# Harvest simplified.

ROPA



USA/CANADA

In 1972, just 25 years old, Hermann Paintner designed and built his first comprehensive self-propelled sugar beet harvester.



1972 And so it all began:



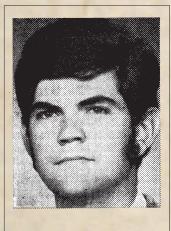
A powerful "piece of equipment": that is the six-row beet harvester. This machine has already caused quite a stir among the professionals.

100 hectares of beet fields are waiting for Farmer's son has designed a comprehensive harvester Paintner's six-row machine thet for some weaks continued the occurants at the at khe. SITTELSDURF. Une can well imagine the suspense that for some weeks captivated the occupants at the at-tractive Pointner form similar to the atmosphere at Cane that for some weeks captivated the occupants at the at-tractive Paintner farm similar to the atmosphere at Cape Kennedy prior to the launch of the first space craft. The Paintner family found themselves in exactly the same

state when young Hermann, just 25 years old, was buil-ding his six-row beet harvester in the farm's workshop: is this monster going to work or have the owners of 100 hectares of land in the Rottenburg/Laaber and Mallers-dorf regions backed a phantom?

Limited in financial resources but unrestrained in enthusiasm and oambition for his goal, Hermann Paintner immersed himself in the task.

No one at that time dared to imagine the overwhelming success his undertaking would bring.



khe. SITTELSDORF. The 26-year old farmer's son Hermann Paintner of Sittelsdorf, Lower Bavaria, is at present the topic of conversation among beet growers, but not only in his local area. The six-row harvester with a 12-ton tank capacity almost caused pilgrimages to Sittelsdorf. Before the campaign even finished, it had become a legend. A rumour is circulating among beet growers that the head of a well-known harvesting machine manufacturer has vowed that he would dismiss his entire team of constructors if the Paintner machine only managed a mere 100 metres.

#### No Technical Training

Who, people ask, is this Hermann Paintner? What is he, the technician and constructor without a drawing board and not only that, but without any technical training whatsoever or even the capability to produce a technical drawing, what has he built? How has his prototype performed?

Hermann Paintner, with only the standard primary school and agricultural college education, the son of a farmer with eleven to twelve hectares of sugar beets, is a passionate technical inventor. He began with the idea that the one-row harvesters produced little result, and that instead, performance should be based on an hourly output per hectare which would not call for more personnel or expertise, would not damage the beet foliage and would elimina-ted the need for temporary unloading of beets even after longer runs.



The new six-row comprehensive sugar beet harvester of the Paintner system (rear view) in operation.

December 1972

... among the beet growers of Lower Bavaria is this twelve metre long six-row harvester designed and built by the 26-year old farmer's son .Hermann Paintner of Sittelsdorf, who has no technical training whatsoever. The harvester has already operated over 90 hectares of sugar beet in this campaign (see also page 8).

Topic of the day..





Premium Class.

It was in 1972 when the 25-year old budding farmer Hermann Paintner designed and built his first comprehensive self-propelled beet harvester at his parents' farm.

He was supported by friends and especially by his parents who viewed his fervent interest in and his passion for technical inventions with utmost understanding.

He constructed his first machine mainly from second-hand parts and therefore became a welcome visitor at the local scrap merchants.

The component parts of his machine may have been old but his ideas were not. At first the experts in the field wrote him off as an immature idealist without any practical experience. They forecast no or hardly any chance for somebody totally lacking a well-founded technical training. And yet, they soon learned otherwise to accomplish such a feat.

Hermann Paintner's unwavering perseverance paid off only two years later – in 1974 - when interested parties wanting more machines emerged. He and his partner devoted themselves to the production of a small batch of the sugar beet harvesters

The "Paintner System" soon became a byword for the six-row, self-propelled beet harvesting technology in Germany and in other European countries.

In 1986 the ROPA Fahrzeug- und Maschinenbau GmbH with its agricultural activities and estate in Sittelsdorf was founded. Inspired by new ideas and with great energy Hermann Paintner set about producing a simpler and more functional version of the sugar beet harvester.

Hermann Paintner was already known at the Südzucker AG as a designer and constructor to be reckoned with, and in 1987, he took upon the task of converting a patented beet loader.

ROPA acquired the licence and soon began with the production of the "Lade-Maus" as the machine is called among the professionals. The 'Maus' tackles the

## The long journey from the first beet harvester



cleaning and loading of the sugar beet from the clamp at the edge of the field to the truck on the road for delivery directly to the sugar refinery.

One year later, in 1988, the reconstruction of a comprehensive sugar beet harvester began, and this machine was to bring ROPA resounding success in the market.

