



LEMKEN

Semi-mounted reversible ploughs EuroDiamant and Vari-Diamant



EuroDiamant and Vari-Diamant

The conception

The demands on modern ploughs increase more and more due to continuously growing farms.

LEMKEN offer mechanical variwidth and hydraulic variwidth to meet these demands, especially with regard to handling, working quality and increase of productivity.

- The plough is easy to manoeuvre, in order to turn on narrow headlands quickly providing optimum hectare performance.
- The easy to use working width adjustment is suitable for different soil and weather conditions, an important contribution to ecological and economic farming.
- The especially high stability of the ploughs meets the increasing horsepower of tractors at wide working widths.

- It is possible to plough near fences, ditches and boundaries despite wide working widths.
- The skimmers can be adjusted quickly, easily and without tools.
- The transport on public roads is safe with weight being distributed between tractor and plough
- Long life time of the wearing parts leads to less down time and results in lower costs.



Technique which pays off

EuroDiamant 8 and 10

- Adjustable in four working width positions of 33, 38, 44 or 50 cm per body
- 5 to 9 furrows in working widths of 165 to 450 cm
- Also available with Auto Reset Non-Stop safety device
- EuroDiamant 10 also available as an 'Onland' in Furrow' version (OF)

Vari-Diamant 10

- Hydraulic on the move adjustable working width from 30 to 55 per body
- 5 to 8 furrows in working widths of 150 to 440 cm
- Also available with Auto Reset Non-Stop safety device
- Also available as an 'Onland in Furrow' version



Attachment, parking and turning

The durable headstock



The category II or III one-piece drawbar is elastic and absorbs high shock loads and protects the tractor and plough headstock.

The heat treated headstock shaft has tapered roller bearings, these are easy to maintain ensuring long durability.

The height adjustable stand



The stand is multiple heights adjusting, which guarantees an optimal position of the headstock for coupling and uncoupling of the tractor. The stand can be quickly moved from parking into transport position by readjustment of a spring-loaded pin.

The reliable turnover mechanism



Two telescopic rams turn the plough smoothly and positively through 180 degrees.

The exact angle adjustment will be done by adjuster screws separately for each side.



Excellent manoeuvrability

Positioning of hoses



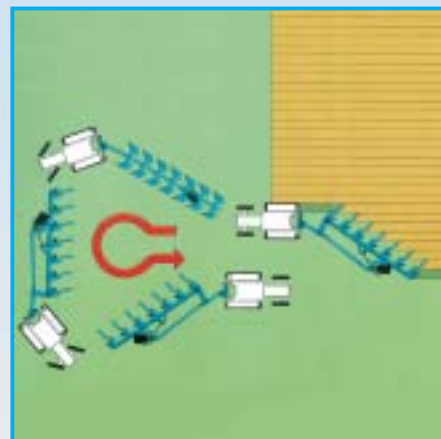
To protect them against damage the hydraulic hoses are securely laid and partly covered. The hydraulic hoses for the working width adjustment and the wheel are integrated into the stabilizer frame which protects them efficiently against damage and soiling.

Large clearance



The large clearance between turnover mechanism and tractor enables the tractor to turn sharply = 90 degrees on headlands. By means of turning the plough frame, the depth wheel is steered automatically.

Easy turning procedure



The optimum interplay of turnover mechanism and depth wheel ensures also in hilly and difficult conditions the speedy and easy turning procedure on narrow headlands.



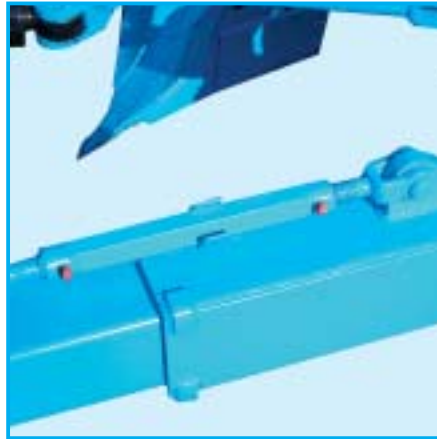
Multiple use

Clogging free working



Plough bodies fitted laterally to the frame and the unique shape of the legs give exceptional large clearances between the plough bodies. So clogging will be avoided also when working with narrow working widths. The legs are fitted with shearbolts as standard for safety. The legs are positively located to prevent any possibility of turning during work.

