



ROPA



- 4 Premium class driver's seat
- **6** Terminals and operation
- **8** R-Connect online portal
- 10 R-Trim automatic topper height adjustment & R-Contour ground-contour sensors
- **12** Powerful LED lighting
- **14** Hydraulic chassis with slope compensation
- **15** Hydraulic chassis system R-Soil Protect
- **18** Topper
- 20 RR lifting unit
- 21 Maintenance position of the RR lifting unit
- 22 Tiger 6S XL
- **24** Cleaning
- **26** Unloading
- 28 Diesel engine
- **30** Technical data







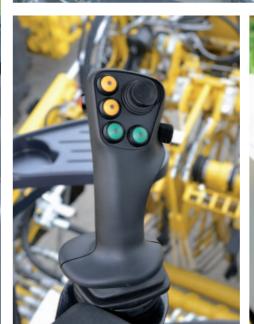
Premium class driver's seat

Panorama cabin with improved, comfortable operation and two R-Touch displays

In comparison with the predecessors, the Tiger 6S has two 12.1-inch operating terminals with high pixel density resulting in even sharper resolution. Operation at the terminal with interactive buttons is even more intuitive and uses the same logic as tablets and smartphones.

In addition to the machine functions, two separate video streams can also be shown on the R-Touch display at the left A-pillar. The Tiger 6S has digital cameras as standard. The image quality of the digital cameras is significantly better, and an additional Ethernet network is integrated into the machine to handle the resulting greatly increased volumes of data. The relevant camera image is automatically displayed on the left R-Touch display while reversing or when unloading the bunker. The unloading conveyor and the bunker unloading can be controlled even more conveniently from the new ergonomic control element on the left armrest. Five function buttons on the right multifunction joystick can be customised, for example with the wide-area window wiper.

The new "intelligent main steering switch" automatically synchronises the articulation and front-axle steering for travel on the road as well as straight-ahead positioning of the rear wheels.





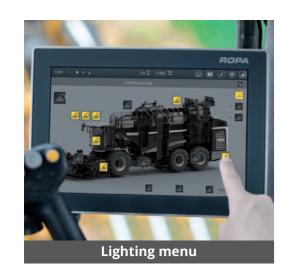


Terminals and operation

The Tiger 6S has two 12.1 inch operating terminals with high pixel density resulting in even sharper resolution.

Operation at the terminal with interactive buttons highlighted by the clear colour composition on the modern flat design is even more intuitive and has the same logic as tablets and smartphones. Intentionally used contrasts improve legibility and usability.

The Tiger 6S can be fully operated via the two rotary switches R-Direct and R-Select as an alternative to the touchscreen.





High resolution video display

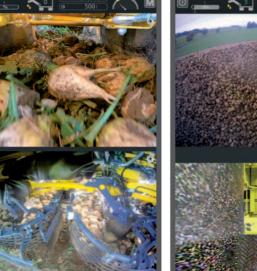
In addition to the machine functions, the terminal at the left A-pillar can display the camera images and the status of the unload conveyor and bunker unloading.

The relevant camera image is automatically displayed on the left terminal when driving backwards or unloading the bunker.

The image quality of the high-resolution digital cameras installed as standard in the Tiger 6S is significantly better. An additional Ethernet network was integrated into the machine to handle the resulting greatly increased volumes of data. Additional cameras can be installed optionally.







Infeed conveyor / cleaning



Bunker unloading



R-Connect online portal

R-Connect telematics module and remote diagnostics as standard equipment





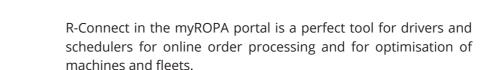




The ROPA Tiger 6S comes with the efficient telematics hardware including SIM card for online access as standard equipment. The telematics module is thus the basis for proactive Service 4.0, particularly for predictive analytics and fast assistance and diagnostics if service is required on any continent. When service is required, if desired the service technician can switch directly to the terminal and the machine control and assist the driver, e.g. with problem-solving.

