

Clever farming



Intelligent farm management - for more success



Digital agricultural technology

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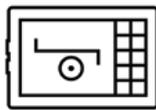
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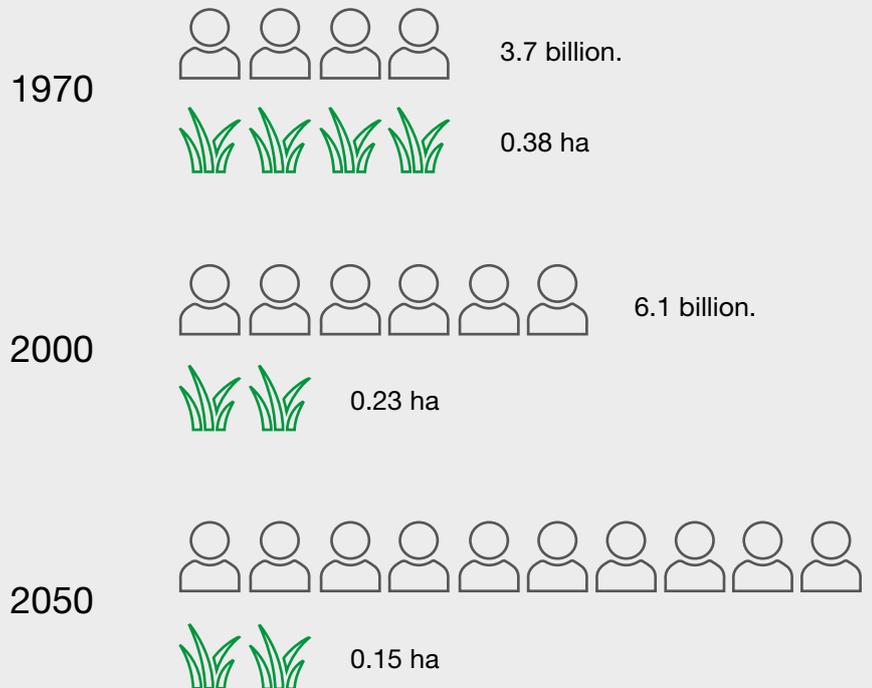
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All information on technical data, dimensions, weights, output, etc. and the images shown, are approximate and are not binding. The machines shown do not feature country-specific equipment and may include equipment that is not supplied as standard, or is not available in all regions. Your PÖTTINGER dealership would be pleased to provide you with more information.

The importance of digital agricultural technology

Area of agricultural land available per capita*



Agriculture in transition

Today's professional farmers have to face increasingly greater challenges: increasing operating costs, climate change strict reporting regulations and higher capital investments to name just a few. Agriculture is currently dependent on a range of factors that have significantly changed the industry and will continue to do so in the future.

Rapidly growing world population

A glance at the statistics indicates: In the 1970s there were about half as many people on Earth as there are today. And this trend is continuing: Over the next 50 years, experts believe that the Earth's population will rise to over ten billion people. More than ten billion people who need to be fed.

Increasing productivity

Agriculture has changed enormously in the last century. While a farmer was able to feed 15 people in 1950, it is estimated that he will need to be able to feed between 150 and 200 people by 2020. Mechanisation, progress in breeding and also digitalisation are some of the milestones that have supported this development.

Decreasing agricultural area

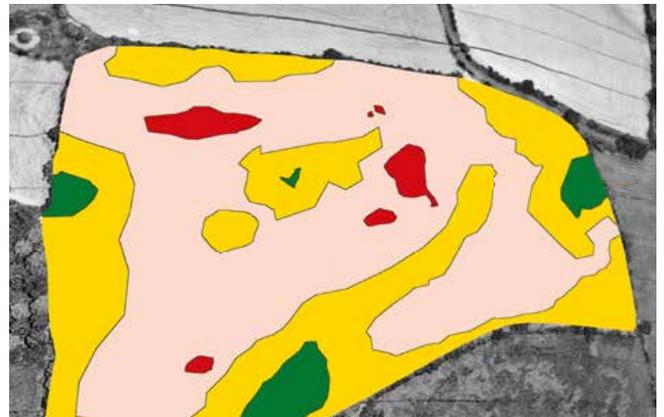
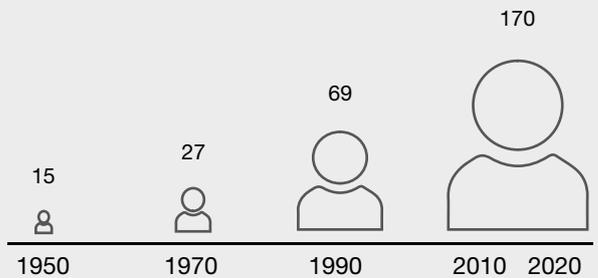
The ongoing increase in building and road construction has led to the area of agricultural land per capita being more than halved compared to 1970. This means less than half of the original farming area for twice as many people.

(Source: www.statista.com)

9.8 billion.

* Source: www.statista.com

Number of people fed per farmer*



Digitalisation in agriculture

Digitalisation is about converting analog values into digital formats. Data can then be obtained, stored and used for information purposes.

This means, for example, that your PÖTTINGER seed drill can tell you the size of the area it covered during its last job. You need this information for your documentation.

In return, you can use suitable software to tell your seed drill where and how much seed it should sow in order to make optimum use of your soil conditions. At the same time, your tractor-trailer combination documents all job information and sends data live directly to your documentation system in the office. This is referred to as a networked form of digitalisation, which already exists.

The significance of precision farming

In order to meet the challenges of the future, agriculture must be fit for purpose and efficient. Less agricultural land for a larger global population means that the available land must be used in the best possible way, i.e. extremely precisely. "Smart Farming", "Agriculture 4.0", "Precision Farming" are common terms in practice that point in this direction and all want to achieve roughly the same thing:

- Site-specific processes and precision management of farmland ...
- ... taking into account biotic (e.g. potential pests) and abiotic (e.g. soil composition, temperature) factors within each field.

The prerequisite for precision farming is that data can be exchanged between each piece in the puzzle (human, machine, software, etc.) and processed for information purposes. This in turn requires digital and networked communication.

The advantages of digital agricultural technology



Making your working day easier

Machines are becoming more and more precise and can perform several tasks simultaneously. The range of farming software and apps available is increasing. Sometimes you wonder what all these digital solutions for machines and offices are supposed to do.

Ultimately, it's all about making your job easier and enjoying economic benefits through the use of intelligent technologies. This means more convenience, time and profit.



Efficient farm management

Digital agricultural technology gives you an advantage in every aspect of optimising your farm processes:

- In the arable sector, the use of precision farming technologies ensures that resources are used exactly where they are required for each crop. The application of seed, fertiliser and plant protection can be precisely adapted to site-specific requirements. Resources are then used specifically and the plants have optimum growth conditions so that your yield is maximised.
- Simplified data transfer and automatic documentation of work in the field save you valuable time in the office.
- With the help of intelligent farm management and information systems (FMIS), you can make the best possible use of your machinery.



Increased ease of operation

As a farmer you have a responsible job and are bound by given factors such as soil conditions and the weather. A working day can be a long one, so it is good to be able to rely on intelligent solutions that will take the stress out of your work.

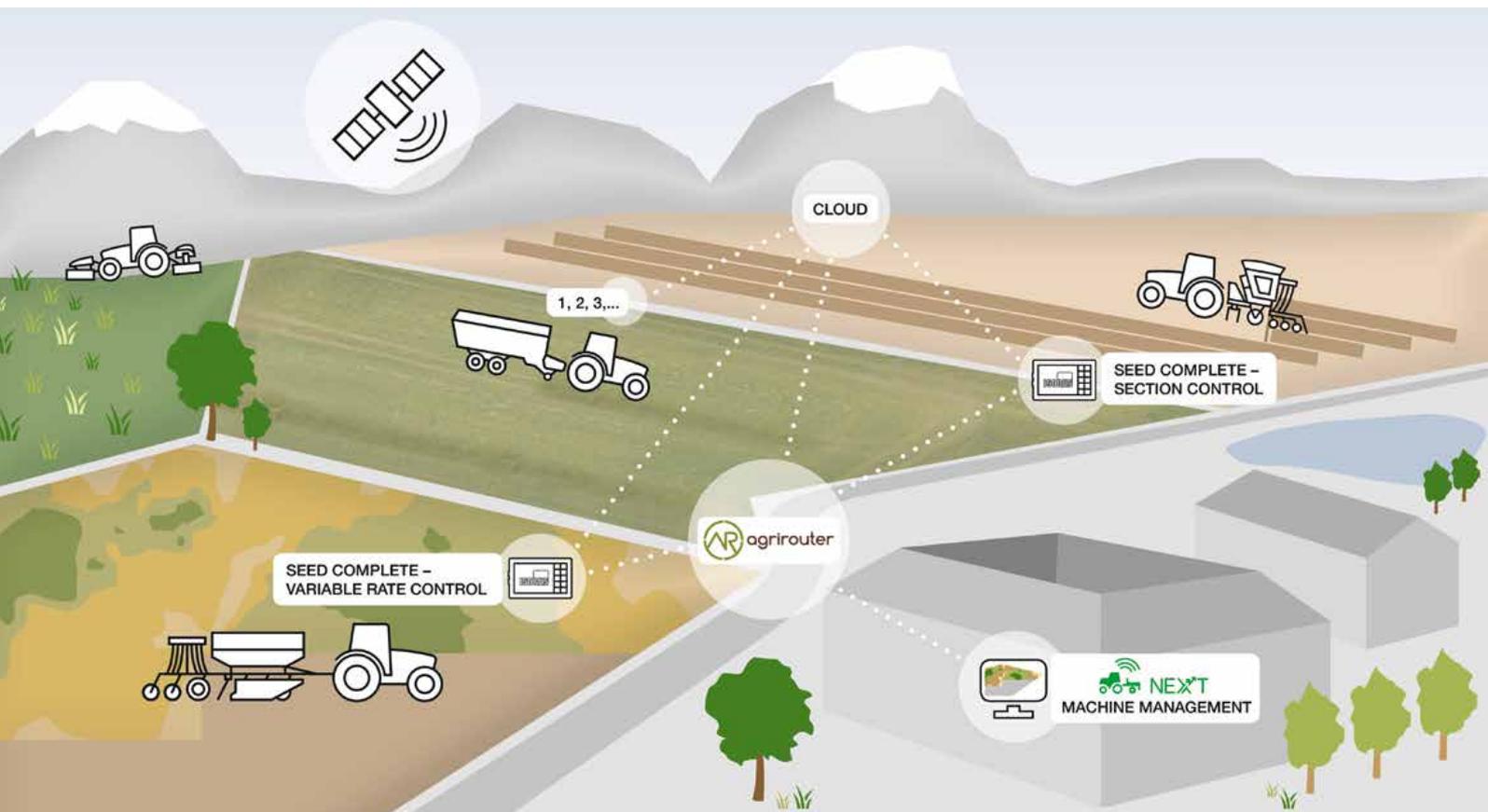
As machines become more intelligent and precise, drivers can concentrate on the essentials. For example, your seed drill can switch on and off automatically, depending on its position in the field.



