LEMKEN
The Agrovision Company

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 Juwel generation of ploughs from LEMKEN combines operational reliability and ease of use with an excellent quality of work.

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 choosing interbody and underframe clearance, stepped and continuously variable options for adjusting working width, and mechanical or hydraulic overload protection systems.

The Juwel has the following equipment variations:

- 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.
- Juwel M and MV with hydraulic turnover device.
- As Juwel M X and M V X with automatic mechanical overload protection.
- Juwel and Juwel V electro-hydraulic turnover device TurnControl.
- The Juwel 8 TCP is available with TurnControl Pro ISOBUS control.


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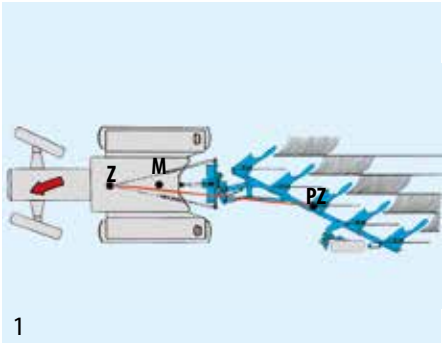
Optiquick - the prerequisite for perfect ploughing

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.



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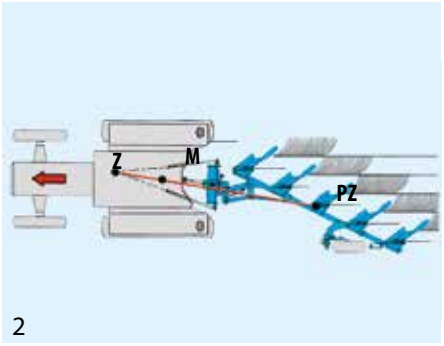

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Juwel - front furrow width and pull point setting

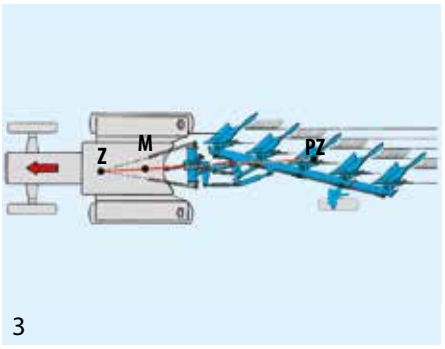
- The plough has been optimally set when the tractor/plough pull line – in Fig. 1 the connection line between Z and PZ – runs through the middle of the rear tractor axle M. Z marks the draw point at which the lower links cross (if extended forwards). PZ indicates the centre of the plough.

- 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.



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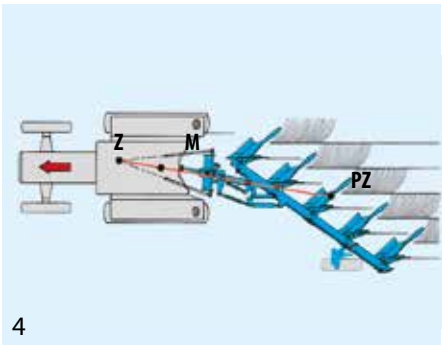

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Juwel V - ploughing without side pull at varying furrow widths

- 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.

– with more ground clearance

Electric wing stop adjustment

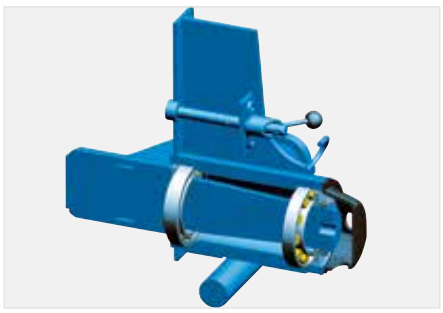
Juwel ploughs feature the new electro-hydraulic TurnControl for setting of wing stops.

- 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.

Easy wing stop adjustment in the M version

With the Juwel 7 and 8 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.

Pendulum wheel with hydraulic suspension

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 adjusted separately for both sides via a half-hole matrix, without any need for tools.
- When the working width is adjusted, the pendulum wheel is also adjusted.

