

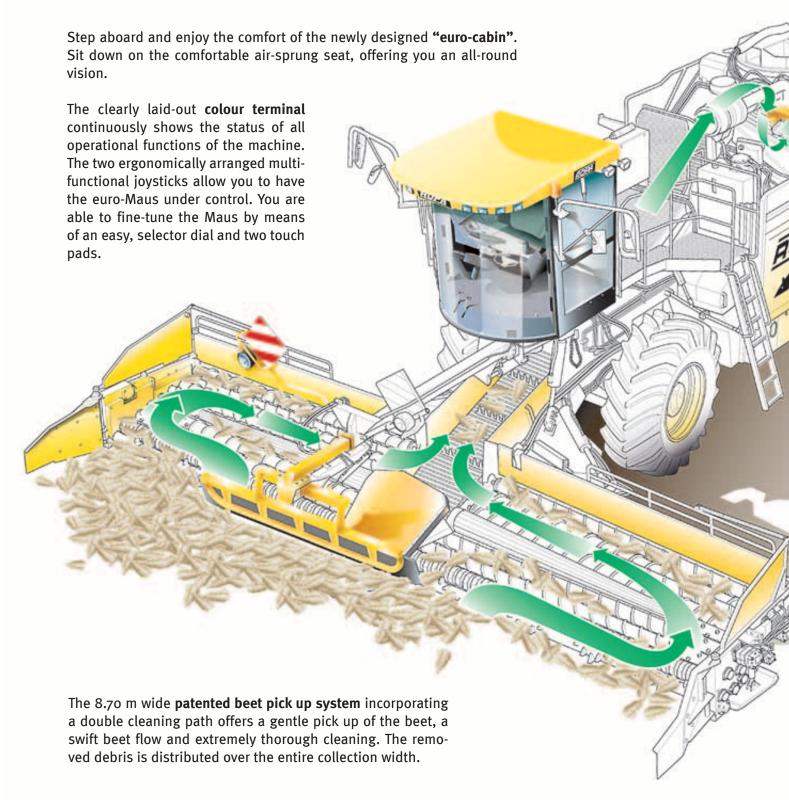


innovative technology for Sugar Beet harvesting



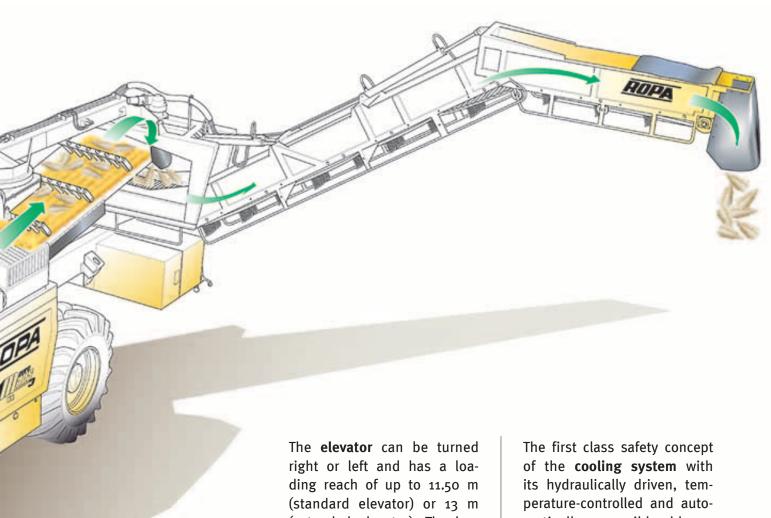
euro-Maus 3

A pleasure to load - functional and practical



The beet is gently and swiftly transported from the **in-feed continental web** with its soft, stone-resistant PU cleats onto the transfer conveyer, or to the optionally integrated spiral roller cleaner.





The **elevator** can be turned right or left and has a loading reach of up to 11.50 m (standard elevator) or 13 m (extended elevator). The loading height is up to 6 m. Large ditches or hedges can be easily bridged. It is your 'long arm' when it comes to loading beet.

The economical 220kw (299 hp) linear Mercedes Benz engine operates at a reduced speed when loading or driving on roads. Adequate power is provided during intensive operations; it allows the euro Maus to clean fast and effectively and offers super efficiency for highest requirements.

