

COBRA 7710T

FORAGE HARVESTER



ELHO - MADE IN FINLAND



As farms grow larger, the efficiency of machinery used in agriculture also becomes more of a priority. The average size of tractors used on farms has grown tremendously in recent years, and this enables the use of even more powerful tractor-driven implements. In response to this trend, ELHO has introduced the highly efficient tractor-powered Cobra forage harvester to its model lineup.

The benefits of finely chopped forage are undeniable. A short cut length provides the best storage properties and a more uniform feed quality. Precision-chopped forage can be stored tightly in a stack or silo, and feeding is also more efficient with precision-chopped forage.

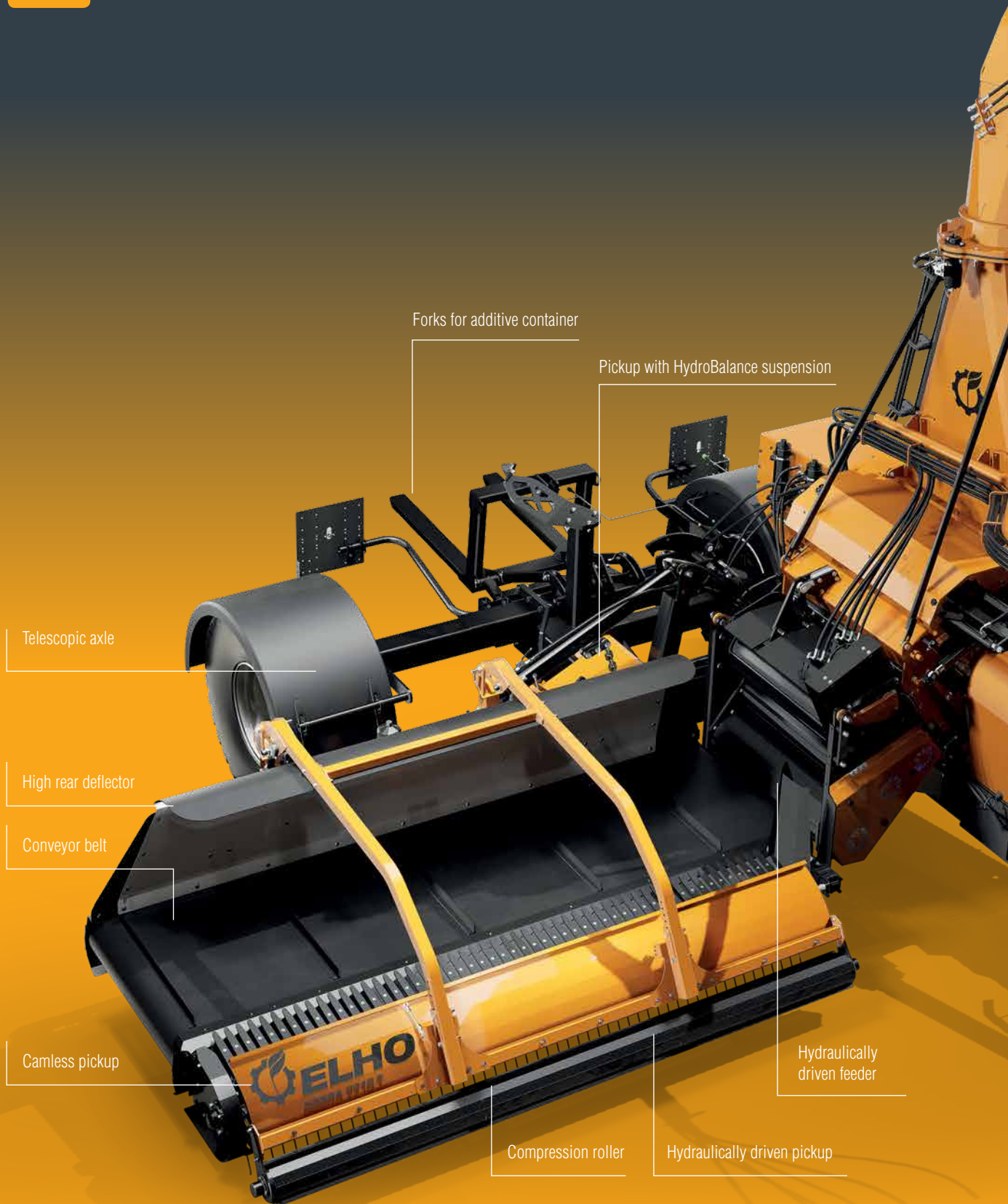
The profitability of farms is affected not only by the quality of the forage, but also by its price. The key factors that determine the price of forage are the fixed costs and fuel economy of the machinery.

