Kverneland

MOUNTED AND SEMI-MOUNTED PLOUGHS

PROFITABLE PLOUGHING

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 absorbation

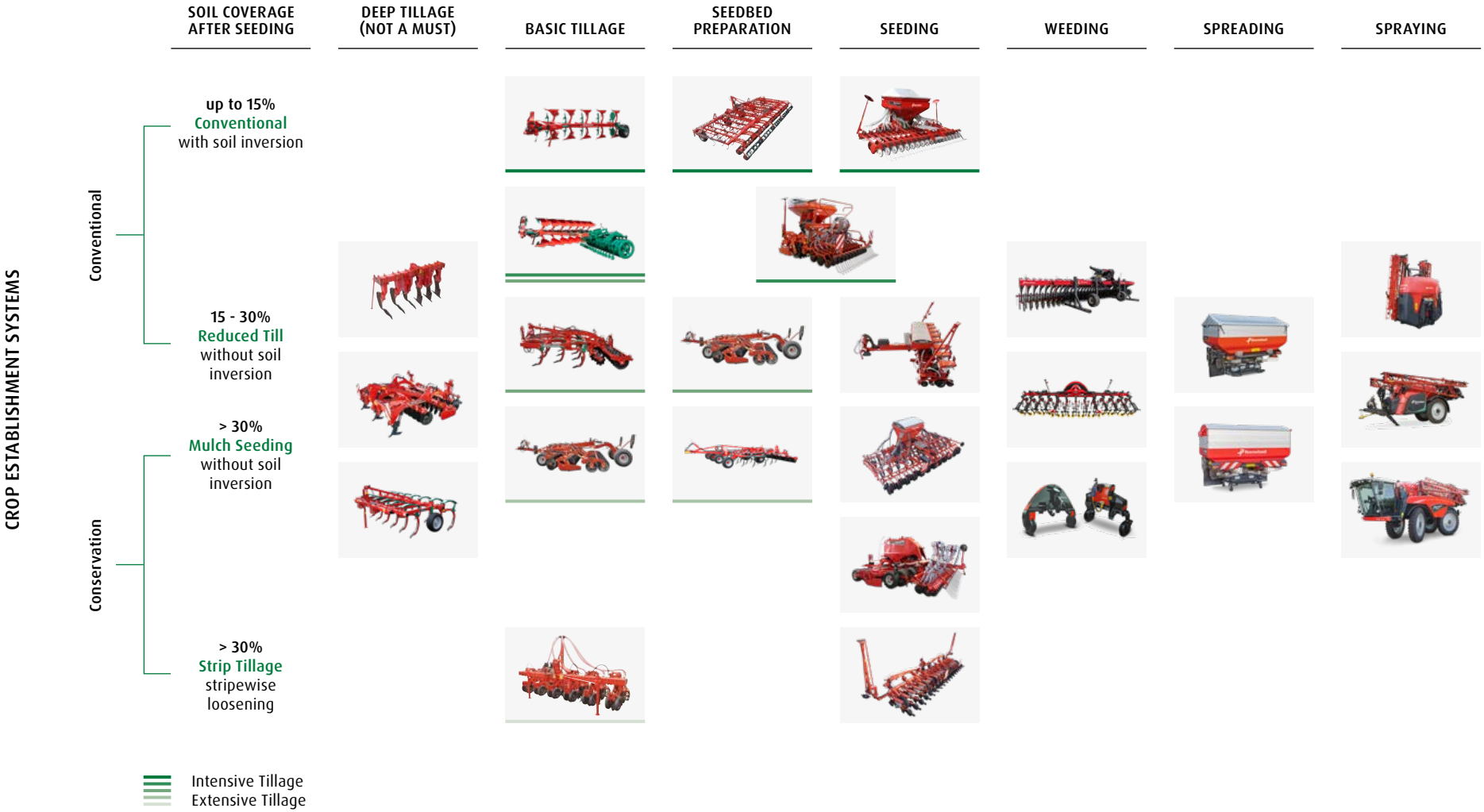
Conservation Tillage

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



O.G. Kverneland: black smith & ploughman. Here demonstrating how well balanced his ploughs are. Even today Kverneland R&D employees are ploughmen.

The context: typical arable land in Norway

The result: high performance ploughing

PERFORMANCE DRIVEN
FOR THE FARMERS SATISFACTION

Kverneland is world renowned and unequalled in producing robust & light ploughs for high performance with low operating costs.

Innovation from the start

In 1879 at the age of 25, Ole Gabriel Kverneland founded his smithy business in a small village south of Stavanger, Norway. Brought up on a farm and educated in agriculture, he subsequently understood all the machinery requirements of farmers. He strongly believed in innovation and manage to produce a mouldboard plough able to withstand the very tough stony soil conditions of Norway.

