

Semi-mounted ploughs



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# VARI-MANAGER, CHALLENGER



be strong, **be KUHN**



VARI-MANAGER, CHALLENGER

# The KUHN plough

The future of farming lies in competitiveness and profitability.

The plough concept with its advanced features will contribute to a quick return on your investment.

The KUHN plough will allow you to:

- Maintain a high quality soil structure with an efficient burial of organic matter and an even aggregate spread throughout the soil profile - crop yields will be increased.
- Have at your disposal a wide range of working width settings and an excellent overall manoeuvrability - "in field" costs will be reduced.
- Benefit from a number of technological innovations such as the variable width, the plough structure protection systems (Hydraulic non-stop or traction bolt) - the working life of the plough is increased and maintenance costs reduced.
- Profit from a renowned reliability and long working life allowing you to work throughout the day without interruption - your plough will also keep a high second-hand value.

Opt for a KUHN plough - because obtaining high yields and optimising financial results all starts with high quality ploughing.

KUHN offers solutions for ploughing while meeting your requirements with regards to:



# A SEMI-MOUNTED PLOUGH WITH HYDRAULIC VARIABLE WIDTH FOR MAXIMUM VERSATILITY

The VARI-MANAGER meets the demands of today' s professionals.

- Robust and durable.
  - Total protection of the plough structure with the non-stop hydraulic auto-reset system, shear bolt protected skimmers and transport suspension.
  - A high level of versatility for increased work rates, easy adjustments and a hydraulic variable width system for quick and easy adaptation to all working conditions.
- A variable width mechanism fully integrated into the plough beam for maximum protection and long life.



## ONE PIECE HEADSTOCK

A quick-hitch cross-shaft is positioned low on the machine for the best possible weight distribution and maximum traction in difficult conditions.

The cross-shaft features “ U-shaped supports at each end for extra strength. The heavy-duty headstock allows the use of tractors up to 240 hp (176 kW).

## HYDRAULIC SEQUENCING (PATENTED)

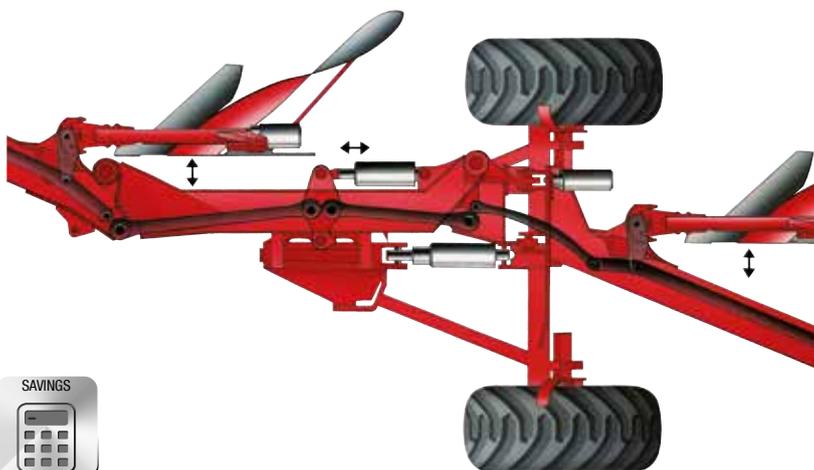


In the tractor cab the same lever controls both the lifting out of work and turnover of the plough in one combined automatic operation greatly simplifying headland manoeuvres and reducing driver fatigue



## PLOUGH TURNOVER

Turnover is carried out by two direct acting horizontal cylinders with no complex mechanical linkages. This very simple turnover system has a minimum of moving parts reducing both the risks of wear and of any possible maintenance requirements. The system comes complete with a hydraulic levelling lock (patented).



**ALL MOVING PARTS FULLY INTEGRATED INTO THE PLOUGH BEAM**

The whole linkage mechanism responsible for the variable width changes is housed inside the plough beam. All links and moving joints are in this way fully protected from abrasive agents (dust, corrosion) as well as from any possible impact damage. This exclusive KUHN feature ensures a long trouble free working life. All variable width linkages and articulation points are heavy duty for an exceptionally strong overall construction. All moving joints are fitted with heavy duty bushes.



**ADVANTAGES OF THE VARIABLE WIDTH SYSTEM**

- To adapt quickly to available traction.
- To adapt to different soil types, ground relief and field size whilst maintaining a high work rate.
- To alternate the plough profile summer and winter.
- To cope with large amounts of trash.
- To neatly finish up to the field border.
- To avoid obstacles and tidy the furrow.



