

Drum Mowers

# PZ Series



[www.kuhn.com](http://www.kuhn.com)



be strong, be **KUHN**



PZ

Series

# KUHN DRUMMOWERS

## GRASS HARVESTING AT ITS BEST!



### **A WELL CONSIDERED DECISION**

Mowing is the first and very important step in the process of making silage. And the KUHN drum mowers will be your choice in a well considered decision!

### **OVER 50 YEAR EXPERIENCE**

Kuhn has with its drum mower program over 50 years of experience as from the first invention of the drum mower.

### **STAYING IN FRONT WITH NEW INNOVATIONS**

The Research & Development department is still constantly improving the drum mowers to stay in front with innovations like: LIFT-CONTROL, Height adjustment, FLEXPROTECT and Modular design.

# PZ DRUM MOWER SERIES

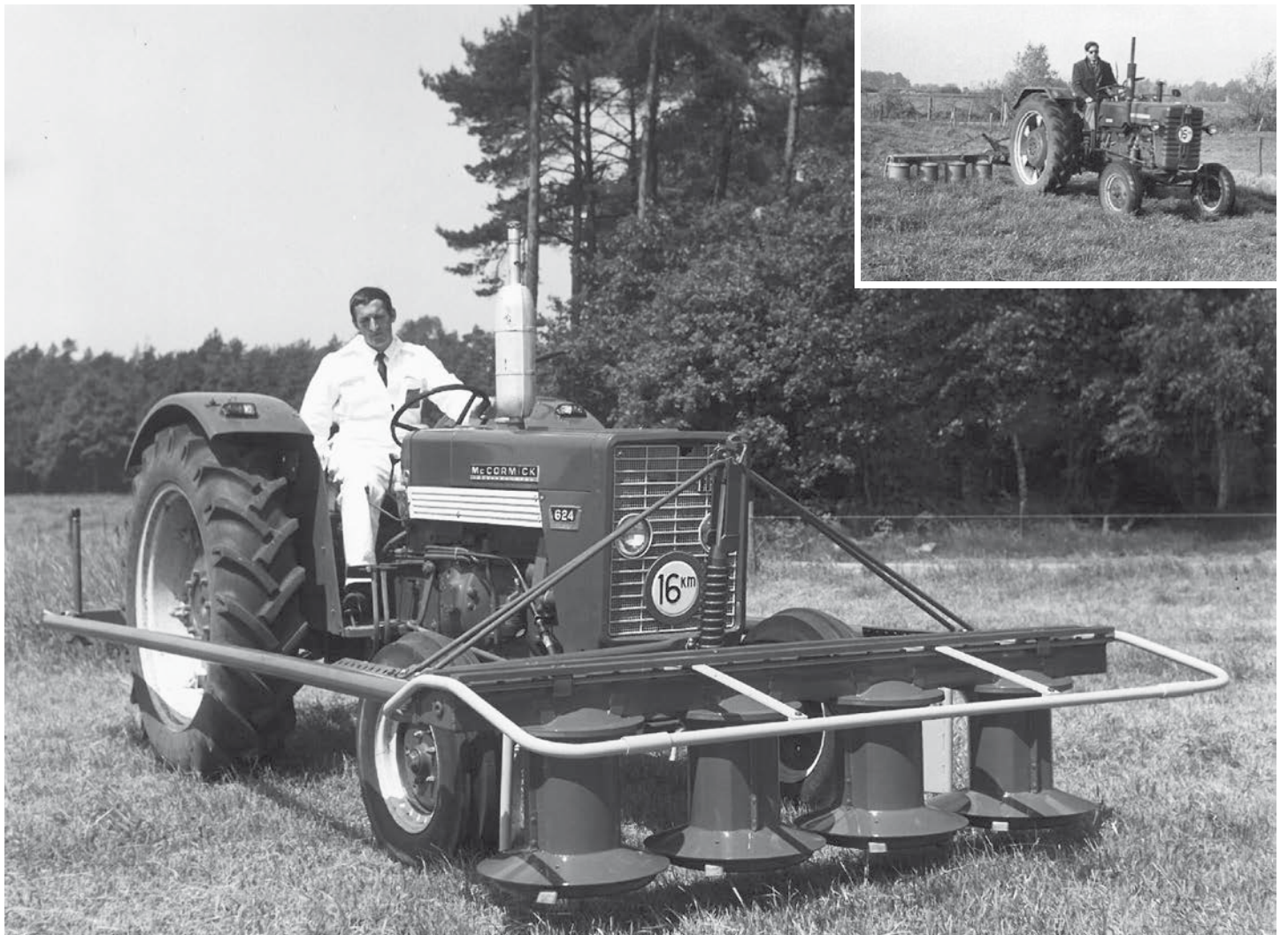
## OVER 50 YEARS OF EXPERIENCE!

