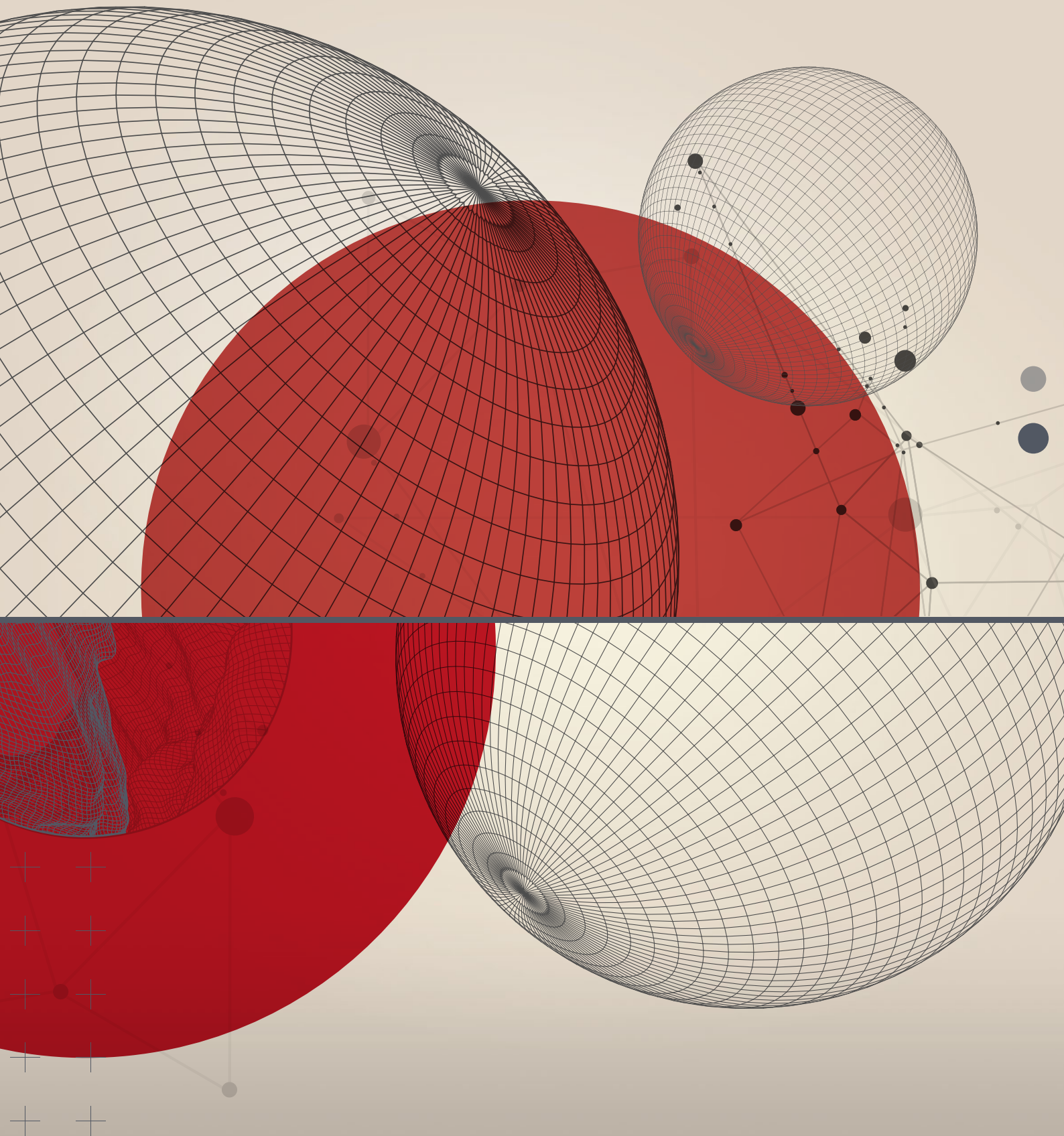


INTELLIGENCE

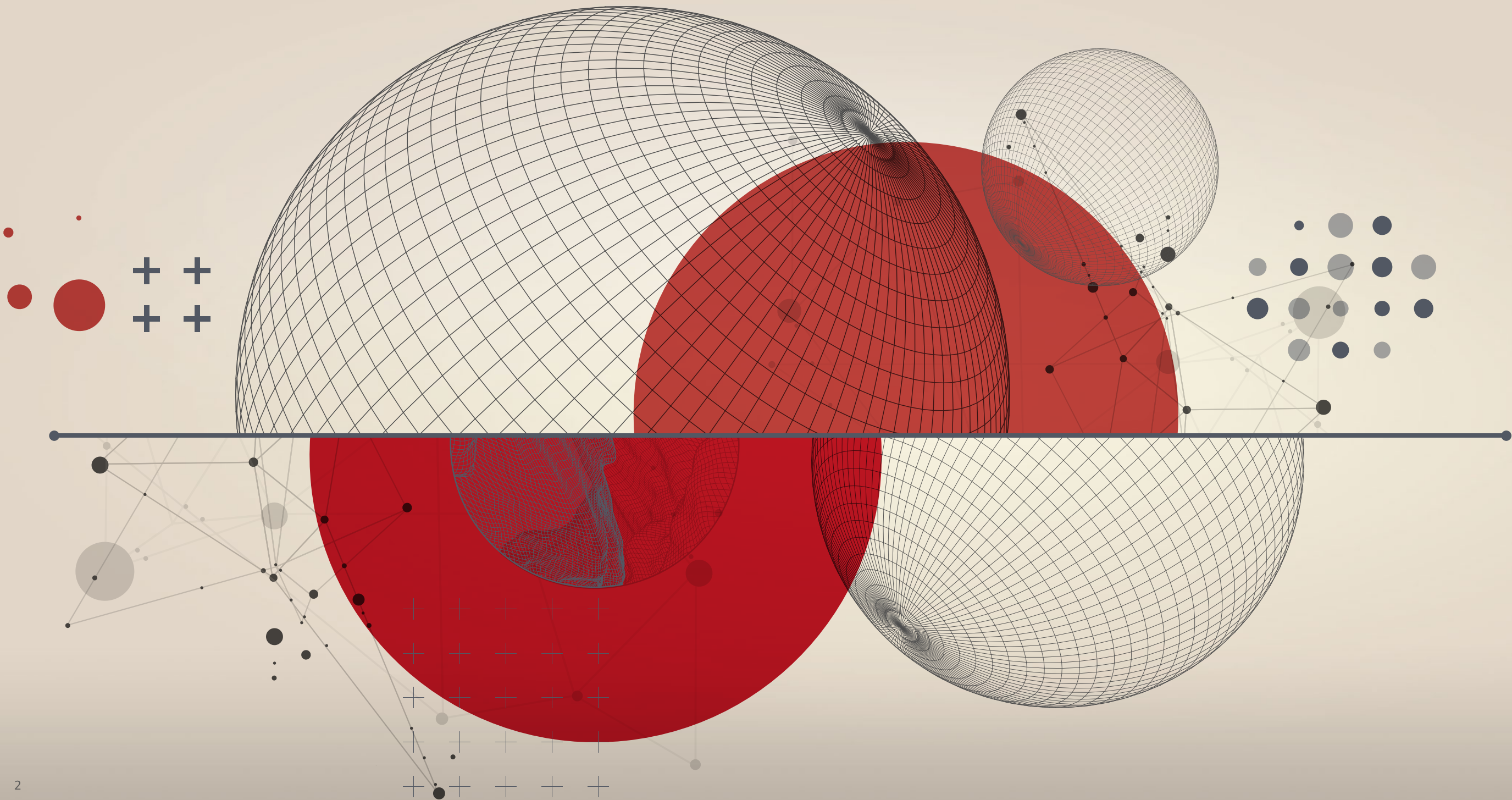




PHILIPP HORSCH

Year after year, electronics and software allow for new functions in and around a machine. In our sector, we are only at the beginning of an intelligent linking of functions, machines and services. In the future, HORSCH wants to use the resulting possibilities for the optimisation of work processes and communication for the customers even more useful. This is the reason why in the sector of systems engineering a large team of developers is working on the automation and connectivity of our machines. We attach utmost importance to the reliability of components and functions. It is our objective to continuously improve the ease of use and the productivity of HORSCH machines by means of

electronics, software and telemetric data links while at the same time we continue to reduce electronic-related breakdowns. To ensure a smooth electronic coupling of our machines with tractors and farm management software, we and a lot of other manufacturers of agricultural machinery co-operate in the AEF with regard to a practice-oriented standardisation of ISOBUS and data interfaces. Below we will show you some current and future functions and products from our electronic development team for the sectors seed drills, plant protection and telemetry.



eosT10 (Pro)

- High-resolution 10" terminal for controlling all ISOBUS devices according to ISO 11783
- Reliable and powerful: a high-performance hardware combined with an intuitive, user-friendly operation in daytime or night mode
- Straightforward transfer of application maps with the wireless Task Data Exchange
- Various layout options allow for a simultaneous display of several applications – for an optimum overview
- eosT10 and eosT10 Pro – one hardware, completed by two licence kits. Precision is always standard for us.