# KUHN'S SOLUTION FOR HIGH HORSEPOWER TRACTOR !

The Challenger range is without doubt the plough for high horsepower tractors and extremely difficult working conditions.

Its number of bodies ensure that the highest work rates are achieved.

The Challenger's 220 mm section beam ensures robustness during work and combined with its safety system (traction bolt or Non Stop Security) a long life.

The beam's articulation and the plough's transport suspension gives you a more sensitive reaction to ground and road conditions during use.



CHALLENGER 12 T on-land

## LARGE OFFSETTING ADJUSTMENT



Large adjustments can be made to the plough offsetting (its angle in relation to the tractor) from the tractor seat by simple action on one of the spool levers. This allows for easy adaptation to all possible tractor inter-wheel distances and also permits a complete cancellation of the effect of the first body for particular circumstances e.g. finishing a field, going round obstacles etc.





### MULTIPLE WORKING WIDTHS 14", 16" AND 18"

Whether a traction bolt model or non-stop hydraulic (NSH), changes in working width to settings of either 14", 16" or 18" are quick and easy to carry out. The width fixing bolt is removed and the plough leg pivoted to the desired width setting. The rear beam angle is changed in the same manner and shims at the articulation joint moved to positions corresponding to the required width setting.

### PLOUGHING ON-LAND



#### Benefits

- greater distribution of weight load reducing compaction to a minimum
- no tractor wheel slip in the furrow
- reduced tyre wear on stony ground
- extra wide tyres or dual wheels can be used
- time savings - not necessary to disassemble dual wheels for ploughing.

The Challenger in its "on-land" version can be easily transformed back to an "in the furrow" plough when wet conditions reduce traction on land.

A front mounted depth wheel is essential when working in the on-land position.



CHALLENGER 12 NSH on-land

# HIGH TECHNOLOGY DESIGN AND MANUFACTURE

## HYDRAULIC BEAM ARTICULATION (PATENTED)

Fitted as standard the hydraulic articulation allows an adjustment (from the tractor cab) of the amount of articulation travel according to soil conditions.

A hydraulic accumulator integrated into the hydraulic circuit has the advantage of giving a more sensitive reaction to small ground level changes.



## TRANSPORT SUSPENSION

Fitted as standard on the CHALLENGER, optional on the VARI-MANAGER. Transport safety is maximised with 3 weight bearing points (two carriage wheels and tractor arms) giving an improved overall balance to the plough in the transport position.

There are no protruding depth wheels when on the road.

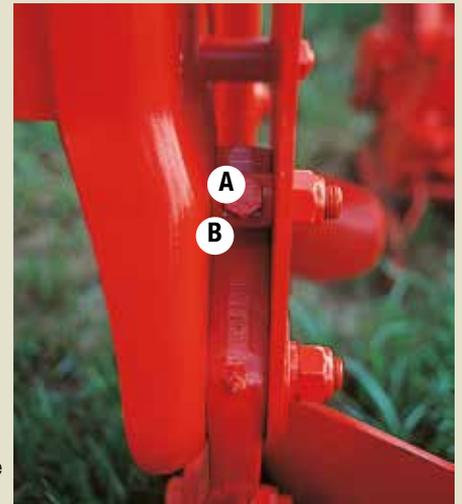
Suspension in the transport position is provided by means of an undercarriage mounted shock absorber protecting the entire length of the plough from possible transport shocks.



## TRACTION BOLT LEG PROTECTION

Abrupt breakage of the 16 mm traction bolt following a force at the plough point in excess of 4000 kg (4500 kg on Challenger) avoids risk of too frequent a breakage.

- The bolt **A** runs in the direction of the line of force contrary to the conventional scissor bolt method where the bolt runs across the line of force.
- Due to these "in-line" forces the bolt support **B** never deforms and never becomes rounded with use.
- It is impossible for the bolt to become trapped inside following a breakage. Once a force in excess of 4000 kg is met at the furrow point the bolt breaks along its length and simply falls away for quick and easy replacement.
- Even after many bolt breakages the plough bodies remain at an identical depth and perfectly in-line.



# PLOUGH LEG PROTECTION SYSTEMS FOR ALL WORKING CONDITIONS



## AUTO RESET PLOUGH LEG PROTECTION (NON-STOP HYDRAULIC)

### 1. Adapting to all working conditions

Designed for stony and / or heavy conditions the Non-Stop Hydraulic (NSH) system allows continuous ploughing with the plough legs automatically folding out of work upon hitting an obstacle and immediately returning into work again once the obstacle is passed. No need to get out of the tractor and no need to replace bolts.

