



**PACKER**

SOIL RE-CONSOLIDATION

# WHEN FARMING MEANS BUSINESS

Realising the full potential of farming is about growing and developing your business, not only your crop or livestock, but also your profit. Improve productivity and profitability by focusing on the positives and minimising disadvantageous aspects, through strong, dedicated management.

Success springs from determination and clear targets, from laying down the appropriate strategy and allocating correct investments for the future. Quality results require the right ideas and equipment. When there is work to be done, you need the optimal setup and smart solutions that support you towards an easier, more profitable way of working. You need solutions that make tough and demanding conditions less complicated.





## TILLAGE

Preparing and cultivating your soil in order to achieve the highest possible yield is about choosing the correct tillage system

# YOUR KVERNELAND INTELLIGENT FARMING SOLUTIONS

Choose the best farming solution for you and your land. Combine the highest possible yields with sustainability. This will start with the correct tillage. The choices you make depend on various factors and should match your specific circumstances, like soil structure, crop rotation, residue management, economic and ecological viabilities.

*The choice is yours!*

You must consider environmental and legal issues. From conventional methods to conservation tillage: the balance of operations at the right time has to be found to achieve high yields with the best soil condition (air, moisture, biological activity, etc.) with a minimum amount of energy, time and investment. For this, Kverneland offers a full range of intelligent farming solutions.

## Conventional Tillage

### Conventional Tillage

- **Intensive** method of cultivation
- Complete soil inversion e.g. by a plough
- Less than 15-30% crop residues left on soil surface
- Seedbed preparation done by an active tool or special seedbed harrow
- High phytosanitary effect by reduced pressure of weed and fungi diseases - fewer herbicides and fungicides needed
- Better dry-off and faster increase of soil temperature for better nutrients absorption

## Conservation Tillage

### Mulch Tillage

- **Reduced** intensively in terms of depth and frequency
- More than 30% of residues are left on soil surface
- Extended repose period of the soil
- Cultivator and/or discs incorporate the crop residues within the top 10cm of soil for stable bearing soil
- Full-width tillage - seedbed preparation and seeding in one pass
- Protection against soil erosions with reduced lost of soil and water
- Improvement of soil moisture retention

