



# **BiG M 450**

SP high-capacity  
mower conditioner





## BiG M 450

SP high-capacity mower conditioner

- Powerful and fuel efficient 449 hp Liebherr engine
- Large 9.95 m work width for maximum productivity
- Heavy-duty cutterbar with **SafeCut** blade protection





- Hydraulic running gear adjusts for more ground clearance
- **SilentSpace** cab offers maximum operator comfort



With the BiG M 450 KRONE presents another upgrade of its self-propelled mower. Offering huge work width, superior manoeuvrability, optimum weight distribution and tapping into enormous power reserves, BiG M 450 is the perfect mower for large and small fields, for flat and hilly land and for the most difficult soil conditions – a machine that excels in any conceivable application in any field in the world.

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# The **BiG M** concept

- Optimum weight distribution for great sward protection
- Enormous manoeuvrability based on a professional design
- Optional swath mergers
- Low centre of gravity for high stability
- 40 km/h road travel
- Best visibility and quickest changeovers

1996



## Premiere in 1996

BiG M was unveiled to the public on 20 May 1996. Featuring the well-proven EasyCut cutterbars, it offered a working width of 9.1 m and 300 hp engine power.



## BiG M 450

At Agritechnica 2017, KRONE introduced what was then the fifth generation of a BiG M mower. The mower conditioner received a comprehensive update and now offers a cutting width of 9.95 m. The new 6-cylinder, inline LIEBHERR engine with PowerSplit control develops 449 hp and has plenty of power in reserve.





### Big but very agile

Driven by wheel motors and turning through a 50° angle, BiG M is extremely easy to manoeuvre. and as such also offers great efficiency in small fields. An excellent front-rear weight distribution (64% : 36%) ensures that the self-propelled mower also copes perfectly in difficult terrain.



### Three into one will go

When the swathing hoods on both mowers are closed the augers feed the material from the sides, windrowing it into one central swath. When cutting along field edges you can also close just one hood to present a clean job to the following harvester.



### Quick and safe

Working at speeds of up to 25 km/h in the field and travelling at up to 40 km/h on public roads while the engine speed is reduced to 1250rpm, BiG M 450 offers particularly great operator comfort – courtesy of the hydro-pneumatic suspension on both axles. The running gear lowers hydraulically up to 15 cm to bring the transport height of the machine down to less than four metres.



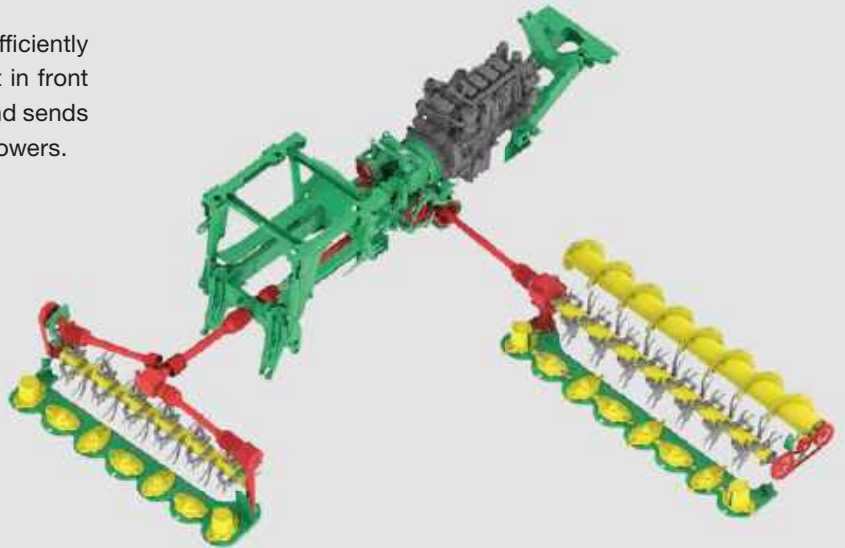
# The **mowers**

- Direct drive through Powerbands and driveshafts
- Stepless and hydraulic cutting height control
- Front mower with optional auto sideshift relative to the current steering angle
- DuoGrip centre-of-gravity suspension on the side mowers

The innovative KRONE BiG M 450 driveline allows operators to achieve work rates of more than 17 hectares per hour. The power flows from the axially mounted engine down the powerbands and driveshafts directly to the three mowers. And superior operator comfort comes from hydraulic cutting height control from the cab and fully hydraulic ground pressure control.

