

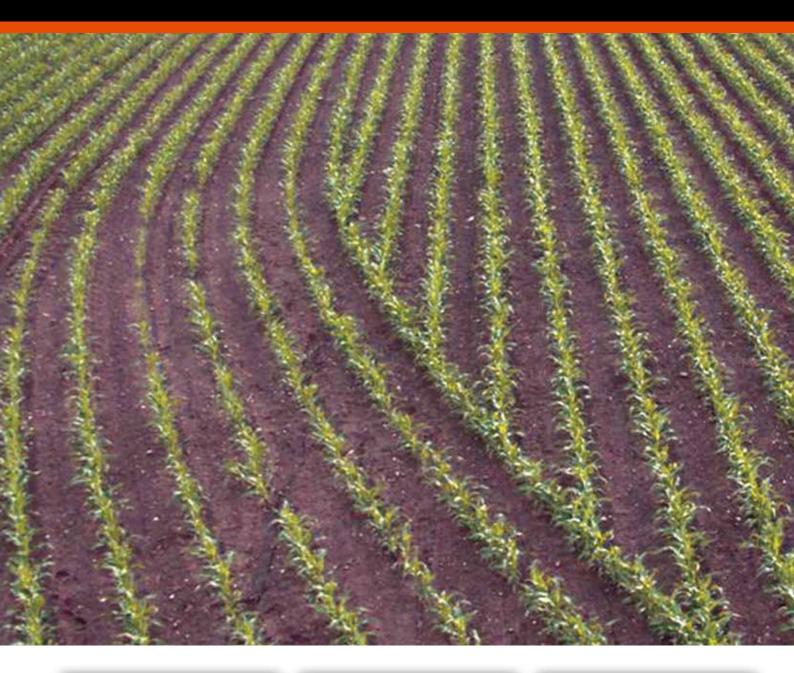
For Earth, For Life Kubota

KUBOTA PRECISION DRILL PP1000 SERIES

The versatile solution for maize and more



PRECISION ESTABLISHMENT OF MAIZ









E, BEET, BEANS, SUNFLOWERS, ETC.



For all tillage and row crop establishment methods, Kubota offers proven technology meeting all precision drilling requirements.

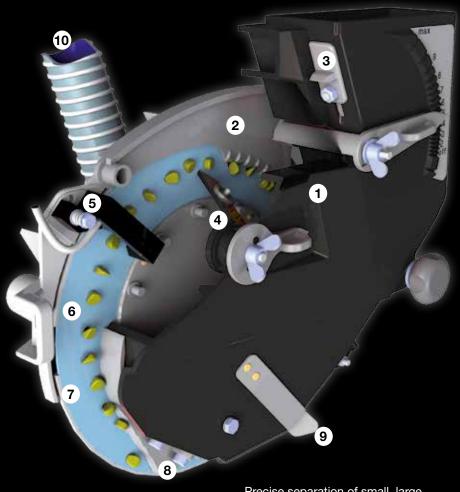
Today Precision Farming has become more and more important. The more precise and evenly the seed is sown, the higher the possible yield. With GEOcontrol and GEOseed® Kubota offers two applications for the PP range that maximise the machines output and prevent double seeding. Even in total darkness your seeding results will be exceptional.

The PP models can be used for standard or mulch seeding (depending on optional equipment). The PP serie is available with working widths from 3 to 6m, with flexibly adjustable row widths and a wide range of additional equipment.

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THE SEEDING HEART



Seeding heart without seals

The patented seeding heart technology is the result of development which has reduced maintenance costs to a minimum.

- No friction no wear
- Low drive torque
- Minimum maintenance

The seed disc rotates in the seeding heart together with the vacuum chamber. This seeding drum is connected to the vacuum fan via a hollow shaft. This seeding heart principle results in no loss of vacuum, and therefore a low vacuum requirement. The upper toothed scraper singulates the seeds on the seed disc. It can be infinitely adjusted to suit seed size and type by means of a scale. The adjustable lower scraper centralises difficult seeds (e.g.sunflowers) over the holes on the seed discs. During calibration the correct loading of the seed disc can be checked via a window.

Precise separation of small, large, round elongated and flat seeds.

- By using vacuum, the seeds are sucked out of the stock and transported directly to the seed disc. While turning the seed disc, the seeds are allocated to each of the holes.
- 2. The adjustable, upper scraper singulates the seeds to every hole.
- 3. The filling height limiter regulates the stream of small seeds.
- 4. The adjustable, lower scraper prevents doubles of bigger seeds.
- The opto-electronic sensor (optional for mechanic driven machines; standard for e-drive) controls the correct allocation
- of seeds on the disc. In case of missing

4

seeds, the sensor transfers a signal to the terminal. The opto-electronic sensor also serves as a low level sensor.