Responsible use of resources

Especially in times when the extent of climate change is more than evident within agriculture, it is important that resources are used responsibly. Crop failures due to prolonged dry periods or extreme weather conditions are no longer uncommon and take place right on your doorstep. Such risks are difficult to calculate - so it is good if you can make savings elsewhere. With intelligent precision farming solutions, you can use your machines with the greatest possible efficiency and save expensive resources. This protects your wallet and the environment.

Our contribution to digital agricultural technology



Competence in the digital field

At PÖTTINGER, we offer you numerous possibilities in the field of digital agricultural technology that make your everyday work easier. As a result this enables you operate more efficiently and conveniently.

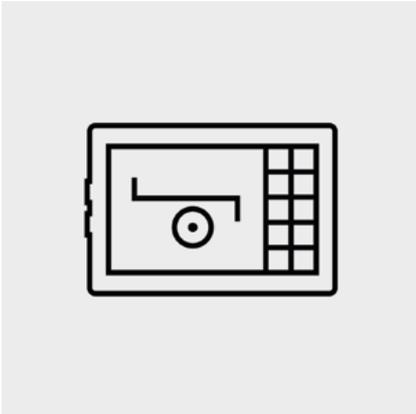
For years, our customers have benefited from intelligent control terminals and precision farming solutions for soil and seed, grassland and harvesting technology. We also promote digital features in data management. Together with PÖTTINGER, being a modern, networked company becomes reality.

We influence the future

PÖTTINGER is a member of several organisations that promote intelligent solutions for digital and networked agriculture. The aim is to achieve manufacturer-independent standards.

- AEF (**A**gricultural Industry **E**lectronics **F**oundation): Focus on ISOBUS, farm management and information systems (FMIS) and more (see page 13)
- CCI (**C**ompetence **C**enter **I**SOBUS): Development of innovative agricultural electronics (see pages 10 - 15)
- DKE-Data GmbH & Co. KG (**D**aten, **K**ommunikation und **E**ntwicklung): Development of the agrirouter as a cross-manufacturer and cross-product data exchange platform (see pages 48 - 49)
- NEXT Machine Management: Agricultural software for intelligent networking of mixed fleets and documentation of manufacturer-independent machine data (see pages 50 - 51)

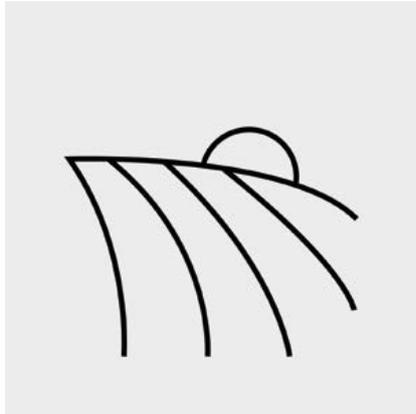




Intelligent control

The development of our terminals focussed on maximum operating convenience, ergonomics and automation of each working step. The result is a range of control systems to suit your equipment, from electronic preselect controls through to fully integrated ISOBUS terminals.

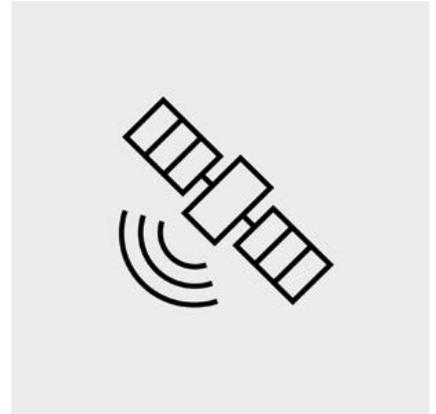
Our new CCI 1200 ISOBUS terminal sets new standards in intelligent operation.



Precision work

Efficient farming requires care. To be able to work carefully, you need machines that are well equipped for precision farming.

Site-specific drilling (VARIABLE RATE CONTROL), automatic partial width switching (SECTION CONTROL) and steering angle-dependent side shifting on the mower are just a few examples of how you can get even more out of your business with the help of PÖTTINGER machines.



Data management

Digital data quickly accumulates in large quantities. And, until recently, some data interfaces posed an additional challenge. This requires intelligent handling of data.

At PÖTTINGER we work together with other manufacturers of agricultural machinery to ensure that your data is easily and conveniently transferred from A to B. agrirouter is a central tool for this. The manufacturer-independent data exchange platform enables wireless data transfer between machines and agricultural software of different brands. For documentation purposes, for example, current output flow rates can be transmitted directly from the terminal to the office during drilling. Another joint development has been successful with NEXT Machine Management - an application of the farm management system NEXT Farming, which intelligently networks mixed fleets. This gives you the capability to use machine data for documentation purposes, regardless of the make of the machine.

A shared language



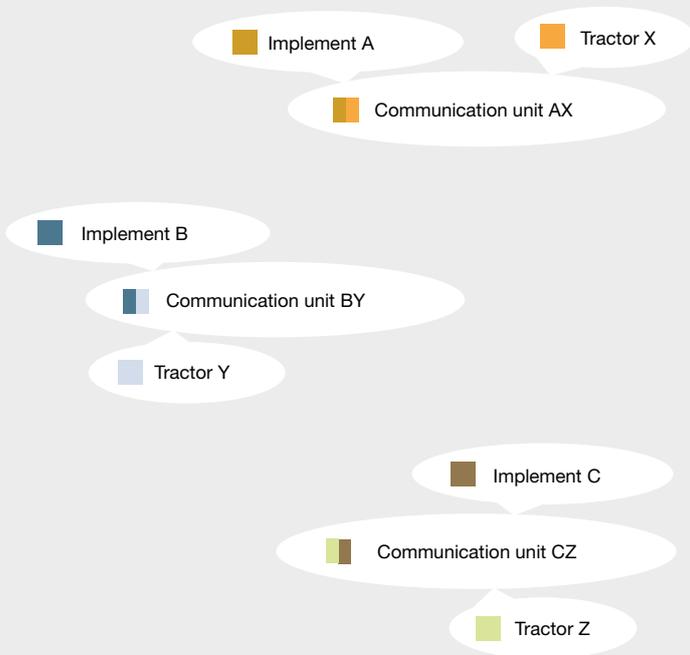
How machine and tractor communicate, even if they are from different manufacturers

Communicating in a common language is what stands behind the term ISOBUS. The need for this stemmed from the fact that each agricultural machinery manufacturer originally developed its own electronics solution. This was an obstacle for any farmer whose machinery consists of equipment from different manufacturers.

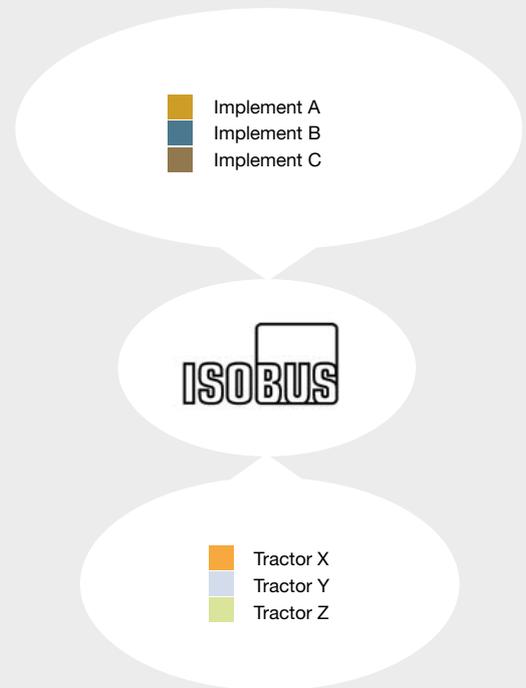
ISOBUS refers to the standardised communication system between tractor and implement using standardised hardware and software that is not limited to a single manufacturer: This really makes your daily work a great deal easier.

A shared language

Without ISOBUS

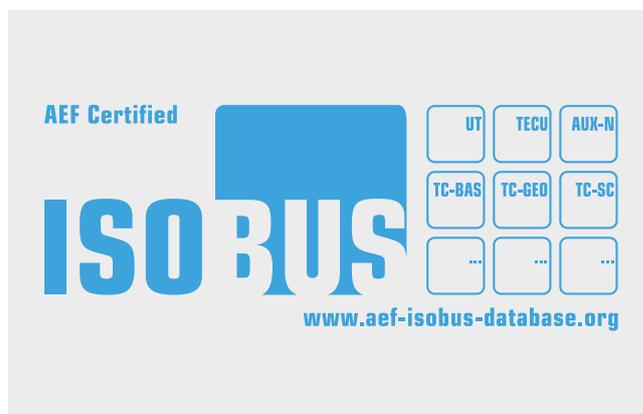


With ISOBUS



The need for standardised communication

Electronics make agricultural equipment smarter and more efficient. In the past, however, each manufacturer relied on its own (proprietary) solutions when it came to electronics. This made special modifications necessary for each combination of tractor and implement. As long as each manufacturer uses different electronics, a separate terminal is required for each implement and for the tractor. Three or four different terminals in the tractor cab were not uncommon. Complexity took over.



ISOBUS and the role of the AEF

At the beginning of the 1990s the first efforts were made in agricultural engineering to standardise the communication between tractor and implement across manufacturers. This was when the term ISOBUS came into play. The term ISOBUS is composed as follows:

- ISO (International Organisation for Standardisation): An independent organisation with the task of developing and implementing international standards
- BUS (system for data transmission)

ISOBUS therefore describes a standardised system for data transmission between the machine and the tractor. The basis for this is the standard ISO 11783 "Tractors and machinery for agriculture and forestry - Serial control and communications data network".

To promote international acceptance and awareness of ISOBUS technology, various agricultural equipment manufacturers, including PÖTTINGER, formed the AEF (Agricultural Industry Electronics Foundation) in 2008. Together, the consortium is successful in optimising the way hardware and software work together across different brands.

More convenience using ISOBUS

ISOBUS eliminates isolated solutions by establishing a standardised, compatible connection between tractor and implement, which should work with all combinations using "plug and play": Simply plug the ISOBUS plug into the ISOBUS socket and you are ready to go. A single ISOBUS terminal replaces the large number of implement-specific terminals inside the tractor cab.