With the new terminal generation eosT10 you can experience machine control at top level. Due to the high resolution and the sophisticated user guide, even complex machine functions can be operated comfortably. The high efficiency and the large (working) memory allow for a smooth handling of large data quantities or application maps. The terminal, thus, is the perfect all-rounder for the operation of the machine

By displaying up to 3 widgets in addition to the main working screen, the user can keep track of several applications at the same time

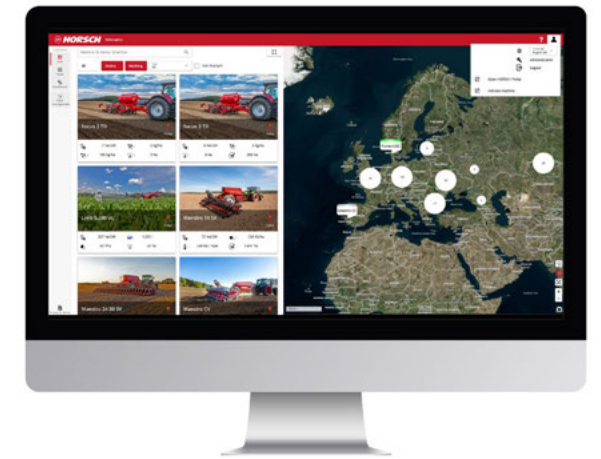


Due to the flexible holder, the eosT10 can be perfectly integrated in every cabin

HorschConnect

Prepare today for tomorrow. Control different machine functions quite easily via the MobileControl app – your smartphone replaces the terminal! In addition, gain complete, transparent insight in all aspects of work performance and working quality with HorschConnect Telematics.

- Digital solutions exactly where they make sense
- Straightforward out-of-the-box solution with integrated SIM card, WLAN modem and other interfaces
- HorschConnect Telematics to document the performance of the machine
- HorschConnect Telematics for complete transparency of the working quality, e.g the application rate of all components
- Targeted and proactive service due to remote insight in the error messages
- Control of machine functions via smartphone app MobileControl: e.g. calibration of all metering units



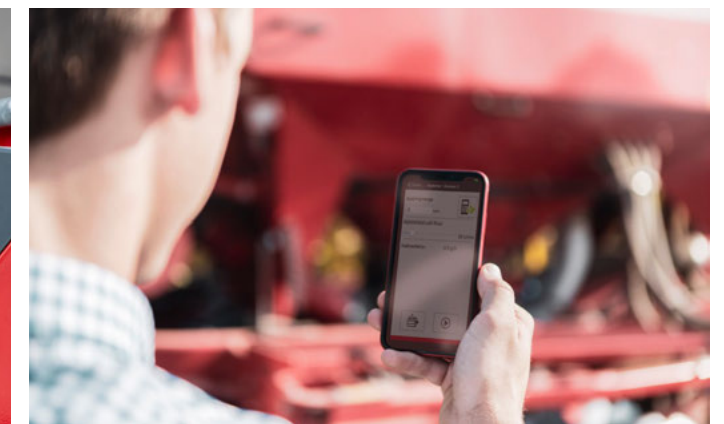
With HorschConnect telemetry solutions can be found in the sowing and plant protection sector – exactly where they make sense



The MobileControl app allows for controlling individual machine functions – completely comfortably from the smartphone



Straightforward out-of-the-box solution with a wide range of integrated interfaces



Quick and easy calibration of the machine via smartphone with the MobileControl app



Digital Services

OUR INTERACTIVE, DIGITAL TOOLS HELP YOU TO MAKE THE PERFECT DECISION IN A VERY SHORT TIME!!

The wide range of digital solutions offers tools to support any product range. The applications include all process steps – from the preparations for working in the field to the supply of spare parts

During the preparation process, the most appropriate components for example can be determined. The rotor selection helps to select the correct rotor for the respective application from the wide range of rotors. The metering system used, the metering product and the working width of the machine can be selected on the website. The system calculates the throughput at the metering unit based on the data entered and recommends the appropriate rotor. Along these lines, the metering disc selection recommends the most appropriate metering disc for sowing the desired crop.

Whether single grain or universal seed drill – the tramline calculator helps to determine the required tramline rhythm. You only have to enter the track and tyre width.

If additional information is required, the QR code which is attached to each machine and acts as a digital company card, can be used any time. By scanning it, the user accesses machine- and serial number-specific information.

The PartFinder has been developed to facilitate the search for and the ordering of spare parts. 3D models transfer the customer-specific machine to the digital HORSCH world – fully automatic starting at the time of design. The individual image of the machine allows our sales partners to find and order the appropriate spare part quickly, precisely and efficiently.

All information can thus be reviewed online any time and is always up-to-date. User-friendliness and easy use complete the solutions.