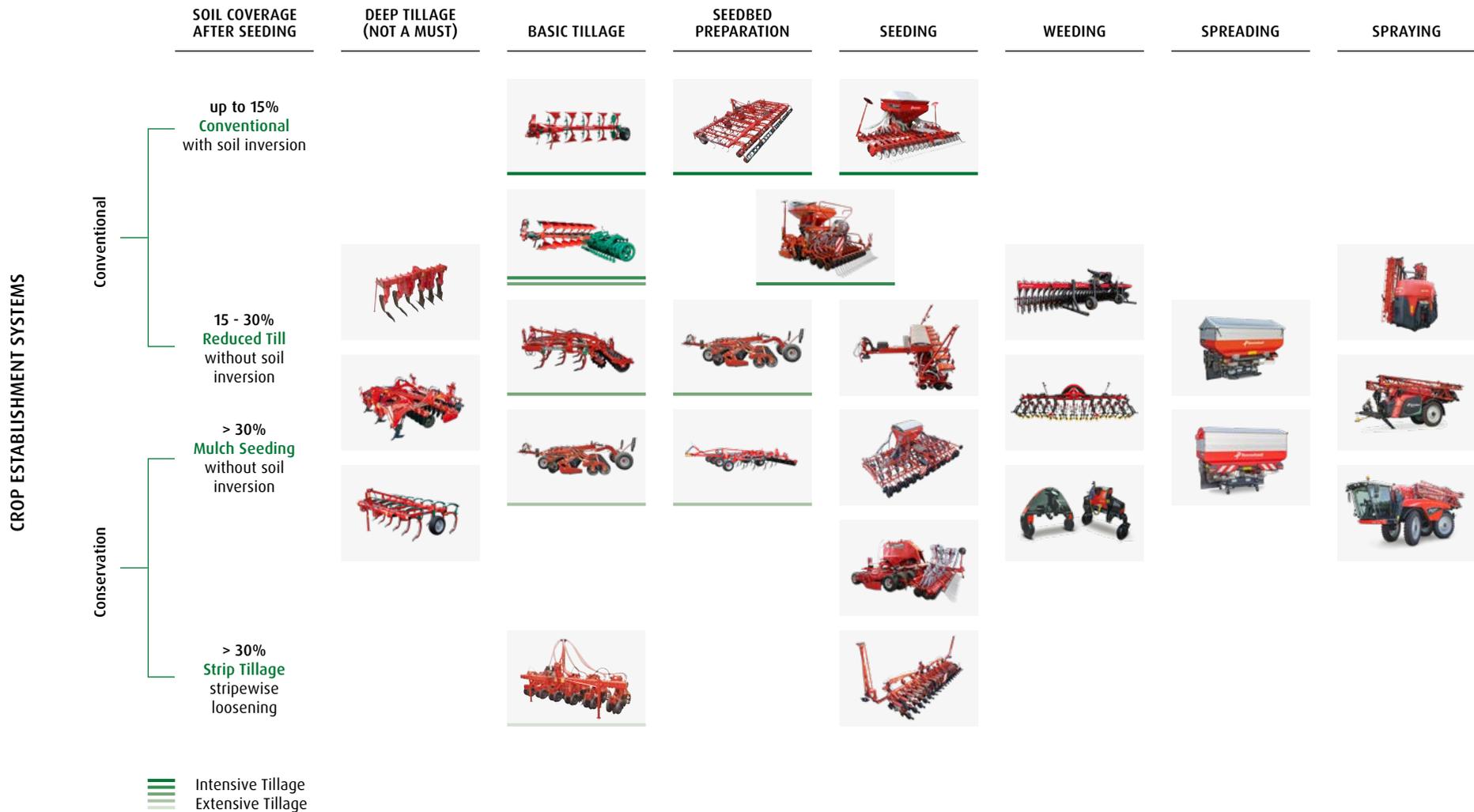
### Strip Tillage

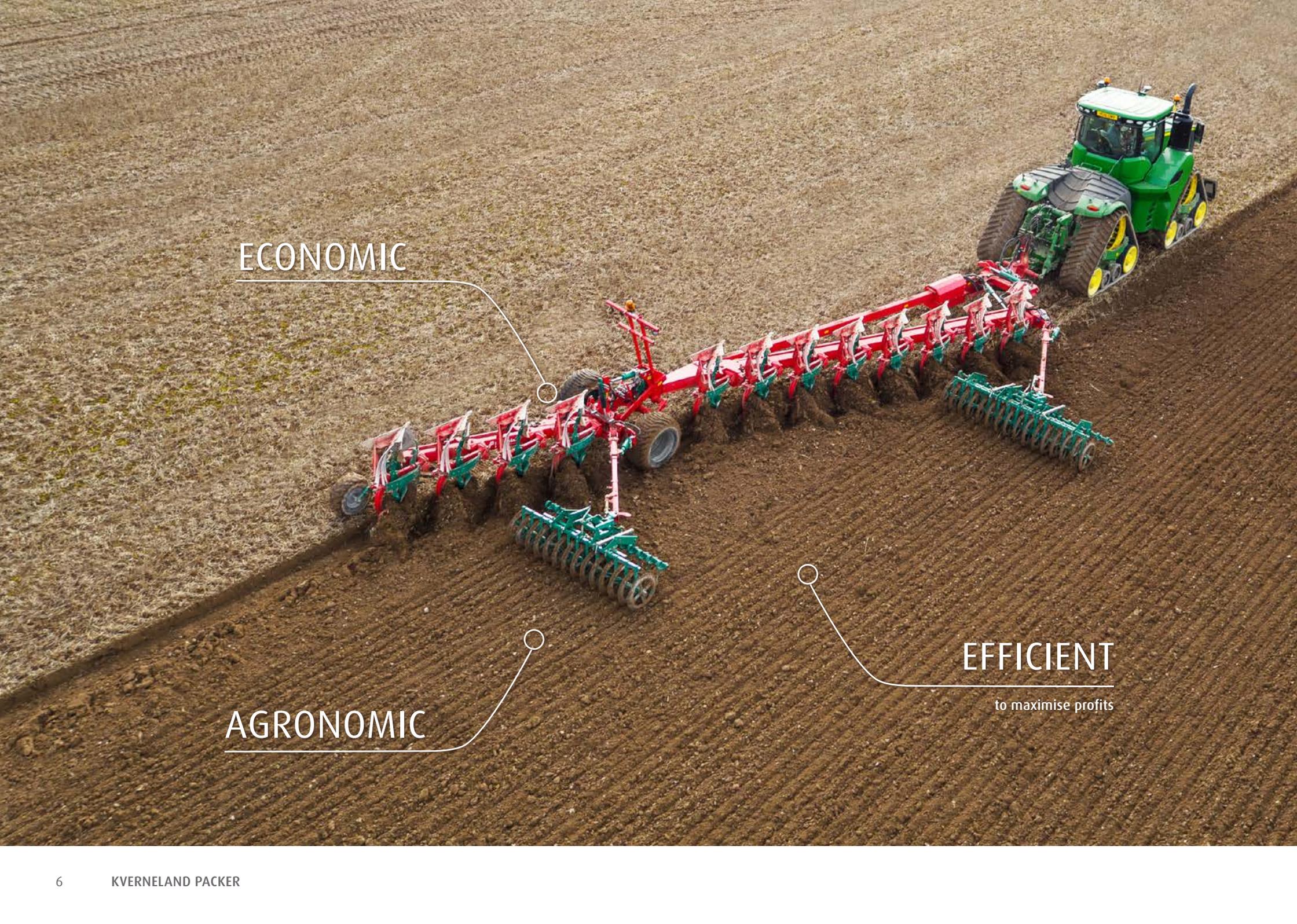
- **Strip-wise** loosening before or during seeding of up to 1/3 of the row width (Loibl, 2006). Up to 70% of the soil surface remains untouched
- Strip-till combines the soil drying and warming benefits of conventional tillage with the soil-protecting advantages of no-till by disturbing only the area of the soil where the seeds are placed
- Exact fertilising deposit
- Soil protection against erosion and drought

### Vertical Tillage / No-Till

- **Extensive** method
- Working soil vertically avoids additional horizontal layers or density changes
- Increasing water infiltration, root development and nutrient take-up
- Plants' roots dictate the overall health of the plant, as they deliver nutrients and water throughout, contributing to a higher yield
- A strong set of roots make plants more resistant to wind and drought
- Indirect energy input

# KVERNELAND'S INTELLIGENT FARMING SOLUTION





ECONOMIC

AGRONOMIC

EFFICIENT

to maximise profits



## OPTIMISE PLOUGHING WITH DIRECT SOIL RE-CONSOLIDATION

### **Agronomic**

Re-consolidate soils right after ploughing or directly before seeding, crushes coarse clods and favours moisture.

### **Efficient**

A wide range of tools to re-consolidate soils is available from Kverneland. They adapt to any soil conditions and customs.

### **Economic**

Completing 2 operations in 1 only pass saves time. Less fuel gets used too.