Adjustment of the plough



The front-furrow width can be set by adjusting a turnbuckle. An hydraulic option from the tractor seat is available.

The individual choice of the cutting width guarantees the best work result possible.

Narrow seeding furrow

- better crumbling
- simple tilthmaking
- less working passes

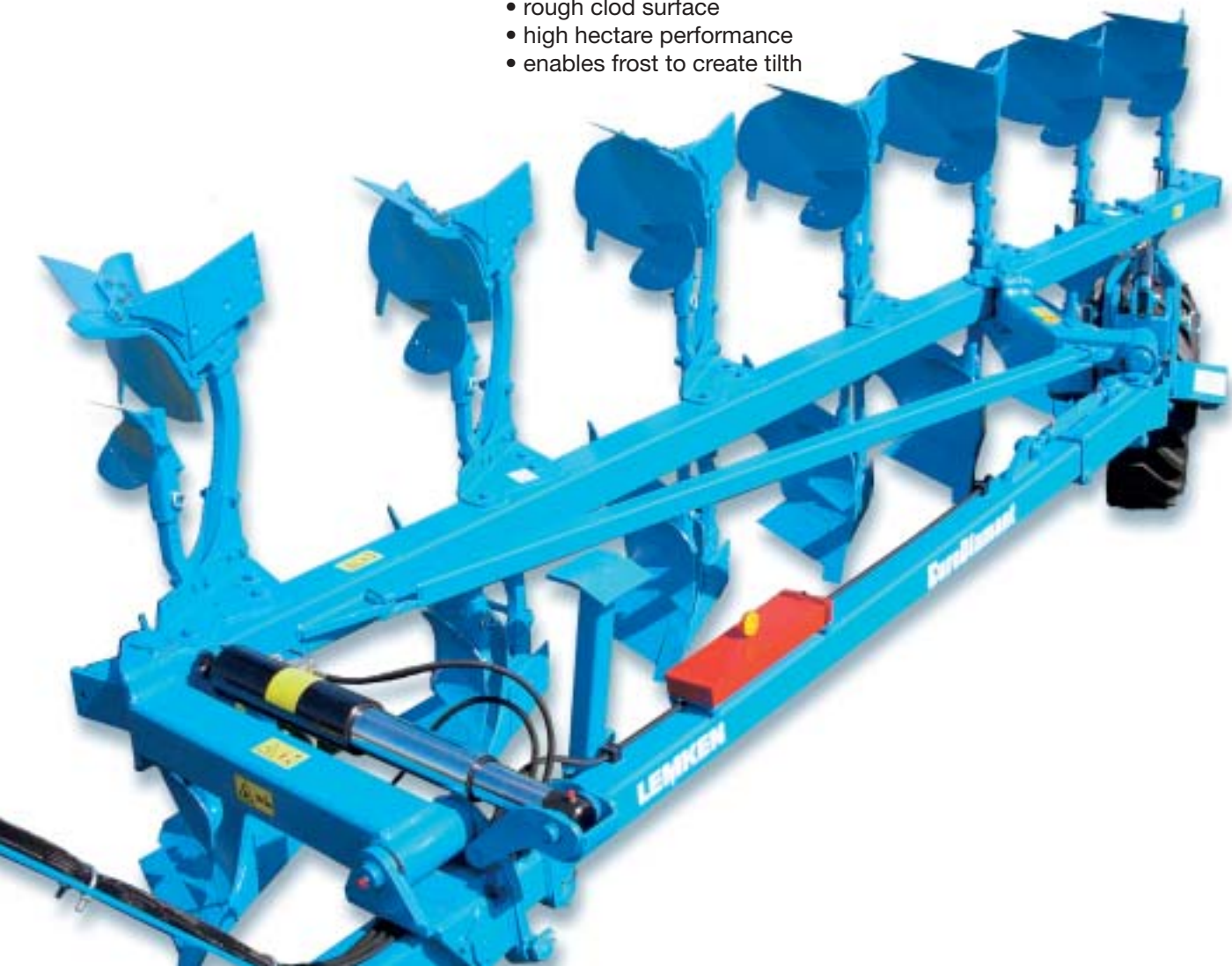
Wide winter furrow

- rough clod surface
- high hectare performance
- enables frost to create tilth

The toolbox

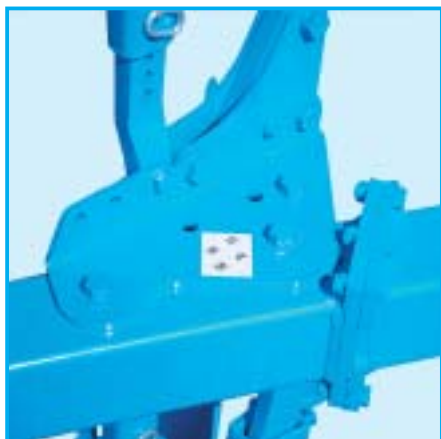


For convenience, LEMKEN provides a toolbox for spanner, tools, shearbolts and other small items.



Working width adjustment

Solid frame design



Special features of the robust box section frame of micro-alloy fine grain steel are low weight for enormous strength and long life. It is possible to add an extension furrow if required.

The Euro Diamant adjustment brackets are firmly bolted to the frame. Following loosening of the central bolt, four different working widths between 30 and 50 cm can be rapidly and easily selected.

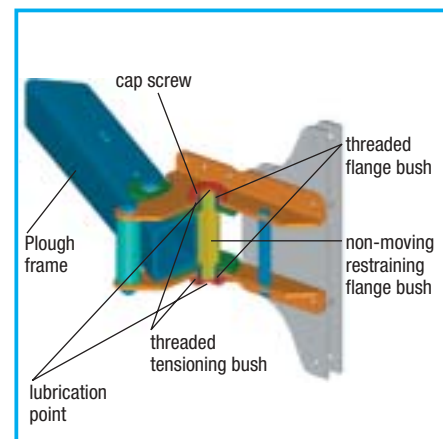
Steplessly adjustable working width



The plates for the leg pivot bracket are bolted to the frame. This gives very positive location, great strength and long life.