## Direct drivelines

All BiG M 450 engine power flows directly and efficiently to the three mowers. The transfer gearbox right in front of the axially mounted engine splits the power and sends it down belts and driveshafts to the individual mowers.



## Convenient set-up

Ground pressure and cutting height on all units are conveniently controlled from the cab. Operators can program two cutting heights and ground pressures to the system and select the setting from the joystick.





### DuoGrip

The side mowers are suspended in ball sockets in a centre-of-gravity system, which ensures a uniform ground pressure across the full working width. The side pulling forces are absorbed by two parallel arms. The design results in a large pivot range for consistently clean cuts in sloping fields and along ditches and verges.



### Controlled break-back

The standard break-back system allows the side mowers to swing to the rear when hitting an obstacle. Once the obstacle has been passed the mower returns to its working position.

### Stripeless cuts on slopes and in curves

The front mower is available with an optional sideshift function. After a sensor detects the current steering angle the mower moves hydraulically to the right or left and relative to the current position of the wheels. The feature eliminates the risk of striping when cutting in curves and on sloping fields.

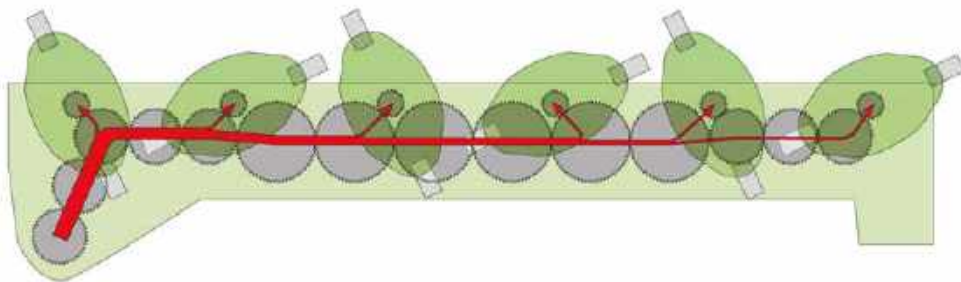




# The **EasyCut** cutterbar

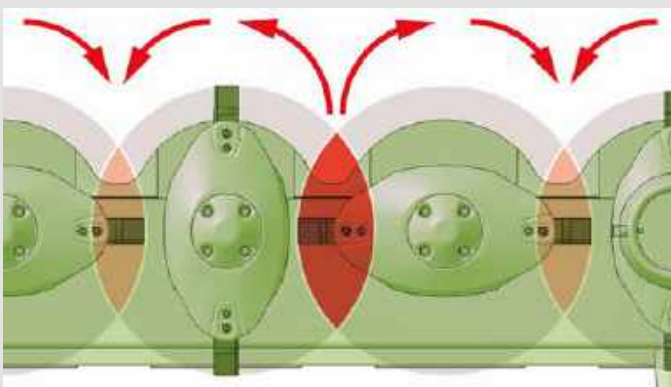
- Fully welded and permanently lubricated heavy-duty cutterbar.
- SafeCut shear-pin protection for each individual disc
- Satellite driveline smooths the power flow inside the cutterbar
- SmartCut system ensures a perfect cut
- Added protection from wear

The BiG M 450 sources its super sturdy disc mowers in heavy-duty specification from the well-proven EasyCut range. The power flow enters the mower from the rear through the gearbox and flows down a driveline of massive and quiet-running spur gears that drive the satellite gears and the discs. KRONE SmartCut implements a generous overlap of those discs that turn away from each other, which translates into a perfect cut. Meanwhile the SafeCut system protects the blade from damage caused by hitting an object.