The following years with an ever expanding business were devoted to further development and improvement in the technology of agricultural machines. The dates below can merely highlight to the meteoric development of ROPA:

- 1992 the world's largest topper harvester yet, with a tank capacity of 35 m<sup>3</sup> (22 tons) is designed. In the same year the 'Maus' has its intake width extended from 6.7 m to 8.3 m.
- 1996 the chain intake of the 'Maus' is superseded by a roller intake system
- 1998 the euro-Tiger and the euro-Maus are designed
- 2001 the pivot articulation of the euro-Tiger is extended from 15° to 30° thereby improving its manoeuvrability
- 2005 the first newly designed and blockage-free PR harvesting units with

## ... from the cleaning conveyor to the euro-Maus.



### to the euro-Tiger ...



a higher throughput and noticeably less wear and tear are produced as a series

- From 2005 onwards the euro-Tiger V8 is built; the new universal concept increases productivity, comfort and economical operation
- 2006 ROPA develops a new flailing unit for extremely dense weed growth and difficult harvesting condition suitable for use with the blockage-free PR uptake unit
- 2006 at an introduction in Seligenstadt a few models of the newly designed euro-Maus 3 are introduced;

the Maus distinguishes itself by an extremely high operator friendliness, reliability and easy maintenance

- 2007 for transport on highways a new system solution of the PR-XL harvesting unit is demonstrated
- 2007 start of the euro-Maus 3 production; numerous new practical solutions are introduced at the Agritechnica
- 2009 a number of improvements in the design details of the euro-Tiger V8-3 increase its profitability and provide even greater comfort
- 2011 the euro-Maus 4 model with its 10.2 m wide uptake system, counterweight arm and lift-up cabin is fascinating to see in operation. The euro-Tiger V8-4 with Micro-Topper and numerous new developments is presented at the Agritechnica



... 40 years innovative technology for the beet harvest!



Pilot- and experimental biogas unit

5.

• •

Central store

Adaptation Frame construction / welding

**CNC-production** 

Customer service **Business Centre** 11111

1 MARY



**Bavaria**, Germany





New factory space - 26000 m<sup>2</sup> To be completed by the end of 2013

Construction / spraying

A

Fille .

uceccettececete

Canteen

1170

Training centre

ecer.

Development



Service



# Impressions of ROPA sugar beet harvest technology demonstration in November at ROPA in Sittelsdorf

Around 12,000 to 15,000 international guests





### A family owned and managed company



**Founded** in 1972 by Hermann Paintner, the family business has risen to become the leading specialists in machinery for the harvesting, cleaning and loading of sugar beets.

ROPA's objective for all developments is to strive to meet the demands of progressive sugar beet farmers and entrepreneurs. More than 270 employees work at the ROPA headquarters in Sittelsdorf. With all colleagues in the subsidiaries, the team has a total of over 400 employees. ROPA is active worldwide, especially in dedicated sugar beet areas like Russia, USA and Canada. Premium service and parts supply is provided by subsidiaries and specialised ROPA importers and dealers.

#### **Experience** for practice

As before, the Paintner family worked on their own farm in Sittelsdorf. On about 200 ha they cultivate sugar beets, wheat, potatoes and rapeseed. Since 2004, Hermann Paintner also managed an agricultural business in Ukraine. Sugar beets and cereals are grown on around 1000 ha of leased land in the south of Kiev. Having their own farm provides decisive advantages for ROPA. The employees have hands-on experience and, therefore, better understand the needs and requirements of the machines. All developments are matched to the practical requirements and reviewed simultaneously on the suitability for daily use. Also the land in Ukraine is serving possibilities for experimentation and testing. New and further developments can be reviewed on the large fields in detail before bringing onto the market.





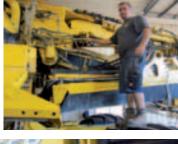
















ROPA North America Inc. est. 2003 3130 London Line , Wyoming, Ontario, CA NON 1T0 Phone (1)-519-786-3025, Mobile (1)-519-339-6015 info@ropanorthamerica.com, www.ropanorthamerica.com



#### **Technology to Perfection**

The ROPA euro-Tiger V8-4 is considered world-wide to be the **most efficient Sugar Beet Harvester** of its class. The power transfer of the 440 kW/598 HP (Mercedes

Benz V8 - mit SCR-Cat and AdBlue) euro-Tiger V8-4 is now even more efficient with a **reduced fuel consumption** and **more powerful traction.** It operates **efficiently**  **and flexibly** on short as well as on long beet fields due to its hopper capacity of more than 40 m<sup>3</sup>. A perfect blend of tank loading automation and hydraulic **axle** 



**load control** (with integrated suspension) guarantees optimum traction and load distribuion with, at the same time, an **outstanding manoeuvrability** in all harvesting conditions. The extra-wide 1050/50 R32 Michelin tires at the front axle ensure superior soil protection, even with a completely filled beet tank.