The pivot point of each bracket aligns closely with the centre of effort of the body, thus greatly reducing the loads on the pivot and associated components. The working width is steplessly adjustable by a double acting hydraulic ram.

The Vari pivot brackets



The main pivot pin of the Vari pivot brackets is equipped with bushes locked securely with 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 pins, even under toughest conditions. Each component can be separately replaced in case of wear.



Good on the field, safe on the road

The large depth wheel



The very large dimensioned depth wheel minimises the soil pressure during work and ensures the required safety when driving on roads.

The working depth of the plough is adjusted in the front by the tractor hydraulic lift and in the rear by the hydraulically adjustable wheel. A pin is used as depth limiter. A stop at the depth wheel prevents the plough from lowering down too deeply, which ensures that there is always enough clearance between stabiliser and ground.

The transport

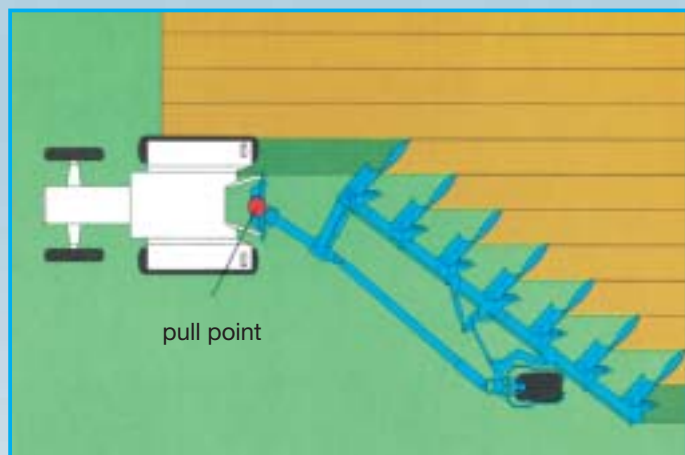


For fast and safe transport on roads, the plough will be turned until the plough bodies are parallel to the ground (the butterfly position) and locked by means of two lock valves. Now the plough can be towed as easily as a single axle, articulated trailer. So the tractor and the plough are protected against overload.