Over the years, he together with his team of engineers developed special steel heat treatment processes to allow his ploughs to work in the toughest of soil. Using these new steels of unique strength, Kverneland succeeded in manufacturing robust ploughs thus gaining a strong reputation for quality. Today, Kverneland is the leading manufacturer of ploughs with a very strong market position throughout the world.

Customer orientated

The tradition of customer orientated product development has resulted in the long record of innovations and in becoming a leading plough brand in the industry.
High priority is given to building close relationships with end users. Systematic follow up of individual customer experience helps Kverneland to adapt products to better match farmer's requirements.

Kverneland plough factory (Norway)

Forge (1879)

Ole Gabriel Kverneland


ROBUST
ECONOMIC TO RUN
HIGH PERFORMANCE

OPTIMISED ROBUSTNESS
TO MAXIMISE PROFITABILITY

Robust
Developed over 140 years, the Kverneland Steel Technology remains unsurpassed within the plough industry.
It guarantees extra robustness for extra life time to the plough.

Economic to run
The design of a Kverneland plough combined to the specific heat treatments of each and every part ensures low running cost. Easy to lift, easy to pull for a low fuel consumption; optimised low wearing of parts...

High performance
Kverneland innovations and design of parts enable a quick set up and adjustments for the perfect ploughed field.

Kverneland ploughs adapt to any tractor brands!

VARIOMAT®

OPTIMISED PRODUCTIVITY

Efficient

The patented Kverneland Variomat® is the most reliable system on the market. It allows the optimal match between the soil conditions, the plough and the tractor for the optimal output. By varying the furrow width, the work can be kept straighter. It is also easier to work up to the hedges and around obstacles.

By being able the adapt not only the depth but also the width of the furrows, the best results can hence be achieved.

Two different systems

Kverneland Variomat® is available in two variants: with hydraulic or mechanical adjustment of the furrow width. The hydraulic variant allows adjustments of the furrow width easily from the driver's seat "On the Move". The pulling line adjusts automatically thanks to the auto-line.

Reliable Auto-Line (AB/AD)

Kverneland Auto-line is a standard system which guarantees the correct pulling line at any time. When changing the working width, both front furrow width and pulling line adjust accordingly. Kverneland Auto-line system makes these adjustments automatically. No time spent on correcting/adjusting the pulling line when changing the working width.

The position of the headstock remains in the center of the tractor, all the time, ensuring a favorable and an even geometry of the three point linkage. Side pull and unnecessary high landside pressure are therefore avoided. Consequently, the Kverneland Auto-line system ensures an efficient ploughing with less fuel consumption.

Maintenance free

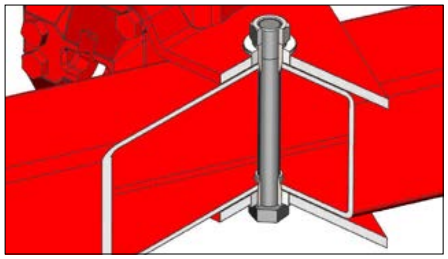
The Kverneland Variomat® system is maintenance free thanks to a unique non wearing linkage joint between the beams and the mainframe section. The system consists of a robust 24 mm bolt, a distance tube, two special heat-treated cones and replaceable bushes. No need to spend time on lubrifications.

The heat-treatment of high quality steels and exacting manufacturing accuracy guarantee perfect beam and body alignment with minimum wear.

Optimise fuel consumption

By adapting the working width to the soil conditions, the fuel consumption is optimised. Furthermore, when increasing the ploughing width, the fuel consumption per Ha gets reduced and hence profits are maximised.

