ZX

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HIGH-PERFORMANCE SHORT CUT LOADING AND FORAGE TRANSPORT WAGON

ZX

High-performance short cut loading and forage transport wagon

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KRONE ZX – with innovative technology for perfect forage quality!

The KRONE ZX dual-purpose loading and forage transport wagon is impressive all along the line thanks to its modern design, innovative technologies and excellent forage quality. With the high-performance "OptiGrass 28 and 37" cutting systems, it offers a clean, precise cut as well as structured and homogeneous forage conditioning across the entire width. Maximum power and efficiency round off the programme. The ZX sets new standards in the high-performance loading and forage transport wagon segment.

ZX

The high-capacity range

More movement

- **Versatile**
- **Efficient**
- **Economical**
- **Operator comfort**

Working economically means: boosting efficiency, cutting costs and utilising equipment to its full potential all year round. This is why KRONE developed the ZX loading and forage transport wagon. Dual-purpose means these machines serve as both loading and forage transport wagon in maize and grass.

Nothing is lost
Filling the ZX models from the harvester is straightforward and easy, especially as there are neither hoops nor ropes nor sliding covers where material could collect. The chute can direct the stream of material into every corner and hence achieve consistent and complete fills.

Model	Discharge rollers	Capacity	OptiGrass 37		OptiGrass 28	
			Number of blades	theor. cutting length	Number of blades	theor. cutting length
ZX 430 GL	–	43 m³	40	37 mm	54	28 mm
ZX 430 GD	3	43 m³	40	37 mm	54	28 mm
ZX 470 GL	–	47 m³	40	37 mm	54	28 mm
ZX 470 GD	3	47 m³	40	37 mm	54	28 mm
ZX 560 GL	–	56 m³	40	37 mm	54	28 mm
ZX 560 GD	3	56 m³	40	37 mm	54	28 mm

The technical data may vary depending on the equipment.

Picking up fast and cleanly

The KRONE ZX high-performance short-cut loading and forage transport wagon stands for fast and clean harvesting. Thanks to the perfectly coordinated interaction of the hydraulically driven pick-up, the OptiGrass high-performance cutting unit system and the unique KRONE SplitCut edge-cutting technology, efficient and precise harvesting is possible without compromising forage quality.

The models without discharge rollers

The dual-purpose loading and forage transport wagon without discharge rollers are super-efficient machines The huge throughput with the tailgate open, the front wall which pivots to the rear and the powerful double scraper conveyor reduce the unloading duration. leaving more time for compacting the silage for better quality.

Unloading without discharge rollers

Solid all-steel bodies and up to three discharge rollers make the ZX 430 GD, ZX 470 GD and 560 GD models very versatile machines which unload the material in uniform mats to reduce the workload on the clamp and establish the best conditions for high-quality silage.

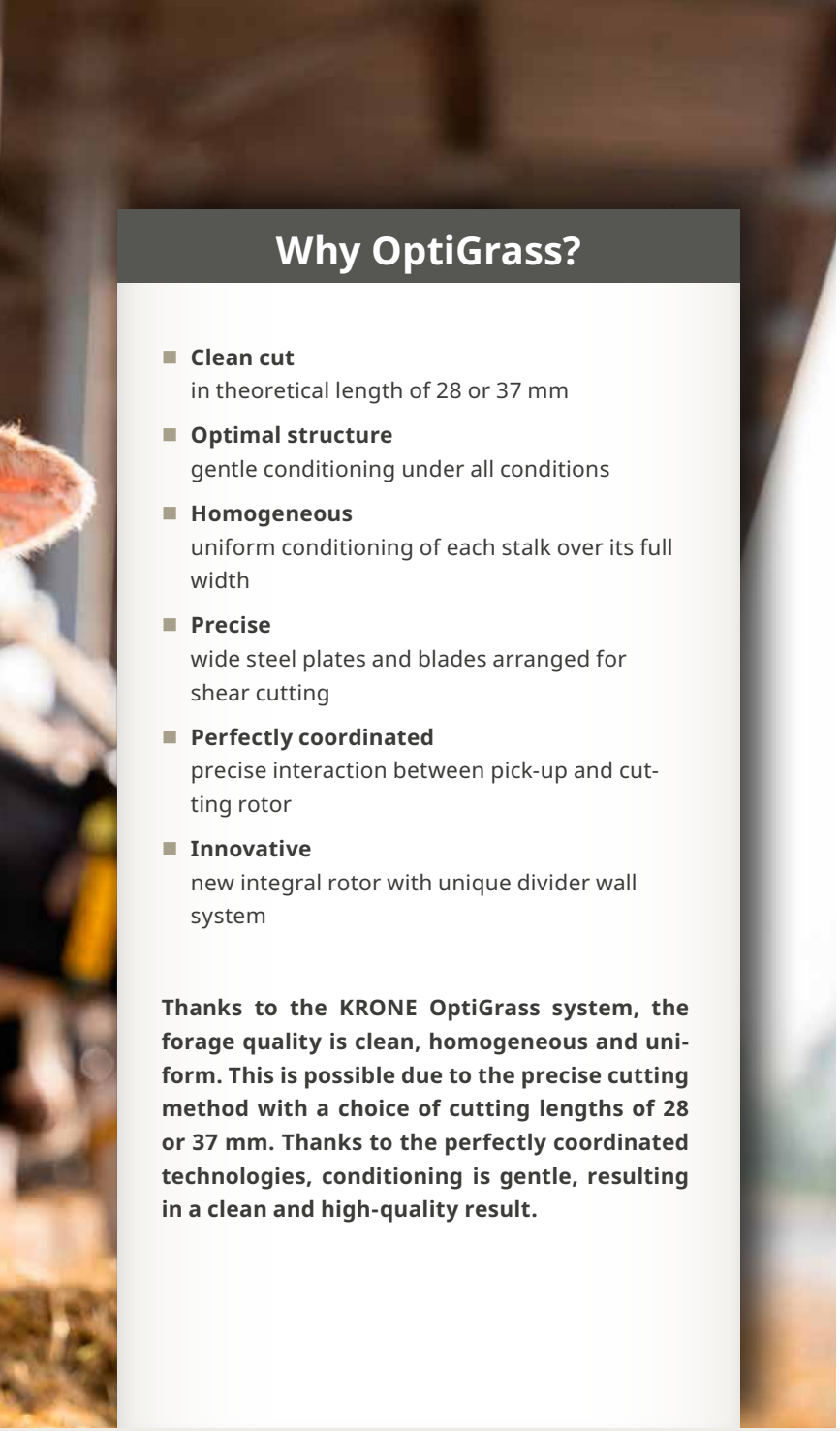
OptiGrass

Forage quality which inspires!

Clean on the forage table
A high milk yield is the decisive factor for the economic success of a farm. The forage intake required for this is ensured in particular by tasty and pure forage. To ensure clean pick-up without the introduction of raw ash, fungi and yeasts, the OptiGrass concept with its wide oscillating pick-up and excellent scanning characteristics offers the right technical solution to achieve perfect crop pick-up.

Well structured
A very important aspect is the optimal structure of the forage; this helps to support the natural chewing and digestive activity of the animals and reduce the risks of constipation and digestive problems. Well-structured forage promotes natural utilisation and therefore the milk production of your animals. The KRONE OptiGrass concept ensures crunchy, well-structured forage and prevents the crop from being crushed at any time of the year.

OPTIGRASS



Why OptiGrass?

- **Clean cut**
  in theoretical length of 28 or 37 mm
- **Optimal structure**
  gentle conditioning under all conditions
- **Homogeneous**
  uniform conditioning of each stalk over its full width
- **Precise**
  wide steel plates and blades arranged for shear cutting
- **Perfectly coordinated**
  precise interaction between pick-up and cutting rotor
- **Innovative**
  new integral rotor with unique divider wall system

Thanks to the KRONE OptiGrass system, the forage quality is clean, homogeneous and uniform. This is possible due to the precise cutting method with a choice of cutting lengths of 28 or 37 mm. Thanks to the perfectly coordinated technologies, conditioning is gentle, resulting in a clean and high-quality result.