A well designed hydraulic system maximises the effectiveness of power transfer during intensive operations. A multiple disk clutch shuts down all drives to ensure easy starting up of the diesel engine in cold weather conditions. The load sensing hydraulic system ensures high oil efficiency at any time even in idling position.

The first class safety concept of the **cooling system** with its hydraulically driven, temperature-controlled and automatically reversible blower ensures that the diesel engine and the hydraulic equipment are always 'keeping a cool head'. The heat exchanger of the cooling system is positioned above the engine and protected from dirt.

The large capacity fuel tank with its spacious maintenance box is hydraulically swung out and balances the loader to provide a better weight distribution in the fields. This ensures a stable working position of the machine and a satisfactory weight distribution on roads.

The transfer conveyer or the speed-adjustable spiral roller cleaner with its beet flow nylon deflector tubes can be installed in your machine depending on the cleaning intensity required in your area. This ensures that the beet get to the factory with only the minimum soil tare.



Pick Up System

Careful collection, extreme intensive cleaning

The unique, 8.70 m wide ROPA pick up system divides the beet clamp evenly to the right and to the left. A nose cone, eccentrically driven, shakes up the clamp face and distributes the beet flow evenly. This concept minimizes the power requirement of the machine's forward speed. Clearance underneath the in-feed web and an even soil distribution across the entire collection width offer significant advantages to this concept.

Finger rollers penetrate up to a depth of 7 cm below the beet clamp thereby carefully lifting the beet from underneath and, via the following disc transfer roller, sweeping them up onto the two conveyer rollers. Whilst at the same time cleaning the beet the conveyer rollers ensure an even beet flow outwards. Assisted by PU-collecting fingers the beet are cleaned on the right and left side of the pick up unit and conveyed onto 4 reversible spiral rollers. The reverse action starts another thorough removal of soil, leaf and scalped tops as well as grass and weed debris without damaging the beet in any way. Even chopped-up straw protecting the beet clamp is cleaned off by the spiral rollers and deposited underneath the pick up unit.

Two conical rollers, one on each side, separate the beet flow between initial pick up and rear pick up spiral rollers to channel the beet along the outside and the inside of the entire cleaning path. This long path scatters soil particles over the entire collection width preventing soil from accumulation in heaps and thereby allowing a swift and economical soil preparation for winter sowing once the beet is harvested.

All rollers are electronically speed adjustable. They can be switched on and off as well as reversed with the right joystick. The electronic speed control with its automatic reversing facility ensures uninterrupted loading without involvement of the operator – even when clamps have a high stone content.

Durable polyamide plug couplings in the roller drive mechanism guarantee extremely long operating periods and easy and efficient replacement of a roller.

Careful lifting, intensive cleaning, even distribution of soil particles and minimum maintenance of the "euro MAUS" form the basis of high beet quality with minimum cost of cultivation, transport and subsequent preparation of the soil underneath the beet clamp.







Double cleaning path - conical roller separates the beet flow



Efficient removal of soil, leaf and scalpings



Replaceable lifting finger, PU collection fingers for gentle cleaning, hard coated



Skids and pressure control on the outer and central parts of the pick up unit determine the working depth. Setting is done via the joystick.

For monitoring the operating depth a colour camera with spotlight has been installed underneath the nose cone allowing for the depth to be optimised and maintained from the cabin via a LCD colour monitor. This prevents loss and guarantees a clean collection as well as minimum power requirement.

The hydraulically powered, pivoting telescopic beet collection arm with its proportio-

nal control valves is easily controlled from the cabin by using the left joystick. The remaining beet can then be swept in without the operator having to leave his seat. The "euro MAUS" leaves behind a neatly harvested area in an easy working process. This is quality work equally convinces operators and farmers alike.



Additional Cleaning

Highest loading capacity – careful additional cleaning

Beet conveying in the machine

The beet protecting ROPA in-feed web with its maximum loading capacity and its soft PU cleats conveys the beet swiftly and gently underneath the cabin to the next cleaning unit. The beet flow can be comfortably monitored from the swivel seat.