## OVERVIEW

# MAXIMISE SOIL RE-CONSOLIDATION BENEFITS

Ploughing alone benefits most soils. Re-consolidation after ploughing or before seeding increases productivity and favours higher yields.

### **Agronomic benefits**

The combination of ploughing and re-consolidating is both efficient and environmentally friendly. Soils are loosened, organic matters are incorporated to enrich the soils. Weeds are controlled mechanically. The elevation of temperature of the ploughed soil is actually positive. The associated water evaporation is limited by the immediate re-consolidation via packers. Water capilarity is hence re-established for the benefit of the soil life.

### **Maximise efficiency**

Driven by efficient crop management processes, as a farmer, it is difficult to grant sufficient time for the soil to settle by itself. Furthermore, soil moisture shall be maintained to ensure a good germination after seeding.

Kverneland's re-consolidating tools are therefore recommended in combination with ploughing or directly before seeding. Coarse clods get crushed, soil is re-consolidated with a favourable soil moisture.

### **Higher profitability**

Profitability is generally improved by either cutting down costs or improving yields. By re-consolidating soils either during ploughing or directly before seeding, the profitability improves on both ends. Cost are reduced by completing 2 operations simultaneously. The fuel consumption is optimised too. Yields will improved due to the re-consolidation of the soils.



## TOOLS FOR RE-CONSOLIDATION

### PACKER PRINCIPLE



The soil packers are also called furrow presses. Single or double row rollers, they are pulled while ploughing. Positioned beside the plough, they re-consolidate the plough furrow while the soil still contain moisture.

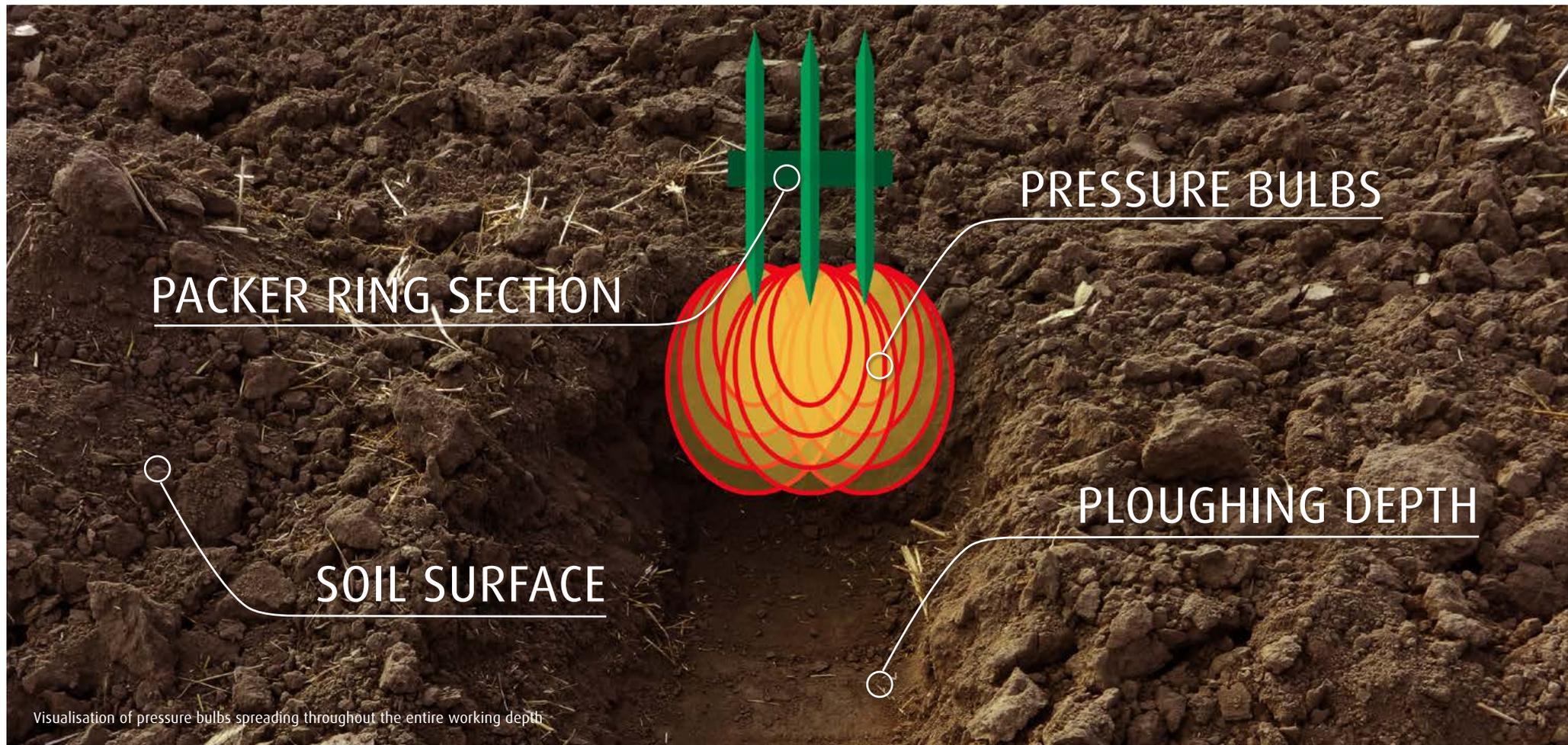
Kverneland soil packers suit different soils conditions and local customs. One can choose among 30° (Packomat) to 50° heavy cast iron rings shape. Their diameter is equally important when it comes to the levelling of the soil surface. 700 and 900 mm rings have proved to be the most popular for the models SP, DP, FP, TP. For the Packomat, 480 and 600 mm rings give the best results.