The soil is protected – with improved ride stability and higher operator comfort.

# Harvesting the whole beet without any leafs...

The ROPA Micro-Topper maximizes your profits. That's a fact.



The ROPA Micro-Topper – maximum gain with no extra effort

The ROPA micro-topper is the practical solution fulfilling the requirements of beet growers, wage payers and sugar factories alike! With the ROPA micro-topper you harvest **the whole beet with top** but without leaves. The flail unit is left to operate at its high setting but at reduced revs. leaving each beet with stalks. This **increases** the **life**  of the blades (less contact with soil and stones) at reduced fuel consumption. The micro-topper comb measures every beet crown separately. The minimal scalping or





The finder comb identifies the exact height of each beet top – then a quick shave

shaving amount is then adjusted narrower or wider – nothing is wasted, **no beet is trimmed too low**, the quality is better than ever. This is easily adjusted from the cabin. Optionally, a second topping can be made or only the leaves are shaved off (micro-topping).







**Hydraulic stone protection**, positioned on top, maintenance free linear propulsion



**Excellent view across the pickup unit** -> the operator overlooks the beet row and the operation of the micro-topper

PISh – the ROPA integral flail unit The chopped beet leaf is deposited between the rows.

> **Row finder for automatic steering** – with maintenance-free linkage

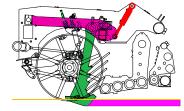
#### Non-jamming PR harvester with hydraulic stone protection

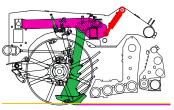
The PRh pickup unit is equipped with tangentially oscillating shares and a maintenance-free stone protection. Pickup units with fixed row widths are avilable for 6, 8 or 9 rows. We also supply six-row variable units with 45 cm and 50 cm. Our 900 mm depth wheels combined with the intelligent three-point measuring system guarantee accurate depth control of the pickup. There is minimum maintenance cost through adjustable conical bearing in drives and oscillating share drive.

Oscillating share drive with spur wheel gear and adjustable conical bearing

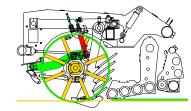


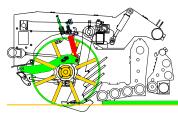
Hydraulic height adjustment of the share shaft





Hydraulic height adjustment of pickup rollers







XL



- New operating console ✓ Joystick with integrated mini-joystick
- ✓ 3 new on-board computers with 2.8 times faster computing speed
- ✓ 3 USB-data interface

- ✓ New Mercedes V8-Diesel engine with 2800 Nm torque
- ✓ New drive with 12% more pump efficiency and 5% higher traction
- Intelligent three-point with integrated measuring system for more accurate depth control of the pickup rollers
- ✓ Larger front tires best soil protection at full tank capacity
- Improved cabin positioning
- Speed of longitudinal and cross tank conveyors continuously adjustable
- ✓ New share plates with 6 different available positions
- Extended unloading conveyor for all standard models

✓ micro Topper for all standard models



Beet tank of 40 m<sup>3</sup> capacity – flexible operation and sustainable soil protection

The euro-Tiger V8-4 offers a tank capacity of more than 40 m<sup>3</sup>. The auger loads the rear end of the tank first. This ensures an even load distribution over the two rear ax-

les relative to largest tire size. The front axle load remains at a constant low. When the rear part of the tank is full (ca. 80 % of the tank capacity) the tank auger – controlled

by **ultra-sound sensors** – reverses and fills the front area of the tank. The **tank load level** is shown at the colour terminal. This is a valuable automatic system for the opera-

PR-Lifting units available in different row-widths:

- 6x 30 inch
- 8x 22 inch
- 9x 20 inch
- 6x 45 cm
- 6x 50 cm
- 6x 45 cm/50 cm variable
- 8x 45 cm
- 8x 50 cm
- 9x 45 cm
- 9x 50 cm
- others on request

PR-lifting unit of this Tiger: row-width 6x 45 cm/50 cm variable

tor. When e.g. the display shows a load of < 50% as he turns round on the headland he knows immediately that the tank has sufficient capacity left to take in the beet from the

return run. The **fully variable and stepless hydraulically driven main tank and cross conveyors** are fitted with hardened chains and sprung steel slats. High quality materials increase the durability of the conveyors and so improve the profitability of the machine.



#### **Tank Operating Console**

At the push of a button the automatic unloading is activated and the entire tank content of 40 m<sup>3</sup> is unloaded in less than one minute. Additional operator ease with the memory function selecting two unloading heights.

Unloading of 40 m<sup>3</sup> in less than 1 minute

It takes only 1 minute to empty the tank of more than 40 m<sup>3</sup> via the extended unloading conveyor. The unloading speed is continuously adjustable, therefore loading

the vehicle driving alongside can be done with ease. The extended unloading conveyor ensures accurate delivery even onto **clamps of 10 m width.** For simply loading or unloading, two different automatic heights of the unloading conveyor can be stored.