When the in-feed web switches off, pick up unit and forward drive are also automatically stopped.

Between the in-feed web and the elevator there is the option for a continental web conveyer cleaner or a spiral roller cleaner to be installed. In medium or light soil the 90 cm wide transfer conveyer achieves good cleaning results by continuous adjustment from the terminal.

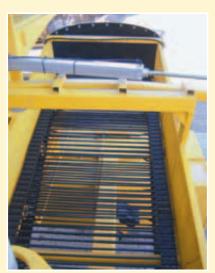
The spiral roller cleaner has proven itself in heavy soil conditions and in beet clamps with high soil content. It provides an additional and extremely effective beet cleaning facility in that the entire beet flow is once more intensively cleaned over a width of 1.25 m by 8 tangentially rotating spiral cleaning rollers which are constantly speed adjustable. Speed adjustment is made from the terminal by electronic impulse to an axial piston pump – reliable and easy.

If required the cleaning effect can be intensified via the hydraulically adjustable beet deflector tubes. Small stones are even crushed and discharged together with the soil. The robust method of construction and the maintenance-free propulsion of the oil-immersed spur gear guarantee uninterrupted operation as well as highest possible cleaning even for high specification requirements.

After the cleaning process a drop in height and change of direction convey the beet to the elevator and onto the waiting transport vehicles. The elevator can be continuously, horizontally and vertically adjusted with the joystick from the cabin so that the beet is loaded gently from an always optimal position. A pivoting angle of more than 300° can be covered by two substantial slew rings allowing for the beet to be loaded from almost any position of the loader, right or left. The loader can be pivoted up to 11.5 m (or an optional 13 m).



In-feed web with durable PU-collection cleats



Transfer conveyer cleaner



Standard loader, 11.5 m loading reach



Extended loader, 13 m loading reach



Spiral roller cleaner



Wider ditches can be bridged. The loading height is up to 6 m allowing lorries to stand on higher ground.

Conveyor webs are equipped with a fast gear so that soil sticking to the continental web conveyers can be removed by centrifugal force.

A hydraulically adjustable cross shaft axle at the rear ensures that beet collection is always carried out parallel to the ground to prevent the machine from turning over.

By weighting the fuel tank with an additional steel plate the machine achieves a superb stability even when the loading width is set at a maximum and the elevator is extended.

Comfortable Cabin

Clearly laid out and functional in every detail

The euro Cabin is specially developed by ROPA to combine modern design, first class overview and effective noise reduction all resulting in an ergonomic and comfortable work place. A smoothly curved windscreen provides an excellent all round view. Complemented by a particular low-line vision this gives the operator an unobstructed view over the entire operational width from an ergonomically correct seating position.

An optimal view over picking up and loading functions without the need to adjust the sitting position means working ergonomically without tiring even on long working days.

This is the basis for top efficiency in the beet harvest.

Tinted, full glazing, adjustable steering column, air-sprung, comfortable Grammer seat, MP3-CD radio with audio system, video-monitored depth control as well as heated and pneumatically foldable wing mirrors combine into a near perfect work place. To make it absolutely perfect we can offer you an optional, stationary heater which would also heat the hydraulic oil tank and a standard airconditioning system with continuous fan speed adjustment.

The seat including an integrated control panel and a new colour terminal rotates by approximately 250° enabling the operator to have a continuous view over picking up and loading from an unchanging, individually adjusted position. The control panel and the air sprung seat can be adjusted to one another ensuring that the operator is in a relaxed position suited to his personal well-being and efficiency. The seat can be locked into any position by a push button enabling the operator to maintain his sitting position without physical stress even when loading on a slope.