- 6. The seed disc turns on to the point of drop. The seed disc is directly fixed to the turning back of the vacuum heart. No sealing, only at the bearing, ensures that there are no leaks to the vacuum. The patented seeding heart is the only one in the market that gets along without a wearing sealing. This minimises friction and power needed for turning.
- 7. The standard vacuum interruptor (optional rotating vacuum interuptor) closes the holes of the seed disc from the back

side. The vacuum is interrupted and the seeds drop down controlled from the seed disc.

- 8. The end-scraper cleans the seed disc from seed residues, like coating or dust.
- The emptying flap is located at the lowest point of the seeding heart. This ensures a complete and easy emptying and cleaning of the seeding heart.
- 10. The vacuum hose is connected directly either with the fan or with the new vacuum channel. This ensures a constant vacuum, every time. The vacuum is always shown on a manometer, which is easily visible from the tractor cab.

CONVENTIONAL SOWING ROW



The standard equipment for sowing in prepared conditions.

- Maize coulter and Farmflex depth wheel 370mm (500mm optional)
- Coverer, spring-loaded fitted on both sides of the unit
- Lifting device as standard

Sowing unit for conventional seeding

The sowing units - like the whole machine - are modular in design. The basic element always remains the same and the equipment can vary according to individual requirements.

Press wheels

The press wheels run on maintenance free ball bearings. The sowing depth can be infinitely adjusted by means of a screw jack. A scale ensures even depth adjustment over all rows.

Sowing coulters

The sowing coulters are designed with a high attachment point. This enables them to work deeply when sowing beans or on dry soil, without the housing being subject to wear.

Parallelogram

Special washers are used at the parallelogram bushes to protect against dust. Only top quality components are used to ensure extremely low maintenance costs.

Tandem sowing unit:

The tandem row is the right solution for light and marshy soil. The front wheel is connected to the press wheel with a bar. The depth of the row is guided by the front and rear wheel. The depth adjustment is centrally adjustable by a handle in the back.

- 1. 30l seed hopper (standard)
- 2. Clod deflector (option)
- 3. Front guiding wheel (100mm width) (standard)
- 4. Seeding coulter (standard)
- 5. Intermediate Press wheel (standard)
- 6. Scraper (standard)
- 7. Monoflex Press wheel (standard)



PP ROW HEAVY DUTY



- The heavy basic weight of the sowing unit combined with the possibility to add additional pressure (up to 100kg) onto each individual sowing unit via the optional spring loaded system allows optimal depth control even under extreme conditions.
- Effective ground contour following, due to the large lateral depth control wheels (Ø 400mm, width 120mm) or open gauge wheels (option), precise seed placement and seed covering by means of the intermediate press wheel and the multi-adjustable Vpress wheel, ensure maximum field emergence.
- The sowing unit HD can be mounted on all PP frames (3-point linkage or trailed) - prerequisite for this is a minimum row width of 35 cm





Multiple adjustable V-press wheel



Optimal pressure adjustment by lever



Easy depth adjustment



Intermediate press wheel with parking position



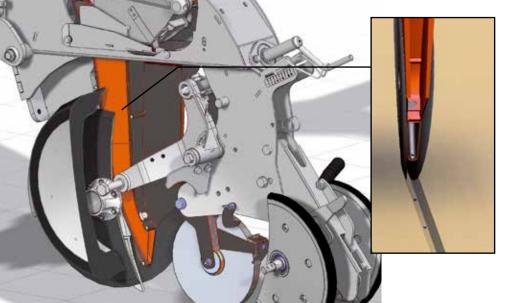
Stainless steel intermediate press wheel

EQUIPMENT FOR ALL REQUIREMENTS



- 1. 55l seed hopper (standard)
- 2. 30l seed hopper (optional)
- 3. Parallelogram with 20kg weight transfer (standard)
- 4. Parallelogram with 100kg adjustable weight transfer (optional)
- 5. Trash wheel (optional)

- 6. Clod deflector (optional)
- 7. 25mm V-press wheels (standard) with angle and pressure adjustment
- 8. 50mm V-press wheels (optional)
- 9. 120mm width gauge wheels (standard)
- 10. Open gauge wheel for wet conditions (optional)
- 11. Spindle for stepless depth adjustment with clearly arranged scale
- 12. Intermediate press wheel stainless steel with scraper (optional)
- 13. Intermediate press wheel cast iron with rubber ring (optional)