# **Superior Class for the Professional**

# euro-TIGER V8-4 XL

- functional and innovative
- efficient harvests every last beet
- ✓ excellent safety in operation sturdy construction
- Iarge tank capacity high daily performance
- ✓ reduced fuel consumption
- ✓ low maintenance
- Iong-lasting and value-retaining









The ROPA euro-Tiger equipped with an 8- or 9-row wide harvesting unit of the PR-XL series is easily capable of covering larger areas. Additionally, this version offers the advantages of reduced fuel consumption, lower fixed costs and an improved topping quality. By attaching the wide PR-XL units at the front of the machine the front axle of the euro-Tiger can have even wider and more soil protecting Terra tires of the 900/60R 32 or 1050/50 R32 types fitted. Fewer field runs and turns also contribute to soil protection.

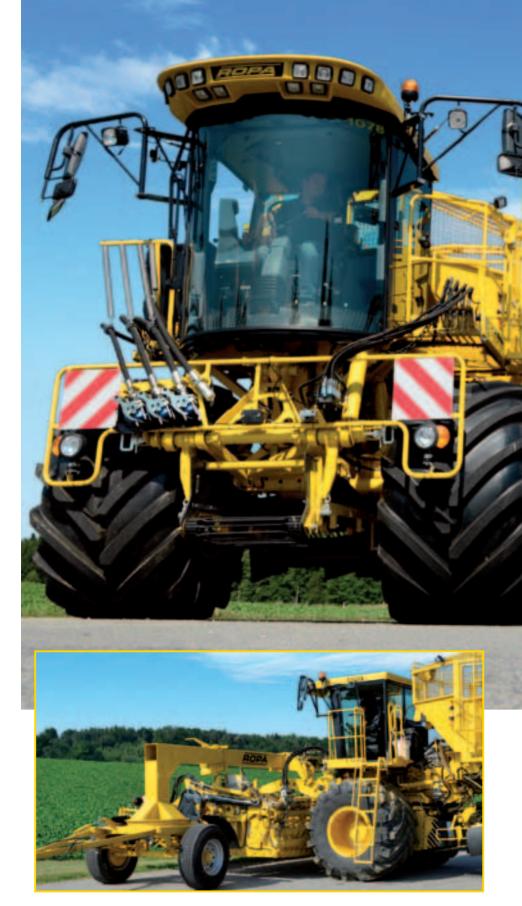
ROPA has developed its very own transport and coupling technique for driving the harvesting units of the PR-XL series (8 or 9-rows with varying distances) on highways.

The extra wide harvesting units with flails raised are towed lengthways behind the euro-Tiger on a trailer with compressed pneumatic brake systems. The driver is able to monitor the coupling of the trailer on a colour screen with help from the rear camera. This way docking is swift and can be completed without outside help.

The entire assembly maneuvers easily around sharp bends. Steering the euro-Tiger via the rear axle assists with guiding it optimally around bends. The rear camera shows the two front wheels of the trailer and the road orientation. For connecting the harvesting unit the three-point connector is lowered, plugged into the trailer slot and raised slightly. That way the harvesting unit is attached to the three-point connector of the euro-Tiger similar to the topper of a flail unit. Finally two bolts are inserted for extra fastening.

For driving the harvesting unit an eight-fold hydraulic multi-coupler and 4 main oil supply pipes are connected by the fast coupler - swift and practical.

The harvesting unit is slotted in at three points of the trailer. The



uncoupling is initiated from the cabin: at first the flail is hydraulically lowered, then the harvesting unit is raised by approx. 10 cm and driven out of the rear of the trailer. The total

decoupling procedure is completed in merely a few minutes.

Performance aims for Efficiency worldwide there are already 100 euro-Tiger V8 XL in operation.



Optional road transport system - fast coupler and transport cart





... 40 years innovative technology for the beet harvest!









#### Technical Data: ROPA euro-Tiger V8-4 XL

#### **Engine:**

New Mercedes Benz V8 Dieselenginer OM502LA with 2800 Nm max. torque, exhaust level 97/68/EG 3B (with SCR-Cat and AdBlue), 440 kw (598 HP), harvesting revs. 1.250 rpm (operative up to max 1.650 rpm), fuel consumption indicator l/ha and l/h at the terminal. Fuel tank capacity: 1380 l, AdBlue 120 l, separate connection for tank filling

#### Drives:

Continuous hydrostatic drive via 2-gear all wheel drive.

