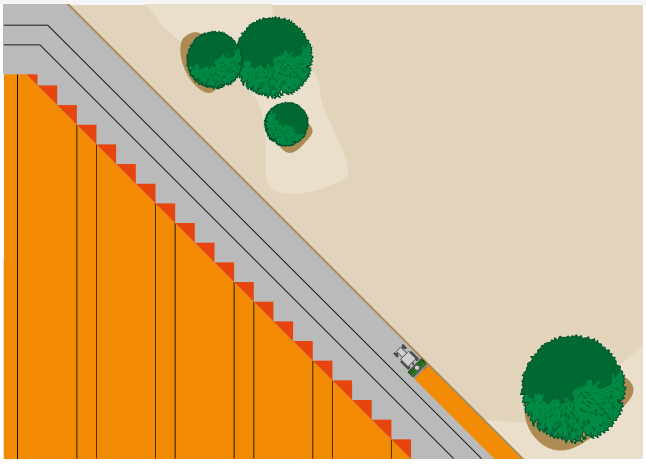
The benefits of more than just ISOBUS:

- Highest compatibility and function flexibility of your ISOBUS equipment
- No additional modules on the machine side. All ISOBUS machinery from AMAZONE is already equipped with the necessary ISOBUS functionality as standard
- Practice-oriented machine software and logical menu structure
- MiniView display with all AMAZONE terminals and additional ISOBUS terminals. See, for instance, the machine information in the GPS view
- Possibility of operating the machine via the tractor terminal or a twin terminal solution
- Flexible assignment of the field and machine view between the tractor and the operator terminal
- Unique operation concept. Freely-configurable displays and individual user interfaces for each driver
- Freely-configurable machine operation, e.g. folding of the boom of your AMAZONE crop protection sprayer
- Integrated TaskController data logger function

GPS-Switch automatic part-width section control



Over or under sowing with manual on/off control without GPS-Switch



Position dependent, automatic control, both on and off, of the electric metering unit via GPS-Switch

GPS-Switch
for all ISOBUS machinery

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

GPS-Switch basic
- Automatic part-width section control for up to 16 part-width sections
- Creation of a virtual headland
- Automated boom lowering with an AMAZONE crop protection sprayer
- Standard with AmaPad 2
- Optional with AmaTron 4

GPS-Switch pro (as an extension of GPS-Switch basic)
- Automatic part-width section control with up to 128 part-width sections, particularly for crop protection sprayers with individual nozzle control
- Marking of obstacles (e.g. water holes, pylons)
- Auto-zoom when approaching the headland
- Standard with AmaPad 2
- Optional with AmaTron 4

Automatic switching on and off of the Primera DMC

If the operating terminal has Section Control, e.g. GPS-Switch part-width section control from AMAZONE, the part-width sections can be automatically switched on and off in relation to the GPS position. Once a field has been created, the driver can concentrate fully on operating the vehicle in automatic mode, since the part-width sections are automatically switched on and off in wedge shaped fields and on headlands.

Benefits of automatic control:
- Relieves stress on the driver
- Increase in precision, especially at night or at higher speeds
- Less overlaps and gaps
- Saving of inputs
- Less crop damage and environmental impact

"With Section Control, the ISOBUS computer takes a lot of work away from the driver."

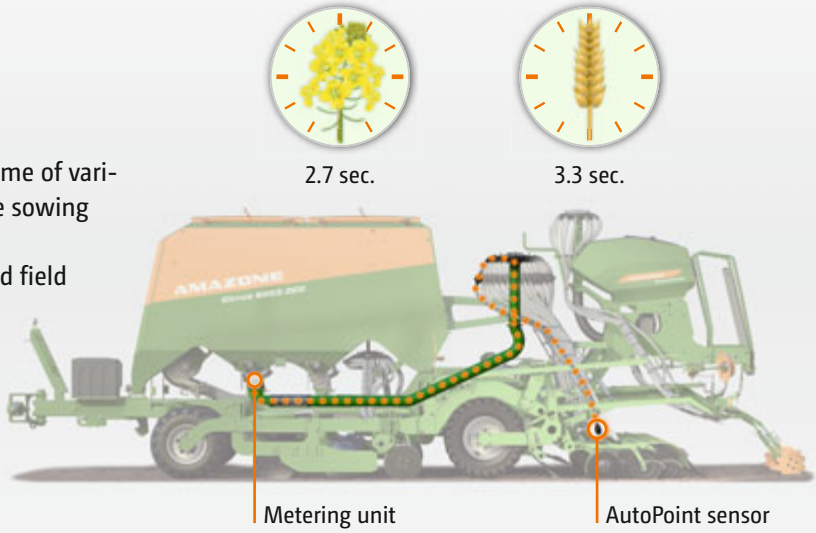
("dlz agrar magazine" – test report ZA-TS fertiliser spreader · 02/2017)