Uniform conditioning stalk by stalk
The KRONE OptiGrass concept redefines homogeneous forage. Conditioning of every blade of grass was the ultimate development goal. Homogeneous forage, on the one hand, contributes to improved preservation as it is less susceptible to mildew and other types of spoilage. Furthermore, the uniform quality and composition of the silage enables precise feeding which meets all the needs of your herd.

What length should it be?
OptiGrass for optimum TMR, with the two cutting unit variants (28 mm or 37 mm) the structure value can be adjusted variably, which enables the built-in blade group control system to double the cutting length if required. Our goal: short, structured and homogeneous basic forage, perfect for total mixed rations. Result: best forage presentation, low selection and minimised residual amounts on the forage table.

Optimum quality is decisive!
The right quality on the forage table is the key to success in the cowshed. A high-quality basic forage ensures that the animals have access to sufficient amounts of nutrients and vital trace elements. A high intake of tasty and quality forage is the foundation for successful milk production and the best possible health of your herd.

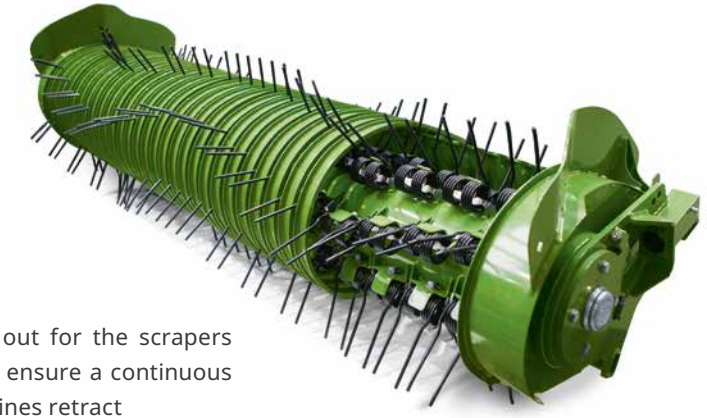
The KRONE EasyFlow pick-up

Leaves nothing behind

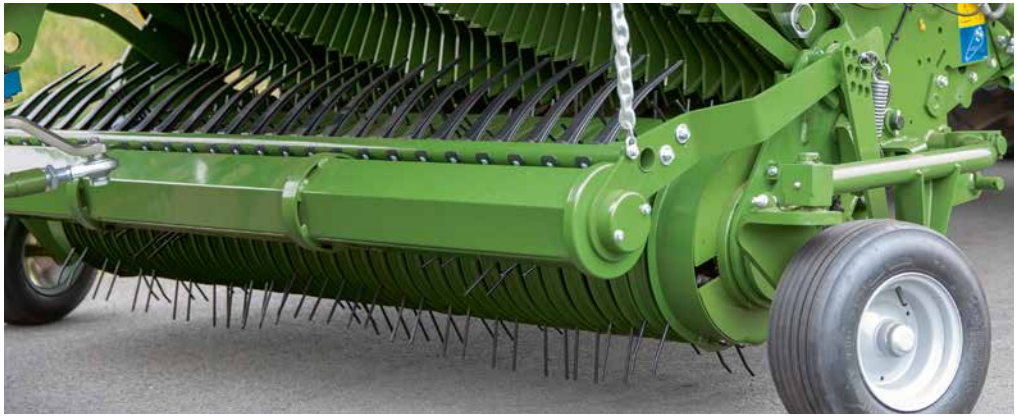
Precision that pays

- **Hydraulic drive**
  independent of the cutting rotor
- **Automatic or manual rotational speed adjustment**
  to the driving speed
- **Maintenance-free and low wear**
- **Uniform filling**
  staggered arrangement of the tines in a W-shape
- **Large pivoting range**
- **Electrohydraulic relief**
  for even better sward protection

The EasyFlow pick-up with hydraulic drive is the ideal solution for demanding requirements. With its 6.5 mm thick double tines in a helical layout, it meets the most demanding requirements in ease of maintenance and pick-up capacity. The hydraulic drive integrated in this pick-up offers an even larger work width, which helps to collect even more material at an optimum driving speed and maximizes the intake capacity.



Camless is better
This camless pick-up stands out for the scrapers and their special design, that ensure a continuous and smooth crop flow as the tines retract



EasyFlow – more efficient and more effective
Working at a width of 2.12 mm (DIN 11220), the wide and camless pick-up with helical tines is powered by its own hydraulic motor that is separate from the cutting and feed rotor for a dependable performance even when more power is required. Even large and unevenly deposited swaths are picked up evenly and cleanly. The height is adjusted easily to suit the current crop, the swath volume and ground speed.

A unique pivoting system

Arranged in a W-shape on a round pipe, the double tines ensure a consistent crop flow and an even full-width supply of the material to the cutting and feed rotor, boosting throughputs and machine fills.

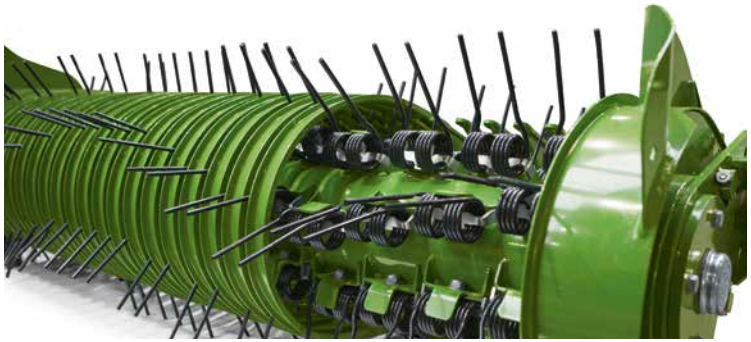
Hydraulic drive

The integral hydro motor offers a number of advantages:

- It frees space on the pick-up ends for a wider work width
- Maintenance-free
- The absence of sprockets on the sides translates into a larger pivoting range
- Adaptation to the respective harvesting conditions by manually or automatically adjusting the speed via ISOBUS, depending on the driving speed

The KRONE EasyFlow pick-up

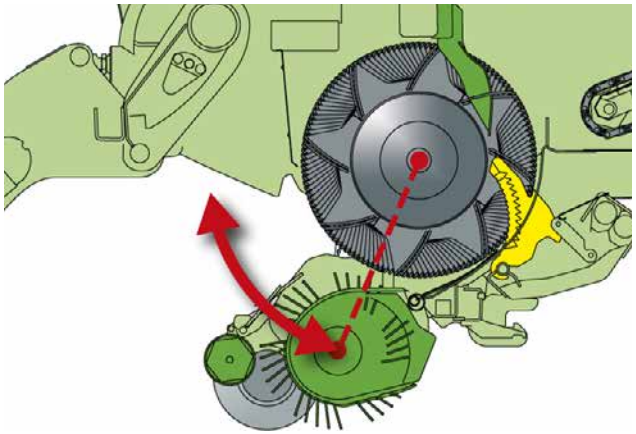
For optimum forage quality



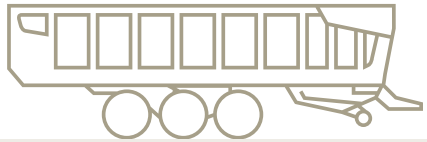
Extra strong
The 6.5 mm tines with large-diameter coils withstand the most arduous conditions.

Large pivoting range
The laterally pivoting pick-up follows ground contours both axially and transversely and benefits from a more generous pivoting range because of the integral hydraulic drive that replaces an external chain drive. The result is a clean rake and nothing is left behind.

Excellent tracking
The height of the pneumatic guide wheels on either side can be adjusted for full adaptation to any conditions. Tracking excellently behind the tractor during headland turns, these wheels avoid scuffing and offer best protection of the sward.



Lifting out higher
On undulating terrain, the pick-up oscillates through a constant range around the core of the cutting rotor, maintaining an optimum crop flow into the machine no matter how difficult the conditions. The steering is aligned with the centre of the cutting rotor, enabling a wide lift height – ideal on the headland.



Drawbar control system
The articulated drawbar with double-acting hydraulic cylinder is standard specification and provides a generous ground clearance of up to 75 cm – enough to easily roll on clamps. The new automatic articulated drawbar offers a better ground clearance for headland turns. One headland and one road position can be programmed to the control unit.

Secured as a standard
Wide guide wheels behind the pick-up ensure clean forage intake on damp ground. The height-adjustable wheels prevent them from sinking too deep and therefore protect them from damage. The 28 mm OptiGrass cutting unit has four wheels, the 37 mm cutting unit has two.

