





## Intelligent machines for global challenges.

WINTERSTEIGER has established itself at the top of a niche market which will continue to gain significance in future. Agronomists and plant breeders today face the challenge of introducing new developments to make a decisive contribution towards sustainable food and energy supplies for the world.

WINTERSTEIGER supplies the technology needed to do this. The WINTERSTEIGER Delta plot combine fulfills all the requirements for fast, mix-free harvesting from experimental plots to small seed increases. This ensures optimum conditions for research, breeding, testing and propagation of field crops including specialty crops to exacting standards.

Read the following pages to discover in detail what the global market leader offers you.



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## Delta

Plot combine.

### High performance harvesting with modular flexibility.

The Delta plot combine fulfills all the requirements for an efficient, clean harvest, from experimental plots to small seed increases. The Delta stands out due to exceptional stability and ruggedness thus ensuring reliability of use, even under difficult harvesting conditions. Thanks to its modular system, the combine is suitable for all harvesting conditions and customer requirements.



### Your benefits summed up:

- Many variants of powerful cutting tables for a variety of crops and applications make the Delta a universally deployable machine
- Best threshing performance and best sample quality thanks to powerful threshing unit, two step shaker and double cleaning sieve system
- Mix-free harvesting with pneumatic seed delivery system, conveyor belt in threshing case and automatic clean out system for header and sieve areas
- Easy operation thanks to multi-function lever for all driving and harvesting functions, hydraulic steering and hydrostatic drive
- Comfortable working conditions thanks to noise insulated cabin with state-of-art controls and features
- The wide range of bagging and sampling methods as well as the automatic weighing system with moisture measurement can be adjusted to match customer-specific procedures
- The stable and compact construction allows for excellent maneuverability and centre row threshing ability combined with fast loading and unloading for transportation



## Basic machine for peak performance.

The WINTERSTEIGER Delta has a hydrostatic drive with powerful wheel hub motors. The 62 kW water cooled Perkins diesel engine (84 HP) is designed for maximum performance and operational safety. Speed ranges: forward/reverse 0 - 18 km/h (0 - 11 mph) in 2 steps.

Optional all-wheel drive can be activated from the driver's seat on difficult terrain including a differential lock. The Delta can be equipped with a full track system for harvesting rice in muddy ground conditions. The Delta can also be supplied with larger diameter tires (1047 mm) on request. This provides 7 cm more ground

clearance. Reduced sensitivity to unevenness in terrain, less tendency to sink in and enhanced traction result in greater stability while in motion.

### Accessories:

- Electro-hydraulically controlled differential lock acting on front-wheel hub motors: can be switched on and off from the cockpit
- Compressor with air hose for cleaning the machine's exterior
- Underbody protection against thick stems (sunflower and maize harvesting)
- Rotary light



Delta with larger tires



Delta with full track system for rice harvesting

## Perfect view.

The WINTERSTEIGER Delta convinces owners with a number of benefits, but in particular due to a clear-cut layout of the control panel, easy and simple operation and a wide range of settings accessible from the driver's seat. On top of this, the cockpit gives the driver a perfect view of all functional areas. The spring mounted, ergonomic seat can be adjusted to match the driver's weight.

The driver and optional second operator have the choice between a cabin with air-conditioning and heating, or a cockpit with a safety rail and a sunroof. Thanks to the special cabin construction - the cabin is uncoupled from the basic machine - and to noise insulation measures, noise and vibrations have been minimized to 80 – 82 dB (A).



Gives the driver a perfect view of all functional areas

### All controls and displays are clearly laid out and easily accessible:

- Input and control functions are directly on the operator's platform
- Hydraulic steering
- Hydraulic setting of cutting table and reel height
- Stepless hydraulic reel speed adjustment from 0 - 45 rpm
- Fast stop for cutting table, reel and feed auger



Controls and displays

### A multifunction lever combines all driving and harvesting controls in your hand:

- Driving operations forward/backward stepless
- Raise/lower cutting table
- Raise/lower reel
- Reel forward/backward (option)
- Reel speed
- Weighing system: weighing cycle start
- Cleaning cycle start



Multifunction lever

An optional Stop&Go foot pedal lets you drive and stop the machine without changing the position of the multifunction lever. This simplifies operation and improves the harvesting efficiency.



## A variety of headers are available.

### The following headers are available for the Delta:

- Cutting table with chain intake feeder (cutting widths 150, 175 and 200 cm)
- Cutting table with conveyor belt (cutting width: 150 mm)
- Header for harvesting 2 rows of maize
- Row-crop header for harvesting 2 rows of soybeans
- Header for harvesting sunflowers
- Tine cloth pick-up device for swath harvesting

## Cutting table with feeding auger and chain.

This cutting table is a high-performance standard tool for the Delta. It comprises a auger that feeds the cut harvested material to the center, and a a chain to feed the grain to the

threshing unit. The cutting table has proven itself under the most difficult harvesting conditions, such as lodged, heavy, or bulky crops with high moisture levels.

### The cutting table has the following characteristics:

- Consistent intake and best harvesting performance
- Mix-free harvesting due to standard clean out systems
- Excellent harvesting results even in difficult harvesting conditions, on account of the crop lifters and extra-long outer dividers
- Easily dismantled (e.g. for converting to maize)

### Accessory (option):

- Reel brushes for a grain free cutting table
- Crop lifters for harvesting lodged crops
- Fine seed option
- Hydraulic horizontal reel adjustment
- Additional air cleaning of the feeder house
- Speed adjustment for feeder house chain
- Cutting table extensions and vertical cutter bars for rapeseed harvesting
- 6-part reel e.g. for harvesting rice
- Vertical cutter bar



Header with feeding auger



Header with feeding auger and chain



## Cutting table with conveyor belt and feeding auger.

This cutting table is a combination of a conveyor belt, feeding auger and a transfer drum. Continuous straw feed and the large distance between the cutter and between the cutting bar and the feeding auger guarantee minimal seed losses.

Side air nozzles on the cutting table guarantee an absolutely mix-free harvesting. This cutting table makes the Delta a high performance combine for harvesting breeding and variety plots.