Auto-line system



Maintenance free

HARD

as a diamond for optimum wear resistance

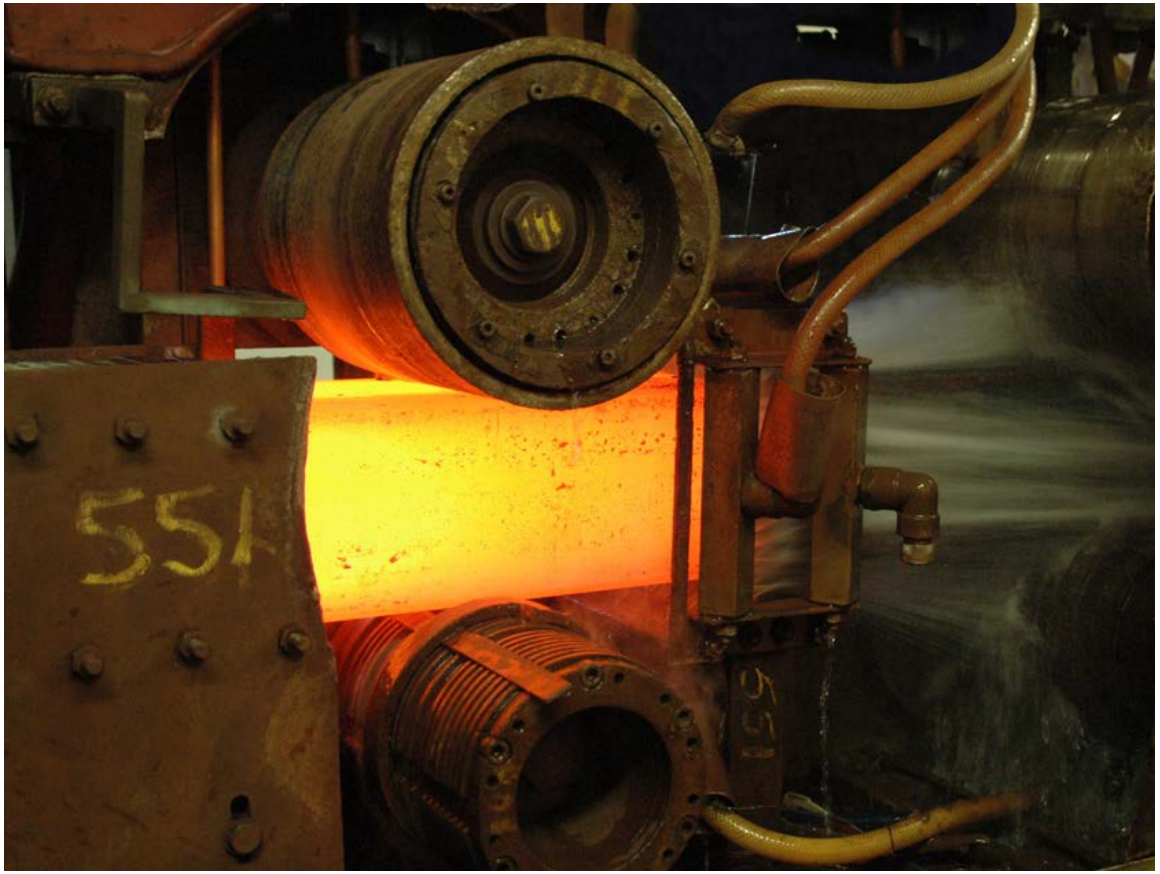
FLEXIBLE

to absorb shocks

Kverneland 12 hours carburising process results in creating 2 steels in 1 sole mouldboard.

For the highest ploughing performance, Kverneland also grinds the body to ensure a uniform surface for an even furrow.

KVERNELAND STEEL TECHNOLOGY
FOR THE COMPLETE PLOUGH



Kverneland's unique steel

More than 135 years of experience in developing special steels and heat treatment processes have resulted in an unsurpassed quality and wear resistance.

The heat treatment processes are carried out and adapted not only to a few selected parts but to the complete plough. This results in ploughs lighter than competitors' and extremely robust while delivering outstanding performance.

Induction hardened frame

To guarantee the durability of the plough, Kverneland heat treats the frame as well. Most competitors do not. The induction process allows using lesser steel than competitors, therefore less weight to pull and lift while ensuring a higher resistance.

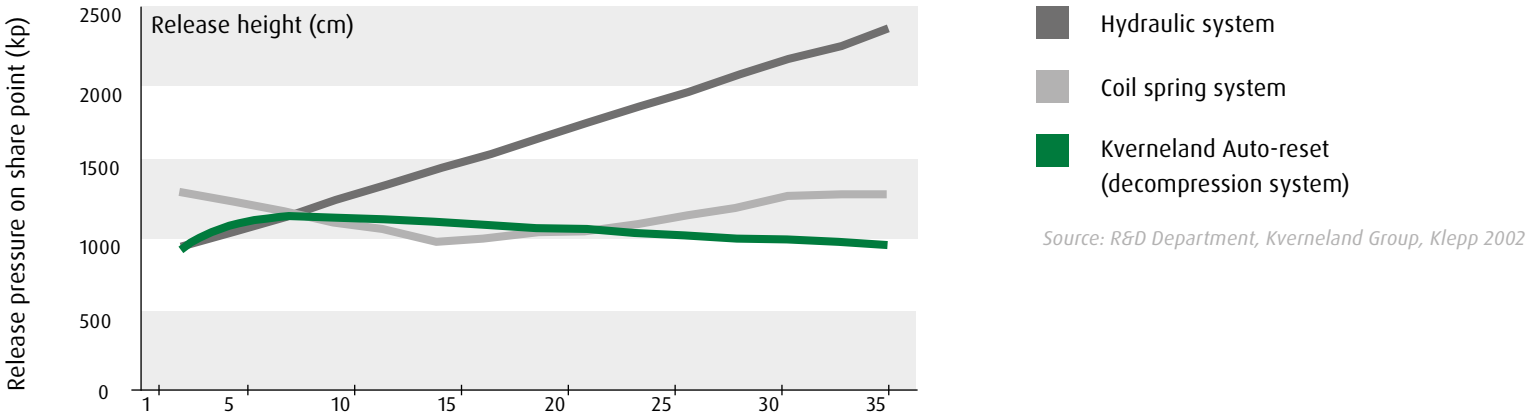
KVERNELAND AUTO-RESET SYSTEM
EFFICIENT AND MAINTENANCE FREE

Release characteristics
The diagram shows the differences between three different Auto-reset systems, and how the pressure varies as the body rises (1 cm).