1. gear 0 - 13,5 km/h

2. gear 0 - 20 km/h, or 0 - 25 km/h (optional)

3 mechanically driven axles with differential locks, automatic axle displacement control for the 3rd axle, cross shaft axle support lock for front axle, automatic drive and harvesting, load limit control, pressure switch-off

#### Cabin:

New cabin installation, sound-proof and all-round tinted glazing with low horizon, heating and air-conditioning (automatic), operator console with colour terminal, joystick-operation, auto pilot, tempomat, engine control/machine diagnostics fully integrated in terminal, suspension Grammer comfort seat, MP3-radio with audio system, holder for telephone, full-screen wipers, 2 LED internal lights, vidoeo monitor with standard reversing camera, yield indicator via ultra sound measuring system of tank load status

#### Tires:

1st axle 1050/50 R 32 optional 900/60 R 32 2nd axle 1050/50 R 32 3rd axle 1000/50 R 25 Tank capacity: Ca. 40 m<sup>3</sup>

Loading height/unloading height: Up to 4.00 m

#### Flail unit:

**PISh** with integrated flail and leave deflectors between the rows

#### Pickup unit:

PR-pickup unit, hydraulically driven: 6 rows and 45 cm or 50 cm row distance, optional PRh-V 45-50 cm variable PR-XL:

6 rows, 30 inches 8 rows, 45 cm, 50 cm or 22 inches, 9 rows, 45 cm, 50 cm or 20 inches

#### Cleaning:

Infeed conveyor 800 mm wide, separation 50 mm or 60 mm







1st turbine 1.700 mm diameter / 2nd and 3rd turbine 1.500 mm diameter Elevator ring trace 900 mm wide

#### Electrics/electronics:

Internal net 24 volts, 2 lights of 100 amps. each, 32 super-beam operating at 70 W each, 2 sockets of 12 volts for radio/telephone etc., CAN-Bus computing system with diagnostic for all elements connected to terminal, possibility of software update via USB interface

#### Measurements:

length: 15,50 m height: 4,00 m (transport setting) Width: 3,00 m (6 rows at 45 cm row) to 4,80 m (9 rows at 20 inch row)

#### Standard:

Central lubrication, data management on the terminal, incl. fuel consumption measurements, air-conditioning automatic, rear shelf with 2 integrated storage lockers (not for PR-XL with transporter)

#### Optional:

Widia-shares, 25 km/h version, turbine camera, unloading conveyor camera, 2nd LCD-colour monitor, quick shares motion, pig tail gates in turbines 1-3, quirl in 2nd turbine, leaf spreader with stone protection, 4th axle (compulsory in Germany), xenon beam, data printer, data output via USB, data input and output with task processing via USB, GIS-interface, GPS-driving speed sensor, leaf collecting equipment (only for flail with auger), additional hydraulic pump 45 cm<sup>3</sup> for extra drive, bio-hydraulic oil, limit indicator at diesel tank, pressurized air brake at transport vehicle for PR-XL pickup units and hydraulic fast coupling, chicory equipment

Tested by TÜV and co-operative associeation, conforming with CE-regulation. Subject to technical alterations.

Caution!

For improved quality of graphic displays some safety fittings have been removed.

The machine must not be operated without these protective devices correctly fitted!



# BIGOBEAR

Harvest simplified.



Premium Class.



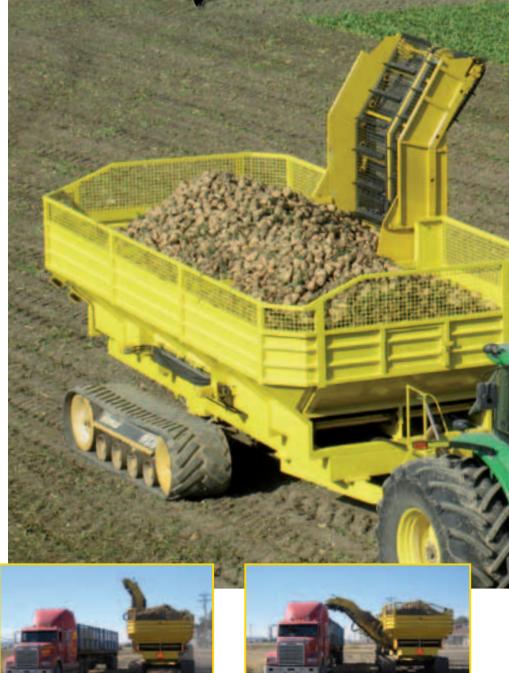
#### Sugar beet carts by ROPA North America

- Large capacity 34 ton plus
- Fast unloading approx. 34 ton in 90 seconds
- Each conveyor independently controlled from tractor
- All conveyors driven hydraulically
- Excellent flotation provided by track system
- Robust construction-very low maintenance
- Center unloading maintains a balanced load
- Load trucks, or make perfect piles for reloading with the Maus
- Drive beside, instead of tracking in front of the pile
- Good visibility from the cab for unloading
- Cleaning action by the scrub roller and unload conveyor
- Proven unloading system: all sprockets, chains, shafts, hydraulic motors, and unload conveyor are sourced from ROPA and performance proven on the Tiger
- Choice of left side or right side unloading
- Conveyor folds into bunker for road travel

#### www.ropanorthamerica.com













... 40 years innovative technology for the beet harvest!