Uni wheel with hydraulic suspension

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.

Uni wheel with hydraulic setting

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.

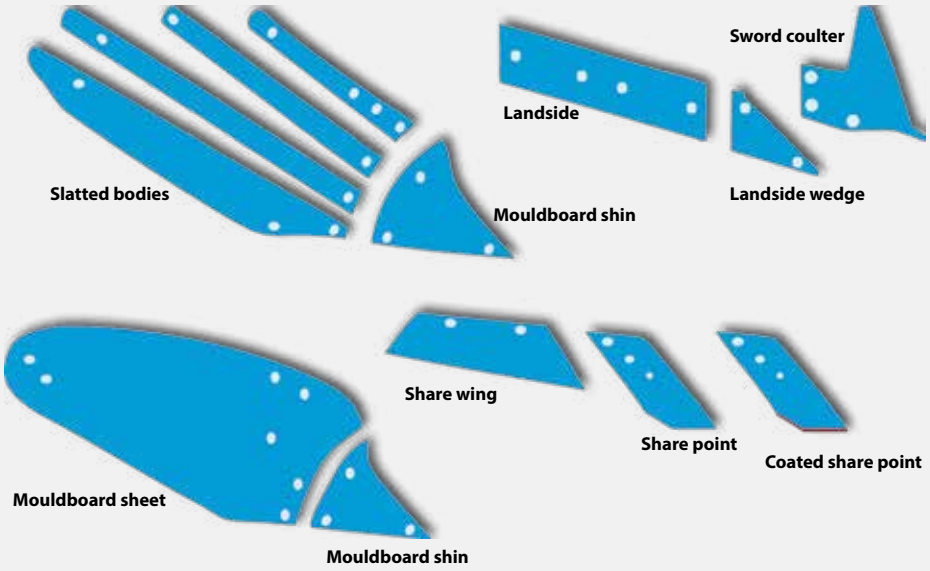
DuraMaxx hybrid for sticky soils

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.

Cost-effective plough bodies



Dural slatted bodies

The slats of the slatted bodies are made of thick, fully hardened special steel and can be individually replaced.

- The attachment screws are deeply sunk to ensure that the slats remain firmly in place throughout their extremely long service life.
- Slatted bodies and conventional mouldboards are based on the same basic body.
- The shares are divided and made of micro-alloyed boron steel.
- The overlapping design prevents roots or foreign objects from catching.
- High material density and firm attachment provide for resistance to wear and breakage.
- The wear zones of the share wings are significantly larger than with conventional shares.

Dural mouldboard

The frog of the Dural body is tempered and extremely strong.

- The pitch of the plough bodies is adjustable to ensure consistently good penetration of the plough into the soil.
- The smooth transition from the share to the mouldboard and the low-resistance shape make the plough even easier to tow.
- The mouldboards made of hardened special steel are designed for low wear without screws or bolts in the main wearing zone.
- The extra large mouldboard shin can be replaced individually for greater cost-effectiveness.

Superior operating comfort with ISOBUS control

In agricultural machinery, work processes are being increasingly networked with more implements are controlled electronically. The ISOBUS standard allows solutions to be implemented across several machines, making it obvious that due to the ease of operation offered by ISOBUS, this system should also be available for ploughs.

TurnControl Pro

TurnControlPro in the Juwel 8 controls plough rotation and the settings for front furrow, working angle, working width and working depth via the hydraulic support wheel as standard. These functions are controlled via the CCI-200 terminal or the ISOBUS system on the tractor. Additional functions such as furrow press operation or settings for the Hydromatic overload protection are available as options.

- The TurnControlPro on-board computer allows operating functions to be combined, saved and activated for up to four different scenarios, for example for ploughing on slopes and finishing fields. For preparing a shallow end furrow, a scenario with a different working angle and a shallower support wheel setting would, for example, be activated. This feature allows the ISOBUS functionalities with tractors to be utilised in mounted ploughs.

- The user interface on the display is intuitive and clear, making it easy to adjust any plough settings as required.