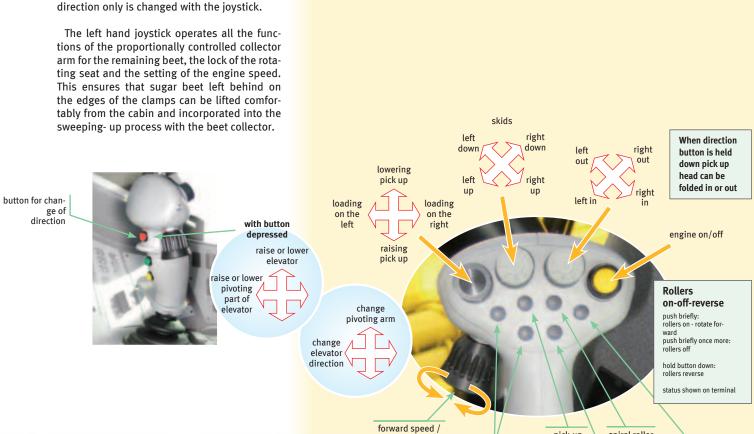
The radio is practically and prominently integrated into the cabin ceiling, as are the switches for the side windscreen wipers, the 22 super beam head lights and the main fuses. The LCD colour terminal for monitoring the pick-up depth or the optionally available elevator camera occupies a prime position in the operator's range of vision.



Operation

Simple and practical

The right hand joystick activates all the important loading functions, controls the picking-up depth and separately sets into motion all the individual drive units as well as saving them. The entire operation of the machine rests in one hand of the operator whilst he has the other hand free for using the radio or telephone. It does not matter whether loading takes place on the right or on the left, control of the loader is always the same, the loading direction only is changed with the joystick.



power for on-road driving

pick-up

wheel drive

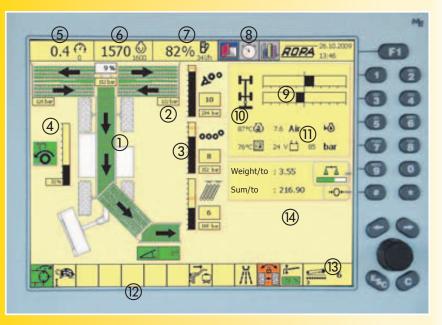
forward/reverse

spiral roller

nose cone on/off

spiral roller

cleaners



Colour terminal with graphical display of every operational state, output data and state of loading:

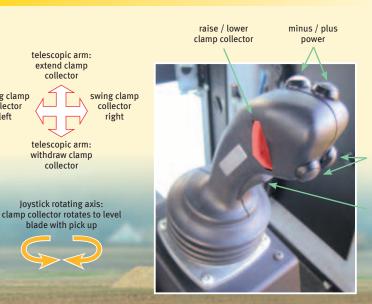
- 1. Beet flow drives: green on, white off, red blocked
- 2. Ground pressure of pick up rollers
- 3. Roller speeds with load monitor
- 4. Forward speed when loading
- 5. Driving speed
- 6. Engine speed: actual / required
- 7. Tank content/level; fuel consumption
- 8. Function selection fields
- 9. Turning angle: front / rear
- 10. Collection height
- 11. Operations parameter display area
- 12. Status data

swing clamp

collector

left

- 13. Position of selector dial
- 14. Display of operations in progress / scales



Clamp collector rotates to level blade with

lock / release seat brake

The colour monitor is integrated into the control panel in the cabin enabling the operator to be continuously informed of the operational status of the machine from his range of vision. Some information is given acoustically as well as optically. He can therefore constantly read off all data crucial for the operation processes of the machine: (green = ok; orange = check; red = alarm).

All data from the euro Maus are saved separately after road transport and after loading procedures. An integrated fuel consumption monitor allows for a cost assessment to be made per loading hour. An optional task evaluation facility allows all data to be saved on a USB stick via a USB interface and to be transferred to a PC or laptop. A standard MS Excel program helps with the data processing.

A water spraying unit available as an optional extra can be refilled from the ground and operated either in continuous or in automatic mode. When in automatic mode the unit applies water when pre-determined pressure parameters are exceeded by the cleaning rollers thereby preventing clogging. The spraying unit can be switched on separately for pick up or for spiral roller cleaning unit or together for both cleaning functions.

The most important settings of the euro Maus can be made comfortably with a selector dial switch and changed with the \pm - keys.



control panel with multi-function selector dial switch

Road transport

Highest manoeuvrability – swift change over

The euro Maus can be changed from transport to work mode in as little as 2 minutes without the operator having to leave the cab. This facilitates swift and easy movement between clamps. Short set up times lead to highest efficiency when loading beet.