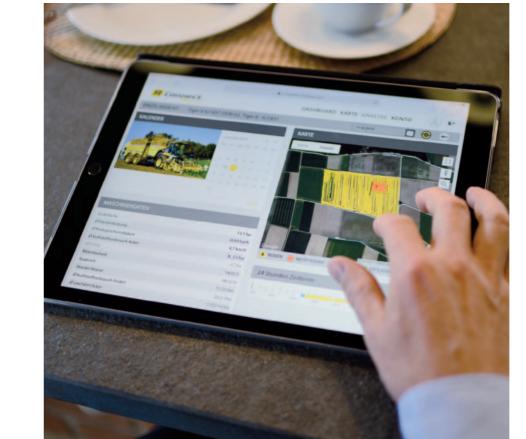
The dashboard shows the current status of your machines and the daily output. The location, road and harvesting travel along with the current harvesting progress of each machine can be viewed in the individual view along with detailed data. Finished orders are transmitted to the R-Connect portal where they can be viewed and evaluated by the machine schedulers as well as downloaded.





Now, the scheduler can be present virtually "live" on the machine with the help of online facilities. A diesel supplier, for example, can also be granted access to the current location of the machine and the fuel level as well as AdBlue level, if provided.

The ROPA R-Connect online portal can be opened via a web browser on any device (PC, tablet, smartphone).







R-Connect monitor offers intelligent and fully automatic image documentation during the sugar beet harvest. While harvesting, the optional camera on the cabin roof captures images of the beet crop state with assigned location. While unloading the bunker, pictures tagged with the location are taken at the pile and allocated to the harvest order in the R-Connect portal automatically.

R-Trim and R-Contour

Automatic topper height adjustment and ground contour sensor system for better quality of the harvested beets combined with a significant ease of operation

Both systems adapt their working depth to the changing conditions in the beet crop throughout the field. The automatic systems react to different crown heights or to ground unevenness crosswise to the direction of travel. The measuring system on the scalper has been extended by an additional measuring system with ultrasonic sensors to record the ground contour directly at the beet rows. A powerful onboard computer on the lifting unit of the Tiger 6S reads all measured values within a split second and changes the topper height or the lifting depth for the individual rows. The combination and interaction of both systems significantly relieve the driver. Topping losses are avoided despite the reduction in the size of cut-off leaf stalks without any stress for the driver. This prevents not only the unnecessary pickup of soil by the lifting share and increased fuel consumption due to excessively deep lifting, but also root fracture of the beet if harvesting too flat.

R-Trim automatic topper adjustment

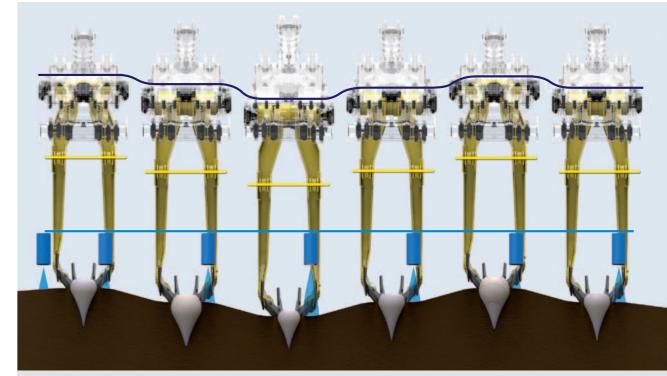
The Micro-Topper comb detects the crown height of the topped beets. The height profile (blue line in the chart) is calculated from the average values of these crown heights. The height of the topper shaft is constantly adjusted to this profile. This prevents too intensive topping of the beet crowns, e.g. when the beet crop changes from small to large. Furthermore, too large leaf stalks are avoided when the beet size changes from large to small.

R-Trim

The driver sets in the menu the desired height of the topper shaft over the cutting height of the scalper flail (red arrow in the chart). This setting defines the average length of the stalks remaining on the beet after the topper knives. An angle sensor on each Micro-Topper records the crown height of each beet row. In the case of differences in the crop growth (e.g. dry areas) the activated R-Trim automatically corrects the height guide of the topper shaft depending on the highest beet.

R-Contour - automatic share depth adjustment of the individual rows at the RR lifting unit

The machine operator uses the joystick to set the lifting depth as required and thus defines how deep the lifter share will penetrate the soil. Ultrasonic sensors beside every beet row record the ground surface contour. Powerful on-board computers process the measured values and ensure that the lifting depth is maintained in accordance with the ground contour. Compared to the previous systems for automatic adjustment of single rows, this system has many advantages, particularly with higher growth in beet rows beside lanes.



