

# MOUNTED REVERSIBLE PLOUGHS

## **JUWEL**





**Reliability, ease of use and quality of work in a completely new plough model**



With the expansion of maize cultivation in recent years, and the increasing fight against grass weeds, the plough has been growing in importance again. Even today there is no viable alternative to the plough for the prevention of plant diseases, the mechanical control of weeds, due to the increasing resistance to different active substances, and for the eradication of mice and other vermin.

Recent investigations have shown, for example, that the plough is the best solution for the optimum development of the rapeseed root. The plough forms the basis for high and reliable yields via targeted loosening and aeration of the main root zone.

The new Juwel generation of ploughs from LEMKEN combines operational reliability and ease of use with an excellent quality of work in a completely new form.

The Juwel ploughs have extensive features and versatile accessories allowing each farmer and contractor to tailor the specification to his individual requirements. This includes numerous options for the selection of body spacing and under-beam clearance, mechanical and hydraulic vari-width, as well as hydraulic auto-reset if required.

The Juwel has the following equipment variations:

- All Juwel ploughs are available with 90 or 100 cm body spacing.
- The basic version allows four different working widths to be set.
- The Juwel V features hydraulic working width adjustment as standard. Using a double-acting hydraulic cylinder, working widths from 30 to 55 cm per body can be set from the tractor seat. Both the Juwel and the Juwel V feature a shear pin in the standard specification.
- The Juwel T and Juwel V T versions feature the Hydromatic auto-reset trip device which enables the plough bodies to move simultaneously upwards and to the side.



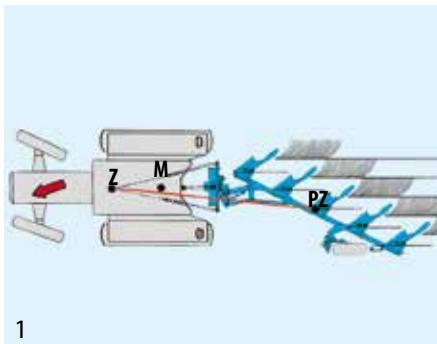
# Optiquick - the prerequisite for perfect ploughing



## Optimally set - save time and costs

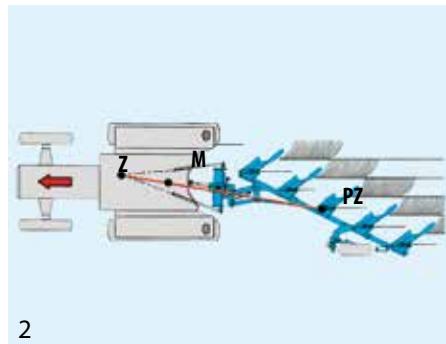
A precise plough setting is crucial to minimise material wear and to significantly reduce fuel consumption. To this end, LEMKEN has developed its unsurpassed Optiquick setting system which is also used with the Juwel.

Optiquick can be used to set the front furrow width, independently from the tractor/plough pull line, simply and quickly. Optiquick therefore helps you save time and costs.



## Juwel - front furrow width and pull point setting

- The plough has been optimally set when the tractor/plough pull line – in Fig. 1 the connection line between Z and PZ – runs through the middle of the rear tractor axle M. Z marks the draw point at which the lower links cross (if extended forwards). PZ indicates the centre of the plough.
- First of all the front furrow width is set using the outer turnbuckle. The tractor/plough pull line is still not running



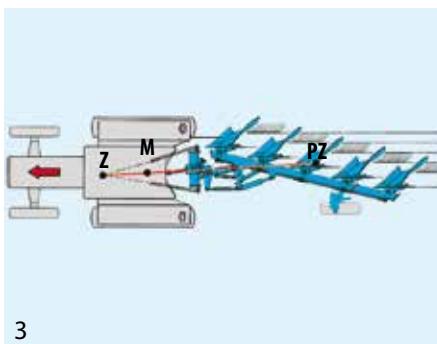
correctly in Fig. 1, as the line between Z and PZ still does not go through the middle of the back axle.

- Secondly, side force is eliminated by adjusting the inner turnbuckle. The tractor/plough pull line now crosses the rear axle of the tractor at Point M (Fig. 2). Despite the draw point correction, the width of the front furrow does not change.