Piet Zweegers came up with his idea for the cyclo mower because mowing with the finger bar mower became harder and harder. The grass was getting heavier and thicker and the finger mower got clogged more often, which had loss of time as result. In 1963 Piet was experimenting with a hay rake with little chains under the drums. While testing the machine he discovered that the machine was mowing the crop and transported it backwards. The idea for the cyclo mowers was born. He replaced the chains with knives and increased the speed and the grass was getting mowed without shredding it and perfect swaths were created.



Patents were filed in 26 countries all over the world. Because of good relationships and license agreements with other companies, Fahr and Kuhn, a revolution in mowing was realized. The reciprocating finger bar mower of the American McCormick, which had proved its worth for more than 130 years, was replaced by disc and drum mowers of 3 co-operating manufacturers.

**The KUHN PZ mower series still owe their name to the inventor Piet Zweegers.**

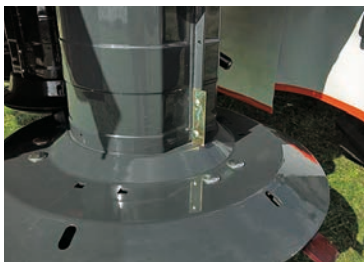


Around 1970 Piet Zweegers also invented the Front Mower, he made a system to put the mower in front of the tractor with the drive coming from the back of the tractor.



# FOR A CLEAN CUT

The new generation of KUHN drum mowers has been developed using a combination of experience and the most up-to-date mowing quality, technology and design engineering. The result is a complete series of front and rear drum mower units. The well-known features of the KUHN PZ drum mowers have been complimented by new solutions such as the FLEXPROTECT protective side covers and its modular structure.



## FLAT SIDED DRUMS

Round drums do not transport well. That is why KUHN uses drums with two flat sides for optimal crop transport without the risk of blockage. Movement of the crop has an impact on the mowing quality. It is for this reason that KUHN has chosen to use screw-on transport strips.

## HEIGHT ADJUSTMENT

The cutting height is adjustable using a spindle attached to the top of the mower. This can be easily reached and infinitely adjusted.

## ROTATING SAUCERS

The continuously rotating saucers have a major advantage. In uneven ground conditions, the saucer "rotates" over the ground rather than sliding, thus protecting the stubble and reducing PTO power requirement. The positive effects of reduced crop contamination will be particularly noticeable on sensitive soils such as boggy land.

## QUICK CHANGE OF BLADES

Using the special blade tool, you can push the blade holder down and simply replace the blades. A quick and efficient system! Another advantage of this system is that the blade holders get less polluted.



## FLEXPROTECT

Damage to the side covers is now a thing of the past. The KUHN FLEXPROTECT side covers are adding a new dimension to mowing with their design made of polythene. On encountering any obstacles, the material of the side cover bends, without breaking or damaging the mower. The material then returns back to its original shape. The FLEXPROTECT side covers are integrated on all the PZ mowers, except for the PZ 170, 190 and 220 series.