Conclusion
The unique Kverneland leaf spring Auto-reset system is highly recommended.

Benefits from Kverneland Auto-reset
When hitting an obstacle, the pressure on the point, frame, plough parts, decreases. The stress on the plough is therefore reduced which guarantees a longer life to the plough.

Each body releases independently one from another to come back to the correct ploughing depth once the obstable passed. This ensures a quality ploughing.



Source: R&D Department, Kverneland Group, Klepp 2002


Kverneland
AD

KVERNELAND BODIES
FOR HIGH PERFORMANCE

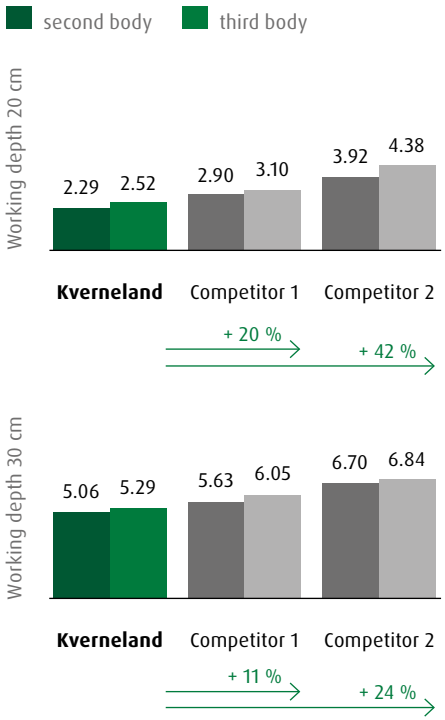
Designed for high performance
Kverneland bodies benefit from an outstanding reputation worldwide: high agronomic performance and low wearing.

Low pull requirement
Recent university studies, FH Cologne and Wilsmannn 2012, have revealed that the design of Kverneland bodies offer some of the lowest pulling forces on the market: from -20% to -42% when ploughing at 20 cm working depth and -11% to -24% at 30 cm.

Optimise profitability
It is therefore possible to plough with one extra Kverneland body and gain in output compared to competition for the equivalent pulling forces. As regard to fuel consumption, it is reduced by 19% to 28% when using a Kverneland plough.

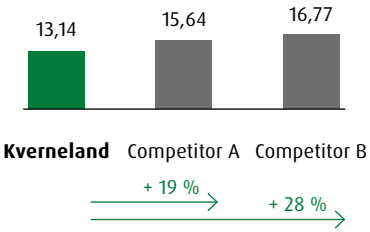
Wide choice of bodies
Over the years, Kverneland has designed bodies which are adapted to any soils conditions.

PULLING FORCE (KN)*
at working-depth 20 and 30 cm



Source: FH Cologne and Wilsmann, 2012

FUEL CONSUMPTION (L/HA)*



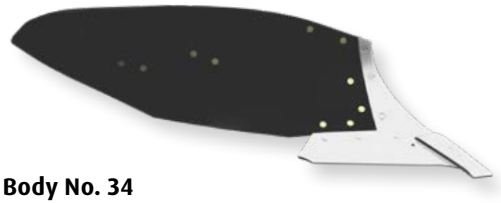
Source: FH Cologne, 2014

* The reference body is Kverneland No. 28 and the equivalent from competitors.

Body No. 8
- general purpose body
- for light to heavy soils
- working depth: 15-28 cm
- working width: 30-50 cm
- landside / mouldboard: 40°

Body No. 9
- universal body
- for light and medium soil
- easy to pull
- working depth: 18-30 cm
- working width: 30-50 cm
- landside / mouldboard: 40°

Body No. 30
- finger mouldboard with 4 exchangeable strips
- plastic spacers
- for any soil conditions
- intensive crumbling
- working depth: 18-35 cm
- working width: 30-55 cm
- landside / mouldboard: 46°



Body No. 34
- plastic mouldboard
- long and slim shape (similar to body No. 28)
- for soils with high humus content without stones
- advised for tractors with large tyres
- easy pulling
- working depth: 12-35 cm
- working width: 30-55 cm
- landside / mouldboard: 40°

Body No. 38
- universal body – easy to pull
- for any soil conditions
- recommended for tractors with large tyres
- from deep to shallow ploughing
- perfect turning of the furrow slice
- working depth: 12-35 cm
- working width: 30-55 cm
- landside / mouldboard: 40°

Body No. 40
- for wet, sticky, abrasive, stony conditions
- recommended for tractors with large tyres
- crumble effect. Marked furrows at low speed (winter ploughing)
- best cleaning effect in sticky conditions
- working depth: 12-35 cm
- working width: 30-55 cm
- landside / mouldboard: 40°

BODY NO. 28 AND BODY NO. 38
THE ANSWER FOR PLOUGHING WITH WIDE TYRES

Bodies No. 28 and No. 38 are Kverneland's answer to ploughing with modern farm tractors equipped with wide tyres.

