



*Kersten Maschinenfabrik*

# *Product Catalogue*

## *Municipal technology*



## Contents

<b>3</b>	<b><i>History</i></b>
<b>4</b>	<b><i>KEMA—This is what sets us apart</i></b>
<b>5</b>	<b><i>Advantages of double-blade mowing technology</i></b>
<b>6</b>	<b><i>Double-blade system</i></b>
<b>7</b>	<b><i>Comparison of the Bidux and BiduxX systems</i></b>
<b>8-9</b>	<b><i>Product overview of municipal technology</i></b>
<b>10-12</b>	<b><i>F series mowers</i></b>
<b>14-17</b>	<b><i>FK series mowers</i></b>
<b>18-19</b>	<b><i>FKL series mowers</i></b>
<b>20-21</b>	<b><i>FSR series mowers</i></b>
<b>22-25</b>	<b><i>H series mowers</i></b>
<b>26-27</b>	<b><i>Belt rake</i></b>
<b>28</b>	<b><i>Rivet press AAP300</i></b>
<b>29</b>	<b><i>Blade sharpener</i></b>

In order to tailor our machines to our customers' needs, we are constantly expanding our product range and developing our existing machines further. As the manufacturer, we therefore reserve the right to make technical changes and further developments. For this reason, the photos and illustrations shown here may differ from the actual designs. Errors excepted.



## History

### **1918**

Founded in 1918 as an agricultural machinery company

### **1965**

Specialisation in sales and service for municipal equipment  
Start of welding and contract work

### **1972**

Expansion of sheet-metal forming operations  
Production of complete assemblies for industry

### **From 1986**

Development and construction of attachments to complete the sales programme  
Development of hand-guided carrier vehicles

### **2010**

Licensing of production to Kersten Maschinen GmbH

### **2013**

Insolvency of Kersten Maschinen GmbH  
Division of the business units

### **2014**

New Development department established with extensive CNC machine tool park

### **2018 - Kersten's 100th anniversary**

Takeover of production and distribution of double-blade mowing technology from the Kunzelmann company based in Vogtsburg, Germany  
Our family business celebrates its 100th anniversary

### **2019**

Product maintenance of the F and H series  
Presentation of the FK series for municipal applications

### **2020**

Introduction of the front butterfly mower FX with working widths up to 9.65 m

### **2021**

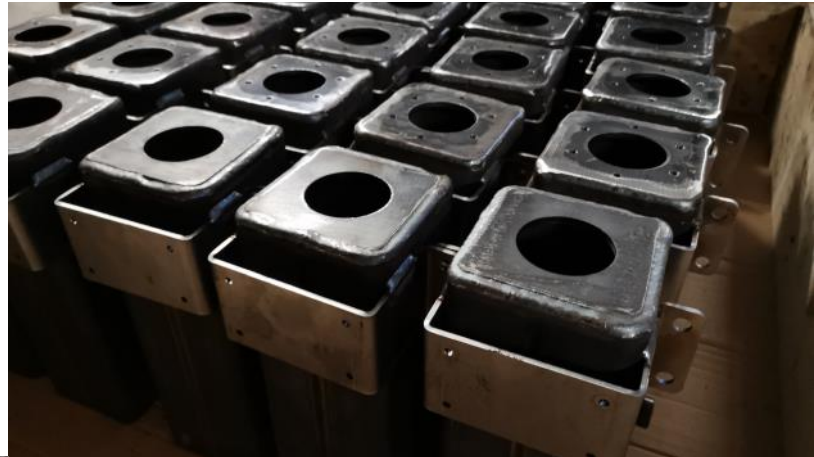
Expansion and extension of the production area for double-blade mowing technology to over 1,850 m<sup>2</sup>  
Introduction of the FKL and FSR series



## KEMA - This is what sets us apart

Since the takeover of Kunzelmann, we have adapted our production to the manufacture of double-blade mowers and have expanded continuously.

"Made in Germany", a special feature of our machines is their high percentage of in-house production of over 80%.



Our extensive CNC machinery includes turning, milling, bending and welding. The high percentage of in-house production allows us to meet our high demands on quality and short delivery times. For sheet-metal laser cutting and surface finishing, we work closely with specialised regional partners.