Gentle on the soil
A nitrogen damper provides electro-hydraulic suspension for the pick-up for even better soil protection. The system allows operators to set the suspension pressure from the cab and on the move.

Das OptiGrass concept

Innovative technology for optimal forage

The OptiGrass concept
The new high-performance "OptiGrass" cutting unit systems take forage quality to a new level. In addition to a theoretical cutting length of 37 mm with a maximum of 40 blades, it is now possible to achieve a cutting length of 28 mm with a maximum of 54 blades. Together with the KRONE SplitCut, nothing stands in the way of optimum forage recovery. With the optionally available SpeedSharp blade grinding device, sharp blades are guaranteed everywhere and at all times!

Precise and efficient
With the OptiGrass system, the ZX series offers two cutting unit variants with theoretical cutting lengths of 28 or 37 mm. The integral rotor concept, which cuts more precisely and shorter than ever with fewer blades, ensures compact cut packages. Combined with the EasyFlow pick-up, the OptiGrass cutting rotor and SpliCut edge-cutting system, the KRONE ZX delivers an optimum result in all conditions.

Perfectly coordinated

- **OptiGrass 37 mm cutting distance**
  with 40-blade cutting unit
- **OptiGrass 28 mm cutting distance**
  with 54-blade cutting unit
- **KRONE PowerBelt**
  the drive concept for extremely high throughput rates.
- **Integral rotor with augers**
  high-performance crop flow with maximum pick-up width
- **KRONE SplitCut**
  optimum conditioning over the entire rotor width

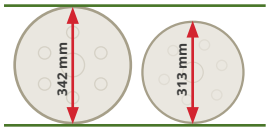
KRONE OptiGrass – state-of-the-art technology for perfect forage conditioning. The 40-blade cutting unit with a cutting distance of 37 mm and the 54-blade cutting unit with a cutting distance of 28 mm ensure optimum forage quality. KRONE PowerBelt ensures extremely high throughput rates and the KRONE SplitCut system ensures gapless conditioning across the entire rotor width.

The drive for all requirements

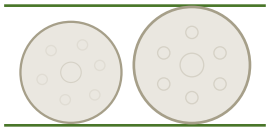
The KRONE Powerbelt drive concept supports the rotational speed reduction from the main drive to the cutting and feed rotor by means of a planetary gearbox located in the rotor. The compact design of the assembly allows us to maximize the length of the rotor and hence the width of the crop flow. The drive is impressive thanks to its high throughput, extremely quiet running, low wear and minimal maintenance. A wide belt enables power transmission of up to 430 hp in the drive train. A cam clutch in the main universal shaft ensures the safety of the entire drive train up to a torque of 3000 Nm.

Drive further thanks to Powerbelt

Maximum throughput rates and high loading speeds allow hardly any errors. In practice, however, uneven swaths with changing crops are more common. Thanks to the powerful KRONE Powerbelt, these short-term load peaks are cushioned and the overload protection is prevented from tripping. With the KRONE Powerbelt you can drive on while others stand still.



Variant A

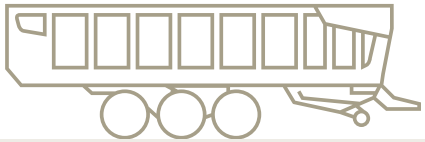


Variant B

The unique speed concept of the loading and forage transport wagon

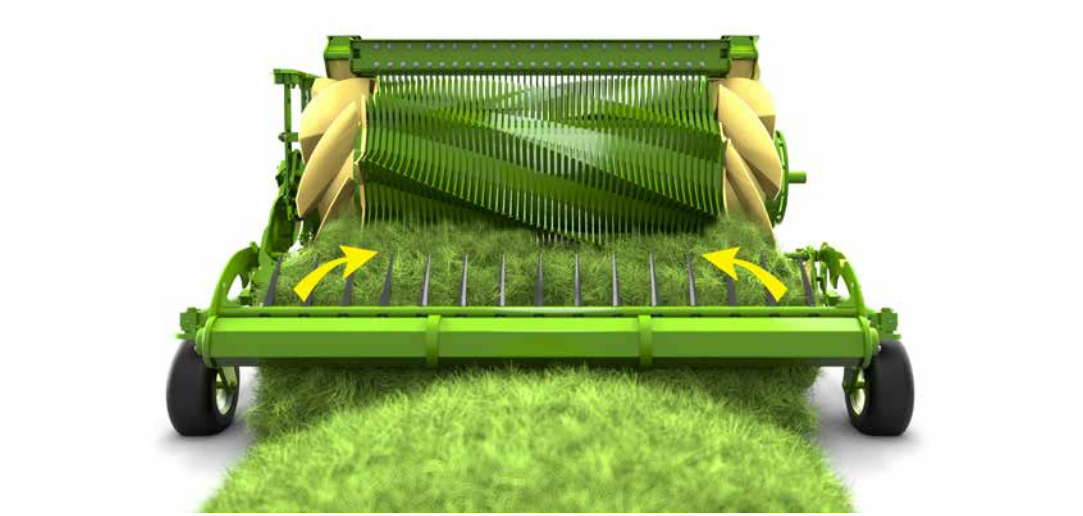
offers different rotor speeds with specific advantages depending on the position of the pulleys:

- **Variant A:** This configuration is optimal for large emergence rates and voluminous swaths in spring. A rotor speed of 47 rpm is used here to achieve maximum throughput with optimum compression.
- **Variant B:** A rotor speed of 40 rpm ensures good throughput rates and perfect pre-compression. This configuration is ideal for lower emergence rates in late summer and autumn and for smaller tractors where throughput is limited.



Das OptiGrass concept

Innovative technology for optimal forage



OptiGrass integral rotor
The new integral rotor concept combines numerous advantages and significantly improves the performance of the cutting system. The 22 cm wide auger bodies, which are part of the cutting rotor, ensure that the crop is transported evenly and cleanly to the centre of the rotor. This results in a powerful crop flow with maximum pick-up width and, at the same time, the best possible cutting quality thanks to optimum pre-compression in the conveyor pockets. The concept, in conjunction with the enormous diameter of the cutting rotor, enables the ZX to achieve maximum throughput with optimum conditioning quality.

1.
The entire swath is picked up via the wide pick-up

2.
The auger body conveys the grass from the outer areas to the centre of the rotor.

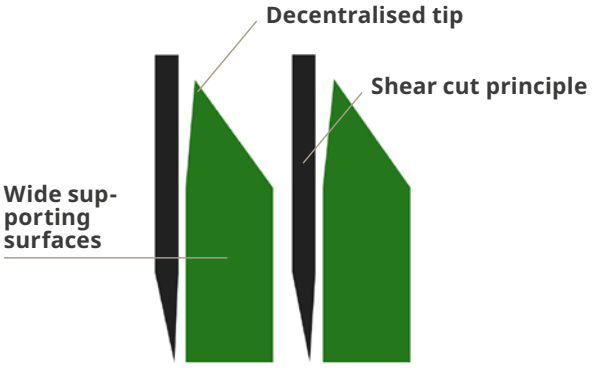
3.
The material is compacted in the rotor pockets and formed into a perfect cut package.

KRONE cutting rotors are manufactured using the latest welding robot technology – precision in perfection.

Fig. MX cutting rotor

A challenge
The integral rotor concept ensures an increased crop flow in the outer areas of the cutting rotor. Especially here, uniform conditioning is challenging, but at the same time essential. The SplitCut system redefines homogeneous forage.

Optigrass cutting rotor
Precise shear cutting is made possible by the use of extra-wide steel plates in combination with a dense arrangement of blades and supporting surfaces. The width of the supporting surfaces varies between 17 mm and 22 mm, depending on the cutting unit. The decentralised arrangement of the tips of the supporting surfaces creates an optimum shearing effect on the blade, resulting in the crop being picked up gently and with little effort. This prevents mushing.



KRONE SplitCut – optimum forage across the full width
A concept which, thanks to its innovative design, enables optimum conditioning of the forage across the entire width of the rotor. Consisting of a cutting blade, a divider wall, scraper tines and crop deflector sheet, the two SplitCutters ensure that the crop is separated at the cutting blade and fed back centrally into the crop flow. This ensures that every stalk has completely passed through the cutting blades, resulting in perfect conditioning quality.