The system also acts as an excellent shock absorber when working in pebbly or flinty ground absorbing all the vibration, increasing the life of the plough and increasing comfort for the driver.

**VARIBAR system :** An optional system allowing instant control from the tractor cab of the NSH pressure at the share point - either with or without Maxibar.

**MAXIBAR system :** The Maxibar option allows the pressure at the share point to be increased giving an adjustment range of 600 to 2500 kg yet conserving the suppleness of the system. The option is particularly useful in heavy compacted ground.

### 2. A unique concept

The basic concept of the hydraulic non-stop plough leg safety system gives a rapid break-away when an obstacle is met and yet an increase in pressure thereafter bringing the body quickly and firmly back into work.

## ADVANTAGES OF THE NSH SYSTEM :

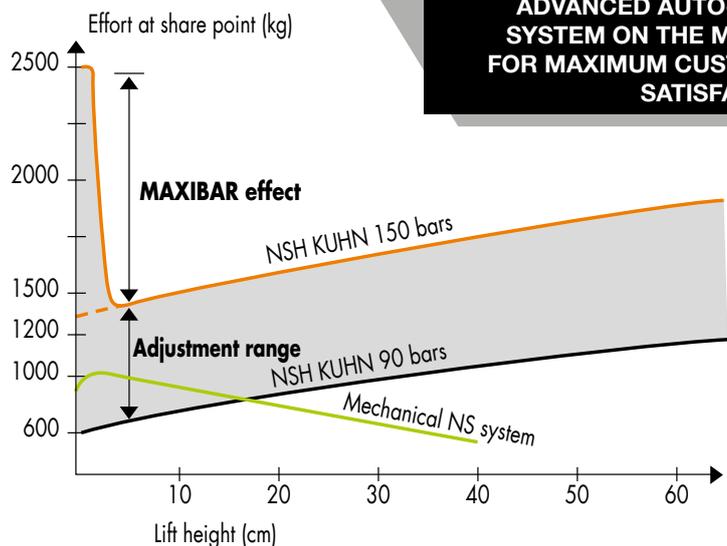
- Long life and reliability - hydraulic technology is more reliable with no wear or friction and fewer moving parts (just one articulation point and two moving parts per leg).
- Weight saving - compared to a mechanical auto reset system the NSH system is 25 kg lighter per leg.
- Ease of use - the pressure at the share point can be quickly adjusted from 600 to 1500 kg by simply inflating or deflating the accumulator mounted on the headstock.
- Excellent performance - plough leg resetting is quick and positive once the obstacle is passed with no "drumming" of the plough bodies in work.
- Compactness - the NSH tie rod is located inside the plough leg structure and the hydraulic cylinder incorporated into the leg profile for the maximum possible clearance and minimum obstruction to trash and vegetation.
- Exceptional obstacle clearance - the share point can lift 60 cm vertically out of work and 20 cm sideways.

## HEAVY DUTY PLOUGH LEG ARTICULATION AND TIE ROD

- All pressure points receive a specific heat treatment process.
- With just one articulation point all the forces put through the plough leg are transmitted in a straight line through a one piece forged and heat treated tie rod.



**KUHN HAS CHOSEN THE MOST ADVANCED AUTO-RESET SYSTEM ON THE MARKET FOR MAXIMUM CUSTOMER SATISFACTION**





VARI-MANAGER, CHALLENGER

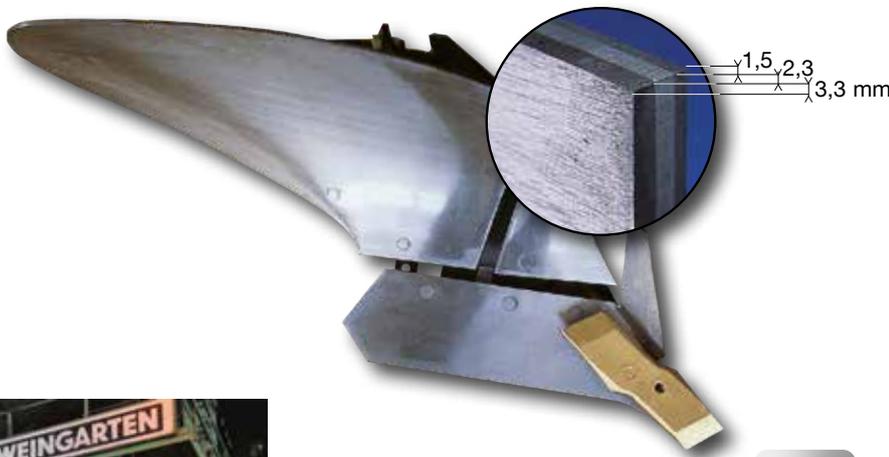
# PLOUGH BODIES DESIGNED TO SAVE ON COSTS

