HORSCH

Farming with passion

Maestro SW

THE FUTURE OF PNEUMATIC SINGLE GRAIN SEED TECHNOLOGY

THE FUTURE OF PNEUMATIC SINGLE GRAIN SEED TECHNOLOGY.
FAST – PRECISE – VERSATILE.

The Maestro – a master of singulation

Due to its exact grain singulation it is universally suitable for maize, soy, sunflowers and sugarbeet. The patented **Maestro** single grain technology particularly excels due to three features:

— The unique metering system

— The extremely small single grain metering unit

— The placement quality control.

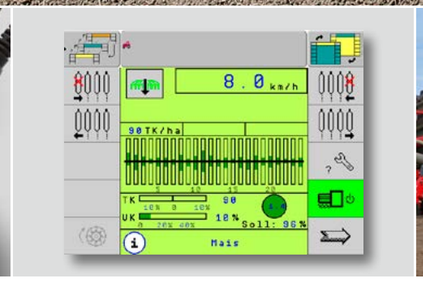
The metering system is based on a completely new metering disc. It does not have the usual holes, but grooves that open up to the outside. Thus, together with the new scraper, the singulation results achieved in a large frequency range from 0 to 30 Hz are excellent. 30 Hz correspond to a working speed of 12 km/h for the usual 90 000 grains of maize per hectare.

The crucial factor for these results is the smooth transition of the grains from a circular to a linear movement in the placement area. There are no disturbing centrifugal forces in the fall sluice. This extraordinary accuracy is undependend from the rotational frequency of the metering disc and is exactly controlled by sensors. As the grains are not shot into the soil pneumatically, it is possible to work without a catching roller at the seed unit, e. g. under wet conditions.

The software in the HORSCH Terminal is set up in such a way that the driver can clearly see the exact missing and double spots as well as the variation coefficient for every single row. Thus, the driver can respond any time to the most different conditions like seed or seedbed quality and use the machine to its full capacity. The working speed can thus be adapted to the individual requirements for placement accuracy.

Compact and robust –
the Maestro single grain metering device

The **new metering disc**
of the Maestro with open grooves



The **HORSCH Terminal** shows the placement quality
of each individual row on a real-time basis.

The new **pneumatic singulation**
is absolutely precise.

Maestro SW

MAXIMUM EFFICIENCY WITH LARGE SEED WAGGON

What are the excelling features of the Maestro SW?

— 8 to 12 km/h working speed

— Maximum efficiency for single grain seed

— Seed waggon with a capacity of 2 000 litre for seed and of 7 000 litre for fertiliser

— Seed on Demand system for a permanent seed provision at each seed unit

— As 12-, 16-, 18-, 24- or 36-row version

— Row spacing from 45 to 90 cm

— Robust HORSCH seed units

— Coulter pressure between 150 and 350 kg hydraulically adjustable

And of course

— The unique **Maestro** metering system

— The extremely small single grain metering unit

— The exact control of the placement quality

— Precise sowing with 12 km/h working speed

— Universally suitable for maize, soy, sunflowers and sugarbeet

Extremely robust **single grain seed units** with precise grain singling and **Seed on Demand system**

Seed waggon for 2 000 litre seed and 7 000 litre fertiliser for maximum efficiency

16-row **Maestro SW** road transport

Transfer of the seed waggon weight to the seed bar for increased coulter pressure

AutoForce

AUTOMATIC COULTER PRESSURE CONTROL

AutoForce –
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.

— Lighter soils or more easily compacted soils require less coulter pressure to avoid a compaction of the soil. 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 regular. The coulter pressure should be adjusted for every section of the field.

— This is why HORSCH developed an automatic coulter pressure control system.

How does AutoForce work?

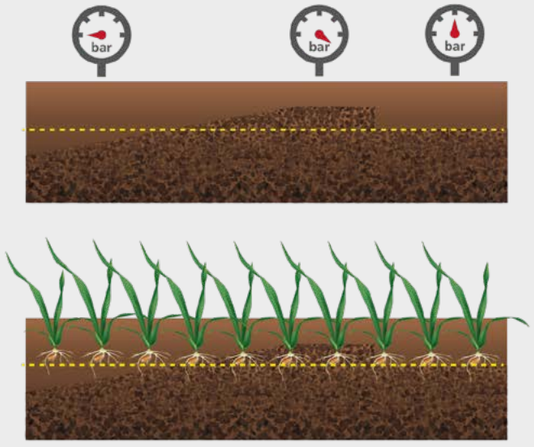
— There are 1, 2 or 4 sections over the whole working width of the machine.