The ring profile compacts the soil from the top down to the ploughing horizon. A crumbling roller with 550 mm diameter is available to crumble the top layer, hence limiting erosion, and to create a seedbed.

The packer rings consolidate the freshly ploughed land in order to reach a better soil structure. Kverneland's packers enable soil re-consolidation, seedbed preparation, crumbling and levelling of the plough furrows. The soil is hence ready for a fast and good plant growth.



# BULB PRESSURE THEORY



## CHOOSING THE CORRECT TOOL FOR A SUCCESSFUL SOIL PREPARATION



### Three different solutions for re-consolidation during ploughing

The soil re-consolidation is influenced by the choice of packers.

Kverneland made a test in 2016. It compared and measured the re-consolidation results when using 3 different packers:

- Kverneland Packomat
- Kverneland Trailed Packer
- Integrated competitor system

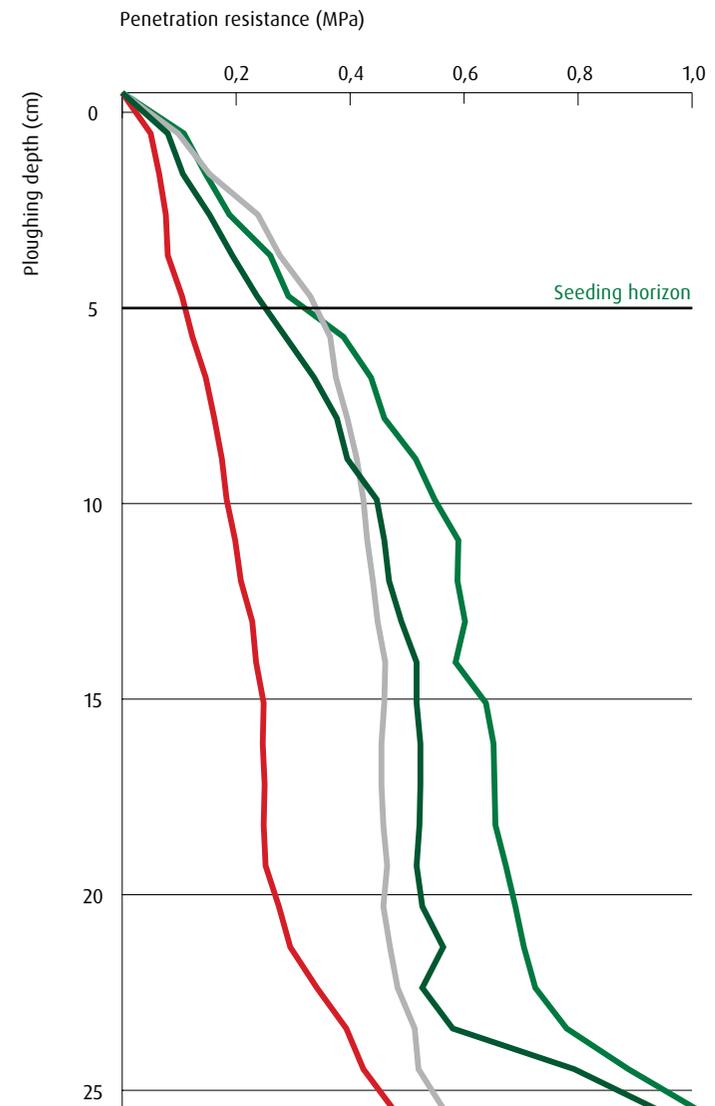
# TEST RESULTS

The re-consolidation of the soil after ploughing has been analysed after using three packer systems: Kverneland Packomat, Kverneland packer and a competitor packer.

The graph compares the results from the actual re-consolidation and shows that:

- using a packer has a significant re-consolidation effect compared to ploughing alone.
- from an agronomic point of view, the Packomat and the trailed packer positively impact the entire ploughing depth.
- the competitor system shows a lower degree of re-consolidation directly underneath the seeding horizon (5 cm).

Source: Kverneland Group, Klepp, Haus Düsse, 2016



# EASY

handling from tractor cab

# 100% INTEGRATED

from work to transport

# ECONOMIC

No need for additional pulling forces

# OPTIMISED

levelling with front harrow

# EFFICIENT

soil preparation up to seedbed

# KVERNELAND PACKOMAT

## EFFICIENT SOIL PREPARATION

### **100% integrated Packer**

Packomat follows the plough from transport to work. Compared to other packers, the Packomat offers high productivity gains.

### **Easy handling**

From the tractor cabin, it is easy to position the Packomat for transport or work. The Packomat can remain lifted on field bonderies.

### **Optimised levelling**

Choice of front harrows to crush clods and ease the ring soil re-consolidation.

### **Economic**

Packomat contributes to the balance of the plough in work. No extra pulling forces are needed. Its design reduces landside pressure and their wear. No need for extra manpower for transport

### **Efficient**

Packomat works in any ploughing conditions. Soil preparation can be extended to seedbed. Available from 4 to 12 furrow Kverneland ploughs, Packomat is an efficient tool.

*Packomat is a Kverneland invention*



# KVERNELAND PACKOMAT

## EFFICIENT SOIL PREPARATION



Packomat works in all ploughing conditions. It levels, re-consolidates, crushes clods, prepares seed beds, from light-dry to heavy-wet soils.

Packomat is rigidly mounted via a packer arm. The latter is made of a specially hardened spring steel. By means of that arm, weight transfer takes place from the plough to the Packomat to ensure that the packer works the soil with the correct "field pressure".

Easy packing pressure adjustments. More than 1250 kg\* pressure gets easily regulated by means of a turnbuckle or an optional hydraulic cylinder.