When in automotive mode on the road the euro Maus is at all times driven at the required speed with low engine revolutions and lowest possible fuel consumption. When the power pedal is depressed propulsion and engine revolution are jointly activated. An electro-pneumatic gear takes over from the driver and reliably prevents any switching errors. A top speed of 20 km/hr (optional 25 km/hr) can be achieved at an economical 1250 RPM (or 1550 RPM).

The automatic parking brake prevents any possibility of the euro Maus rolling away. As soon as the machine comes to a halt (a couple of seconds after the power pedal is released) the parking brake clicks in automatically. Renewed depression of the power pedal automatically releases the parking brake.



Mechanism of electro-pneumatic gear



Change-over to transport mode in only 2 minutes without the operator having to leave the cab





Steering is by front axle / steering wheel. If necessary the rear axle can be activated as well. This increases manoeuvrability and results in a turning circle with an inner diameter of 8.3 m which is advantageous for narrow field access. The turning angle at the front is 30°, at the rear even 32°.

The forward speed at the beet clamp can be set with the potentiometer dial on the multi-functional joystick for continuous between o and 700 m/hr. When in the beet clamp the reverse gear can be activated simply by pushing a button on the joystick. The standard specification of high load-bearing tyres, 710/75 R34 Michelin or Good Year on all 4 driving tyres (load index 178 A8) allows an optimal power transfer at a smooth forward speed.

Innovative Design

Energy efficient power transmission – low maintenance



Foldable gate at back of in-feed web

The 220 kw/299 hp Mercedes Benz linear engine OM 926 LA is integrated into a strong frame structure. It operates at a maximum torque of 1200 Nm within a range of 1300-1600 RPM. Thanks to a new propulsion concept the economical turbo motor with air cooler offers engine revolutions at loading reduced by 12% compared to the earlier type. A fuel filter pollution indicator gives early warning to prevent a drop in efficiency. The drive belt in the soundproof engine casing is easily accessible for monitoring and maintenance. A belt drive with automatic tensioning ensures a maintenance-free power transfer to the two generators, the water pump and the air compressor. The battery box cover can be folded out and serves as a platform to stand

The euro-Maus 3 is equipped with a highly efficient hydraulic system for power transfer. The supply to all hydraulic operations is by a load-sensing hydraulic pump, which already supplies maximum oil when idling. A large combination return filter cleans the entire oil flow that runs back into the tank. In addition a high-pressure filter protects the entire hydraulics from contamination. A new pump distributor drive with a pressurized facility for keeping the circuit greased and with a load "sensitive" disk clutch for additionally switching on all operations makes starting of the diesel engine easy even at low outer temperatures. For monitoring the lubricating oil level a measuring sensor has been integrated. In addition, a coarse and a fine filter ensure optimal safety for the pump distributor gear mechanism in the oil circuit.

Three axial piston pumps supply adequate oil to the roller drives which offer adjustable and reversible speed. A generously dimensioned propulsion pump reduces the engine speed when the machine is in drive mode.

A hydraulically driven, temperature dependant and continuously adjusted blower guarantees maximum safety of the cooling mechanism. Every time the engine starts the blower reverses automatically and blows the neatly arranged cooling elements free from any debris. The blower can also be reversed from the cabin by pushing a button. Cool air is sucked in from the top thus preventing pollution from the cleaning mechanism of the spiral roller or the rear wheels. For cleaning the blower simply lifts up. Access to the blower is via the in-feed web when its back wall gate is folded out.

Two on-board computers which communicate with the terminal via a CAN-BUS system steer and monitor the machine. Warning signals are clearly and comprehensively shown

Low maintenance auto tension belt drive

at the terminal. A detailed and easily accessible diagnostics menu ensures that all functions of the sensors and electro components can be checked.

All cable connections are clearly and permanently marked and can be found easily in the switching diagram and the diagnostics menu (at the terminal). This simplifies maintenance and fault detection and saves money and time. All cable connections are integrated into the central electric system without plugs. Such a thoughtful electrical design by ROPA eliminates contact problems caused by oxidization, loose plugs or even insufficiently tightened clamps. A well-arranged electronics cubicle incorporates even a reading light allowing monitoring in the dark hours.

Many electric circuits are equipped with LED safety automatics.