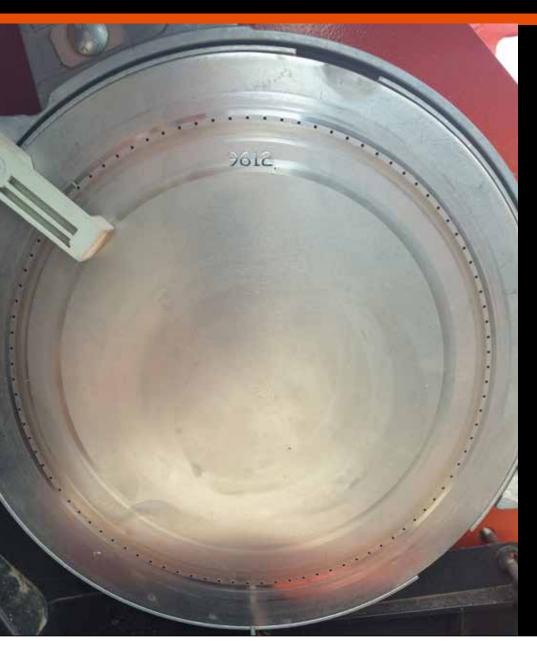


Channel Extra (optional)

The Channel Extra is specially designed for shallow seeding of small seeds such as sugar beet, rape and maize (up to a thousand grain weight of 325g). Perfect placement is guaranteed by the special design of the Channel Extra which guide the seed towards the furrow left by the coulter.

Rolling or bouncing of seed in the furrow is almost 100% eliminated. The Channel Extra can be retrofitted on all in-field HD rows.

RAPE KIT



Rape Kit

For sowing rape a special rape seeding kit has been developed. The seed disc has 96 holes and is continuously cleaned by a small toothed gearwheel to ensure the seed disc is kept clear of any blockages.

The rape kit is available for all Optima models fitted with HD rows!







SAFE & SPEED KIT

More extreme weather conditions and shorter drilling periods require higher performance from machines in the field. For that reason, Kubota developed a kit for the PP HD sowing unit to increase the working speed of the precision planter.

Tests and practical on farm experience have shown that this kit ensures accurate precision spacing, at higher speeds of up to 12km/h.

The PP "Safe & Speed Kit" is specially designed for maize seeding.

The benefits are obvious:

- Exact seed placement at up to 12km/h
- Ensure high yields due to perfect placement
- Drilling at the right time for perfect seeding
- More hectares per hour

Components

1. Intermediate heavy stainless steel press wheel

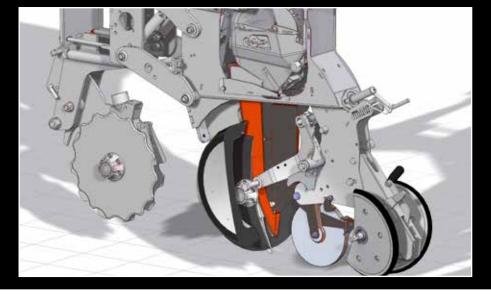
A 5.4kg heavy duty intermediate stainless steel press wheel ensures that the seed is pressed firmly in position in the soil.

2. Channel Extra, the additional channel improves the flow of the seed.

Perfect placement is guaranteed. Maize is guided towards the furrow left by the coulter.

- 3. Self-setting vacuum interrupter to improve the precise dropoff point. A spring-loaded, self-adjusting rotating vacuum interrupter ensures the exact release point of the seed from the disc.
- 4. Additional row ballasting of up to 100kg per sowing unit ensures smoother running in rougher conditions.

In addition to the heavy weight of the basic sowing unit of 129kg it is the possible to add additional pressure (up to 100kg) to each individual sowing unit via the optional spring loaded system.

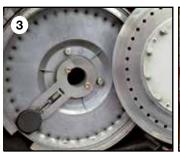






Intermediate heavy stainless steel press wheel

Channel Extra



Self-setting vacuum interrupter



Addtional row ballasting

WORKING WIDTH FROM 3-6M

PP1300 - PP1450 - PP1600 RIGID FRAME



PP1600 with 12 rows, 6.1m working widths and rigid tool bar

PP1450TE TELESCOPIC FRAME



PP1400TE with 6 rows, 4.0 mworking width telescopic frame, 440I fertiliser hopper

Easy, light and cost-efficient frame concept for all farm sizes. The small machines can be driven without any mounting on the road. For the bigger frames, a lengthwise transport device is available.

- Working width from 3 to 6.1m
- Row width from 30 to 80cm
- Transport width: 2.7m with lengthwise transport device
- HP requirement from 37kW (50hp) up to 110kw (150hp)

The ideal machine for contractors, with a working width of 4.5m and a fertiliser capacity up to 770 litres. The hydraulically operated telescopic tool bar converts the machine to its transport width of 3.2m within seconds. Hydraulic vertical folding track markers are standard equipment.

- Working width 4.5m
- Row distance from 40 to 80cm
- HP requirement 85 kW (115 HP)

PP1450V VARIABLE TELESCOPIC



PP1450V e-drive II: 6-row telescopic, 4.5m working width, 1000I fertiliser hopper

The PP1450V is the perfect precision drill for farmers and contractors who need a machine for various crops and row widths. With the PP1450V, the row width can be changed within seconds which ensures a speedy response to changing requirements.