### **Low pulling forces**

The Packomat does not require any extra pulling force than for the plough alone. The support of the depth wheel on one side and the Packomat on the other side, balance even better the Kverneland plough. Less landside pressure actually reduces the draft requirements.

\*Based on a 5-furrow plough with 2.80 m Packomat

## PACKOMAT FOLLOWS THE PLOUGH DURING WORK



### **User friendly**

Packomat, being an integrated packer, is easy to use. It follows the plough automatically.

For the first pass next to field edge, lift up the packer arm.

At the headland, the Packomat reverses side with the plough.

Lower then the plough to start ploughing, the Packomat follows the plough and starts re-consolidating the ploughed soil.

At the headland, lift the plough and the Packomat follows the same movement automatically.

## PACKOMAT FOLLOWS THE PLOUGH DURING TRANSPORT



### **Narrow transport width**

Smart: the roller can be mechanically or hydraulically adjusted to get transport width within tractor width.

No additional tractor or manpower required for transport.

*20 years of successful experience*



up to 6 furrow Mounted ploughs

up to 12 furrow PW/RW Semi-mounted ploughs by combining 2 rollers

## TECHNICAL DATA



20 cm ring distance Ø 60 cm rings  
(optional Ø 48 cm)



Single front harrow: 16 mm tines with rev. points or  
20 mm tines with blade points

Packomat	Working width (m)	Ring spacing (cm)	Ring Ø (mm)
4 furrow ring sections	2.40	20	480/600
5 furrow ring sections	2.80	20	480/600
6 furrow ring sections	3.20	20	480/600
8 furrow ring sections	4.00	20	480/600



## EFFICIENT

soil preparation  
up to seedbed

## OPTIMISED

fine layer to limit erosion

## IMPROVED

fine seedbed with crumbler

## PERFECT

pulling with Packer arm

## DEEP

re-consolidation down to  
the ploughing depth

# KVERNELAND TRAILED SOIL PACKER

## HEAVY DUTY SOIL PREPARATION

### Single Packers (SP) and Single Turn-around Packers (TP)

These packers are ideal for heavy-duty re-consolidation in light to medium soils. The crumbler roller, part of the single turn-around combination, adds a crumbling effect and refines the seedbed preparation.

Re-consolidate the soil structure while ploughing to keep the moisture needed for optimum crop establishment. The Kverneland plough packer arm enables an easy release and hooking of the packer at headlands.

*As good and even easier*

Packer configuration	Ring diameter (mm)	Ring profile	Soil conditions				
			light	light/medium	medium	medium/heavy	heavy
Single Packer (SP)	900	50°					
Single Turn-around Packer (TP)	900	50°					

# SINGLE PACKER AND SINGLE TURN AROUND PACKER

## KVERNELAND SP/TP

1

Strong extendable frame  
(axle needs to be changed)

2

High-tensile axle with maintenance-free bearings:

- 2 bearings up to 2.90 m
- 4 bearings for bigger sizes

3

Pivot bolt for additional crumble roller

4

Connection to 3-point linkage Cat. II

5

Strong gray cast iron

6

### Options

Vertically adjustable pulling arms for reversible ploughs with damper system (from 2.10 m)