## **Satellite driveline**

The KRONE satellite driveline is made up of massive spur gears that turn at reduced speeds for quiet running and reduced wear. The discs are arranged in a forward position that ensures clean cuts.



## **SmartCut for stripe-free cuts**

With some discs turning in pairs towards each other and others turning away from each other, it was necessary to redesign the degree of blade overlap to ensure cleanest cuts. For stripeless cuts in light and young crops, we have therefore increased blade overlaps on the discs turning outwards. In addition, the blades turning to the rear are now further apart to promote smooth flows of large volumes of crop.



## **Wide flotation skids**

Extra-wide skids minimize the ground pressure and give maximum protection to the sward. As a side effect, they also protect the cutterbar from damage. Optional high-cutting skids are also available and recommended in stony conditions.





#### **SafeCut**

Each disc on the mower has its own individual impact protection. When the blade hits an obstacle, the shockload is transferred to a roll pin which breaks. As a result, the disc moves 15 mm up on its threaded drive pin and clear out of the risk zone and away from the neighbouring discs.



#### **Quick blade changes**

Swapping blades is a matter of seconds – just use the spanner supplied.

#### **Minimised wear**

The blades rotate through a full 360 degrees avoiding obstacles and damage. The discs themselves are hard-faced to withstand wear more effectively.





# The conditioner

- High-performance conditioners for haulm crops
- Full-width conditioning
- V-type steel tines for intensive and gentle treatment
- Conditioning intensity is altered without tools

The KRONE CV conditioner ensures fast and uniform wilts at high throughputs. The conditioning intensity is set by selecting a rotor speed (700rpm or 1000rpm) and by tool-free adjustment the gap between the rotor and the baffle plate.



## Conditioner rotor with steel V-tines

The V-type steel tines on the 64cm diameter rotor feed the crop past an adjustable baffle plate which rubs the wax layer off the plants. The V-tines are made from hardened steel and are arranged at a steep angle, treating the material very intensively and pulling it effectively through the unit.



## Steplessly adjustable

The gap between the tines and the baffle plate is adjusted steplessly by means of this lever. The smaller this gap, the more intensive is the treatment.





### Side drive

The side mowers on BiG M 450 are powered by drive-shafts. A side-mounted gearbox offers a number of benefits: the conditioner rotors are not split but work effectively across the full machine width. By eliminating the central gearbox, which was previously mounted between the conditioner and the cutterbar, our developers have created extra clearance for more material to pass through at low power inputs.



### Adjusting the gearbox speed

Adjusting the intensity of the conditioning effect to the prevailing conditions is quick and easy as the operator changes the rotor speed on the side-mounted gearbox speed from 700rpm to 1000rpm or vice versa without using tools.





# The **swath mergers**

- Augers with fingertip-controlled hoods
- Augers ensure a clean and gentle crop feed
- Crops hardly touch the ground – minimum contamination
- Perfect swath presentation for the following harvesters

Cutting, conditioning and producing one single swath – BiG M 450 completes three tasks in one operation. With the augers forming an integral part of the side mowers, they deposit the material on the swath that was formed by the front mower without the material touching the ground at all, staying very clean and reducing a pass in the harvest chain.



## **Fingertip control**

The swathing hoods open and close conveniently from the cab, spreading the material across the cutting width or feeding it to the central swath that was formed by the front mower.



## **Thought-through**

Opened wide, the auger hoods present the material in a fluffy and uniform swath. BiG M 450 memorizes the previous setting of the hoods and retrieves it when the mowers lower into work. The new augers have 20% larger flights for higher throughputs and an even gentler crop feed.



