



# LEMKEN

## Hybrid Plough VariTansanit



# Plough Technology for the Future

## Reduce Ploughing Costs with VariTansanit

Plough Comparison 6 furrow ploughs with 3m working, ploughing depth 22cm <small>Source: DLG Test 03/07</small>		
Measurement	Average wheel slip	Average driving speed
Hybrid plough VariTansanit Full oil pressure on top link	11.9 %	5.8 km/h
Anbaudrehpflug VariOpal	16.8 %	5 km/h
Semi-mounted reversible plough VariDiamant	23 %	3.8 km/h

On mounted ploughs the tractor's draft control system provides weight transfer to the tractor wheels to maximise traction and reduce wheel slip. As the number of furrows is increased, the ability to lift the plough often becomes a limiting factor and the switch to semi-mounted machines at 7 furrows and over is common place. However, semi-mounted ploughs do not benefit from the draft control system in the same way as mounted ploughs, so a heavy tractor is usually needed to provide the traction to pull the plough. Ploughing costs are increased as a result.

## The Hybrid Plough with Adjustable Top Link



The VariTansanit hybrid plough from LEMKEN combines the benefits of both fully- and semi-mounted ploughs. This 6 or 7 furrow plough is equipped with an adjustable top link and load sensing pipe to automatically transfer weight to the tractor when required. In work, the top link shortens to transfer weight, from the full length of the plough, to the tractor. At the headlands, or during transport, it lengthens to allow the plough's weight to be shared between the tractor and land-wheel of the plough. As a result, more furrows can be handled by a smaller tractor.





# Safe and Simple Operation

## Reduced Driver Fatigue



The operator selects the weight transfer to the tractor by choosing and setting a top link operating pressure. A constant oil flow, via one of the tractor spool valves, allows the operating system to monitor and constantly adjust the top link to maintain the selected pressure, and transfer the optimum amount of weight to the tractor.

The standard headland management system automates lifting and turning sequences at the headland. After lifting the tractor link arms, the operator presses a single button to start the headland sequence which controls all lifting/lowering actions of the land wheel and plough turnover. Sequence timing can be programmed by the operator, and manually overridden as and when required.

## Improved Safety



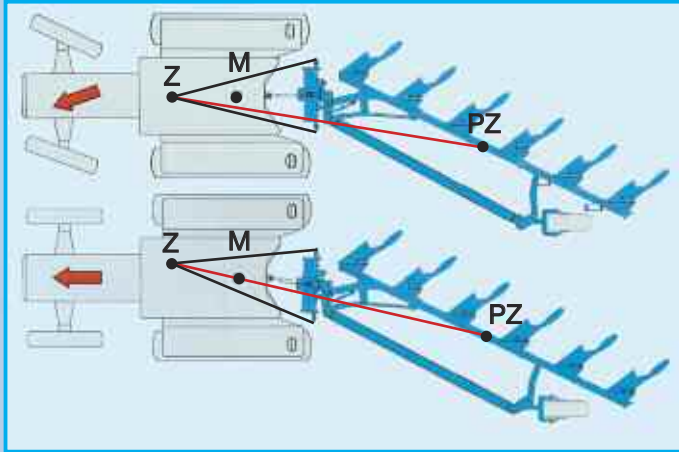
The headland management system optimises weight transfer during headland turns. It transfers some weight to the ploughs land-wheel to ensure the tractor linkage is not overloaded, but leaves enough weight on the tractor to maintain stability when working on hillsides. This fully automatic system creates a safe and efficient working situation for the driver.





# Optiquick for Optimum Plough Adjustment

## Front Furrow Width and Pull Point Adjustment

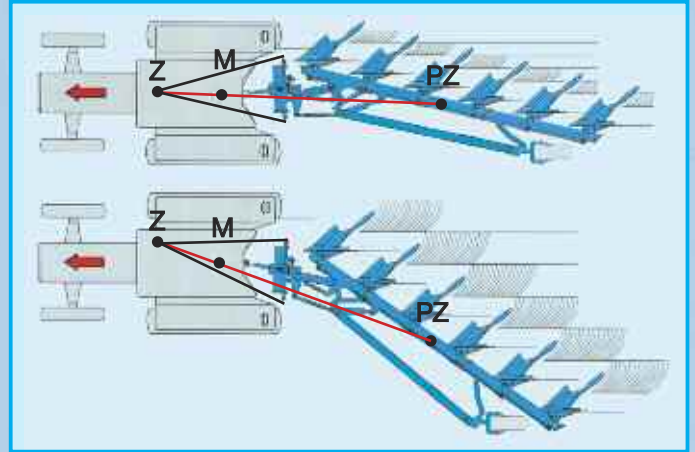


The VariTansanit includes LEMKEN's proven Optiquick fuel-saving system.