### The cutting table has the following characteristics:

- Consistent feed and high harvesting capacity
- Mix-free harvesting thanks to fully covered cutting knife and conveyor belt, anti-static rubber conveyor belt and pneumatic clean out system
- Adjustable cutting skids guarantee an even cutting height
- Fast stop system for the cutting table and reel prevents the intake of foreign objects
- Outstanding results, even under difficult harvesting conditions, on account of the crop lifters and extra-long row dividers

### Accessory (option):

- 2 brushes mounted on the reel for a grain-free cutting table without manual cleaning
- Rubber flaps for harvesting peas or beans, preventing overripe or burst crops from rolling or bouncing away, thus preventing losses on the cutting table
- Hydraulic horizontal reel adjustment
- Underbody protection for cutting table to prevent damage to the conveyor belt by sunflower stalks, bean stubble etc.
- Extra-long row dividers for perfect splitting of plots with long stem grains from the full crop
- Crop lifters for harvesting lodged crops
- Vertical cutter bar on the right in place of the outer divider for rapeseed, beet, bean and vegetable plots to minimize losses at the separating lines
- Vertical cutter bar on the left in addition to the vertical cutting table on the right for harvesting only the center of plots
- Rapeseed cutting table extension



Conveyor belt



Header with conveyor belt and feeding auger



## Header for harvesting 2 rows of maize.

Thanks to its sturdy and rugged construction, the WINTERSTEIGER Delta is the perfect machine for harvesting maize/corn and has the following convincing characteristics:

- Sturdy picking frame ensures excellent cutting performance with low power requirement
- Special maize intake chains ensure even transport to the threshing units without damaging the grains
- Minimal seed loss
- Narrow construction enables harvesting of 2 center rows
- Hydraulic adjustment of picker bars with ground clearance display in cockpit
- Row spacing of 70 - 80 cm (other row spacing on request)
- Quick attachment frame in case of crop changes thanks to hydraulically driven system

### Accessory (option):

- Integrated chopper for chopping stalks
- Sunflower accessory for maize picking header



Maize picking header

## Row-crop header for harvesting 2 rows of soybeans.

For high-performance and clean harvesting of soybeans in rows, the row crop header offers the following characteristics:

- Handling of the harvested crop without damaging the grains due to intake conveyor belts and conveyor belt
- Mix-free thanks to conveyor belt and sealing of corners and edges
- Minimal seed loss
- Operator-friendly thanks to stepless hydraulic adjustment of intake speed and cutting height
- Fast stop device avoids intake of foreign bodies
- Row spacing 75 cm (other row spacing on request)
- Low cutting height



Row-crop header



## Header for sunflower harvest.

Sunflower harvesting can basically be handled by an optional accessory for the cutting table with chain intake, the cutting table with belt intake and the 2-row maize picking header.

A special two-row sunflower attachment is available for particularly difficult harvesting conditions. It is designed for 70 and 80 cm row spacing.

### The header has the following characteristics:

- Vibration free and thus low loss cutting thanks to two counter-rotating cutting discs
- Continuous intake via two feeder belts and a cross auger
- Clean harvesting thanks to raising the trays and blowing out the header at the end of the plot



Sunflower attachment

## Tine cloth pick-up device for swath harvesting.

Tine cloth pick-up devices are used for harvesting material from swath. A belt mounted on the cutting table with integrated plastic tines carefully picks up the swath without any waste. The belt is hydraulically driven.

The advantage compared to pick up with a normal cutting table is that there is no need to deploy an active cutting knife that additionally cuts the standing stalks thus inadvertently feeding residue material into the harvester.



Delta with tine cloth pick-up device

## Mix-free pneumatic seed transport, gentle to seeds.



### Grain transport elements:

- 1 Cyclone
  - 2 Weighing system
  - 3 Side mounted bagging
  - 4 Sampling
- Transporting of harvested material from the sieve box
  - Optional transport directly to the grain tank
  - Transport to the cyclone/weighing system
  - Material flow through the cyclone/weighing system
  - Optional side mounted bagging
  - Transports of the harvested material downstream of the weighing system
  - Optional transport directly to the grain tank
  - Sampling (subsampling, remainder is bagged in cabin or grain tank)

**WINTERSTEIGER offers the right solution for the job in hand:**

### Grain tank.

The grain tank is filled pneumatically, emptying is done by an auger. By operating a switch valve, it is possible to choose between delivering the grain to the bagging unit, weighing

system, or into the grain tank. Emptying through the floor flap ensures fast, complete cleaning of the grain tank. The hydraulically driven emptying auger enables fast emptying of

the grain tank. The standard machine has a 1,100 l grain tank. An optional extension to the grain tank increases the volume to 1,500 l.



## Side mounted bagging.

With a 2-person harvesting process, bagging takes place on the side of the machine using pneumatic seed delivery, adjustable blower, injector sluice, cyclone and bag holder. If you use a mobile harvesting data system, you can bag the complete plot at the side, unless it is fed into the grain tank.

### Accessories:

- Additional platform for bagging
- Seat for additional platform



Side mounted bagging, left-hand side

## Bagging in the cabin.

With a 1-person or 2-person harvesting process, bagging takes place in the cabin either by the driver or a second operator using pneumatic seed delivery, adjustable blower, injector sluice, cyclone and bag holder. The pneumatic seed delivery system ensures mix-free and gentle seed transport.



Bagging in cabin

## Skid-based bagging.

Skid-based bagging is used for subsampling to 20 hoppers of 4 liters each, where standard boxes can be replaced quickly. You can take mixed samples with several

repetitions of one crop type as the hoppers can be accessed multiple times for filling of subsamples. The subsamples are blown by the existing sampling system into

the cyclone above the positioning system. A 2-axial positioning system then accesses the selected sample hopper, and the subsample flows into the hopper.

### The operator can choose between the following options in the cabin:

- Manual accessing of individual hoppers: feedback is given to the driver when the position is reached
- Sequential processing: the driver selects a start position. After reaching this position, the next higher or next lower position is accessed after each start signal
- Movement controlled by the field plan in the Field Research Software™ (FRS): the hopper number defined in the FRS field plan is accessed for filling



Skid-based bagging

## Sampling.

The machine can be equipped as follows for sampling:

- Sampling of total plot in the cabin
- Sampling of 0 – 600 ml of plot (adjustable) in the cabin
- Sampling of 700 – 2000 ml of plot (adjustable) in the cabin
- Sampling of 0 – 1000 ml of plot (adjustable) in the cabin

For all other sampling variants the remaining harvested material can either be bagged or fed to the grain tank.



Sampling from the cabin



Side sampling

## Delta sample conveyor belt.

The sample conveyor belt was developed to support more efficient storage of samples on the Delta plot combine. Samples are collected, depending on the desired sample size, in the cabin during harvesting. The samples are transported, by way of a flap in the cabin rear wall, to a roller conveyor, from where the samples drop onto the sample conveyor belt. The conveyor belt is situated 200 mm lower than the roller conveyor, is fitted with 250 mm high walls and is 300 mm wide and 2.3 m long. The depositing capacity is thus approx. 170 l. Correspondingly, depending on sample size,



Sample conveyor belt during filling

from 120 (1400 ml) to 850 (200 ml) samples can be deposited. The conveyor belt is advanced during loading by means of a sensor in the

cabin, allowing it to be filled completely.