- Row distances from 33 to 80cm
- 6, 7 or 8 rows
- Large fertiliser hopper
- HP requirement from 60kW (80hp)

FOR ALL FARM SIZES

PP1600F 6M HYDRAULIC FOLDING FRAME



The ideal machine for contractors with an optional fertiliser capacity of 900l with central fertiliser hopper.

- Working width 6m
- Row distance from 37.5cm to 80cm
- Available with 8, 12 or 16 rows

PP1600F 6m hydraulic folding frame width

PP1601TF FOLDABLE TRAILED FRAME



The PP1601TF model requires less tractor power, but has a large hopper capacity.

- Working width of 6m
- Row width from 70 to 80cm
- 8 rows available
- Large fertiliser hopper capacity of 2000I
- Tractor requirements from 66kW(90hp)

PP1601TF 8 row trailed with fertiliser applicaton

FOR HIGH WORK RATES

PP1000 SERIES RIGID FRAME

The rigid frames are an easy and costwise alternative for all kinds of customers.

The rigid PP1000 models are available in 3, 4.5 and 6.1 with a row width from narrow 30cm up to wide 80 cm, depending on the kind of row and equipment. All machines from 4.5m working width can be equipped with a lengthwise transport device.

All rigid PP1000 frames can be equipped with either mechanic or electric drive – also normal seeding, tandem – and HD rows are available. The PP1000 models can be combined with an optional fertiliser spreader, front hopper or microgranular spreader.





Lenghtwise transport device

| Working width (m) | 3 | 4,5 | 6 |
|-------------------------|-----|------|------|
| Number of Rows | 4-8 | 6-10 | 8-12 |
| | | | |
| HD row | • | •* | • |
| Normal Seeding Row | • | • | • |
| Tandem row | • | • | • |
| | | | |
| e-drive | - | - | • |
| e-drive II / GEOseed® | • | • | - |
| Mechanical drive | • | • | • |
| | | | |
| Fertiliser | • | • | • |
| SH1150 / SH1650 | • | • | • |
| Microgranule Applicator | • | • | • |

*maximum 8 rows

PP1450TE SERIES TELESCOPIC FRAME



The telescopic frame which can be moved from 4.5m working position to the transport width of 3.2m is the perfect solution for medium-sized farms.

Equipped with 6 to 8 HD or standard seed rows at a row distance of 45 to 80cm, with the row fertilizer spreader and the micro-granule applicator, the PP1450TE frame can be adapted to the individual requirements of the farmer.

The fertilizer hoppers made of plastic save weight. Together with the compact design for a favorable center of gravity, this ensures a low lifting requirement. The easy handling of the PP1450TE is convincing from the very first minute.



Microgranule Applicator

| Working width (m) | 4,5 |
|-------------------------|-----|
| Number of Rows | 5-8 |
| | |
| HD row | • |
| Normal Seeding Row | • |
| Tandem row | • |
| | |
| e-drive | • |
| e-drive II / GEOseed® | - |
| Mechanical drive | • |
| | |
| Fertiliser | • |
| SH1150 / SH1650 | - |
| Microgranule Applicator | • |
| | |

MAXIMUM FLEXIBILITY WITH VARIAB





Compact and clear design < 3m transport width



Simple and fast adjustment of the row width



Optional hydr. frame ballasting kit

LE ROW WIDTHS



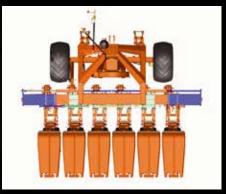
PP1450V - PRECISION SEED DRILL WITH VARIABLE ROW WIDTHS

The PP1450V is the perfect precision drill for farmers and contractors who need a machine with various row widths. With the PP1450V, the row width is ready in next to no time which ensures a speedy response on changing requirements. Your benefit: a high level of flexibility and less time waste.

The frame of the PP1450V has a complete new design. The headstock is made of round tubes, which saves weight and increases the stiffness. The main telescopic frame is made of a

160mm squaretube. In this tube, plastic glide parts guarantee a longterm usage of the machine.

All inner rows are mounted on 8 maintenance free plastic rolls and are adjustable in different step widths. Optionally, the PP1450V can be equipped with a 1000l fertiliser hopper or front hopper solution. A microgranular applicator is also available. All PP1450V are electric driven and compatible with GEOseed@!



PP1450V with 6 rows and row distances of 45cm or 80cm.