## An intake width of 10.2 m - individually adjustable cleaning intensity

The new and extremely robust intake system from ROPA is the widest version available on the market. A total of 18 cleaning rollers (all with hard welded coating) ensure a gentle and efficient soil and weed separation while at the same time allowing more space underneath. The patented intake system is designed so that the length and intensity of the cleaning path can be variably set from the cabin as necessary. In contrast to earlier systems 50 percent more beet can be stored in an average-sized clamp - a great advantage on larger fields or in heavy frost.



Separate drives for 3 groups of rollers with individual setting of revolutions and automatic reversing for stone protection



### Maximized efficiency of the intake system - significantly less wear and tear

The annual operating capability of loaders is constantly increasing. Many machines operate in 24-hour shifts, and time for maintenance and parts replacement is limited and expensive. ROPA has once again improved the heavy duty models by developing this new intake system and uses extra durable components. The nose cone with its repaceable point and a split cap offers extra clearance for the drive designed with a conical bearing and automatic lubrication. Finger rollers, cleaning rollers and spiral rollers (3seam) have been given a hard weld finish. The first spiral rollers are threaded to the outside for maximum possible cleaning. The beet is then gently,



with protective helpers, brought onto the next spiral roller cleaners and travel into the center of the pick up. At the point of transition from spiral roller cleaners to the in-feed web hardened end plates cover, to protect the beet and to reduce the wear and tear, at the roller ends. The beet collector telescope arm (now 180mm x 180 mm x 5 mm) uses proportional control valves and is equipped with a plate with reinforced rubber lip and angled corners.

Already measuring sensors are fitted at the intake, providing the information from which an automatic system for the final beet collector is being developed for 2012 campaign.



Multifunctional Terminal The complete Maus can automatically be folded in and out with only one control switch



### **Optimal Balance – Unique Counter Weight Concept**

Without leaving the cab and with only one device the operator can convert the euro-Maus 4 from operation in the field to road transport in as little as one minute.

A newly designed and clearly laid-out

console with logically grouped operating units, a selector switch as well as 2 new ergonomically arranged multifunctional joysticks in the armrests provide a highly user-friendly machine when loading. A counterweight arm from fine 700 grade steel, specially designed by the company's founder, Hermann Paintner, guarantees extra stability when loading as well as offering a spectacular sight. The counterweight arm, more

### A fully integrated weighing system (optional)

Weighing cells, revolution and sensors, and weight calculators are integrated into the loading elevator





All loader side walls are made from highly durable PU plates and allow four usable positions

than 9 m wide and 4 m high, with the fuel tank attached as a counterweight to the loader swings out and provides optimal balance even at loading widths of 15 m.

The weight of the loader is taken up by

the counter weight arm at the machine center – leaving the frame unstressed. An absolutely safe and horizontal position and optimal traction on all 4 wheels are essential features of the ROPA counterweight concept.





### Best all-round vision - flexible comfort cabin

The comfort cabin, specially designed by ROPA, can be raised up to 5.1 m providing the operator with a workplace of a superior class with an all-round vision never known before. The cabin with its unobstructed view is a fusion of modern design, first class vision and excellent sound-proofing to create a most comfortable workplace. The evenly curved front windscreen with an unusually low horizon grants an excellent, undistorted view. The view over the loader and the entire width of intake without having to get up from the ergonomically arranged seating position means untiring operation even on long working days – the basis for high performance during beet loading.



Full tinted glazing, adjustable steering column, air-ride comfort seat with swivel seat brake, MP3-CD radio and audio system, video-controlled depth operation as well as pneumatically folding and heated wing mirrors, offers a workplace satisfying all operator needs. An auxiliary heater which also maintains the temperature of the hydraulic oil tank is equipped with automatic air-conditioning and continuously adjustable fan speed control.





## Technology with maximal performance – minimal fuel consumption

The extremely economical Mercedes Benz engine of 240 kW / 326 HP (OM 926, 7.2 I CC) with integrated AdBlue and SCR-Cat. is automatically driven at reduced revolutions even during loading while at the same time preserving enough power for extreme conditions. In contrast to the previous model it is possible to increase the throughput at reduced fuel consumption. Due to the increased throughput the cleaning capacity was also improved to achieve optimal cleaning results.