Wide empty furrow

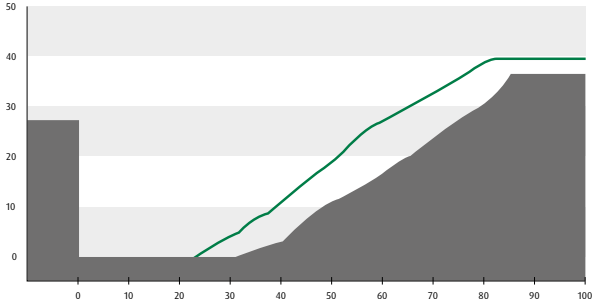
Bodies No. 28 and No. 38 shape and action move the soil further away from the landside, increase the furrow bottom width by as much as 25% compared to body No. 9. This allows wide tractor tyres, like a 710 serie type, to work in the furrow without rolling down the previous furrow. Body No. 38 enables ploughing from shallow to deeper than body No. 28.

Low pulling forces

Body No. 28 is suitable for depths from 12 to 30 cm (5 to 12 inches) and widths from 30 to 55 cm (12 to 22 inches). Longer than body No. 8, it creates a flatter profile for an improved tilth. The furrow is well turned and packed. Bodies No. 28 & No. 38 clever design will require as little pulling force as body No. 8 or 9.

Body No. 28

- universal body – easy to pull
- for any soil conditions
- recommended for tractors with large tyres
- creates a flatter profile for improved tilth
- perfect turning of the furrow slice
- working depth: 12-30 cm
- working width: 30-55 cm
- landside / mouldboard: 40°



furrow profile body No. 28
working depth: 26 cm, buttom: 30 cm, width 73 cm


EASY TO OPERATE
ROBUST
VARIOMAT®

KVERNELAND AB/AD VARIOMAT® PLOUGHS
STRONG AND EFFICIENT

Increase your capacity up to 30% with 20% less fuel: Conventional mounted ploughs with stepless furrow width adjustment, manual or hydraulic.

Robust construction
The Kverneland AB & AD are known for their simple but strong and reliable construction.

A robust 100x200 mm square frame, induction heat-treated by a special method developed by Kverneland, gives the necessary strength. This together with the heavy duty beams, the Kverneland auto-reset system and the well known Kverneland bodies contribute to high ploughing performance in most conditions.

Optimise output
Both models feature the Variomat® system, which allows infinite furrow width adjustment from 30 to 50 cm (12" to 20"). By increasing from 35 to 45 cm (14" to 18") the working capacity will be increased by up to 30%.

Likewise, the optimal furrow width can be obtained for all types of soil, moisture conditions and tractor capacity. Hence fuel consumption and ploughing performance are optimised.

AB and AD models
On the AB model all adjustments have to be done manually while setting up the plough. For the AD model, "On the Move" working width adjustments are hydraulically done from the tractor seat.

On the AB model the furrow width adjustment is done by using two turnbuckles: one to angle the main frame and the other to correct the width of the front furrow.
On the AD model, a special frame construction with one hydraulic cylinder enables the operator to hydraulically adjust all furrows, including the first one, plus the realignment of the rear wheel, with a single lever operation from the tractor seat.

Ploughing on side slopes
Mechanical front furrow width adjustment is standard. However, a hydraulic cylinder is available and is recommended for ploughing on side slopes to control the front furrow width "On the Move".

Maximise performance
The Kverneland auto-reset system, the simplest and most reliable system in the world, ensures trouble-free work in stony fields for years.

Very easy to operate
Both models are easy to adjust to any tractors and remain easy to operate: only a few adjustments and the plough is ready for work. Under difficult conditions one or more bodies can be locked in a parked position.

Optimise your plough
Kverneland AB is available as: 2-, 3- and 4 furrows, while Kverneland AD is available as: 3-, 4- and 5+1 furrows.

All models can be extended by one furrow to the maximum size indicated above. This means that the plough can grow with the size of your tractor.

KVERNELAND KNOCK-ON®
QUICK & EASY

Smart
The Knock-on® system consists of only 2 parts: a holder fixed to a regular Kverneland share and a Knock-on® point.

Clever
Kverneland Knock-on® is a universal system.
Plough Knock-on® points can also be used for cultivators.

Long lasting
Knock-on® benefits from the Kverneland steel technology (quality steels + Kverneland heat treatments). The quality of the steel combined with a clever design ensure a long life to the Knock-on® system. Therefore, Knock-on® points can be used in any soil conditions.