- Digital support tool for all HORSCH product ranges
- Online access at all times
- All information is always up-to-date
- Solutions for all process steps – from the preparations for working in the field to the supply of spare parts

Compatibility data base

Text: The ISOBUS standard according to the standard 11783 allows for the communication between mounted implements and tractors across all manufacturers. We know what we are talking about: Comprehensive tests of different combinations ensure the operational reliability of our technology in combination with other ISOBUS devices.



- The comprehensive data base provides transparency with regard to all ISOBUS compatibilities, functionalities and their meaning.
- Extensive tests showed that the operational reliability is guaranteed.
- Enter machine, desired terminal and respective software versions and off you go!

Error code lookup

Optimally prepared if things don't run smoothly: Look up detailed error messages and troubleshooting recommendations quickly with the HORSCH error code Lookup!



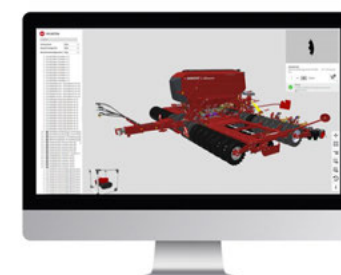
- Enter the error code displayed on the terminal.
- The description of the error in the app saves the user from scrolling in the manual.
- In addition to the cause of the error, specific instructions for a quick troubleshooting are displayed.
- Available as a web application and as an app for Apple and Android

PartFinder

- Transfer of the customised machine to the digital HORSCH world.
- The 3D models are an innovative solution for facilitating the search and the ordering of spare parts.
- Reduce incorrect orders and errors with regard to the identification of spare parts.

QR code

- Machine and serial number-specific information and applications are provided directly at the machine
- Maximum ease of access by scanning the QR code during use of the machine
- Access to all machine-specific web applications



The individual 3D image of the customer machine



The digital business card of the machine



Camera control

To guide the hoe along the row with utmost precision, we recommend using the optional camera Culticam. It can detect the plant in 2D or 3D mode even in difficult conditions. In addition, a light kit is available to allow for hoeing reliably even in difficult lighting conditions or at night.

- Highly precise steering along the plant row due to the optional camera Culticam
- In difficult conditions, the plant row can be captured in 2D or 3D mode.
- Light kit for working in twilight or in the dark
- Can be extended with a 2nd camera for even more operational reliability
- Can be extended with a joystick for headland situations
- Can be extended with feeler fingers for high populations like maize or sunflowers

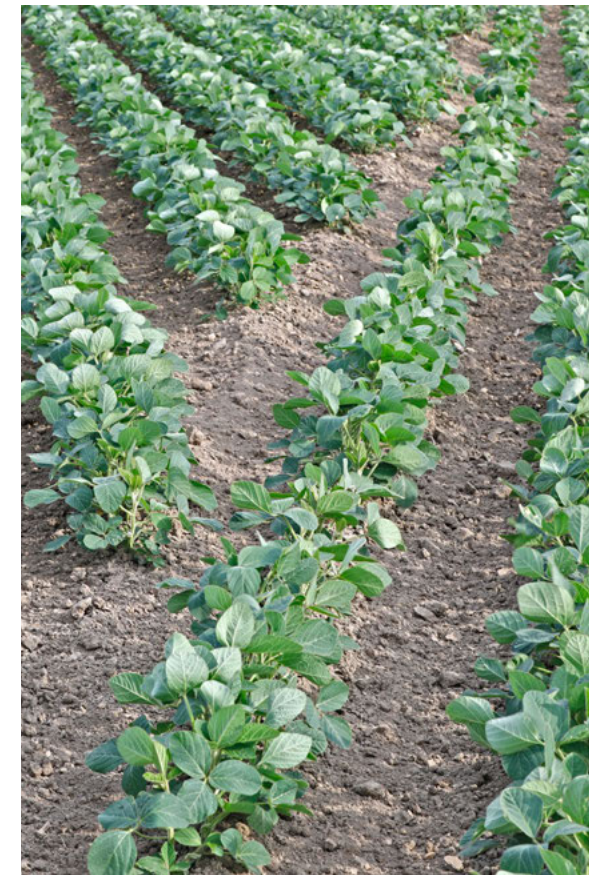


Camera control Culticam with optional light kit for working in twilight or in the dark

RowLift

To achieve a constantly high precision even on a long working day, the machine can be equipped with an optional individual row lift system (RowLift). The fully automatic GPS-controlled application lifts individual hoeing units precisely and puts them down again.