In order to achieve the shortest possible delivery times, we pre-produce the individual components and assemblies throughout the year. These are then assembled according to your configuration. This enables us to implement a wide range of different working widths and configurations. This is particularly important in order to adapt the mowers exactly to your requirements.



Our high level of in-house expertise gives us a measure of flexibility when it comes to responding to product changes and further developments.

Especially for the further development of our machinery, we work in close contact with the end user to create practical solutions.



## Advantages of double-blade mowing technology

With a double-blade mower, two blades run in opposite directions to each other. The cutter bar with an unequal blade pitch 70 / 84 mm and CARBODUX blades guarantees a high-quality cut and long blade life.

The combination of a comparatively low power requirement and a high mowing speed enable a high area coverage with low fuel consumption. The engine size of the carrier vehicles can be significantly reduced and mowing can be carried out at low engine speeds.

All our mowers are equipped with the latest **BiduxX system** as standard. Details of the difference between the old Bidux system and the new **BiduxX system** can be found on our website at [www.kersten-maschinenfabrik.de](http://www.kersten-maschinenfabrik.de).

### *Economical*

- improved regrowth due to clean cut
- low power requirement of 2-2.5 kW per metre of working width
- mowing speeds up to 12 km/h
- even and smooth placement of mown crop and therefore improved drying behaviour

### *Ecological*

- strong protection of meadow fauna
- low soil pollution due to low dead weight of the mowers and smaller carrier vehicles
- ecologically acknowledged mowing technology

### *Oscillating*

- no stone chipping, as there are no rotating blades
- clean forage, heaps of soil, etc. are not dispersed in the mown crop
- suitable for special applications in water, etc.



## Optimum use of the double blades

### *Correct cutting height:*

- Cutting height adjustment between 5-15 cm via different skids mounted under the bars.
- Higher cutting heights (over 8 cm) ensure longer blade life and greater protection of insects and amphibians



### *Regular maintenance of the blades:*

- The blades must be re-sharpened regularly
- The sooner the blades are sharpened, the less they need to be sharpened to be sharp again; regular sharpening increases the life of the blades
- Regular greasing of the drives and the pots of the guide arms
- Before fitting the blades, check that they are aligned so that there are no gaps between them.



### *Correct blade and motor speed*

- Rule of thumb: Speed (km/h) x 100 = appropriate blade speed.
- Maximum blade speed 1100 rpm (limited by a valve in the mowers as standard)
- Example of a standard front PTO:  

With a 1000 PTO at 680 rpm, the blade speed is already 1000 rpm and the engine speed of the carrier vehicle is approx. 1300-1400 rpm.
- If the mower is driven by the tractor's hydraulic system, the engine speed must be adjusted to the oil flow rate; in this case, the mower can be adapted to the carrier vehicle in advance.
- A reduced engine speed leads to longer blade life and reduced fuel consumption by the carrier vehicle.



## Comparison of Bidux and BiduxX systems

Due to positive experiences in the past, we have decided to change our mowers from the previously known Bidux to the new BiduxX system of cutter bars.

### Advantages of BiduxX compared to Bidux:

- Significantly more area coverage
- Blade allows 100% geometrical re-sharpened
- Blade 100% as sharp as new - after every sharpening
- Blade with 70% greater re-sharpened surface = longer useful life
- Blade can be re-sharpened 100% by machine

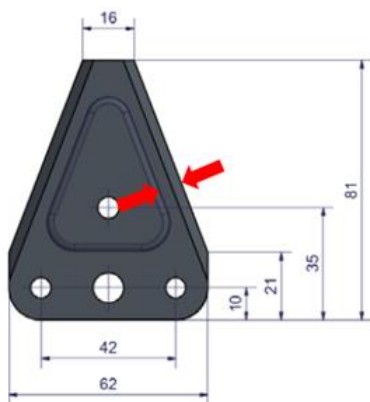
In the following, we will show you the most important differences between the two systems:

#### Bidux system

bidux<sup>SYSTEM</sup>



Bidux series blade

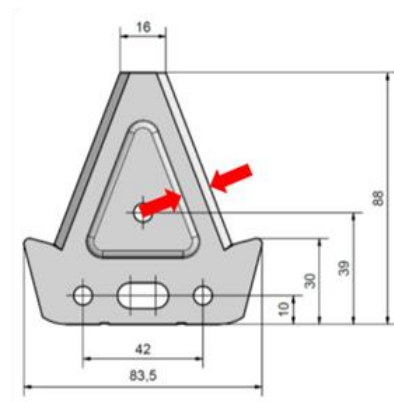


#### BiduxX system

bidux<sup>SYSTEM</sup>



BiduxX lower cutter blade,  
maintenance and surface-optimised



Regrinding area Bidux = 5 mm BiduxX = 9 mm (red arrows).