Operating comfort

Operator comfort can be increased even further by integrating controls compatible with the ISOBUS IL4 standard such as joysticks or multi-function levers.

TurnControl Pro Guide

The GPS-controlled TurnControl Pro Guide working width adjustment allows ploughing with a precisely straight furrow and working towards a target furrow, for example to avoid an additional turn at the headland.

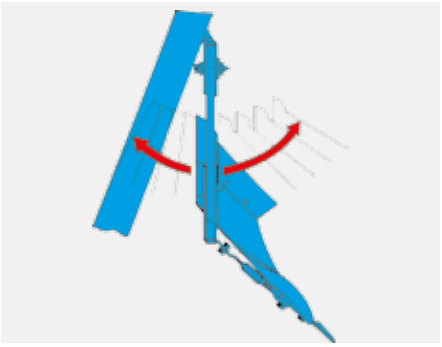
Disruption-free ploughing in any conditions

With mechanical non-stop overload protection: simplicity and strength

Overload protection to prevent damage

All LEMKEN overload protection systems protect against damage from the share point colliding with underground obstacles. The overload protection in all Juwel ploughs features not only double-cut shear-off protection with a shear bolt as standard, but also a steering system with high trigger and re-entry forces to ensure that the system is triggered softly and smoothly whenever an obstacle is encountered. This protects both the tractor and the plough.

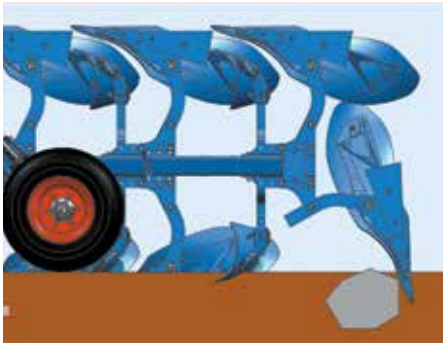
- The auto-reset spreader roller fitted to the Juwel X, which runs between the tandem beams, is not exposed to high friction forces, neither when the overload system is triggered, nor when the plough bodies re-enter the soil.
- As a result, force loss at the re-entry of the plough bodies into the soil is minimised.
- This ensures even trigger characteristics with smooth, effortless activation and powerful, speedy plough body re-entry.



Response to obstacles

Whenever an obstacle is encountered, the elastic, high-quality surface-hardened spring steel beams and body legs can deflect exceptionally far to the side.

- The beams are firmly guided in the process to ensure that they remain in position at all times.
- Both the leg brackets and the beams c/w roller are bolted and together not welded.
- This means high strength and a long service life of the overload elements.



Double protection

The Juwel features double-cut shear-off protection with a shear bolt as standard.

- The shear bolt additionally protects the plough against damage if the system becomes trapped under rocks or roots.

With Hydromatic hydraulic overload protection: versatility and comfort

Avoiding obstacles by simultaneous upward and side movements

The Juwel T version features Hydromatic overload protection. The Hydromatic hydraulic overload protection is easily able to deflect vertically up to 38 cm and horizontally up to 20 cm at the same time, even when obstacles are hit from the side.

- This high level of deflection ensures consistently disruption-free work, even with deep ploughing.
- Higher trigger forces can be comfortably adjusted from the tractor cabin.

Individual setting

A minimum and a maximum value for the release force can be set between 120 and 200 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 simlifies 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

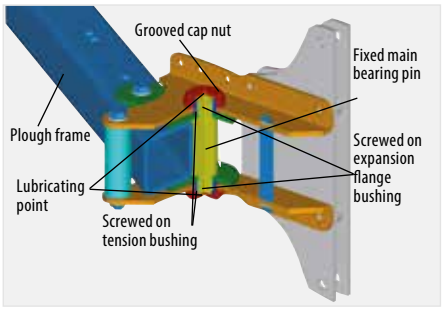
The long body spacing, plough bodies attached to the side of the frame, and the shape of the legs, create large clearances between the plough bodies and skimmers.