ISOBUS technology standardises not only the communication between tractors and implements, but also the data transfer between agricultural machinery and farm office software. ISOBUS is therefore the foundation for networked agricultural operations. Precision farming and intelligent data management would not be possible without ISOBUS.

(Source: www.aef-online.org)

A shared language



The right solution for every requirement

A modern ISOBUS system consists of various components, including tractor, terminal and implement. It always depends on what the terminal and attachments are able to do in each situation and what equipment options have been installed. This is where the ISOBUS functions come into play.

ISOBUS functions are independent modules or building blocks within the ISOBUS system. These work as soon as they are included in all the components involved.



1 UT: Universal Terminal

This basic function enables you to operate an implement using any terminal or to use a terminal to operate different farm implements. A single ISOBUS universal terminal replaces the large number of implement-specific terminals inside the tractor cab. Every implement can work with every terminal, as long as they support ISOBUS. All ISOBUS implements can be operated using one terminal, regardless of whether it is made by a tractor manufacturer or an implement manufacturer.



2 TECU: Basic Tractor ECU

The tractor ECU is the tractor's job computer. Information such as driving speed, PTO speed, etc. is provided centrally via the ISOBUS.

3 AUX-N: Auxiliary Control

This function is for additional control elements that facilitate the operation of complex devices, such as a joystick or, on the implement, the possibility of controlling functions using an additional control.

ISOBUS functions



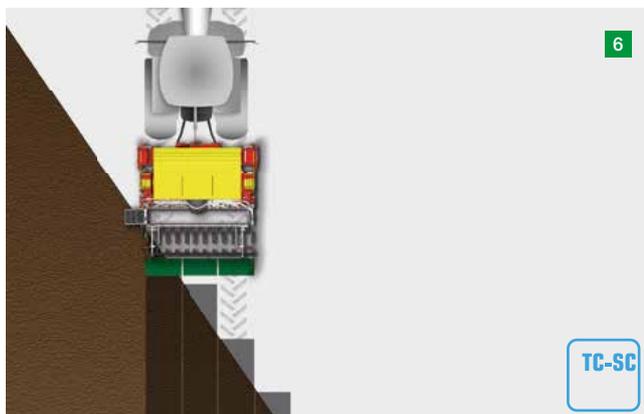
4 TC-BAS: Task Controller - basic

The task controller basic takes over the documentation of total values that are meaningful with regard to the work carried out (see page 28). The device provides the values. Data exchange between the field indexing software and the task controller (TC-BAS) takes place using the standardised ISO-XML data format. This makes it easy to import orders into the task controller and / or export the finished documentation afterwards.



5 TC-GEO: Task Controller - geo-based

This module offers the possibility to collect site-related data or to plan site-specific orders, using application maps for example. This function is relevant for VARIABLE RATE CONTROL (see page 29).



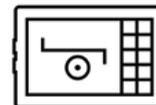
6 TC-SC: Task Controller - Section Control

TC-SC enables the automatic switching of part width sections, e.g. on seed drills, depending on GPS position and the required degree of overlap (see page 29). SECTION CONTROL can bring you higher yields with a simultaneous saving of 5 to 10% on the cost of materials.

(Source: www.aef-online.org)

Intelligent operation





More relaxed at work

PÖTTINGER's convenient control terminals make sure you have everything under control, even after a long day in the field. The development of our terminals focussed on maximum operating convenience, ergonomics and automation of each working step. The result is a range of control systems to suit your equipment, from electronic preselect controls through to fully integrated ISOBUS terminals.

Convenient operation without ISOBUS

- SELECT CONTROL
- COMPASS CONTROL
- DIRECT CONTROL
- POWER CONTROL
- POWER CONTROL Wireless

ISOBUS terminals

- EXPERT 75
- CCI 1200

Intelligent control



1

Convenient operation without ISOBUS

The CONTROL terminals made by PÖTTINGER make your day in the field easier. Intuitive machine operation is ensured by the clearly labelled keys and the ergonomic design. This enables stress-free work, even on long working days. The backlit keys and adjustable brightness display ensure safe operation even at night.

1 SELECT CONTROL

With the electronic preselect system SELECT CONTROL, the functions of the implements to be operated can be preselected and then carried out using the tractor's spool valves. SELECT CONTROL is used for mowers, loader wagons and balers.



2

2 COMPASS CONTROL

The COMPASS CONTROL on-board computer was specially developed for PÖTTINGER VITASEM and AEROSEM seed drills. The terminal controls and monitors functions such as tramlining, calibration test, hopper level, hectare counter and speed.



3

3 DIRECT CONTROL

The convenient electronic DIRECT CONTROL system is used especially for the PÖTTINGER loader wagon range without unloading beaters. The functions are performed directly at the push of a button without pre-selection or an additional control unit. The display provides information about the functions and status of the loader wagon.



4

4 POWER CONTROL

With the POWER CONTROL terminal you can operate all ISOBUS-compatible PÖTTINGER machines. The functions are performed directly at the push of a button without pre-selection or an additional control unit. The most important keys are labelled directly with the machine specific functions, this helps operators regardless of whether they have used the machine before or not.

The function keys F1 to F4 can be used to operate additional equipment on your machine. The colour display provides at-a-glance information on functions and the operating status of the machine.

CONTROL terminals



5 POWER CONTROL Wireless

POWER CONTROL Wireless enables convenient operation of the loader wagon even outside the tractor cab up to a range of 100 metres. The holder doubles as the charging station. This makes the terminal a reliable support for the farmer even during long days in the field.

	SELECT CONTROL	COMPASS CONTROL	DIRECT CONTROL	POWER CONTROL	POWER CONTROL Wireless
Mowers					
NOVACAT X8	■	-	-	□	-
NOVACAT X8 COLLECTOR	-	-	-	□	-
NOVACAT A9	■	-	-	-	-
NOVACAT A10	■	-	-	□	-
Rakes					
TOP 1252 C	-	-	-	□	-
Loader wagons					
BOSS ALPIN	□	-	□	-	-
EUROBOSS	■	-	□	□	-
PRIMO L	-	-	■	□	-
FARO L / EUROPROFI L	-	-	■	□	□
EUROBOSS D / PRIMO D / FARO D / EUROPROFI D	-	-	-	□	□
TORRO L / D / JUMBO / JUMBO COMBILINE L / D	-	-	-	□	□
Balers					
IMPRESS	■	-	-	-	-
IMPRESS MASTER	■	-	-	-	-
IMPRESS PRO	-	-	-	□	-
Seed drills					
VITASEM CLASSIC / VITASEM	-	□	-	-	-
VITASEM A / VITASEM ADD / AEROSEM A / AEROSEM ADD	-	□	-	□	-
TERRASEM R / TERRASEM C	-	-	-	□	-

■ = Standard, □ = Option

Intelligent control



ISOBUS terminals

The ISOBUS terminals EXPERT 75 and CCI 1200 enable professional operation of all ISOBUS-compatible machines made by PÖTTINGER as well as other manufacturers. Both terminals are AEF certified.

EXPERT 75, CCI 1200



EXPERT 75

The compact 5.6" EXPERT 75 ISOBUS terminal can be operated both directly via the touchscreen and using keys or a scroll wheel. Safe one-hand operation is supported by the grip bar. The ambient light sensor and the illumination of the function keys ensure convenient handling even at night.



CCI 1200

The new 12" CCI 1200 ISOBUS terminal offers the professional farmer a comprehensive function package. The terminal is operated like a tablet using a touchscreen. Navigation is kept simple so you find what you need with just a few taps. The integrated ambient light sensor automatically adjusts the brightness of the display.

	EXPERT 75	CCI 1200
Mowers		
NOVACAT X8	<input type="checkbox"/>	<input type="checkbox"/>
NOVACAT X8 COLLECTOR	<input type="checkbox"/>	<input type="checkbox"/>
NOVACAT A10	<input type="checkbox"/>	<input type="checkbox"/>
Rakes		
TOP 1252 C	<input type="checkbox"/>	<input type="checkbox"/>
Loader wagons		
FARO L / EUROPROFI L	<input type="checkbox"/>	<input type="checkbox"/>
FARO D / EUROPROFI D	<input type="checkbox"/>	<input type="checkbox"/>
TORRO L / D	<input type="checkbox"/>	<input type="checkbox"/>
JUMBO / JUMBO COMBILINE L / D	<input type="checkbox"/>	<input type="checkbox"/>
Balers		
IMPRESS PRO	<input type="checkbox"/>	<input type="checkbox"/>
Disc harrows		
TERRADISC 8001 / 10001 T	<input type="checkbox"/>	-
Seed drills		
VITASEM A / VITASEM ADD	<input type="checkbox"/>	<input type="checkbox"/>
AEROSEM A / AEROSEM ADD	<input type="checkbox"/>	<input type="checkbox"/>
TERRASEM R / TERRASEM C	<input type="checkbox"/>	<input type="checkbox"/>

■ = Standard, □ = Option

The terminal for professionals



1 Flexible layout

The display can be positioned either horizontally or vertically depending on your preference or the space available in the tractor cab. In addition, the screen can be split so that several applications can be displayed simultaneously; you can adjust the size of each window. Depending on the task, the operator can split up the applications and configure their own interface. An overall view makes it easier for the driver to see various machine details. This enables you to monitor a seed drill with several metering units easily and conveniently in a large format.



2 Camera image and machine functions at a glance

A camera image can also be displayed at the same time as the machine status and controls, so no switching is necessary. With a loader wagon, this makes it easier and, above all, safer to manoeuvre. You can easily keep an eye on unloading in the clamp or the wrapping sequence on a baler/wrapper combination.



3 Help system

The innovative help system enables the driver to find out about the application currently opened, its functions and its settings, at any time. Pictures and videos explain the settings, so you can always work with maximum success.



For the Precision Farming SEED COMPLETE package from PÖTTINGER (see pages 26 - 29) you need the following functions, which are supported by the CCI 1200:

4 VARIABLE RATE CONTROL (see page 29)

Site specific application of seed/fertiliser taking the site soil conditions into consideration

- Import application maps in Shape or ISO-XML format
- The following parameters are supported: Mass, volume, distances and percentages



5 SECTION CONTROL (see page 29)

Automatic switching of the whole or partial working width during operation supported by GPS

- With the headland function, areas can be locked so that the machine works the inside of the field first.
- Perimeter headlands or individual headlands can only be created at the ends of the passes.