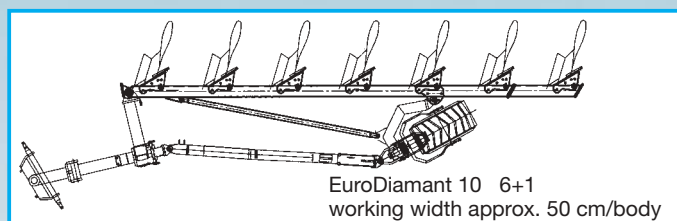
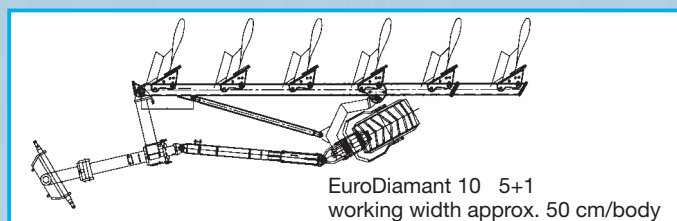
Ploughing close to boundaries

Optimum pull point position and pull force transmission



The pull point of the plough is pre-adjusted and positioned in front of the drawbar. This forward positioned point ensures ideal tractor plough alignment will be achieved. This tractor plough alignment reduces the pressure on the landslides and saves fuel, regardless of the working width.

Ploughing near boundaries with extension



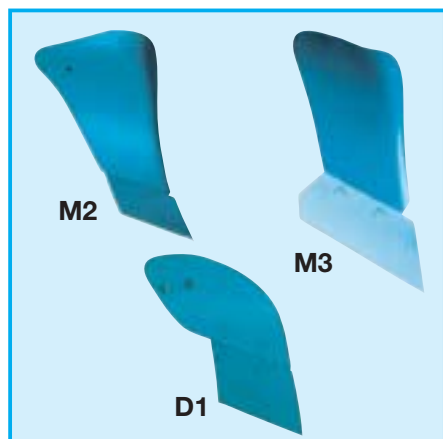
Due to the lateral positioned depth wheel not only the load of the plough frame will be reduced, but also the distance between the tractor wheel and the depth wheel. This has as positive effect on the manoeuvrability of the plough on the headland.

The wheel position enables ploughing close to the edge of fields for ploughs, which are extended by one more furrow. In a 5 furrow version only the wheel runs beside the furrow. When the plough is extended by one more furrow, the wheel runs within the ploughing line.



Ready for action in tough conditions

The skimmers



The special D1, M3 und M2 skimmers ensure a clean ploughed surface even when there's a lot of surface trash. Their working depth is quickly and easily set by pins adjuster with the row of holes in the skim stalk enabling exact and consistent setting for uniform quality of work from all skimmers. D1 and M2 skimmers can be ordered equipped with tail-pieces.

The flat stalk



Fitting the skimmer onto a flat stalk avoids danger of them twisting. All shares and mouldboard variants can be exchanged without any problem because the frog is the same. For ploughing without skimmers these can be quickly removed because only two bolts have to be loosened in each case.

The angle adjustment



The EuroDiamant and the Vari-Diamant with shear bolt device are available with individual quick adjustment system for the skimmer angle. This allows precise aiming of the trash flow.

The working depth

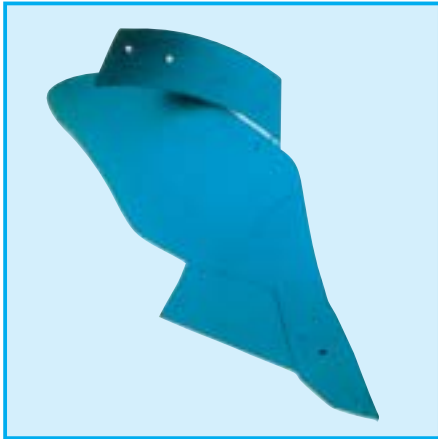


With EuroDiamant and Vari-Diamant ploughs with automatic overload safety systems the skimmers can be moved along the beams. Working depth adjustment is made with pins and therefore no-tool are required. For the ability to adjust the angle, round stalks are available.