Quick
Knock-on® points are changed in a few seconds. It makes sense to save 90% of your time in changing points when working in abrasive soils (points wear quicker) or when having a 5+ furrow plough.

Easy
The only tools needed are a chisel and a hammer (2 kg). Field tests reveal that, as an average, 3 points can be mounted on the same Knock-on® holder. No bolt to unscrew helps save time. In addition, when the holder is worn out, it is normally also time to change the share, without unscrewing the holder. Very handy!

Agronomic benefits

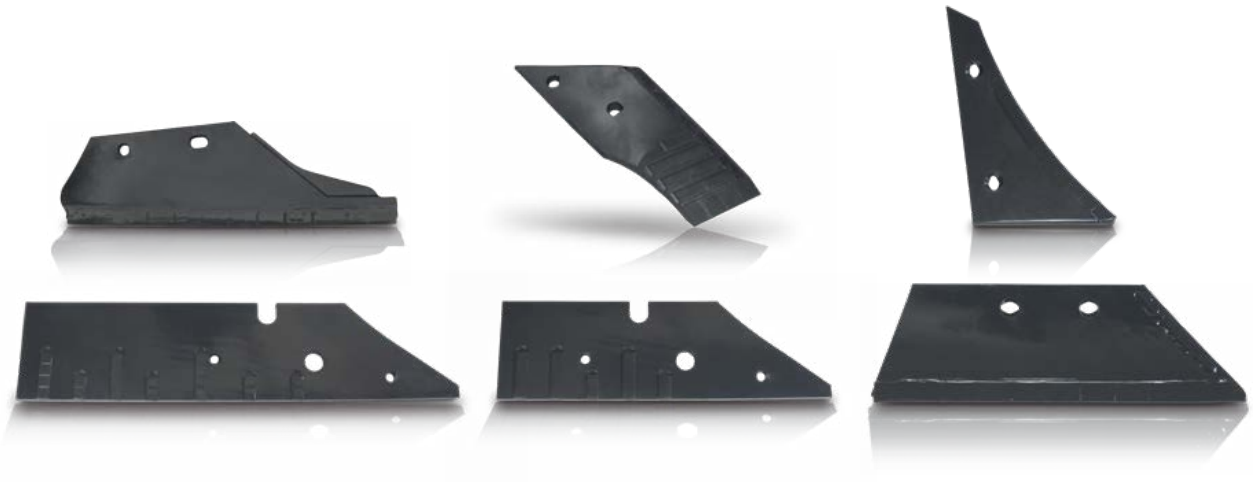
Good soil penetration & Stable in work
Knock-on® has been tested in several soil conditions. Even in the hardest soils, the points ensure a good penetration.

Low pulling forces
Kverneland bodies are reknown for their unrivalled low pulling forces. With Knock-on® points, the pulling forces remain low and hence the fuel consumption.

Soil flow protection
The clever design of Knock-on® actually protects the other parts of the body while allowing an efficient soil flow.

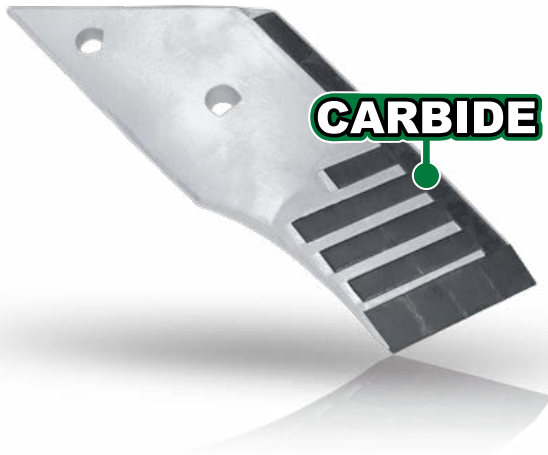
Soil flow protects other parts.

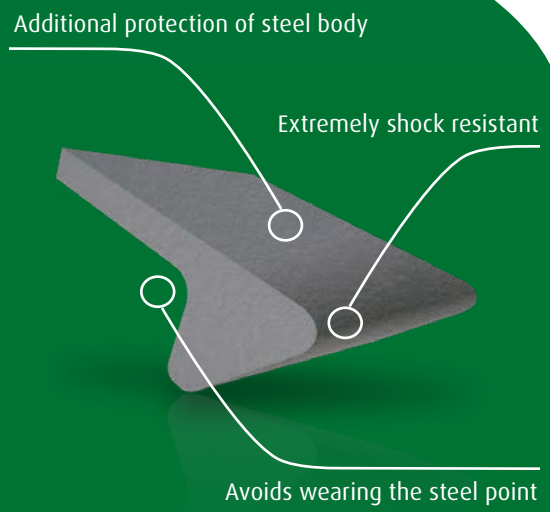
XHD CARBIDE REINFORCED PARTS
STRONGER THAN EVER



Kverneland's XHD Carbide reinforced parts are designed with the most extreme conditions in mind. With a lifetime up to 8 to 10 times the life* of the standard parts, they keep costs and downtime to a minimum. Kverneland`s tried and proved heat treatment processes paired with groundbreaking new designed Tungsten Carbide tiles will provide the best weapon against abrasive soils.