Using the ELHO Cobra forage harvester reduces machinery costs. The purchase of a Cobra is a small investment compared to that of a self-propelled forage harvester when the farm's existing tractor is utilised. In terms of fuel consumption per tonne of feed, fuel economy is significantly better with the Cobra than with a self-propelled forage harvester. When you want to produce good quality forage with the best possible overall economy, choose the ELHO Cobra forage harvester!



ELHO Cobra forage harvester	2
Benefits and features	4
Material flow	6
Silage additive	7
Pickup	8
Feeder unit	9
Knife drum	10
Discharge chute	11
Control system	12
Operating method	13
Telescopic axle	13
Hydraulic system	14
Maintenance	14
Addons	15
Technical specifications	15

ELHO COBRA FORAGE HARVESTER BENEFITS AND FEATURES



Forks for additive container

Pickup with HydroBalance suspension

Telescopic axle

High rear deflector

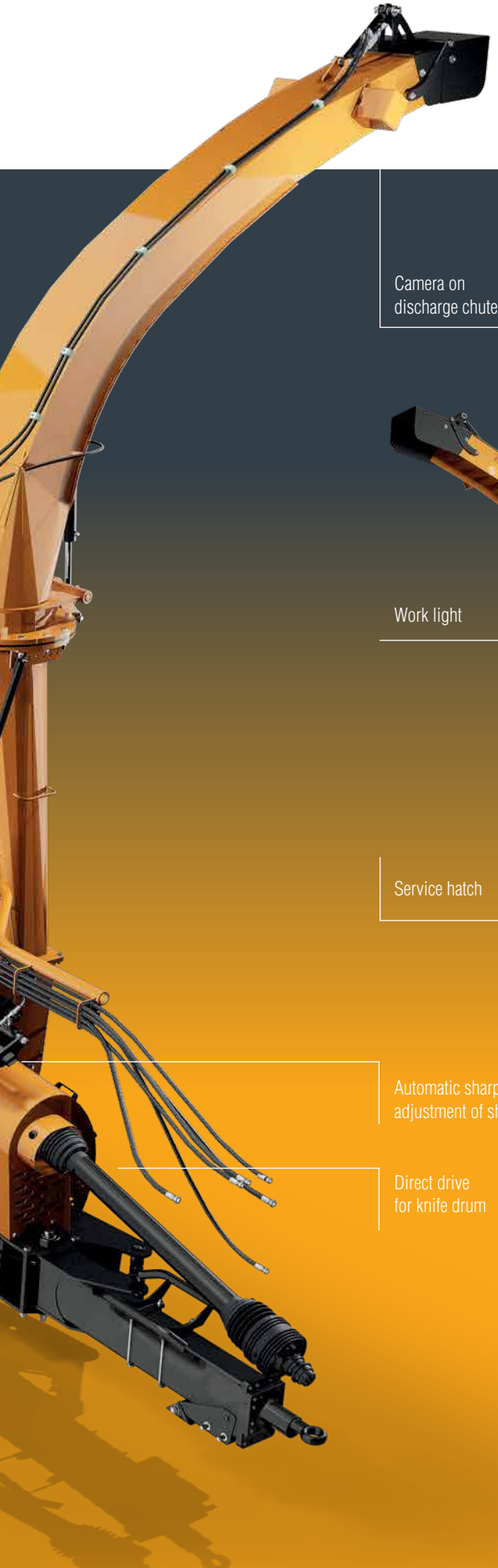
Conveyor belt

Camless pickup

Compression roller

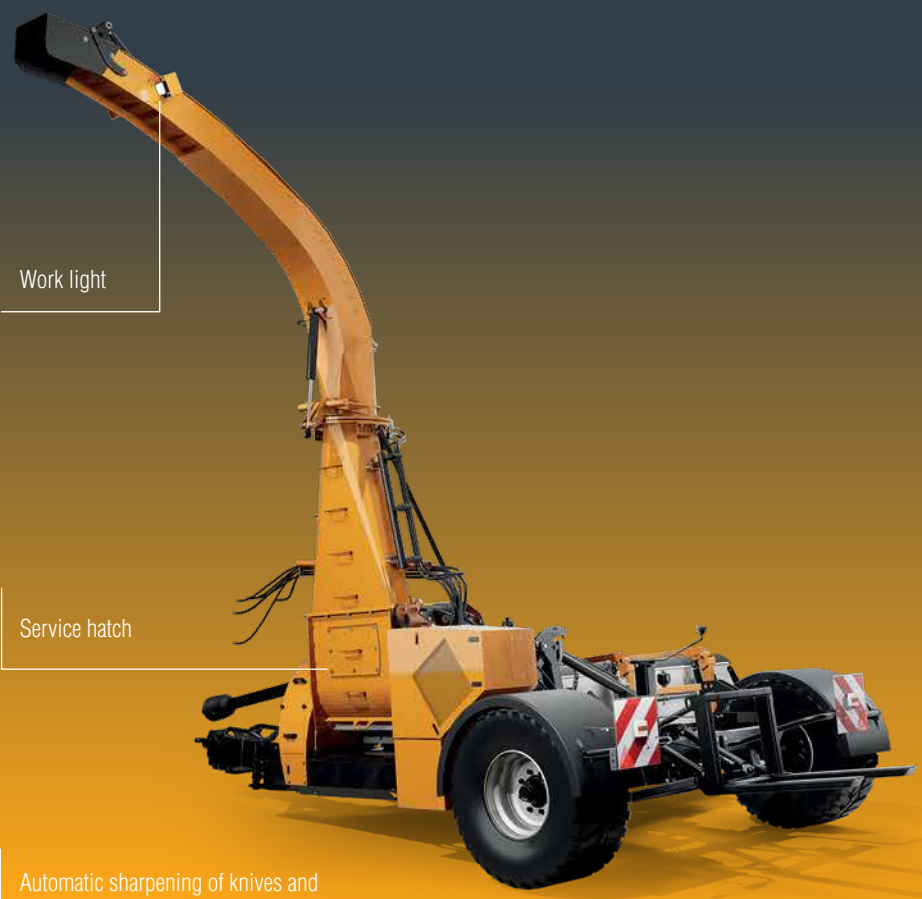
Hydraulically driven pickup

Hydraulically driven feeder



Camera on discharge chute

Work light



Service hatch

Automatic sharpening of knives and adjustment of shear bar

Direct drive for knife drum

FORKS

The forks at the back of the Cobra make loading and transporting the additive container easy. The forks are controlled from the ISOBUS terminal. Loading the additive container is even easier by utilising the camera on the discharge chute.



ELHO COBRA MATERIAL FLOW

The material flow on the Cobra has been made as simple as possible. After the pickup, the forage travels in a straight line through the entire machine. The conveyor belt, feeder and knife drum are all the same width, which ensures that the material flow and load remain even. The forage passes under the knife drum, and the air flow developed by the knife drum