- 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 variable bearing

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

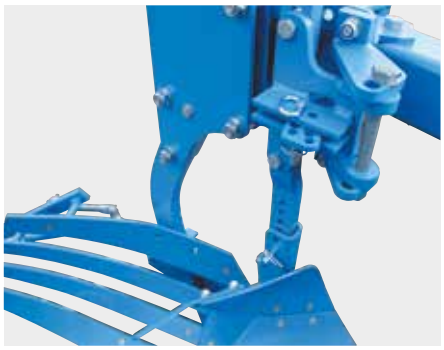
- The swivel bracket features permanently braced flange bushings. The two telescopic bushings for adjustment of the cutting width guarantee a long service life.
- When worn, each part can be replaced separately.

The 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



Adjustment of the skimmers without tools

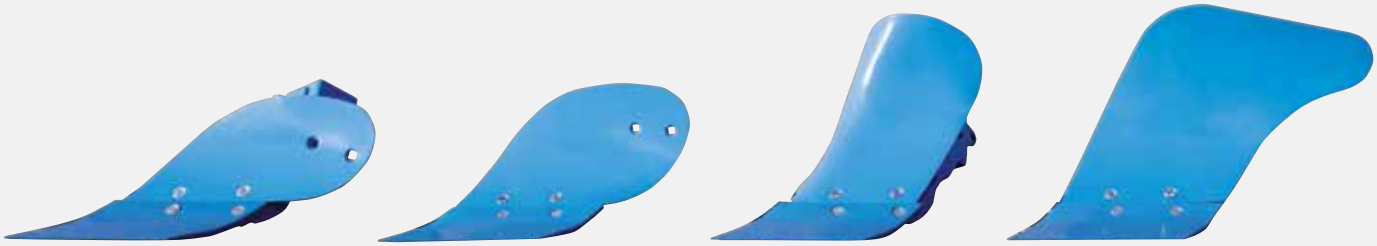
Working depth and angle are set independently of each other without tools.

- 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.



DS1 DS0 MS3 MS1

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 let the soil 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.

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.

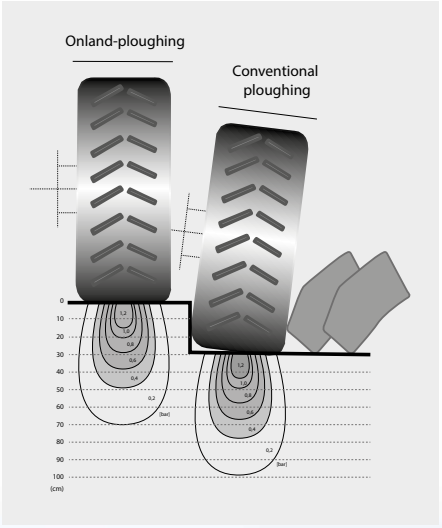
Subsoiler for good loosening

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.

Juwel 8 M, Juwel 8 and Juwel 8 V OF

On-land and in-furrow ploughing



Lower soil compaction during on-land ploughing has a beneficial effect on the soil structure.

In recent years, there has been a trend towards larger tractors with wider tyres (710mm, 800mm or wider). There is not enough space for these wider tyres in the furrows, resulting in harmful soil compaction when driving across loosened soils and along furrow edges.

Versatile applications

Support wheel ground clearance during plough rotation

As GPS steering systems are becoming more popular, on-land ploughing is becoming more practicable for tractor operators. While it was previously mainly tractors with crawler tracks that were driven outside the furrow for systemic reasons, modern steering systems allow comfortable ploughing with precise furrow alignment even from standard tractors.

If damp soil surfaces prevent the optimal transmission of traction forces, Juwel ploughs can be quickly and easily converted to in-furrow ploughing.

The OF versions of LEMKEN's Juwel 8 M, Juwel 8 and 8 V ploughs allow tractors to be driven both in-furrow and on-land.

The ploughs OF system is adjusted via an inner hydraulic cylinder, which also serves to set the distance to the furrow edge and thus the front furrow width.

The outer cylinder is used to set the tractor/plough traction line and, in the Juwel 8 M, additionally an adjustment sleeve.

