

# **The Inventors of Pneumatic Seeding Technology**



**Kverneland**

# **Mounted Pneumatic Seed Drill DL**





The greatest challenge facing agricultural producers today is how to produce food in constant quantities, at the lowest possible price, but at a consistent high quality. The farmer today faces many demands. If farmers are to survive in the market despite fluctuating demand, rising costs, an often uncertain legal situation and unpredictable weather conditions, two things are essential: careful planning and reliable technology.

Over decades, Kverneland have been a reliable partner of farmers worldwide. As a pioneer in pneumatic seeding technology, Kverneland is continually setting new standards in agricultural technology – to help maximize your profits! Perfect seeding is the first step to high yields. Mistakes made at this early stage are difficult to correct, poor seeding can reduce your yields even before the crop emerges from the soil. The pneumatic seeding technology of Kverneland meets these challenges and guarantees a tailor-made precise seeding operation for a great variety of crops with optimum seed distribution and seed placement.



# Kverneland DL

## Compact and Light



The Kverneland DL is the ideal machine for small and medium-sized farms. The DL combines a compact and light design with the proven Kverneland quality. Working widths from 3.0 to 4.5m are available. The power requirement is from as little as 55 kW due to the DL's close centre of gravity.

The wheels of the DL, whether fitted with standard or floatation tyres, run in the track ensuring constant ground contact. They can be easily adjusted to suit any track width from 1.65 to 2.10m.

The hopper of the DL has a low filling height and offers a capacity on the 3.0 and 4.0m of 750 litres which can be extended to 1000 litres. The hopper capacity of the DL with 4.5m working width has 1000l as standard (no extension possible). For the electronic control of the Kverneland DL, the FGS, Signus and ESA systems are available as option.

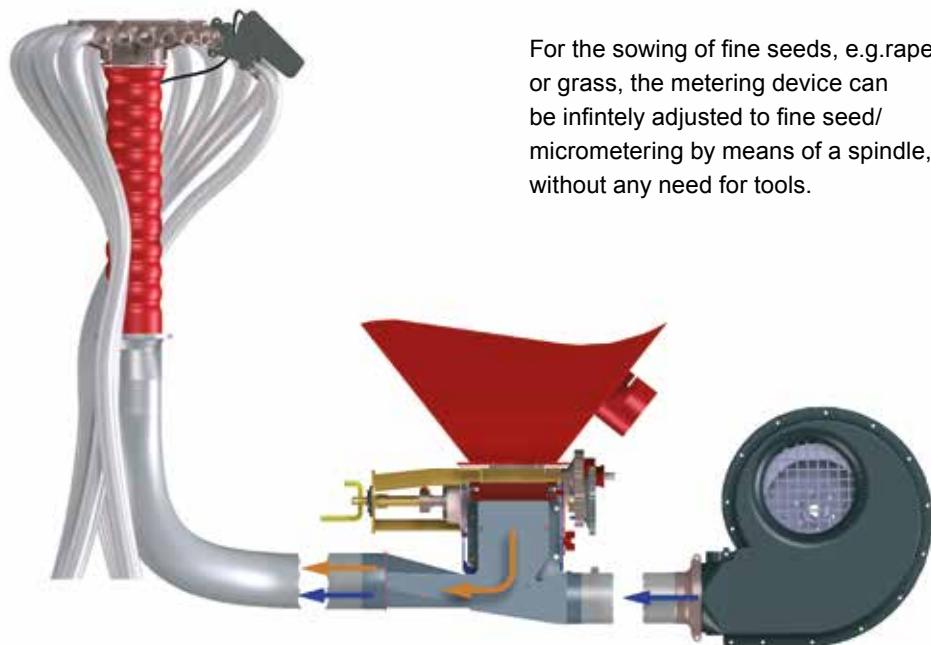


DL 3.0m in road transport position



Compact construction for minimum lifting requirement

# The Metering and Distribution System in Detail



The central metering device accurately measures any desired volume of seed from 2 kg per hectare to 380 kg per hectare.

For the sowing of fine seeds, e.g. rape or grass, the metering device can be infinitely adjusted to fine seed/micrometering by means of a spindle, without any need for tools.

The central, totally enclosed cell wheel of the metering device accurately measures the required volume of seed and discharges it into the venturi cone where it is mixed with the air stream and then conveyed through the diffusor tube and the seed delivery hoses to the coulters.