Automatic half-side shut-off with GPS-Switch – for the Primera DMC 9001-2C and 12001-2C

Accurate placement of the seed
To avoid the over and under sowing in critical areas that often occurs in practice, precise sowing is very important. The remedy for the accurate placement is offered by the half-side control which reduces the relevant working width to half so that, especially in short-work and on the headland, a significant saving is achieved. The two halves of the drill each correspond to one controllable part-width section.

Switch time optimisation – GPS-Switch with AutoPoint

- Automatic determination of the conveying time of various seed types from the metering unit to the sowing coulter
- Minimisation of misses and overlaps for good field hygiene
- Minimisation of disease pressure
  ▷ Fewer plant protection measures needed and costs reduced at the same time



Workday made easy –

Make the most of the possibilities!

GPS-Maps&Doc

All standard ISOBUS terminals from AMAZONE can collect and save machine and site-specific data using Task Controller. Part-area, site-specific operation via application maps in the Shape file format and ISO-XML format is also possible.

- Easy creation, loading and processing of jobs
- Start a new task straight away and decide later whether the data is saved or not
- Import and export of jobs in the ISO-XML format
- Job summary via PDF export
- Intuitive system for processing application maps in the Shape file format and ISO-XML format
- Automatic part-area, site specific regulation of the application rate
- Indication of inactive field boundaries and automatic field detection when approaching the area
- Optimum crop management via needs-based application
- Standard with AmaTron 4 and AmaPad 2

GPS-Track

The GPS-Track parallel guidance aid greatly eases orientation in the field, especially on grassland or areas without tramlines.

- With a virtual light bar in the status bar
- Automatic tramline control via GPS for seed drills
- Various track modes such as A-B lines or contour travel
- Standard with AmaPad 2
- Optional with AmaTron 4

AmaCam

Software licence for the display of one camera image on AmaTron 4 and up to two camera images on AmaPad 2.

- Automatic display of the camera image on AmaTron 4 when reversing

GPS-Maps – part-area, site specific application

AmaTron 4

Manager 4 all

Simple 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 operator-friendly AmaTron 4, which offers a noticeably smoother operational process, especially when it comes to job management. AmaTron 4, with its 8" multi-touch colour display, meets the highest demands and offers you maximum user-friendliness. A swipe of the finger or use of the App carousel allows quick changes between applications and the simple and clearly structured operating menu. The practical MiniView, a freely configurable status bar and an integrated light bar make the AmaTron 4 exceptionally easy and convenient to use.

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

Benefits of AmaTron 4:

- Automatic full screen mode when not being touched
- Automatic control button display via a proximity sensor
- Practical MiniView concept
- Operation via touch display or via soft keys
- Particularly intuitive and user-friendly
- Field-related documentation
- Practice-oriented and intelligent menu navigation
- Practical quick-start menu with import/export of job data, help windows, day/night mode and the AUX-N allocation
- 1 camera input and automatic reversing detection
- Free trial period for all chargeable licences
- AmaTron Connect – for optional entry into the digital age

Equipped as standard with:

GPS-Maps&Doc

AmaTron Connect

Connected to your world

A better overview with the AmaTron Twin display enhancement

Communication in real time

With AmaTron Connect, AMAZONE provides a digital interface to a smartphone or tablet. The mobile device and the ISOBUS terminal AmaTron 4 are simply connected as a hotspot.

AmaTron Twin App – Clear display enhancement

The AmaTron Twin App offers the driver even more comfort in work, as GPS functions in the field view can also be operated via a mobile device (e.g. tablet) in parallel with machine operation in AmaTron 4.

Now download the free App and try the DEMO in the App.

