



Junkkari

Part of the MSK Group

COMBI DRILLS



Junkkari - Part of the MSK Group

Junkkari is part of an almost 70-year-old MSK family corporation that employs over 800 professionals.

The corporation is formed of the parent company, MSK Group, and its six subsidiaries whose HR, communication and financial services are operated by the parent company.



The Association for Finnish Work has granted Junkkari product the right to use the Key Flag symbol.

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Junkkari

Junkkari has been the reliable agricultural machine trade partner of farmers for three generations.

While listening to the experiences of the customer – the farmer – is still a fundamental principle in the company's business, Junkkari is also not afraid to rely on its own competence.

During its 70 years in business, Junkkari, a manufacturer of agricultural and forestry machines, maintained the courage to innovate, challenge norms and break boundaries.

Machines for sowing and forestry are still designed, marketed and manufactured with dedication, with a twinkle in the eye.

SYMBOLS USED IN THE BROCHURE



Work and transport width of the machine



Tractor's power demand



Hopper volume in litres



Seed/Combi coulter's row spacing



Seed/Combi coulter's pressure range

DOWN TO EARTH

At Junkkari, we have our feet on the ground and targets set high. The machines are functional and robust. Junkkari people are honest and easily approachable. Being a family company, the work atmosphere is fair and open, and people have the will to do things the right way.

STRONG

Junkkari is a genuine, fair and honest partner and employer that is in equilibrium with itself and the environment. Over six decades of experience make Junkkari a stable company in the industry. It is supported by a diverse and international high-tech family group whose products are exported all over the world.

BOLD

Junkkari is an expert in seeding and bioenergy, daring to reform and be unique and different. Junkkari challenges the norms, breaks boundaries and innovates boldly, but not recklessly.

INTERNATIONAL

Junkkari is the agriculture and forestry professional's partner that is close to the customer. Junkkari is always ready to learn and develop new things in cooperation with the farmer, and takes part in various research and development projects. Junkkari people have a spirit of doing things.

Junkkari S

Junkkari SH



S and SH models are applicable for both lightly and heavily tilled land, where it is important to keep sowing depth sufficiently shallow.



3 metres
4 metres



12.5 cm



80 hp
100 hp

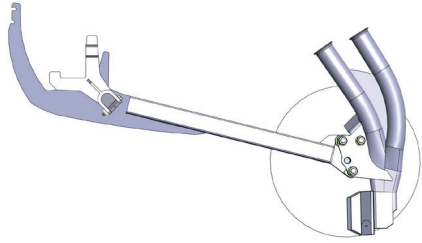


S 10–30 kg
SH 10–60 kg



3 m = 4200 litres
4 m = 5700 litres

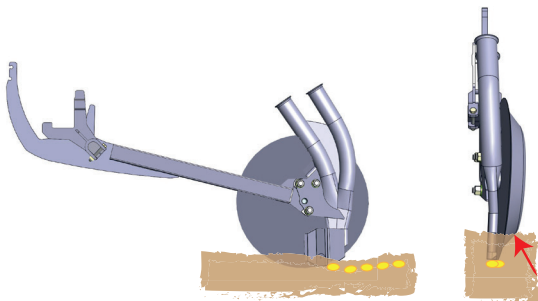
		TYPE OF SOIL		
		soft	medium	hard
S				
SH				
		TILLING		
		conventional	minimum	not tilled
S				
SH				



The high play of the couler helps achieve accurate seed placement even in varying soil type.



Wedge-shaped couler disc prevents the couler from diving too deeply into the soil.



The wedge-shaped couler closely follows the shape of the ground.

S model's idea is based on the wedge-shaped couler, which maintains the seeding depth accurately under different circumstances.

The couler unit consists of a long arm with a wedge-shaped couler disc at the end, which follows the surface of the field steadfastly. The seed and the fertiliser are placed in soil next to the wedge-shaped couler disc at exactly the right depth.

COULTER STRUCTURE

In the new S model, the wear part positioning of the couler is improved compared to the previous models. The couler part touching the soil is a carbide tip. The wear part ploughs less compared to previous models, so the couler enters the ground better. The couler pipe goes all the way down and the seeds do not touch the disc at any point. Seeds do not remain on the surface but are placed at the desired depth.

In the S model, couler pressure can be adjusted mechanically between 5 and 30 kg and in the SH model hydraulically between 5 and 60 kg.

TILLING AND TYPE OF SOIL

The S model performs best in ploughed and harrowed parcels. In soft soil types, such as humus soil and peat soil fields, it is very important to prevent seeding too deeply.

The SH model is a better solution for light-tilling with a disc cultivator or a cultivator. Higher couler pressure ensures sufficiently deep seeding, even on a cloddy surface. With the hydraulic couler pressure, the seeding depth can be adjusted while driving as the soil type changes in the parcel.

PLACEMENT OF FERTILISER

The SH model is available as a combi version, where the seed and fertiliser are placed in the same row. The S model is available as both a combi and a ferti model. In the ferti model, the fertiliser is placed between the seed rows through separate fertiliser coulers.



Junkkari M



The **M model** is Junkkari's most versatile combi drill. Thanks to numerous accessories and a wide coulters pressure area, it is suited for many needs and circumstances. The M model performs best on tilled and lightly tilled soil.



3 metres
4 metres



12.5 cm



90 hp
110 hp



20–120 kg



3 m = 4200 litres
4 m = 5700 litres

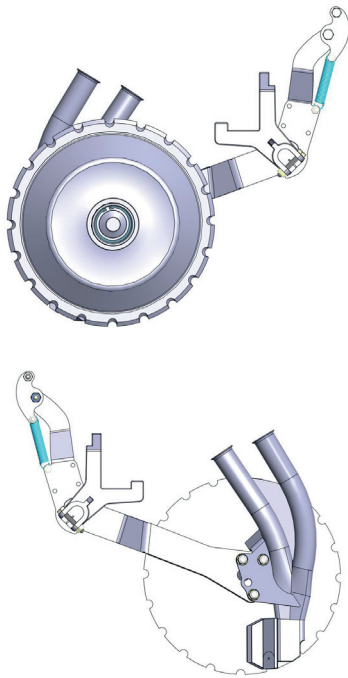
M

M

TYPE OF SOIL		
soft	medium	hard
TILLING		
conventional	minimum	not tilled



Junkkari wedge-shaped coulter controls the working depth and maintains it accurately as the soil types vary.



In the **M model**, the basic coulter is a Combi coulter, which is used to guide seeds and fertiliser into the same seed furrow.

The M model is a versatile machine for tilled and lightly tilled soil. It is suitable for both soft and hard soil types.

WEDGE-SHAPED COULTER

The idea of the machine lies in the rebuilt, sturdy wedge-shaped coulter, which accurately controls the sowing depth. In soft humus soil the wedge-shaped coulter maintains the working depth accurately and prevents the coulter from diving too deep into the soil. On hard clay soil the coulter pressure can be increased hydraulically and then the seed will go down at a sufficient depth.

Each coulter functions independently and follows the surface of the ground, measuring the working depth at exactly the right location, next to the seed to be placed.

COULTER PRESSURE

Tilling needs vary every year depending on the weather conditions, crop rotation and other changes in the environment and requirements. The M model adapts to different circumstances.