The sample conveyor belt is mounted at a height of 1 m. It can be additionally fitted with deflectors if required. The transport width is 2.55 m with the sample conveyor belt folded in.

The sample conveyor belt can be pivoted or the height adjusted hydraulically in order to position it as required during emptying. It can be pivoted by up to 90°. The height can be adjusted to between 0.75 m and 1.8 m for emptying.



Sample conveyor belt may be pivoted by 90°, height-adjustable



Adjustable height for emptying the sample conveyor belt

# Perfect threshing for a clean harvest.

- 1 Cross auger
- 2 Intake bars on the feeder chain
- 3 Threshing drum
- 4 Concave
- 5 Transport belt
- 6 Beater drum
- 7 Shakers



Pneumatic clean out of header and/or conveyor belt intake, threshing drum, shaker, sieve, cleaning fan – perfect synchronization of critical components combined with pneumatic seed delivery guarantee mix-free harvesting and excellent threshing performance

Sophisticated threshing technology, seed delivery and sealed corners and edges guarantee short threshing cycles, best straw throughput and a mix free and clean sample. Controls and adjustments are carried out from the driver's seat.

### A high level of purity of the harvested sample is guaranteed by:

- Various shakers and cleaning sieves
- Optimum distribution of air at the cleaning sieve
- Air deflector plates on the cleaning sieve
- Specific air distribution in the blower

When automatic cleaning is activated, the cutting table is first blown clean, then cleaning fan speed is raised to the maximum speed for a period of time to blow out the sieve areas.



## Threshing drum variator.

The threshing drum variator enables stepless threshing drum speed adjustment from 330 - 1900 rpm. The threshing drum speed is displayed on the operator's platform. Advantages: easy adjustment to suit different crops and harvesting conditions. It is also possible to adjust the distance between the concave and the threshing drum as well as the angle of the concave.

## Shakers.

The two-stage shaker is also universally usable. The surface shaker is mix-free, is capable of working on slopes and has an exceptional ability to open up straw. A high-power maize shaker



Shakers with double sieve system

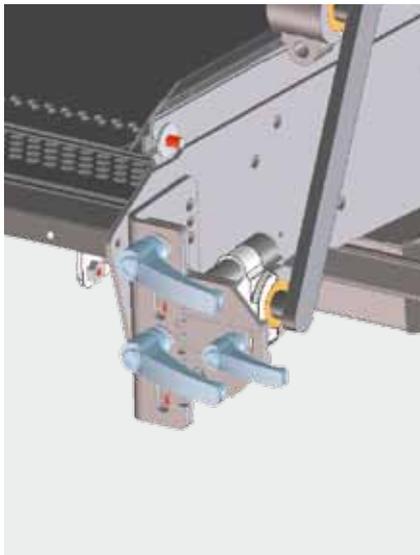
## Bottom sieves.

Using a quick change system (no tools needed), the machine can be converted within minutes to deal with different harvesting conditions and crop types.

## Concaves.

A universal concave is suitable for harvesting almost all crop types. It is possible to attach up to five operator-friendly de-awner bars from the outside. A specially sized concave is available for harvesting large seed crops. A spiked drum and concave is optionally available for rice.

is available for harvesting maize, and a special rapeseed shaker for harvesting rapeseed. The various shakers are fitted with a quick change system.



Variable sieve box setting

## Variable sieve box setting (option).

The sieve box inclination can optionally be set manually. This improves performance while at the same time reducing grain loss, especially for small grains such as e.g. rapeseed.

## Beater drum.

The machine can optionally be equipped with a rubberized beater drum for gentle threshing of bean crops.

## Top sieves.

An adjustable sieve, or a Graepel sieve, is used as the top sieve to ensure the highest level of purity and mix-free harvested material.



Straw chopper

## Straw chopper (option).

The straw chopper distributes the chopped straw evenly over the whole width of the cut. The straw chopper can also be folded up during swath depositing.



### Electrical adjustable sieve setting (option).

In combination with the grain loss display option, the driver can set the adjustable sieve angle electronically from the cabin or from the rear via pushbuttons. This ensures maximum cleaning performance while at the same time minimizing grain loss.

Additionally, during cleaning at the end of the plot, the adjustable sieve is automatically opened for cleaning thus ensuring that awns from crops such as triticale, barley or wheat are dislodged.

### Grain loss display (option).

Grain loss is measured by an acoustic grain loss sensor which is placed at the end of the sieve. The measured grain loss is displayed in the Delta's cabin. If needed, the cleaning fan speed (standard) and the adjustable sieve angle (option) can be set from the cabin.



1 Electrical adjustable sieve setting 2 Grain loss sensor

# Mobile collection of all your harvest data.

WINTERSTEIGER also places an emphasis on future-oriented solutions in the field of mobile data collection. Only state of the art systems specially developed for agricultural research are used in our harvesting machines.

## Automatic harvest data logging takes the following parameters into consideration (depending on the harvesting data system):

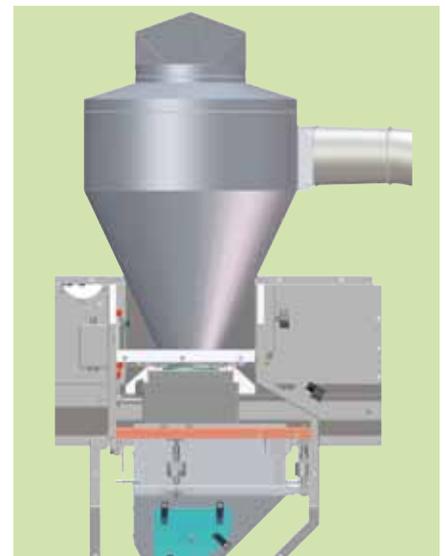
- Plot weight with maximum precision up to a slope of 10 %
- Moisture content of harvested material
- Volumetric weight
- Material content by means of near field infrared spectroscopy (NIRS)

## Mobile harvesting data system Generic Harvest Module™.

This harvesting data system is perfectly suited for weighing in situations where you do not need to determine the hectoliter weight, where extremely rapid cycle times are needed, for plot yields with measurements up to a max. of 30 kg and when using the Field Research Software™ (FRS) for field plan deployment, storage of acquired data and data export of the results.