PZ

170

190

220

# AS RELIABLE AND ECONOMICAL

With the three models of drum mowers, PZ 170, PZ 190 and PZ 220, KUHN provides high-quality technology and working widths up to 2.10 m. These KUHN drum mowers are suitable for small and medium-sized farms. Its long-life and easy and safe operation are the key attributes of these machines. The PZ 220 can be retrofitted with a conditioner which can be removed without any tools thanks to a special centre section and practical quick-locking mechanisms.



## SAFETY BREAK BACK SYSTEM

On hitting an obstacle, the mower unit pivots back, thus absorbing the impact. Reversing the tractor re-engages the safety system, and the mower unit is set back into work position.



## WORKING POSITION

By using a cord, you can move the mower from transport position to working position and vice-versa. On the PZ 220, this can be done from the tractor cab.

# AS THE BIG MOWERS



As option available: hydraulic folding cylinder



## COMPENSATION SPRINGS

Compensation springs are fitted as standard to transfer the weight from the mower unit to the tractor in order to keep ground pressure as low as possible.



## EASY HITCHING

The PZ 170 and 190 can be hitched easily to every tractor with Cat. I or II linkage pins. KUHNS can provide a special adapter for tractors with wide tyres.

PZ

270

300

# UNCOMPROMISING SET-UP FOR

The PZ 270 and 300 models have a proven and tested drum design with over 25,000 units sold. Large outer drums and small inner drums mean benefits such as perfect ground contour following, clean swath formation and large throughput.





# PROFESSIONAL USE

## EASY ACCESS TO THE DRUMS

The front cover can be folded away, allowing easy access to the blades. This is perfect for daily inspections and mower maintenance.



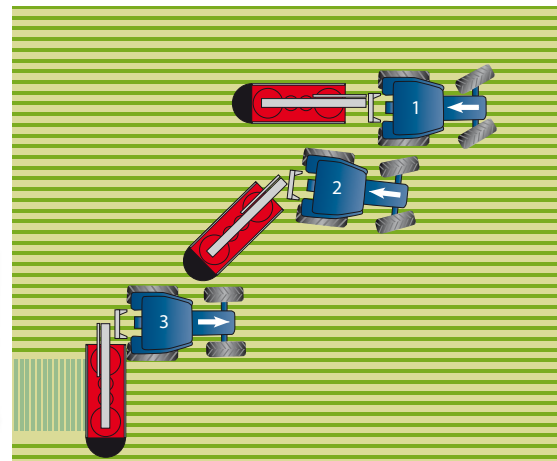
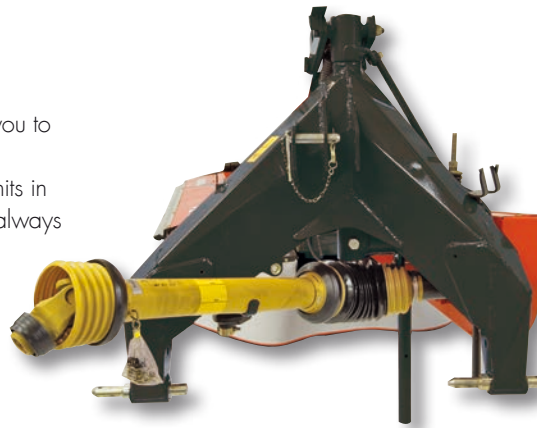
Easy access to the drums

## HEADLAND CYLINDER

The optional headland cylinder offers comfort in a large extend and gives the PZ 270 and the PZ 300 sufficient ground clearance under any conditions.

## 3-POINT LINKAGE

The adjustable 3-point linkage enables you to shift the machine to the left or right. When using the front and rear mower units in combination, this ensures that overlap is always at its optimum even when cornering.



## FOLDING TRANSPORT CYLINDER

Also as option available is the folding cylinder, to keep the centre of gravity as close as possible to the tractor.

## TRANSPORT

Without leaving the tractor seat, the PZ mower units can be put easily into transport position behind the tractor. A hydraulic cylinder is available as optional equipment to fold the machine up vertically behind the tractor.