By increasing coulter pressure it is possible to sow in disc-tilled fields. Correspondingly, on ploughed parcels, lighter coulter pressure is sufficient as the wedge-shaped coulter disc controls the working depth.

In the M model, coulter pressure can be adjusted hydraulically in the range 20–120 kg.

The sturdy coulter of Junkkari M model is also suited for rocky terrains.



Junkkari T



T model is Junkkari's newest challenger for hard soil types. In hard soil types it is important to sow the seed on the border of tilled and non-tilled soil. This is possible thanks to the aggressive disc and high coulter pressure of the T model.



**3 metres
4 metres**



12.5 cm



**90 hp
110 hp**



20–150 kg

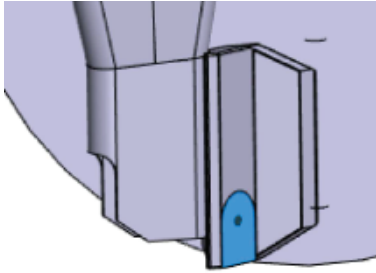


**3 m = 4200 litres
4 m = 5700 litres**

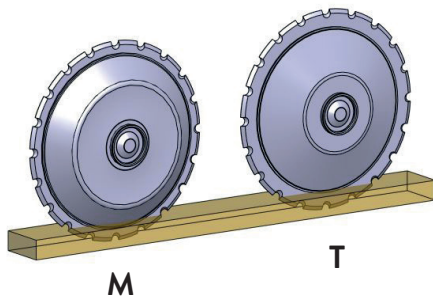
		TYPE OF SOIL		
		soft	medium	hard
T				
		TILLING		
		conventional	minimum	not tilled
T				



The wedge-shaped couler disc penetrates hard soil better



The couler has a wear-resistant carbide tip.



Higher couler pressure ensures penetration of the disc into the soil.

The T model is designed for harder types of soil. This is a more robust version of the M model. The T model is a good choice for hard and clay soil.

ACCURATE PLACEMENT

The basic principle of the Junkkari T model remains the same; the robust wedge-shaped couler is used to control the depth in light conditions and in hard clay soil the disc is pressed into the ground with high couler pressure.

In hard soil types it is important to get the seeds deep enough in the non-tilled soil and ensure that they do not stay in the light loose soil where the capillary rise of water is interrupted.

The T model disc is a wedge-shaped couler disc, more aggressive than in the M model. Its load-carrying area is about 30% smaller than that of the disc of the M model. On clay soil, the T-model disc goes better into the ground and ensures sufficient sowing depth. When the types of soil vary, the wedge-shaped couler ensures that the seeding depth remains the same.

HIGHER COULER PRESSURE

With the extensive couler pressure range of **20–150 kg**, the T model ensures that the disc remains in the ground.

All Junkkari coulers move independently and the coulers sow also at depressions. Seeds do not remain on the surface, which would cause secondary sprouting.



Junkkari D



The **D model** is Junkkari's direct seeding drill. When the soil is hard and the seed must be placed deep enough in the soil, the D model is an excellent choice.



**3 metres
4 metres**



16.7 cm



**90 hp
110 hp**



60–250 kg



**3 m = 4200 litres
4 m = 5700 litres**

		TYPE OF SOIL		
		soft	medium	hard
D				
		TILLING		
		conventional	minimum	not tilled
D				

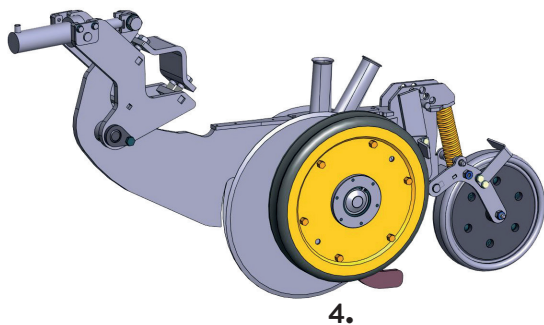
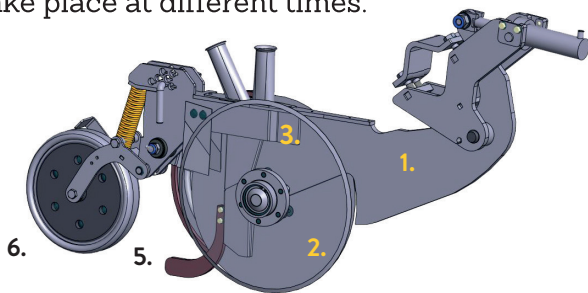
The D model is Junkkari's direct seeding drill, which also can be used to sow in tilled soil.

HEAVY COULTER PRESSURE

Demanding working conditions require high durability from the coulters structure. The coulters pressure must be sufficiently high to be able to place the seed and fertiliser in the desired depth. The coulters pressure of the D model is hydraulically adjustable. The adjustment range of the D coulters is 60 to 250 kg.

The precise depth adjustment is implemented with the depth control wheel located in parallel with the coulters. Behind the coulters, there is a separate closing wheel, which closes and packs the seed furrow.

In hard soil types it is particularly important for the seeding depth to remain stable, because any seeds remaining on the surface cause growth to take place at different times.

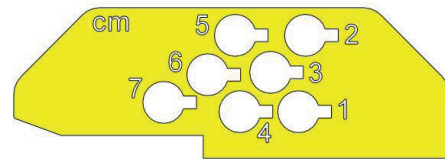


ADAPTING COULTER

The updated selection has centralised lubrication of coulters as standard. The D coulters is suitable for versatile tilling. Even though the main focus is on direct seeding and hard soil, the D coulters also works well when sowing tilled fields, for instance, after disc-tilling and cultivation.

DEPTH ADJUSTMENT

Coulters-specific depth adjustment is implemented with limiter pins. Coulters pressure is adjusted hydraulically from the tractor.



1. The body plate of the coulters is made of strong steel plate. Its durable and robust structure transmits the coulters pressure to sharp discs, with a maximum force of 250 kg.
2. The discs easily cut hard soil and straw. The disc is made of Hardox 450 steel and has a diameter of 445 mm.
3. The discs rotate on maintenance-free, high-quality, double-row SKF 3306A bearings
4. The support wheel is mounted next to the coulters disc. This structure allows the coulters disc to follow the surface of the field where it runs and place the seed exactly at the desired depth.
5. The tongue of the coulters presses the seeds accurately to the bottom of the seeding row, even when driving at a high sowing speed.
6. The adjustable closing wheel closes the seed row and packs the soil. Seed and fertiliser benefit from soil moisture.



COMBI

Junkkari Combi coulters place the seed and the fertiliser in the same row. The fertiliser is close to the seed, readily available. The Combi coulters are Junkkari's most popular coulters, and the method has convinced farmers.

BENEFITS OF COMBI COULTER

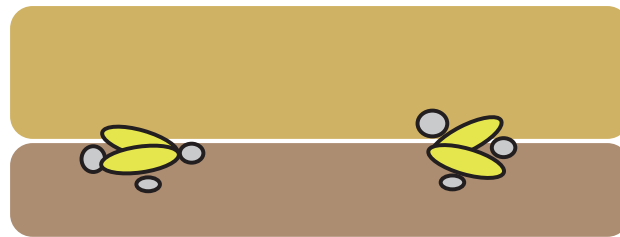
The advantage of the Combi coulters unit is the rapid initial development of the plant in a cool spring, when the soil is still cold, and the nutrients move slowly to the seed. The growth is shown as deep dark green sprouts.