— The pressure is measured with a sensor on both support wheels.

— The system controls the pressure of the cylinders at the parallelogram and corrects the adjustments in such a way that the weight on the support wheels always remains the same. This is possible due to the design of the Maestro that allows for transferring weight to the seed bar.

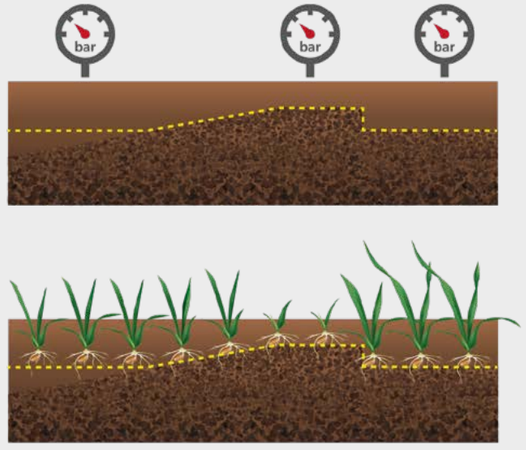
— The coulter pressure then varies automatically between 125 kg and 300 kg.

WITH coulter pressure control system AutoForce



Optimum pressure – optimum sowing depth

WITHOUT coulter pressure control system AutoForce



Too much pressure – too much compaction

Too little pressure – too shallow sowing

Optimum pressure – optimum sowing depth

AutoForce pressure sensor: Weight recording is carried out via Piezo (pressure sensor) technology.

Details of the Piezo sensor

Press wheels

FOR A BETTER EMBEDDING OF THE GRAINS

Which press wheel is suitable for which use?

— The finger wheel is ideal for heavy soils.

— The spike wheel is ideal for lighter sites.

— The rubber closing wheels are ideal for light sandy sites.

— If the furrow wall gets compacted because of the double disc seed coulters, it is broken by the finger/spike wheel – the furrow is removed.

— Seed furrow is not opened after sowing under dry conditions, especially on heavy clayey sites

— Development of the maize root is encouraged

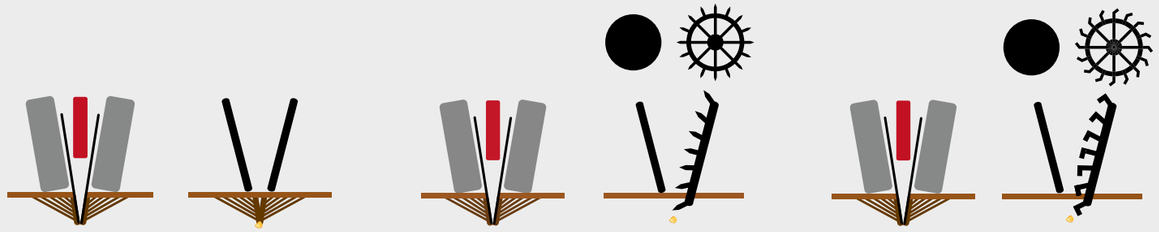
— There is one finger/spike wheel and one standard wheel per row to control the depth and to avoid moving the grains.

— However, the wheels are not suitable for shallow sowing.

Closed seedbed furrow with standard rubber press wheels

Closed seedbed furrow with spike wheels

Closed seedbed furrow with finger press wheels



Seedbed furrow closed with standard press wheels

The standard press wheels keep up the consolidation

The spiked and the finger press wheels version breaks the consolidation that was generated by the depth control wheels.

The seed discs of the seed body open the seed furrow. Between the depth control wheels of the seed discs a little consolidation is created

Finger wheel

Spike wheel

ELECTRONICS

INNOVATIVE AND DIGITAL SOLUTIONS

HORSCH Intelligence

The machines of the future co-operate actively and HORSCH Intelligence allows for it. With intelligent software and electronic solutions HORSCH machines work even more efficiently and help you to save money and nerves.