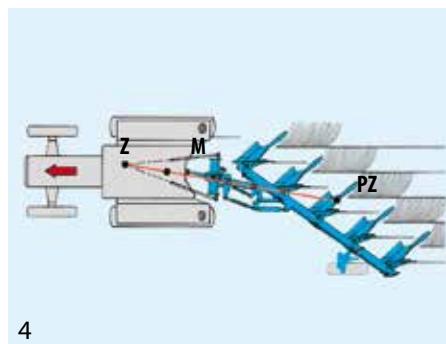
## The Optiquick setting center

The LEMKEN Optiquick setting system ensures that ploughing is free from side forces. To ensure high stability and a long service life, the bearings have wear-resistant bushes and hardened pins. The bearings can be lubricated.



## Juwel V - ploughing without side pull at varying furrow widths

- Even the Juwel V allows the front furrow width and pull point to be set independently of each other.
- Thanks to Optiquick and Vari technology, Juwel V ploughs always work smoothly and without side pull both



for a narrow (Fig. 3) and wide working width (Fig. 4).

- Vari technology ensures that the front furrow width is automatically adjusted whenever the working width is changed.

# Precise and safe when turning



The new TurnControl significantly improves the turning process of the plough.

- A contributing factor is the considerably greater clearance between the depth wheel and soil.

- This advantage is especially useful on tractors with a low lifting height, as well as on heavy five to seven-furrow ploughs.

**Turning with safety**



# - with more ground clearance



## Electric wing stop adjustment

Juwel ploughs feature the new electro-hydraulic TurnControl for setting of wing stops.

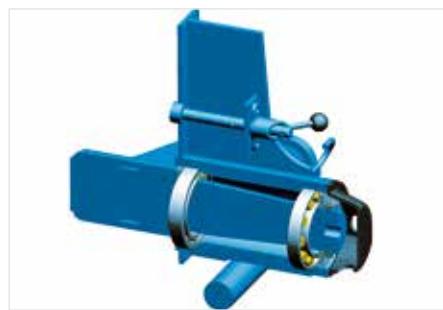
- The push of a button in the cab, sets and saves the plough angle without mechanical wing stops.
- The selected angle can be quickly over-ridden to minimise furrows on the first and last time around the field.



## Mechanical wing stop adjustment

With the Juwel 7 M, the tilt adjustment is made easily and precisely via a cap nut and stop.

- They are easy to handle and protect threads against dirt.
- This ensures that the tilt adjustment will keep operating smoothly.



## Well supported

The short, stable turnover axle can withstand heavy-duty impact and constant loads.

- It is shaped for optimum resistance, runs in tapered rollers and can be lubricated centrally.
- Due to the heat-treated steels used, the wear-resistant pivot bearing is extremely durable and guarantees a long service life.



## The pendulum wheel

The special design of the pendulum wheel guarantees a large ground clearance and ensures an optimum working position and a safe and shock-free swivelling of the wheel during the turning process. Depending on the number of furrows and set working width, it is possible to plough all the way up to ditches, field boundaries, and fences.

- The working depth is set quickly and simply by means of a pin.
- When the working width is adjusted, the pendulum wheel is also adjusted.



## The Uni wheel

It is recommended to use the Uni wheel for safe transportation by road and for ploughs with four or more furrows. It enables a quick and simple change between working and transport position.

- The working depth is easily adjusted using a pin without having to lift the Uni wheel.
- The plough is locked in the central position for transportation.
- The Uni wheel is also suitable for reversing.



## The hydraulic Uni wheel

To ensure optimum ploughing work, the working depth is adjusted to soil conditions which change from shallow to deep or from heavy to light. The hydraulic Uni wheel is used here to ensure uniformly deep ploughing.

- The working depth can also be adjusted hydraulically for heavy ploughs and on heavy soil using a double-acting control unit only.
- The integrated damper ensures that the wheel is swivelled gently during the turning process.

# Safe to use and cost-effective on all soils



## DuraMaxx - 'Maximum Durability' plough body

The DuraMaxx bodies are a completely new plough body concept which enables the service lifes to be increased by 50 % and the set-up time to be reduced by up to 80%.

- The Duramaxx parts are manufactured from much harder steel than before. This is made possible as the material is no longer weakened by drilling and punching.

- Mould boards and slats are supported fully by the frog and other support structures. They are no longer a load-bearing part of the plough body. This means they can be worn much thinner without risk of snapping due to the soil forces on them.





### Can be changed without tools and quickly

The DuraMaxx plough bodies are designed in such a way that mould boards, slatts, and shins can be changed quickly without tools.