On light soil types and fields where livestock manure is used, the method works particularly well, because the nutrient amounts used are lower. A start fertiliser can also be placed in the same row, since its fast-soluble phosphorus improves the plant's growth.

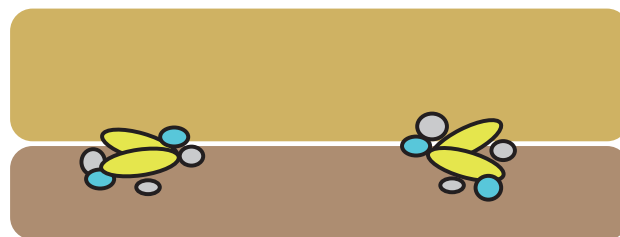
The drill structure becomes more streamlined when separate fertiliser coulters are left out. The need for machine traction power decreases and the number of wear parts is reduced. The coulters unit becomes more spacious and it penetrates straw and plant waste better on light-tilled fields.

SPLIT FERTILISATION

The Combi method is also suitable for split fertilisation. When sowing, 2/3 of the fertiliser is placed in the soil and surface spreading further



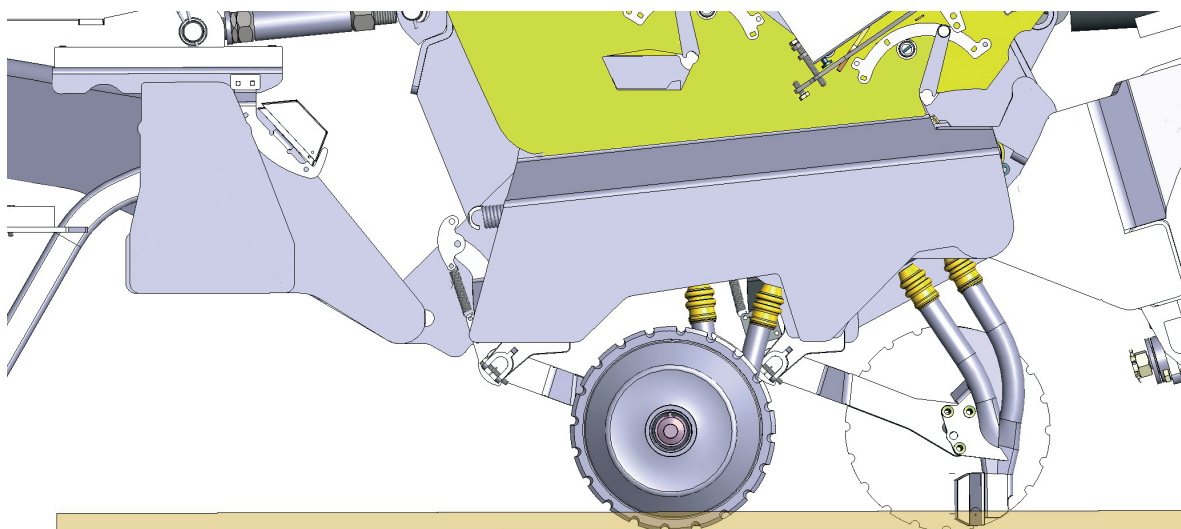
COMBI



COMBI + START

focuses fertiliser according to the growing season and crop. A plant needs most of nutrients during early development and this way they are quickly available to the plant.

The Combi coulters are available for models **S**, **SH**, **M**, **T**, **D** and **W**. Models **D** and **W** are only available with the Combi coulters.



The **Combi coulters** place the seed and the fertiliser in the same row.

FERTI

Junkkari drills are also available with a separate fertiliser coulters unit. Fertiliser coulters place fertiliser between every outer seed coulters at 25 cm row spacing. The fertiliser provides power from one row of fertiliser to two rows of seed.

DEPTH ADJUSTMENT

With separate fertiliser coulters the fertiliser can be placed deeper than the seed row. For example, seeds are sown at the depth of approximately 3 to 5 cm and fertiliser is placed at the depth of approximately 7 to 8 cm.

VERSATILITY OF FERTI

The Ferti coulters unit is a good choice when cultivating in dry clay soil and with a high fertiliser level. Fertiliser for the entire growing season is applied at once, and split fertilisation is not used.

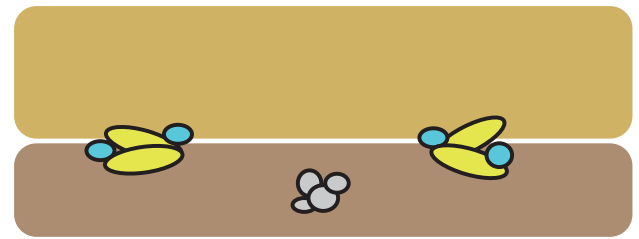
A Ferti coulters unit can also be used to sow covering mixed crops in organic farming, e.g. pea-oat crops, where the greatest possible coverage is an advantage against weeds.

A Ferti coulters unit can be supplemented with start fertilisation, which is placed in the same row with the seeds using a small seed box.

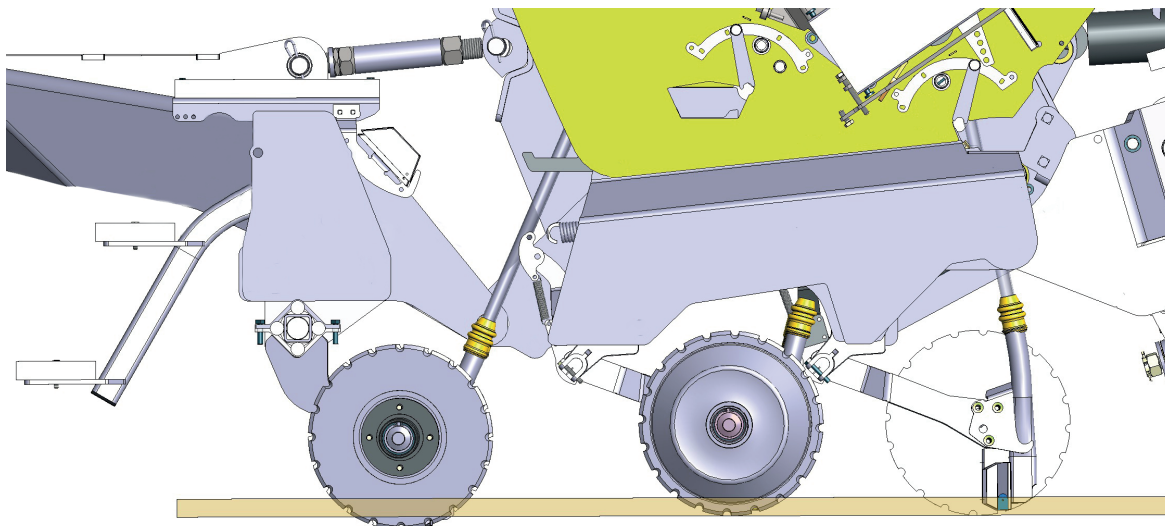
The Ferti coulters unit is available for models **S**, **SH**, **M** and **T**.