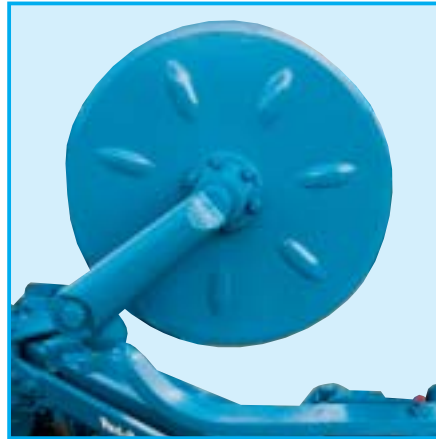
No tool rapid adjustment

Trash boards



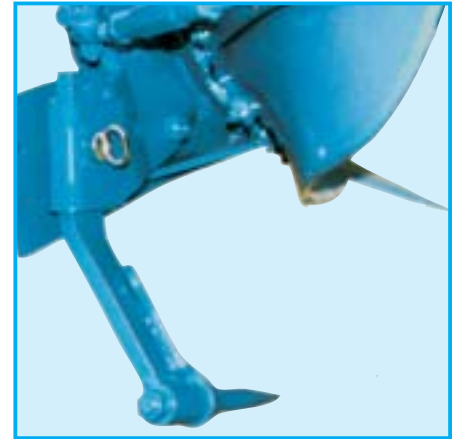
The trash boards are fitted directly to the mouldboards and are multiple adjustable. These enable blockage-free work and clean incorporation of plant material.

Disc coulters



The plain 500 mm diameter disc coulters feature side mouldings which encourage the disc to keep revolving 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.

Subsoilers

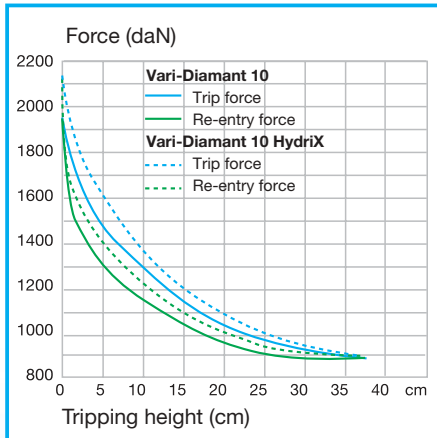


Their special shape gives a very good loosening effect. The subsoilers are adjustable for depth without any tools and can also be easily removed where required. All wearing parts can be individually exchanged. The tine protection prevents wear on the tines.



Tandem overload safety system

The forces at the share point



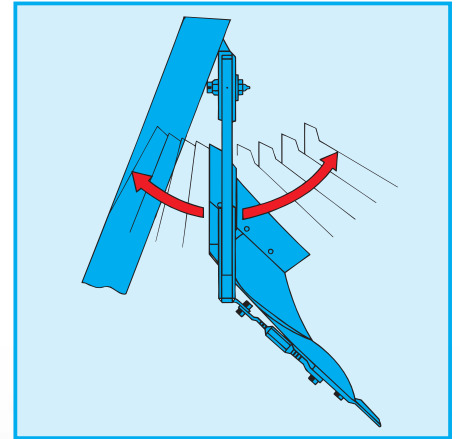
The plough body is tripped without shock loads through the double coil spring system or hydraulic ram. A patented roller system ensures that the force at the point decreases gradually when tripping, increasing progressively with the body re-entering the soil. High trip and re-entry forces provide firm guidance of the plough body and Non-Stop ploughing on stony ground.

The tripping characteristics



Neither at trip or re-entry does any significant amount of frictional resistance occur at the spacing roller between the tandem beams. This means that force losses at re-entry of a plough body are reduced to a minimum. The result is a consistent tripping characteristic: gentle and shock-free followed by powerful, rapid re-entry of the plough body.