The OptiGrass cutting unit

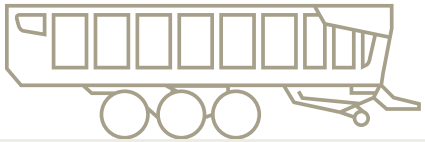
For a successful harvest

The material is pulled over the blades

Cutting with their full edges, these blades lead to smoother and quieter running. The wavy blades maintain their sharpness over extended periods of time. In addition, the blade body is single-hardened, while the blade is double-hardened. This results in a considerably longer service life and offers greater resilience in the event of contact with foreign objects.

Peace of mind and perfect results

The crop cannot escape the blades because the distance between the blade and the wide supporting surface of the conveyor rotor tine and its asymmetrical tip is very small. The result: perfect cutting quality through and through, no squeezing, no mushing.



Consistent and clean

- **Top cutting quality**
  Shear cut
- **Theoretical cutting length**
  OptiGrass 28 mm with maximum 54 blades
  OptiGrass 37 mm with maximum 40 blades
- **Central blade group control system**
  0, 20, 20, 40 blades
  0, 27, 27, 54 blades
- **Blade changing without tools**
  and with central locking

KRONE OptiGrass cutting units offer wide tine holders and closely spaced, guarded blades which provide an easy and precise cut, similar to a pair of scissors. Two cutting units with 40 or 54 blades are available for optimum conditioning. Thanks to the central blade group control system, the cutting length can be varied at any time between a half and full set of blades, allowing cutting distances of 28 or 56 mm or 37 or 74 mm. OptiGrass therefore offers a flexible solution for different cutting lengths.

Controlled from the cab
In the event of a crop blockage, the blade cassette can be lowered hydraulically out of the feed channel. After the blockage has been removed, the blade cassette is swivelled in again and work can be resumed immediately.

Single blade locking device
Equipped with individual spring protection, each blade retracts and swings back automatically once the foregn object has passed. The tripping force is set variably from the cab and can be adjusted to special conditions.

Central blade group control system
The desired cutting length can be set quickly and easily via the central blade group control system. With the ZX, theoretical cutting lengths of 28 or 56 mm with 54 blades and 37 or 74 mm with 40 blades can be achieved. In the zero position, the crop remains uncut.

The quick-change blade system

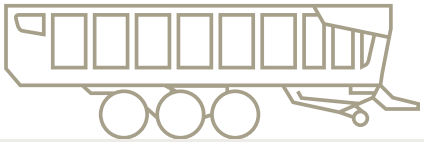
Shorter tooling time – *better efficiency*


1


2


3

How you do it
After the complete blade cassette has been hydraulically lowered and the blades have been unlocked in the zero position, the blade cassettes are released from the left side by means of a lever and swung out to the side. This makes it easy to remove the blades which are positioned loosely in the blade cassette. When the blade cassette is swivelled in, it is automatically locked on the opposite side.



Saves your time

- **Blade cassette can be swivelled out to the side**
- **Blade changing without tools**
  and with central locking
- **Central operation**
  on the left side of the vehicle
- **40 or 54 sharp blades**
  on the side of the blade cassette for a quick change

You change the blades without tools and without leaning over the blade cassette which is now alongside the machine. lower the blade cassette, swing it out to the side and remove the blades without tools – a time and cost saving system.

From the cab

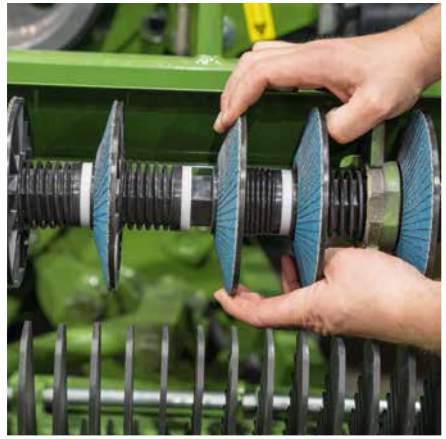
The cutting unit is folded hydraulically. The blade cassette can be folded far down and can be easily swung out to install and remove the blades.

Convenient

These controls allow operators to conveniently raise and lower the blade cassette from the ground – for easy maintenance and blade changes.

KRONE SpeedSharp

Quick *and easy*

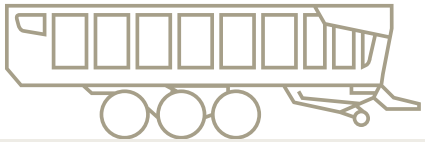


Convenient for operators
They can set the blade grinding interval on the terminal to adapt the intensity to the actual level of wear.

A KRONE exclusive
The grinding discs of the optional fully automatic grinding device are arranged on a laterally movable and hydraulically driven shaft. All work processes for grinding the blades are carried out automatically at the touch of a button.

The perfect grinding process
Depending on the number of blades, grinding is carried out with 18 or 20 flap discs which, with individual, widely overlapping grinding flaps, ensure a particularly high grinding performance and a long service life. give a 'cold' grind that prevents the blades from annealing.

Consistent sharpness
Each disc is pressed on to the blade by a bevel spring, a design that leads to a high-quality and consistent cut of all blades whilst minimising the material that is removed from each blade. The system warrants consistently sharp blades even when these show different degrees of wear.



The right cut

- **Sharp blades in no time –** convenient and fast
- **Simultaneous sharpening** of half (OptiGrass 37) or a third of the blades (OptiGrass 28)
- **No annealing of the blades** thanks to "cold grinding"
- **Simple design, maximum functional reliability**
- **No sparks flying under the wagon**

Sharp blades are fundamental for clean and smooth cuts. This is why KRONE developed SpeedSharp, the unique blade grinding device. The trademark of this system is its simplicity.

Sharp blades
A complete grinding process, including swivelling the cutting unit out and in, is quickly completed: In just five minutes, all 40 or 54 blades are sharp, depending on the number of grinding cycles. With the blade cassette out and alongside the machine, the operator can watch the grinding process and conveniently check on the result.

Automatic and safe
Simply swing out the blade cassette, fold up the grinding shaft, couple two hydraulic hoses and connect an electric lead. Then press a key on the vehicle frame to start the grinding process. The up and down movements required for the grinding process and the lateral movement of the grinding disc shaft are controlled automatically. The grinding is carried out with the blade cassette out and alongside the machine so you can easily watch the process.

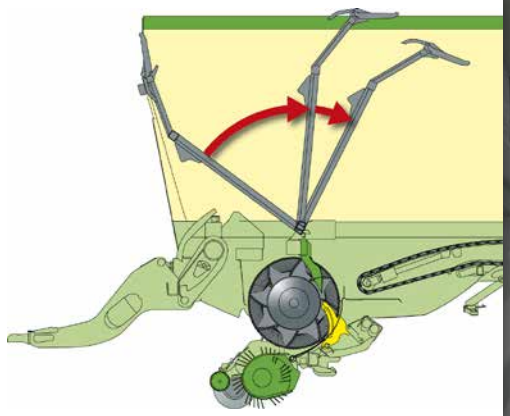
The pivoting headboard

More capacity – *maximum productivity*

In loading position
When used as a loading and forage transport wagon, the swivelling front wall is in the stored middle loading position. It is easy to adapt the board to suit varying harvest conditions.

Plus 4.5 m³
When the loading space is completely filled, the front wall automatically swings forwards in stages and creates approx. 4.5 m³ of additional loading volume. without extending the machine length. So ZX is not compromised in its compact build and agility.

As forage transport wagon
When the machine is used to haul chopped forage, the headboard moves fore into its end position, increasing the loading volume and intake area.



Pivoting front wall

- **Up to 4.5 m³ additional loading volume**
- **Quick and reliable unloading** of the wagon
- **Relief of the scraper conveyor**
- **Variable baling pressure** when used as a loading and forage transport wagon

Loading and unloading rates are important parameters in viable farming and contracting. The pivoting front wall boosts the machine's loading capacity by up to 4.5 m³, pre-compresses crops as required and acts as an unloading aid by emptying the machine faster and effectively.