PZ

270 F

300 F

# HIGH PERFORMANCE

With the PZ 270 F and PZ 300 F models, KUHN sets the standard in this class. The drum arrangement, FLEXPROTECT side protection and accessibility have yet to meet their equal. The mower unit attachment with two large outer drums and two small inner drums ensures maximum throughput for the forage. In this way, you can deposit a double swath that can be easily picked up by any following machine. Using the generously dimensioned swath discs, the finest of adjustments can be made: Narrow swath (90 cm) for day-to-day gathering of forage from sloping terrain, wide swath for hay.



Fixed headstock + Frontflex



PENDEFLEX pendulum headstock



**OPTIMAL GROUND ADAPTATION**

The fixed headstock provides a good, well-priced solution for all grassland specialists. The flexible 'Flextop' top link connection and 'Frontflex' telescopic top ensure the unique ground adaptation in the driving direction. Traverse ground adaptation is ensured by the front linkage arms. For tractor lifts without pendulum device, a pendulum PENDELFLEX headstock (P) can be supplied if required.

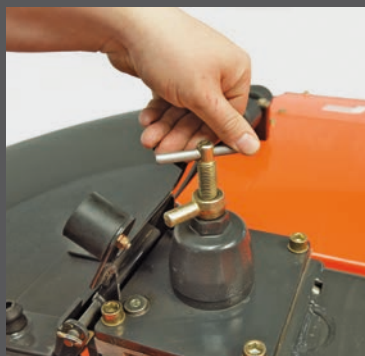
**FOLDABLE FRONT COVER**

The foldable front protective cover on the PZ 270 F and PZ 300 F can be lifted upwards, convenient for daily inspection and blade exchange.



**CUTTING HEIGHT ADJUSTMENT**

The cutting height is adjustable using a spindle at the top of the mower. This can be easily reached and infinitely adjusted. You now no longer need to crawl under the mower to check whether the cutting height is evenly adjusted from left to right.



**CLEAN SWATH FORMATION**

Using large outer drums and small inner drums has great benefits: perfect ground adaptation, clean swath formation and high throughput.



## A CONDITIONER FOR SILAGE OR HAY HARVESTING!

If you wish to use your mower unit for day-to-day gathering, but also want the possibility to use a conditioner for silage or hay harvesting, then the all new KUHN TC 320 brings the solution!



Hitch the TC 320 to the rear to condition the fodder and deposit it across the whole mowing width. Adaptable to every situation with adjustable conditioning and spreading effects. Due to the fixed head stock with oscillating lower link pins the TC 320 is always very stable, even on steep slopes. PTO speed  $540 \text{ min}^{-1}$  as standard,  $1000 \text{ min}^{-1}$  by turning primary gear box. The conditioner rotor speed of  $815 \text{ rpm}$  can be changed into  $650 \text{ rpm}$  by changing the sprockets.

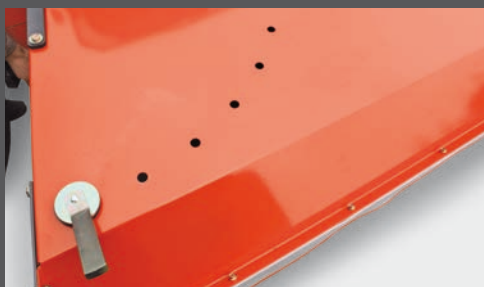
The TC 320 is equipped with big pivoting wheels providing the best possible ground adaption. Because the wheels are attached directly to the head stock frame there is no extra load on the conditioner itself.