### The sequence is as follows during harvesting:

- The system comprises a holding hopper and the weighing bucket
- The weighing cycle is actuated manually at the end of the plot by pressing a button
- The system always transports the harvested material from the previous plot from the holding hopper to the weighing bucket while the holding hopper is filling with the material from the plot currently being harvested
- This approach avoids the need to wait for all of the harvested material to be fed through the harvester and to the weighing system
- The weight is measured in the weighing bucket
- The data is stored on the PC, e.g. the Allegro™ Field PC, or an industrial PC
- Additionally, the data can be documented on a mobile field printer or stored on a memory card



Mobile harvest data system Generic Harvest Module™

### Technical data

Weighing system	
Dimensions (W x D x H)	500 x 530 x 530 mm
Weight	30 kg
Capacity	Approx. 25 kg wheat
Grain discharge opening	110 x 155 mm
Actuator	Precision pneumatics
Measuring precision/speed	
Weight	+/- 100g absolute
Speed cycle time	6 sec. – system ready, data recorded
HM 800 Electronic	
Protection class	Water and dust proof to IP67
Operating temperature	-20°C - +50°C
Power supply	9 - 17 V DC
Interface	CAN Bus – 4 wire
Connection	Con X all connectores

We reserve the right to make technical alterations.

### Your benefits summed up:

- Simple layout
- Mechanical slope compensation
- Low-cost solution
- Fast cycle time
- Use of Field Research Software™ (FRS)

The DK800 weighing terminal can be optionally deployed, if you do not need electronic data storage.

## Mobile harvesting data system Classic GrainGage™.

This harvesting data system is perfectly suited for measuring the weight, moisture and hectoliter weight. In addition to this, in case of plot yield of 900 g or more where best possible measuring accuracy is required, and when deploying the Field Research Software™ (FRS) for application of field plans, storing measured data, and exporting the resulting data.

### The sequence is as follows during harvesting:

- The Classic GrainGage™ comprises a 3-chamber system. The first chamber is a holding hopper with a filling level sensor. Moisture and weight measurements are taken in the second and third chambers
- Once the filling level sensor on the harvesting data system has sufficient material for weighing, the measurement starts automatically in the plot while the harvester is moving
  - At the end of the plot, the remaining material is then weighed
  - The individual sub-weights are added and the mean value of the acquired moisture data and the hectoliter weight are calculated
  - The data is stored on the PC, e.g. the Allegro™ Field PC, or an industrial PC
- Additionally, the data can be documented on a mobile field printer or stored on a memory card
- Manual acknowledgment closes the weighing cycle. You can then continue to harvest the next plot

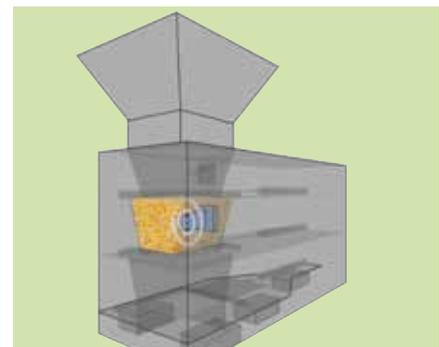
### Your benefits summed up:

- **Precision electronics:** The new HM800 electronics link the weight and moisture sensors by means of a CAN bus data line. The core of the new data collection system is the „HM800 Analog and Actuator Module“.
  - **Slope and motion sensor:** Improves weighing precision and reduces errors caused by vibrations and the harvester moving. This enables weighing while the harvester is moving through the plot and measurements on slopes of up to 10%
  - **Moisture sensor:** Highly precise measurements are possible even for high levels of moisture (up to 35%). The mean values of the sub-samples provide representative results
  - **Continuous harvesting** of long plots is supported
  - Use of **Field Research Software™ (FRS)**
- This avoids the need for long or bulky cables

### Technical data

Weighing system	
Dimensions (W x D x H)	736 x 356 x 533 mm
Weight	45 kg
Capacity	3.00 liters - approx. 2.5 kg wheat 1.50 liters - approx. 1.2 kg wheat 0.75 liters - approx. 0.6 kg wheat
Grain discharge opening	152.4 x 215.9 mm
Grain inlet opening	114.3 x 190.5 mm
Actuator	Precision pneumatics
Measuring precision	
Weight	+/- 0.4% Full Scale or +/-10g absolute per weighing
Hectoliter weight	+/- 0.68 kg/HL
Moisture	+/- 0.5% - 25% (wet weight basis - ww), +/- 0.9% - 35%
Minimal quantity for moisture measurement	At least a full partial weighing, 3.00 / 1.50 / 0.75 liters
Speed	Approx. 4 sec. per partial weighing
HM 800 Electronic	
Protection class	Water and dust proof to IP67
Operating temperature	-20°C to +50°C
Power supply	9 - 17 V DC
Interface	CAN Bus – 4 wire
Connection	Con X all connectors

We reserve the right to make technical alterations.



Moisture sensor



Weighing cells

## Mobile harvesting data system Single High Capacity GrainGage™.

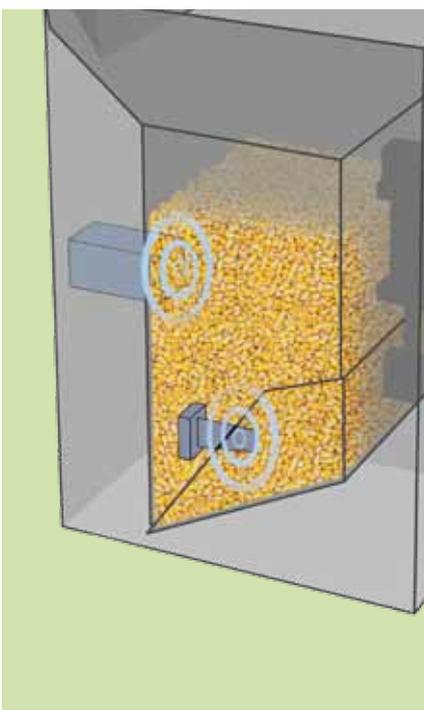
This harvesting data system is perfectly suited for weighing in situations where a large volume of harvested material needs to be weighed (e.g. maize/corn), for moisture measurements when rapid weighing cycles with high yields are required, and when using the Field Research Software™ (FRS) for field plan deployment, storage of acquired data and data export of the results.