Powerful
The robust and movable front wall is moved via swivel cylinders arranged on both sides. Its movement is controlled either manually or automatically. The ‘slotted’ design provides an excellent view of the load area.

Boosting unloading rates
The headboard pivots to the rear so the wall of forage topples over, ensuring the machine is emptied fast and effectively. All unloading sequences run fully automatically.

The loading space

Designed for the heaviest work

Smooth emptying
The conical design offers the advantage of tapered side walls front to rear and the steel base facilitates the unloading process. All of the obstacles have been eliminated from the material flow. nothing is left behind.

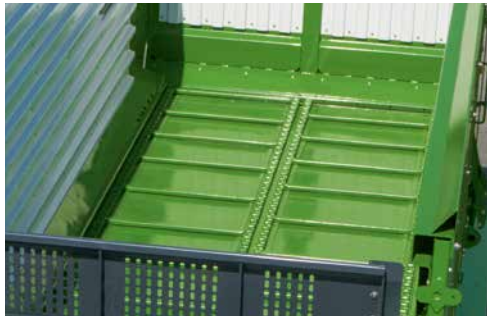
Strong
The 240 cm high stakes on the cap profile withstand the most arduous conditions. The sides are hot-galvanized, powder-coated and plastic-laminated. Quality through and through.

No losses
The cut-and-feed rotor can be covered with a plate during the chopping process to protect it from soiling.

The structure and the chain-and-slat floor

- **Conical frame and design**
  easier unloading
- **Double scraper conveyor with drive on both sides** more power
- **Flat link chains**
  extremely durable
- **Automatic fast unloading system as standard**
  load-dependent engagement of the scraper conveyor rapid traverse

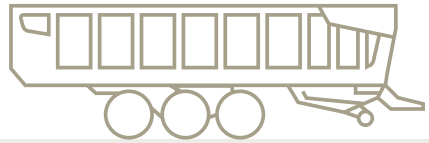
It takes high-end engineering to withstand the permanent exposure to huge masses of material on the loading area and fast unloading processes. Two scraper conveyors, i.e. four flat link chains and two motors and a conical design that tapers to the rear will always deliver.



Double scraper conveyor
The use of two scraper conveyors doubles the machine's unloading efficiency. Its four flat link chains are each mechanically pre-tensioned. The box section chain slats offer good grip and a positive feed.

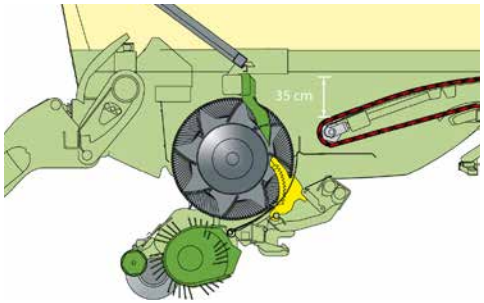
Powered from either side
The scraper conveyor drives on both sides are designed for high performance. The feed gears and their oil motors are protected inside the frame and are mounted completely free of stress. The operator can double the scraper conveyor's advance speed via a spool This is implemented automatically by the automatic fast unloading system.

Flat link chains
The four flat link chains have large joints and are extremely wear-resistant and highly durable. The wide chain links and sprocket wheel teeth translate into less wear and a powerful advance.

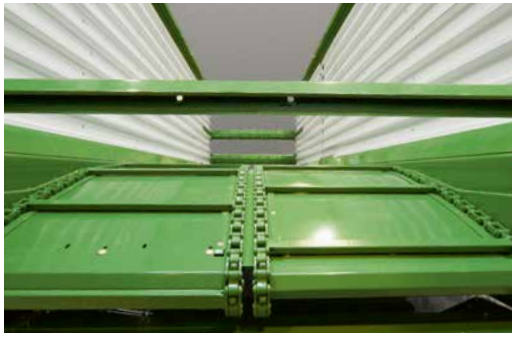


The loading area

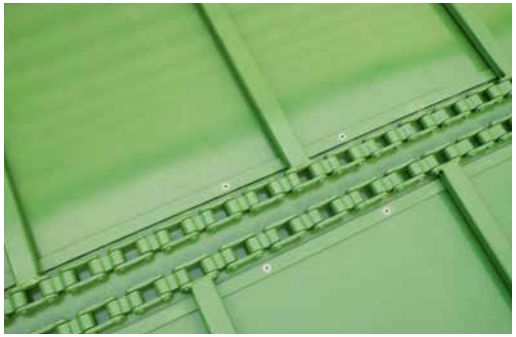
Intelligent loading and unloading



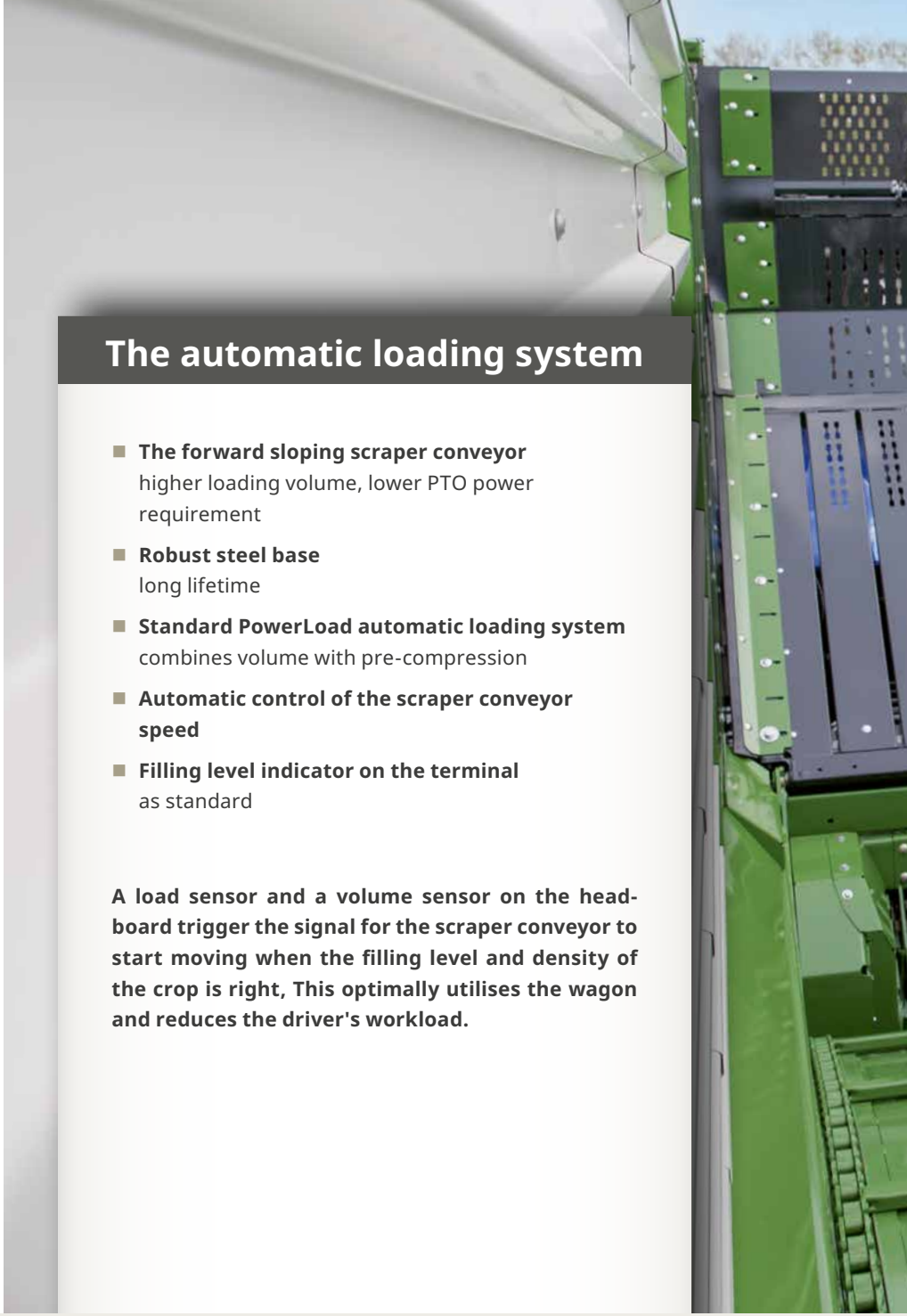
Smooth operation
The scraper conveyor slopes 35 cm towards the cutting rotor – for increased capacity and a smoother material floor into the machine.