Automatic share depth adjustment for uneven ground contour Ultrasonic sensors beside every beet row record the ground surface contour



R-Contour

The driver activates the R-Contour (ground contour sensor system) in the terminal. It adapts the share depth to the ground contours. The activated R-Contour prevents root fracture of the beet if harvesting too flat or unnecessary pickup of soil if harvesting too deep. The share depth adjustment is displayed synchronously on the terminal.



Normal beets - mid

Large beets - high crown height Normal beets - middle crown height

Small beets - low crown height

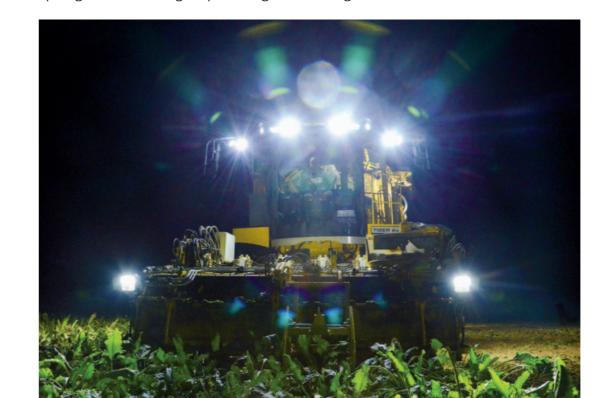




28,200 lumens on the driver's cabin

Powerful LED lights turn night into day

The Tiger 6S is fully equipped with LED spotlights with the combination of working spotlights and headlights providing outstanding illumination.





Lighting menu

Single or all working lights can be switched on and off by simply tapping on the touch terminal.

One touch of the finger is enough to back up and recall three different lighting programs.

R-Balance - hydraulic chassis with slope compensation

Slope compensation up to 10% - gravity centre / ground pressure are compensated

The automatic slope compensation via six hydraulic cylinders and sensors is also unique among 3-axle sugar beet harvesters. The chassis is kept completely horizontal for up to 10 percent side slope. The gravity centre and, thus, the load of the wheels on the slope bottom side are shifted to the slope top side. The track depth of the wheels on the slope bottom side is substantially reduced, the infiltration capacity is retained,

thus significantly reducing erosion risk during heavy rains.
The slope stability and traction increase greatly. Thus, the risk of tipping over is considerably reduced alongside with increased driving comfort.

Soil-protective sugar beet harvesting also on the side slope without additional tyres inflation pressure increase!





On the slope, the load and the gravity centre of the slope bottom side are shifted to the slope top side: soil-protective sugar beet harvesting also on the side slope!











Hydraulic chassis, automatic slope compensation



Hydraulic chassis system R-Soil Protect

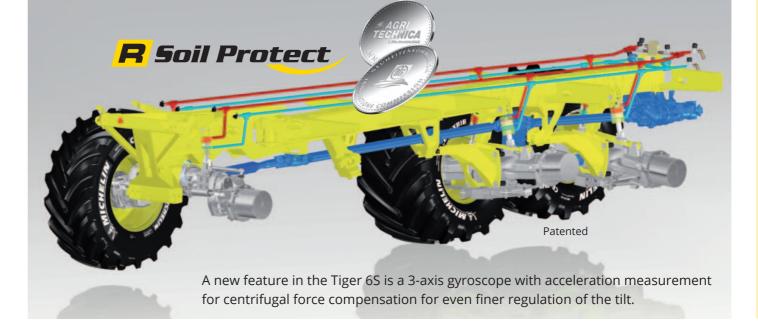
Slope compensation up to 10% - gravity centre / ground pressure are compensated

ROPA R-Soil Protect is the combination of a soil-protective, hydraulic chassis system with MICHELIN CerexBib tyre technology. This soil protection concept was awarded a silver medal at Agritechnica in Hanover. It only requires 1.4 bar tyre pressure and it is available as an option in the Tiger 6S.

The synergy of the load-balancing hydraulic chassis with the new generation of MICHELIN IF1000/55 R32 CerexBib tyres offers even more contact surface with sustained soil protection and significantly reduced contact pressure.