Optional large floating tyres

| Working width (m) | 2.7 - 4.8 | 2.8 - 4.76 | 2.64 - 4.4 |
|-------------------------|-----------|------------|------------|
| Number of Rows | 6 | 7 | 8 |
| Rows widths (cm) | 45-80 | 40-68 | 33-55 |
| | | | |
| HD row | • | • | • |
| Normal Seeding Row | - | - | - |
| Tandem row | - | - | - |
| | | | |
| e-drive II / GEOseed® | • | • | • |
| Mechanical drive | - | - | - |
| | | | |
| Fertiliser | • | • | • |
| Filling Auger | •* | - | - |
| SH1150 / SH1650 | • | - | • |
| Microgranule Applicator | • | • | • |

*not in combination with microgranule applicator

FOR PERFECT PERFORMANCE ON AL

PP1600F SERIES





Central fan for constant vacuum on all seeding rows



Available with e-drive II, ready for GEOseed®



Optional hydr. frame ballasting kit

L FIELD SIZES



PP1600F - 6M HYDRAULIC FOLDING FRAME

The PP1600F 6m hydraulic folding frame catches the farmers attention with it's high performance, fast folding for transport and perfect overview.

Following the farmers needs, the frame is equipable with 8 rows for maize, up to 16 rows for the combined usage in sugar beet, maize, sunflowers or soya, or for narrow seeding of maize and rapeseed. The mounted fertiliser spreader is the easiest way for fertiliser application. Higher performance is secured in combination with a front hopper. Also, a microgranular applicator for a majority of the frames is available.

With an electronic or mechanic drive, this frame secures all farmers' needs. GEOseed® is also compatible.



Safe road transport (< 3m) and compact clear design



Optional external hydr. fan drive

| Working width (m) | 6 | 6 | 6 |
|-------------------------|----------|-------|------|
| Number of Rows | 8 | 12 | 16 |
| Row Distance (cm) | 70/75/80 | 45/50 | 37.5 |
| | | | |
| HD row | • | • | • |
| Normal Seeding Row | • | • | • |
| Tandem row | • | • | • |
| | | | |
| e-drive | • | - | - |
| e-drive II / GEOseed® | - | • | • |
| Mechanical drive | • | • | • |
| | | | |
| Mounted Fertiliser | • | - | - |
| SH1150 / SH1650 | • | • | • |
| Microgranule Applicator | • | • | • |

LOW PULLING FORCE BUT MAXIMUM





Compact and clear design



Easy access to fertiliser hopper



Weigh cells for the precise and controlled fertiliser application

OUTPUT



PP1601TF SERIES - TRAILED FRAME WITH HD ROWS

The PP1601TF Series is the perfect combination of high performance and low tractor power requirement. The trailed, foldable frame with eight rows can be equipped with a 2000l fertiliser hopper.

The PP16001TF Series can be pulled with an 90hp tractor – and requires no lifting capacity. Equipped with either a hydraulic drive or with a direct fan drive via PTO shaft, this machine can also be used with tractors that have little hydraulic power.

The fertiliser hopper can easily be filled with a front end loader or filling auger – different fertiliser coulters are available. A microgranular applicator is available as an option.



Intelligente and individual adaptation of the wheels due to the two-piece hydraulic cylinder



PP1600TF - Very compact in transport position



Optional electro-hydraulic drive for the fertiliser application. Fertiliser rate can be adpated even during work.

| | • |
|-------------------------|----------|
| Working width (m) | 6 |
| Number of Rows | 8 |
| Rows widths (cm) | 70/75/80 |
| | |
| HD row | • |
| Normal Seeding Row | - |
| Tandem row | - |
| | |
| e-drive | - |
| e-drive II / GEOseed® | • |
| Mechanical drive | • |
| | |
| Fertiliser | • |
| SH1150 / SH1650 | - |
| Microgranule Applicator | - |
| Filling auger | 0 |

MAKE SOWING PERFECT!



The weather conditions may differ quite considerably from year to year and also various crop rotations make it difficult to have just one implement to meet all requirements. This is why Kubota offers a wide range of implements and accessories in order to provide the right machine for all the different requirements and various conditions.

This large variety together with the demand for an economic solution require a flexible and versatile implement. The PP Series has become a very well appreciated implement because of its precice working quality, its intelligence technology and its great universal application.

CLOSE ROW SOWING

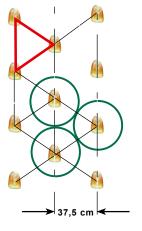


Efforts aiming at the optimum utilisation of growing space, even when sowing a wide variety of crops, have always been the farmers objective.

With regards to maize, the harvesting process previously required a row distance of 75cm. Close rows have only been possible since the introduction of chopping and picking attachments, that are not dependent on the standard row widths. Tests performed at various locations and over several years with distances between rows ranging from 30cm to 37.5cm have demonstrated that with a more even growing space the resulting photosynthesis rate achieved in yield increases by up to 10%.