The powerful scraper conveyor
The scraper conveyor slopes at the front, which increases the capacity and reduces the length of the feeding passage for a faster and gentler crop feed and a significantly reduced power input. This ensures maximum efficiency and fuel economy.



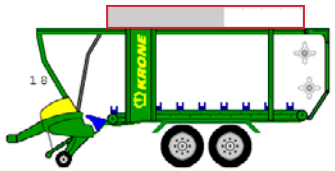
Longer service life
It takes hard wearing materials to manufacture a machine that delivers excellent results. KRONE has thus equipped ZX wagons with a steel floor.



The automatic loading system

- **The forward sloping scraper conveyor**
  higher loading volume, lower PTO power requirement
- **Robust steel base**
  long lifetime
- **Standard PowerLoad automatic loading system**
  combines volume with pre-compression
- **Automatic control of the scraper conveyor speed**
- **Filling level indicator on the terminal**
  as standard

A load sensor and a volume sensor on the headboard trigger the signal for the scraper conveyor to start moving when the filling level and density of the crop is right, This optimally utilises the wagon and reduces the driver's workload.



Standard filling level indicator
A sensor on the scraper conveyor displays the information on the terminal about the discharge and remaining capacity of the loading space. This gives you an overview of the current filling level at all times.

Powerful auto-loading
During the loading process, a strain sensor measures the load down on the front wall. When the adjustable load limit and therefore the required loading density is reached, the scraper conveyor starts automatically. The scraper conveyor speed adapts to the strain measured by the precompression sensor. The system impresses with its uniform utilisation and reduced fuel consumption.

Making the most of machine capacity
The volume sensor on the movable sensor flap of the front wall indicates the filling level reached. When the hatch at the top of head-board is opened longer than for a preset time, the system triggers the scraper conveyor which starts moving. PowerLoad combines the two systems. The result: the driver's workload is reduced and the wagon is fully unloaded.

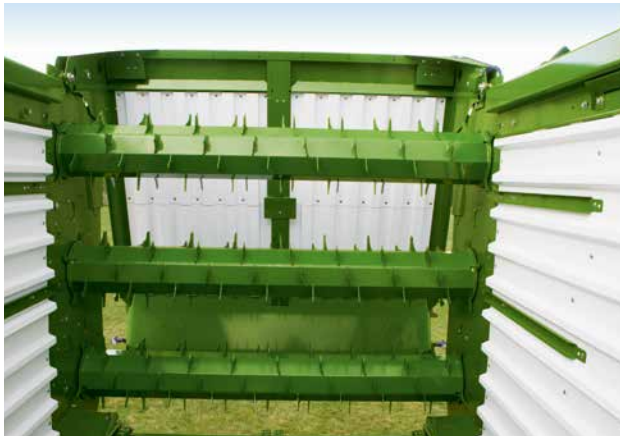
ZX 430 GD · 470 GD · 560 GD

Optionally with *discharge rollers*

Three rotors for three-fold power
Specify your forage wagon with three enclosed rollers and an adjustable tailboard and you can produce even more uniform mats. Studded with V-tines, the rotors spread the crop across the full machine width, while the higher rotational speed of the discharge rollers reduces the unloading duration even further.

The efficient driveline
The particularly robust gearboxes and 1 inch thick roller chains with automatic chain tensioners transmit the full power. The chains are powered by a shaft that runs down the chassis, driving a right-angle gearbox inside one of axial section beams.

Unloading faster
Powered directly by the main gearbox,
the discharge rollers perform absolutely dependably. The overload protection with 3,000 Nm in the main universal shaft enables even faster unloading.



ZX 430 GD · 470 GD · 560 GD

- **3 discharge rollers**
  with large diameter (47 cm) as standard
- **Discharge roller protection**
  with 3,000 Nm in the main universal shaft
- **Automatic scraper conveyor stop**
  via the lower discharge roller
- **Higher speed**
  for the two lower rollers – uniform forage discharge

The first step in producing high-quality silage is to achieve a perfect forage distribution. The ZX GD models with three large-diameter discharge rollers meet these requirements. The material layers are evenly unloaded across the full length of the clamp, perfect for subsequent rolling.

Automatic scraper conveyor stop
When the wagon is filled to capacity, the crops push the lower discharge roller in the guide mechanism to the rear. a motion detector stops the chains and the discharge rotors to start off smoothly.

Convenient
The side hatch with folding ladder provides convenient and safe access to the load space.

The running gear

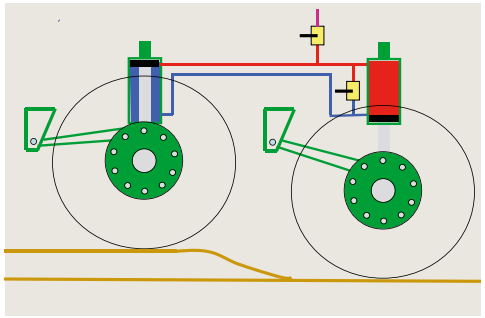
Tandem or tridem axle

Sturdy and reliable

- **Optionally with tandem or tridem chassis**
- **Safe handling**
  at top speeds of up to 60 km/h on the road
- **Maximum stability on slopes –**
  reduced danger of tipping over
- **Equal load distribution on all wheels –**
  reduced brake wear
- **Optionally with 30.5" tyres**
  to reduce ground pressure
- **With axle steering**
  Protection of the sward, reduced tyre wear
- **Optionally with hydropneumatic suspension**
  for even greater comfort

The caster- and force-steered tandem axles have hydraulic pressure compensation for all requirements and needs. Each running gear ensures roll stability when travelling at speed around bends as well as stability on slopes. These axles offer maximum safety and operator comfort.

Very adaptable
The large compensating paths ensure that the front and rear wheels are always evenly loaded. The design provides for excellent climbing and unloading on high and steep clamps.



Maximum stability
To compensate for undulating ground, the oil flows from the cylinder on the front wheel to the cylinder on the rear wheel on the same side of the machine and vice versa. Using two separate oil circuits inside the axle assembly on either side cuts out any risk of rolling and maintains the body level at all times.

Tyre options
The optional 30.5" tyres stand for increased load capacity and low drag resistance, sward protection and transport safety.

800/45 R 26.5 TL 174 D
Width: 800 mm
Ø: 1350 mm

710/50 R 30.5 TL 173 D
(Universal profile)
Width: 730 mm
Ø: 1485 mm

800/45 R 26.5 TL 174 D
(Trac profile)
Width: 800 mm
Ø: 1380 mm

800/45 R 30.5 TL 176 D
(Trac profile)
Width: 810 mm
Ø: 1510 mm

Running gear / model	ZX 430	ZX 470	ZX 560
Tandem chassis 20 t	Standard	Standard	-
Tridem chassis 27 t	-	Optional	-
Tridem chassis 30t	-	-	Standard

Gentle on the sward

The steered axles are standard specification. The steered rear wheels protect the sward and ensure low drag resistance in curves as well as minimising tyre wear and reducing the load on the running gear.

Superior road stability

A separate oil circuit on either machine side and equal oil pressures on either side of a ZX tandem or tridem axle assembly translate into greater road stability and reduce the risk of rolling when working on slopes or managing tight turns.

Big boots

The ZX models with tandem axle can be equipped with 30.5inch tyres. Box-shaped bars improve the stability even in wet conditions and the larger contact area of the tyres reduces ground pressure.

The running gear

Brakes and steering

The brake
The ZX dual-purpose forage wagons have
dual line air brakes as standard specification. The hydraulic ALB valve controls the braking power relative to the current load.

Enhanced operational dependability
EBS is the optional electronic brake system, which comprises ALB, ABS and RSS functions. The roll stabilisation system intervenes by braking whenever there is a danger of tipping over, ensuring the ZX will not roll over when navigating narrow bends at speed. Combined, all of these functions increase operational safety.

Best straight travel
The cam discs on the stub axles are locked relative to the load that is currently placed on the axle. This results in maximum road stability and safe turning. The deflection forces are lowest when the machine is empty.