A pump distributor with a load-switching multiple disc clutch ensures reliable cold-start and minimized fuel consumption for all drives. The new



hydraulics with new transmission technology in the pump distributor combines high throughput at lowest consumption even with running at 1,200 rpm. An extremely efficient loadsensing-hydraulic system guarantees

the highest oil efficiency for maximum performance with quick responsive operation even at low engine revs. The cooling system with its hydrostatically controlled and automatically reversing fan is protected from contamination.





# Minimal time for preparation – fast set up and setting off

For road transport the complete Maus folds in automatically to a road width of 3 m and a total length of only 14.97 m by operating just one control in the cabin. The wheel base of 5.5 m combined with two hydraulically sprung additional axles guarantee safe handling of the ca. 31 ton Maus while maintaining the best driving comfort even at an increased speed (optional 32 km/h). Road transport is as economical in fuel consumption as it is in operational mode because of reduced engine speeds.











# Technical data: ROPA euro-Maus 4

#### Diesel engine:

Mercedes Benz OM 926 LA, 6 cylinder engine OM 926 LA, exhaust level 97/68/EG 3B (with SCR-Cat and AdBlue) 240 kW / 326 HP at 2200 revs/min. and 7.2 I CC, max. torque of 1300 Nm at 1200-1600 rpm, fuel consumption ca. 194 g/kWh at 1250 revs/min when in full operation, fully electronic steering with fuel consumption assessment shown at the colour terminal, temperature dependent control and automatically reversing hydrostatic fan drive, one flat belt drive with automatic belt tightening, automatic engine shutdown when damage may occur engine diagnostics integrated into the colour terminal, fuel reservoir 1225 I, AdBlue store of 95 I, ball cock for 8 I fuel reserve when tank is empty, electronic pump for fully automatic ventilation of the fuel system.

#### Drives:

Continuous hydrostatic (Bosch-Rexroth) 4-gear OMSIdrive for 2 OMSI - planetary axle steering, drive pump alone can easily transfer more than the complete Diesel engine performance, 2 separately adjustable differential locks with automatic function, automatic all wheel switch, Tempomat, automatic driving at reduced rpm, constant throttle brake prevents the Diesel engine overturning at full braking and downhill drive, load control through highly sensitive steering in crawl gear. Front axle with drum brake 500x180, 4 spring reservoire – cylinder brake for operation and parking. Driving speed 20 or 25 km/h, optional 32 km/h (with additional drum brake in rear axle)

#### Cabin:

Adjustable in height up to 5.1 m, sound-proof, clear view with all-round tinted glazing and low horizon, new compact control panel panel at swivel seat with integrated colour terminal, function keys and rotary selector switch, 2 multi-function joysticks with integrated mini-joystick, air conditioning, air-cushioned swivel chair with swivel seat stay, colour terminal with clearly laid-out display of beet flow, fail indicator, MP3 radio with audio system, halter console for telephone, storage locker of 60 I capacity integrated in the cabin rear wall, windscreen wipers on front right and left and at rear. 2 LED-internal llights, video system at swivel seat with split function and standard 2 cameras (optionally up to 4 cameras).

#### Operational drive and hydraualic system:

OMSI-pump distributor drive, pressure circulation lubrication, engine oil cooling system, adaptable drive transmission for reduced engine revs (loading revs 1200-1300 rpm) when loading, load-adjustable lamella coupling for switching 6 hydraulic drive pumps -> ensuring easy start of diesel engine even at extremely low outer temperatures;

 4 Axial piston pumps (Bosch-Rexroth) for continuous and separate revs. setting and roller drive reversing (picking up, discharging, taking in, second cleaning)

- 2 Axial piston pumps (Bosch-Rexroth) for continuous drive of main web and loader
- 1 Load-sensing axial piston pump (Bosch-Rexroth) for feeding all hydraulic cylinders -> with LVS-valves, split for simultaneous execution of all functions
- 1 Axial pistom pump (Bosch-Rexroth) for reversible air-conditioning switch (hydraulic oil water and loading air cooling system)
- hydraulic Sauer-Danfoss motor