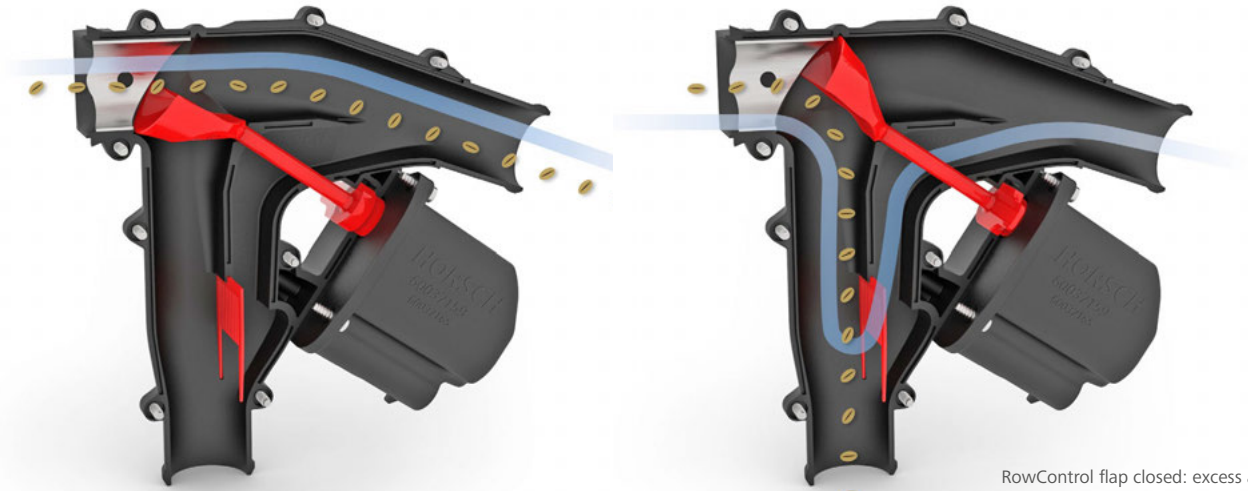
- Constantly high precision due to individual lifting of the row unit (RowLift)
- Fully automatic GPS-controlled application lifts individual hoeing units precisely and puts them down again.



With RowLift, the hoeing units can be lifted and put down again precisely due to GPS control

RowControl distribution tower

INDIVIDUAL ROW CONTROL FOR SEED DRILLS



RowControl flap open: seed is transported to the coulter

RowControl flap closed: excess air escapes via the coulter, the seed is transported to the injector and supplied into the distribution tower – no transverse distribution losses

The RowControl distribution tower lifts SectionControl in seed drills to a completely new level!

The new distribution tower can do more than just SectionControl:

- Possibility of individual row switch-off to the last row
- Freely selectable tramlines
- Freely adjustable row spacings

These functions are possible as with an individual row switch-off system the distribution tower can separate the air and the

seed flow. Thus, this does not affect the lateral distribution.

The SectionControl offers individual row switch-off for saving fertiliser and seed. By avoiding overlaps on the headlands, in wedges or in case of obstacles, the development of the individual plant is improved and the disease and competition pressure in these areas is reduced.

Avoiding overlapping reduces the required seed quantity and prevents over-fertilisation on the headlands and in wedges. Thus, the farmer can save costs quite easily.



RowControl distribution tower – 2-tower version at the Pronto 6 & 7 DC



RowControl distribution tower



RowControl distribution tower – Express 3 KR

Tramline guide

- Facilitates finding possible rhythm settings
- Helps when choosing the number of tramline valves
- Graphic overview of all rows that are switched off



AutoLine

- Automatic, GPS-based tramline control
- Optimised driving strategy near obstacles or on the headlands
- Track-to-track driving is no longer required
- Available in combination with the terminal eosT10 Pro

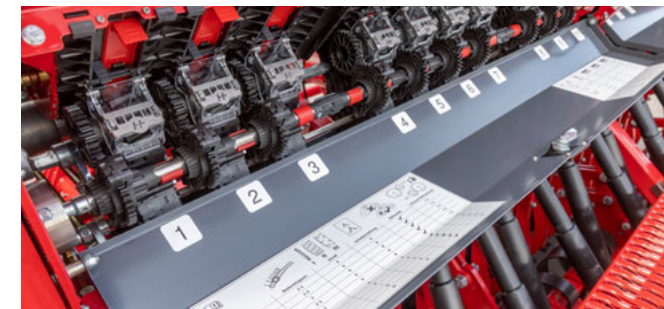
SmartClip Guide

- Simplifies the selection of the optimum setting for any application
- Adjustment aids for different crops and row spacings
- TSW calculator facilitates the calculation of the optimum seed rate

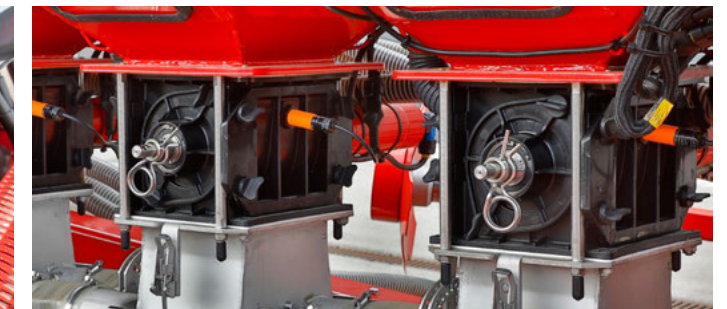


Rotor selection

- Facilitates the selection of the optimum rotor for any application
- Wide selection range from normal seeds to fine seeds to fertiliser and micro-granular compound
- Expert mode to carry out rotor configurations also for variable operating speeds and application rates



Solutions like the online SmartClip Guide are another innovation for the mechanical seed drills.