- The shin is held in place by a lynch pin. Pulling the pin allows the shin to be removed. The shin, in turn, holds the mould board or slatts in place. Once the shin is off, these slide forwards and out without the need for any tools.
- Even the share point, which is attached with a single bolt only, can be changed much more quickly than on conventional systems.



### The body structure

The DuraMaxx plough body is available with mould boards or slatts.

- The mould board and the slatts are attached with only two hooks.
- In the case of the slatted bodies the clearance between the slatts and supports is greatly increased. Supports are set in line with slats, which reduces the possibility of blockages from soil running through the slatts.



### DuraMaxx hybrid for sticky soils

Plastic slatts are also available for the DuraMaxx plough body. These are ideal for use on extremely sticky soils and in soil conditions in which little pressure is applied to the mould board.

- The best sliding properties are achieved by using plastic strips at the top and bottom of areas of the plough body susceptible to adhesion.
- The DuraMaxx body therefore works without "adhesion problems" even under extreme conditions.



# Trouble-free ploughing under all conditions

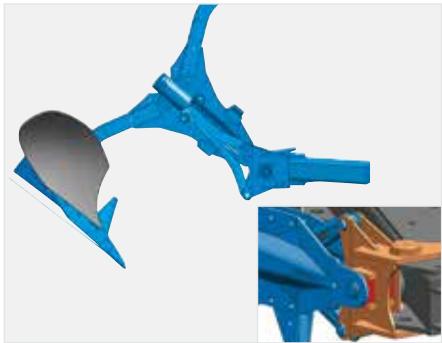


## Protection against damage by trip devices

All trip devices from LEMKEN guarantee protection against damage if the share point strikes an obstacle.

- In the T version the Juwel features the Hydromatic auto-reset trip device.
- The Juwel features a double-cut shear bolt as standard.
- Even with auto-reset, the shear bolt remains to prevent damage if the system gets caught under ledges or roots.





### The Hydromatic trip device

The innovative LEMKEN Hydromatic trip device consists of a link system which ensures that the plough body is connected securely to the bearing point in any position.

- The Hydromatic uses high release and retraction forces to release the system from an obstacle in a gentle and shock-free manner.
- The bodies are always held rigidly and cannot be unhooked or torn off.



### Avoiding obstacles by simultaneous upward and side movements

The hydraulic Hydromatic overload element can easily avoid an obstacle at any time, even if an obstacle is struck from the side, by moving 38cm upwards and simultaneously 20cm to the side.

- Even when carrying out deep ploughing work, there is adequate avoidance room to ensure that work is always trouble-free.
- The high release forces can easily be adjusted from the tractor seat.



### Individual setting

A minimum and a maximum value for the release force can be set between 50 and 140 bar using a tap (option) on the control block, e.g. for shallow or heavy soil locations.

- The working pressure is then set, hydraulically from the tractor seat, within the selected working range.
- This is done without the need to monitor a pressure gauge.
- The fixed connection between plough beam and frame allows low system pressures.



# Variable to perfection - the Juwel V

Good ploughing is largely dependent on the working width and the working depth of the individual plough bodies. The LEMKEN Juwel V can fulfill the agricultural requirements for ploughing in the best possible way.

To ensure that the required working effect can be achieved depending on the type of soil, moisture conditions, and whether a seedbed or winter furrow is

required, the working width of the Juwel V can be simply, quickly and steplessly adjusted during work. All bodies and the depth wheel are automatically adjusted when the working width is adjusted.

The narrow seed furrow provides better tilling - the ideal condition for simple seedbed preparation with fewer subsequent operations required.

The wide winter furrow leaves a coarse surface to be broken up by the frost.

Juwel V simplifies the ploughing of wedge-shaped pieces of land, curved headlands, and around poles and trees. Simple, hydraulic adjustment of furrow width straightens the work. In addition the tractor is always used to capacity.

The Juwel V features hydraulic working width adjustment as standard. Using a double-acting hydraulic cylinder, working widths from 30 to 55 cm per body can be set from the tractor seat.



# Strong frame structure for all requirements



## The square frame

The robust, thick-walled square tube made of micro-alloyed, fine-grained, special steel provides the strong foundation for the new frame structure.

- The frame can be extended subsequently by a pair of plough bodies.
- It is guaranteed to have a low weight and a long service life.