Documentation (see page 28)

- Site specific recording of all field data during operation
- For documentation purposes, this data can be imported into field indexing software as a standardised ISO-XML file



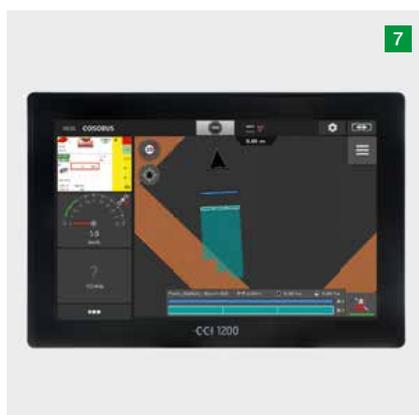
6 agrirouter connection (see pages 48 – 49)

- Wireless manufacturer-independent data transmission from the terminal directly to field indexing software in the office and vice-versa
- A WLAN dongle (included in the SEED COMPLETE package) is required. This is simply attached to the back of the terminal.

7 Multi Boom

Independent control of all the different functions on a machine

- Prerequisite for automatic partial section control on AEROSEM drills: Separate control of metering wheel and IDS distributor head (see pages 29 - 31).
- Separate default values for seed and fertiliser (TERRASEM FERTILIZER)
- Separate default values for maize and companion crop / fertiliser (AEROSEM PCS)



Precision farming – soil and seed





Convenience and efficiency for soil and seed

PÖTTINGER offers you a comprehensive range of intelligent solutions for tillage and drilling that make your everyday work easier and more efficient.

Seed drills

- SEED COMPLETE - Precision Farming package (VITASEM and AEROSEM with electric metering drive, TERRASEM)
- IDS – Intelligent Distribution System (AEROSEM with electric metering, TERRASEM)
- Tramline switching (VITASEM and AEROSEM with electric metering, TERRASEM)
- SEEDFLOW CONTROL (AEROSEM with electric metering, TERRASEM)
- PCS – precision drilling for maize (AEROSEM with electric metering)
- DUPLEX SEED – sowing maize in double rows (AEROSEM with electric metering and PCS)
- Camera supported seedbed preparation (LION)

Disc harrows

- Profiline – for convenient operation (TERRADISC 8001 T / 10001 T)

The complete precision farming package



Your complete package for optimised agriculture

With SEED COMPLETE, PÖTTINGER offers a tool for your success by optimising the management of your farming operations.

SEED COMPLETE is a package of intelligent smart farming solutions including a communication unit offered for our VITASEM, AEROSEM and TERRASEM seed drills.

With SEED COMPLETE you can optimise the seed rate to match site-specific soil conditions using application maps created in advance on your PC (VARIABLE RATE CONTROL). The seed metering system switches on and off automatically at the headland (SECTION CONTROL). Each job is documented automatically.

When ordering the SEED COMPLETE package, you will receive the activation for the ISOBUS modules

- TC-BAS (documentation of totals values for field work carried out),
- TC-GEO (VARIABLE RATE CONTROL) and
- TC-SC (SECTION CONTROL)

in combination with the new CCI 1200 ISOBUS terminal. If required, SEED COMPLETE also includes an antenna package that you need for VARIABLE RATE CONTROL and SECTION CONTROL (see pages 28-29).

SECTION CONTROL and VARIABLE RATE CONTROL are available as standard equipment.

SEED COMPLETE



Your advantages with SEED COMPLETE:

- Stress free operation for the driver with the seed drill switching on and off automatically.
- Increases efficiency and improves the cost effectiveness of the farm: Saves resources.
- Avoids overlaps in wedge-shaped fields when sowing and fertilising.
- Takes into account the differences in soil quality and yield potential within a field during drilling.

The complete precision farming package



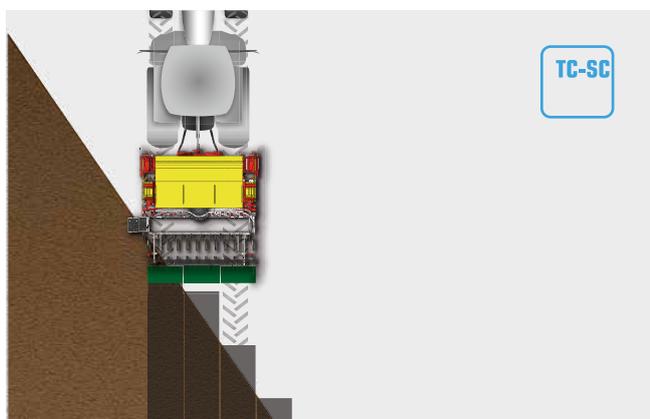
GPS-based work

Precision farming is about location-differentiated and purpose specific agriculture. The basis for this is knowledge of one's own location during work. This is already a common practice for automatic steering systems on tractors. Thanks to ISOBUS, the tractor shares its position data with the implement. This means that not only does the tractor drive on track to take the strain off the driver, but the implement is also used in the most efficient and resource-saving way. During the communication between tractor and implement, all data relating to the current task is recorded and documented. In addition, intelligent solutions like SECTION CONTROL and VARIABLE RATE CONTROL are only possible in this way.

Automatic documentation

In many areas of agriculture there is an obligation to keep documentation, which is designed for quality assurance and traceability purposes. For example, arable farming measures and the application of resources must also be submitted to the official authorities.

With SEED COMPLETE (using ISOBUS modules TC-BAS / TC-GEO), all data is recorded during work in the field and evaluated site-specifically. For documentation purposes, this data can be imported into field indexing software as a standardised ISO-XML file. This can be transferred by either a USB drive, or wirelessly via the agrirouter (see pages 48 - 49).



SECTION CONTROL

SECTION CONTROL refers to the automatic switching of whole or partial working widths of the implement. SECTION CONTROL is a convenient, efficient and resource-saving solution for headlands and awkwardly shaped fields.

There are two possible situations:

- Automatic start or stop of metering when passing over the virtual headland line: The entire working width is switched on and off according to the GPS position data. Available for VITASEM and AEROSEM with electric metering as well as for TERRASEM.
- Automatic activation or deactivation of part width sections for narrow field sections: The working width of the machine is divided into several sections which are automatically switched on and off according to the GPS position data. Available for AEROSEM with electric metering when equipped with IDS (see page 29).

SECTION CONTROL makes sure that you have tidy ends at the headland for one final perimeter pass. By avoiding unwanted overlaps, you save resources, avoid crop growth rate differences, prevent inconsistent crop densities, reduce the threat of disease, pests, and weeds. Another advantage is that first the inside of the field and then the headland can be worked on.

SECTION CONTROL works as soon as the terminal and implement have enabled the ISOBUS TC-SC module. SEED COMPLETE contains the activation of this module.

VARIABLE RATE CONTROL

It is only natural that fields vary, no field is completely uniform in its characteristics. If you want to make the best possible use of your land, you must take into account the different soil conditions within each field. VARIABLE RATE CONTROL is a convenient solution for this.

VARIABLE RATE CONTROL offers site specific application of seed/fertiliser taking the site soil conditions into consideration. The basis for this is an application map, which you create on the farm PC before starting work in the field. An FMIS (Farm Management and Information System), of which there are now various providers, will help you. An application map provides information on the application rates adapted to the soil conditions, which are marked in different colour zones. When creating application maps, you can draw on your own experience with the respective field, as well as soil samples, satellite data, etc.

If both your seed drill and your terminal have the ISOBUS module TC-GEO (included in the SEED COMPLETE package), the job including the application map can be processed after importing it to your terminal: Using ISOBUS and GPS control, the application rate is adapted exactly to the soil conditions that you previously recorded on the application map.

For later traceability, the values actually output can be documented on the farm PC once the job has been completed and then compared over time.

The intelligent distributor head



IDS - flexibility that pays dividends

The unique IDS system (Intelligent Distribution System) controls all outlets via the bus system. This opens up completely new capabilities in seed row and tramline switching. With IDS, there are no limits to the freedom you have when working. IDS is perfect for contractors and machinery rings.

It is easy to set the tramlines at the terminal - there is no need to change the hoses.

Choose any of the following:

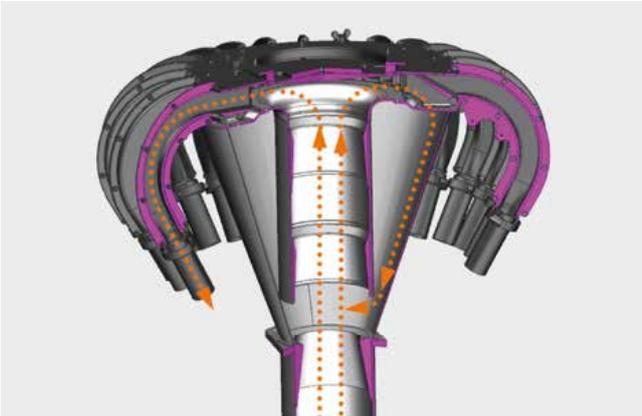
- Tramline widths
- Track widths
- Special tramline switching
- Dual tramline systems
- Half-width shut-off

The intelligent heart of the system

The IDS distributor head ensures uniform crop growth by maintaining a completely consistent seed count in all coulter pipes.

- Riser tube with funnel-shaped outside conveys the seed material.
- The patented funnel system feeds the seed back into the air stream.
- Controlled outlets for tramlining for 2 to 6 rows per track.
- Fully equipped distributor head with controlled outlets on all coulter pipes.

IDS / seed flow monitoring



Reliable & convenient: Tramline switching

Tramline switching is performed electronically using actuator motors. Straightforward setting and monitoring functions using the terminal.

Tramline switching can be symmetrical, asymmetrical or custom.

- Flaps on the distributor return the seeds from the tramlines to the riser tube so that overall seed output is reduced, saving up to 6 % of seed material.
- Exact and even distribution across the whole width, even when tramlining
- Half width switching C4 / C6: Half the distributor head with controlled outlets



For convenience and operational safety

With the seed flow monitoring, PÖTTINGER offers you convenient seed flow monitoring for all pneumatic seed drills. Each coulters pipe is fitted with a sensor which checks the seed flow. The sensor sensitivity can be adjusted in three stages depending on the seed material (fine, normal, large).

Seed flow monitoring is displayed on each terminal, on the POWER CONTROL, EXPERT 75, CCI 1200 and on the ISOBUS tractor terminal. In the event of a blockade, the driver receives a message about the current status. If a coulters pipe becomes blocked, the row number is displayed directly on the terminal.

Additional convenience is provided by the LED lights mounted directly on the sensor on each coulters pipe. This allows the driver to immediately detect the clogged seed line even when the seed drill is dusty or at night.