Depending on the model, the diffusor tube with the distributor is either located inside or outside the hopper for an excellent diagonal distribution either way.



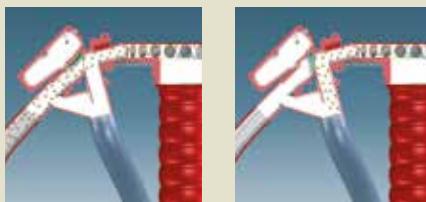
Setting for normal seed



Setting for fine seeds, with rotary brush

## Exact calibration

Calibration has never been so simple: with easy adjustment of the metering wheel as well as the basic equipment for the weighing (calibration tray, bag, scale), quick and comfortable calibration ensures optimum control!



Combi valves: open and closed

## Half-width shut-off

The distribution head of the machine can be easily shut-off for half of the working width. Simply loosen the wing bolts, slide down the shut-off plate and change to micro metering, no opening of the distributor head and no exchanging of the cover is required. Retro-fitting is possible by exchanging the distribution head plate.



## Tramline

Kverneland offers the option of standard and combination tramline shut-off valves: With the standard Kverneland tramline valve the "edge row effect" can be utilised when placing tramlines. The seed from the blocked valve is distributed to the adjacent rows. Kverneland Combi Valves allow the seed from the closed track during tramlining to be returned to the metering device.



## Kverneland Group - The ISOBUS Company

### IsoMatch Tellus

The next generation universal **ISOBUS** Terminal – IsoMatch Tellus

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



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

**Robustly designed aluminum body and ergonomic rubber grip**



#### **Firm grip accurate control**

Grip bar in combination with easily accessible digital touch screen soft keys.



**FGS Electronic Tramline Control Box**

The FGS tramline control system allows the operator to select from a variety of preprogrammed tramline rhythms. In operation the bout number and tramline valve activation are displayed by a series of LEDs located at the top of the control box. The system has an override function which allows the operator to correct his position within the rhythm. The FGS unit also features hopper low level and under voltage warning (optional).



**SIGNUS Electronic seed control**

The Signus combines comprehensive information, simple data input, a multitude of functions, and precise control. For precise machine guidance during subsequent spraying or fertilising operations, tramlines are set up using the electronic seed control system Signus. Signus also offers many other functions (the set-up of special rhythms, changes in the seed rate, monitoring of the fan speed, etc.), which can easily be set according to requirements and called up during the operation.

### ISOBUS Shortcut Button (ICB)

The ISOBUS Shortcut Button (ICB) is a new feature conforming to the very latest ISO 11783 standardisation. When the operator detects an unsafe situation and presses the ISOBUS Shortcut Button (ICB), a safety message will be sent to the connected ISOBUS implement.



## iM FARMING

smart efficient easy **FARMING**

As an innovative supplier of electronic control systems, the Kverneland Group has played a leading role in providing solutions in the field of electronic control systems on the basis of the ISOBUS protocol (a standard system for communication between on-board electronic control systems).

The iM Farming communications concept describes and presents our range of ISOBUS devices and solutions for electronic control systems.

With the iM Farming concept, we aim to give you an idea of the advantages and efficiency you can gain from our comprehensive product range.

Further information on iM Farming is to be found here:

[www.imfarming.kvernelandgroup.com](http://www.imfarming.kvernelandgroup.com)



### IsoMatch Tellus GO

Kverneland Group is extending its range of Universal ISOBUS Terminals with the IsoMatch Tellus GO. This new multifunctional one-screen terminal is developed for fast and simple control of any ISOBUS implement, giving the farmer a 'custom made' experience as it suits all needs for plain and efficient handling of farming machinery and tasks. IsoMatch Tellus GO is the farmers first step into Precision Farming. With the easy to use application, IsoMatch GEOcontrol, it is possible to boost efficiency and save time and costs. The application includes Manual Guidance, Section Control and Variable Rate. Precision Farming is just one click away.



### Flow-Check Seed-flow monitoring

For pneumatic seed drills Kverneland Group offers an additional seed-flow check. This is an independent machine control system which monitors the seed distribution tubes automatically, immediately recognising and reporting any blockages or errors. The display indicates the affected seed delivery tube, making it possible to localise and remove the problem quickly. The system is suitable for all common seed types (including oil seed rape) and can be fitted retrospectively on all pneumatic seed drills.

# Various Coulters for Optimum Seed Placement

The patented **CX disc coulter** ensures exact seed placement under both wet and dry conditions.