## 1 - MOULDBOARDS WITH UNEQUAL LAYER TRIPLEX STEEL



### EXCLUSIVE TO KUHN

- Kuhn mouldboards are made of unequal layer Triplex steel.
- The thickness of the wearing surface is increased to 3.3mm - an exclusive feature.



## 2 - PLOUGH BODIES DESIGNED TO REDUCE WEARING COST



Shares are forged with a force of 5500 tonnes ensuring:

- excellent wear resistance,
- self-sharpening profile due to the grain in the steel resulting from the forging process.



### MARATHON®

Special heat treated forged steel. Reversible for maximum efficiency. Featuring a step giving better landside protection.



### OLYMPIC®

Special heat treated forged steel. Reversible for maximum efficiency. More pronounced form at wearing zones on the point for longer life and better protection of the landside. Point is self sharpening for good ground penetration at all times.



### SUPER MARATHON®

Special heat treated forged steel fitted with a tungsten carbide tip. High wear resistance. Four to five times the life of a traditional share point. A sharp working edge is maintained for excellent ground penetration.





## CLASSIC TYPE PLOUGH BODIES



### N BODY

Helicoidal cylindrical semi-digger.  
15 to 30cm ploughing depth.  
Highly versatile body.  
Cylindrical at front, helicoidal at rear. Low draft, ensures a partly broken furrow, with excellent trash burial.



### L WIDE HELICOIDAL (20 TO 35 CM)

All round body for furrowed or flat ploughing finish depending on the forward speed. Cuts a particularly wide furrow bottom for the passage of wide tractor tyres

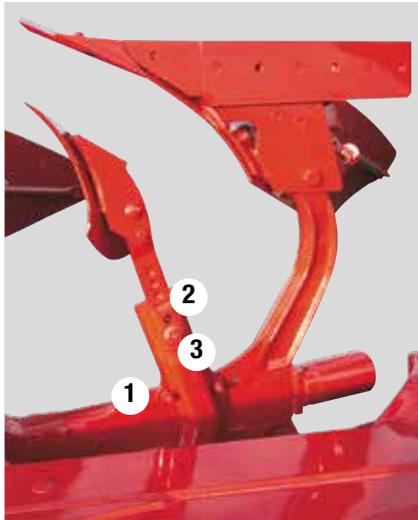


### VP SLATTED BODY

Mouldboard composed of independant and interchangeable slats. Gives a reduction of traction force, due to a lower mouldboard surface area. Easy maintenance.



# HIGH QUALITY EQUIPMENT



## INDEPENDENT, EASY TO ADJUST SKIMMERS

Each skimmer is totally independent left from right and is firmly held in a sheath like support. The skimmers are shear bolt protected and are adjustable in three directions:

- 1** Forwards and backwards - with a choice of three positions the sheath bolts to the leg support via countersunk holes to avoid any risk of free play.
- 2** Up and down - rapid and precise height adjustment (20cm of adjustment) also with countersunk holes in the skimmer leg for easy locking of the leg at the desired height.
- 3** Side to side - for correct adjustment in relation to the disc coulters (where fitted).



## DISC COULTERS

Discs have a diameter of 500mm plain or notched with the added choice on the traction bolt models of a 600mm disc. The disc serves to cut the furrow wall in front of the plough body giving a cleaner finish and improving trash incorporation.



## TRASHBOARD

For trash burial in difficult conditions where the quantity of trash may otherwise block up the skimmers.



## ALL PURPOSE ZX SKIMMER

Well adapted to ploughing on cereal or maize stubbles. ZXL : large share, ZXE : small share.



## HELICOIDAL ZH SKIMMER

Helicoidal skimmer for deep trash burial. Well adapted to grassland ploughing.



## ZRL HIGH CAPACITY SKIMMER

High capacity skimmer for trash incorporation throughout the soil profile. Excellent straw and maize trash burial.