Advantages of the AmaTron Twin display enhancement:

- Use of an existing mobile device
- Greater clarity – all applications in sight
- Comfortable control of GPS functions in the field view in parallel via the mobile device
- Clear, authentic representation of the working machine and its part-width sections

Map view with AmaTron Twin – Clear display of the machine and its part-width sections, as well as buttons on the right-hand side of the tablet display

agrirouter –

the independent data exchange platform for agriculture

ready for agrirouter

- Watch the video for more details

Secure data exchange

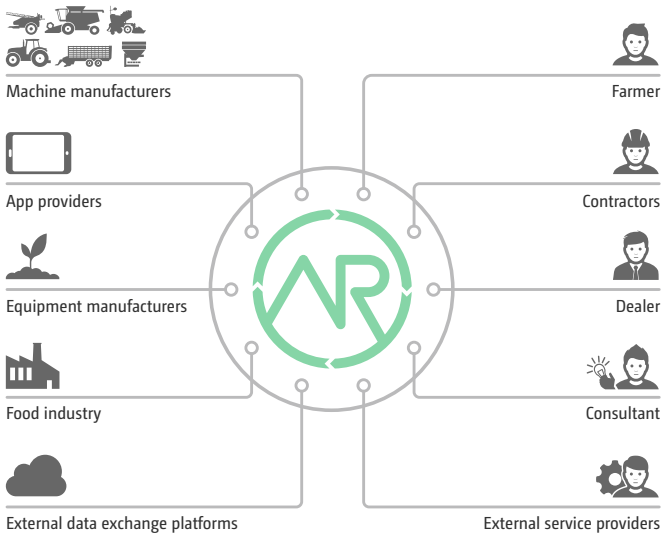
AMAZONE opens the way to universal data exchange by means of the manufacturer-independent agrirouter. agrirouter enables data to be exchanged between AMAZONE machinery, agricultural software providers, other manufacturers and companies both securely and without any complications.

Benefits of the agrirouter:

- Simple and easy handling
- Comfortable and fast transfer
- Full control of your data
- Data is transferred, not stored
- Manufacturer-independent use

myAmaRouter App – Comfortable and simple

The myAmaRouter App enables data to be exchanged between the AmaTron 4 ISOBUS terminal and the agrirouter manufacturer-independent data exchange platform. If an AMAZONE machine is to be used to carry out a task with job data (e.g. application maps), the data can be easily transmitted from the agrirouter to the AmaTron 4 via the myAmaRouter App and sent back after completion.



- The manufacturer-independent agrirouter enables secure and uncomplicated data exchange

Uncomplicated data transfer. Transparent and secure!

Primera DMC 3000

AmaPad 2

An especially comfortable method of controlling agricultural machinery

The most important information at a glance – in full screen mode or in the MiniView

The new dimension of control and monitoring

With AmaPad 2, AMAZONE offers an especially high performance operator terminal. The 12.1" multi-touch colour display is particularly convenient and fulfils the highest demands from Precision Farming. AmaPad 2 is operated solely via touch.

With the practical "MiniView concept", applications which aren't being actively operated at that moment, but need to be monitored, are clearly displayed at the side. When needed, these can be enlarged using "a finger swipe". The possibility of individualising the "dashboard panel" with a choice of display rounds off the user ergonomics.

Benefits of AmaPad 2:

- High-end ISOBUS operator terminal with a large touch display
- Extended MiniView concept enables the simultaneous display of a maximum of four menus
- Quick-start button and integrated light bar
- 2 camera inputs
- Day-night mode

Equipped as standard with:

GPS-Maps&Doc
GPS-Switch basic
GPS-Switch pro
GPS-Track

Two cameras enable continuous monitoring of the surroundings during field work or on the road

AmaPilot^{+} – Everything in one hand!

Thanks to the AUX-N feature, you can operate multiple functions of the machine via AmaPilot^{+} or any other ISOBUS multi-function joystick.

The benefits of AmaPilot^{+}:

- Almost every function directly controlled via 3 levels
- Adjustable palm rest
- Freely-programmable, individual key layout

Overview of ISOBUS terminals	AmaTron 4 	AmaPad 2 
Display	8" multi-touch colour display	12.1" multi-touch colour display
Mode of operation	Touch and 12 soft keys	Touch
Interfaces	Serial interface for GPS 2x USB interfaces	
Sensor connection, e.g. nitrogen sensor	via SCU-L adapter	via SCU-L adapter or PeerControl
Job management and processing of application maps (ISO-XML format and Shape file format)	GPS-Maps&Doc	
Automatic part-width section control (SectionControl**)	GPS-Switch basic * with up to 16 part-width sections or GPS-Switch pro * with up to 128 part-width sections	GPS-Switch basic + pro with up to 128 part-width sections
Parallel guidance aid	GPS-Track * with virtual light bar	GPS-Track with virtual light bar
Automatic track guidance	–	GPS-Track Auto * for the Pantera self-propelled crop protection sprayer
Camera connection / Licence *	1 x camera connection / AmaCam * with automatic reversing detection	2 x camera connections / AmaCam *