- GREEN: Sensor active and row OK
- RED flashing: Row blocked

Precision drill technology



All-in-one for pure flexibility

PCS (Precision Combi Seeding) integrates precision seed drilling technology into a pneumatic seed drill, offering another option to dedicated single seed drills. This means more flexibility and more economical operation.

This innovation was awarded the DLG Silver Medal at Agritechnica 2013.

A seed drill for 4 applications

- Cereal
- Maize without fertiliser
- Maize with fertiliser
- Maize with companion crop

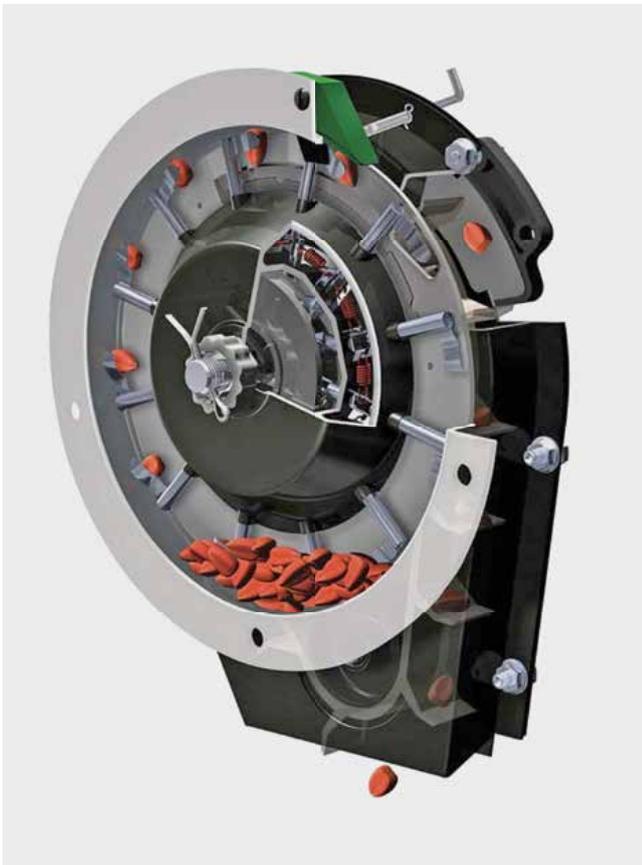
Your advantages with PCS

- Reduction in investment costs by combining pneumatic seed drill with single seed drill
- Multiple uses for machine combination
- No separate precision seed drill required
- Independence from contractor
- Reduction in fixed operating costs per hectare
- Expansion to range of applications - high flexibility

Exact seed separation

Depending on the machine width, row spacing and row system, several precision metering elements are placed below the additional hopper funnel. This hydraulically-driven system ensures exact mechanical separation of the seed. The seeds are then transported to the specially-developed injector. The air stream conveys the seed to the coulters.

- Easy adjustment of seeds per m²
- Precise monitoring of seed distribution in furrow





Pneumatic seed transport

An air flap divides the air stream between the standard metering system and the PCS. Under pressure, the air system injector takes the individual seeds from the seed elevator and transports them at precise intervals to the couler.

A seed flow sensor monitors reliable seed transport and indicates to the driver the accuracy of seed distribution in the seed slot.



Perfectly placed

The DUAL DISC couler with its integrated seed slot former ensures a perfect seed slot. A firming roller presses the seed into the slot. A press wheel controls consolidation and working depth. The seed placement depth can be adjusted centrally.

- No vertical drop
- Exact seed placement
- Seed does not roll along slot
- Optimum covering of seed
- Uniform seed germination

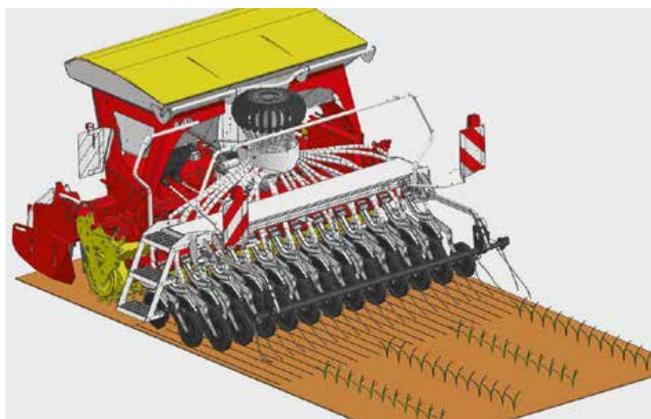


Fertiliser included

If required, fertiliser can also be applied using the standard metering system in a strip on either side of each seed row.

Alternatively, instead of fertiliser, grass seed can be deposited to protect against erosion.

Maize planted with AEROSEM



Number of rows AEROSEM 3002 ADD

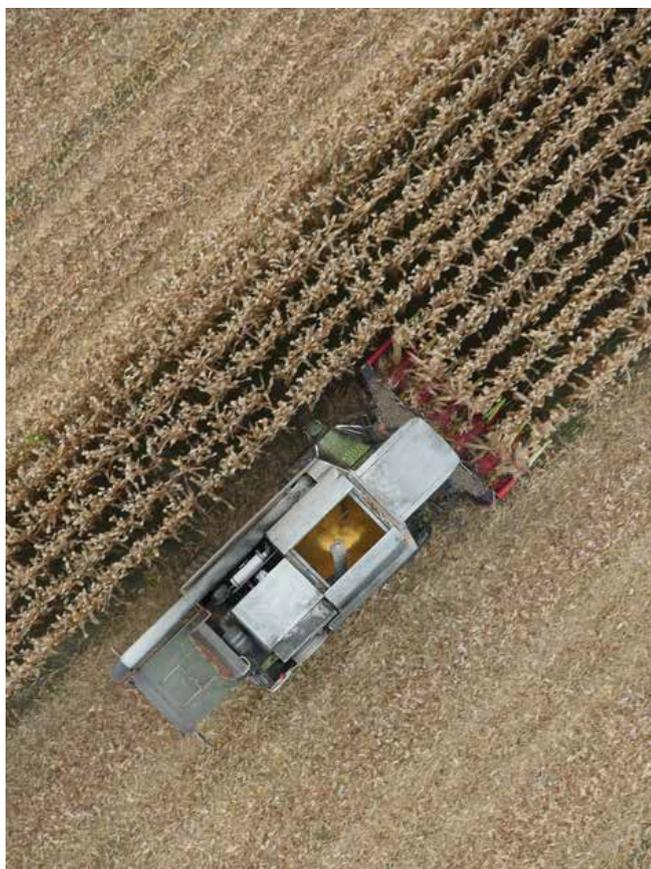
- Four rows, row spacing 75 cm
- Eight rows, row spacing 37.5 cm

Number of rows AEROSEM 3502 ADD

- Five rows, row spacing 75 cm
- Nine rows, row spacing 37.5 cm

Number of rows AEROSEM 4002 ADD

- Five rows, row spacing 75 cm
- Ten rows, row spacing 37.5 cm



Improves the environment and energy situation

- Minimises erosion by leaving behind a surface without marks
- Grass seed erosion protection drilled simultaneously in a single pass
- Fewer passes
- One-pass maize planting
- More efficient and saves more fuel
- Higher productivity
- Dressing dust goes directly into the furrow and is covered immediately

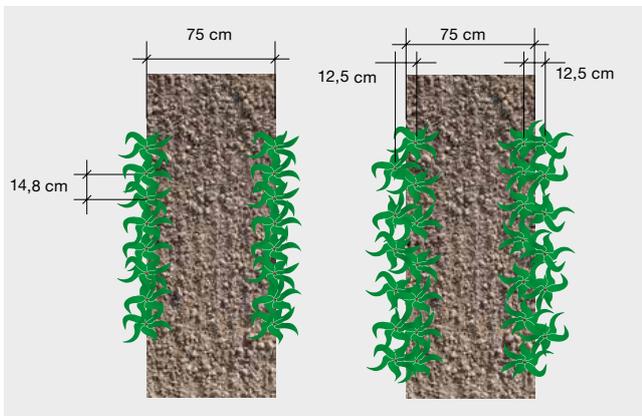
PCS / DUPLEX SEED



Intelligent maize drilling in double rows DUPLEX SEED

If your AEROSEM is equipped with PCS, you can also sow maize in double rows: With 12.5 cm spacing within the double row, double grain spacing and 75 cm double row spacing. This intelligent configuration has numerous advantages:

- Performance increase when sowing a higher driving speed
- Maize in twin rows gives the plant perfect growing conditions
- Up to 30% more space between each seed - more light - more nutrients - increased photosynthesis
- Up to 70% larger area per plant - more water - improved root penetration - less competition between plants



DUPLEX SEED for more cost effectiveness

- Reduces the risk of erosion
- Better shade on the ground - fast row integration
- Up to 5.5% increase in yield with silage maize
- Up to 5.5% increase in yield with corn maize



Camera supported seedbed preparation

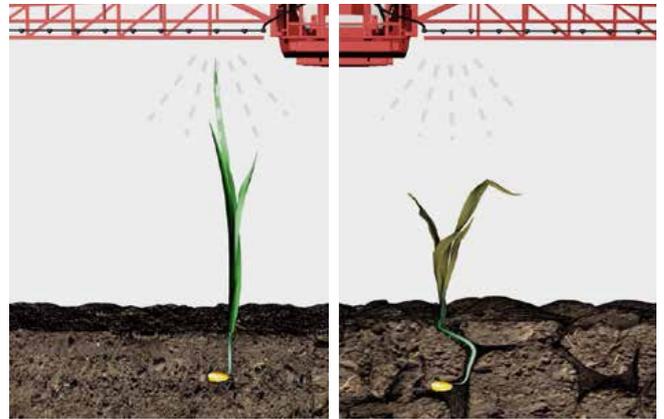


Your way to the best working results

Best quality tilth and optimum preparation of the seedbed are key to successful seed germination and growth. The seedbed should ideally be as coarse as possible and as fine as necessary. In practice, it is a challenge to select the right tillage intensity of the soil to match each crop. The main issue is to avoid ponding and crusting on silty soils. That is because cultivating the soil too finely leads to erosion, making it easier for fine soil particles to be washed away. However, eroded soil is valuable capital that the farmer then loses.

Camera supported seedbed preparation

Our innovation for camera-assisted seedbed preparation was awarded the DLG Silver Medal at Agritechnica 2017. This system is available as an option for LION power harrows.