blows the forage at high speed through the discharge chute into the trailer. The Cobra is designed for harvesting grasses and whole grains, so there is no need for an accelerator. The absence of an accelerator significantly reduces the chopper's power requirement and also fuel consumption.





AUTOMATIC DOSING OF SILAGE ADDITIVE

The forks at the back of the Cobra make loading and transporting the additive container easy. The forks are controlled from the ISOBUS terminal. Loading the additive container is even easier by utilising the camera on the discharge chute.

The Cobra features automatic dosing of the silage additive. The desired dosage is adjusted from the ISOBUS terminal, and the automation takes care of the rest. The dosing starts automatically when forage is detected in the knife drum. The automation ensures that additive is only dosed when there is forage in the harvester and never when it is empty. This function also ensures that there is always an even amount of additive in the forage.





PICKUP

The Cobra forage harvester uses a pickup developed by ELHO. The starting point for the design was to develop a pickup that works as efficiently as possible alongside the harvester. The powerful feeder unit and knife drum place tough demands on the pickup, which is why the Cobra's pickup is designed for handling large amounts of forage.

The pickup features a fully hydraulic transmission, meaning it is driven by the machine's own hydraulics. The pickup works with two hydraulic motors, one for the conveyor belt and one for the pickup. The use of hydraulics makes it possible to precisely adjust the rotation speed of the pickup to suit the conditions. The hydraulic drive also enables the conveyor belt to be reversed if the feeder unit is blocked. The pickup is extremely maintenance-friendly, as there are few parts to be greased and few wearing parts.