* = optional / ** = Note the max. no. of machine part-width sections

The filling auger

Quick and comfortable filling

Primera DMC 9001-2C with filling auger

In order to be able to fill the Primera DMC with both seed and fertiliser, AMAZONE offers a hydraulically-driven filling auger. Using this system the filling time is kept down to just 15 minutes meaning that the output of the drill is even further extended.

The two-piece filling auger is mounted on the back of the machine. The bottom section of the auger, which includes the filling hopper, can be quickly and easily folded up for work and transport. Thanks to the swivelling chute at the top end of the auger, the seed corn can be optimally distributed over the full width of the seed hopper.

With a top lip height of only 70 cm on the filling funnel, the filling auger can be easily filled from a tipping trailer. The trailer just needs to be equipped with a slide and a chute so that the filling operation can be optimally regulated. As an option, AMAZONE also offers lorry trailer outlets.

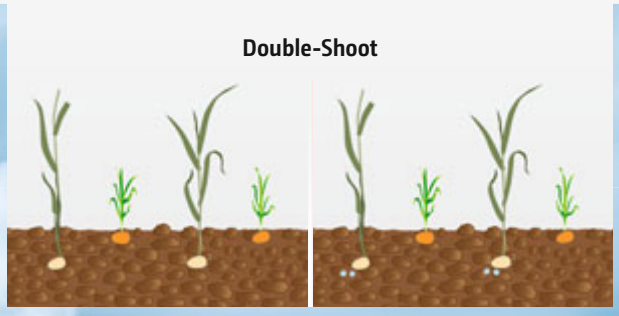
Drive and operation of the filling auger is carried out via the hydraulic system on the tractor. The tractor should have a hydraulic output of at least 50 l/min and requires a pressure-free return.

Technical data of the filling auger

	Primera DMC 3000/3000-C 4500/4500-C 6000-2/6000-2C 9000-2/9000-2C 9000-2C Super 12000-2C	**Primera DMC 9001-2C 12001-2C**
Length (mm)	5,100	6,400
Filling height of the filling auger (mm)	700	700
Hopper dimensions (mm)	L x B x H: 800 x 1,000 x 500	L x B x H: 800 x 1,000 x 500
Filling height of the seed hopper (mm)	max. 3,000	max. 3,000
Weight (kg)	450	450
Capacity (t/h)	30	50

GreenDrill 501

Universal catch crop seeder box with a hopper capacity of 500 l for Primera DMC 3000/-C and 6000-2/-2C



GreenDrill 501 on the Primera DMC 6000-2C:
suitable for undersown crops, catch crops or slug pellets

Primera DMC 6000-2C with GreenDrill 501

Comfortable, flexible and precise

The GreenDrill seeder box is the ideal solution for sowing catch crops or the under-sowing of a secondary crop in just one operational pass. The GreenDrill seed hopper, which is safely accessed via steps has a capacity of 500 l. The seed is distributed over the entire area via distribution rails in front of the harrow.

Benefits of GreenDrill:

- Sowing catch crops and fine seeds simultaneously with stubble cultivation or soil tillage
- Metering rollers available for different seed rates and types
- Full-width broadcasting via the baffle plates in front of the harrow
- Easily filling via access steps
- Machine control via ISOBUS interface

Machine control via ISOBUS

Control of the GreenDrill can be achieved in various ways, depending on the machine onto which the GreenDrill has been mounted. For example, if the GreenDrill 501 is mounted on a Primera DMC with an ISOBUS electronic system, it is fully integrated in the electronic system of the Primera DMC as an "ISOBUS participant". The GreenDrill is shown in the controls of the machine operating section of the terminal as a second or third seed hopper with metering unit.

Accurate electrical metering

The metering of the seed is carried out by an electrically-driven metering unit. The electric drive facilitates easy setting of the seed rate using the ISOBUS terminal in the tractor cab. Alternatively, the electric drive can also be controlled fully automatically using application maps. It is furthermore possible to calibrate the system at the push of a button and to do pre-metering in field corners.