HORSCH technology is always equipped with ISOBUS standard. This does not only mean that every HORSCH machine can be controlled with any ISOBUS terminal. In addition, every HORSCH machine with a job computer can, as a standard, carry out functions like SectionControl, VariableRate or the order processing with the TaskController as soon as the necessary licences have been activated.

SectionControl

The ISOBUS SectionControl function allows for an automatic section control. The current position of the machine is determined via GPS. At the field boundaries, on the headlands or near obstacles, sections (individual row switch-off) or the whole working width are switched off automatically and thus overlapping is avoided.

Advantages of SectionControl

— Saving of seed and fertiliser as overlapping is reduced to a minimum.

— Constant working quality on the whole field

— Productivity increase under various conditions (day and night, fog)

— Reduced stress for the driver

— Protection of the environment

TaskController

The ISOBUS TaskController allows for easily transferring data from the PC to the terminal. It also is possible to transfer and document seed rates, sown hectares and other data that were recorded while sowing from the terminal to the PC. This facilitates the administration of the acreage index. Orders can be created and worked off via the integrated order handling management.

Advantages of the TaskController

— Uncomplicated data exchange

— Automatic documentation

— Structured working due to data management

— Simple administration of the acreage index

— Simple accounting and proof for contract services

VariableRate

ISOBUS VariableRate allows for a site-specific application of seed and fertiliser. Thus, with an appropriate application card for every section within a field the optimum quantity of fertiliser and seed can be applied.

Advantages of VariableRate

— Saving of seed and fertiliser as only the necessary quantity is applied

— Homogeneous emergence with an optimum number of grains/m²

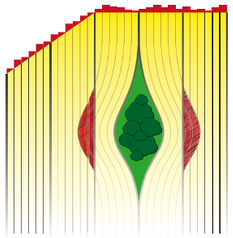
— Simple and quick documentation
  – The different application rates are documented automatically.
  – Uncomplicated transmission to the acreage index

— Reduced stress for the driver
  – Fields are drilled or fertilised automatically with the optimum application rate

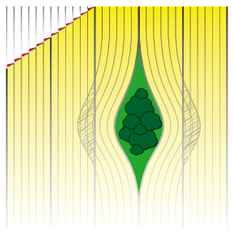
— Protection of the environment
  – Only the necessary amount of fertiliser is applied.

MultiControl

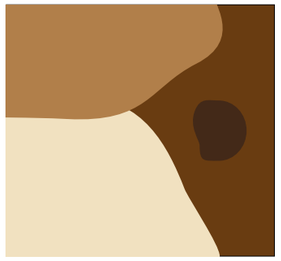
When using a HORSCH Touch 800/1200 terminal you can also use the MultiControl function. If SectionControl is activated, MultiControl allows for switching on and off seed and fertiliser independently. If sowing is carried out in a site-specific way with VariableRate, MultiControl varies the quantity of fertiliser and seed independently. Without MultiControl, SectionControl allows for either switching on and off either seed or fertiliser at the right time respectively VariableRate allows for varying either seed or fertiliser.



WITHOUT SectionControl



WITH SectionControl

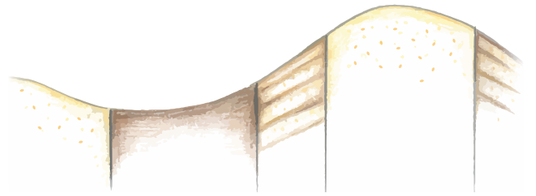


Soil quality	Seed	Fertiliser
high	300 grains/m²	2.8 dt/ha PK
medium high	270 grains/m²	2.5 dt/ha PK
medium low	250 grains/m²	2.3 dt/ha PK
low	220 grains/m²	2.0 dt/ha PK

VariableRate
Seed OR fertiliser

VariableRate with MultiControl
Seed AND fertiliser

Variable Rate allows for applying site-specific quantities of fertiliser and seed by means of application maps.



VariableRate also takes different typres of soil into consideration.