FERTI



FERTI + START



The **Ferti coulters unit** sows the seeds and fertiliser through separate coulters.

HOPPERS

The combi drill hopper consists of two parts. By turning the divider, the mutual volumes of the seed and fertiliser hoppers can be changed. In addition, a separate small seed box is available. It can be used to sow small seeds or start fertiliser.

AMPLE EQUIPMENT

The hopper has sieves for fertiliser as standard and steps inside the hopper to make climbing into the hopper easier. The hopper has a hopper sticker, which helps estimate the remaining seed amount, which makes it easier to change the cultivar later.

As optional equipment, cameras can be installed in the hopper. Cameras help observe the sufficiency of seed and fertiliser, and the hopper can be sown completely empty.

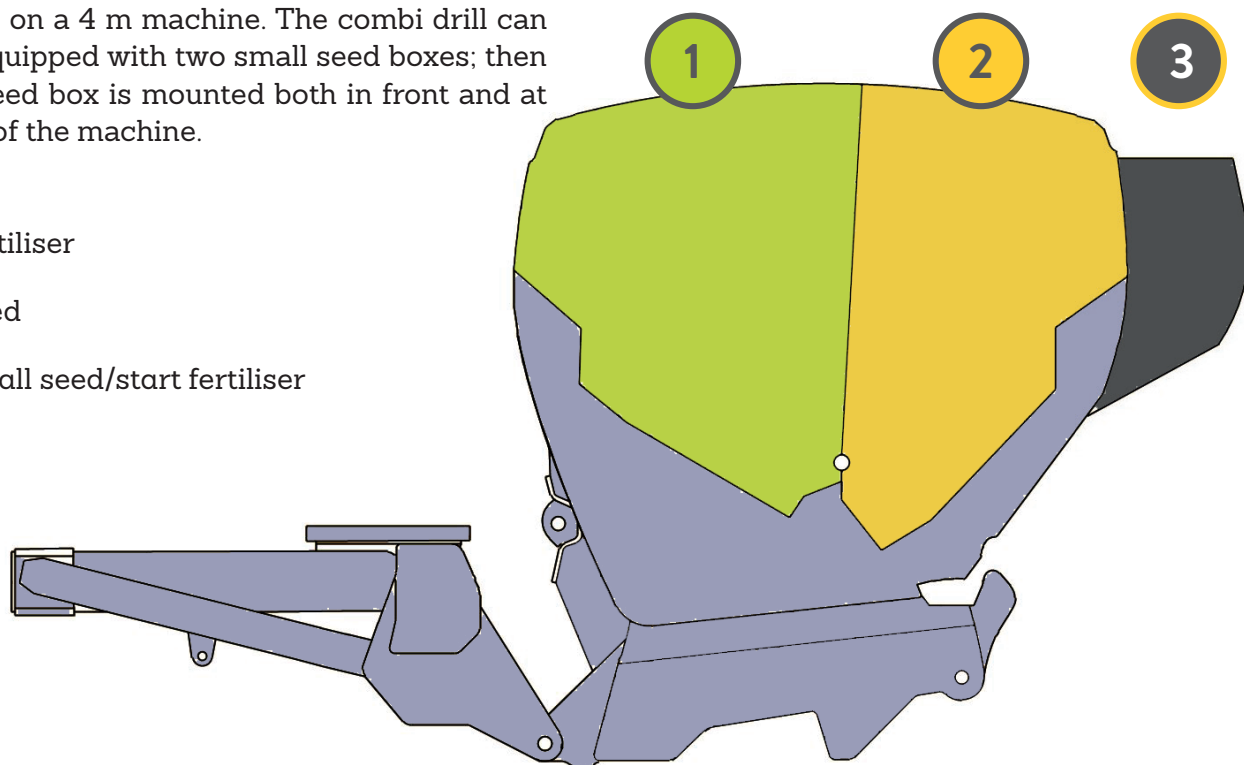


EFFICIENCY TO SOWING FROM HOPPER

The total volume of Junkkari's 3-metre machine's hopper is 4,200 litres and the 4-metre machine's total hopper volume is 5,700 litres. This means a grain sowing area of about 5 ha with a 3-metre machine and about 7 ha with a 4-metre machine with one hopper.

The corresponding volumes of small seed boxes are about 285 litres on a 3 m machine and about 380 litres on a 4 m machine. The combi drill can also be equipped with two small seed boxes; then a small seed box is mounted both in front and at the back of the machine.

- 1 Fertiliser
- 2 Seed
- 3 Small seed/start fertiliser



METERING DEVICE AND GROUND WHEEL

Junkkari's precise metering equipment is built of mechanical traction that adapts to driving speed. The ground wheel and cardan take the traction reliably from the ground and gearboxes and full-width feed wheels take care of the feed volumes.

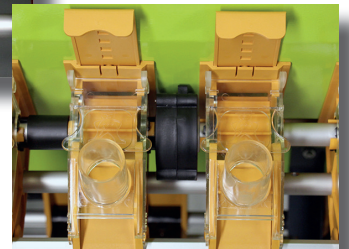
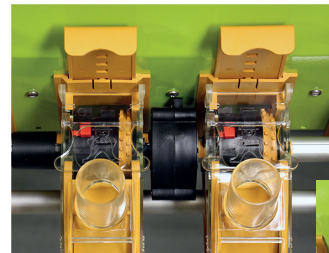
SEED FEEDERS

Two-part stud feeders consist of a black feed roller used for grain and a yellow, narrower roll used for small seed. When sowing grain, the rollers are connected by a red locking stud, which is released when starting to sow small seed.



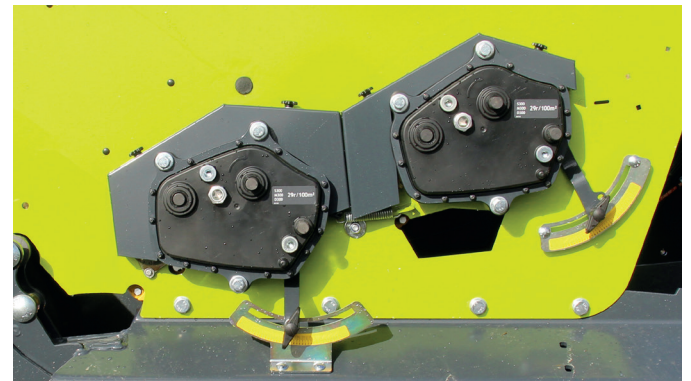
FERTILISER FEEDERS

Fertiliser rollers are full-width and equipped with larger feed holes, which also feed the fertiliser clods efficiently. A full-width roller provides accuracy for small feed amounts compared to traditional roller feed, where the length of the roller is adjusted in relation to the feed opening. Fertiliser roller is also recommended for sowing larger seeds for pea and broad bean.