## The adjustment brackets

The adjustment brackets securely screwed to the frame provide great strength, reliability, and high fitting accuracy.

- When the central screw has been loosened, four working widths can be set between 30 and 50 cm.
- Skimmers and disc coulters are adjusted automatically as a new furrow width is set.



## Body spacing

The long body spacing, plough bodies attached to the side of the frame, and the shape of the legs, create large clearances between the plough bodies and skimmers.

- Blockages are avoided even at a narrow working width.
- The legs feature a double-cut shearing off safety device.



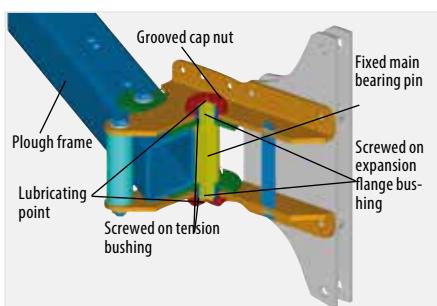
## The bearings

The pivot of the Juwel V swivel brackets supported next to the frame is situated close to the body.

- As a result, the bearings and components are exposed to reduced loads.
- All bearings have wear-resistant bushes, hardened pins, and can be lubricated.

- The swivel bracket features permanently braced flange bushings. The two telescopic bushings for adjustment of the cutting width guarantee a long service life.
- When worn, each part can be replaced separately.



## The variable bearing

The main bearing pin of the swivel bracket is fitted with tension bushings and is braced with the frame plates against rotation.



## The frame plates

The frame plates which support the swivel brackets of the Juwel V and the link are screwed to the frame.

- This ensures great stability, high endurance strength and high fitting accuracy.

# Always well equipped



**Skimmers for blockage-free ploughing**

The innovative skimmers with different share lengths ensure blockage-free ploughing even under difficult conditions.

- The special shape of the shares minimises wear and increases the service life. Their mode of operation causes the earth to flow very well.
- The specially shaped mould boards turn the soil neatly into the furrow bottom.
- A plastic mould board is available for sticky soil conditions and soils which apply little pressure to the skimmer.



**Adjustment of the skimmers without tools**

Working depth and angle are set independently of each other without tools.

- The throwing angle can be set as standard by moving one of the wedges secured with a pin without changing the working depth of the skimmer.
- The working depth is set using a pin on the flat stalk. As a result, all skimmers on the plough are set uniformly without the need for further alignments or measurements. The angle is unchanged as depth is amended.



**No twisting of the skimmer**

Juwel skimmers are fitted with strong flat stalks connected to the frame by two screws.

- The flat stalk prevents the skimmer from twisting.
- Skimmers can be quickly removed if not required.





### Trash boards for blockage-free work

The trash boards are mounted directly on the leg and can be set over a wide range.

- They ensure blockage-free work and the neat insertion of plant material.
- Trash boards are also available in plastic for sticky soil conditions.



### Disc coulter for all application areas

The disc coulter is beaded on the sides. This provides a positive drive even while cutting a great deal of organic material.

- The depth is set by vertically swivelling the disc arms and locking them with a screw.
- The smooth bearing positioned on the unploughed side is doubly sealed against soil and is maintenance-free.
- The disc coulters are available in different designs and installation positions.



### Subsoiler for good loosening

Thanks to its special shape, the subsoiler achieves a particularly good loosening effect.

- The depth of the subsoiler can be adjusted without tools and can be simply removed if required.
- All wearing parts can be replaced individually. The stalk guard prevents the stalk from wear.



# Optimum reconsolidation



## High degree of efficiency on any soil

Pressing is ideally done directly behind the plough, under optimum moisture conditions. The VarioPack land packer reconsolidates the soil, particularly the topsoil, breaking up large lumps. This encourages tilth formation and prevents drying out.

- The hubless ring structure, means the width of the VarioPack can be adjusted at any time by simply adding or removing rings.

- The ring shape, the ring profile, and the special type of attachment guarantee maximum strength, breaking resistance, and minimum wear.
- The hook linkage of the land packer can be set three-dimensionally. As a result, it can always be easily picked up and brought to the required distance from the plough.





### For all conditions

With the VarioPack land packer LEMKEN has the right solution for all operating conditions:

- Plough or front packer,
- Single or two-row design,
- 700 or 900 mm ring diameter,
- Ring profiles at 30° or 45°.



### Secure hooking

The packer arm automatically swivels in and out.