Adjustable conditioner intensity



Big pivoting wheels



Adjustable spreading width



Conditioner rotor speed of  $815 \text{ rpm}$  can be changed into  $650 \text{ rpm}$  by changing the sprockets

## INNOVATIVE AND HIGH CLASS MOWER UNIT TECHNOLOGY

# NEW GENERATION OF MOWER UNITS

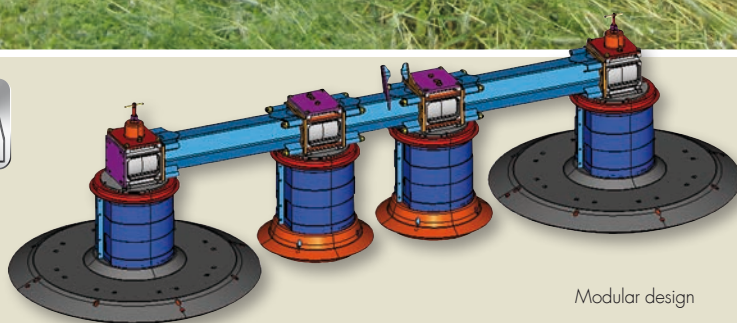
The new generation of KUHN PZ drum mowers allow easy maintenance through its modular design and extensive standardization. The KUHN PZ drum mowers feature a foldable front cover and FLEXPROTECT side covers for easy access to the drums, ideal for the daily inspection and maintenance of the mower unit. The unit's modular design and use of strong aluminium components make the overall weight of the mower unit very low.



### ADVANTAGES MODULAR DESIGN

First, when a small part of a component needed replacement, the whole component needed to be replaced. Through the modular design of the new mower generation small parts can be replaced when needed and individual drive damage does not result in total loss damage. Maintenance of the mower is quicker and easier, and repairs take less time.

The new generation mowers can be used by tractors with more power. Because of the direct drive without V-belts the machine can process a higher capacity. This results in high power transmission possibilities without rpm losses and consequently high output with constant and perfect cutting performance.



### ADJUSTABLE CUTTING HEIGHT ADJUSTMENT WITH SAUCER BRAKES (1)

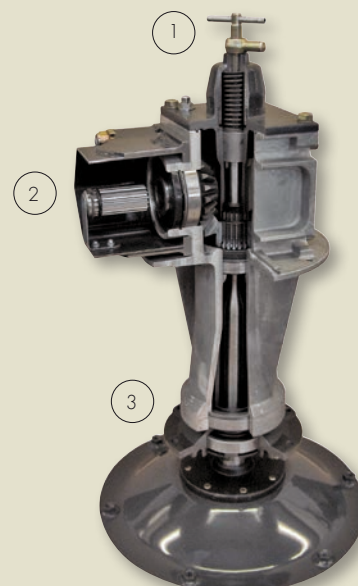
The cutting height is adjustable using a spindle attached to the top of the mower. This can be easily reached and infinitely adjusted. The saucers rotate on the ground, but remain in their raised position in order to prevent imbalances.

### OIL BATH DRIVE (2)

The gearing of the connecting shaft between the mower drums runs in an oil bath, which is the best way of protecting it from wear.

### SEPARATE DRIVES (3)

The split drive shaft prevents axial torsion and (peak) loads between the drum skirts and saucers.





PZ 321 F  
575 kg

PZ

321 F

# CREATING CLEAN AND NARROW SWATHS



The PZ 321 F model is equipped with direct drive. Turning the gearbox changes the direction of rotation. The input shaft, with a standard PTO height of 70 cm, is suitable for every size of tractor. With 1000 and 740 rpm integrated in the gearbox, no need for extra parts. Standard equipped with cw and ccw rotating direction and integrated freewheel clutch. A hydraulic folding device for the side covers is an optional equipment.





Hydraulic folding device for side covers

### SWATH DEPOSIT

The use of the two large outer drums and the two smaller inner drums has great benefits for the front mower: a clean swath formation, perfect ground adaptation and high throughput with little PTO power requirement.

The arrangement of the drums has the added advantage that it is fuel-saving. Both models are equipped with a set of swath discs as standard. An extra pair of swath discs is available on request. This allows you to deposit the grass in an optimum swath for any following machinery.

### HEADSTOCK

The PZ 321 F models is available in two versions: with fixed headstock or PENDELFLEX pendulum headstock. This ensures perfect ground contour following, even in the most difficult conditions. A floating headstock can also be supplied for extra comfort and security.