The rotor selection app facilitates the selection of the optimum rotor for any application

Metering disc selection

- Maximum flexibility – the use of different metering discs allows for sowing different crops with the HORSCH Maestro.
- The tool determines the appropriate metering disc for your application.
- Only enter the type of crop, operating speed, application rate and row spacing and off you go!



Whether maize, sunflowers, beans or rape – depending on the type of crop, different metering discs are available for the Maestro. Depending on the type of crop, operating speed, application rate and the row spacing, the tool recommends the optimum metering disc for seeding.

ContourFarming

Especially in uneven shaped fields, ContourFarming offers many advantages. For large working widths there is a speed difference between the inside and outside radius of the seed bar. The system measures this difference and adjusts the seed rate by means of a speed change of the metering units proportionally across the working width. Thus, the set seed rate is maintained precisely across all rows.

- Adapted seed rate control when cornering
- Control of seed rate via two additional radar sensors
- Recording of inside and outside radius speed



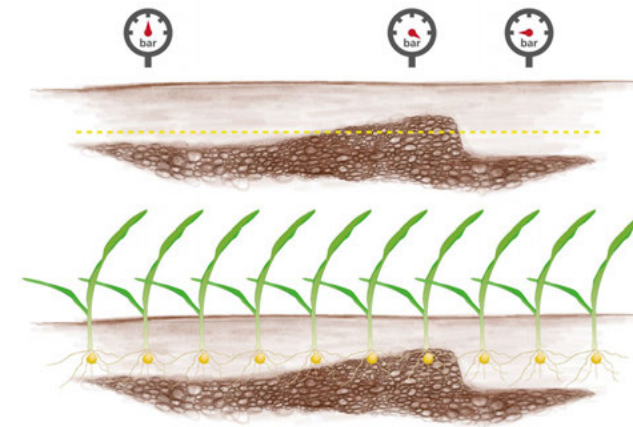
One of the additional radar sensors for ContourFarming



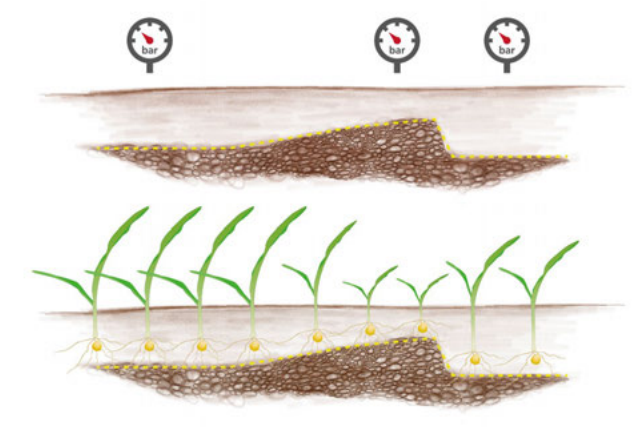
Even seeding rate even when cornering

AutoForce

OPTIMUM EMBEDDING DESPITE CHANGING SOIL CONDITIONS



With AutoForce: optimum pressure – optimum sowing depth



Without AutoForce: constant pressure – irregular placement

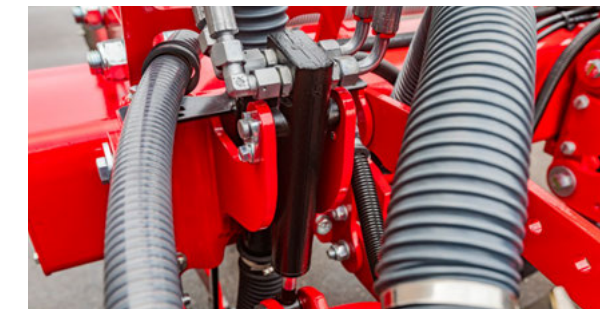
What do you need an automatic coulter pressure control for?