Terminals

HORSCH Terminal

Touch 800 Terminal

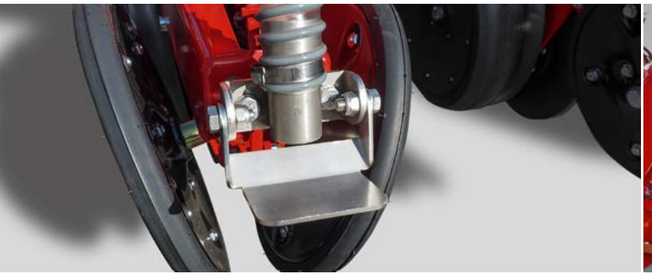
Touch 1200 Terminal

ready for agrirouter

MEMBER OF AEF

AEF Certified ISOBUS www.aef-isobus-database.org

EQUIPMENT



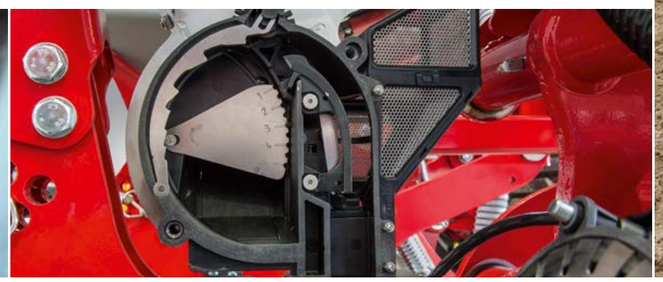
Outlet micro-granular compound

Metering device micro-granular product

Fertilizer discs

Depth control wheels with scraper, adjustable press wheels and the catching roller which can be removed in extremely wet conditions as the seed grain is not placed into the soil with pressure

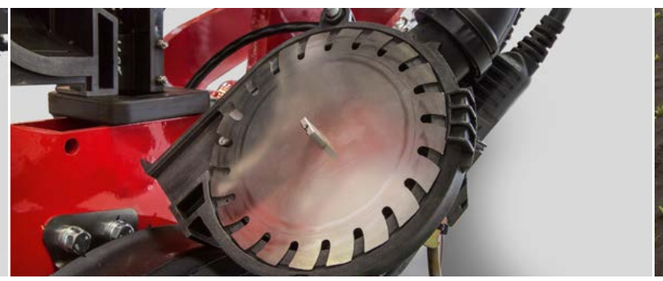
Depth control wheel with spokes



The adjustable **scraper** transports the grain into the fall sluice without any disturbing centrifugal forces.

Maestro SW with liquid fertiliser unit to apply fertiliser on the seed row

Optional **trash wheels** in front of the fertiliser coulters



The **metering** of the Maestro

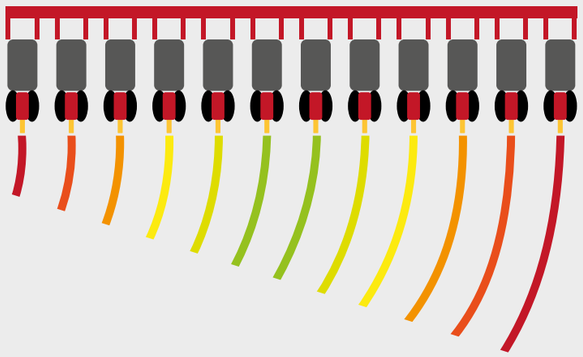
SectionControl allows for an automatic switching off and on of the rows via GPS position signal. The GPS system is not part of the HORSCH Terminal.

Seed unit with Seed On Demand

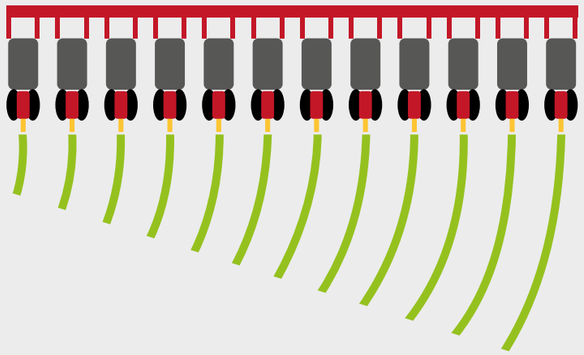
Trash wheels, floating with depth control

EQUIPMENT

WITHOUT ContourFarming
In a bend the seed rate is higher – on the outside the seed rate is lower.