ADJUSTMENT OF FEED AMOUNT

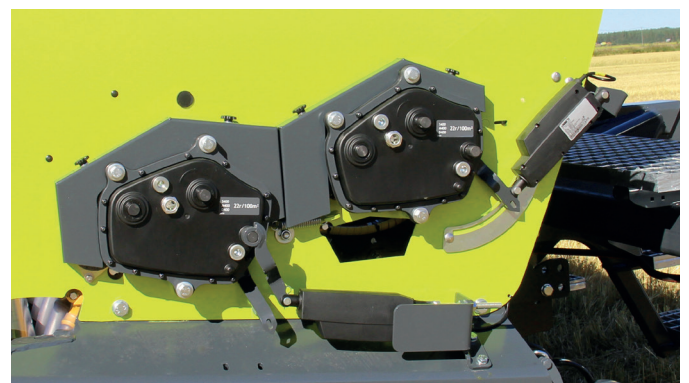
Feed amounts are adjusted by changing the rotation speed of the gearbox. Gearboxes help achieve accurate and equal feed amounts even with small seed amounts, such as a few kilos of canola seeds. Gearbox also helps achieve small amounts of fertiliser accurately, whilst rapid wear of feed rollers is avoided.



The feed amount is controlled continuously with the gearbox by changing the rotation speed of the feed roller.

ELECTRONIC REMOTE CONTROL OF FERTILISER

Electronic remote control of fertiliser is available as an option. It can be used to change fertiliser amounts while driving within the parcel when the soil type varies. In addition, precision farming readiness is also available. In addition to fertiliser, seed and small seed amounts are adjustable electronically according to a preplanned sowing map. The precision farming readiness is built on top of the ISOBUS system.



A mechanical metering device is a clear, accurate, sustainable and reliable choice for a farmer. Feed rollers are produced by the Group's own plastic factory and the gearboxes are made by Junkkari.

ERGONOMICS AND OCCUPATIONAL SAFETY

The Junkkari combi drill is designed for easy and safe use. Large, full-width work platforms and steps made of grating plate are standard on the front and rear of the machine. It is easy to move around the machine during filling and cleaning.

The grating plate is safe as a structure, because it does not accumulate dirt or dust, which could cause a slipping hazard.

Inside the machine's hopper there is a safe step in every corner for easy access.



ROTATION TEST

Performing a rotation test is extremely easy and clear with all Junkkari combi drills:

- Set the rotation test trays in place.
- Adjust the continuously variable gearbox to the desired amount of seed or fertiliser.
- Change the position of the replacement flap so that the seeds drip from the hopper into the test trays. It is not necessary to remove the locking pins.
- Rotate the gearbox using the manual crank and you will get the amount of seed for 100 m².
- Weigh the result, multiply it by 100 and the result is the amount for 1 ha.
- Finally, turn the replacement flaps back to the basic position.

The rotation test is completed!

Watch the video to see how easy it is!



WHEELS AND FOLLOWING HARROW

The wheels at the rear of the machine have two main tasks: they press the seeding rows and close the furrow. Eliminating the need for separate pressing delivers considerable time savings during the busy seeding season. Packer wheels also act as the machine's transport wheels.

LARGE WHEELS SAVE SOIL AND MONEY

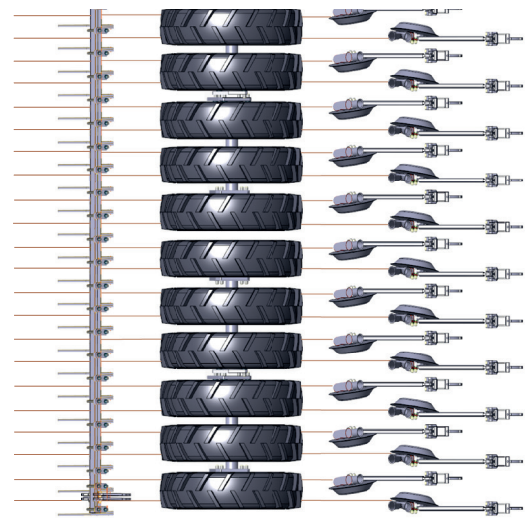
Junkkari wheels are equipped with 7.5x20" tractor-patterned tyres, which guarantees functioning even on the very lightest soil types. Thanks to the 20-inch tyres, the unit is light to pull, and the large tyres considerably reduce the risk of bulldozing effect. The large tyres save fuel costs and the structure of the soil remains more intact thanks to the lower surface pressure.

The wheels are dimensioned so that transit with full hoppers is possible. The strong and spacious-ly structured frame of the wheel unit ensures good cleaning access and makes service points easily accessible. The wheel bearings are easily lubricated thanks to the new central lubrication.

BOGIE ADOPTING TO TERRAIN

Thanks to the bogie-type operating principle, the wheels adapt excellently to terrain contours, whether it is a depression in a field or a convex gravel road. Pressing is even and travel in transit is more stable than with more rigid solutions.

The 7.5 inch tyre size is ideal for machines with 12.5 cm row spacing; then each row aligns evenly with the tyres. In the D model the row spacing is 16.7 cm and pressing is ensured with coulter-specific closing wheels.



Seed rows in S, SH, M and T models.

STANDARD HARROW FINALISES THE SEEDING FINISH

In the 3 and 4 m Junkkari machines the following harrow is standard equipment, as there are undeniable benefits to using it. The following harrow harrows between the rows and breaks up the surface of the soil packed by the tyre. A well-harrowed loose soil layer prevents silting and crust formation of the surface and retains vital moisture in the soil.

The seed drill **half lift function** available as an option keeps the harrow on the ground also when turning in headlands.



CONTROLLERS

ELECTRIC AREA METER

An electric area meter is a clear battery-operated display that can be attached to the tractor cab. The area meter tells you the sown area, allowing you to estimate the hopper filling need and monitor the sown area for a parcel or growth parcel. The area meter cannot be used to control any accessories separately.



G-WIZARD

The modern and versatile graphical control unit provides most of the monitoring and control functions related to managing the combi drill. The unambiguous screen displays all necessary runtime information at a glance. The control unit is easy and logical to use. Depending on the equipment level of the drill, the control unit provides, among others, the following functions:

- drive speed
- 2 area counters
- hopper sensors
- axle rotation sensors
- track marker control
- tramline control
- half lift control
- fertilizer rate remote adjustment (Wizard Plus model)
- gearbox monitoring



ISOBUS

ISOBUS is Junkkari's most advanced control system. The officially certified system is compatible with ISO-BUS tractors and controllers. The ISOBUS user interface is unambiguous and can be controlled on the tractor's own display, avoiding wiring in the cab.

ISOBUS comes with all the same functions as the G Wizard, but in addition the seed and small seed adjustment can be electronically controlled if desired. With these accessories, the combi drill is ready for precision farming.