In practice, close row sowing with a distance between rows of 37.5cm provides the ideal conditions for growth, with all plants developing at the same pace.





| Frame | 37.5cm | 45cm |
|----------|--------|------|
| | | |
| PP1300 | • | • |
| PP1450 | • | • |
| PP1600 | - | • |
| PP1450TE | - | • |
| PP1450V | • | • |
| PP1601TF | - | - |
| PP1600F | • | • |

GEOseed® provides for a positive yield development

OPTIMUM FERTILISER APPLICATION



Precise metering by volume through cell wheel metering system with sealing lip

Harmonised fertilising and sowing

- Stable design
- Low maintenance costs
- High degree of wear resistance
- Optimum depth placement

For fertiliser placement Kubota supplies different hoppers for the different frame types – always fitting to the working width.

Most frames have a mounted fertiliser hopper - these systems are mechani-

cally driven. Application rates between 100 and 390kg/ha (depending on row width) are possible.

For the foldable frames 6m combinations with front hopper is also available. The front hopper SH1150 (1150I) for 8 rows and SH1650 (1650I) for 12 and 16 rows can be mechanically or electrically driven.

The combination with a front hopper offers an perfect weight distribution.



Mulch seeding notched double-disc coulter

- Blockage-free and precise fertiliser placement through ø 350mm notched double-disc coulter
- Maintenance-free roller bearings
- Overload protection via tension spring and depth adjustment
- Optimum fertiliser placement in mulch seeding conditions



Fertilising coulter, standard seeding

- Narrow coulter design
- Stable reliable construction
- Coil spring protection from sideways forces
- Minimal disruption of soil adjacent to rows



| Frame | Mounted Fertiliser Spreader | SH1150 / SH1650 |
|----------|--------------------------------|-----------------|
| | | |
| PP1300 | • | - |
| PP1450 | • | _ |
| PP1600 | •* | • |
| PP1450TE | • | - |
| PP1450V | • | • |
| PP1601TF | • | - |
| PP1600F | •* | • |
| * O 1 | | |

* Only up to 8 rows

IN ONE PASS



With an increasing amount of insects killing plants during growing, and an increased need of microfertiliser, increases the need of micro-granule applicators.

The majority of PP1000 models can be equipped with microgranule applicators. The hoppers are made of special grade plastics and have a capacity of 35 litres.

Depending on the working width, the hoppers supply 2 or 3 seeding units.

Alternative metering wheels are available to suit every application requirement for pesticides.

Optionally, a Sure Fill adapter is available to secure the filling process – also, an electric switch-off solution is available so that no microgranules are spilt on the headlands.

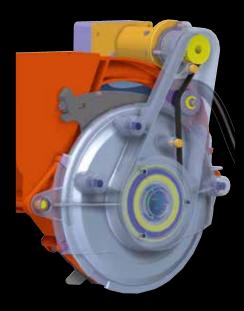


| Frame | Microgranular- Applicator | | | |
|-----------------|------------------------------|--|--|--|
| | | | | |
| PP1300 | • | | | |
| PP1450 | • | | | |
| PP1600 | • | | | |
| PP1450TE | • | | | |
| PP1450V | • | | | |
| PP1601TF | •** | | | |
| PP1600F | •* | | | |

* only up to 12 rows ** limited availability

E-DRIVE AND E-DRIVE II

PP1000 SERIES E-DRIVE - ELECTRONIC DRIVE



e-drive & e-drive II: complete control and monitoring of the machine from the tractor cab in accordance with ISOBUS standard

The main advantages of an electric drive are:

- are:Individual row start and stop function
- Variable seed rate per row
- Variable seed rate during seeding process
- 2 independent tramlining systems
- Optoelectronic control as standard equipment

With e-drive / e-drive II each sowing unit is driven individually via an electric motor. All the data is entered and read with an ISOBUS conform terminal like ISOmatch Tellus. The sowing distances are infinitely adjustable and can be adjusted during sowing. All the sowing units can be switched off individually. This solution saves seeds and money! In conjunction with close row sowing widths of less than 50cm another benefit of e-drive comes into play: Individual tramline switching. Tramlines can be set up for every sprayer width. The e-drive / e-drive II features complete electronic monitoring of all machine functions, including seed monitoring via optoelectronic sensors or steering of hydraulic functions like trackmarker arms or folding processes.

Only the construction of the seeding heart without a sealing enables the steering of all these functions without extra power. All functions for every machine can be used without an extra generator or accumulator. This saves money and sensible parts on the machine.

ELECTRONIC TERMINALS FOR ELECTRIC DRIVE



IsoMatch Tellus GO

IsoMatch Tellus GO is the farmers first step into Precision Farming. With the easy to use application, IsoMatch GEOcontrol, it is possible to boost efficiency and save time and costs. The application includes Manual Guidance, Section Control and Variable Rate. Whether it is used with fertiliser spreaders, sprayers or seed drills, Precision Framing is just one click away.