The new blade geometry allows the guaranteed re-sharpened of the entire active cutting edges of the upper and lower blade for the first time! (yellow area)

## Front mowers — Front side mowers

### F series front mowers

Page 10-12

- working widths 2.00 m - 3.60 m, from 230 kg
- large passage height for high material throughput
- extensive swathing possibilities
- for tractors starting at 40 HP



### FK series front mowers

Page 14-17

- working widths 1.70 m - 2.35 m, from 215 kg
- low mounting height for better overview
- short centre of gravity
- extensive mounting and drive options
- suitable for almost all lighter and lower carrier vehicles



### FKL series front mowers

Page 18-19

- working widths 1.35 m and 1.70 m, from 140 kg
- very lightweight and low design
- for carrier vehicles with low front lifting power



### FSR front side mowers

Page 20-21

- working widths 1.10 m - 2.35 m, from 270 kg
- front-mounted with right-hand delivery
- hydraulic drive with 75 cm side shift
- for roadside and ditch maintenance





## Rear-mounted mowers — Belt rakes — Service equipment



**H series rear mowers**  
Page 22-25

- working widths 1.70 m - 3.60 m, from 315 kg
- suitable for both small and large carrier vehicles

**Belt rake**  
Page 26-27

- working widths 1.80 m - 2.45 m, from 220 kg
- compact attachment for small and narrow areas
- robust and heavy-duty design
- front- and rear-mounted



**Riveting press AAP300**  
Page 28

- For blade maintenance
- Riveting and unriveting of individual blades
- Manually operated
- For nearly all mower blades

**Grinding machines**  
Page 29

- MSR100
- MSA300
- MSA400









## F series front mowers

Our F series front mowers are driven hydraulically by the carrier vehicle or a separate oil supply and PTO drive. The mowers are suspended in the front hydraulics of the carrier vehicle and mechanically relieved via springs or via a hydraulic carrying device of the front hydraulics.

In addition to an efficient oil guide and high-quality hydraulic components, this mower series has the following special features:

- working widths from 2 m to 3.6 m (BiduxX cutter bars)
- hydraulic overload protection
- speed limiting
- large passage of approx. 107 cm (diagonal)
- grass cutting discs that cut the crop and ensure a clean crop flow
- mowing height adjustment via different skids between 5-15 cm
- pendulum suspension for horizontal contour adjustment



Designation - Weight				Working width	Outer width
Hydraulically driven		PTO-driven			
F-200-H	230 kg	F-200-Z	260 kg	2.00 m	2.25 m
F-235-H	240 kg	F-235-Z	290 kg	2.35 m	2.60 m
F-275-H	290 kg	F-275-Z	325 kg	2.75 m	3.00 m
F-320-H	315 kg	F-320-Z	350 kg	3.20 m	3.45 m
F360-H	335 kg	F-360-Z	390 kg	3.60 m	3.85 m

When driven by the hydraulics of the carrier vehicle, approx. 30 l/min of circulating oil and a pressure-free return flow are required.

With the PTO-driven version, an operating speed of 650 rpm is required for full mowing performance with a 1000 front PTO. Other speeds can also be realised, As well as left-turning or right-turning PTOs.



## Additional equipment

Our F series front mowers are already fully operational in series production. Depending on requirements, the mower can be equipped with various additional equipment. For better visibility in road traffic, warning signs with or without navigation lights can be fitted. If the crop is to be placed directly on the swath, there are various options for this.

### Swathing equipment:

- Swath plates or swath wheels (adjustable).