## **Reliable and long-lasting**

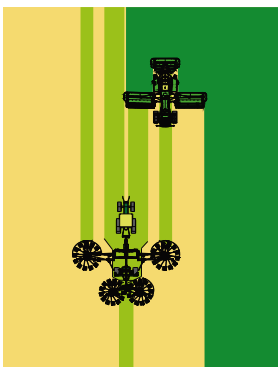
The massive swath merging augers are driven by strong and reliable belts.





### Spreading the material at full width

When the swathing hoods are open the material flows over the turning augers and spreads across the full machine width for uniform and fast wilting thereby eliminating one tedding pass.



### Independent swathing

Open one hood only and BiG M 450 swathes the material to one side. In one up-and-down pass the machine windrows 19.90 m into less than 13.00 m for easy follow-up with the four-rotor rake which groups it into one single swath – a system that makes perfect use of the following machines.

### Swathing

When both swathing hoods are closed the two augers feed the material directly to the central swath that was formed by the front mower – a strategy that substantially reduces crop loss and contamination and eliminates the raking pass.





# The ground drive and running gear

- Infinitely variable power transmission via wheel motors
- Reduced 1250 engine rpm in road travel for better fuel economy and ride comfort
- Hydro-pneumatic axle suspension for high operator comfort
- Hydraulic axle height control adjusts ground clearance to conditions

Wheel motors bring the power steplessly on the ground and make BiG M 450 fantastically easy to steer and manoeuvre. The axles boast hydro-pneumatic suspension for ultimate operator comfort and hydraulic height control, so that operators can flexibly adjust the ground clearance of the machine in field work and for road travel at reduced transport height.



## Agile and hard-wearing

The hydraulic wheel motors make BiG M 450 an extremely agile machine which manoeuvres easily also in small fields. Each wheel is driven by a swashplate motor and a set of planetary gears. Unlike traditional drivelines which use universal joints, this type of ground drive is very robust and hard-wearing.



## Plenty of underbelly room

The use of wheel motors eliminates axles that run close to the ground. In field mode, moreover, hydraulic rams automatically raise the running gear 15 cm, giving the machine an extremely generous ground clearance for work in high yielding crops.





#### Maximum ride comfort

All axles on the BiG M 450 have hydraulic height control and hydro-pneumatic suspension – features that offer operators an ultimate ride comfort both in the field and on public roads. For example, they can lower the running gear to bring the transport height to less than 4 m.



#### Road travel

The maximum road speed is 40 km/h which is generated at 1250 engine rpm. At the same time, engine speed is automatically controlled relative to the current ground speed and load. For example, the system reduces the engine speed when the machine is waiting at a traffic light or when it is approaching a junction, saving a great deal of fuel and reducing the load on the engine and the drives.



#### Tyres

BiG M 450 is clad with 800/65 R 32 (front) and 600/65 R 28 (rear) bar-tread flotation tyres as standard, which give the machine the necessary traction and protect the turf. Flotation Trac 800/60 R 32 (front) and 600/60 R 30.5 (rear) tyres from Vredestein are also available as an option for grassland applications. This tyre is very gentle on the sward.





# The engine

- 6-cylinder, 449 hp Liebherr engine, Emission Stage 4 compliant
- Long 1000-hour service intervals
- Extremely fuel-efficient thanks to **PowerSplit** engine control
- Automatic load limit control for maximum efficiency
- Mounted on silent blocks and therefore quiet running
- Large radiator with passive rotor for optimum temperature control

The 449 hp Liebherr engine features automatic engine control which tailors the output to the current load on the mowers. Consequently, BiG M 450 will use less fuel in lower-yield crops. A new load limit control system monitors the engine speed and reduces the ground speed when engine speed is very low. Mounted on silent blocks, the engine runs very quietly in all situations.



## Clean engine technology

The Liebherr engine that powers the BiG M 450 is Emission Stage IV compliant and uses SCR technology (Selective Catalytic Reduction) to achieve clean combustion. The technology injects urea into the exhaust stream upstream of the catalyst which converts the nitrogen oxides that develop during the combustion process into natural nitrogen and water. The fuel tank holds 780 litres and the urea tank 80 litres to last through long working days without the need for topping up.