Due to the combination of convex steel disc and flexible plastic disc, there is no need for independent scrapers saving the costs for expensive wearing parts.

The convex steel disc forms a clean and clear furrow with light recompaction. The narrow profile allows higher working speed and the convex form of the disc ensures good depth control.

The flexible plastic disc keeps the furrow open for exact seed placement.

It cleans the steel disc and helps prevent sticking and blocking.

Narrow and wide press wheels are available for special seeding conditions.

These press wheels can be fully lifted in case of changing weather conditions.

The **Suffolk coulter** of Kverneland is especially suitable for sowing after the plough and offers coulter distances between 9.4 and 15cm. The coulter tip of special cast can be exchanged when worn out.



CX-disc coulter



CX-disc coulter with narrow press wheel (26mm)



CX-disc coulter with wide press wheel (65mm)



Suffolk coulter

## Heavy duty following harrow (8 and 10mm)

Setting angle and pressure of the harrow can be adjusted to suit any soil conditions.

Kverneland offers an 8 mm following harrow or a heavy-duty 10mm following harrow. S-shaped tine design ensures even levelling and seed covering – even in heavy trash conditions.



# Technical Specifications & Options

Machine type	DL		
Hopper content (l)	750 (1000l standard on 4.5m)		
Hopper extension	<input type="radio"/>	(not for 4.5m)	
Folding hopper cover		<input checked="" type="radio"/>	
Mech. fan drive 1000 rpm		<input type="radio"/>	
Mech. fan drive 540 rpm		<input checked="" type="radio"/>	
Hydr. fan drive		<input type="radio"/>	
Hydr. track marker changeover (single acting)		<input checked="" type="radio"/>	
No. of metering devices		<input checked="" type="radio"/>	1
Micro metering		<input checked="" type="radio"/>	
Seed rate 2-380 kg/ha		<input checked="" type="radio"/>	
Mechanical hectaremeter		<input type="radio"/>	
Half-width shut-off		<input type="radio"/>	
Tramline system FGS		<input type="radio"/>	
Tramline system Signus		<input type="radio"/>	
ESA with IsoMatch Tellus/Tellus GO		<input type="radio"/>	
Pre-emergence marker		<input type="radio"/>	
CX-disc coulter		<input type="radio"/>	
Press wheel for CX-disc coulter		<input type="radio"/>	
Central coulter pressure adjustment by spindle		<input checked="" type="radio"/>	
Hydraulic coulter pressure adjustment		<input type="radio"/>	
S-tine harrow (8 mm)		<input type="radio"/>	
Loading step		<input type="radio"/>	
Flotation tyres		<input type="radio"/>	
Mechanical folding coulter bar (>3m)		<input checked="" type="radio"/>	
Hydr. folding coulter bar		<input type="radio"/>	-
Weight (kg)	435 - 560		
Working width	3.0	4.0	4.5
No. of coulters	20	24	29
	24	29	32
		32	36
			40

- Standard equipment
- Accessories



## Pre-emergence marker

- Systematic tramlining saves seed



## Half-width shut-off

- Distribution head can be easily shut-off for half-width sowing
- No opening of the distribution head
- Retro-fitting is possible



## ESA

- Mechanical drive wheel or electric drive of the metering device
- On the move seed rate adjustment



## Hydraulic fan drive

- Additional hydr. fan drive allows variable engine speed of the tractor



## Hopper extension

- 250 l hopper extension (extension not for 4.5m)



## Standard and combination tramlining shut-off valves

- Standard shut-off valves with "edge row effect"
- Combination shut-off valves return the seeds to the hopper



## Kverneland Group

**Kverneland Group is a leading international company developing, producing and distributing agricultural machinery and services.**

Strong focus on innovation allows us to provide a unique and broad product range with high quality. Kverneland Group offers an extensive package aimed at the professional farming community, covering the areas of soil preparation, seeding, forage and bale equipment, spreading, spraying and electronic solutions for agricultural tractors and machinery.

## Original Spare Parts

**Kverneland Group spare parts are designed to give reliable, safe and optimal machinery performance - whilst ensuring a low cost life-cycle. High quality standards are achieved by using innovative production methods and patented processes in all our production sites.**

Kverneland Group has a very professional network of partners to support you with service, technical knowledge and genuine parts. To assist our partners, we provide high quality spare parts and an efficient spare parts distribution worldwide.



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