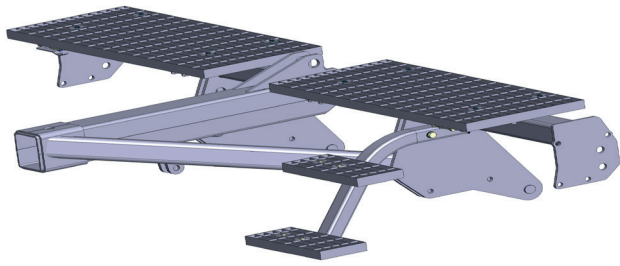


Electronic accessories

Junkkari combi drills have the following accessories

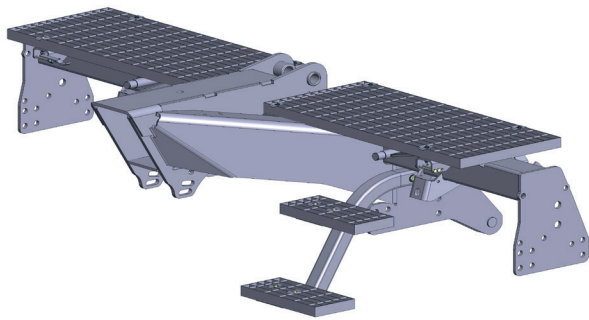
- Remote adjustment of fertiliser and/or seeds
- Tramlines for seed
- Tramlines for fertiliser
- Half-lift function of the machine
- Additional hopper monitoring
- Hopper cameras + rear view camera
- Isobus display and harness

DRAW EQUIPMENT STEADY AND HEAVY



There are two different versions of draw equipment, depending on the machine's cultivator equipment.

Steady draw equipment is intended for a machine with no cultivators or only a light, single-row cultivator, such as a front leveller, s-tine leveller or front harrow. In draw equipment, the dimensions of the towbar's beam are 150x100 mm.



Heavy draw equipment is a more robust version intended for double-row cultivators and disc cultivators. Double-row cultivators are longer and also require a longer and sturdier towbar. The dimensions of the draw equipment's towbar's beam are 250x150 mm.

Both types of draw equipment are options for 3- and 4-metre machines, excluding the D model, which is always manufactured with Heavy draw equipment.

TOWBARS



There are three different types of towing:

A **hook towbar** that connects to the tractor's towing hook is a clear and inexpensive option for towing a combi drill. The length of the towbar can be adjusted to suit different tractors.



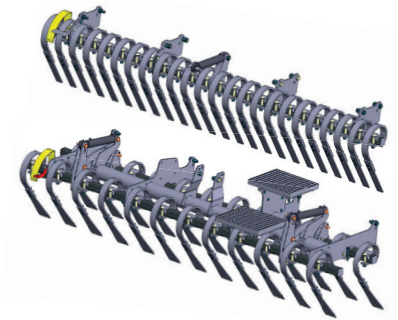
Two-point linkage, which is connected to the lower links of the tractor. Two-point linkage makes the combi drill and tractor combination agile and it is possible to make tighter turns in headlands.



Packer packs the soil between the wheels of the tractor and guarantees an even sprouting surface for seeds. This helps achieve even new crop and conditions for good growth.

The packer is connected to lower links, the same as the two-point linkage, which improves the agility of the combination. The packer keeps the seeding depth stable, because in the field, the combi drill is supported by the back wheels and packer. Then the changes in the tractor height do not affect the seeding depth.

CULTIVATORS

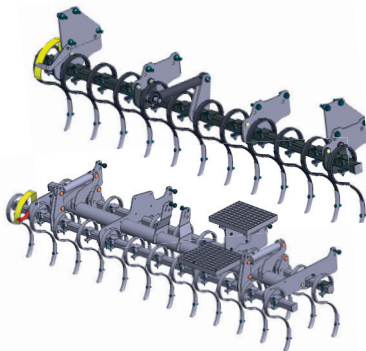


A combi drill can be supplemented with various cultivators.

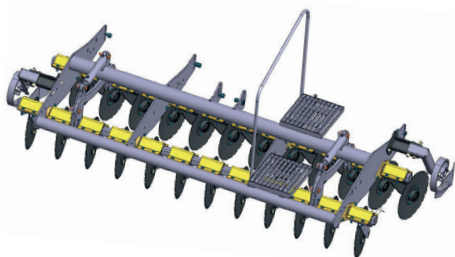
A **front leveller with one or two rows** is an efficient option for hard and clay soil, where the front leveller renders the soil into crumbs and levels the surface, ensuring full germinability of the seeds. In soft soil the front leveller can be used to level the unevenness caused by the pressure of the tractor wheels.



A **front harrow** is a good option, if most of the soil is tilled with a disc cultivator or a cultivator. A front harrow can be used to level the plant waste from light tilling evenly and create a good seed bed for seeds.



S-tine leveller helps reduce tilling times. Depending on the soil type and humidity conditions, fields that are normally harrowed twice can be harrowed only once with the s-tine leveller. S-tine leveller can also be used to till headlands, which become compacted during turns when using the reciprocating sowing method. The s-tine leveller is available as 1-row with 25 cm row spacing and 2-row with 12.5 cm tine spacing, the 2-row has a more spacious structure, with two axles which better penetrate plant waste.



Disc cultivator is intended for direct seeding and additional tilling on hard soil after light-tilling, and for land where plant coverage in winter is the primary cultivation method. A disc cultivator has ploughing discs.

Other supplies

Junkkari drills have the following accessories

- Hydraulic track marker
- Sieves for seed
- Small seed box
- Organic equipment for divider



Junkkari W



Why Junkkari W600 or W700?

RELIABLE, EASY TO USE AND MAINTAIN

- **Power take-off** to the metering device from packer wheels.
- The only runtime **need for hydraulics** is the 20 l/min required by the transfer augers.
- The built is reliable and simple.
- **No complicated** hydraulics or electronics.

PRECISE

- **Even feed** both in length and width. Each coulter has its own metering device.
- **No delays** - feed takes place only when the wheels of the machine are rotating. No overlapping sowing or unsown places.
- **Separate traction** for both halves increases accuracy in cornering.
- **Double disc coulter** places the seed and fertiliser accurately at the desired depth in all soil types.



ECONOMICAL

- **Considerably lower** tractor requirements than pneumatic competitors.
- **Does not require** continuously variable transmission, variable displacement hydraulics or high continuous hydraulics output.
- The **need for traction** is clearly lower than the competition's thanks to the mechanical implementation, large wheels and light to pull coulter unit.

EFFICIENT

- **Large hoppers** minimise the time spent on filling and logistics.
- Available in working widths of 6 and 7 metres.
- **Low power requirements** and mechanical metering device enable high, technically unlimited sowing speeds.



Material transfer - ingenious design in every detail

1 FERTILISER TRANSFER

Reliable, simple transfer of material from the main hopper to wing hoppers. The seed is transferred by gravity and the fertiliser assisted by an auger.

The extra fertiliser returns to main hopper. Rotation speed of the auger can be adjusted continuously.



2 WING HOPPERS

The wing hoppers have accurate mechanical metering devices, familiar from Junkkari's SMD models. Two augers in every hopper ensure that there is enough material.

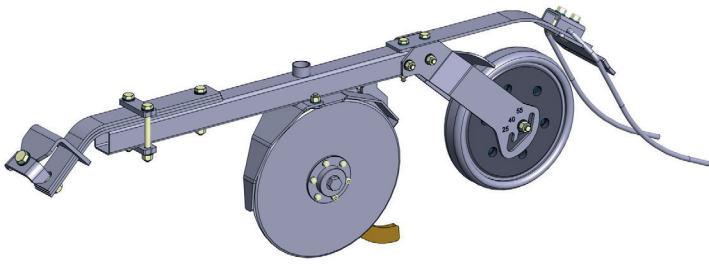
The mixing augers and metering devices of the wing hoppers are powered by the wheel set in front of them.