## Power on demand

The KRONE PowerSplit engine control monitors the engine speed. In Eco mode the engine starts off at 1650 rpm and put out 354 hp. It changes into M mode when a higher output is detected. The output in M mode is 449 hp. Load limit control kicks in when engine speed droop is excessive. As output is adjusted automatically, consumption decreases noticeably.

## Smooth running

The engine and the transmission rest on silent blocks, which makes for quiet running and reduces the noise level.





#### **Optimum efficiency**

A new top-speed control system allows operators to make even more efficient use of their machine. The system reduces the ground speed automatically as soon as the engine is revving within a specific range and thereby ensures the cut is always perfect.



#### **Active radiator cleaner**

BiG M features an active radiator cleaning system, which comprises a rotary and fine-mesh screen that keeps debris out of the radiator. The rotating screen passes a suction fan that removes the debris from its surface. Generously dimensioned, the unit ensures the engine temperature is always in the optimum range.



#### **Optimum position**

Mounting the engine centrally between the rear and front axle brings a number of benefits: short drivelines to the mowers, an ideal 64%:36% front/rear weight distribution and a low centre of gravity.



## The cab

- Large window screens offer perfect all-round visibility
- Maximum seating and operator comfort
- 10-inch operator terminal with colour-display touch screen
- Optional LED package for maximum lighting
- Modern armrest with integral joystick

Mounted on hydro bearings, the SilentSpace cab is particularly quiet, offers plenty of space and an ergonomically designed environment. The standard specification level comprises a high-resolution 10-inch touch screen terminal where the operator enters and monitors all machine settings, an armrest with integral joystick, as well as climate control and an electric cooling box. More comfort is available from the optional LED package or the Premium comfort seat.



### Panoramic view

Plenty of glazing and slim posts make for excellent visibility of all mowers. The double floor ensures noise levels are reduced and a comprehensive line-up of work lights with optional LED lights on the roof and the panels turn night into day.



### Convenient steps

There are also offside steps now, so operators can clean the right windows conveniently. The steps are available with optional LED lights for safe access and exit at night.





#### **The cockpit**

The optional Activo Premium is a ventilated and heated seat from where all controls are in easy reach. The comfy seat ensures fatigue-free work during long days in the field. The large 10-inch terminal records all major machine data and displays them on the high-definition colour screen, where the operator enters many of the machine settings. A reverse drive camera with display screen is an option for perfect overview of all elements.



#### **Fingertip control**

The ergonomic joystick is integrated in the armrest on the operator seat. Its controls are clearly marked for easy use. The joystick offers convenient control of all machine functions simply by pressing a button, and four of them are customizable to suit individual operator needs.



## Service and maintenance

- Sensor-based auto lubrication
- 1000-hour or 1-year engine service intervals
- Optimum accessibility through wide opening covers
- Plenty of storage space for tools and parts
- Large 780-litre diesel and 80-litre urea tanks

BiG M 450 is specified with many details which make service and maintenance a lot easier and reduce the time spent on these jobs. The sensor controlled automatic lubrication system supplies oil to most greasing points.



### Engine service

The large bonnet opens wide for easy access to the engine and convenient servicing and inspection. The service intervals are particularly long – 1000 hours or one year.



### Plenty of fuel in store

The large 780-litre fuel and 80-litre urea tanks do not call for many refill stops. The filler necks of both tanks are readily accessible via safe steps and a platform.



### Auto lubrication

Most grease points are attended to by an automatic lubricator, which services all points sensor controlled – a system that ensures the machine is given optimum attention.





### Plenty of stowage space

Two stowage compartments are arranged underneath the panels between the cab platform and the front wheels. The battery compartment and the master switch are located above the nearside front wheel with assorted parts stored to its left hand side. The compartment on the offside wheel stores water for the wipers and for operators to wash their hands and offers room to store wedges and more assorted parts.