Soil-protective hydraulic chassis system with Ultraflex tyre technology

with low tyre inflation pressure for sustainable land management



ROPA R-Soil Protect

- Significantly improved soil protection due to tyre pressure reduced by 1 bar in comparison with euro-Tiger V8-4 unique for harvesting root crops
- 49% greater tyre contact area, 33% lower contact pressure with the IF1000/55 R32 CerexBib
- Significant reduction of load peaks by load transfer
 by 8 % less on the first axle,
 37 % less on the second axle,
 43 % less on the third axle
- Equal load distribution on all wheels by networked hydraulics
- On slopes, the load and the gravity centre of the low side of the slope are shifted to the high side
- Cleaning components are also guided horizontally on slopes, resulting in perfect cleaning performance
- Soil-protective sugar beet harvesting also on the side slope without requiring increased tyre pressures
- Maintains and protects soil structure, retaining infiltration capacity and air exchange

Summary: Resources and Soil Protection for Efficient Land Management

R-Soil Protect

Roll stabilisation with load compensation, patented

ROPA has developed an innovative chassis concept with an oscillating front axle in conjunction with two hydraulically supported rear axles specially for the flagship Tiger. Compared to the chassis on previous 3-axle beet harvesters (with the central axle fixed to the frame), this reduces the sway of machine by one third! The reason for the improvement is the hydraulic connection of the cylinders at the front and rear axles on

one side, so unevenness at one wheel at a different level only affects the frame by 33 per cent compared to the previous system. Thanks to the reduction of the chassis swing, the row and depth control are improved simultaneously, as the frame is averaged to the position of three axles. The hydraulic connection of the axles always distributes the load equally over all 6 wheels.

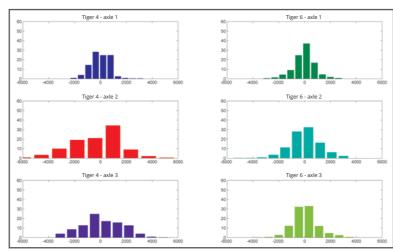
The hydraulic chassis system minimizes tyres load and ground pressure, thus ensuring further reduction of tyre inflation pressure.

Hydraulic connection of the stabilization cylinders at front and rear axles from the



The patented chassis reduces the load peaks by

- 8 % at the 1st axle
- 37 % at the 2nd axle
- 43 % at the 3rd axle



Horizontally: peak loads in kg during lifting at 7 km/h Vertically: time in %

R-Soil Protect

Direct power transmission with cardan shafts ensures even traction at all wheels with very high torque

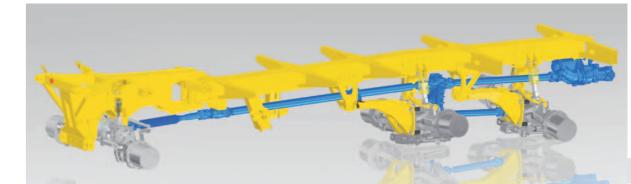
As a unique selling proposition on the market of 3-axle sugar beet harvesters, the Tiger has a direct power transmission via directly linear situated cardan shafts from traction drive to both rear axles and front axle, which is a great advantage for better traction in changing or difficult soil and harvesting conditions. Thanks to hydraulic chassis the load is always distributed evenly.

Stepless CVR gearbox for efficient power transfer

The new stepless traction drive was specifically developed by ROPA, Omsi and Bosch-Rexroth for the ROPA Tiger with its high drive power. The "constant variable ROPA" gearbox (CVR) consists of three hydraulic motors on a compound gearbox and is located between the engine compartment and the third axle. The maximum speed of 40 km/h can be reached by the Tiger 6S at an extremely economical 1,200 rpm. Harvesting in the field requires an engine speed of only 1,100 rpm. Depending on power requirements the rotational speed of the Tiger is automatically regulated up to 1,650 rpm. The multidisk differential brakes integrated into the axles (protected from dirt) running in oil bath "tame" the Tiger as required.



Even wheel load, uniform rolling circumference of rear wheels, even traction power distribution → optimal traction!



Topper

ROPA integral topper - standard model for normal harvesting conditions

Leaves from the beet crowns are mulched with robust topper knives and spread between the rows. Therefore, beet leaves with all their nutrients are evenly delivered to the soil, the optimal basis for further soil cultivation as green waste is quickly converted to humus.







ROPA rubber-topper

The speed and height of the two fully hydraulically powered and counter-rotating cleaning rotors can be independently adjusted – unique! The front shaft designed as a combined shaft is fitted with steel blades and cleaning rubbers, the second topper shaft is fitted with cleaning rubbers only.