- Fully integrated operation of the GreenDrill 501 using the AmaTron 4 ISOBUS terminal or any ISOBUS terminal

Easy change of the metering cassettes for different seed rates and types

FDC 6000 Fertiliser Delivery Cart

Accurate and reliable application of liquid fertiliser directly when sowing

FDC 6000 with Primera DMC 12000-2C seed drill

AMAZONE developed the FDC Fertiliser Delivery Cart especially for dry farming locations. It can be used in combination with the Primera DMC seed drill, the Condor seed drill, the Citan seed drill or the EDX precision air seeder. The Cart is hitched between the tractor and the towed seed drill. A pump with friction wheel drive transports the liquid fertiliser to the sowing coulters, which apply it to the soil. This combination is used to carry out sowing and starter fertilisation in a single pass. Liquid fertilisation in direct combination with sowing promotes early growth and saves an additional pass. The application of granular fertiliser is approaching its limits in these dry areas. Liquid fertiliser is immediately and fully available to the young plants at the start of their growth phase.

A combination of the FDC and a seed drill with its own granular fertiliser tank, even allows for the simultaneous application of liquid fertiliser and mineral fertiliser in a single pass. Each plant can therefore be provided with nutrients, according to the environmental conditions, in an optimum way.

FDC 6000 with EDX 9000-TC precision air seeder

FDC 6000 with 6,000 l tank capacity and two 300 l fresh water tanks – excellent manoeuvrability on the headland, in order to drive track-to-track

Chassis and drawbar

The weight is optimally distributed on the ground by the large contact area of the two over-dimensioned 800/45/26.5 tyres, so that the soil is protected. The tractor is attached to the fertiliser tank via a Cat. 3, 4 or K700 lower link cross shaft using a drawbar eye or a ball point coupling as required. The drawbar has additional ballast weights as standard equipment to achieve optimal weight distribution and to improve the traction of the tractor. The drawbar has a hydraulic cylinder fitted as standard for connecting and disconnecting the seed drill and for horizontal levelling of the machine. The drawbar has a hose rail fitted as standard, where the hydraulic hoses and electrical power connections can be neatly stowed after disconnecting the cart.

The rear of the FDC sports a lower link cross shaft to which the trailed seed drill can be quickly connected.

The entire combination, consisting of the FDC and the seed drill, is an easily-manoeuvrable unit that allows driving pass on pass, despite its length on the headland.

Large-capacity liquid fertiliser tank for high output levels

The FDC Fertiliser Delivery Cart consists of two liquid fertiliser tanks, each having a 3,000 l capacity, i.e. a total tank capacity of 6,000 l. At an application rate of 60 l/ha, one tank is sufficient for 100 ha, which corresponds to one dayshift on large farms. The two liquid fertiliser tanks have as standard fill level indicators so that the driver can always monitor the fill level. In addition to the fertiliser tanks, the FDC Fertiliser Delivery Cart is equipped with two 300 l fresh water tanks, so that the entire Cart, including the pump and hoses, can be cleaned intermittently by flushing with water. All the tanks can be safely accessed from a working platform and have a large tank opening.

The FDC Fertiliser Delivery Cart can be combined with these seed drills:

- EDX 9000-TC precision air seeder

- Primera DMC direct seed drill

- Citan seed drill

- Condor 12001-C/15001-C direct seed drill

FDC 6000
Additional pulling power requirement of 50 HP

Neat routing of the fertiliser hoses to the outlet on the chisel openers of the Primera DMC

Easy-to-use control panel on the FDC 6000 for reliable application

Accurate metering and simple operation

The FDC Fertiliser Delivery Cart is equipped with a speed-related spray fluid pump which allows for very accurate metering of application rates between 40 and 300 l/ha. Accurate control is achieved by the AmaSpray^{+} operating computer. Working speeds up to 20 km/h can be achieved. The Fertiliser Delivery Cart is filled by a separate, motor-driven filling pump with a filling rate of 500 l/min.

The liquid fertiliser is pumped through hoses to the coulters on the seed drill. The fertiliser hoses are carefully routed and they are protected by protective cladding from stone impacts and damage. The liquid fertiliser is applied through a special outlet at the sowing coulter. In order to prevent dripping at the headland, each outlet is equipped with its anti-drip diaphragm. Each outlet also has an appropriately-large metering disc, depending on the application rate.