The conveyor belt is 100 cm wide, so thanks to its large surface area, it can effectively transfer the forage to the feeder unit. The conveyor belt is made of rubber, which provides good friction between the forage and the belt. The conveyor belt is self-cleaning.

The pickup features the proven AutoBalance suspension. Beneath the pickup are three large support rollers that, combined with the hydro-pneumatic suspension, ensure a very low surface pressure. The surface pressure of a single support roller can be even less than 70 kg, even though the pickup as a whole weighs around 1300 kg.

The working height of the pickup is adjusted by changing the height of the support rollers. The height adjustment is stepless and is easily done via the ISOBUS terminal.

At the front of the pickup is a forage compression roller. The roller is hydraulically lightened and rises upwards according to the flow of forage. The roller and the deflector plate connected to it ensure an even flow of forage to the conveyor belt. The height of the roller is adjustable. If necessary, the roller can be hydraulically raised completely, in which case the roller is not in use.





FEEDER UNIT

The feeder unit on the Cobra features three feed rollers and two compression rollers. The feed rollers are hydraulically driven, and all rollers have the same rotation speed. Changing the rotation speed of the feed rollers adjusts the cut length of the forage, which is steplessly adjustable from 4 to 18 mm. The adjustment is made from the ISOBUS terminal. By decreasing the number of knives to 16, a cut length up to 36 mm can be achieved. There are two pre-compression rollers above the feed rollers. The pre-compression is hydraulic, and the compression force is also steplessly adjustable.

The hydraulically driven feeder unit enables not only precise adjustment of the cut length but also reversing of the feeder unit, making it easy to clear possible blockages. Unblocking is very efficient, as the conveyor belt is reversed at the same time as the feeder unit. The feeder unit has a protection mechanism that stops the feeder unit if the knife drum is overloaded.



KNIFE DRUM

When designing the Cobra, the aim was to develop a forage harvester that is as straightforward and efficient as possible. To optimise efficiency, the Cobra features direct drive to the knife drum. Power is transmitted directly from the PTO shaft to the knife drum without a gearbox. Direct drive ensures that all the power from the tractor is transmitted to the harvester without power losses. The absence of a gearbox also reduces the need for maintenance.

The knife drum on the Cobra is large, the largest on the market in fact, with a width of 100 cm and a diameter of 77 cm. The knife drum and the conveyor belt have the same width, enabling the knife drum to be fed along the entire width of the conveyor belt. There are fan blades on both ends of the knife drum that, combined with the high peripheral speed of the knife drum, create a strong air flow into the discharge chute. This provides good blowing power and prevents blockages.

The knife drum has a total of 32 knives in two rows. Thanks to the ingenious position of the knife drum, it is very maintenance friendly. Changing the knives and other maintenance procedures can be done easily through the service hatch next to the knife drum.



The knives can be sharpened simply by pushing a button on the ISOBUS terminal, and the shear bar can be adjusted automatically after sharpening.



DISCHARGE CHUTE

The powerful air flow developed by the knife drum combined with the design of the discharge chute effectively blows the forage regardless of the conditions. The height of the discharge chute reaches up to 5.5 m, which makes filling even tall trailers effortless. The discharge chute turns backwards and down into the transport position, so that the transport height remains moderate. The discharge chute's wear-resistant body and sturdy swivel base guarantee a long service life.

The discharge chute has a camera, which makes filling trailers effortless. The operator can monitor the filling of the trailer from the screen inside the cab without having to turn his head. The rotation of the discharge chute and control of the spout are controlled directly by the tractor's hydraulics. It is easy for the operator to select the buttons or switches to control the functions.





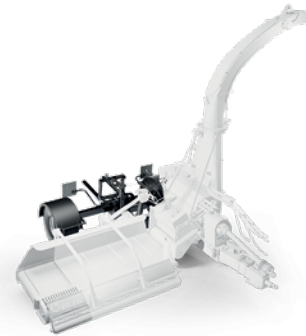
CONTROL SYSTEM

The Cobra forage harvester is ISOBUS compatible and can be controlled either from the tractor's ISOBUS terminal or from the optional ISOBUS terminal. The Cobra features advanced automation that makes the operator's work easier, including headland automation and automatic dosing of silage additive. The Cobra has a wide range of adjustments, which allow the operator to get the end result of his liking.

Headland turns are made easy with headland automation. When approaching the headland, the driver only needs to use one function that stops the feed and pickup while raising the pickup to the headland position. Correspondingly, when leaving the headland, the pickup and feed start with one action and the pickup lowers into the working position.