Additional equipment Swath wheels	Clearing width	F-200-H/Z	F-235-H/Z	F-275-H/Z	F-320-H/Z	F-360-H/Z
Swath plates	60 cm	✓	✓	✓	✓	✓
Set of 2 swath wheels	up to 115 cm	✓	✓	✓	✓	✓
Set of 3 swath wheels	up to 170 cm	-	-	✓	✓	✓
Set of 4 swath wheels	up to 225 cm	-	-	-	✓	✓

The swath width can be calculated from the working width minus the clearing width.

### Warning signs:

- better visibility
- Optionally including navigation lights

### Pressure gauge:

- Wear indicator
- Indicates the power consumption of the drive

### Pipe bracket:

- For extremely high crops starting at 1.50 m
- Pushes the crop forward so that it does not fall onto the carrier frame or the carrier vehicle

### Serrated upper blade:

- For coarse, structured cuttings, such as reeds, annual addition etc.





The background of the slide is a close-up photograph of a lawnmower's cutting deck. Several metal blades are visible, some of which are cutting through green grass. The blades are arranged in a row, and the grass is being cut into small pieces. The image is slightly blurred, giving it a sense of motion.

**Clean cut?**  
**With the KEMA**  
**double blade without**  
**Problems!**









## FK series front mowers

Our FK series front mowers are driven hydraulically by the carrier vehicle or a separate oil supply and PTO drive.

The FK series has the following special features:

- working widths from 1.70 m to 2.35 m (BiduxX cutter bars)  
- shorter centre of gravity
- lower mounting height
- Attachment options to a wide range of carrier vehicles, municipal tractors, crawler mowers, municipal implement carriers (e.g. Holder, John Deere, Kubota etc.)
- A wide variety of solutions for sometimes highly confined installation spaces and different attachment options

Series equipment:

- hydraulic overload protection
- speed limiting
- large passage of approx. 77 cm (diagonal)
- grass cutting discs that cut the crop and ensure a clean crop flow
- mowing height adjustment via different skids between 5-15 cm
- pendulum suspension (ball or pin) for horizontal contour adjustment

Designation - Weight				Working width	Outer width
Hydraulically driven		PTO-driven			
FK-170-H	215 kg	FK-170-Z	260 kg	1.70 m	1.95 m
FK-200-H	230 kg	FK-200-Z	290 kg	2.00 m	2.25 m
FK-235-H	240 kg	FK-235-Z	325 kg	2.35 m	2.60 m

When driven by the hydraulics of the carrier vehicle, approx. 30 l/min of circulating oil and a pressure-free return flow are required.

With the PTO-driven version, an operating speed of 650 rpm is required for full mowing performance with a 1000 front PTO. Other speeds can also be realised, As well as left-turning or right-turning PTOs.

## Additional equipment

Our FK series front mowers are already fully operational in series production. Depending on requirements, the mower can be equipped with various additional equipment. For better visibility in road traffic, warning signs with or without navigation lights can be fitted.

### Swathing equipment:

- Swath plates

The swath width can be calculated from the working width minus the clearing width.

Additional equipment Swath wheels	Clearing width	FK-170-H/ Z	FK-200-H/ Z	F-235-H/Z
Swath plates	60 cm	✓	✓	✓



### Warning signs:

- better visibility
- Optionally including navigation lights

### Pressure gauge:

- Indicates the power consumption of the drive

### Pipe bracket:

- For extremely high crops starting at 1.50 m
- Pushes the crop forward so that it does not fall onto the carrier frame or the carrier vehicle



### Serrated upper blade:

- For coarse, structured cuttings, such as reeds, annual addition etc.





## FK attachment options

Compared to F series mowers, which are generally mounted on carrier vehicles with similar attachment areas (Cat 1 or 2, 1000 front PTO), the attachment areas of the municipal carrier vehicles are much more diverse.

For carrier vehicles with powerful hydraulics, the volume flow from the mowers can be adjusted in such a way that as little reduction of the oil flow rate as possible is required to prevent overheating. On the other hand, it can also be designed so that the carrier vehicle can be operated at reduced engine speed.