WITH ContourFarming
In a bend the seed rate does not change.



ContourFarming
Automatic adaption of the metering frequency in bends: Each outside wing is equipped with a radar. These radar sensors measure the sowing speed and the seed rate in every row, the seed rate is adjusted accordingly (only for Maestro 24 and 36 SW).

One of the radars for **ContourFarming**

Filling auger **Maestro SW**

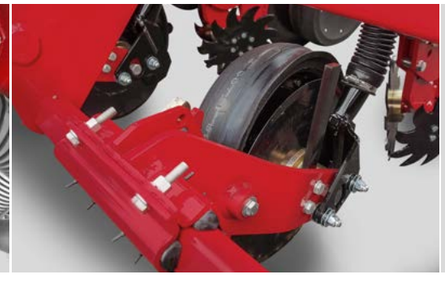
Maestro 16 SW with large press wheels

Hydraulic **coulter pressure adjustment** for **Maestro SW**

Maestro SW: Metering unit in the **Seed on Demand** version

View into the **divided seed waggon** of the **Maestro SW**

Open **Seed on Demand system** at the Maestro SW



Optional SingleDisc fertiliser coulter

SingleDisc fertliser coulter as an option (not for Maestro 12/18 SW)

TECHNICAL SPECIFICATIONS

HORSCH Maestro SW	12.70–90 SW/30"–36" SW	16.70–75–80 SW/30" SW	18.45–50 SW
Transport width (m)	3.00/3.12 for 12.70–30" SW/ 3.65 for 12.90 and 12.36" SW	3.00/3.12 for 16.70–30" SW (3.50 m option without hydraulic axles)	3.00
Transport height (m)	4.00/4.60 for 12.90 and 12.36" SW	4.00	4.00
Transport length (m)	9.51	8.06	9.51
Weight incl. seed waggon (kg)*	7 175	9 857	8 300
Axle load (kg)	---	---	---
Support weight (kg)	---	---	---
Hopper capacity seed waggon (seed/fertiliser) (l)	2 000/7 000	2 000/7 000	2 000/7 000
Hopper capacity seed waggon only seed (l)	8 500	8 500	8 500
Feed opening seed waggon seed (mm)	800x660	800x660	800x660
Feed opening seed waggon fertiliser (mm)	2 450x660	2 450x660	2 450x660
Hopper opening seed waggon only seed (mm)	1 700x660 (2x)	1 700x660 (2x)	1 700x660 (2x)
Number of rows	12	16	18
Electr. coulter pressure adjustment terminal (kg)	150–350	150–350	150–350
Depth control wheel Ø (cm)	40	40	40
Press wheel Ø (cm)	30/33	30/33	30/33
Catching roller	Standard	Standard	Standard
Row spacing (cm, inch)	70/75/90/30"/36"	70/75/80/30"	45 or 50
Sowing depth (cm)	1.5–9	1.5–9	1.5–9
Drop height seed (cm)	45	45	45
Tyre size seed waggon	520/85 R 38	520/85 R 42	520/85 R 42
Telescopic axle	Standard	Standard	Standard
Working speed (km/h)	8–12	8–12	8–12
Horsepower requirement from (kW/hp)	130/180	160/220	160/220
Depressurized return flow (max. 5 bar)	1	1	1
DA control devices direct drive	1 DA hydr. functions, 1 DA hydr. fan direct drive underpressure with adjustable flow rate, 1 DA hydr. fan direct drive fertiliser and seed with adjustable flow rate, 1 DA hydr. filling auger fertiliser system	1 DA hydr. functions, 1 DA hydr. fan direct drive underpressure with adjustable flow rate, 1 DA hydr. fan direct drive fertiliser with adjustable flow rate, 1 DA hydr. fan direct drive seed with adjustable flow rate, 1 DA hydr. filling auger fertiliser system	1 DA hydr. functions, 1 DA hydr. fan direct drive underpressure with adjustable flow rate, 1 DA hydr. fan direct drive fertiliser and seed with adjustable flow rate, 1 DA hydr. filling auger fertiliser system
DA control devices pto-shaft drive	---	---	---
Oil quantity hydr. fan fertiliser (l/min)	40	40	40
Oil quantity hydr. fan seed (l/min)	40	20	40
Oil quantity hydr. fan underpressure (l/min)	---	25	25
Power demand during operation (A)	45	50	50
Adj. drawbar linkage	Ring drawbar Ø 58–79 mm	Ring drawbar Ø 58–79 mm	Ring drawbar Ø 58–79 mm
Ball-type linkage	K 80	K 80	K 80