4 SUPER-ACCURATE MECHANICAL METERING DEVICE



The separate mechanical metering device for each coulter unit ensures an extremely even sowing result throughout the entire width of the machine. The metering devices and gearboxes are manufactured by Junkkari and are known from the SMD models.

The metering device is powered by two sets of roller wheels, one on the right and one on the left. This allows compensating for the speed



3 COULTER UNIT

The W model's coulters units are designed for durability even on large areas and for reliable operation in a variety of soil types and sowing methods. The double-disc coulters have 15.9 cm row spacing, and the coulters pressure range is 20–100 kg.

The double-disc coulters unit opens a perfect seed furrow, and the guide lip between the discs ensures that the seeds and fertiliser end up at the bottom of the furrow. The press wheel following the coulters unit controls the working depth and closes the furrow. The coulters weight and working depth are adjusted simply by changing the number of lamellas.

The wings' hydraulic pressure and a play of ± 10 cm enable the machine to adapt to the surface contours of the field and still maintain the even seeding depth for the entire width.



difference in curves. Feeding is adjusted continuously changing the speed with the help of gearboxes. The seed side has two separate stud rollers, the smaller of which can be used for accurately sowing even very small quantities.

Electrical remote controls for both seed and fertiliser are available as accessories. The ISOBUS controller also allows automatic rate control from a GPS-based plan prepared in advance.



Hopper

The large combi hopper with a total volume of 6,500 litres increases efficiency by minimising refilling time. The hopper has a fixed partition wall, dividing the volumes for fertiliser and seed in 60:40 ratio.

The hopper is fitted with a safe, ergonomic working platform and an easy-to-use, spring-operated tarpaulin cover. The fertiliser hopper also has sieves as standard.

Filling height of the hopper is 3,2 m.



Wheels

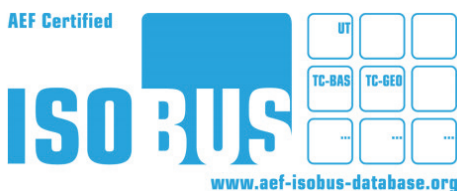
There is a set of tractor-treaded 7.5x20" wheels in front of the coulter units, spanning the whole width of the machine. The mid-section is of bogey construction, allowing stable transfer driving. The large wheels support the machine well, even on soft soil.

W-series drill is available with brakes as an option.



Control

W-series has an ISOBUS compatible control as a standard. Functions like wings and augers are normally used by tractor hydraulics. If the tractor does not have enough hydraulics valves, machine can be equipped with valve block and joystick control.



Accessories

W model machines can be supplemented with accessories

SMALL SEED BOX

A fan-type small seed box is available for sowing grass and undergrowth. The small seed box is mounted on the machine frame and the tubing is brought to the front of the packer wheels into the spreading nozzles.

The small seed box is hydraulically operated and requires one hydraulic block as well as a free return to operate.

FRONT LEVELLER

A front leveller is available for levelling earth embankments and tyre tracks. The front leveller has one row, and it is connected to both wing blocks in front of the packer wheels.

The front leveller is a good option for soft soil in particular, where the tractor's twin wheels do not pack the soil for the entire width of the machine. The front leveller levels the seed bed the same for both packer wheels and coulters.

DISC CULTIVATOR

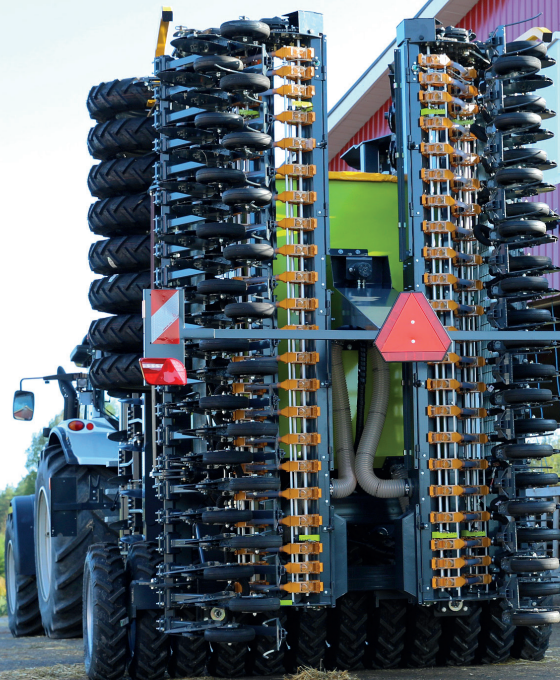
A disc cultivator is also available for stubble drilling and seed bed cultivation. The disc cultivator has a double-row structure, equipped with ploughing discs; the disc diameter is 330 mm. When equipping a machine with a disc cultivator, the growing need for traction power must be taken into account.

Transporting the machine

What makes the W model special is that it combines a six and seven-metre working width with a three-metre transport width.

After seeding, the grains and fertilisers left in the wing hoppers are rotated back into the hopper and the wings are lifted hydraulically.

The wings lock in the transport position and it is safe to transfer the machine on the road.



Simulta 2500 NL/3000 NL

Simulta 2500 KH

LIFTING EQUIPMENT SIMULTA 2500 NL/3000 NL

Attached to lifting equipment, **Simulta NL** is an inexpensive and good choice for farms with a relatively small annual area to be sown or where the shape of the parcels does not favour another type of structure.

The Simulta NL model is available with 2- and 3-metre working widths.

LIGHT TRAILED SIMULTA 2500 KH

Simulta KH is an excellent solution, for instance, when the farm's large tractor is kept permanently in front of the harrow. It can easily be pulled by a 45 kW (about 60 hp) tractor.

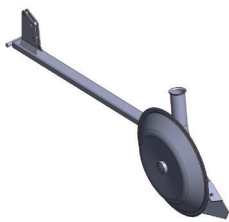
Optional side plates increase effective working time and improve achieved sowing.

TECHNICAL SPECIFICATIONS	2500 NL	3000 NL	2500 KH
Working width	250 cm	300 cm	250 cm
Row spacing, seed	12.5 cm	12.5 cm	12.5 cm
Row spacing, fertiliser	25 cm	25 cm	25 cm
Hopper volume			
- Fertiliser maximum (with additional side plates)	607(837) l	728 l	837 l
- Seed maximum (with additional side plates)	412 (627) l	495 l	627 l
Filling height	1.2 m	1.2 m	1.39 m
Tyres	11.5/80-15.3	11.5/80-15.3	400x15.5ELS or 320/70R20
Empty weight	686 kg	830 kg	750 kg
Total width	3.38 m	3.88 m	3.58 m



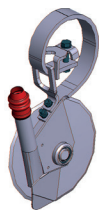
Coulter options for NL and KH models

SEED COULTER



Wedge-shaped coulter

FERTILISER COULTER OPTIONS



Fertiliser disc coulter



S-tine fertiliser coulter

In addition to extensive standard equipment, Simulta models offer a wide range of accessories.