**Steering:** Front axle steering, rear axle steering, all wheel drive automatic centering of rear axle

Turning circle: 9.90 m inside diameter

#### Cleaning and loading capacity:

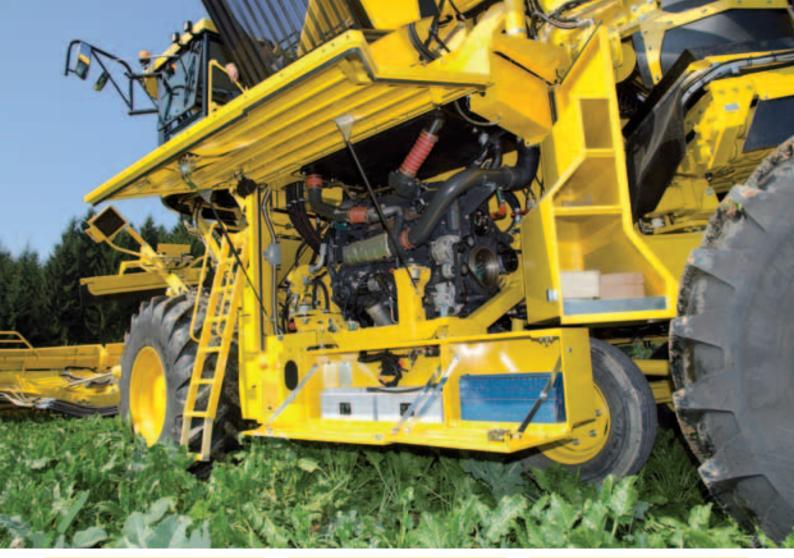
up to more than 560 tons/hour

#### Pickup system:

Maximal pickup width 10.2 m, ROPA roller-pickup with 18 rollers, split into 3 separately driven units (each drive has a continuous revs. control and automatic reversing for all rollers (patented pickup system).

- 1. Pickup:
- 2 Finger rollers operate up to a depth of 7 cm, 2 Cleaning rollers
- 2. Cleaning:

6 Conveyor rollers removing waste, separate the beet flow









3. Intake:

8 tangentially oscillating spiral rollers (8 mm walll thickness) convey into the machine => double cleaning path

Nose cone with new, tensioned drive, automatically adjustable speed matching collecting rollers. Slow running for low wear and tear of the split nose cone cap . Valves protection against breaking safety chains, when not disconnected.

Telescopic and proportional control of end of clamp collector arm (external telescopic tube 180\*180\*5mm), colour camera and LCD-colour monitor for camera depth control, de-icer in pickup centre and side.

#### In-feed web:

80 cm wide, 50 mm pitch with new designed PU finger rollers and soil deflectors, double profile belts, with speed control and high-speed gear, 4 mm steel side walls

#### Additional cleaning:

Standard: conveyer web, 90 cm wide, 40 mm pitch Optional: spiral roller cleaning with 8 tangentially rotating spiral rollers, 1150 mm inner width, 1300 outer width

#### Loader:

80 cm wide, 40 mm-pitch, with speed control and high-speed gear, side walls reversible and interchangeable, made of 15 mm PU plates, wear and tear proof

#### Loading height: up to 6 m

Loading width: 15 m

**Counterweight arm:** Length 9,02 m, 6 m to pivot point, 156 mm steel base of fuel tank

Total cleaning area: 35.5 m<sup>2</sup>

#### Maximum cleaning path: 31.7 m

#### **Electrics:**

24 Volt, 2 lights of 100 amps each, electronic batteryoperated main switch with automatic cut out after 5 days ignition off (AUS), 3 X 12 Volt sockets, diagnostics mechanism for the entire sensing and operational system integrated in the colour terminal, warning signals are shown as symbols with text in the appropriate native language, software updating via standard supplied USB ports, long-life, water and corrosion protected construction of on-board electrics, use of exclusive, individually protected plugs (AMP German), wiring of central electric system with WAGO-spring tightening clips (vibration proof), 3 ESR computer and RIO module (exchangeable) each, cable looms with heavy duty thread protection

#### Road transport and operational mode:

Switchover from road transport into operational mode in just over 1 minute.



#### Measurements at road transport:

Length: 14,97 m; width: 3,00 m; height: 4,00 m Empty weight with full fuel tank 30300 kg to 31500 kg as applicable, total weight 32000 kg 4 axles

#### Tires:

Front- and rear axles of 710/75 R34, load index 178 A8 2. and 3. axles standard production, with tires 235/75 R17,5

#### Standard equipment :

Reversing camera, depth control camera, central greasing, air-conditioning, on-board tools, all rollers with hard weld finish

#### Additional equipment:

Cleaning with 8 contra-rotating rollers, night oil heater, water jet system, elevator camera, camera for additional cleaning, 32 km/h version, data printer, electrically adjustable mirrors, additional locker 1000\*600 mm behind rear axle, measuring system, integrated GIS interface, RABS system integrated into terminal for disposal logistics or data-key, laptop fixture for DELL type ATG.

Made in Germany –TÜV and Trade Association tested, conforming with CE Legislature. Subject to technical alterations.



We would like to thank you for your trust in ROPA North America and wish you continued satisfaction and success with ROPA beet harvesting technology.

Together with our highly motivated team, we always strive to cater to all your requirements in an economical and progressive beet harvesting technology.

Your Team from ROPA North America

# **POPA** North America Inc. 3130 London Line, Wyoming, Ontario, CA NON 1TO Phone (1)-519-339-6015 info@ropanorthamerica.com

# www.ropanorthamerica.com

www.ropa-maschinenbau.de