7

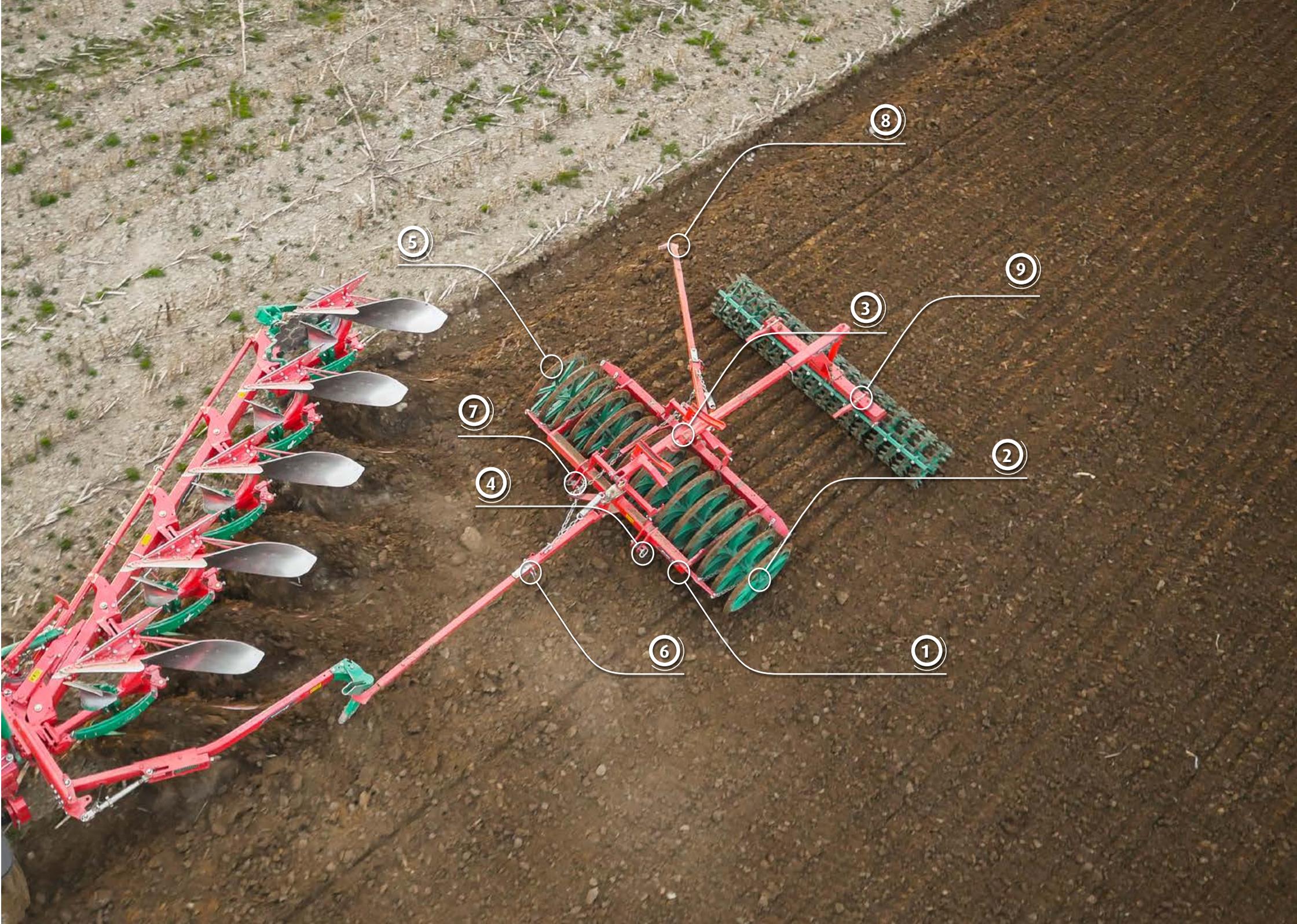
Jerk chain for conventional plough

8

Special Kverneland hook

9

Lightning kit



8

5

9

3

7

2

4

8

6

1



## PACKER ARM

with shock absorber

# PACKER ARM

## STRONG AND RELIABLE



Packer arm connecting to the packer



Spring system

**Kverneland packer arm is available for all Kverneland mounted reversible ploughs and for all packers.**

Packer arms are connected to the headstock on most of the Kverneland plough models in order to minimize additional side forces during ploughing. The specific design of the 2500 i-Plough allows the packer arm to be connected directly to the main frame.

Quick, easy and smooth operations thanks to the hydraulic release system and to the spring system which absorbs shocks. Simple manual handling for transport position.

# TECHNICAL DATA

## KVERNELAND SP: SINGLE PACKER 900



Kverneland SP: Single Packer, rings Ø 900 mm 50°	Weight (kg)	Number of rings	Working width (m)
SP 901-210	1,072	11	2.10
SP 901-230	1,168	12	2.30
SP 901-270	1,346	14	2.70
SP 901-290	1,428	15	2.90
SP 901-330	1,665	17	3.30
SP 901-350	1,738	18	3.50
SP 901-370	1,834	19	3.70
SP 901-390	1,930	20	3.90
SP 901-410	2,012	21	4.10
SP 901-430	2,094	22	4.30

## TECHNICAL DATA

### KVERNELAND TP: SINGLE PACKER WITH CRUMBLER



<b>Kverneland TP: Single Turn-around Packer, rings Ø 900 mm 50°, crumbler roller Ø 550 mm</b>	<b>Weight (kg)</b>	<b>Number of rings</b>	<b>Working width (m)</b>
SPC 901-210	1,646	11/13	2.10
SPC 901-230	1,777	12/14	2.30
SPC 901-270	2,025	14/16	2.70
SPC 901-290	2,137	15/17	2.90
SPC 901-330	2,524	17/20	3.30
SPC 901-350	2,597	18/20	3.50
SPC 901-370	2,748	19/22	3.70

# KVERNELAND TRAILED SOIL PACKER CRUMBLER

Crumbler, rings Ø 550 mm	Weight (kg)	Number of rings	Working width (m)
CR 55-220	475	13	2.20
CR 55-240	510	14	2.40
CR 55-280	580	16	2.80
Cr 55-300	610	17	3.00
CR 55-350	760	20	3.50
CR 55-380	815	22	3.80



- Fine seedbed preparation and levelling thanks to the 550 mm notched crumble rings. The produced fine top layer also limits erosion.
- Additional hooked crumble roller on pivot bolt
- Easy turning process
- Extendable
- Self-cleaning with integrated scrapers
- Strong gray cast iron rollers

### Options:

- Standard drawbar with brackets
- Telescopic drawbar with saddle brackets for transport
- Transport wheels with mechanical handling
- Lightning kit





PERFECT

pulling with Packer arm

IMPROVED

crumbling effect

DENSE

re-compaction/cm<sup>3</sup>



## KVERNELAND TRAILED SOIL PACKER TRANSPORT



Kverneland DP



Kverneland TP

- Easy transport in front or rear 3-point linkage
- Manual assembly and disassembly of Pulling arms
- Pulling arms during transport in brackets fixed

# TECHNICAL DATA

## KVERNELAND DP: DOUBLE PACKER

Double Packer, rings Ø 900 mm 38°	Weight (kg)	Number of rings	Working width (m)
DP 901-225	1,414	15	2.25
DP 901-255	1,605	17	2.55
DP 901-285	1,766	19	2.85
DP 902-315	2,076	21	3.15
DP 902-345	2,219	23	3.45
DP 902-375	2,363	25	3.75
DP 902-405	2,554	27	4.05
DP 902-435	2,720	29	4.35
Double Packer, with hydr. Transport system			
DP 902-315 FW	2,434	21	3.15
DP 902-345 FW	2,577	23	3.45
DP 902-375 FW	2,722	25	3.75
DP 902-405 FW	2,913	27	4.05
DP 902-435 FW	3,078	29	4.35