Based on average test conditions. Depending on soil type, moisture content, machine type, working speed, working depth, machine width and mounting position.





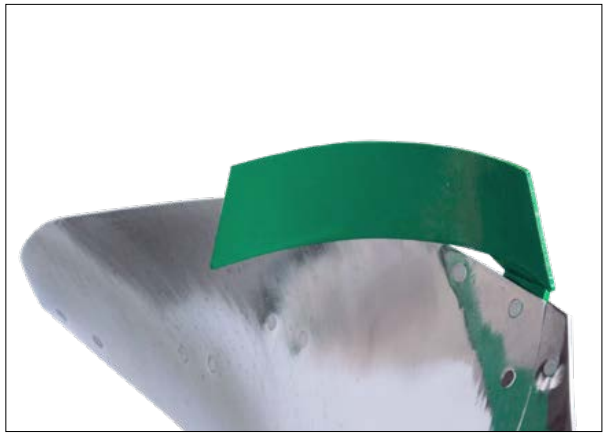
Corner Tiles make the difference

The traditional method of reinforcing steel parts is to apply flat tungsten carbide tiles to the surface of the cutting edge. However, these only protect the surface - not the cutting edge.

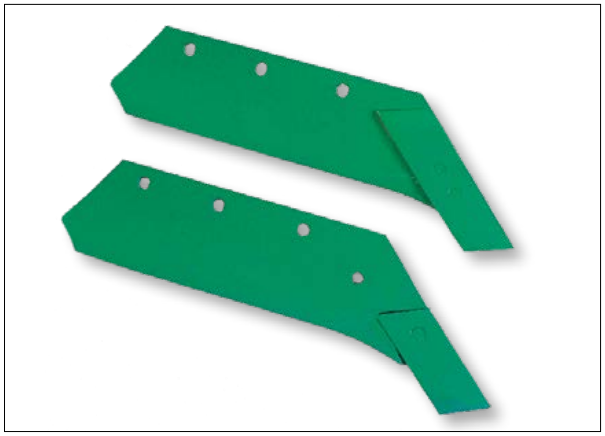
All cutting edges of the Kverneland XHD range are equipped with Corner Tiles. These specially designed tiles wrap around the leading edge, protecting both the surface and edge from wear and damage. The result is a sharper, long lasting edge – that remains resistant to shocks and breakages from hard impacts.

ACCESSORIES
TO MAXIMISE EFFICIENCY

Easy adjustable skimmers
To ensure optimum positioning of the skimmer, a quick adjusting system is incorporated on all plough models. The skimmers are available in two versions: standard manure and maize skimmers for those difficult conditions with large amounts of trash.



Trashboards
Particularly useful when large quantities of surface trash are present (manure, straw etc.)



Shares
Shares with Reversible Points:
The most cost efficient system to plough in difficult conditions like hard or abrasive soils.

Shares with Flush Fit Points:
Recommended for ploughing in sticky soil conditions. The point is fixed by means of a single bolt and is therefore quickly replaced.

Plain disc coulter Notched disk coulter

Disc Coulters

Available in sizes 45, 50 and 55 cm (18, 20 or 22") diameter, plain or notched. Disc coulters are mounted on single arms. Easy to adjust to suit all conditions.

Sword Share Knives

These are an alternative to disc coulters, either to reduce weight or to avoid blockage from trash and stones. It can only be used on ploughs fitted with reversible points.

Landside Knives

A very good alternative to disc coulters, either to reduce weight or to avoid blockage from trash and stones. A good combination with skimmers.

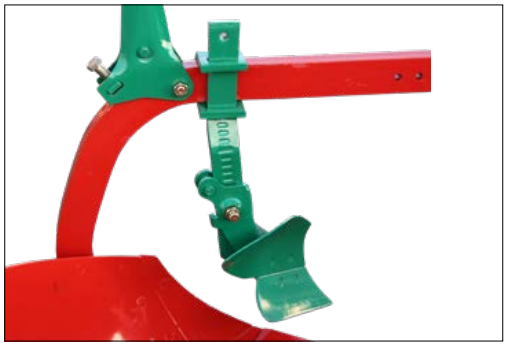
Furrow Opener

For use on the rear body to increase the width of the furrow bottom in order to accept tractors with larger tyres: up to 30" wide for example.