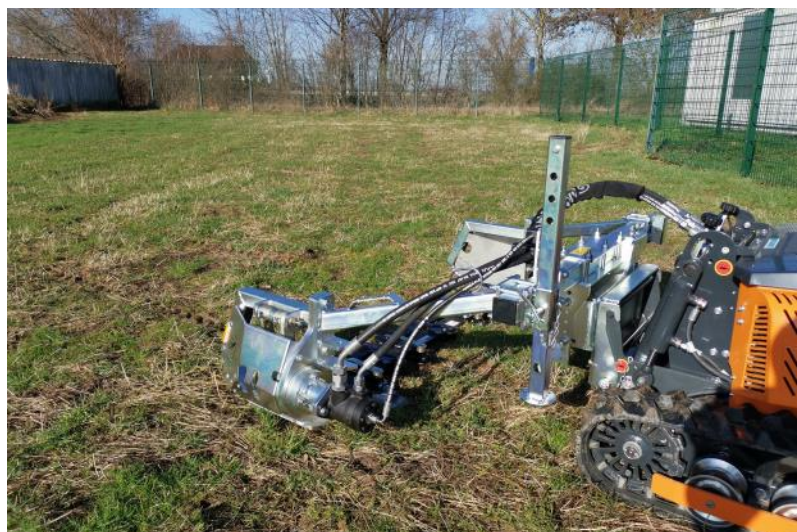
PTO-driven mowers entail the challenge of sometimes very confined installation spaces as well as highly varying PTO speeds. Our modular system makes various configurations possible, such as PTO speeds from approx. 300 rpm to over 2500 rpm.

**Our aim is to meet the high demands on "attachability", operational safety and user-friendliness.**





**NEW**





## FKL series front mowers

Our FK series front mowers are driven hydraulically by the carrier vehicle.

The FKL series has the following special features:

- working widths from 1.35 m to 1.70 m (BiduxX cutter bars)
- low dead weight from 140 kg
- short centre of gravity
- lower mounting height
- Attachment specially for very small/lightweight carrier vehicles



Series equipment:

- hydraulic overload protection
- speed limiting
- mowing height adjustment via different skids between 5-15 cm
- pendulum suspension for horizontal contour adjustment

Designation - Weight		Working width	Outer width
FKL-135-H	140 kg	1.35 m	1.60 m
FKL-170-H	170 kg	1.70 m	1.95 m





**NEW**





## FSR front side mower

Our FSR series front side mowers are driven hydraulically by the carrier vehicle. The FSR series has the following special features:

- working widths from 1.10 m to 2.35 m (BiduxX cutter bars)  
- compact design with an outer width of 1.25 m and a length of 1.20 m
- approx. 75 cm hydraulic side shift
- hydraulic lift with floating position and adjustable cutter bar relief
- pivot range at an inclination of +90° to -50°
- mechanical collision protection device (adjustable)
- speed limitation of the cutter bar
- hydraulic overload protection
- Attachment options to a wide range of carrier vehicles, municipal tractors, crawler mowers, municipal implement carriers, etc.
- mowing height adjustment via different skids between 5-15 cm
- bar back reinforcement

When driven by the hydraulics of the carrier vehicle, approx. 30 l/min and a pressure-free return flow are required for the mower drive.

The lift and the hydraulic side shift can be controlled via the control units of the carrier vehicle or via a separate control box installed in the carrier vehicle.

Designation - Weight		Working width	Transport height
FSR-110	270 kg	1.10 m	1.70 m
FSR-135	275 kg	1.35 m	1.95 m
FSR-170	280 kg	1.70 m	2.35 m
FSR-200	290 kg	2.00 m	2.60 m
FSR-235	300 kg	2.35 m	2.95 m









## H series rear mowers

Our H series rear mowers boast a sturdy design and an adjustable three-point hitch attachment.

Like our front mowers, our rear mowers are driven hydraulically by the carrier vehicle or a separate oil supply and PTO drive.

Our rear mowers have the following special features:

- working widths from 1.7 m to 3.6 m (BiduxX cutter bars)
- Cat 1 and Cat 2 attachment frames
- hydraulic overload protection
- mechanical collision protection
- speed limiting
- bar back reinforcement
- mowing height adjustment via different skids between 5-15 cm
- sliding base frame for adjustment to the vehicle width



When driven by the hydraulics of the carrier vehicle, approx. 30 l/min of circulating oil and a pressure-free return flow are required.

With the PTO-driven version, both the speed and the direction of rotation of the PTO shaft can be configured.