- This enables secure hooking of the packer and an optimum pull point position during ploughing.
- It is possible to switch between the working, transporting and "ploughing without packer" positions without tools using a pin.



### Automatic adjustment

By swivelling into the working position, the packer is drawn closer to the plough.

- As a result, the system pressure is minimised.
- The Juwel packer arm is automatically adjusted to the working width. In this way the packer is securely hooked for every working width.



# Technical data

Juwel 7															
Body spacing (cm)		90	100	90	100	90	100	90	100						
Number of furrows		3		3+1		4		4+1							
Working width (cm)		90-150		120-200		120-200		150-250							
Weight (kg)		801	813	1,023	1,039	1,013	1,029	1,235	1,255						
Tractor output	(PS) (kW)	70-100 51-74		80-130 59-96		80-130 59-96		90-160 66-118							
T-version Weight (kg) <sup>1</sup>		947	959	1,210	1,226	1,200	1,216	1,463	1,483						
Juwel 7 V <sup>2</sup>															
Body spacing (cm)		90	100	90	100	90	100	90	100						
Number of furrows		3		3+1		4		4+1							
Working width (cm)		90-165		120-220		120-220		150-275							
Weight (kg)		912		1,198		1,171		1,187		1,453		1,473			
Tractor output	(PS) (kW)	70-100 51-74		80-130 59-96		80-130 59-96		90-160 66-118							
T-version Weight (kg) <sup>1</sup>		1,053		1,386		1,359		1,375		1,688		1,708			
Juwel 8															
Body spacing (cm)		90	100	90	100	90	100	90	100	90	100	90	100	90	100
Number of furrows		3		3+1		4		4+1		5		5+1		6	
Working width (cm)		90-150		120-200		120-200		150-250		150-250		180-300		180-300	
Weight (kg)		1,058	1,073	1,289	1,308	1,274	1,293	1,505	1,528	1,409	1,513	1,721	1,748	1,706	1,734
Tractor output	(PS) (kW)	90-135 66-99		110-180 81-132		110-180 81-132		130-225 96-165		130-225 96-165		140-270 103-199		140-270 103-199	
T-version Weight (kg) <sup>1</sup>		1,250	1,265	1,545	1,564	1,530	1,549	1,825	1,848	1,810	1,833	2,105	2,132		
Juwel 8 V <sup>2</sup>															
Body spacing (cm)		90	100	90	100	90	100	90	100	90	100	90	100	90	100
Number of furrows		3		3+1		4		4+1		5		5+1		6	
Working width (cm)		90-165		120-220		120-220		150-275		150-275		180-330		180-330	
Weight (kg)		1,172	1,187	1,463	1,482	1,442	1,461	1,733	1,756	1,708	1,731	1,999	2,026	1,974	2,001
Tractor output	(PS) (kW)	90-135 66-99		110-180 81-132		110-180 81-132		130-225 96-165		130-225 96-165		140-270 103-199		140-270 103-199	
T-version Weight (kg) <sup>1</sup>		1,364	1,379	1,723	1,742	1,698	1,717	2,057	2,080	2,028	2,051	2,387	2,418		

<sup>1</sup> T-version = with additional hydraulic overload safety device Hydromatic

<sup>2</sup> Hydraulically adjustable working width

All specifications, dimensions and weights are subject to continuous technical development and are therefore not binding. The weight specifications always refer to the basic equipment. Subject to change.

# Service decides



When you have bought a machine from LEMKEN, the well-known, almost proverbial LEMKEN service starts. 18 customer-oriented factory branches and outdoor storage areas in Germany as well as our own sales companies and importers in more than 50 countries, and a strong dealer network, ensure that machines and spare parts are supplied quickly.

If a part is not in stock, it can be delivered to the customer within 24 hours via the LEMKEN logistics centre which is manned round-the-clock 365 days a year.

## Knowledge from the LEMKEN specialist

Well trained customer service technicians are available to farmers, contractors and trade, who are using machinery for the

first time, as well as for professional maintenance and repairs. Thanks to regular training courses, LEMKEN customer service is always up to date with the latest LEMKEN technology.

## Original spare parts for maximum service lives

LEMKEN wearing parts are designed for a maximum service life. High-quality steels, the latest production methods, and an intensive quality control ensure a long service life. Therefore, all original spare parts bear a unique identification with the registered LEMKEN trademark. Original spare parts can be ordered at any time online on the Internet via the LEMKEN information and ordering system.



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