## PRESS ARMS WITH HYDRAULIC RELEASE



Available for the complete plough range the arm allows the use of a furrow press with easy hooking up and hydraulic push-off. On the pick-up hook part of the arm where there is most risk of damage all grease nipples and hydraulic hoses are protected inside the structure of the head. The arm folds up conveniently for subsequent transport.



## MODULAR CONSTRUCTION

Each plough is made up of three basic elements :  
1 front beam, 1 rear beam and the extension/s.  
Following the assembly specifications set out in the table  
below the plough can be built up by yourself to correspond to  
the available tractor power.



### REAR DEPTH CONTROL WHEEL

Fitted with a 600 mm (VARI-MANAGER range) or 690 mm (CHALLENGER range) tyre, the rear beam mounted depth wheel pivots freely from side to side to follow all changes in working width.  
The wheel is simply designed and easy to adjust : depth adjustments by turning handle screw **C** with the possibility to set the depth independently left from right.



### DEPTH WHEEL WITH SHOCK ABSORBER

Available for the CHALLENGER series in 690 mm diameter with rubber tyre. The shock absorber not only removes the shock of the wheel falling during turnover but also ensures the wheel is in the correct rearwards inclined position as the plough is lowered back into work.



VARI-MANAGER



CHALLENGER



## Specifications

## VARI-MANAGER, CHALLENGER

Model	Number of bodies	Beam configuration	Max authorized tractor power (kW/hp)	Weight (kg)	Safety	Working width (inches/cm)	Clearances (cm)		Diamond body possibility	
							under beam	point to point		
VARI-MANAGER	5	3 + 2	110/149	3150	NSH auto-reset	12" to 20" 30 to 50	80	102	YES	
	6	3 + (2 + 1)	132/179	3500						
	7	(3 + 1) + (2 + 1)	154/209	3850						
	8	(3 + 1 + 1) + (2 + 1)	176/239	4200						
CHALLENGER	CHALLENGER T	7	4 + 3	210/287	Traction bolt	14", 16" and 18" 35, 40 and 45	80	102	YES	
		8	(4 + 1) + 3	240/322						4048
		9	(4 + 1) + (3 + 1)	270/369						4336
		10	(4 + 1 + 1) + (3 + 1)	300/410						4624
		11	(4 + 4) + 3	330/451						4912
		12	(4 + 4) + (3 + 1)	360/492						5200
	CHALLENGER NSH	7	4 + 3	210/287	NSH auto-reset	14", 16" and 18" 35, 40 and 45	80	102	YES	
		8	(4 + 1) + 3	240/322						4428
		9	(4 + 1) + (3 + 1)	270/369						4746
		10	(4 + 1 + 1) + (3 + 1)	300/410						5064
		11	(4 + 4) + 3	330/451						5382
		12	(4 + 4) + (3 + 1)	360/492						5700

# KUHN SERVICES ADVANTAGES FOR OPTIMUM EQUIPMENT USE AND PROFITABILITY

## KUHN sos order

### Express spare parts service 24/7

You urgently need spare parts? With KUHN SOS ORDER benefit from express delivery seven days a week, 365 days a year. Thus, you can minimize machine downtime considerably and increase our work output.

## KUHN protect +

### The choice of professionals!

Benefit from 36 months in complete serenity because of KUHN's PROTECT + warranty. You can concentrate exclusively on your work and the performance of your machine. Because this is what you expect, when investing in high-tech machinery.

## KUHN i tech

### For ever quicker repairs!

An unexpected technical problem always occurs at the wrong time. Your KUHN dealer can support you quickly and efficiently thanks to KUHN I TECH. With this 24/7 online service, a quick and exact diagnosis is possible.

## KUHN finance

### Invest rationally!

New machine necessary, financing unsure? Modernize your equipment and develop your farm with KUHN FINANCE, in total safety and according to your needs and demands. We offer custom-made finance solutions, adapted to your requirements.



VARI-MANAGER, CHALLENGER

# KUHN Semi-mounted ploughs

Farmers have different issues but common objectives: reducing the cost of crop establishment and high work output without compromising yield potential.

VARI-MANAGER and CHALLENGER were designed with this in mind, to offer you a top of the range multipurpose machine, quick and easy to adjust, in order to increase your work output and maintain the quality of your soil.

## Discover KUHN's range of ploughs



**MASTER 103, 113, 123, 153 et 183  
MASTER L**



**LEADER**



**VARI-CHALLENGER**



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