### The sequence is as follows during harvesting:

- The weighing system comprises a weighing bucket, which in turn contains the required sensor for weight and moisture measurement
- The harvested material is harvested directly into the weighing bucket
- The weighing cycle is triggered manually at the end of the plot by pressing a button
- The data is stored on the PC, e.g. the Allegro™ Field PC, or an industrial PC
- Additionally, the data can be documented on a mobile field printer or stored on an additional memory card
- Additionally, this weighing system has a countdown timer to determine the optimal weighing point

### Your benefits summed up:

- The **single-chamber system** guarantees a fast cycle time
- **Precision electronics:** The new HM800 electronics link the weight and moisture sensors by means of a CAN bus data line. The core of the new data collection system is the „HM800 Analog and Actuator Module“. This avoids the need for long or bulky cables
- **Slope and motion sensor:** Improves weighing precision and reduces errors caused by vibrations and the harvester moving. This enables weighing while the harvester is moving through the plot and measurements on slopes of up to 10%
- **Moisture sensor:** Highly precise measurements are possible even for high levels of moisture
- **Continuous harvesting** of long plots is supported
- Use of **Field Research Software™ (FRS)**



Moisture and weight measurement in HCGG

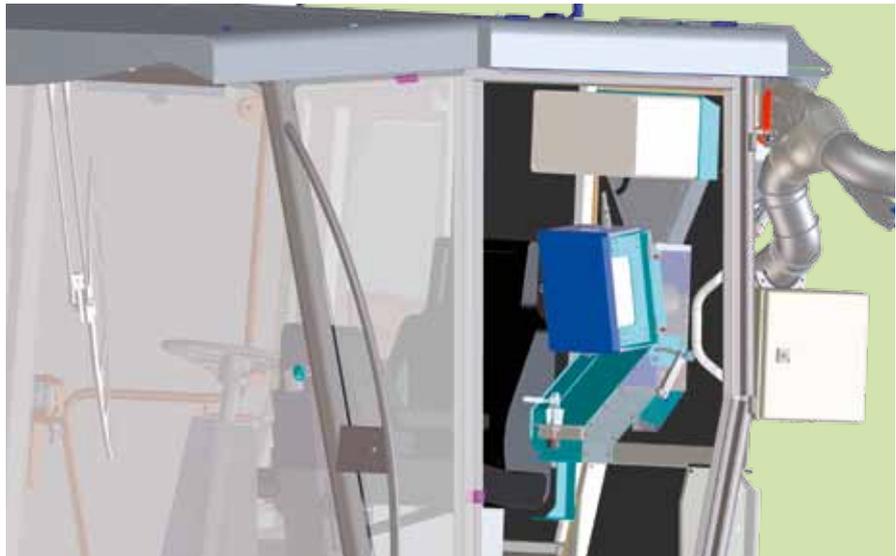
### Technical data

<b>Weighing system</b>	
<b>Dimensions (W x D x H)</b>	508 x 483 x 560 mm
<b>Weight</b>	46 kg
<b>Capacity</b>	Approx. 20 kg maize
<b>Grain discharge opening</b>	457 mm
<b>Actuator</b>	Precision pneumatics
<b>Measuring precision/speed</b>	
<b>Weight</b>	+/- 80g absolute
<b>Hectoliter weight</b>	+/- 1.2 kg/100 l for over 95% of samples
<b>Moisture</b>	+/- 0.5 % to 25 % (wet weight basis - wwb), +/- 0.9 % to 35 %
<b>Minimum quantity for moisture content measuring</b>	Approx. 7 liters Approx. 2 liters with "HCGG Insert" (baffle insert)
<b>Speed cycle time</b>	Approx. 6 sec. – System ready / data recorded
<b>HM 800 Electronic</b>	
<b>Protection class</b>	Water and dust proof to IP67
<b>Operating temperature</b>	-20°C to +50°C
<b>Power supply</b>	9 - 17 V DC
<b>Interface</b>	CAN Bus – 4 wire
<b>Connection</b>	Con X all connectors

We reserve the right to make technical alterations.

## NIRS analysis.

Near infrared spectroscopy (NIRS) has established itself in agricultural analysis over decades and has been the focus of both theoretical and practical ongoing development work. It can be assumed that the transition from the laboratory to field measurements and thence to online measurements performed directly on the harvester will continue to gain significance. The Delta can be equipped with a NIRS analysis device for mobile moisture content and quality testing.



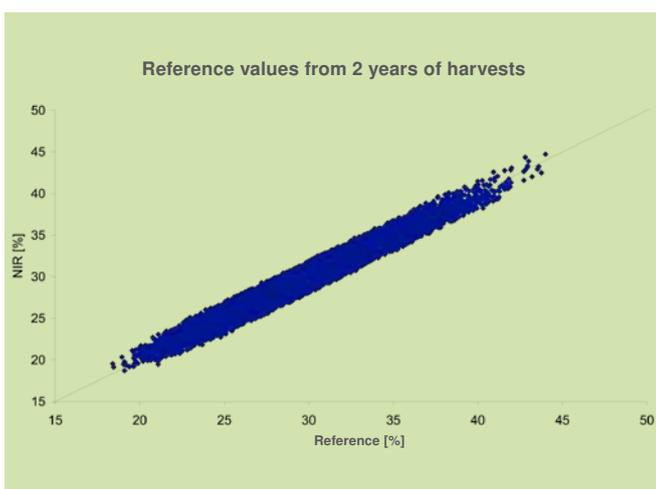
NIRS analysis

### The procedure is as follows during harvesting:

- The NIRS optical sensors are located in the cabin
- The harvested material is fed to the sampling cyclone behind the cabin
- The harvested material then flows past the NIRS optical sensors after opening the sampling cyclone flap
- The NIRS measurement is started by the signal for opening the sampling cyclone flap; the duration of the measurement is set software side
- The sampling cyclone aperture size is adjustable to allow feeding of sufficient material to the optical sensors in case of low plot yields (e.g. rapeseed)
- After completing the measurement, the grain can either be bagged in the cabin or transported to the grain tank
- The software runs on a laptop in the cabin

### Mounting the NIRS components in the air-conditioned cabin on the WINTERSTEIGER Delta ensures the following advantages:

- Constant temperature
- Easy to monitor by the driver
- Quick access for maintenance and black/white calibration
- Easy to dismount and operate



Cross-validation of the water content in maize with reference values from 2 years of harvests

The graphic shows the cross-validation of the water content in maize with reference values from 2 years of harvests. Reference values for samples from stationary measures are shown on the x axis. The y axis shows the values acquired by mobile measurements on the harvester.