Designation - Weight				Working width	Transport height (road travel)
Hydraulically driven		PTO-driven			
H-170-H	315 kg	H-170-Z	345 kg	1.70 m	2.20 m
H-200-H	320 kg	H-200-Z	350 kg	2.00 m	2.50 m
H-235-H	330 kg	H-235-Z	360 kg	2.35 m	2.85 m
H-275-H	340 kg	H-275-Z	370 kg	2.75 m	3.25 m
H-320-H	350 kg	H-320-Z	380 kg	3.20 m	3.70 m
H-360-H	360 kg	H-360-Z	390 kg	3.60 m	<b>4.10 m</b>



### Additional equipment

#### *Swathing equipment:*

- Swath plates

#### *Pressure gauge:*

- Wear indicator
- Indicates the power consumption of the drive

#### *Serrated upper blade:*

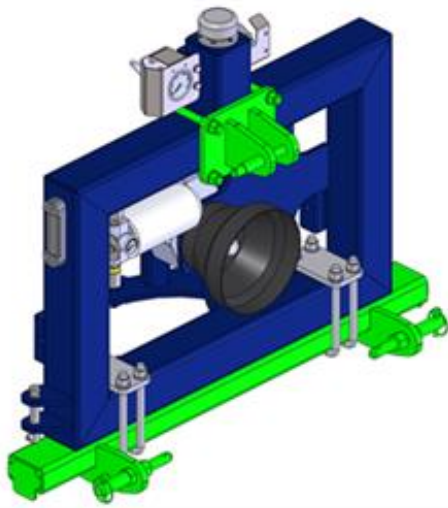
- For coarse, structured cuttings, such as reeds, annual addition etc.



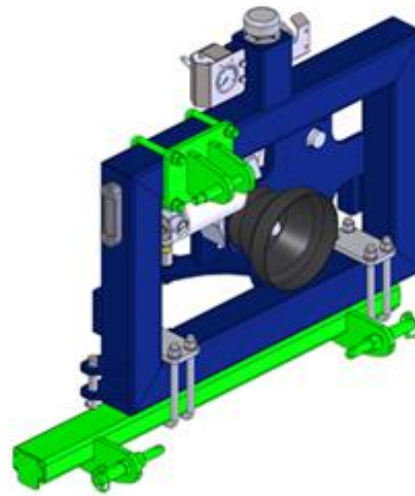


## Special features of KEMA rear mowers

A special feature of our rear mowers is the adjustment rail used to mount the base body of the mower. This allows the mower to be individually adjusted to the width of the carrier vehicle or the front mower. This makes the mower suitable for wide tractors with additional tyres, but it can also be used for smaller municipal vehicles.