Perfect seedbed thanks to real-time measurement

The award-winning development by PÖTTINGER - camera assisted seedbed preparation focusses precisely on this issue to enable consistent seedbed preparation and seed placement depending on the condition of the soil. The system measures in real time the surface roughness of the soil using images from a camera mounted between the power harrow and the seed drill that detects depth differences. The PTO speed and driving speed of the tractor* are regulated as a function of the roughness values recorded. The unit therefore controls the tractor automatically to adapt to changing soil conditions. The working results are an optimised seedbed with uniform tilth across the entire field.

Your advantages with Camera supported seedbed preparation

- Optimum soil structure, exact depth placement, ideal germination conditions, rapid emergence, stress resistant plants for plant protection applications
- Minimises proportion of fine soil: Erosion reduction
- Less driver fatigue: Fully automated work sequence, no visual check of the seedbed necessary any more
- Optimisation of diesel consumption: No more manual adjustment of rotor speed and driving speed required
- Night work is also possible because the system does not rely on daylight
- Possible to create a surface roughness map of the field: Useful for subsequent processes

* only with CNH tractors (Class III)

Convenient operation





Convenient operation from the tractor seat

Profit from the equipment options and operate your 8 or 10 metre wide TERRADISC machine without leaving the cab.

The Profiline version machines are set up and controlled using the ISOBUS control system. This is fully hydraulic and can be operated using the EXPERT 75 terminal or the monitor in the tractor. You can control all the settings from the tractor seat.

More advantages thanks to Profiline

- All cylinders are equipped with position sensors so that parameters such as pre-tension pressure and exact working depth are displayed on the screen.
- A hectare counter and operating hours counter with memory enable exact documentation of each job.

Operated at the press of a button

- Fold the disc harrow at the press of a button
- Hydraulic depth adjustment - varying the working depth from 5 to 15 cm
- Pressure adjustment of the frame sections for consistent ground tracking
- Pressure adaptation of the shock absorber for smooth operation
- Inclination adjustment - no side pull
- Adjustment of the working depth when disc diameters decrease
- Load sensing system for perfect ground tracking and ensuring a long service life for your tractor's hydraulic components
- Headland sequence - lift and lower at the push of a button or using the tractor's control system via a joystick

Precision farming – grassland and harvesting technology





Smart forage harvest

PÖTTINGER also offers intelligent electronic features for forage harvesting. This enables you to use your machine in an even more purpose specific manner and achieve maximum utilisation.

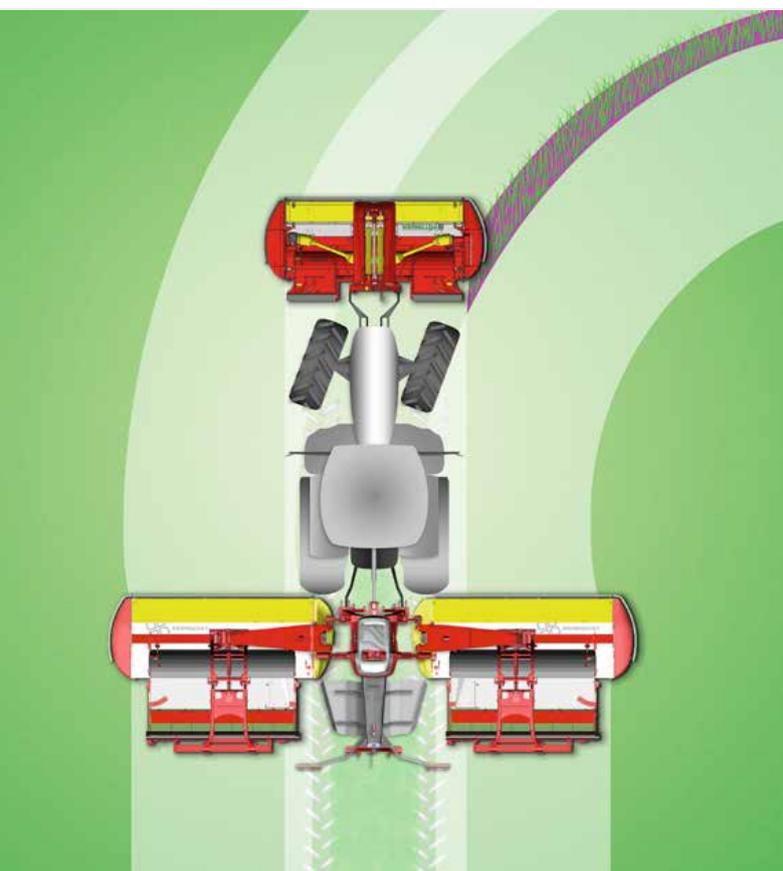
Mower

- Steering angle controlled side shift (NOVACAT A10)
- Automatic ground pressure control (NOVACAT A10)

Loader wagons

- Intelligent trailed axles (FARO, EUROPROFI, TORRO, JUMBO)
- Loading torque sensor (EUROPROFI, TORRO, JUMBO)

Get the most out of your machine



Use the maximum possible working width

To ensure that your work delivers the highest output and is as convenient as possible, we offer an automatic side-shift system. This feature is offered for the NOVACAT A10 mower combination.

driving straight ahead, the mower units are automatically shifted out again to the maximum possible working width. Using this system ensures that you make the most of the maximum possible working width.

Steering angle dependent side shift

The hydraulic cylinders integrated into the booms can shift the cutter bars on each side by up to 400 mm. If your tractor is equipped with a steering angle sensor, then the steering signal when cornering can be sent to your machine via ISOBUS. The mower responds by automatically adjusting the mowing width. On a right-hand corner, for example, the right-hand cutter bar automatically shifts inwards (see image). This ensures sufficient overlap with the front mower so that no grass escape the cutter bars. When

Thanks to the steering angle dependent side shift you do not have to even think about setting the optimum cutting width yourself.

Automatic ground pressure control



Automatic ground pressure control: First class ground tracking

Consistent ground pressure during mowing is a prerequisite for clean cut forage and conservation of the sward. With the NOVACAT A10 mower combination you benefit from automatic ground pressure control to ensure the optimum float of the mower at all times - even on uneven ground and thus lay the foundation for quality forage.

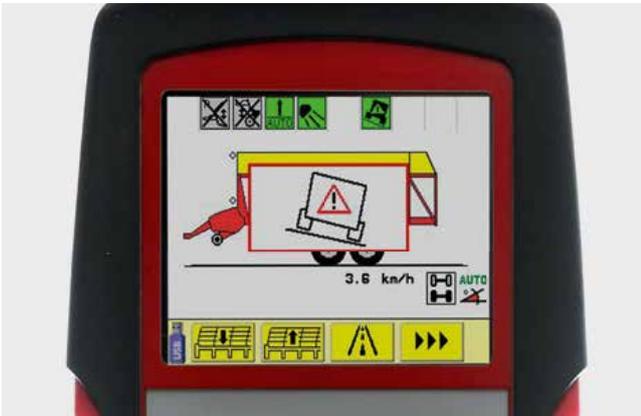
At the control panel (either POWER CONTROL or ISOBUS terminal) you first determine the ground pressure required. In automatic mode the mower combination is controlled so that the ground pressure of the mower unit is always consistent.

The automatic ground pressure control also ensures a considerable reduction in wear and fuel consumption costs. Your sward is protected and you benefit from optimal growing conditions.

Smart electronics for your loader wagon



Intelligent trailed axles / loading torque sensor



Your driver assistance system: Intelligent trailed axles

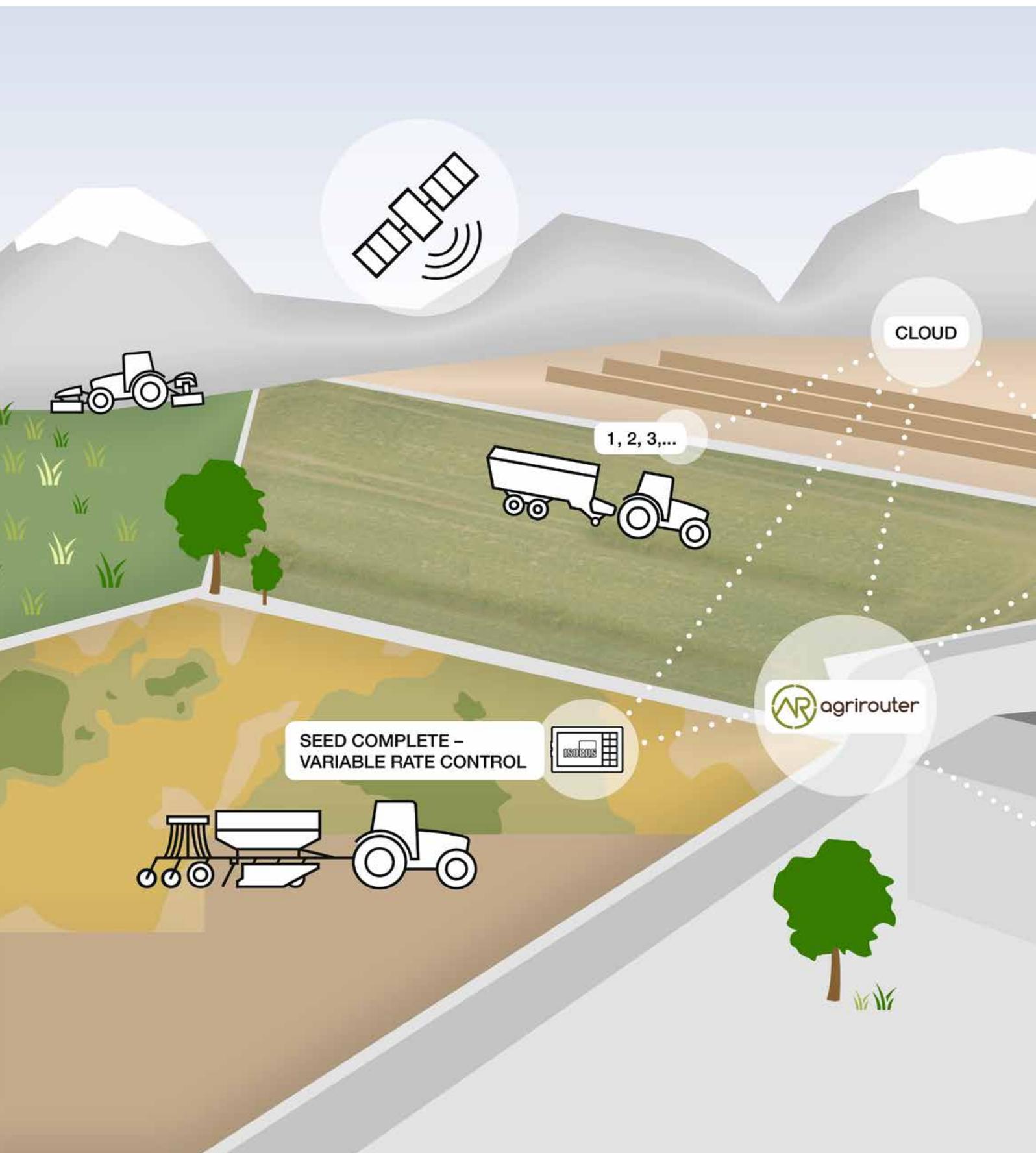
We offer you a smart electronic feature for all FARO, EUROPROFI, TORRO and JUMBO loader wagons so that you can always drive safely and comfortably with your loader wagon. With the aid of the intelligent trailed axle, it is possible - even without ISOBUS - for your loader wagon to automatically lock the self-steering axle when critical values are reached in any operating conditions. This is particularly important on slopes to ensure that the loader wagon remains safe and stable.