ROPA Micro-Topper 2

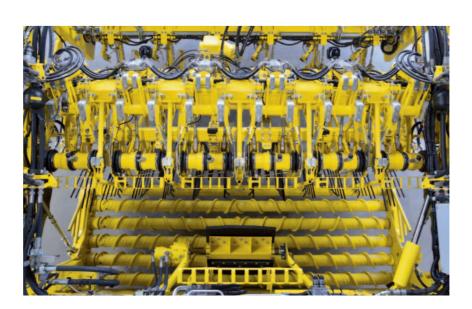
The comb of the Micro-Topper scans every beet crown individually. For large beets, the trimming gap is wider so that more is cut off. For small beets, the trimming gap is reduced accordingly, so that nothing is lost, no sugar beet is trimmed too much.



RR lifting unit

RR lifting unit with automatic share depth adjustment of the individual rows and hydraulic stone protection

The RR lifting unit is equipped with counter-rotating oscillating shares, seven lifting rollers, welded as standard with extremely abrasion-resistant, carbide containing hard-coated wire "Ropa Screwtec", completely maintenance-free hydraulic stone protection and single-row adjustment of the share depth. Simple and fast exchange of the lifting rollers for varying conditions (different diameters, outfeed, infeed, etc.). The 850 mm large depth-control wheels combined with the intelligent three-point suspension guarantee accurate depth control of the lifter. Maintenance costs are minimised with adjustable taper roller bearings in gear units and the oscillating share drive.









Tiger 6S XL

Tiger 6S XL - efficiency and power

The ROPA Tiger 6S equipped with 8- or 9-row wide harvesting units of the RR-XL series is capable of covering significantly larger areas at reduced harvesting speed. Advantages of this version are reduced fuel consumption, lower fixed costs and an improved topping quality. With the wide PR-XL lifting units at the front, the front axle of the Tiger 6S can use even wider and extremely soil-protective Michelin IF 900/60 R38 CerexBib2 tyres.

Significantly higher area performance with reduced fuel consumption leads to lower costs during the profitable and efficient sugar beet harvesting season. Fewer passes and manoeuvres also contribute to better soil protection.