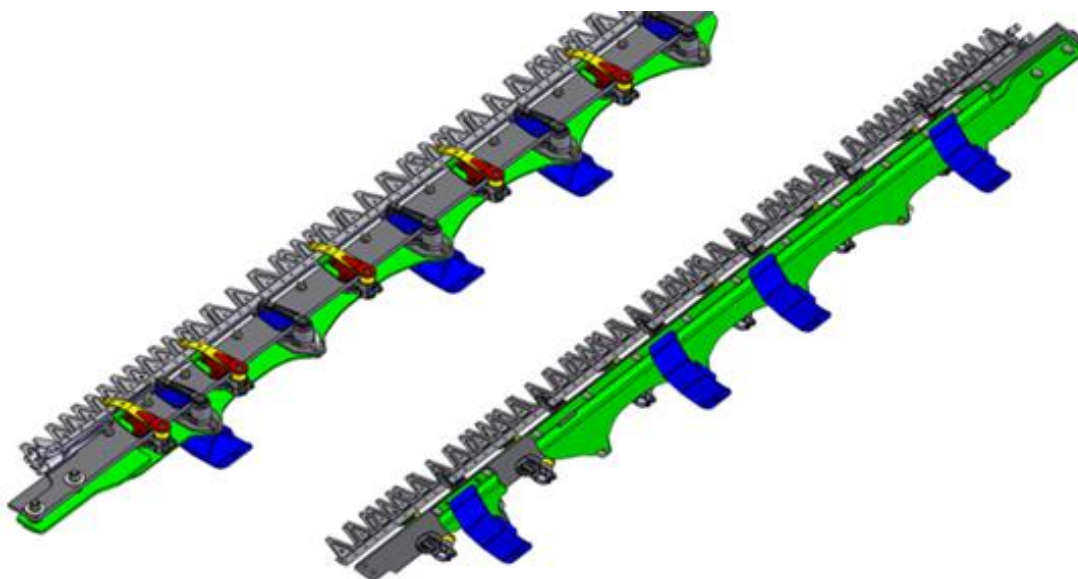


Rail centred



Rail adjusted

Another important feature of our rear mowers is the standard bar back reinforcement (green in the photo below). Particularly when the cutter bar is lifted, the back of the bar is subjected to a great deal of stress, which is absorbed by the reinforcement bar. In addition, the mounts for the skids are integrated into the reinforcement.









## BRF-BRH series belt rakes

Our belt rakes are characterised by airy swathing, high working speeds and clean forage. They are very lightweight, short and adapt very well to the ground, especially on truncated terrain.

Like our double-blade mowers, the belt rakes are available for both front and rear mounting. The belt rakes can be operated via the tractor's hydraulic system as well as front or rear PTO.

In principle our belt rakes are always mechanically driven via the PTO shaft, but they can also be driven via the hydraulics of the carrier vehicle using a hydraulic slip-on motor. The hydraulic drive includes an overload protection and a speed limiter.

The belt rakes have the following standard equipment:

- 4 double rows of tines
- Height-adjustable push-out running wheels
- Adjustable swath former
- Height adjustable 3-point attachment

Designation - Weight				Working width	Outer width
Front-mounted		Rear-mounted			
BRF-185-H/Z	from 205 kg	BRH-185-Z	205 kg	1.85 m	2.05 m
BRF-200-H/Z	from 220 kg	BRH-200-Z	220 kg	2.00 m	2.20 m
BRF-225-H/Z	from 235 kg	BRH-225-Z	235 kg	2.25 m	2.45 m
BRF-245-H/Z	from 250 kg	BRH-245-Z	250 kg	2.45 m	2.65 m

## Additional equipment

### *Warning signs:*

- better visibility in road traffic
- Optionally including navigation lights

### *Hydraulic swath former:*

- Swath former can be extended and retracted using a control unit





If the blades of the mower cutter bar are worn and can no longer be re-sharpened, or if individual blades are damaged or loose, it is possible to refit the cutter bar with new blades. It is important for blades to be riveted properly. When riveting by hand, the back of the cutter bar on which the blades are mounted may be damaged and deformed. For a good cutting result, it is essential that the back of the cutter bar remains completely straight.

Our hand-operated riveting and unriveting press is the ideal accessory for your double-blade mowers. It enables the simple replacement of individual blades on almost all commercially available finger bar and double-blade cutter bars. The blades can be replaced in the following four steps:

1st step: Shear off the old blade

2nd step: Press out the sheared rivets

3rd step: Rivet on the new blade

4th step: Smooth the rivet curve on the underside of the blade



An important issue with the double-blade mowing technique is blade sharpening. To ensure the long life and durability of the blades and a good cutting quality, the blades must be sharpened properly. When grinding by hand and with an angle grinder, it is difficult to get the correct angle of the cutting edge. It is also important not to damage the back of the blade.

## MSA300 / MSA 400

The blade sharpener MSA boasts a sturdy design. The basic body is a galvanised trough that is either 3 meters (MSA300) or 4 meters (MSA400) in length. A speed-adjustable angle grinder is guided on this body. The angles and end stops are both adjustable, making the sharpener suitable not only for double blades, but also for other blades, such as hedge trimmers.

Key features:

- Adjustable blade holders, 4/5 pieces
- Continuous adjustment of all grinding angles, including scales
- Quick changer for 2 grinding angles
- Special ceramic grinding wheel
- Speed-adjustable angle grinder



## MSH100

Our grinding device MSH100 is a retrofit kit for standard speed-adjustable angle grinders with a grinding wheel diameter of 125 mm.

In addition to our double blades, other blades with a blade cutting angle of up to 40° can also be re-sharpened.

By adjusting the grinding angle and using the depth stop, the grinding results can be significantly improved compared to free-hand grinding.











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