- Stony soils require more coulter pressure to place the seed at a consistent depth. If the coulter pressure is too low the coulter body would not move smoothly and the seed would germinate irregularly and with different speed.
- Light conditions or pressure-sensitive soils need less coulter pressure so that the soil is not compacted. Too much coulter pressure compacts the soil and slows down the development of the roots although all seed was placed at the same depth.
- There rarely are fields that are completely even. The coulter pressure has to be adapted to each section of the field.
- This is why AutoForce has been available for the Maestro line since 2016.

AutoForce guarantees an always consistent embedding of the grains in changing conditions. Thus, more regular emergence and populations are achieved. The contact pressure of the row unit is measured with a sensor at the two support wheels. This pressure (= nominal value) is previously set in the terminal. You can choose between three pressure levels: 25 kg – 50 kg and 80 kg (the values can also be adapted individually). With changing soil conditions, the row needs more or less power to be able to keep up the set placement depth. The contact pressure would change. The sensor detects this, and the system regulates the contact pressure in such a way that it always corresponds to the nominal value that has been set. This is possible due to the design of the machine which allows for transferring weight to the seed bar. The coulter pressure automatically varies between 150 kg and 350 kg. Thus, the grain is always embedded at the same level. A too shallow placement as well as soil compaction can thus be avoided.



The Piezo sensor in detail



Hydraulic coulter pressure cylinder

AutoSelect

- Control of the nozzle size in combination with the application rate means the operational speed is adapted
- Possibility to adjust the target height in addition to the pressure range to keep up the distance required
- Can be switched on or off comfortably in the cabin
- Optimum distance stipulation control along waters and structures
- Automatic adaption of the boom height depending on the defined nozzle profiles



AutoSelect menu in the terminal

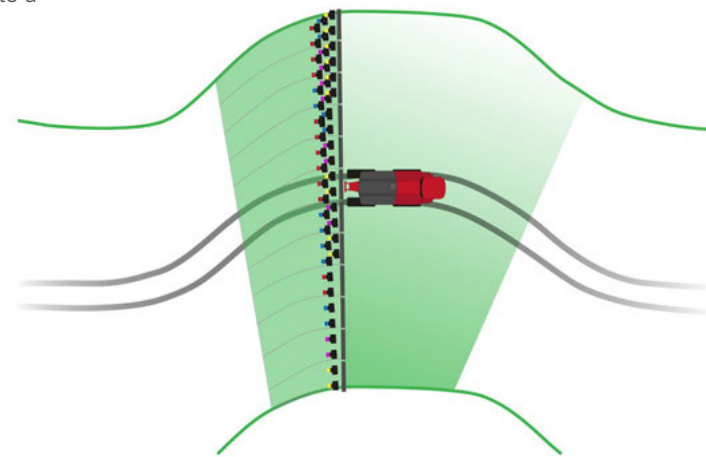


AutoSelect nozzle overlap

AutoSelect Pro

AutoSelect Pro takes the HORSCH nozzle control system to the next level. Due to the separate activation of the curve compensation, it is possible to combine profiles and thus increase the application rate on the outside of the curves in a targeted way when cornering. At the same time, the application rate is reduced by switching to a smaller nozzle size on the inside of the curve.

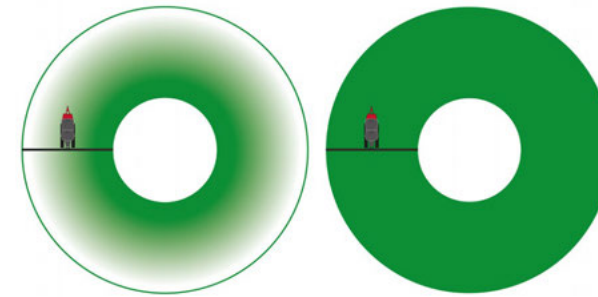
- All functions of AutoSelect
- In addition: activation for curve compensation for pneumatic nozzle control
- Rate adjustment when cornering due to combination of the profiles
- Reduction of over and under applying.



AutoSelect Pro: Curve compensation

PRECISIONSPRAY

- Infinitely variable adaption of the volume flow with constant pressure and drop size
- Constant drop spectrum when using one nozzle
- Lower number of different nozzle sizes required
- Adaption of the application rate without changing the spraying characteristics
- Curve compensation
- Large nozzle bodies that are less prone to cloggings