When the front furrow width is set, the tractor may still be affected by side draft because the tractor/plough alignment is incorrect (the line joining points Z and PZ do not cross the tractor rear axle in the middle (M)).

The side draft is reduced to zero by the inner turnbuckle so that the tractor/plough alignment crosses the tractor rear axle at point M. Despite the draft point being corrected, the front furrow width remains the same.

## Adaptation to Different Working Widths



The LEMKEN Optiquick system automatically adjusts the front furrow width and tractor/plough alignment during an adjustment to the working width. This ensures the operator only has to set the front furrow width and tractor/plough alignment once. Subsequent adjustments to working width need no further manual adjustment of the front furrow width setting, or the tractor/plough alignment. Operating efficiency is maintained at all times.





# No Side Draft Whatever the Working Width

## The Optiquick Adjustment Centre



The VariTansanit is equipped with hydraulic frame swiveling, as standard, with an adjustable stop to set front furrow width. The Optiquick turnbuckle allows simple adjustment of the tractor/plough alignment using the spanner provided.

All pivot points of the Optiquick adjustment centre feature wear-resistant bushes, hardened bolts, and can be lubricated, guaranteeing immense strength and long working life.

## Always Without Side Draft



The VariTansanit is equipped as standard with hydraulic working width adjustment from 25 to 55cm per body. The plough can always be set to the optimum working width for the soil, subsequent crop, and situation. Optiquick ensures that ploughing without side draft is guaranteed whatever the working width.





# Durable, Solid and Precise

## The Frame Plates



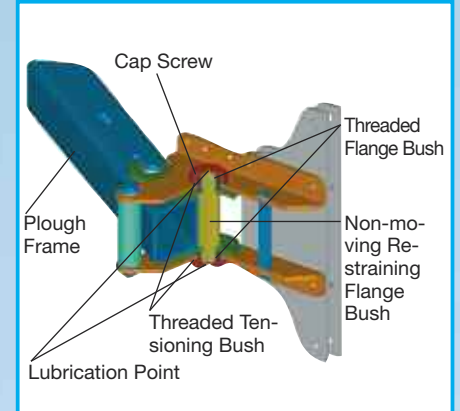
The frame plates for the mounting of the adjustable brackets and the main link are bolted to the frame. This gives immense strength, increased durability and a high degree of constructional precision.

## The Pivot Points



LEMKEN mount the main pivot, for each furrow, immediately beside the plough main beam. This reduces the strain on the main beam and dramatically increases its durability. Additionally, the pivot is more centrally located in relation to the pulling point of the body, which reduces the stresses and wear on the linkage and pivot. All pivot points feature wear-resistant replaceable bushes, hardened pins and lubrication points guaranteeing highest durability and long working life.

## The Vari Pivot Brackets



The main pivot pin of the Vari pivot brackets is equipped with bushes locked securely by the frame plates. Each Vari pivot bracket is also fitted with tight locking bushings. In this way the two lubricated bushes running one within the other guarantee long working life for the furrow width adjustment pivot points, even under the toughest conditions. Each component can be separately replaced in case of wear.





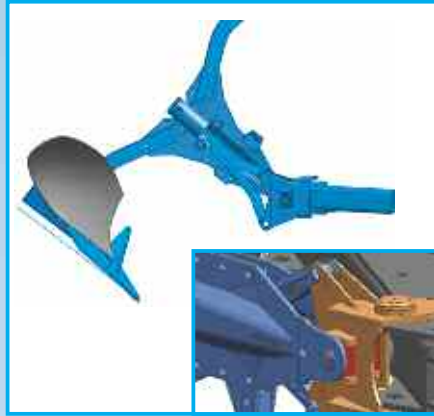
# Hydromatic Auto-Reset Overload Safety Device