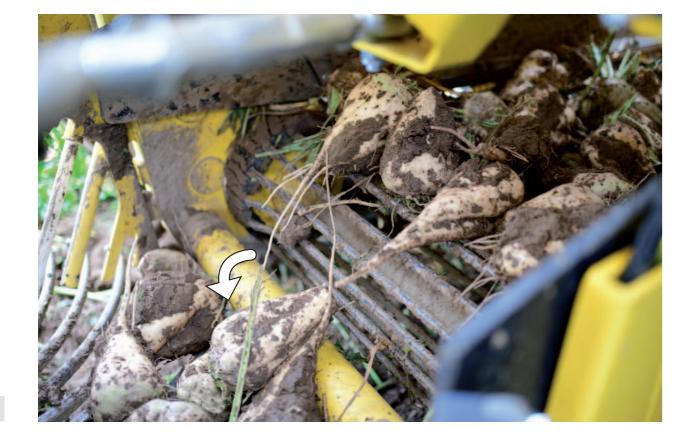


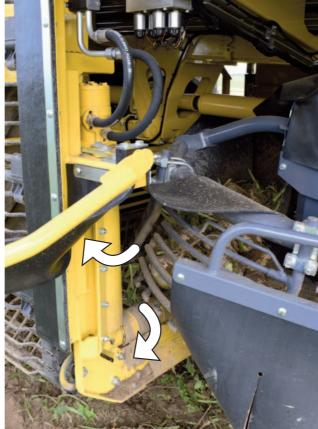


Cleaning

Gentle, efficient and individually adjustable

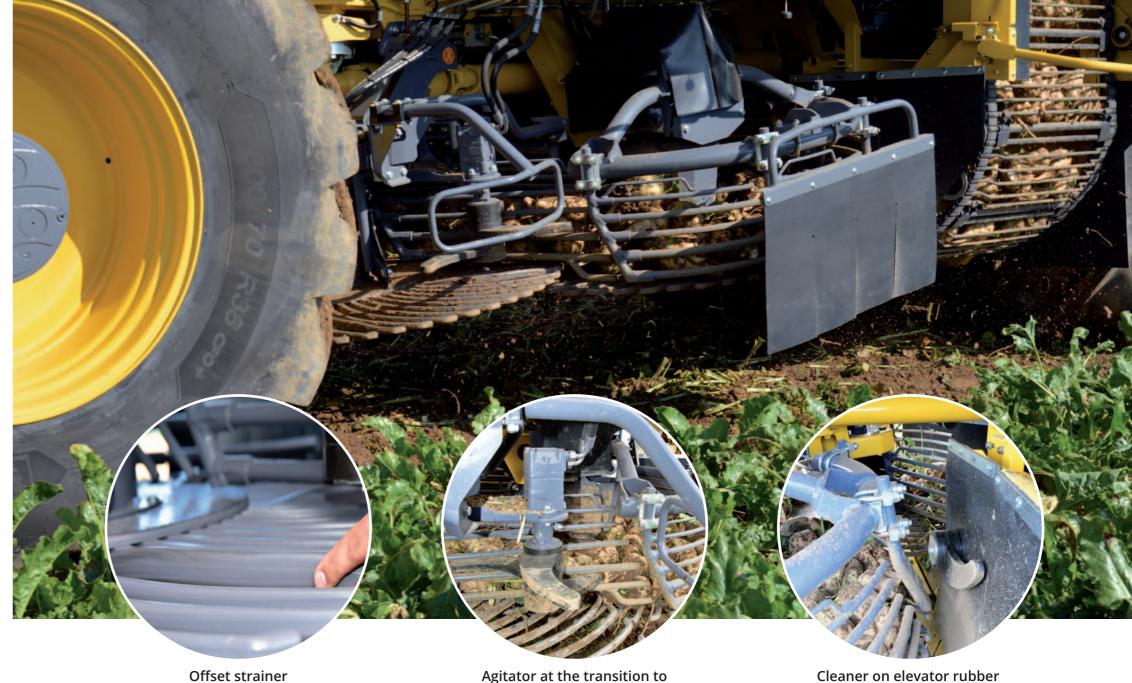
The hydraulically tensioned sieve conveyor efficiently transports the beets to the first strainer wheel. The portal axle enables maximum throughput without slowing the beet flow or damaging the beets. The driver can steplessly adjust the sieve conveyor speed and reverse it if necessary from the cabin. The beet flow monitoring prevents the beets from overflowing the machine. Three strainer wheels equipped with forged tines, which have improved speed adjustment (a separate pressure sensor for each strainer wheel), clean the beets with extreme efficiency and care. The offset carrier tines ensure fast forwarding even at low strainer wheel rotation speeds.





Rotating transition tubes at the elevator infeed prevent accumulation of soil





wheel tines

Agitator at the transition to the second strainer wheel

Unloading

Extra-long unloading conveyor - faster bunker unloading

The extra-long unloading conveyor is attached high up. A great advantage when overloading on driving alongside trailers, as it is performed shallower. The unloading conveyor is 3-way foldable and 2,000 mm wide for simple laying of 10-metre-wide piles or easy loading on trailers. Gentle polyurethane fingers guarantee high feeding capacity with short unloading times of less than 50 sec. with a full beet bunker holding approx. 43 m³. The automatic bunker filling allows optimum traction under all harvest conditions by excellent weight distribution. Two ultrasound sensors measure the load by totalling the bunker loads and save it in the order database.

Fast truck loading, gentle and convenient bunker unloading.





Diesel engine

Volvo Penta TWD1683VE with 796 hp / 585 kW

Volvo Penta has designed this engine specifically for operation in the Tiger 6S. With 16.12 litre capacity, common rail injection, SCR catalytic converter and AdBlue, the power generation of this engine type is even more efficient and cleaner.

This power package with dual turbocharging generates a huge maximum torque of 3,650 Nm. At only 1,000 rpm it already generates 3,550 Nm, enabling the machine to harvest beets longer in the low speed range, i.e. fuel-saving. With its modern technology this diesel engine complies with the EU V emission category and the USA Tier 4f even without exhaust gas recirculation and particle filter.



Volvo Penta TWD1683VE is the basis for greater daily output at less fuel consumption and even more power at lower speeds.