Avoid over and under applying due to curve compensation

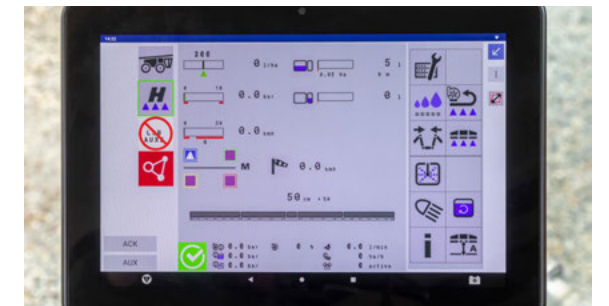


PRECISIONSPRAY

Terminal technology & steering system

Tractor terminal 1060 or 1260 with steering system

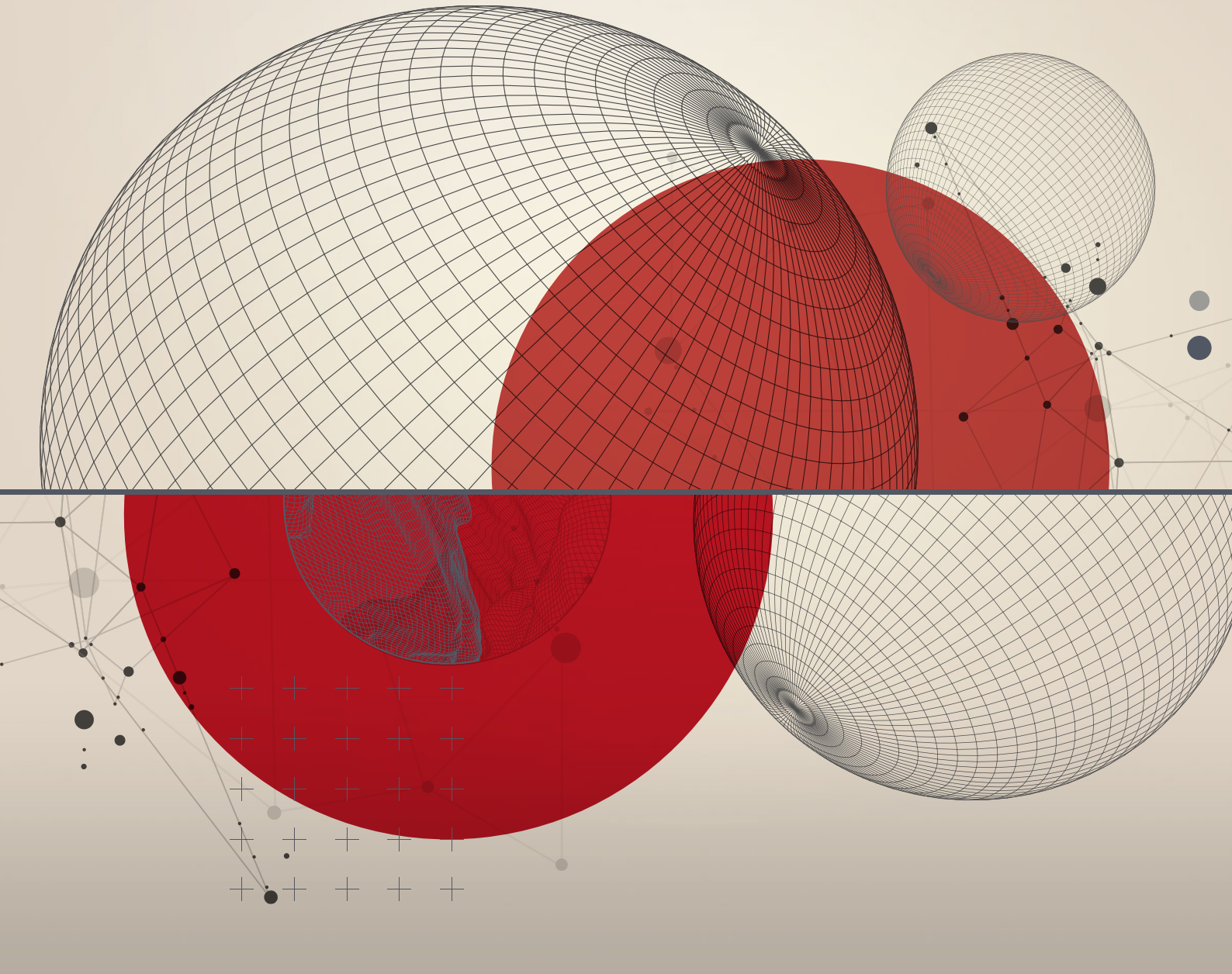
- Intuitive machine operation via the high-resolution Trimble Terminal 1060 or 1260
- Optional extension by a second terminal or optional control via different approved external terminals
- Fully integrated steering system with receiver Trimble Nav 900
- Additional activation of VariableRate for site-specific variable application by means of application maps



Powerful terminal TME1260 with large screen



Receiver Trimble Nav 900



Your distributor

HORSCH Maschinen GmbH
Sitzenhof 1 · 92421 Schwandorf
Phone: +49 9431 7143-0
Fax: +49 9431 7143-9200
E-Mail: info@horsch.com

horsch.com

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All specifications and diagrams are approximate and not binding. Technical features and design are subject to change.

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