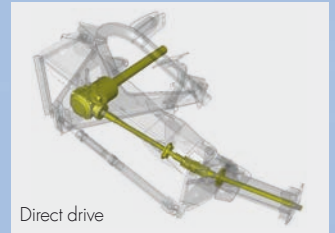
Fixed headstock



PENDELFLEX pendulum headstock

# NEW AND INNOVATIVE SUSPENSION SYSTEM!

The KUHN 320 LIFT-CONTROL has a direct driveline with integrated slipclutch and freewheel. The foldable front cover and FLEXPROTECT side covers provide easy access to the drums, ideal for the daily inspections and maintenance of the mower unit. The unit's modular design and use of strong aluminium components make the overall weight of the mower unit very low. A wide spreading kit which can deposit the crop across the whole mowing width is optional.



Direct drive



## THE KEY TO THE SYSTEM: KINETICS

The LIFT-CONTROL device is much more than just a suspension system with a nitrogen accumulator replacing the traditional spring.

The principal advantage of the LIFT-CONTROL system is derived from the exclusive way in which kinetic forces that act on the mower unit are utilized. KUHN engineers have succeeded in making an active and dynamic suspension system as opposed to the passive system commonly in use.

As the force on the mower unit increases, the LIFT-CONTROL system automatically will lighten and raise the unit.

The greater the force, the lighter the mower unit gets.

The clear benefits are:

- Constant ground pressure
- Non-stop safety breakaway
- Excellent terrain following
- Less soil in the crops
- Minimize torn up turf

## ADJUST PRESSURE EASILY AND ACCURATELY

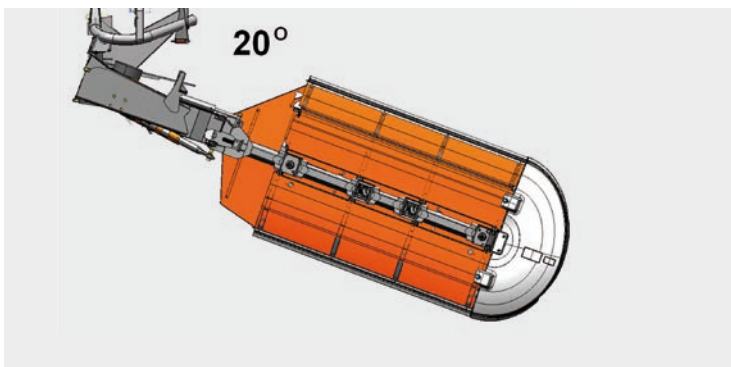
Through the accumulators, the ground pressure can be adjusted with great precision to the harvesting conditions, easily from the tractor seat. Therefore, on wet land minimal pressure on the ground prevents the fodder from becoming clogged and soiled. Lateral force, wear on the drums and tensile strength will be significantly reduced.







When hitting an obstacle the complete mower unit will pivot Hydro-pneumatic back- and upwards by the use of LIFT-CONTROL. The hinge point of the mower is at the left side of the tractor instead of the middle, this way all drum are optimal protected (also the ones closest to the hinge point, because of added space between hinge point and first drum).



For stable transport the machine has a transport position of 120°, the weight of the machine is placed more evenly between the rear wheels. This increases the safety and comfort in transport significantly, tractor lights are always good visible. A renewed geometry of the between frame enables a low transport height, 3.6 m headway with a ground clearance of 40 cm. And in working position a normal ground distance, with a ground clearance of 50 cm.



The between frame always has the optimum height in every position: Low enough in transport and high enough in working and headland position.

# EASY TOWING AND HIGH OUTPUT

If you want to mow wide working widths, the PZ 960 is the right mower combination for you. With its two mower units (of the PZ 320), mowing up to a width of 8.95 m is possible with the PZ 960 front and rear combination. Farms with tractors in the 74 to 110 kW/100-150 hp range can now achieve maximum mowing width, and therefore the highest work rates.