Volvo Penta TAD1643VE-B





Volvo Penta TAD1643VE-B with 768 hp / 565 kW

With a capacity of 16.12 litres and pump-nozzle injection (PDE), this engine is the familiar and reliable power package used in the Tiger 6. It does not require AdBlue, SCR catalytic converter or exhaust gas recirculation. A powerful maximum torque of 3,260 Nm is efficiently transmitted by the stepless traction drive. This engine is no longer available for the EU.



Technical Data for ROPA Tiger 6S

Tiger 6Sd engine:

Volvo Penta TWD1683VE 796 hp/585 kW, 16.12 l capacity, 6-cylinder inline engine, common rail injection, complies with EU level 5, USA TIER 4f, with SCR catalytic converter and AdBlue, maximum fuel sulphur content 15 ppm required to meet emission standards

Max. torque 3.650 Nm, 3.550 Nm from as low as 1.000 rpm, working speed 1,100 rpm, automotive up to max. 1,650 rpm

Tiger 6Sa engine (not for EU/USA/Canada):

Volvo Penta TAD1643VE-B 768 hp/565 kW, 16.12 l capacity, 6-cylinder inline engine, pump injection (PDE), WITHOUT AdBlue, WITHOUT exhaust gas recirculation, approved max. fuel sulphur content mag 000.2

Max. torque 3,260 Nm, working speed 1,100 rpm, automotive up to max. 1,650 rpm

Cooling system:

Horizontal side-by-side radiator elements for intercooling and water cooling, CVR oil cooler and air-conditioning condenser above (can be lifted off), radiator positioned at top rear for protection from dirt, hydraulic oil cooler with open fan, hydrostatically driven stepless and automatically reversing fan

Traction drive:

Traction drive with stepless CVR gearbox for efficient power transmission consisting of three hydraulic motors on the compound gearbox, continuous from 0 to 40 km/h without power interruption (no gear change or switching), 40 km/h in road mode at approx. 1,200 rpm, 17.5 km/h in the field at 1,240 rpm.

Chassis - R-Soil Protect:

Patented chassis design with oscillating front axle in conjunction with 2 hydraulically supported rear axles

R-Balance slope adaptation:

The chassis can be inclined by 10% to the slope on

each side by 6 hydraulic cylinders. Automatic slope adaption by a 3-axis gyroscope with acceleration measurement for centrifugal force compensation

Chassis roll stabilisation:

Roll stabilisation by hydraulic compensation of the oil level in the stabilisation cylinders on one side of the vehicle

Tyres:

1st axle:

Michelin IF 800/70 R38 CerexBib2 (1.4 bar) 2nd and 3rd axle:

Michelin IF 1000/55 R32 CerexBib (1.4 bar)

Large tyre contact surface protects soil and allows high operating reliability even in wet conditions and on slopes

Hydraulics:

Pump distributor gears with pressurized air lubrication and transmission oil cooling system. Bosch-Rexroth traction drive, high-capacity load sensing hydraulics from Bosch-Rexroth, Bucher and Hydac

Cabin:

Sound-insulated and tinted all-round glass with low-line vision, quiet stepless fan in heating and ventilation system (climate control air-conditioning), air-sprung GRAMMER ROPA Evolution seat with heating and active ventilation, autopilot, cruise control, base console for telephone, AM/FM/CD/USB/ Bluetooth/DAB+ radio with external microphone for hands-free system, 14 litre cooling box

Operation:

Two 12.1 inch R-Touch displays on the operating console and the left A-pillar, multifunction joystick on the right with programmable buttons, bunker control with joystick grip on the left armrest, fully integrated

machine diagnostics including DM1 error messages of the diesel engine in plain text, 2 LED interior lights. full-surface window wipers

Topper unit:

Integral topper

with leaf spreading between beet rows, without depth-control wheels

All-round topper

push-button operation from the driver's seat, can be changed for either integral topping or leaf ejection to the left, without depth-control wheels (optionally 2 or 4 depth-control wheels)

Topper with leaf ejection

For leaf ejection to the side (left) - with leaf auger and leaf-spreader, 4 rigid depthcontrol wheels, only available in 45 cm (Legally approved only in specific countries)

Rubber-topper

with leaf spreading between beet rows, 2 depthcontrol wheels

RR lifting unit:

6, 8 or 9-row, 45 cm, 50 cm or variable (6-row only) Hydraulic single-row share-depth adjustment, hydraulic stone protection, depth-control wheels with 85 cm diameter, 7 lifting rollers, fast stepless shaking share drive with axial piston motor, adjustable taper roller bearings in shaking share drive and lifting gears, excellent view of lifting unit and scalper without additional cameras, service position allows topper and lifting group to be raised 90 degrees for the best possible inspection and service of topper knives, scalper flails and lifting shares