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 / 7 M																
Body spacing (cm)	**90**	**100**	**90**	**100**	**90**	**100**	**90**	**100**	**90**	**100**						
Number of furrows	3		3+1		4		4+1		5							
Working width (cm)	90-150		120-200		120-200		150-250		150-250							
Weight (kg)	801	813	1,023	1,039	1,013	1,029	1,235	1,255	1,235	1,255						
Tractor output (PS)	70-100		80-130		80-130		90-160		90-160							
(kW)	51-74		59-96		59-96		66-118		66-118							
T-version Weight (kg) [1]	947	959	1,210	1,226	1,200	1,216	1,463	1,483	1,452	1,472						
X-version Weight (kg) [3]	1,009	1,021	1,302	1,318	1,292	1,308	1,585	1,605	1,575	1,595						

Juwel 7 V / 7 MV [2]																
Body spacing (cm)	**90**	**100**	**90**	**100**	**90**	**100**	**90**	**100**	**90**	**100**						
Number of furrows	3		3+1		4		4+1		5							
Working width (cm)	90-165		120-220		120-220		150-275		150-275							
Weight (kg)	912		1,198		1,171	1,187	1,453	1,473	1,453	1,473						
Tractor output (PS)	70-100		80-130		80-130		90-160		90-160							
(kW)	51-74		59-96		59-96		66-118		66-118							
T-version Weight (kg) [1]	1,053		1,386		1,359	1,375	1,688	1,708	1,677	1,697						
X-version Weight (kg) [3]	1,120		1,477		1,450	1,466	1,803	1,823	1,792	1,812						

Juwel 8 / 8 M																
Body spacing (cm)	**90**	**100**	**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		6+1	
Working width (cm)	90-150		120-200		120-200		150-250		150-250		180-300		180-300		210-350	
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	1,937	1,969
Tractor output (PS)	90-135		110-180		110-180		130-225		130-225		140-270		140-270		160-315	
(kW)	66-99		81-132		81-132		96-165		96-165		103-199		103-199		118-232	
T-version Weight (kg) [1]	1,250	1,265	1,545	1,564	1,530	1,549	1,825	1,848	1,810	1,833	2,105	2,132				
X-version Weight (kg) [3]	1,311	1,326	1,613	1,632	1,598	1,617	1,900	1,923	1,885	1,908	2,187	2,214				

Juwel 8 M																
Body spacing (cm)	**120**		**120**													
Number of furrows	4		4+1													
Working width (cm)	160-240		200-300													
Weight (kg)	1,373		1,618													
Tractor output (PS)	110-190		130-238													
(kW)	81-140		96-175													
T-version Weight (kg) [1]	1,629		1,938													
X-version Weight (kg) [3]	1,657		1,973													

Juwel 8 V / 8 MV [2]																
Body spacing (cm)	**90**	**100**	**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		6+1	
Working width (cm)	90-165		120-220		120-220		150-275		150-275		180-330		180-330		210-350	
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	2,269	
Tractor output (PS)	90-135		110-180		110-180		130-225		130-225		140-270		140-270		160-315	
(kW)	66-99		81-132		81-132		96-165		96-165		103-199		103-199		118-232	
T-version Weight (kg) [1]	1,364	1,379	1,723	1,742	1,698	1,717	2,057	2,080	2,028	2,051	2,387	2,418				
X-version Weight (kg) [3]	1,425	1,440	1,787	1,806	1,766	1,785	2,128	2,151	2,103	2,126	2,465	2,492				

Juwel 8 MV																
Body spacing (cm)	**120**		**120**													
Number of furrows	4		4+1													
Working width (cm)	140-240		175-300													
Weight (kg)	1,541		1,846													
Tractor output (PS)	110-190		130-238													
(kW)	81-140		96-175													
T-version Weight (kg) [1]	1,797		2,170													
X-version Weight (kg) [3]	1,825		2,201													

[1] T-version = with additional hydraulic overload safety device Hydromatic
[2] Hydraulically adjustable working width
[3] X-version = with additional mechanical overload safety device

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 40 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 from LEMKEN

LEMKEN wearing parts are designed for a maximum service life. High-quality materials, 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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