Reaction at obstacles

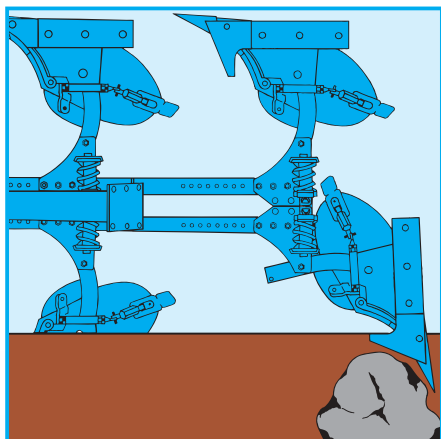


When the plough makes contact with an obstacle the elastic, high quality tempered spring-steel beam and plough legs are able to „side-step“ to an unusual degree. During this movement each beam is firmly guided so that there is no way it can spring out of its mounting. Both leg bracket and beam with the roller are bolted and not welded. This means great strength and long life for the units of the overload safety system.



HydriX hydraulic overload safety system

Overload security



Even where the share point is firmly caught under a stone, tree root or rock ridge, the plough is protected against damage by an additional shear bolt device as standard. A new shear bolt is quickly and easily replaced and the work can restart as easily as that.

Adjustment range and maintenance



The adjustment range, controlled by a handwheel on the control block, is between 50 and 140 bar.

- Individual limits for specific areas can be set at the plough control block and activated through the controls from the tractor seat.
- Readjustments with manometer observations are not necessary.
- The firm connection between beam and frame enables low system pressures to be applied with the HydriX overload safety system.

Safety with all conditions



Trip force is easily adjusted – and this is important, especially when ploughing in stony conditions with rapidly changing types of soil. With the LEMKEN HydriX hydraulic version, the pressure in the hydraulic system can be adjusted individually: in light soil conditions ploughing takes place with trip forces as low as possible so that stones are left under the soil surface. Changing to heavier soils or harder ground conditions the tractor driver increases the pressure with the tractor controls so that the plough bodies are firmly kept at working depth.

The lateral overload safety device (special equipment) makes the Vari-Diamant the No 1 in conditions with especially big stones. Two springs in the area of the connection bar of the working width adjustment give more way of the complete plough body. When the share, the point or the mouldboard touches a stone laterally, the spring unit will be loaded. The body trips and will be led back reliably to its previous position.



The economic plough body

The Dural body



The frog is hardened and tempered and thus immensely strong. The plough body is adjustable for pitch and thus always allows good entry into the soil. The smooth transition from share to mouldboard and the low-resistance shape make the plough even lighter to pull.

The mouldboard is made of hardened special steel with a low-wear shape and no bolts in the main wear zones. The extra large mouldboard shin is a separate component and thus cost-efficiently replaceable.

Slatted body

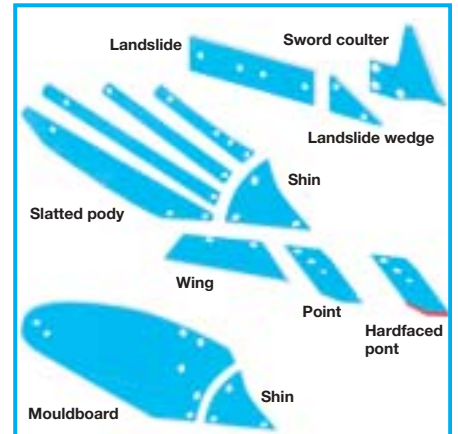


The slats of the slatted body are of thick, completely hardened, special steel and individually exchangeable. The securing bolts are deeply countersunk to guarantee that slats still remain firmly attached after extremely long usage. Slatted bodies and normal mouldboards are based on the same frog.

The share components are separate and of micro-alloyed boron steel. 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 zones on the wing are considerably larger than with common shares.

Plough body construction



Low wear and good entry characteristics are guaranteed for the replaceable share points through their strength, material and form.