Steel wheel Rubber wheel

Rear Depth Wheel for AB/AD ploughs

When ploughing in changing soil conditions and when it is essential for an even depth, the depth wheel eliminates the need for constant adjustment with the depth control lever on the tractor.
Rubber wheel: 6,00 x 9
Metal wheel: 500 x 165



Easy adjustable skimmers

To ensure optimum positioning of the skimmer, a quick adjusting system is incorporated on all plough models.

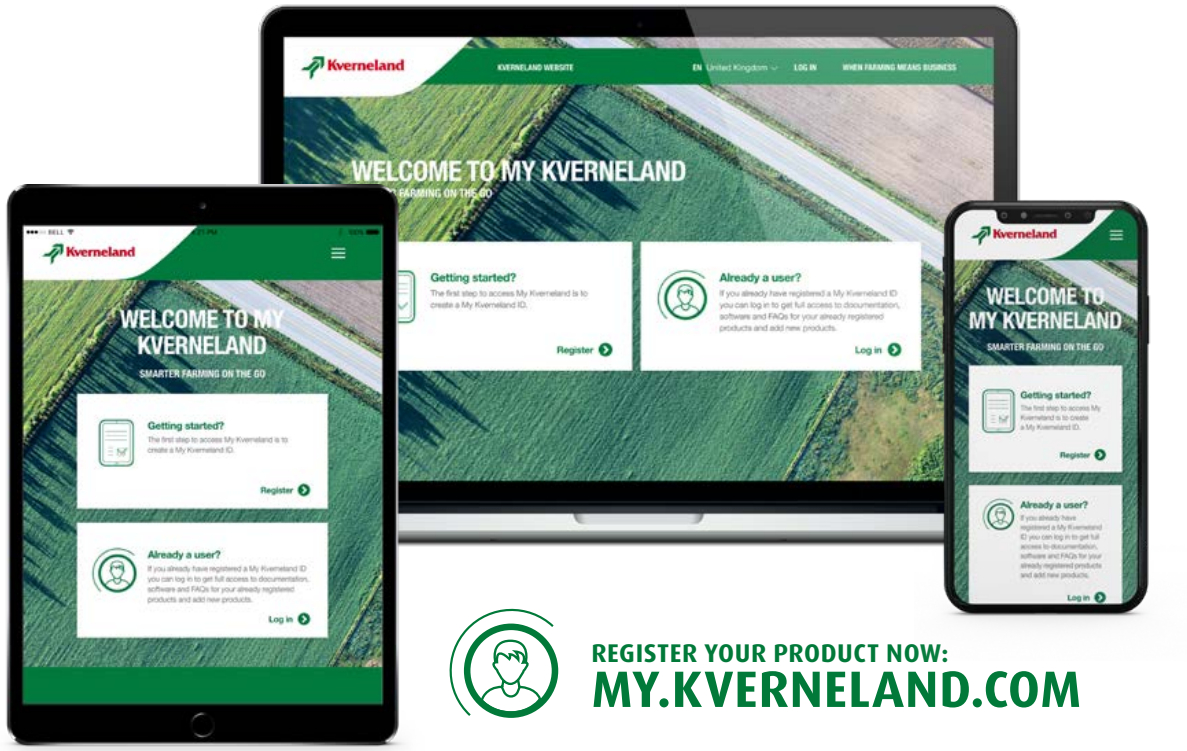
ORIGINAL PARTS & SERVICE
LET'S FOCUS ON YOUR BUSINESS

MYKVERNELAND
SMARTER FARMING ON THE GO

A personalised online platform tailored to your machine needs

With MYKVERNELAND you will benefit from easy access to Kverneland's online service tools.

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.



REGISTER YOUR PRODUCT NOW:
MY.KVERNELAND.COM

TECHNICAL DATA

Model	Interbody clearance (cm)	Working width (cm)	Underbeam clearance (cm)	No. of furrows	Weight (kg)					Recommended horse power (hp)				
					2	3	4	5	6	2	3	4	5	6
AB	85	30-50	70	2-4	425	580	750	–	–	40-60	60-80	80-100	–	–
AB	100	30-55	70	2-4	440	600	800	–	–	40-60	60-80	80-100	–	–
AD	85	30-50	70/80	3-6	–	730	900	1090	1260	–	60-80	80-100	100-120	120-140
AD	100	30-55	70/80	3-5	–	750	920	1120	1290	–	60-80	80-100	100-120	–

Most models can be extended by one body. All weights are given without optional equipment (net weights). The lift-requirements are given with the following equipment: depth wheel, one coulter and skimmers for all furrows.

Weights and lifting requirements are given for ploughs with 85 cm 'interbody clearance'. For ploughs with 100 cm clearance, please adjust according to the following: Weight + 15 kg/body, lifting requirement + 50 kg/body.

Kverneland

REGISTER YOUR PRODUCT NOW:
MY.KVERNELAND.COM

WHEN FARMING MEANS BUSINESS

kverneland.com

kverneland group