ELECTRONICS

KUBOTA – PRECISION FARMING

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The Kubota M7001 series are ISOBUS 11783 compatible. This means that the precision drill can be plugged directly into the tractor and where available be operated via the K-monitor without any other separate terminal.

Maximum efficiency with precision farming

IsoMatch GEOcontrol for use with fertiliser spreaders, sprayers, seed drills and precision drills, can boost accuracy and efficiency, while allowing seamless integration with precision farming systems. Isomatch GEOcontrol provides the following functionalities: • Automatic section control

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- Variable rate control
- Documentation
- Manual guidance
- Headland control
- Smart boundary recording

This advanced software application installed on the IsoMatch Tellus or IsoMatch Tellus GO, makes it possible to automatically switch the implement's sections on/off. It is a simple job, especially during night operations. You can use variable rates by downloading field maps to the Terminal which is then controlled by GPS. IsoMatch GEOcontrol will automatically adjust the output rate for the implement. The savings are significant on input costs such as fertiliser, chemicals and seed. The next generation universal ISOBUS Terminal – IsoMatch Tellus

- Two ISOBUS interfaces in one terminal
- Multifunctional ergonomic design
- ISOBUS Shortcut Button (ICB)

Robustly designed aluminum body and ergonomic rubber grip

The IsoMatch Tellus is the first ISOBUS terminal in the world with the capability to operate 2 different (machine) screens through 1 terminal, without the need to constantly toggle between screens.



Kubota has a strong focus on development and production of new electronic solutions for agricultural tractors and machinery, all to make the farmers live easy and ready for the future. All initiatives in development in ISOBUS Technology are undertaken:

- To increase the customer benefits in relation to the application of ISOBUS technology within ISOBUS machines.
- To improve the compatibility of ISOBUS products world wide (plug & play).



PERFECTION IN PRECISION SEEDING

GEOseed®



GEOseed® is the next chapter of precision seeding. You are able to increase the yields of your row crops significantly. So if you are interested in maximum efficiency – , GEOseed® is right for you.

The central idea of this development is that seeds can be placed perfectly in line and perfectly in relation to each other – and also over the working width of your machine if you prefer. So you can decide if you want to seed in parallel or triangle pattern. The biggest advantage is that nutrients are used most effi ciently, erosion of water and wind is prevented and maximum solar energy is used.

Biologically working farmers are also able to use a mechanic weed control across the seeding direction without injuring the plant. This saves costs and increases the turnover. Kubota shows their knowledge in the highest step of the iM Farming concept.

Today you get rowwise the approvement for this technology. With an exactness of 2.5cm yields are increased.

The function of a precision drill with GEOseed® is easy. The electric driven rows are connected to an ISOBUS Terminal like the IM Tellus. The combination of special sensors at the seeding heart and a special software steer the rpm of the seeding hearts in the machine. If you like you can update your system with RTK GPS and you can do the synchronisation of rows over the whole field.

It doesn't matter if you are growing sugarbeet or maize, pumpkins or beans. You can decide between parallel or triangle pattern. For example: If you are seeding sugar beet with GEOseed® in triangle pattern, during harvesting always one beet after another is harvested. This saves energy and increases the forward speed of the harvester up to 20%.



ADVANTAGES OF GEOseed®

Seeding in parallel or trianlge pattern – the advantages of GEOseed®:

- Perfect usage of nutrients, water and sun because the plants are perfectly spread
- Less problems with erosions (Water & Wind)
- Mechanic weed control across the seeding direction
- Easy handling with ISOBUS Technology and IM Tellus.







GEOCONTROL

Cost saving with immediate payback

The more precisely and evenly a seed is sown, the easier it is to work and harvest, and the greater the possible yield. Seeding with GPS and GEOcontrol in combination with an model PP1000 edrive is a major step towards precision and cost saving. These machines are all equipped with ISOBUS technology which, with the help of the IsoMatch Tellus terminal, can be easily controlled. Each electric driven seeding element, in combination with GPS and GEOcontrol, is automatically switched on or off in exactly the right place, ensuring there already been seeded. This is especially handy in triangular fields, on curved or irregular shaped headlands. You can also continue seeding at night since the switching on/off of the seed elements is completely reliable. Available for all machines with e-drive or e-drive II.