## **SIMPLY IMPRESSIVE: THE PZ 960 FRONT AND REAR COMBINATION**

The two rear units of the mower combination are built from a tested and proven design. With the legendary drum design of more than 25,000 front and rear mounted mowers so far sold; these mower units have proven themselves in real, tough operating conditions. One special feature is its arrangement of mower drums: Large outer drums and small inner drums produce a swath form to match intake and follow the contours of the land perfectly. The freely rotating saucers make this mower very easy to tow.

# UT!



Independent lifting. The PZ 960 drum mower rear combination is standard equipped with a multifunctional hydraulic valve.

### LIFT-CONTROL

The PZ 960 is fitted as standard with a hydraulic safety break back system. On hitting an obstacle, the mower units move upwards and backwards, independently of each other. This hydraulic safety break back system also controls the ground pressure hydro pneumatically.



More information about the LIFT-CONTROL system can be found at the PZ 320 LIFT-CONTROL pages.



With the help of an attachment kit for the front mounted mower (special equipment), the PZ 960 can be used as a reverse drive combination.

### ADJUSTABLE WORKING WIDTH AND OVERLAP

The working width of the mower units can be set in three levels: 8.40 m, 8.65 m and 8.95 m. This has the advantage that you can use front mower units of different working widths, which in turn means that you can increase the overlap in hilly conditions.



Three different working widths.



### COMPACT DESIGN FOR BEST WEIGHT TRANSFER

The PZ 960 has a weight of 1900 kg. With one front mounted mower and two mowers attached to the rear of the tractor, this mower combination ensures an excellent weight transfer for the best manoeuvrability in sloping terrain.

For a road transport width of less than 3.00 m, the mower units are swung upwards using hydraulic cylinders.



# EFFICIENT MOWING WITH REDU



Removed rotor



FREE-FLOAT suspension

## 2-SPEED CONVERTER

The PZ 320 C and PZ 320 FC have a two-level lever change gearbox for conditioner speeds of 900 or 650 rpm. You can choose between intensive conditioning or low fuel consumption if the grass needs only light conditioning. The conditioner rotor can be removed with just a few hand movements. In this way, the farmer can use the mower unit with or without a conditioner, depending on the working conditions.



## TRANSPORT POSITION

The PZ 320 C is swung upwards hydraulically through 125° for transport. The central and low gravity point of the mower in transport position results in outstanding weight distribution during road transport. Tractor lights are always good visible.



# REDUCED DRYING TIMES!



FREE-FLOAT suspension

## FREE-FLOAT ATTACHMENT

With the FREE-FLOAT suspension concept of the PZ 320 C and PZ 320 FC, KUHN has ensured that the mowers follow the contours of the land in the way that you always wanted. The mowing unit is able to independently float and is hydraulically adjustable, to give more precise ground contour following. Giving it the best impact protection imaginable, since the mower unit can move upwards and backwards. With the integrated telescopic connection and parallel attachment, the PZ 320 FC front mower unit can easily adjust to any unevenness and every contour of the ground both lengthways and crossways. No damage to the stubble! This attachment provides extra security when it comes into contact with obstacles.

## HYDRAULIC SUSPENSION

The ground pressure on the PZ 320 C and PZ 320 FC can be adjusted hydraulically. The operator will find this system easy and uncomplicated to use.





## Specifications

	PZ 170	PZ 190	PZ 220	PZ 270	PZ 300	PZ 320	PZ 960
Working width	165 cm	185 cm	210 cm	265 cm	295 cm	310 cm	840/865/895 cm
Transport width	140 cm	150 cm	160 cm	180 cm	200 cm	230 cm	300 cm
Hitch	cat. I+II		cat. II				
Number of drums	2		4			8	
Number of blades	6	8	10	12		24	
Cutting height adjustment	spacers			spacers		continuously	
Quick change blades	◆						
Swath discs	(1x) ◇		(2x) ◇				
Hydraulic folding cylinder	◇		◇*	◇*	◆		
PTO speed (min <sup>-1</sup> )	540		540 ◆ / 1000 ◇				1000
Wheels	-						
Weight	380 kg	420 kg	580 kg	725 kg	780 kg	800 kg	1900 kg
Necessary hydraulic tractor equipment	-				-	2+1	3
Theoretical PTO power requirem.	20 kW (27 hp)	25 kW (35 hp)	30 kW (40 hp)	40 kW (55 hp)	47 kW (65 hp)	51 kW (70 hp)	85 kW (115 hp)

◆ = standard equipment   ◇ = optional equipment   - = not available   \* Further options such as headland and swivel cylinder available.