The extra broad landsides and large soil contact area ensure a more positive plough guidance and these can be turned four ways to give maximum possible wear life. The sword coultter offers a substantially greater proportion of wearing area for optimum utilisation. The 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.

A special hard metal coating on the share points and the wings gives an up until now unbeatable working life and substantially higher cost-effectiveness. Both pieces are hardfaced on one side from below, producing a self-sharpening effect.

Onland ploughing with the furrow scout

The onland conversion



Depending on type of tractor and tyres, it is possible to change this semi-mounted reversible plough from onland to in-furrow mode just using the hydraulics from the tractor seat. The front support wheel for onland ploughing runs within the plough frame thus giving the large clearance necessary when reversing the plough. For in-furrow ploughing, this wheel is locked in the mid-position so there's no need to dismantle it.

The horizontal draught point



The horizontal draught point can be easily adjusted via a simple bolt setting. This allows precise load transfer onto the rear axle of the tractor. Where a tracklayer is used the draught point for a consistent loading on the tracks is set far down. The system means optimum draught transfer is achievable for all tractor types with resultant minimum wheel or track slip.

The control terminal



The sensing system warns the tractor driver via a control terminal with optical and acoustic signals when freely-programmable limits to the plough line are neared or exceeded.

Three ultrasonic sensors continuously measure the distance between plough frame and furrow edge. The computer processes the measurement data and, via hydraulic cylinder and proportionally-controlled magnet valve, maintains the plough at exactly the right distance from the furrow edge. Deviations from the ideal line by the driver are automatically corrected with the programmed distance being re-imposed. All control impulses occur without time lag because distance to the furrow edge is measured before the first plough body. This means an exact joining of the last furrow and new furrow bout is always guaranteed.



The range for all requirements

EuroDiamant 8

Box section

frame

□ 140 x 140 x 10 mm



| | | | | |
|---------------------------|---------|---------|---------|---------|
| Working width (cm) | 165-250 | 198-300 | 198-300 | 231-350 |
| Weight (kg) | 2.054 | 2.282 | 2.272 | 2.510 |
| Up to kW/hp | 118/160 | 125/170 | 125/170 | 132/180 |
| Interbody-clearance (cm) | 100 | 100 | 100 | 100 |
| Underframe-clearance (cm) | 80 | 80 | 80 | 80 |
| Auto-Reset version* | x | x | x | x |

EuroDiamant 10

Box section

frame

□ 160 x 160 x 10 mm



| | | | | | | | | |
|---------------------------|---------|---------|---------|--------------|--------------|--------------|--------------|--------------|
| Working width (cm) | 165-250 | 198-300 | 198-300 | 231-350 | 231-350 | 264-400 | 264-400 | 297-450 |
| Weight (kg) | 2.500 | 2.750 | 2.730 | 2.990 | 2.970 | 3.220 | 3.200 | 3.450 |
| Up to kW/hp | 155/210 | 177/240 | 177/240 | from 140/190 | from 140/190 | from 140/190 | from 140/190 | from 140/190 |
| Interbody-clearance (cm) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Underframe-clearance (cm) | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Onland-version | x | x | x | x | x | x | x | |
| Auto-Reset version* | x | x | x | x | x | x | | |

Vari-Diamant 10

Box section

frame

□ 160 x 160 x 10 mm



| | | | | | | | | |
|---------------------------|---------|---------|---------|--------------|--------------|--------------|--------------|--------------|
| Working width (cm) | 150-275 | 180-330 | 180-330 | 210-385 | 210-385 | 240-440 | 240-440 | 270-495 |
| Weight (kg) | 2.675 | 2.990 | 2.940 | 3.235 | 3.215 | 3.500 | 3.480 | 3.785 |
| Up to kW/hp | 155/210 | 177/240 | 177/240 | from 140/190 | from 140/190 | from 140/190 | from 140/190 | from 140/190 |
| Interbody-clearance (cm) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Underframe-clearance (cm) | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Onland-version | x | x | x | x | x | x | x | x |
| Auto-Reset version* | x | x | x | x | x | x | | |

* Ploughs with Auto Reset trip device are approximately 15% heavier.

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