TECHNICAL SPECIFICATIONS

| Frame | | rigid | | telecopic | variable | hydr. fold- able (PH) | trailed foldable |
|--|-----------|--------------------|---------|-----------------|----------------------|--------------------------|----------------------------------|
| Model | PP1300 | PP1450 | PP1600 | PP1400TE | PP1450V | PP1600F | PP1601TF |
| Working width (m) | 3.00 | 4.50 | 6.10 | 4 | 2,70- 4,50 | 6 | 6 |
| No. of HD Sowing rows | 4-8 | 6-9 | 8-12 | 5-8 | 6 / 7 / 8 | 8-16 | 8 |
| Row width HD row (cm) | 37.5 - 80 | 45 - 80 | 45 - 80 | 45 - 80 | 33- 80 ¹⁾ | 37.5 - 80 | 70-80 |
| No. of Normal Sowing rows | 4-9 | 6-11 | 8-16 | 5-8 | - | 8-16 | - |
| Row width Normal Sowing row (cm) | 35 - 80 | 35 - 80 | 35 - 80 | 45 - 80 | - | 37.5 - 80 | - |
| Transport width (m) | 3.00 | 2.85 ³⁾ | 2.85 3) | 3.20 | 3.00 | 3.00 | 3.00 4) |
| Sowing row | | | | | | | |
| Mech. drive of the sowing row | o | o | o | o | - | 0 | o |
| e-drive | - | - | o | o | - | - | - |
| e-drive II, ready for GEOseed® | o | o | - | - | • | 0 | • |
| Fan drive 1000rpm | o | o | o | 0 | • | • | • |
| Fan drive 540rpm | • | • | • | • | - | - | - |
| Hydr. fan drive | o | o | ۰ | o | o | 0 | ٥ |
| Frame | | | | | | | |
| Linkage | Cat. 2 | Cat. 2 | Cat. 2 | Cat. 2 | Cat. 2 | Cat. 2 | Cat. 3 Crosshaft ^e |
| Tyres 7.00-12 AS | • | • | • | • | - | - | - |
| Tyres 26x12.00STG | o | o | o | 0 | • | • | - |
| Tyres 12.5/80-18 | - | - | - | - | - | - | • |
| Manually operated track marker | • | - | - | - | - | - | - |
| Hydraulically operated track marker | o | • | • | • | • | • | • |
| Fertilizer | | | | | | | |
| Mounted fertiliser spreader | ٥ | o | o | 0 | o | o | ٥ |
| Max. rows with mounted fertiliser spreader | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Mech. drive of fertilizer spreader | • | • | • | • | • | • | • |
| Electro-hydraulic drive of fertiliser spreader | - | - | - | - | o | - | o |
| Fertiliser hopper capacity in litres | 440 - 770 | 440 - 770 | 880 | 880 | 1000 | 900 | 2000 |
| Filling auger | - | - | - | - | 0 | • | o |
| No. of rows in combination with front hopper SH1150 /SH1650 | 6 / 8 | 6 / 8 | 8 / 12 | - | 6 / 8 | 8 / 12 / 16 | - |
| Micro granule | | | | | | | |
| Micro granule applicator | 0 | o | 0 | 0 | 0 | o | _o 5) |

¹⁾ Depending on no. of rows ²⁾ Optional external hydr. fan drive ³⁾ with Lenghtwise transport device ⁴⁾ 3.40m if 80cm row width ⁵⁾ Limited availability ⁶⁾ Optional K80 pulling eye

| sowing unit (without seed disc) | Normal seeding | Normal seeding e-drive | HD | HD e-drive | | |
|--|------------------------------------|---------------------------|-------------------------|------------|----|--------------------------|
| | | | | | | |
| Parallelogram | • | • | • | • | | |
| Integrated chain drive | • | - | • | - | | |
| Electronic drive | - | • | - | • | | |
| Opto-electronic sensor | ٥ | • | ٥ | • | | |
| Lifting device | • | | ٥ | | | |
| Double-sided coverer | • | | - | | | |
| Sowing coulter with quick-connect coupling | cutting disc | | g disc | | | |
| Various coulters, depending on version | 0 | | - | | | |
| Various seed discs, depending on seed type | o o | | 0 | | | |
| Press wheel | (Farmflex 370 ø) (V-press wheel 26 | | /heel 26mm) | | | |
| Various press wheels, depending on version | 0 | | | 0 | | |
| Retrofit kit optional for standard seeding, beet seeding | ٥ | | | 0 | | |
| Single hopper, capacity in litres | 30I (55I ²) | | 30l (55l ²) | | 55 | j ²⁾ |
| Sowing unit weight, approx. | 60kg | | 129kg | | | |

ELECTRONIC TERMINAL FOR MECHANICAL DRIVE

The in-cab mounted Visus, Opto Electronic Control, constantly monitors the operation of the machine alerting the operator of any malfunction within the sowing heart.

The Visus monitors seeds as they are sown. If there is an interruption in seed delivery, an audible and visual alarm is immediately triggered. The Visus indicates the area worked, working time and forward speed. Suitable for all seed types. High degree of operational reliability for contractors and farmers alike.



The company reserves the right to change the above specifications without notice. This brochure is for descriptive purpose only. Some of the items pictured in this brochure are optional and not standard equipment. Please consult your local Kubota dealer for warranty, safety or product information. For your safety, Kubota strongly recommend the use of a seat belt in all applications. © 2016 Kverneland Group Soest GmbH.