## Specifications

	PZ 270 F	PZ 300 F	PZ 321 F	PZ 320 FC	PZ 320 C	TC 320
Working width	265 cm	295 cm	310 cm		180 cm	
Transport width	255 cm	285 cm	300 cm		255 cm	
Hitch	cat. II + A-frame ISO 11000-2 (cat. II)				cat. II + III	cat II
Number of drums	4					-
Number of blades	10	12	12		-	
Cutting height adjustment	continuously					-
Quick change blades	◆					-
Swath discs	(2x) ◆ / (2x) ◇		-	-	-	
Hydraulic folding cylinder	-	-	-	-	◆	-
PTO speed (min <sup>-1</sup> )	1000 ◆ / 540 ◇ / 740 ◇	1000 ◆ / 540 ◇ / 740 ◇	1000 ◆ / 740 ◇	1000		540 ◆ / 1000 ◇
Wheels	-					6.00-9 6PR
Weight	585 kg	655 kg	575 kg	950 kg	1000 kg	475 kg
Necessary hydraulic tractor equipment	-			1	2+1	-
Theoretical PTO power requirem.	37 kW (50 hp)	44 kW (60 hp)	51 kW (69 hp)	59 kW (80 hp)	66 kW (88 hp)	18 kW (25 hp)

◆ = standard equipment   ◇ = optional equipment   - = not available   \* Further options such as headland and swivel cylinder available.

PZ

Series

# FIND THE KUHN DRUMMOWER, WHICH IS PERFECTLY ADAPTED TO YOUR NEEDS!

## PZ Series

Models	PZ 170	PZ 190	PZ 220	PZ 270	PZ 300	PZ 320	PZ 960
Working width	165 cm	185 cm	210 cm	265 cm	295 cm	310 cm	840/865/895 cm
No. of drums	2	2	2	4	4	4	8
Models	PZ 270 F	PZ 300 F	PZ 321 F	PZ 320 FC	PZ 320 C	TC 320	
Working width	265 cm	295 cm	310 cm	310 cm	310 cm	180 cm	
No. of drums	4	4	4	4	4	-	

## CHECK OUT THE WHOLE KUHN DISK MOWER RANGE



1



2



3



4



5



6

1. Front Mounted Disc Mower Conditioners - 2. Horizontal Fold Disc Mowers - 3. Trailed Disc Mower Conditioners - 4. Triple Gang Disc Mowers Conditioners - 5. Triple Gang Disc Mowers - 6. Vertical Fold Disc Mowers.

### KUHN NORTH AMERICA, INC.

Corporate Headquarters - 1501 West Seventh Avenue  
P.O. Box 167 - Brodhead, WI 53520-0167 USA  
Phone : (608) 897-2131 - Fax : (608) 897-2561  
[www.kuhnnorthamerica.com](http://www.kuhnnorthamerica.com)

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[www.kuhn.com](http://www.kuhn.com)

### KUHN FARM MACHINERY PTY. LTD

313-325 Foleys Rd - Deer Park, 3023, Victoria - Australia  
[www.kuhn.com.au](http://www.kuhn.com.au)

### United Kingdom KUHN FARM MACHINERY (U.K.) LTD

Stafford Park 7 - TELFORD - SHROPSHIRE TF 3 3 BQ  
Phone : TELFORD (01952) 239300/1/2 - Fax : (01952) 290091  
[www.kuhn.co.uk](http://www.kuhn.co.uk)

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