Double Packer, rings Ø 900 mm 50°	Weight (kg)	Number of rings	Working width (m)
DP 901-225S	1,484	15	2.25
DP 901-255S	1,687	17	2.55
DP 901-285S	1,858	19	2.85
DP 902-315S	2,173	21	3.15
DP 902-345S	2,321	23	3.45
DP 902-375S	2,476	25	3.75
DP 902-405S	2,679	27	4.05
DP 902-435S	2,855	29	4.35
Double Packer, with hydr. Transport system			
DP 902-315S FW	2,532	21	3.15
DP 902-345S FW	2,680	23	3.45
DP 902-375S FW	2,835	25	3.75
DP 902-405S FW	3,037	27	4.05
DP 902-435S FW	3,215	29	4.35

# DEEP

re-consolidation down to  
the ploughing depth

# PERFECT

for combinations

# EASY

to manoeuvre

# MAXIMISE

levelling



## KVERNELAND FRONT PACKER PERFECT FOR IMPLEMENT COMBINATIONS



- Strong and robust tower for long reliability.
- Passive steering with damping system.
- High-tensile axle with maintenance free bearings.
- Connection to 3-point linkage Cat. II.
- Rigid (3.00 m) and hydr. foldable (4.00 m +).
- Parking stand (foldable FP are possible to park in transport or working position).
- Manual transport locking for safe and stable transport.





Rigid front packer

# KVERNELAND FRONT PACKER SAFE IN TRANSPORT



## Foldable front packer

On public roads, the packers' 3-point linkage is locked in order to allow safe transport without swaying. Hydraulically foldable packers are getting locked, automatically, prior to folding whereas all rigid models need to get locked manually.

# KVERNELAND FRONT PACKER

## USEFUL OPTIONS



- Lightning kit
- 2-row front Harrow, tines 45x12 mm, mechanical adjustment
- 2-row front Harrow, Packomat-tines 20 mm with knives, mechanical adjustment



45x12 mm tines

## TECHNICAL DATA

### KVERNELAND FP: FRONT PACKER

Front Packer, rings Ø 700 mm 30°	Weight (kg)	Number of rings	Working width (m)
FP 70-300, rigid	950	20	3.00
FP 70-400, fold	1,500	26	4.00
FP 70-450, fold	1,600	28	4.50
FP 70-500, fold	1,739	32	5.00
FP 70-600, fold	2,050	38	6.00
Front Packer, rings Ø 700 mm 45°			
FP 70-300S, rigid	1,080	20	3.00
FP 70-400S, fold	1,665	26	4.00
FP 70-450S, fold	1,780	28	4.50
FP 70-500S, fold	1,739	32	5.00
FP 70-600S, fold	2,290	38	6.00

Front Packer, rings Ø 900 mm 38°	Weight (kg)	Number of rings	Working width (m)
FP 90-300, rigid	1,395	15	3.00
FP 90-400, fold	2,115	20	4.00
FP 90-450, fold	2,270	22	4.50
FP 90-500, fold	2,455	24	5.00
FP 90-600, fold	3,005	30	6.00
Front Packer, rings Ø 900 mm 50°			
FP 90-300S, rigid	1,465	15	3.00
FP 90-400S, fold	2,165	20	4.00
FP 90-450S, fold	2,370	22	4.50
FP 90-500S, fold	2,575	24	5.00
FP 90-600S, fold	3,150	30	6.00



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# ORIGINAL PARTS & SERVICE

## LET'S FOCUS ON YOUR BUSINESS

ORIGINAL  
PARTS

- 
- ① LONG LASTING - HIGH QUALITY SPARE PARTS
  - ② OVER 100 YEARS OF PARTS KNOWLEDGE
  - ③ SUPPORT FROM A WIDE NETWORK OF DEALERS
  - ④ 24/7 SPARE PARTS SERVICE
  - ⑤ HIGHLY SKILLED DEALER TECHNICIANS

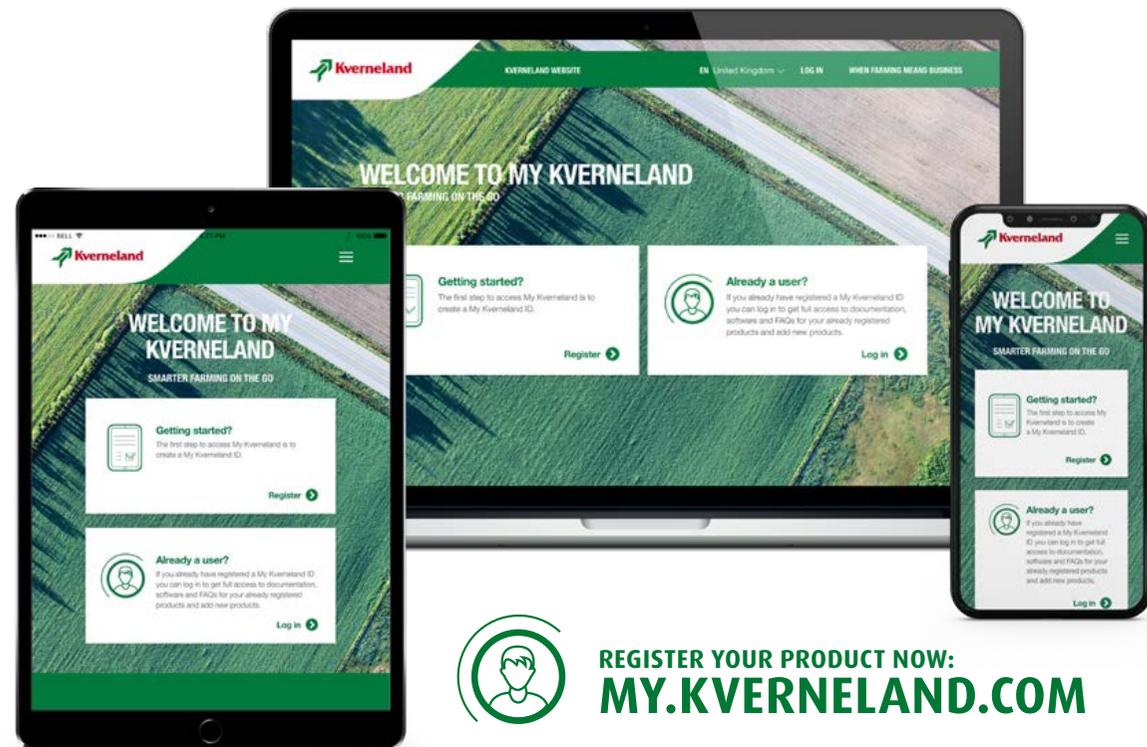
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Receive first hand access to information on future developments and updates, operator and spare parts manuals, FAQs and local VIP offers. All information is gathered in one place.