## The Concept



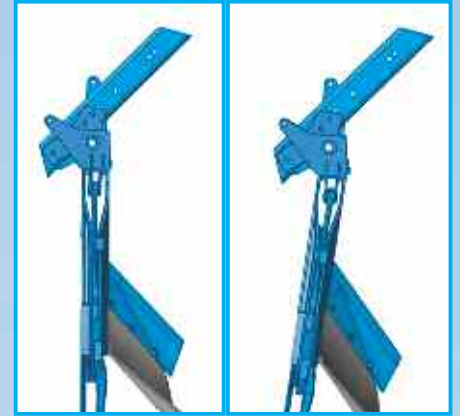
When simultaneously tripping side-ways and upwards, normal overload safety devices, based on a four-point connection, make the position of the whole plough body unstable as it lifts from three connection points and is drawn back by the mechanical or hydraulic pull element via only one point.

## The Three-dimensional Connection Point



The significant advantage, of the Hydromatic system, is a firm link to the three-dimensional connection point in any position of the plough body. Thus the bodies are always kept in a stable position and cannot jump off. The innovative Hydromatic overload security element can always trip simultaneously side-ways and upwards without any problem, even when the obstacle is hit laterally.

## Upwards or Sideways



With up to 38cm upward and 20cm sideward movement, there is sufficient tripping capacity to provide continuous trouble free work even when ploughing deep. High trip forces, which are adjustable from the tractor seat, ensure the Hydromatic auto-reset system is always set to combine quality ploughing with efficient plough protection. A further benefit of the system is the lack of lubrication points – the system is maintenance-free.





# Dural - The Universal Plough Body

## The Dural Body



The LEMKEN Dural body is the standard body for LEMKEN ploughs. The frog is hardened and tempered making it immensely strong. The plough body is adjustable for pitch to help soil penetration. The smooth transition from share to mouldboard and the low-resistance profile ensure that the draft requirement of the plough body is minimised.

The mouldboard is made of hardened steel with a low-wear shape and free from bolts in the main wearing zones. This helps to increase life expectancy, aided by an extra large shin which is independently replaceable.

## The Slatted Body



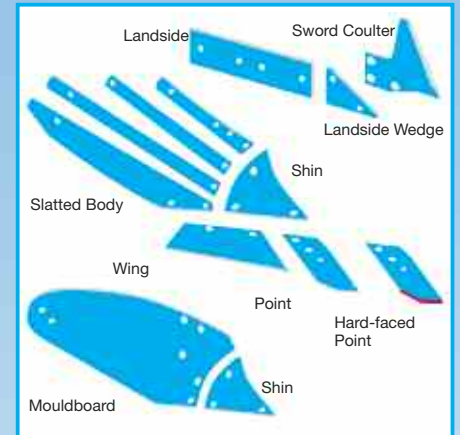
The slats are of thick, completely hardened, special steel and individually exchangeable.

The securing bolts are deeply countersunk to guarantee that slats still remain firmly attached after extremely long usage. Slatted and solid bodies are based on the same frog giving the opportunity to change from one to another if required.

The share components comprise separate point and wing sections. Their overlapping attachment avoids snagging of roots or other foreign bodies. High material density and strong attachment guarantee low wear and resistance against breakages.

The available wearing time on the wing section is considerably longer than that where a single-piece point and wing is used.

## Plough Body Construction



Low wear and good entry characteristics are guaranteed for the replaceable share points through their shape, strength, and material. The extra large landsides with large soil contact area ensure a more positive plough guidance, and can be turned four ways to give maximum possible wear life. The sword coulter offers a substantially greater proportion of wearing area for optimum utilisation. Its attachment area lies in the „shadow“ of the cutting edge and so is protected from wear and damage. Through the angling of the cutting edge to the rear and above there's no opportunity for stones, roots, or other objects, to jam.

Points are hard-faced to extend working life and maintain a self-sharpening point to improve soil penetration.





# DuraMaxx – The Innovative Plough Body

## Plough Body Design



Standard mounting technology for the wearing parts of plough bodies uses screws or bolts. This technique enforces limitations to the material type and hardening that can be achieved, as there is the risk of tearing or cracking around the holes in the wearing parts.

For the new LEMKEN DuraMaxx plough body, harder steels can be used because all important elements are produced without bores or press cuts. This increased level of hardening offers up to 50% longer lifetime of the associated parts.