## Allegro™ MX Field PC.

The Allegro™ MX Field PC was developed to provide a mobile PC for rating data acquisition, or for deployment harvesters. The PC is resilient to dust, water, and vibrations, and offers the following specifications:

- Safe data storage
- Windows Mobile 6.1
- Integrated Bluetooth Wireless Technology
- IP67 certified (water and dust proof)
- Touch screen display
- Robust, full alphanumeric keyboard with large keys and many function keys
- Easy-to-read color display
- 12 hour mains-free operations
- User-friendly design



Allegro™ MX Field PC

### Technical data

<b>Processor</b>	624Mhz PXA270 Processor
<b>Operating system and software</b>	Windows Mobile® 6 Classic, Microsoft® Office Mobile, various languages
<b>Data memory</b>	128MB RAM, 1 or 2 GB internal memory options, PCMCIA slot, type I or type II 16 bit, MicroSD/SDHC slot
<b>Display options</b>	3.8" (96 mm) color display QVGA (320 x 240), color display easily readable in daylight, monochrome display, heatable display for extreme conditions
<b>Keyboard</b>	Full 62-key alphanumeric keyboard, large keys with assignable functions, function keys, keyboard mounting removable for easy cleaning
<b>Connections</b>	USB Host – A, Mini USB Client – B, Com 1, RS-232C 9-pin subD with 5VDC on DTR pin, 12VDC power supply in, 10-18V non-regulated
<b>Dimensions</b>	256 x 133 x 79 mm
<b>Weight</b>	840 g
<b>Environment</b>	IP67 water and dust proof, operating temperature -30°C to 54°C, storage temperature -35°C to 60°C, tested to MIL-STD 810F for water, humidity, sand and dust, vibrations, temperature
<b>Power supply</b>	Rechargeable 4000mAh NiMH battery, running time 10 - 20 hours, fully recharged after 4 hours
<b>Wireless connection</b>	Bluetooth® wireless technology 2.0+EDR, Class 1, function radius 10 meters
<b>Certificates and standards</b>	FCC Class B, CE Mark, EN60950, RoHS compliant
<b>Standard accessories</b>	4000 mAh NiMH battery, styluses pen and mini, power cable, documentation, USB cable, hand holder and shoulder carrying strap, multiple fastening options for retaining belt
<b>Optional accessories</b>	USB charger, 12VDC vehicle charger

We reserve the right to make technical alterations.



## ads-tec VMT Industrial PC.

As an alternative to the Allegro, a 15" industrial PC can also be mounted on the Delta if a large operating panel is required. The device is very solidly constructed to meet any requirement placed on units used in combines.

### The industrial PC offers the following specifications:

- 15" monitor
- Convenient control via 5 keys on the front
- 5 wire industrial touchscreen
- Front panel manufactured from fiberglass-reinforced plastic
- Stable diecast aluminum case
- adsX<sup>2</sup> Intel® Atom™ processor platform
- Low power design
- Fan-free operation
- Internal WLAN/UMTS/RFID antennas
- USB port at front (can be deactivated by software)
- 2 Ethernet ports 10/100/1000 RJ 45
- Well-protected interfaces under covers
- Expanded temperature range
- IP 65 (protection against dust and spray water)



ads-tec VMT Industrial PC



### Technical data

<b>Case</b>	Diecast aluminum, powder-coated
<b>Front panel</b>	Fiberglass-reinforced plastic, painted
<b>Display</b>	15" TFT, 1024 x 768 pixel resolution, 16.1 mill. colors, automatic or manual display brightness adjustment
<b>Operation</b>	Resistive 5 wire industrial touchscreen and 5 keys at front
<b>Processor</b>	adsX <sup>2</sup> Intel® Atom™ 1.1 GHz or 1.6 GHz
<b>RAM</b>	1 GB or 2 GB DDR2 RAM
<b>Graphic controller</b>	Intel® SCH US15W with integrated graphics, max. 8 MB shared memory
<b>Mass storage</b>	1 Flash SSD (via internal USB port), alternative: 2.5" automotive hard disk drive, 40 GB min. (UDMA) Hard disk drive design: vibration/shock class 5M2
<b>Interfaces</b>	COM 1 (RS232, 5 V power supply can be activated for scanner), 1 PS/2 port (keyboard/mouse), 3 USB 2.0 ports (may be deactivated via software), one mounted on front panel, all interfaces protected under covers RFID reader for user identification, optional: keyboard simulator
<b>Wireless interfaces</b>	Optional: integrated WLAN module 802.11 (a/b/g) and UMTS Optional: connection for external antenna
<b>Network</b>	2 Ethernet ports (10/100/1000MBit) RJ 45
<b>Sound</b>	Sound output via two internal speakers
<b>Power supply</b>	24 V DC +/- 20% (19 to 29 V): voltage fluctuations are compensated, powered on via ignition voltage, enters standby mode when unused for some time, system is locked when the ignition key is removed, protection against corrupt file systems resulting from power loss or improper use
<b>Operating system</b>	Windows® CE 6.0, Windows® XP
<b>Protection class</b>	IP 65: protection against dust penetration and spray water
<b>Operating temperature</b>	-20 to +55 °C, fan-free operation -20 to +55 °C, fan-free operation
<b>Dimensions</b>	(W x H x D) 400 x 305 x 65 mm, approx. 4.3 kg
<b>Humidity</b>	10 to 85 %, non-condensating
<b>Accessories</b>	Keyboard shelves of various sizes are optionally available for external keyboards Desktop power supply 230 V AC to 24 V DC

We reserve the right to make technical alterations.

## Field Research Software™ (FRS).

Developed in cooperation with plant breeders, FRS is a high-performance software for data collection and processing in field trials. FRS can be used in the field for note taking and on the harvester in combination with our mobile harvesting data systems. Special attention was paid to the user-friendliness of the software. The software runs on Windows XP, Mobile and CE, which will run on any standard PC, and on handheld devices such as the Allegro™. The software is additionally available in various languages.

### First steps with the software.

Start by selecting one of the following menu items:

- **Activity:** Choose to launch the note taking or harvesting module
- **Field folder:** Select an existing field plan
- **Property template:** Select the property template, i.e. you can select enterprise-specific characteristics such as e.g. weight, humidity and similar

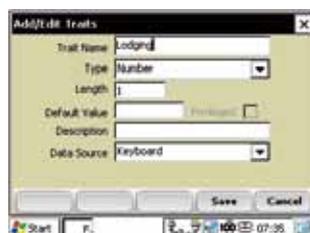


### Preparation.

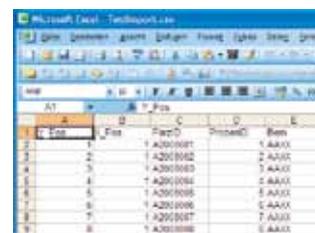
The first step is to create a field plan for the subsequent data collection. You can create the field plan directly in FRS, or easily import a field plan.



You can create your field plan in FRS. To do so, save a field folder under an intuitive name and define the number of plots and rows



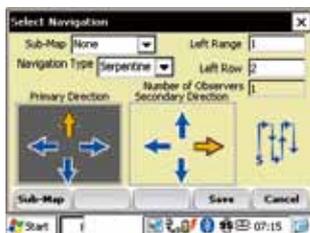
Enterprise specific characteristics can be created or imported as needed



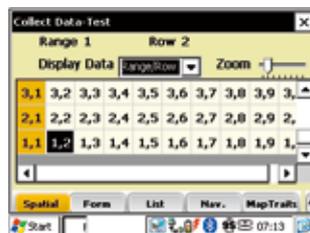
Of course, you can import field plans and previously defined characteristics

### Data collection in note taking mode.

The FRS note taking module is used to record observations in field trial plots.



Start by defining field navigation, that is, the move direction or shape

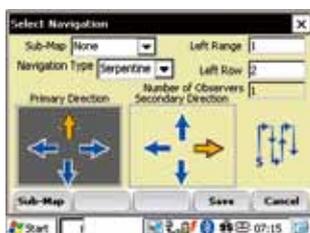


You can now record the values for the previously defined characteristics directly in the field plan. A visualization helps you identify plotstores that you have already recorded (orange) and those that you are currently logging (black)

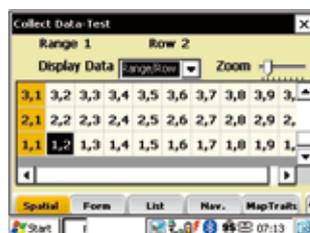


### Data collection in the harvest mode.

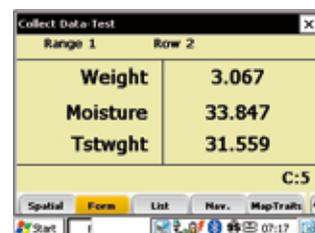
The FRS harvesting module is used to store measuring results in the field plan.



Start by defining field navigation, that is, the move direction or shape



After each measurement the selected properties are recorded in the field plan. A visualization helps you identify plotstores that you have already recorded (orange) and those that you are currently logging (black)



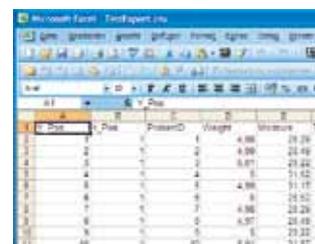
### Data export.

After collection, the data can be exported in CSV file format for ongoing processing. CSV is a neutral text format which can be read by any text editor.

The data formats are compatible with the following programs:

- Prism – Central Software Solutions

- Agrobases – Agronomix Software, Inc.
- ARM – Gylling Data Management Inc.
- PIAF





**Best threshing  
performance and best  
sample quality.**

# Delta

## Figures. Data. Facts.

### Technical data

Basic machine						
Perkins diesel engine	62 kW (84 HP), water cooled, 3.3 l capacity, turbo					
Fuel tank capacity	90 l, extension on request					
Hydrostatic drive	Gear 1: 0 - 9 km/h (5.5 mph) / gear 2: 0 - 18 km/h (11 mph)					
Steering	Hydraulic					
Service brake	Hydrostatic					
Parking brake	Hydraulic multiple disc brake					
Ground clearance	50 mm / 2" zfi 50 mm / 2" zfi					
Wheel base	2590 mm (102")					
Front tires	Standard tires		Terra tires		Large tires	
Type	11.5/80-15.3		Terra 400/55-17.5		340/80 R 20 AS	
Tire width	290 mm (11.5")		400 mm (15.5")		353 mm / 13.9" zfi	
Track width	1287 mm (50.5")		1457 mm (57")		1504 mm / 59.2" zfi	
External wheel width	1577 mm (62")		1857 mm (73")		1857 mm / 73.1" zfi	
Rear tires	Standard tires		Terra tires		Large tires	
Type	200/60-14.5 2WD	7.00-12 4WD	Terra 26x12.00-12 2WD	Terra 26x12.00-12 4WD	10.0/75-15.3 AS 2WD	10.0/75-15.3 AS 4WD
Tire width	210 mm (8.5")	200 mm (8")	312 mm (12")	312 mm (12")	264 mm (10")	264 mm (10")
Track width	1200 mm (47")	1355 mm (53.5")	1400 mm (55")	1455 mm (57")	1500 mm (59")	1438 mm (56.5")
External wheel width	1410 mm (55.5")	1555 mm (61")	1712 mm (67")	1767 mm (69.6")	1764 mm (69.4")	1715 mm (67.5")
Full track system						
Track width	1430 mm (56")		1430 mm (56")			
Track belt width	400 mm (16")		500 mm (20")			
External width full track system	1830 mm (72")		1930 mm (76")			
Internal width full track system	1030 mm (40.5")		930 mm (36.5")			
Headers and accessories						
Cutting tables	Feed auger with transverse conveyor belt and blow-out device, hydraulically reversible and with emergency stop device, cutting widths: 1500 mm, 1750 mm, 2000 mm, Cutting table with belt feeder, cutting width: 1500 mm					
Reel	4-part pick-up reel, hydraulically driven with hydraulic adjustment 0 - 50 rpm, 6-part reel (option)					
Outer divider	Left and right; extra long outer dividers (option)					
Crop lifters	5 - 7 units					
Cutting height setting	Hydraulically from -100 to +960 mm in case of chain intake, -200 to +800 mm in case of belt intake					
Horizontal reel adjustment	Mechanical and/or hydraulic (option)					
Maize picking header	2-row					
Sunflower attachments	Mounted independently of row on the cutting table, 2-row sunflower attachment on maize picking header mounted					
Row-Crop-Header	2-row for row harvesting of soybeans or sorghum					
Cutting table extension	For rapeseed					
Vertical cutter bar	For rapeseed: electrical on left, mechanical on right					
Tine cloth pick-up device	For swath harvesting					
Grain collection and transport						
Grain transport	Pneumatic conveyor system					
Bagging method	Side mounted bagging on left side, bagging in driver's cabin, bagging in cockpit					
Grain tank	1100 l (standard) or 1500 l (option), overload height: 3000 mm					
Weighing system	HarvestMaster or DK 800 data collection and transfer system					
Sampling	In the cabin, on the driver's platform, or side-bagging on the machine					