The liquid circuit is very easily operated using the control panel on the left-hand side of the machine, which is already familiar from the AMAZONE crop protection technology. Suction and pressure filters in the liquid circuit remove impurities in the liquid fertiliser and ensure high application reliability.

Technical data:

	FDC 6000
Transport width (mm)	3,270 (with tyres 800/45 26.5) 3,000 (with tyres 700/50 26.5)
Transport height (mm)	2,990
Transport length (mm)	6,150
Tank capacity (l)	6,000
Tank capacity (l) fresh water	600
Additional power requirement (kW/PS)	37/50

FDC 6000 with Primera DMC 9001-2C seed drill in the transport position

Applications

The primary areas of application for the FDC Fertiliser Delivery Cart are in dry agricultural areas. Starter fertilisation via liquid does not draw as much residual moisture out of the soil, since the fertiliser does not first have to be dissolved to be available to the plants.

The rapid availability and better usability of liquid fertiliser, even at low temperatures, is another point that recommends liquid fertilising. The application of liquid fertiliser with the seeding operation promotes plant growth and quickly provides dense plant coverage. This reduces the weed pressure and thus reduces plant protection agent consumption. Rapid development at an early stage also has a positive influence on the yield.

Application results from the 2018 season in Russia

We applied AHL liquid fertiliser when sowing rape, malting barley, peas and soya beans. The seed drill combination consisted of the Primera DMC 9000 linked to an FDC 6000 Fertiliser Delivery Cart. The application rates were of the order of 60 l/ha, so that we were able to treat an area of 100 ha. The tractor in the combination developed 320 HP. The driving speed was between 13 and 15 km/h.

The plant development with the support of AHL liquid fertiliser was clearly better than in the areas without AHL. The bright green colour of the plant is an indicator of good nutrient supply. The plants with AHL fertilisation also show much more advanced plant growth.

With AHL fertilisation

Without AHL fertilisation

Left with AHL fertilisation, right without AHL fertilisation

The realisation of a good idea

Mulch or direct sowing

Continuously dropping profits result in many farmers thinking seriously about costs, especially those relating to crop establishment. Cost favourable production systems now require even more radical thinking in view of the extremely efficient techniques already implemented. Quite often the necessary profits from farming can only be maintained or increased by means of continuing or increasing rationalisation measures.

In modern crop establishment mulch and direct sowing systems can no longer be disregarded as it creates the most cost favourable crop production.

The state of preparation to introduce either a mulch or direct sowing system depends mainly on the following factors:

- Soil conditions
- Crop rotation
- Management
- Economic situation of agriculture

At least one third of all arable land in Europe can be sowed directly. The majority could be cultivated using mulch or direct sowing in good arable areas with traditional crop rotations.

Primera DMC 12000-2C

Project leader:
Prof. h.c. Univ. Samara **R A S** Dr. Dr. h.c. Heinz Dreyer

Science confirms our practical experience that mulch or direct sowing should start within the crop rotation following a root crop or pulses. Many practical comparisons have also led to this conclusion as the optimum time to introduce direct sowing.

Mulch and direct sowing of winter wheat following sugar beet, rape or maize is one of the best examples of the success that can be achieved in these early years. Without any change to fertiliser and crop protection measures in the first year repeatedly higher yields are noticeable with this sowing system. The emergence of grass weeds in addition to other weeds can sometimes be observed in the following years. If necessary, these must be controlled by means of good crop rotation or with special plant protection agents.

Mulch and direct sowing – no ideology, but a consequence of an economic and ecological decision process which can be influenced by you yourself.

Sales management Russia:	Dimitri Gujo
Primera DMC design engineers:	Dipl. Eng. Viktor Schwamm Dipl. Eng. Michael Tröbner
Technical drawings:	Petra Brünen
Product manager:	BERND LUMMER
Head of the experimental department:	Hubert Vollmer
Research & Development technician:	Fabian Windhorn
Responsible for the product line and project leader:	Prof. h.c. Univ. Samara **R A S** Dr. Dr. h.c. Heinz Dreyer
Technical director:	Dr. Justus Dreyer

Research in Russia

For several years now AMAZONE has been researching and developing in situ in Russia. Especially in cooperation with the government agency Agrarian Academy Samara and some of the larger estates in this region comprehensive trials regarding procedures, higher outputs and the strengths and weaknesses of machines and specific machine components were carried out and analysed. These trials results have now been incorporated into the technical development of, for example, the new Primera DMC and have made a considerable contribution towards its huge productivity and excellent reliability. Machines made by AMAZONE to cope with huge outputs have to be and indeed are tested and evaluated on these large-scale farms.