In advance, you define at the terminal the speed and inclination limits at which the axle is to be locked. A direction-of-rotation sensor on the trailed axle detects the direction of rotation and the speed and locks the axle within the defined speed range. In addition, an inclination sensor locks the axle when the defined inclination is reached. If required, a warning can be displayed on the screen if a defined inclination value is exceeded. This takes the stress off the driver and at the same time you are on the safe side.

Forage conservation at the highest level. Loading torque sensor

A uniform power curve during loading without torque peaks is what distinguishes a modern loader wagon with automatic loading and it is one of the prerequisites for careful forage handling. On all EUROPROFI, TORRO and JUMBO loader wagons, a loading torque sensor on the gearbox in combination with a sensor in the front panel ensures a smooth loading process adapted to the respective harvest conditions. The loading torque sensor measures the force acting on the rotor. If this reaches the limit value set in the tractor cab, the scraper floor is activated automatically so that there is less resistance for the rotor and the forage is protected. Even with difficult or changeable harvesting conditions, you can ensure an optimum forage structure. If you are aiming for a dry matter content of around 35 %, the loading strategy can be flexibly adjusted in the tractor cab even if the dry matter values deviate from this.

Data management





Generate, transfer and benefit from data

Intelligent machines generate site-specific data relating to the machine and the job. Thanks to ISOBUS, this data can be easily exchanged between the implement and the terminal. Smart features allow data generated during field work to be easily moved to FMIS (farm management and information systems) and therefore used for documentation purposes. Manufacturer-independent standards greatly simplify data transfer.

Data transfer

- agrirouter
(VITASEM and AEROSEM with electric metering, TERRASEM, FARO, EUROPROMI, TORRO, JUMBO)

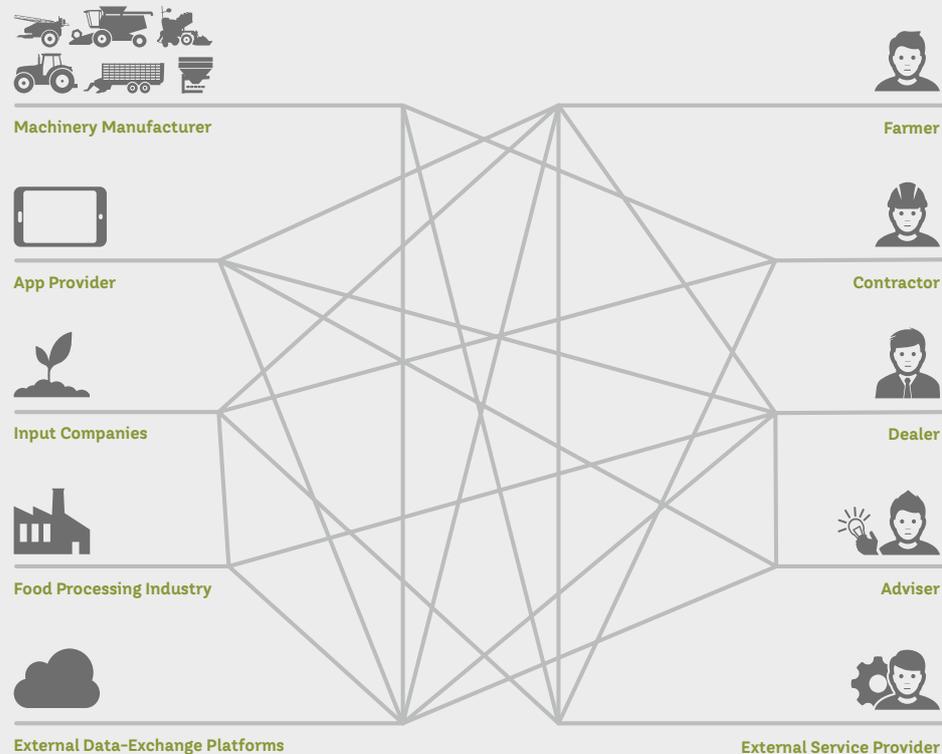
Data processing

- NEXT Machine Management
(VITASEM and AEROSEM with electric metering, TERRASEM, FARO, EUROPROMI, TORRO, JUMBO)

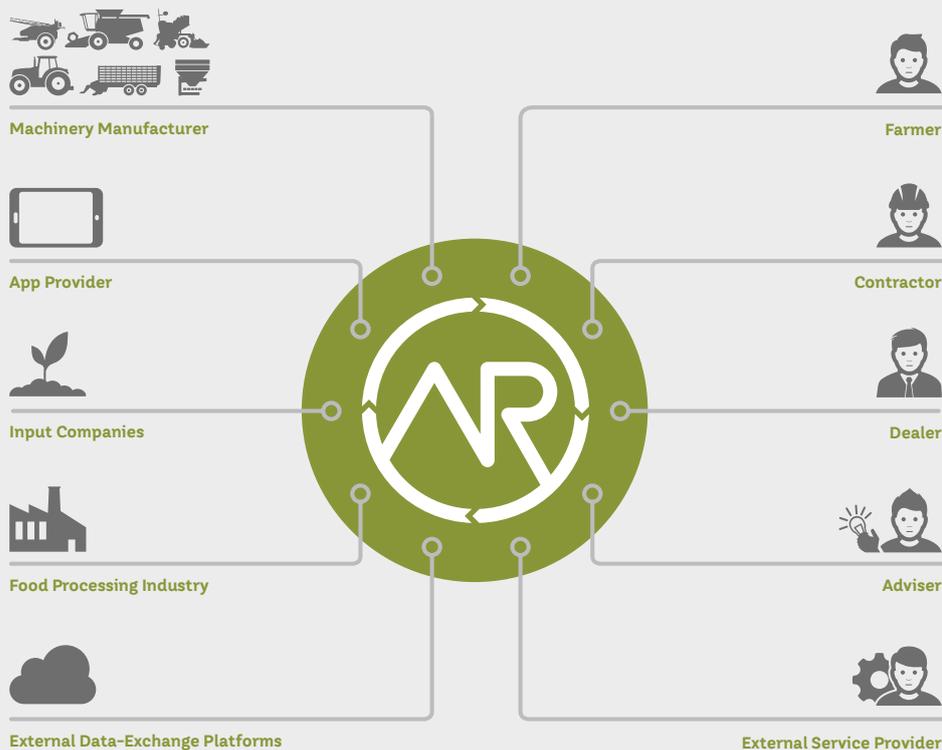


Manufacturer-independent, wireless data exchange

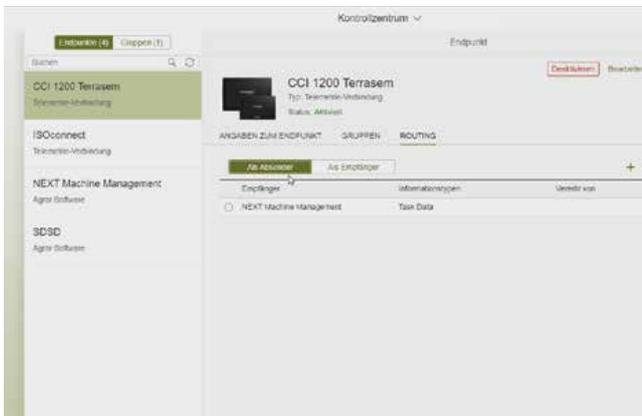
Without agrirouter



With agrirouter



Thanks to the ISOBUS standard, machines from different manufacturers can easily communicate and exchange data with each other. In order to use this data once work has been completed, it makes sense to import it into a farm management system and evaluate it for documentation purposes. While data transfer between agricultural machines from different manufacturers is now straightforward, it has still been difficult to transfer data between machines and software products from different suppliers. This was due to a lack of standards - until now. That is why various agricultural equipment manufacturers - including PÖTTINGER - have joined forces to develop the agrirouter. The agrirouter enables manufacturer-independent, wireless data exchange between machines and agricultural software and reduces the number of communication interfaces to a minimum.



agrirouter - the "data forwarding service"

The agrirouter is a web-based data exchange platform. A free account can be used to send data such as jobs from your field indexing software directly to the CCI 1200 terminal in the tractor. This can also be carried out in the reverse direction by sending machine related data directly to your farm PC.

Transparency

You define the routes on which the agrirouter transports your data.

Data security

agrirouter does not store any data - you retain full control.

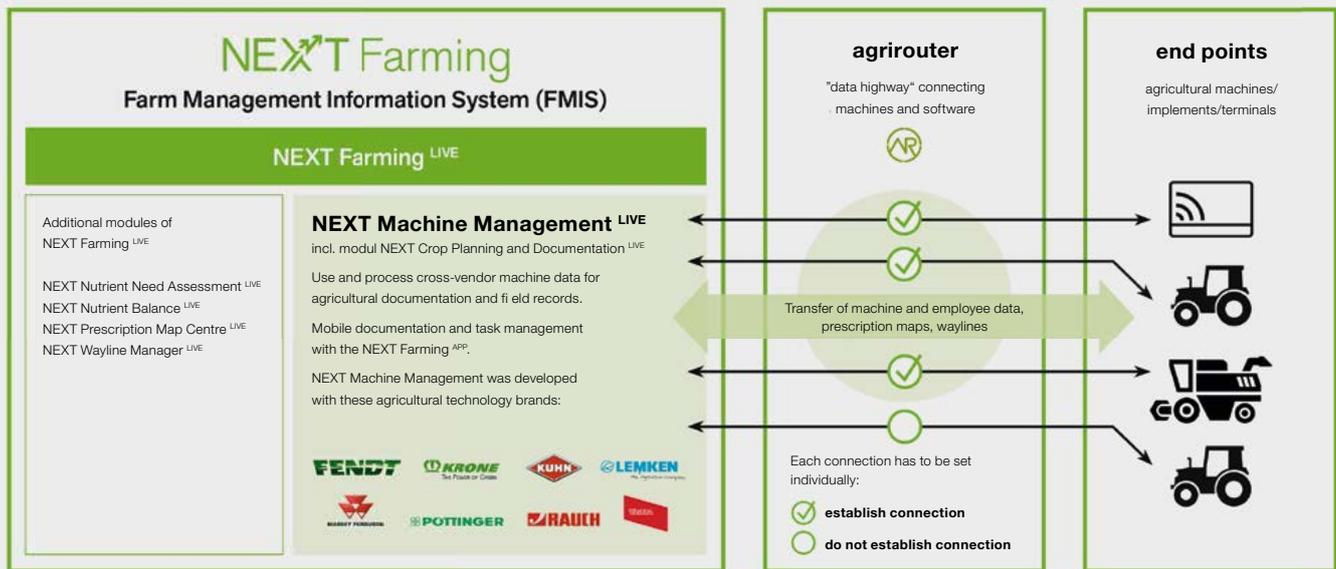
We are agrirouter ready

You can use the agrirouter for sowing technology in conjunction with our VITASEM and AEROSEM with electric metering drives and TERRASEM seed drills. In the harvesting sector, our ISOBUS-compatible loader wagon range FARO, EUROPROFI, TORRO and JUMBO can be connected to the agrirouter.