Smart details

- **Optional electronic EBS braking system features**
  - ALB automatic load-dependent brake force control
  - ABS anti-lock braking system
  - RSS roll stabilisation support
- **Intelligent self-steering**
- **Contactless electronic forced steering**

Larger and faster tractors and higher transport volumes and payloads require a rethink in terms of safety. Therefore, KRONE offers an electronic braking system that has already proven its worth in the commercial vehicle sector. In addition, steered axles help protect the swath and provide added safety.

Caster-steer axle
The intelligent aster-steer tandem axle is base specification for all ZX 430 and ZX 470 models. The advantages include less tyre wear, protection of the sward and low drag resistance in curves.

Intelligent system
The caster steer system can be locked for shunting and clamping by operating a locking cylinder from the terminal. On an ISOBUS-compatible tractor this auto lock system ensures quiet castering at speeds of more than 30 km/h and when reversing.

Managing tightest turns
Doing without a control linkage, the intelligent caster steer system provides for plenty of clearance around the drawbar and therefore tightest turns. All clear for the rotors.

The running gear

Electronic forced steering

Contactless electronic forced steering
By electronically transmitting the steering angle, the contactless forced steering allows a higher steering angle and prevents possible damage due to collisions with the tractor tyre. No linkage interferes with the full steering angle of the tractor-trailer combination. Thanks to the electronic control, the steering characteristics can be adjusted perfectly to different driving situations.

Safe road travel
The electrohydraulic forced steering system offers the best possible ride stability, quiet running and safety at speed. Starting to decrease the intensity of steering when the machine's forward speed reaches 30 km/h and reducing it to zero when the combination reaches 50 km/h.

Lots of benefits

- **Optional for the tandem axle, standard for the tridem axle**
- **Smooth and quiet running**, low abrasion, ideal for manoeuvring
- **Electronic forced steering –** can also be operated manually for counter-steering
- **No additional coupling required** – for greater tractor flexibility

Forced-steer wheels protect the sward and the tyres when driving around corners, reducing the load on the tandem or tridem chassis and making it easier to pull the wagon. When shunting, driving on a slope or clamping, the electronic system allows the operator to actively intervene and change the position of the steering axle so that the wagon countersteers.

Beware of the edge

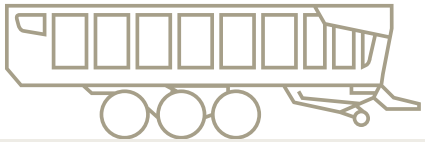
Electro-hydraulic forced steering allows the ZX to be steered away from the silo edge as well as enabling automatic countersteering on slopes. In the case of the tandem axle, this affects the rear wheels, while in the case of the tridem axle, the first and last axles take over the control. This prevents the vehicle from drifting and provides greater control.

The hitch

Efficient *and convenient*

Compact and stable
The ZX dual-purpose forage wagons have bottom-mount drawbars, The combination of the stable construction and a ball-head attachment allows drawbar loads of up to four tonnes. The narrow and compact design of the drawbar allows a minimum turning radius.

Suspended drawbar
The drawbar suspension with a nitrogen accumulator on the hydraulic cylinders ensures maximum driving comfort and absorbs all of the shocks.



Robust, strong and easy to steer

- **Excellent manoeuvrability**
  thanks to small, compact design
- **Higher drawbar loads**
  with bottom hitching
- **Quiet driving**
  with drawbar suspension
- **High driving comfort**
  with ball-head attachment

Increased total weights have made bottom-hitching the most popular type of attachment for loading and forage transport wagons. This reduces the load on the tractor's front axle and ensures the four-wheel drive system is more effective.

Easy
ZX features a foldable stand. The articulated drawbar adjusts hydraulically to the tractor's hitch height. It's easy.

Convenient attachment
Standard buttons in the front of the wagon allow additional height adjustment of the articulated drawbar. This way, he monitors the hitching process.

Ball hitch 80
It maximises operator comfort and minimizes wear. Loads are transported smoothly without jolting. The forced steering system can only be implemented with the ball-head attachment.

The lighting

The Premium lighting package – as standard

More light, more safety!

- **Premium lighting package**
  as standard
- **Excellent all-round visibility**
  at night thanks to two powerful LED working lights at the rear
- **Safe in the field and on the road**
  with front position lamps and reflectors
- **The load always in view**
  Thanks to LED light strips installed as standard in the loading space
- **Two additional working lights**
  can be quickly retrofitted thanks to prepared cable position

The KRONE ZX's premium lighting package not only enhances safety, but also increases nighttime productivity. The Premium package provides optimum lighting of the surroundings, the loading space, the crop flow and the drive components. Additional working lights can be retrofitted as an option.

Crop flow lighting
Two LED strips on both sides provide optimal lighting in the area of the crop intake. They provide sufficient illumination in front of and behind the pick-up and, thanks to their diffuse light, create a pleasant working atmosphere without dazzling.

Maintenance lighting
An LED strip located under the side guard provides optimum illumination of the drive components and the swung-out blade cassette. In addition, the lighting of the feed channel ensures straightforward handling when swivelling the blade cassette in and out.

Loading space and ambient lighting
Four powerful LED light strips are fitted as standard in the loading space to facilitate working in the dark. With its two working lights at the rear, the KRONE ZX provides optimum illumination of the surrounding area. For ideal illumination of any working environment, two additional freely positionable working lights can be mounted at the front or rear. The cable position required for this is prepared as standard in the ZX to enable simple and quick assembly. Two modes can be used to conveniently configure field and discharge lighting.

Always work comfortably, even at night!

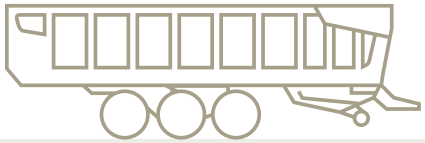
Silage additives unit

For maximum silage quality

The tank
The KRONE ZX features a 200-litre silage additives tank which is optimally positioned for access behind the rear of the vehicle. Thanks to two side openings, the tank is easy to clean. The electronic filling level indicator on the terminal enables quick and precise monitoring of the filling level at any time.

The pump
The pump unit, which includes filters and valves, is installed in the rear of the vehicle to save space. It can be easily removed without tools, for example to protect it from frost in winter. Practical functions, such as a compressed air connection for emptying the lines, have also been considered. To carry out maintenance work, the pump can be switched by a push button.

Operation
Thedosingsystemisfullyintegratedintotheuserinterface of the ZX and can be operated in different modes. Whether a fixed dosing rate (l/min), a dosing rate-dependent dosing rate (an optional weighing device is required for this) or a percentage flow rate – all values can be set easily and conveniently in the submenu.



Space-saving storage

- **Spreading above the pick-up using flat jet nozzles**
- **200 litre tank capacity**
  optimally positioned for access at the rear
- **Easy cleaning of the system**
- **Removal of the pump unit without tools**
- **Convenient operation**
  via the terminal
- **Different modes**
  for optimal dosage

The KRONE ZX has an integrated dosing system with a 200-litre silage additives tank which can be operated in different modes. The pump unit, including the filters and valves, is installed in the rear of the vehicle to save space. An electronic filling level indicator enables reliable and fast monitoring of the silage additives supply.

The additional equipment

For maximum efficiency

Flexible and safe
The optional crop covers are flexible to adapt to the contours of the forage mass. Hinged to the sides, they cover the material effectively and will not open as the combination travels at speed.

Covers down
When the loading space cover halves are folded down to the side, the ZX is easy to load from the forage harvester. There is nothing in the way that might obstruct filling.

Hydraulic
The covers are operated by hydraulic motors for quick and dependable control.

What else is there?

- **Loading space cover**
  for loss-free transport
- **Camera**
  with colour display on the monitor
- **Weighing device**
  for an exact measurement
- **KRONE SmartConnect telemetry unit**
  optimal data management

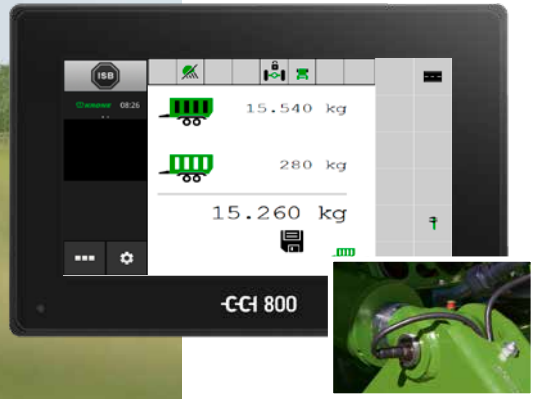
The loading space cover ensures clean transport even when driving fast and increases safety in road traffic. A camera helps to see the working environment better, making work easier and safer. The electronic weighing device can be used to measure the loading quantity precisely. The KSC control unit ensures rapid transmission of the recorded data.