Heinz Dreyer
Prof. h.c. of the Samara State Agricultural Academy
Member of the International Agricultural Academy Moscow
Dipl. Eng. Technical University of Munich (1956)
Dr. agr. of the Justus Liebig University Gießen
Dipl. Eng. Univ. Technical University Munich (1985)
Dr. h.c. of the University of Hohenheim
May 2008: Awarded silver order of merit from the Russian ministry of agriculture
May 2009: Awarded the (golden) VDI medal of honour (Association of German Engineers)
February 2012: Selected to be "Foreign team member at the Russian Academy for Agriculture RAAS" (today **R A S**)
May 2012: Holder of the Order of GORYACHKIN Moscow State University of Agriculture
Member of the management board and shareholder of AMAZONEN-WERKE H. Dreyer GmbH & Co. KG

Technical data:

Primera DMC large area seed drill

Primera DMC 3000

Primera DMC 3000/-C, 4500/-C, 6000-2/-2C, 9000-2/-2C, 9000-2C Super und 12000-2C

Model		Primera DMC 3000/3000-C	Primera DMC 4500/4500-C	Primera DMC 6000-2/6000-2C	Primera DMC 9000-2/9000-2C	Primera DMC 9000-2C Super	Primera DMC 12000-2C
Working width (m)		3.00	4.50	6.00	9.00	9.00	12.00
Transport width (mm) Optional with transport kit		3,225 3,000	4,725 4,500	3,225 3,000	4,725 4,500	4,725 4,500	4,725 4,500
Transport height (mm)	– without filling auger	3,600	3,600	3,800	3,800	3,800	3,800
	– with filling auger	4,000	4,000	4,000	4,000	4,000	4,000
Seed and fertiliser hopper capacities (l) (3/4 seed – 1/4 fertiliser)		4,200	4,200	4,200	4,200	6,000	6,000
Seed and fertiliser hopper (l)	– with extension 800 l	5,000	5,000	5,000	5,000	–	–
	– with extension 1,200 l	–	–	–	–	7,200	7,200
	– with extension 1,600 l	5,800	5,800	5,800	5,800	–	–
	– with extension 2,400 l	–	–	–	–	8,400	8,400
Total weight (empty) (kg)		4,800	5,600	6,400	10,600	11,000	15,000
Weight (full) (kg)	– without extension	8,200	9,000	9,800	14,300	19,000	20,100
	– with extension 800 l	8,800	9,600	10,400	14,900	–	–
	– with extension 1,200 l	–	–	–	–	19,900	21,000
	– with extension 1,600 l	9,400	10,200	11,000	15,500	–	–
	– with extension 2,400 l	–	–	–	–	20,800	21,900
Linkage		trailed	trailed	trailed	trailed	trailed	trailed
Number of openers		16	24	32/24	48/36	48/36	64/48
Number of opener modules		4	6	8	12	12	16
Spacing between the coulter (mm)		840	840	840/1,120	840/1,120	840/1,120	840/1,120
Row spacing (cm)		18.75	18.75	18.75/25.00	18.75/25.00	18.75/25.00	18.75/25.00
Spacing of openers in one row (cm)		75	75	75	75	75	75
Ground clearance at the openers (mm)		500	500	500	500	500	500
Central depth control for each coulter module		yes	yes	yes	yes	yes	yes
Coulter pressure (constant) (kg/coulter)		52	52	52	52	52	52
Operational speed (km/h)		15–18	15–18	10–18	10–18	10–18	10–18
Tractor pulling power from (kW/PS)	Row spacing (cm) 18.75	60/80	95/130	133/180	200/270	215/290	280/380
	Row spacing (cm) 25.00	–	–	118/160	185/250	200/270	260/350
Recommended tyre size		700/45-22,5 PR	700/45-22,5 PR	700/45-22,5 PR	700/45-22,5 PR	800/45-26,5 PR	800/45-26,5 PR

Illustrations, content and technical data are not binding! Deviations of technical data are possible depending on the equipment. The illustrations may deviate from the requirements for local road traffic regulations.