* Weights of the machines with minimum equipment

HORSCH Maestro SW	24.45–50 SW	24.70–75 SW/30" SW	36.45–50 SW
Transport width (m)	3.00 (3.50 m option without hydraulic axles)	3.00/3.12 for 24.70–30" SW (3.50 m option without hydraulic axles)	3.00 (3.50 m option without hydraulic axles)
Transport height (m)	4.00	4.00	4.00
Transport length (m)	8.06	9.50	9.62
Weight incl. seed waggon (kg)*	11 830	11 830	13 900
Axle load (kg)	---	---	10 200
Support weight (kg)	---	---	3 700
Hopper capacity seed waggon (seed/fertiliser) (l)	2 000/7 000	2 000/7 000	2 000/7 000
Hopper capacity seed waggon only seed (l)	8 500	8 500	8 500
Feed opening seed waggon seed (mm)	800x660	800x660	800x660
Feed opening seed waggon fertiliser (mm)	2 450x660	2 450x660	2 450x660
Hopper opening seed waggon only seed (mm)	1 700x660 (2x)	1 700x660 (2x)	1 700x660 (2x)
Number of rows	24	24	36
Electr. coulter pressure adjustment terminal (kg)	150–350	150–300	150–350
Depth control wheel Ø (cm)	40	40	40
Press wheel Ø (cm)	30/33	30/33	30/33
Catching roller	Standard	Standard	Standard
Row spacing (cm, inch)	45/50	70/75/30"	45/50
Sowing depth (cm)	1.5–9	1.5–9	1.5–9
Drop height seed (cm)	45	45	45
Tyre size seed waggon	520/85 R 42	520/85 R 42	520/85 R 42
Telescopic axle	Standard	Standard	Standard
Working speed (km/h)	8–12	8–12	8–12
Horsepower requirement from (kW/hp)	200/270	200/270	243/330
Depressurized return flow (max. 5 bar)	1	1	1
DA control devices direct drive	1 DA hydr. functions, 1 DA hydr. fan direct drive underpressure with adjustable flow rate, 1 DA hydr. fan direct drive fertiliser with adjustable flow rate, 1 DA hydr. fan direct drive seed with adjustable flow rate, 1 DA hydr. filling auger fertiliser system	1 DA hydr. functions, 1 DA hydr. fan direct drive underpressure with adjustable flow rate, 1 DA hydr. fan direct drive fertiliser with adjustable flow rate, 1 DA hydr. fan direct drive seed with adjustable flow rate, 1 DA hydr. filling auger fertiliser system	1 DA hydr. functions, 1 DA hydr. fan direct drive underpressure with adjustable flow rate, 1 DA hydr. fan direct drive fertiliser with adjustable flow rate, 1 DA hydr. fan direct drive seed with adjustable flow rate, 1 DA hydr. filling auger fertiliser system
DA control devices pto-shaft drive	1 DA hydr. functions, 1 DA hydr. fan direct drive fertiliser with adjustable flow rate, 1 DA hydr. filling auger fertiliser system	1 DA hydr. functions, 1 DA hydr. fan direct drive fertiliser with adjustable flow rate, 1 DA hydr. filling auger fertiliser system	1 DA hydr. functions, 1 DA hydr. fan direct drive fertiliser with adjustable flow rate, 1 DA hydr. filling auger fertiliser system
Oil quantity hydr. fan fertiliser (l/min)	45	45	45
Oil quantity hydr. fan seed (l/min)	20	20	20
Oil quantity hydr. fan underpressure (l/min)	55	55	55
Power demand during operation (A)	60	60	80 (ATTENTION: check electrical power equipment of the tractor)
Adj. drawbar linkage	Ring drawbar Ø 58–79 mm	Ring drawbar Ø 58–79 mm	Ring drawbar Ø 58–79 mm
Ball-type linkage	K 80	K 80	K 80

* Weights of the machines with minimum equipment

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