### Large storage compartment

At the rear of BiG M there is another large compartment That stores two blade holders and the spanner for the blades plus a toolbox.



### Easy maintenance

The blades are easy to get at for quick change and replacement after the operator folds back the cover including the curtain.



## Further specification options

- ISOBUS steering provision and **SectionControl** help reduce operator fatigue
- High-cutting skids for cuts of more than 90 mm in height
- 9.20 m working width mulcher including conversion kit
- LED light kit for 360° illumination

A wide range of further extras are available as factory-installed options to boost operator comfort and create an even more pleasant operator environment.



### Automatic control

BiG M 450 is ISOBUS autoguidance ready and adopts control systems from various manufacturers. The autoguidance system uses GPS data and the correction signal to steer BiG M automatically and without operator interference along the crop line, allowing just a minimum overlap (left). This way the machine makes maximum use of its massive working width and potential.



### Hydraulic side guards

The side guards on the mowers fold up before the machine moves into transport position to ensure transport width does not exceed 3 m. The side guards on the front mower fold up hydraulically as an option.



### BiG M turns into a mulcher

The Perfect TriGant mulcher units turn BiG M into a convenient SP mulcher of a 9.20 m working width. Operators set the ground pressure hydraulically from the cab for optimum contouring.

The Perfect TriGant flail mulcher is sold and serviced exclusively by Van Wamel B.V.



### Lights all round

Optional LED working lights (360° illumination) turn night into day. Optional LED lights on the steps and all service points make your work a lot easier in poor light conditions.





# Technical data

			BiG M 450
Engine	Engine model	Liebherr D946 A7-04	
	No. of cylinders	6	
	Engine capacity	Litres	12
	Max. output to ECE R120 and 1650 rpm	kW/hp	330/449
	Max. output to ECE R24 and 1650 rpm	kW/hp	310/422
	Rated speed	rpm	1,650
	Fuel tank capacity	Litres	780
Ground drive	Model	Infinitely variable hydrostatic drive via wheel motors	
	Work rate	km/h	Max. 25
	Transport speed	km/h	40 (at 1250 rpm)
	4WD	Standard	
	Traction Control	Standard	
Axles	Steering angle	Degrees	53
	Rear axle steering	yes	
	Front/rear axle suspension	hydro-pneumatic	
Mowers	No. of mowers	3	
	Work width	m	9.95
	Conditioner speed	rpm	700/1,000
	Conditioner model	V-type steel tines	
	No. of discs	6 / side mower 5/ front mower	
	No. of top hats	2 / side mower 2/ front mower	
	Blade attachment	Quick-fit	
Cab	Air seat	Standard	
	Helper seat	Standard	
	Climatronic with cooling box	Standard	
	In-cab information system	Standard	
Overall dimensions	Transport width	m	3.00
	Transport length	m	8.45
	Transport height	m	4.00
	Weight depending on specification	t	15.5
	Weight distribution front/rear axle	%	64 / 36
Tyres	Front: Mitas AC 70 N 800/65 R 32	Standard	
	Rear: Mitas AC 65 600/65 R28	Standard	
	Front: Vredestein Flotation Trac 800/60 R 32	Option	
	Rear: Vredestein Flotation Trac 600/60 R 30.5	Option	

All specifications, weights and dimensions do not necessarily comply with standard specifications and are therefore not binding. All product specifications are subject to change.

# Maschinenfabrik Bernard Krone

Perfect in every detail



Innovative, proficient and close to our customers – these are the keywords that mark the philosophy of our family-owned company. As a forage specialist, KRONE manufactures disc mowers, tedders, rakes, forage wagons and silage trailers, round and square balers as well as the high-capacity and self-propelled BiG M mower conditioners and our BiG X forage harvesters. Quality made in Spelle – since 1906.

Your KRONE dealer



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