Threshing and Cleaning	
<b>Concave</b>	10 concave bars
<b>De-awner bars</b>	5 units may be inserted from the side
<b>Threshing drum diameter</b>	350 mm (14")
<b>Threshing drum width</b>	780 mm (31")
<b>Speed adjustment</b>	Electrically adjustable variator: 330 - 1900 rpm stepless
<b>Beater bars</b>	6 units
<b>Shakers</b>	Area: 1.8 m <sup>2</sup> , 2 drop stages, including suspended guide plates
<b>Cleaning blower</b>	Hydraulically driven
<b>Rpm</b>	Stepless electrical speed adjustment
<b>Cleaning sieve</b>	Top sieve: adjustable sieve, Bottom sieve: mesh or adjustable sieve, cleaning program, total sieve area: 2.18 m <sup>2</sup>
Options	
	Cabin with air conditioning and heating, sunroof, filling level display for grain tank, spiked drum and concave for rice, full track system for rice harvesting, all-wheel drive including differential lock, differential lock, foot pedal for stop & go operation, straw chopper, electrical adjustable sieve adjustment, variable sieve box settings, grain loss display
Dimensions	
<b>Dimensions</b>	Length: approx. 6000 mm (236") Width: approx. 2000 mm (79") with 1500 mm wide cutting table Height: approx. 2750 mm (108") without cabin, approx. 2950 mm (116") with cabin
<b>Weight</b>	From 3500 kg (7700 lbs), with cabin from 3750 kg (8250 lbs)

We reserve the right to make technical alterations.



Thanks to the compact construction, the machine is easy to transport without removing components (maximum transport height: 2950 mm)

# WINTERSTEIGER After Sales Service. The delivery is just the start of our service.

**The best time to evaluate the quality of an investment is several years after delivery. That is why WINTERSTEIGER has set up a worldwide After Sales Service.**

## **Commissioning and training**

WINTERSTEIGER ensures both with its experts worldwide and of course on site.

## **Proactive maintenance**

Maintenance and preventive exchange of pre-defined parts subject to wear and tear at pre-set times eliminate problems before they arise. For example, during our customers' annual holiday to keep maintenance costs as low as possible.

## **On-Call-Help-Desk**

This service underlines our high claims for service for our partners worldwide. It ensures first class support even outside our own hours of business.

## **Strong customer service team**

A large team of extremely well trained service staff provides comprehensive care for:

- Installation and commissioning
- Training
- Preventive maintenance
- Conversions
- Modifications
- Clearing faults
- Repairs
- Support
- Rapid supply of replacement parts

## **Advice services**

- Advice from experts on technical equipment for research facilities
- Participation at international seed breeding symposia
- Arranging contacts with experts
- Advice from agricultural consultants in the definition and implementation of projects and technology transfer



## **Intensive guidance and training courses**

WINTERSTEIGER regularly holds guidance and training courses for servicing staff, either directly on site, in our original building in Austria or one of our agencies around the world. They are the basis for perfect mastery of the machines and an uninterrupted harvest. This helps avoid down time and saves costs. Both WINTERSTEIGER service engineers and the service engineers from our agencies receive ongoing training and product information about new developments.

# Those who sow also harvest with WINTERSTEIGER.

**WINTERSTEIGER has positioned itself at the peak of a niche, which will become more critical in the future. Today, agricultural field research is challenged with providing significant contributions for a lasting food and energy supply to the world through new developments. WINTERSTEIGER provides the necessary technology.**

Uniquely designed products offer a range, which covers the entire cycle of field research from the sowing to the harvesting:

## ■ Sowing

Precision spaced planters, plot drills, single row planters and plot tractors for the front and rear planting with seed machines

## ■ Fertilization and plant protection

Fertilizer distributors, field sprayer and hand-pushed plot sprayer

## ■ Data collection

Field PC's for mobile data acquisition

## ■ Harvesting

Plot combines, stationary combines and forage harvester

## ■ Laboratory analysis

Laboratory thresher, laboratory corn sheller, seed dresser, sample chopper and sample divider



Plot combine Split



Plot drill Plotseed S



Plot combine Delta



Laboratory thresher LD 350

As complete provider in agricultural testing, WINTERSTEIGER proves itself as strong partner for customers in various fields:

- Agricultural Universities and research centres
- Agricultural ministries and their departments for plant breeding
- National and international institutes for development projects

- National and international companies that research in the field of plant breeding
- Service companies that test for research companies

Precious seed deserves a careful harvest.



# WINTERSTEIGER. A Global Player. Worldwide.

**WINTERSTEIGER is the world market leader in its three divisions SPORTS, SEEDMECH and WOODTECH. Our success is based on customer proximity which we enjoy due to a globally-structured, tightly-knit sales and service network and sophisticated and future-oriented planning. In this we are guided by the following principles:**

■ According to the „**Progress Principle**“ we are consistently extending our lead with targeted investments in research and development

■ By the „**Quality and Productivity Principle**“ we mean both computer-assisted planning and design, which result directly in fully automated production processes, as well as strict quality assurance management, which ensures continuous control from design to after-sales service

■ We meet the „**Qualification Principle**“ with optimally trained employees. Continuous professional development is an essential part of our strategy

■ On one hand we see the „**Sustainability Principle**“ as our permanent contribution to long-term success, while on the other it represents a clear commitment to conserving natural resources

## The result:

- 15 subsidiaries
- 60 representatives worldwide
- Sales distribution in 130 countries
- 85 % export share
- World market leader in all three divisions

### Division SPORTS

Total solutions for rental and servicing of skis and snowboards.



### Division SEEDMECH

Worldwide No. 1 in field research equipment.



### Division WOODTECH

Process solutions for quality thin-cutting.



Headquarters located in Ried im Innkreis, Upper Austria

Success begins with the right decisions.  
At the right time. We look forward to you!



Worldwide No.1  
**WINTERSTEIGER**  
in field research equipment.

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#### Representations:

**Argentina:** Rosario, **Australia / New Zealand:** Adelaide, **Bulgaria:** Haskovo, **Chile:** Santiago, **Colombia:** Bogotá, **Czech Republic:** Litomysl, **Ecuador:** Quito, **Egypt:** Cairo, **Great Britain / Ireland:** Essex, **Greece:** Athens, **Hungary:** Jászboldogháza, **India:** New Delhi, **Iran:** Teheran, **Japan:** Tokyo, **Kazakhstan:** Astana, **Korea:** Seoul, **Mexico / Venezuela:** Mexico City, **Morocco:** Casablanca, **Netherlands:** Etten-Leur, **Paraguay:** Asuncion, **Poland:** Poznan, **Portugal:** Lisbon, **Slovakia:** Bratislava, **Spain:** Zaragoza, **Syria:** Damascus, **Tunisia:** Tunis, **Turkey:** Ankara, **Ukraine:** Kiev, **Uruguay:** Montevideo