The discharge chute has a camera, which makes filling trailers effortless. The operator can monitor the filling of the trailer from the screen inside the cab without having to turn his head. The rotation of the discharge chute and control of the flap are controlled directly by the tractor's hydraulics. It is easy for the operator to select the buttons or switches to control the functions.



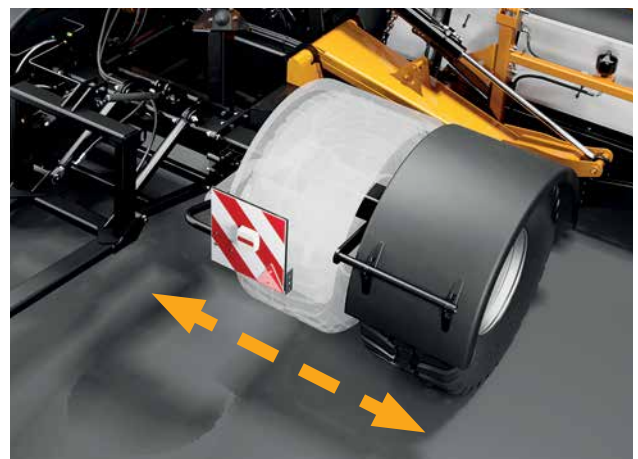


OPERATING METHOD

The efficiency of the forage harvester is essentially affected by logistics, so it is important that the operator of the tractor pulling the harvester and the driver of the tractor pulling the trailer work seamlessly together. The design of the Cobra enables the tractor pulling the harvester and the tractor pulling the trailer to drive close together, almost parallel, which makes filling the trailer much easier. The trailer is filled from the left side of the harvester. The operator can monitor the filling of the trailer from the screen inside the cab without having to turn his head.

TELESCOPIC AXLE

Despite its large size, the Cobra is compact and agile on the road. Due to the low centre of gravity and the suitable drawbar weight, road transfers are safe and efficient. The chassis features a telescopic wheel axle that enhances the chopper's sturdiness in the field. After entering the field, the wheel on the right hand side is moved out 75 cm with the help of a hydraulic telescope. The chopper's wide track minimises swaying.





HYDRAULIC SYSTEM

In order to optimise operating characteristics, both the pickup and the feeder unit are hydraulically driven. This enables precise adjustment of the rotation speed of both. The hydraulic drive also enables the feeder unit and the conveyor belt to be reversed to clear blockages. The hydraulic system is implemented using a variable displacement pump and an electrically controlled valve block. To optimise the operation of the pickup and feeder unit, the hydraulic system uses up to 260 bar of pressure and 170 l/min output. Thanks to its own hydraulic system, the forage harvester does not require big output from the tractor in terms of hydraulics. In terms of maintenance, the hydraulic system offers only advantages, as there are no gearboxes and therefore significantly fewer maintenance points.

MAINTENANCE

One of the priorities when designing the Cobra was ease of maintenance. The power transmission of the knife drum is implemented with direct drive to the knife drum, eliminating the need for belt-driven transmissions or gearboxes that require monitoring and maintenance. The knives of the knife drum can be changed easily and safely through the service hatch next to the knife drum. The number of daily maintenance items has been minimised, for example thanks to the hydraulically operated pickup and feeder unit.



ADDONS

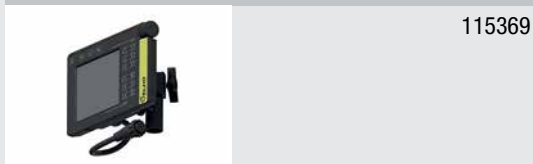
Towing eye K80



Acid pump



ISOBUS terminal



TECHNICAL SPECIFICATIONS



Recommended tractor output, hp	250-500
Nominal pump capacity min, l/min	73
Pickup width, m	3
Knife drum diameter, mm	770
Knife drum width, mm	1000
Knives	2x16
Hydraulic sharpening device	X
Shear bar control	Electric
Discharge chute rotation	Hydraulic
Spout control	Hydraulic
Discharge chute height, m	5,8
Wheel axle	Telescopic
PTO Spline	1 3/4", Z20

*) The recommended tractor weight and power depend on the conditions

Technical specifications are provided without obligation and may be amended without prior notice. Rights to structural changes are reserved. The price list valid at the time of sale takes precedent in matters of prices and equipment. Contact your local dealer for more information.



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