ROPA technology – from practical experience to practical use.

Technical data - ROPA euro-MAUS Typ e-M3

Engine:

Mercedes Benz diesel engine OM 926 LA exhaust norm EURO-MOT IIIa, 6-cylinder linear engine with 220 kW/299 hp at 2200 RPM, max. torque of 1200 Nm at 1300-1600 RPM, cubic capacity 7,201 ccm, fully electronic steering with fuel consumption accessed at the terminal, temperature dependant adjustable and reversible hydrostatic ventilator drive, flat belt alternator drive with automatic belt tensioning, fuel tank capacity 1340 l.

Propulsion:

Continuous hydrostatic propulsion with 4-gear drive, 2 separately activated differential locks, cruise control, automotive driving on roads, speed regulation through electronic steering when in crawling gear. Speed: 0-20 km/hr; optional 25 km/hr.

Hydraulic System:

Pump distributor gear with load-adjustable multiple disc clutch for activating all pumps (easy starting of the diesel engine even at extremely low outer temperatures), pressure circuit lubrication with monitor of the lubricating oil level, adjustable drive transfer for reducing revolutions at loading, a load sensing pump for feeding the entire hydraulic system, 3 axial piston pumps (for the speed adjustable and reversible roller drives) large propulsion pumps for speed-reduced driving on roads in automotive mode.

Steering

Front axle steering, rear axle steering, turning, automatic mid-position with display at the terminal, turning angle front 30°, rear 32°.

Turning Circle: 8.30 m inner turning circle

Cabin:

Sound-proof, all-round view cabin with tinted glazing and low line vision, control panel at rotating seat with integrated colour terminal, function keys with selector dial, 2 proportionally driven multi-function joysticks, engine monitoring at the terminal, air-conditioning unit, rotating and air-sprung comfort seat with lock, MP3-CD radio with audio system, 60 l storage cubicle in the cabin back wall, screen wipers front, left, right and rear.

Cleaning / Loading Capacity:

up to 550 tonnes per hour loading

Maximum collection width: 8.70 m

Collection:

8.70 m wide patented ROPA roller collection, 18 rollers with speed adjustment and automatic reversing facility, (2 finger rollers working up to 7 cm deep, 2 cleaning roller, 4 conveying rollers direct beet outwards, 2 conical rollers separate the beet flow, 8 tangentially rotating spiral rollers direct beet inwards => double cleaning path), eccentrically driven nose

cone, telescopic and proportional driven collector arm for remaining beet, oil flow mainly in the hydraulic pipes, colour camera and LCD colour monitor for monitoring lifting depth.

In-feed Web:

80 cm wide, 50 mm separation with PU-collector cleats and dirt flaps, double-cam belt

Cleaning:

Standard:

transfer conveyer, 90 cm wide, 40 mm or 50 mm pitch Special version:

spiral roller cleaner with 8 tangentially rotating rollers, 125 cm wide

Total Cleaning area:

28.64 m^2 with transfer conveyer; 29.48 m^2 with spiral roller cleaner

Cleaning Path Length:

23.8 m (standard elevator) or 25.3 (extended elevator)

Loading Height: up to 6 m

Loading Width:

11.5 m (standard elevator) optional 13 m (extended elevator)

Electrics:

24 volt, 2 light units with 100 amps each, 12 volt sockets, 2x24 volt sockets

Driving on Roads and Working Mode:

The switch-over from road transport to working mode takes appr. 2 mins.

Dimensions during Road Transport:

length: 13.35 m; width 3 m; height 4 m

Weight: depending on type from 23,500 kg

Tyres: 710-75 R34, load index 178 A8, 3rd axle (compulsory in Germany) 235/75 R17.5

Standard Equipment:

central lubrication, collection arm for remaining beet, air-conditioning, on-board tools

Optional Equipment:

Spiral roller cleaning with 8 tangentially rotating rollers, 13 m elevator, stationary heater, 25 km/h version, 3rd axle (compulsory in Germany), elevator camera, data export by USB stick, weighing facility, cross over rollers.

Made in Germany.

Tested by TÜV and professional cooperatives, conforming with CE regulations. Subject to technical alterations





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