Maintaining a clear view

KRONE loading and forage transport wagons can optionally be fitted with a camera in the loading space and a rear-view camera. The high-resolution images increase the field of view, make it easier to work and increase safety levels especially when shunting, loading and unloading. Can be ideally combined with the CCI terminals or the 7" monitor – to ensure perfect control in every situation.

SmartConnect

The ZX can be optionally equipped with the KRONE Smart-Connect telemetry unit. This interface is used with GPS and WLAN function as the basis for data management. Telemetrics allow managers to track the wagon and record all major data and transmit them to the office. This is the modern way of farming.



Optional weighing system

The electronic weighing device uses gauging pins inside the drawbar and on the tandem/tridem unit with hydraulic compensation. The weight of the load equates to the difference between the loaded weight and the quantity remaining on the wagon.

The operation

Extra convenience *for better work results*

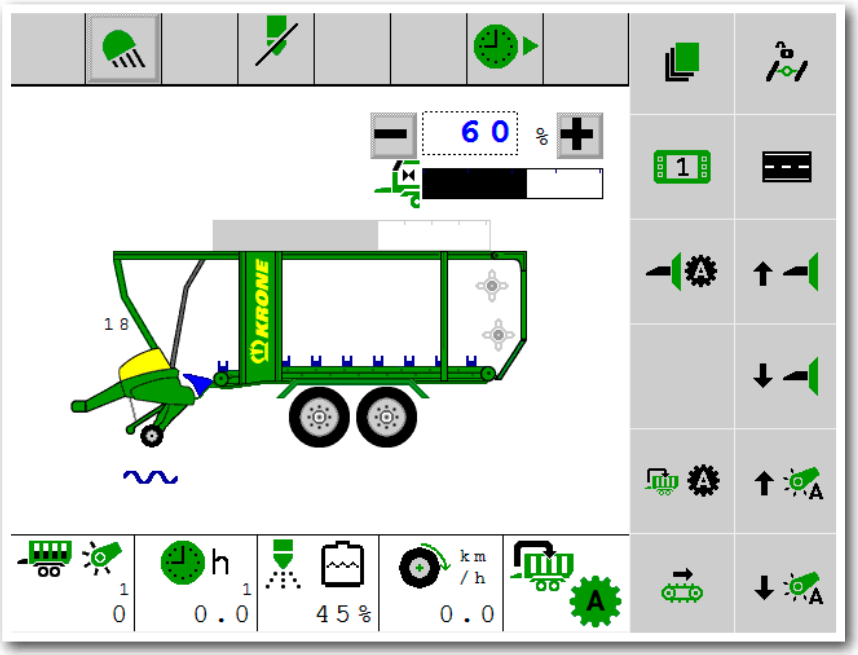
Operation

- **Operator comfort**
- **Clear concept**
- **Easy handling**
- **CCI-ISOBUS**
  One box for everything

Operator comfort is essential. Our shockproof operator terminals are compact, clear-cut and easy to operate. They feature backlit buttons to reduce operator fatigue during those long shifts well into the night. The CCI terminal is a universal operator control unit, which is compatible with a wide variety of ISOBUS implements from many manufacturers.

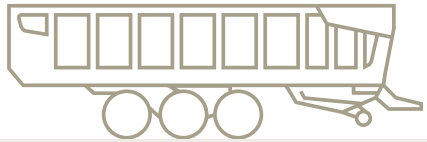
The DS 500 Terminal
The compact DS 500 terminal has a 5.7-inch colour display screen can be operated with 12 function keys, the touchscreen or the scroll wheel on the back. An optional joystick is available for even more convenient operation.

ISOBUS terminals CCI 800 and CCI 1200
With an 8" or 12" colour touchscreen, the CCI 800 and CCI 1200 ISOBUS terminals offer maximum user comfort. In addition to the main function at maximum zoom, other functions are displayed in the mini-viewer at the same time. These terminals can also be combined with cameras and AUX joysticks.



Everything at a glance

The user interface of the KRONE ZX is particularly user-friendly thanks to its simple and intuitive operability. Various work steps are illustrated by visualisation, such as rotating discharge rollers. More comfort is provided by the configurable display bar which can be used to individually adjust the user interface to the user's requirements. Automatic functions, such as the PowerLoad automatic loading system, the automatic unloading system and the drawbar control system, are also available.



Cleaning and maintenance

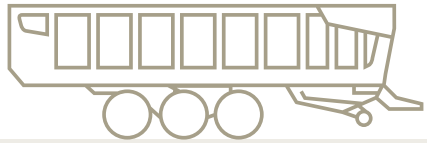
For a perfect condition

Quick and effective cleaning
To ensure optimum use and a long lifetime of the KRONE ZX, thorough cleaning and regular maintenance are essential. Thanks to the running gear height adjustment and the resulting ground clearance, there is sufficient space to remove dirt from all sides and get the machine ready for use again in no time.

Minimal maintenance effort
Thanks to the swivel-out function of the KRONE ZX blade cassette, maintenance is quick and easy. This means maximum efficiency for your operations.

Quickly lubricated
The sophisticated design of the KRONE ZX minimises the need for lubrication points; this in turn results in shorter maintenance and servicing times and enables longer operating times. This outstanding technical design not only offers first-class performance, but also saves time and money.

Quick and easy retrofitting
The KRONE ZX loading and forage transport wagons offer preparation for the connection of a central lubrication unit. The electronic preparation allows lubrication intervals to be controlled and preset from the cab. The preparation enables straightforward retrofitting of a system.



Technical data

Dual-purpose loading and forage transport wagons

		ZX 430 GL	ZX 430 GD	ZX 470 GL	ZX 470 GD	ZX 560 GL	ZX 560 GD
Capacity	m^3	43	43	47	47	56	56
Overall length	Approx. m	9.84	9.84	10.59	10.59	11.99	11.99
Total width*	Approx. m	2.98	2.98	2.98	2.98	2.98	2.98
Total height*	Approx. m	3.95	3.95	3.95	3.95	3.95	3.95
Platform height*	Approx. m	1.70	1.70	1.70	1.70	1.70	1.70
Track width	Approx. m	2.05	2.05	2.05	2.05	2.05	2.05
Drawbar tongue load	t	4	4	4	4	4	4
GVWR on tandem-axle model	t	24	24	24	24	–	–
GVWR on tridem axle model	t	–	–	31	31	34	34
Pick-up width (DIN)	m	2.12	2.12	2.12	2.12	2.12	2.12
Hydr. artic drawbar ground clearance	cm	75	75	75	75	75	75
Crop feed width	m	1.95	1.95	1.95	1.95	1.95	1.95
Rotor cutter diameter	cm	88	88	88	88	88	88
OptiGrass **40 blades (Theor. cutting length)** **54 blades (Theor. cutting length)**	 mm mm	 37 28	 37 28	 37 28	 37 28	 37 28	 37 28
Discharge rollers	Number	–	3 (2)	–	3 (2)	–	3 (2)
Tyre size **800/45 R 26.5 TL 174 D** **800/45 R 26.5 TL 174 D Trac** **710/50 R 30.5 TL 173 D universal profile** **800/45 R 30.5 TL 176 D Trac profile**		 Standard Optional Optional Optional	 Standard Optional Optional Optional	 Standard Optional Option** Option**	 Standard Optional Option** Option**	 Standard Optional Optional Optional	 Standard Optional Optional Optional
Input power	min. kW/hp	155/210	155/210	155/210	155/210	175/240	175/240

The technical data may vary depending on the equipment.

* varies depending on equipment, ** 30.5" tyres are not possible on the ZX 470 with tridem chassis.
All illustrations, dimensions and weights do not necessarily correspond to the standard equipment and are non-binding, subject to technical changes.

EN · ZX · 08/2025 · 209014850

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