ACCESSORY	NL	KH
Area metering, mechanic	S	S
Hopper's level indicators	S	S
Sieves for fertiliser	S	S
Mixer axle, seed	S	S
Working platform in the rear	S	S
Following harrow	○	○
Lighting equipment and/or reflectors	S	S
Small seed box	○	○
Start equipment	○	○
Pickling equipment	○	○
Row press, plastic	○	○
Row press, rubber	○	○
Double springs	○	○
Mechanical remote control of fertiliser	○	○
Sieves for seed hopper	○	○
Traction triangle	-	○
Aluminium feed wheels	○	○

S = standard

○ = option



COULTER UNIT

Need for direct seeding	Tilled, lightly tilled	Tilled, lightly tilled	Tilled, lightly tilled, direct seeding (1)
Coulter type	Single-disc coulter	Single-disc coulter	Single-disc coulter
Working depth control	Wedge-shaped coulter	Wedge-shaped coulter	Toothed wedge-shaped coulter
Coulter pressure range	10–30 kg	10–60 kg	20–120 kg
Coulter pressure adjustment	Mechanical	Hydraulic	Hydraulic central adjustment
Pressure element	Tension spring	Tension spring	Tension spring
Number of seed coulters (3/4 m)	24/32	24/32	24/32
Row spacing	12.5 cm	12.5 cm	12.5 cm
Fertiliser placement method	Fertiliser coulter/seed coulter	Fertiliser coulter/seed coulter	Fertiliser coulter/seed coulter
Fertiliser single-disc coulter	Option	Option	Option

HOPPER

Volume	4,200 litres/5,700 litres	4,200 litres/5,700 litres	4,200 litres/5,700 litres
Partition wall	Adjustable	Adjustable	Adjustable
Sieves for fertiliser	Standard	Standard	Standard
Sieves for seed	Option	Option	Option
Tarpaulin cover	Spring operated	Spring operated	Spring operated
Metering device, fertiliser	Feed wheel with gearbox adjustment	Feed wheel with gearbox adjustment	Feed wheel with gearbox adjustment
Metering device, seed	2 studded wheels with gearbox adjustment	2 studded wheels with gearbox adjustment	2 studded wheels with gearbox adjustment

WHEELS

Tyre options	7.5x20"	7.5x20"	7.5x20"
Brakes	Option	Option	Option

DRAW EQUIPMENT

Steady/Heavy	Steady/Heavy	Steady/Heavy	Steady/Heavy
Basic drawbar	Option	Option	Option
Drawbar for lower links	Option	Option	Option
Packer 140 cm/10.0/75-15.3	Option	Option	Option

CONTROL UNIT

Control unit options	No control unit/Area metering/G-wizard/ISOBUS	No control unit/Area metering/G-wizard/ISOBUS	No control unit/Area metering/G-wizard/ISOBUS
Tramlines for fertiliser	Option	Option	Option
Tramlines for seed	Option	Option	Option
Fertiliser rate remote adjustment	Option (G-wizard/ISOBUS)	Option (G-wizard/ISOBUS)	Option (G-wizard/ISOBUS)
Seed rate remote adjustment	Option (ISOBUS)	Option (ISOBUS)	Option (ISOBUS)
Precision framing solution	Option (ISOBUS)	Option (ISOBUS)	Option (ISOBUS)
Additional hopper monitoring	Option	Option	Option
Half lift	Option	Option	Option

ACCESSORIES

Hydraulic track marker	Option	Option	Option
Single-row front leveller	Option	Option	Option
Double-row front leveller	-	-	Option
Double-row s-tine leveller	-	-	Option
Disc cultivator	-	-	Option
Front harrow	Option	Option	Option
Small seed and start fertiliser device	Option	Option	Option

DIMENSIONS

Working width	300/400 cm	300/400 cm	300/400 cm
Transport width	300/400 cm	300/400 cm	300/400 cm
Height in transport position (3/4 m)	341 cm	341 cm	352 cm
Filling height in working position (Eco/Plus)	216 cm	216 cm	228 cm
Length	474–650 cm	474–650 cm	539–798 cm
Weight	min. 2,500kg/3,100kg	min. 2,500kg/3,100kg	min. 3,200kg/3,900kg
Power demand	80 hp/100 hp	80 hp/100 hp	90 hp/110 hp

1) not recommended for direct seeding in heavy soils

The factory reserves the right

Tilled, lightly tilled, direct seeding (1)	Tilled, lightly tilled, direct seeding	Tilled, lightly tilled	Tilled, lightly tilled
Single-disc coulters	Double-disc coulters	Double-disc coulters	Double-disc coulters
Toothed wedge-shaped coulters	Depth control wheel	Support wheel	Support wheel
20–150 kg	60–250 kg	20–100 kg	20–100 kg
Hydraulic central adjustment	Mechanical for each coulters	Hydraulic, lamella	Hydraulic, lamella
Tension spring	Compression spring	Tension spring	Tension spring
24/32	18/24	38 pcs	44 pcs
12.5 cm	16.7 cm	15.8 cm	15.9 cm
Fertiliser coulters/seed coulters	Seed coulters	Seed coulters	Seed coulters
Option	-	-	-

4,200 litres/5,700 litres	4,200 litres/5,700 litres	Front hopper 3,900/rear hopper 2,600 litres	Front hopper 3,900/rear hopper 2,600 litres
Adjustable	Adjustable	Fixed	Fixed
Standard	Standard	Standard	Standard
Option	Option	Standard	Standard
Spring operated	Spring operated	Spring operated	Spring operated
Feed wheel with gearbox adjustment	Feed wheel with gearbox adjustment	Feed wheel with gearbox adjustment	Feed wheel with gearbox adjustment
2 studded wheels with gearbox adjustment	2 studded wheels with gearbox adjustment	2 studded wheels with gearbox adjustment	2 studded wheels with gearbox adjustment

7.5x20"	7.5x20"	7.5x20"	7.5x20"
Option	Option	Option	Option

Steady/Heavy	Heavy	-	-
Option	Option	-	-
Option	Option	Drawbar for lower links as option	Drawbar for lower links as option
Option	Option	-	-

No control unit/Area metering/G-wizard/ISOBUS	No control unit/Area metering/G-wizard/ISOBUS	ISOBUS	ISOBUS
Option	Option	Option	Option
Option	Option	Option	Option
Option (G-wizard/ISOBUS)	Option (G-wizard/ISOBUS)	Option	Option
Option (ISOBUS)	Option (ISOBUS)	Option	Option
Option (ISOBUS)	Option (ISOBUS)	Option	Option
Option	Option	Camera (2 pcs)	Camera (2 pcs)
Option	Option	-	-

Option	Option	Option	Option
Option	Option	Option	Option
Option	Option	-	-
Option	Option	Option	Option
Option	Option	Option	Option
Option	Option	-	-
Option	Option	Option	Option

300/400 cm	300/400 cm	6 m	7 m
300/400 cm	300/400 cm	3 m	3 m
352 cm	352 cm	3.47 m	3.97 m
228 cm	233 cm	3.2 m	3.2 m
539–798 cm	591–851 cm	850-900	850-900
min. 3,200kg/3,900kg	min. 3,950kg/4,700kg	6800-8300	7500-9000
90 hp/110 hp	90 hp/110 hp	150+ hp	150+ hp

to changes without prior notice.

A GOOD WAY TO
**WORK
SMART**



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