These machines are able to document and make available data that is meaningful in terms of the work carried out. This data can be sent wirelessly from the tractor to the office as a standardised ISO-XML file using the CCI 1200 terminal. Likewise, you can send jobs wirelessly from your farm management system to the CCI 1200 terminal in the tractor. You no longer need a USB drive for data transfer. Even a machine fleet from a variety of manufacturers poses no problem for data transfer via agrirouter, provided the respective manufacturer is a member of the agrirouter consortium.

More information can be found at www.my-agrirouter.com

Intelligent networking of mixed brand machine fleets



Intelligent networking: NEXT Machine Management

NEXT Machine Management is part of the farm management and information system (FMIS) NEXT Farming and intelligently networks your machinery. NEXT Machine Management was developed by various manufacturers of agricultural machinery - including PÖTTINGER - with the aim of ensuring that every farm can benefit from the advantages of digitalisation.

With NEXT Machine Management you have the capability to use and process machine data for documentation purposes, regardless of the make of the machine. A simple transfer of jobs to the machines enables optimal utilisation and effective farm management.

Wireless data transmission using agrirouter

In combination with the agrirouter, your data can be transferred wirelessly from the machine to NEXT Machine Management and back again.

NEXT Machine Management uses the data transmitted via agrirouter to enable the planning, production and documentation process with machines from different manufacturers. In the future, farmers will use the machine data transferred for the automatic documentation of work done on the field, planning work steps in the office and then transferring them to the machine terminals, regardless of the machine manufacturer, type, and location. NEXT Machine Management can work faster and more efficiently and can automatically access or transfer important information to provide the farmer or contractor with an overview of processes at all times.

All machinery information at a glance

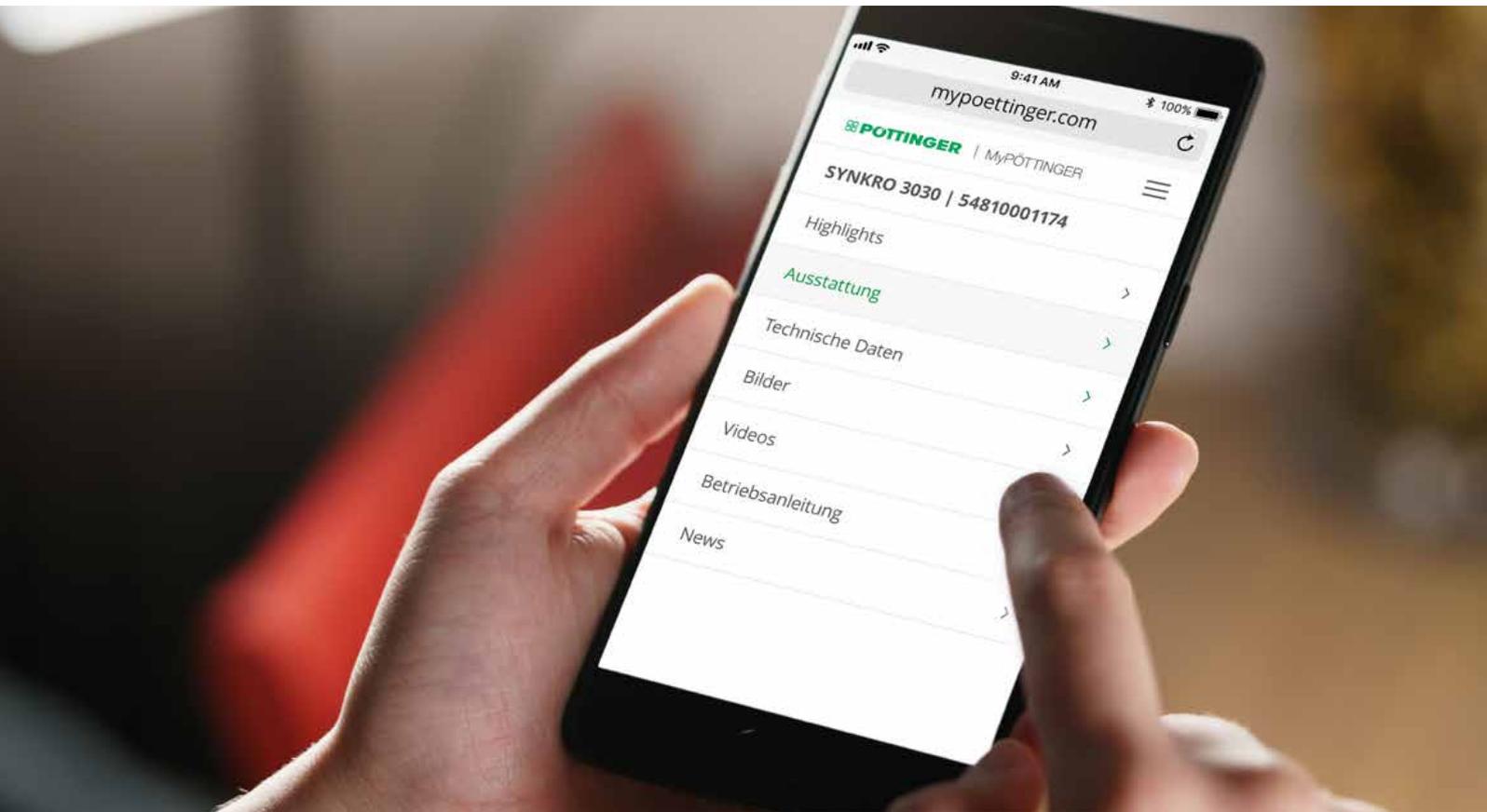


MyPÖTTINGER – it's easy. Anytime. Anywhere.

For all PÖTTINGER machines 1997 models onwards

MyPÖTTINGER is a tool to provide machine-specific information for all machines from year of build 1997 onwards.

Simply scan the QR code on the data plate with your smartphone or tablet or enter your machine number at www.mypoettinger.com.



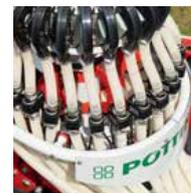
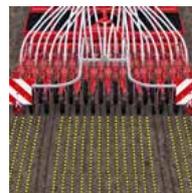
Your machine goes online.

All the information on your machine.

You will immediately receive all the information on your machine.

- Instruction manual
- Optional equipment information
- Brochures
- Photos and videos

An overview



SEED COMPLETE – complete precision farming package

IDS – Intelligent Distribution System

Tramline switching

Seed flow monitoring

VITASEM with electric metering	<input type="checkbox"/>	–	<input type="checkbox"/>	–
AEROSEM with electric metering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TERRASEM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LION	–	–	–	–
TERRADISC	–	–	–	–

■ = Standard, □ = Optional



Steering angle controlled side shift

Automatic ground pressure control

Intelligent trailed axles

Loading torque sensor

NOVACAT A10	<input type="checkbox"/>	■	–	–
FARO	–	–	<input type="checkbox"/>	–
EUROPROFI	–	–	<input type="checkbox"/>	<input type="checkbox"/>
TORRO	–	–	<input type="checkbox"/>	<input type="checkbox"/>
JUMBO	–	–	<input type="checkbox"/>	<input type="checkbox"/>

■ = Standard, □ = Optional

* only in connection with PCS

** only in connection with a CCI 1200 ISOBUS terminal



PCS – precision drilling

DUPLEX SEED – sowing maize in double rows

Camera supported seedbed preparation

agrirouter**

NEXT Machine Management

Profile for convenience

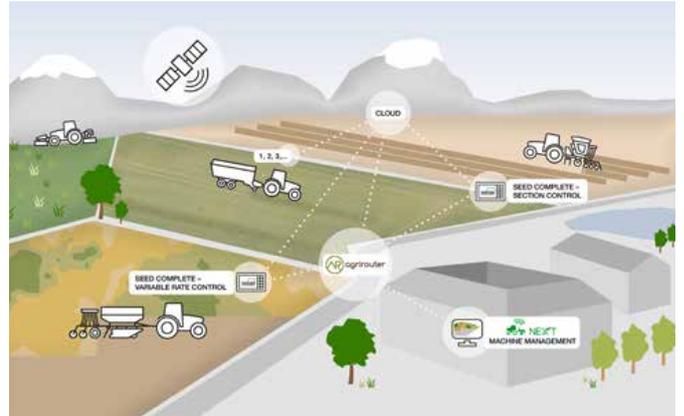
-	-	-	<input type="checkbox"/>	<input type="checkbox"/>	-
<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	-
-	-	-	<input type="checkbox"/>	<input type="checkbox"/>	-
-	-	<input type="checkbox"/>	-	-	-
-	-	-	-	-	<input type="checkbox"/>



agrirouter**

NEXT Machine Management

-	-
<input type="checkbox"/>	<input type="checkbox"/>



More Success with PÖTTINGER

- A family-owned company since 1871
Your reliable partner
- Specialist for tillage, seed drills
Hay and harvesting machines
- Future-safe innovation for outstanding working results
- Roots in Austria - at home throughout the world

Trust digital agricultural technology from PÖTTINGER

- Competence in the digital field through participation in cross-manufacturer organisations
- Intelligent terminals for every requirement
- More convenience and yield with precision farming solutions for soil, seed, grassland and harvesting technology
- Manufacturer-independent standards for the easiest data management

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www.originagroup.co.nz

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wynn@valtrac.co.za
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