Infeed conveyor: 800 mm wide, 50 mm pitch 1st strainer wheel: 1740 mm diameter 2nd strainer wheel: 1,500 mm diameter 3rd strainer wheel: 1.500 mm diameter

Strainer wheels with forged tines, 6 offset strainer wheel tines in the 1st strainer wheel and 4 offset strainer wheel tines each in the 2nd and 3rd strainer

Guide grids:

Height independently adjustable at 1st, 2nd, 3rd strainer wheels, guide grids can be replaced with spring tines segment by segment

Elevator: 1.000 mm wide

Electrics:

24 volt vehicle electrical system, 150 amp generator, 1 12V socket. 1 24 V socket on seat console and 2 USB dual sockets 5 V/3.6 A (USB-A and USB-C) in roof console, CAN-BUS computer system with integrated diagnostics for all components connected to the terminal, software update per USB interface

Lighting:

Coming-home function

2 pcs. Hella C140 LED main headlights at the front on the topper unit

6 pcs. LED working floodlights (1,700 lumen) Hella LED Oval 90 on the cabin roof

23 pcs. LED working floodlights (1,800 lumen) Nordic Lights 4 pcs. LED spotlights for lighting the engine

compartment Rotating beacons Hella RotaLED Compact

Unloading conveyor:

3-way foldable, for even simpler laying of 10 metre piles, beet-protecting PU carriers for high throughput and short unloading times, both conveyors steplessly speed-controlled, longitudinal conveyor with quickmotion switch, 200 cm unloading conveyor width for even easier loading on trailers, bunker unloading in less than one minute, truck loading height up to 4.00 m

Bunker capacity: over 43 m³/30 t

Yield indicator:

2 ultrasound sensors measure the bunker content. full bunkers (and partly loaded bunkers) are added up and automatically recorded in the yield database.

Measurements:

Length: 14.99 m

Height: 4.00 m (transport mode) Width: 3.00 m (6-rows with 45 cm row),

3.30 m (6-row with 50 cm row and 45-50 cm

variable)

> 3.30 m (with RR-XL depending on the size

of the lifting unit)

Fuel tank:

1320 l, fuel consumption displayed in l/ha and l/h on the terminal

AdBlue tank: 145 l (only at Tiger 6Sd)

Empty weight: from 33,400 kg, depending on equipment

Standard equipment:

Central lubricating system, fuel consumption recording, climate control, 1 digital camera as a reversing camera, 1 digital camera for the strainer wheel system, R-Connect telematics module including SIM card, hard-coated scalper flails, welded lifting rollers with hard coating, cleaner on elevator rubber, 40 km/h, R-Balance manual slope compensation

Other equipment options:

R-Balance automatic slope compensation, R-Contour

ground contour detection), R-Trim (automatic topper height adjustment), reinforced defoliator plate, leafspreader with stone protection, leaf pile equipment (only at toppers with leaf ejection), skids on scalper. Widia forged lifting shares, data printer, R-Transfer PROFESSIONAL, R-Transfer BASIC, R-View video system (bird's eye perspective), 1 digital camera for unloading conveyor, 1 digital camera for beet crop on cabin roof, R-Connect monitor, non-slip speed measurement, 4 LED high-beam headlamps (4.500 lumen) Hella on mirror brackets, strainer wheel segments optionally with guide grids or spring tines on strainer wheels 1-3, agitator in the 2nd strainer wheel, 2nd strainer wheel discharge grid in spring tine model or guide grid model or stone protection, level indicator on diesel tank, additional chassis (required in Germany), reduction of maximum speed from 40 km/h to 32 km/h, chicory equipment, contour marking package

(automatic share depth adjustment of single rows by

For delivery within the EU/Europe incl. TÜV Certificate according to § 21 German Road Traffic Licensing Regulations. Conforms to Machinery Directive 2006/42/ EC (CE marking) and the requirements of the employers' liability insurance association. Subject to technical changes.

Existing protective covers have been partially dismantled for better imaging. The machine must not be operated without these covers! Made in Germany.



ROPA Fahrzeug- und Maschinenbau GmbH

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