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# MANAGE YOUR FARM AS A BUSINESS WITH OUR ISOMATCH PRECISION FARMING OFFERING

Our precision farming offering is essential in managing your farming business with success. Applying electronics, software, satellite-technology, online tools and Big Data enables you to use your farming equipment more effectively and reach higher profitability of your crops.

*iM FARMING - smart, efficient, easy farming*



Reduce overlap and save up to 15% on input costs with IsoMatch GEOCONTROL

**Maximum savings!**  
*The IsoMatch GEOCONTROL precision farming application includes Manual Guidance and Data Management free of charge. It is possible to expand this application with Section Control and/or Variable Rate Control.*

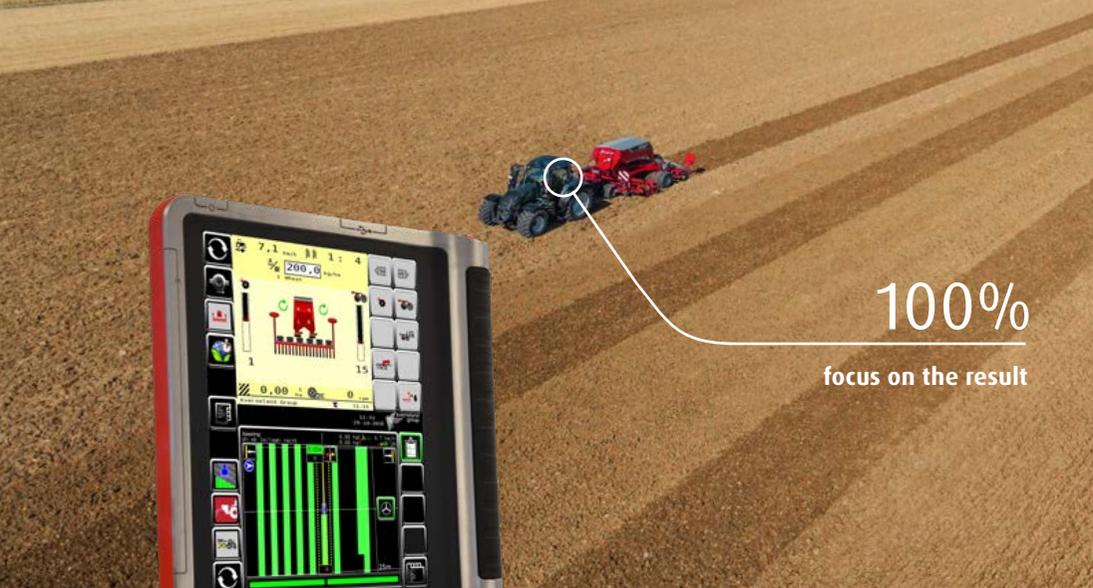
## Enhance your success with e-learning

**IsoMatch Simulator** is a free downloadable virtual training program. It simulates all functions of the IsoMatch Universal Terminals and Kverneland ISOBUS machines. Train yourself and make yourself familiar with your machine to avoid errors and enhance your machine performance.

## The best overview in farm management

**IsoMatch FarmCentre** is the first of a series of telematics solutions. This fleet management solution is applicable for your ISOBUS machines in combination with an IsoMatch Tellus GO/PRO. Whether you wish to control your fleet, manage tasks remotely or analyse machine performance data, IsoMatch FarmCentre provides this in an efficient web application, linking implements, tractors, terminals and the cloud in one continuous flow of data and connectivity.





100%  
focus on the result

**Be a PRO in increasing productivity**

The **IsoMatch Tellus PRO** 12-inch terminal provides you with the optimal solution for an all-in-one control system inside the tractor cab including automatic steering. It is the centre for connecting all ISOBUS machines, running precision farming applications and Farm Management Systems. It offers everything you need to get the maximum out of your machines and crop, as well as cost savings in fertiliser, chemicals and seeds by using automatic section control and variable rate control. With the unique dual screen functionality it gives you the opportunity to view and manage two machines and/or processes simultaneously.



**Easy control management**

The **IsoMatch Tellus GO** is a cost-efficient 7-inch terminal, especially developed for managing the machine in a simple way. Easily set up the machine with the soft keys and simply use the hard keys and rotary switch for optimal control while driving.

*Improve your performance  
Maximum efficiency, minimum waste*



**IsoMatch Global PRO**

GPS antenna system with RTK precision for the highest accuracy (2-3 cm) and best productivity.



**IsoMatch Grip**

This ISOBUS auxiliary device is made for maximum machine control and efficient farming. Operate up to 44 implement functions from one device.



**IsoMatch InLine**

Light bar for manual guidance including section status information. Manage the distance from the A-B line and steer for the ideal position.



**IsoMatch (Multi)Eye**

Connect up to 4 cameras to the IsoMatch Universal Terminals. It gives you full control and overview of the entire machine operation.



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