Primera DMC 12001-2C

Primera DMC 9001-2C and 12001-2C

Model		Primera DMC 9001-2C	Primera DMC 12001-2C
Working width (m)		9.00	12.00
Transport width (mm) Optional with conversion kit		4,725 4,500	4,725 4,500
Transport height (mm)	– without filling auger	4,000	4,000
	– with filling auger	4,000	4,000
Seed and fertiliser hopper capacities (l) – Variant 1: Seed without fertiliser – Variant 2: 3/4 seed – 1/4 fertiliser – Variant 3: 1/2 seed – 1/2 fertiliser		13,000	13,000
Total weight (empty) (kg)		15,000	19,000
Weight (full) (kg)		27,000	30,000
Linkage		trailed	trailed
Number of openers		48/36	64/48
Number of opener modules		12	16
Spacing between the coulter units (mm)		840/1,120	840/1,120
Row spacing (cm)		18.75/25.00	18.75/25.00
Spacing of openers in one row (cm)		75	75
Ground clearance at the openers (mm)		500	500
Central depth control for each coulter module		yes	yes
Coulter pressure constant (kg/coulter)		52	52
Operational speed (km/h)		10–18	10–18
Tractor pulling power requirement from (kW/HP)	Row spacing (cm) 18.75	235/320	320/430
	Row spacing (cm) 25.00	220/300	295/400
Recommended tyre size		850/50-30,5 PR	850/50-30,5 PR

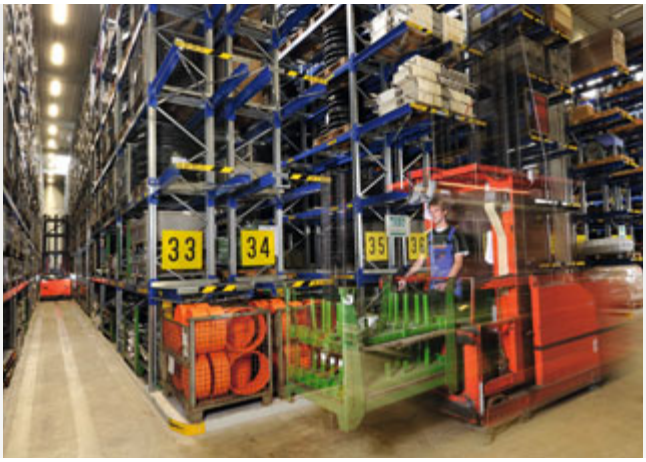
AMAZONE – always in your vicinity

Your satisfaction is our challenge

AMAZONE SmartService 4.0

Due to the increasing use of evermore complex machine technology, AMAZONE utilises, with the SmartService 4.0, both virtual and augmented reality as well as digital media for service, training and maintenance advice.

1. **SmartTraining:** Training and instruction in the use of complex machinery by using Virtual Reality technology (VR).
2. **SmartLearning:** Interactive driver's training for the user for complex machinery operation (www.amazone.net).
3. **SmartInstruction:** Repair or maintenance instructions using Augmented Reality (AR) and mobile terminal equipment.
4. **SmartSupport:** Direct local support from the service technician via Augmented Reality (AR) and mobile terminal equipment.



The satisfaction of our customers is the most important objective

We rely on our expert sales partners for this. Also for service queries they are the reliable contact partner for farmers and contractors. Due to continuous training, our sales partners and service technicians are always up to date when it comes to looking after our state of the art technology.

We provide you with a first class spare parts service

The spare parts warehouse in Tecklenburg-Leeden is the basis for our worldwide spare parts logistics system. This ensures optimum availability of spare parts, even for older machines.

Orders for parts in stock at the Tecklenburg-Leeden spare parts centre which are placed by 5 p.m. leave our premises the same day. 40,000 different spare parts and wearing metal parts are handled and stored via our modern warehousing system. Up to 800 orders are sent out to customers every day.

Better to choose the original right from the start

Your machines are subjected to extreme use! The quality of AMAZONE spare parts and wearing metal offers you the reliability and safety you need for efficient soil tillage, precise sowing, professional fertilisation and successful crop protection.

Only original spare parts and wearing metal parts provide the durability and functionality expected from AMAZONE machinery. This guarantees an optimum work result. Original parts at fair prices pay for themselves in the end.

Therefore, make your decision the original!

The advantages of original spare parts and wearing metal parts

- Quality and reliability
- Innovation and efficiency
- Immediate availability
- Higher resale value of the used machine

AMAZONE

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