## The Unique Concept



Mouldboards and slats are no longer a load bearing part of the plough body which means they serve as wear parts only. Parts can be almost completely worn out without limiting the strength of the plough body. Mouldboards, slats and shins of the DuraMaxx plough body are all hooked into a separate carrier without mounting screws or bolts.

## Easy and Fast



Mouldboards, slats and shins can be exchanged without tools and thus considerably faster than parts from conventional bodies. Simply removing a clip pin, allows the shin to be removed which, itself, acts as a locking device for the slats or solid mouldboard. The point is fixed with a single screw which additionally decreases the replacement time required. Measurements have resulted in set-up times that are 80% lower than that conventional plough bodies.

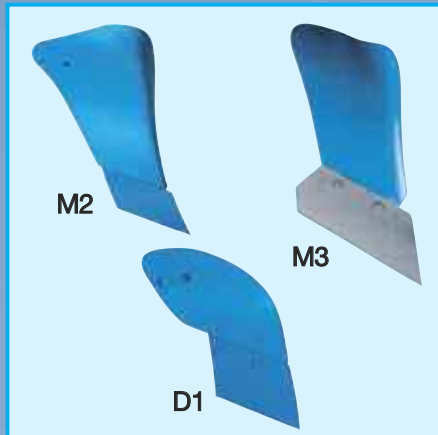
The clearance between slats and supports has been increased compared to conventional plough bodies. Additionally the support runs completely in the shadow of the slats thus providing blockage-free ploughing even in difficult conditions.





# Tool-free Adjustment

## The Skimmers



The D1, M3 und M2 skimmers ensure a clean surface even when there's a lot of surface trash.

Their working depth is quickly and easily set by pins without the need for any tools. A row of holes in the skimmer stalk enables exact and consistent adjustment for uniform quality of work from all skimmers. D1 and M2 skimmers can be ordered equipped with tailpieces.

## The Flat Stalk



Fitting the skimmer onto a flat stalk avoids the risk of twisting. All shares and mouldboard variants can be exchanged without any problem because the frog is the common to all skimmer types. For ploughing without skimmers, loosening of two bolts allows complete removal of the skimmer arm.

## The Angle Adjustment



Both the VariTansanit (shearbolt) and VariTansanit T (auto-reset) are available as an option with individual quick adjustment system for the skimmer angle. This allows further fine-tuning of the skimmer performance where required.





# Ready for Action in Tough Conditions

## Trash Boards



The trash boards are fitted directly to the mouldboards and are fully adjustable. These enable blockage-free work and clean incorporation even under the highest levels of surface residue.

## Disc Coulters



The plain 500mm diameter disc coulters feature side mouldings to provide a positive drive even when cutting through a lot of organic material. Depth adjustment is through vertical swivelling of each coulters arm which is screw-locked into a toothed bracket. The adjustable bearings, fitted with plain side towards the ploughed land, are double sealed against dirt ingress.

## The Toolbox



The maintenance of LEMKEN ploughs is eased by the provision of a toolbox keeping tools, shear-bolts and small parts within reach.





# One Wheel for Support and Transport

## Easy Adjustment



Lifting and lowering of the land wheel is automatically controlled in work by the plough's control box. A simple stop screw sets the desired ploughing depth. Road transport is safe due to the pivoting drawbar, which is hydraulically unlocked during the transport operation.

## Safe Transport



During road transport, the rear wheel is locked, with the plough following the tractor like a trailer. In the field, the headstock pivot is locked, and the land wheel set to its caster position.

## Technical Data

VariTansanit (Box section frame 140 x 140 x 10)		
Number of furrows	6	6 +1
Turnover device	T 120	T 120
Working width (approx. cm)	150 - 330	175 - 385
Weight (kg)	2,317	2,596
Maximum horse power (kW/HP)	151/205	162/230
Under-frame clearance (cm)	85	85
Inter-body clearance (cm)	105	105
Leg size (mm)	70 x 30	70 x 30
T-version *	T	T

\* T-version with additional Hydromatic hydraulic auto-reset device

All information, measurements and weights are subject to continuous technical development and are therefore non obligatory. Information regarding weights always refers to the basic model. The right is reserved to make alterations.



LEMKEN GmbH & Co. KG  
 Weseler Str. 5, D-46519  
 Tel. +49 2802 81-0 · Fax +49 2802 81-220  
 E-Mail: lemken@lemken.com · Internet: www.lemken.com

Your LEMKEN dealer: