

BESPOKE MINING EQUIPMENT CATALOGUE



YOUR COMPLETE SOLUTIONS PARTNER



We are pleased to introduce our range of quality, trackless underground mining vehicles into the mining markets. These vehicles have been designed in partnership with Hencon Mining BV in the Netherlands.



HENCON MINING BV (THE NETHERLANDS)

Hencon Head Office where R&D and manufacturing takes place.

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AFTER-SALES SERVICE AND SUPPORT

Hencon vehicles are available with an optional service contract to ensure hassle-free operations for our clients. All vehicles are equipped with an on-board monitoring system, allowing for real-time performance data availability, and fitted with an on-board camera system.

In contrast to our competitors, we offer exceptional availability, low running costs and a complete hydrostatic drive.

Advantages of the Hydrostatic Drive System:

- Better fuel efficiency
- Low operating costs
- Smoother ride
- Easy running on inclined planes of up to 20°
- No gear shifting required
- No gearbox, drive shaft and torque converter used in vehicles



Due to a proven, robust design, Hencon mining vehicles have been performing very well in severe conditions at mines in, for example, the Arctic Circle. As such, it is no surprise that we've seen an unprecedented demand for our machines over the past years. These vehicles are now manufactured at three of our plants in South Africa, the Netherlands and Asia. After-sales service is supplied by our group's extensive international network.





1. TRANSVERS MODULAR

A multifunctional roll on/roll off vehicle with changeable cassettes for different purposes

Features

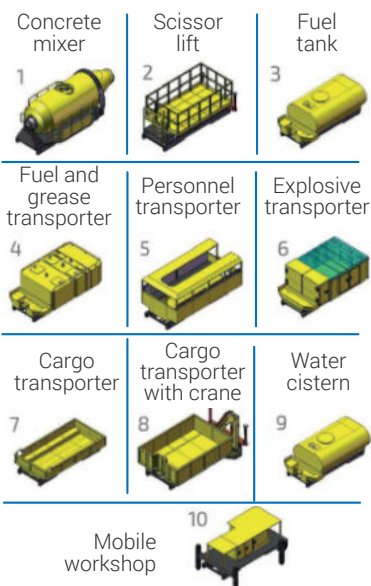
Tilting frame; raising and fixing devices; cassettes can be independently switched in 1-2 minutes

Transmission

Dual speed hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------|------------------------|------------|
| Length | 8 520mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 15° |
| Height | 2 300mm | Steering angle | 50° |
| Turning radius, inner | 3 360mm | Operating weight | 10 700kg |
| Turning radius, outer | 6 400mm | Platform load capacity | 12 000kg |
| Ground clearance | 436mm | Tyres | 12.00 x 20 |

Changeable cassettes



2. TRANSVERS MIXER 4,5M³ / 7M³

Mobile vehicle for transporting concrete in underground mines

Features

Mixer drum with adjustable rotation speed and discharge; hydraulically driven high-pressure washer

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------|------------------|-------------------------|
| Length | 9 450mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 18° |
| Height | 2 440mm | Steering angle | 50° |
| Turning radius, inner | 3 250mm | Operating weight | 12 000kg |
| Turning radius, outer | 5 900mm | Mixer's capacity | 4,5m³ / 7m³ |
| Ground clearance | 400mm | Tyres | 12.00 x 20 / 14.00 x 24 |



3. TRANSVERS MIXER PUMP

Vehicle with concrete pump and concrete boom intended for transporting ready-mixed concrete

Features

Concrete boom; remote control panel for concrete boom and concrete pump; mixer drum with adjustable rotation speed and discharge; hydraulically driven high-pressure washer

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|------------|-------------------------------|----------|
| Length | 11 256mm | Gradient | 18° |
| Width | 2 340mm | Steering angle | 50° |
| Height | 2 700mm | Operating weight | 18 500kg |
| Turning radius, inner | 3 500mm | Load capacity | 5m³ |
| Turning radius, outer | 6 950mm | Concrete boom reach | 7 254mm |
| Ground clearance | 430mm | Concrete max discharge height | 8 500mm |
| Max. speed | 18km/h | Concrete pump capacity | 20m³/h |
| Tyres | 14.00 x 24 | Water tank capacity | 490L |

4. TRANSVERS TANKER

Vehicle for transporting POL materials

Fuel storage tank capacity: 4m³/7m³

Oil storage tank capacity: 2 x 0,4m³/ 4 x 0,75m³

Features: Fuel pump delivery rate 130-185L/min

Transmission: Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------------|------------------|-----------------------------------|
| Length | 8 650/9 900mm | Max. speed | 25km/h |
| Width | 2 000/2 340mm | Gradient | 15° |
| Height | 2 300/2 400mm | Steering angle | 50° |
| Turning radius, inner | 3 200/3 550mm | Operating weight | 11 700/19 500kg |
| Turning radius, outer | 5 930/6 660mm | Capacity | 5m ³ /10m ³ |
| Ground clearance | 400/560mm | Tyres | 12.00x20/14.00x24 |



5. TRANSVERS S-LIFT

Underground vehicle for inspection and reinforcement work in tunnels

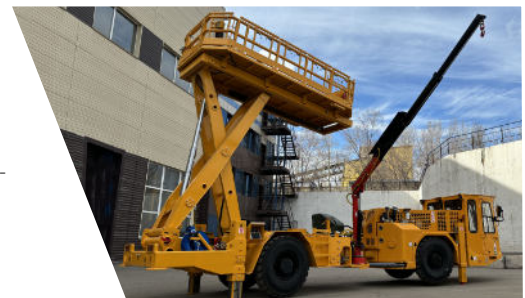
Features

Lifting platform 4 x 2m; lifting height 4,5m; concrete pump, compressor; crane with 2-ton capacity (optional)

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------|------------------------|------------|
| Length | 9 300mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 15° |
| Height | 2 350mm | Steering angle | 50° |
| Turning radius, inner | 4 300mm | Operating weight | 17 120kg |
| Turning radius, outer | 7 000mm | Platform load capacity | 3 000kg |
| Ground clearance | 400mm | Tyres | 12.00 x 20 |



6. TRANSVERS EXPLOSIVES

Fuser primer and explosives transporter

Features

Two safes for fuser primer; easily removable folding cover on top of body (fire resistant material)

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------|------------------|------------|
| Length | 7 430mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 15° |
| Height | 2 300mm | Steering angle | 50° |
| Turning radius, inner | 2 650mm | Operating weight | 14 350kg |
| Turning radius, outer | 5 250mm | Load capacity | 6 000kg |
| Ground clearance | 335mm | Tyres | 12.00 x 20 |





7. TRANSVERS EXPLOSIVES & PERSONNEL

Personnel, fuser primer and explosives transporter

Features

Closed type cabin with four passenger seats with heater and fresh air supply; two safes for fuser primer; easily removable folding cover on top of the body (fire resistant material)

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------|------------------|------------|
| Length | 8 500mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 15° |
| Height | 2 300mm | Steering angle | 50° |
| Turning radius, inner | 3 345mm | Operating weight | 14 500kg |
| Turning radius, outer | 6 360mm | Load capacity | 7 000kg |
| Ground clearance | 400mm | Tyres | 12.00 x 20 |



8. TRANSVERS PT-16

Mining bus for comfortable and safe transportation of personnel

Features

Vehicle body on rear sub frame for carrying 16 passengers (12 or 20 seats optional); inner cabin dimension 3 520 x 200 x 1 480mm

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------|------------------|------------|
| Length | 8 365mm | Max. speed | 25km/h |
| Width | 2 200mm | Gradient | 15° |
| Height | 2 330mm | Steering angle | 50° |
| Turning radius, inner | 2 900mm | Operating weight | 16 500kg |
| Turning radius, outer | 5 650mm | Load capacity | 7 000kg |
| Ground clearance | 400mm | Tyres | 12.00 x 20 |



9. TRANSVERS VAC

Vehicle is designed for collection of dry and wet spillage

Features

Remote control for all vehicle functions; vacuum unit power 180kW; throughput 87m³

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|---------------------------------------|----------|-----------------------|------------|
| Length | 11 430mm | Max. speed | 25km/h |
| Width | 2 020mm | Gradient | 16° |
| Height | 2 600mm | Steering angle | 50° |
| Max height during unloading of hopper | 3 820mm | Capacity hopper | 3,5m³ |
| Turning radius, inner | 3 680mm | Operating weight | 19 590kg |
| Turning radius, outer | 6 600mm | Length when unloading | 13 810mm |
| Ground clearance | 370mm | Tyres | 12.00 x 20 |

10. TRANSVERS DUAL LIFT/DUAL LIFT LONG

Vehicle with crane for transporting materials in underground mines

Features

Crane lifting capacity 2 ton/ 5,8 ton with outriggers; crane span – 10m; winch (optional)

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|----------------|------------------|-----------------|
| Length | 8 200/10 180mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 15° |
| Height | 2 300mm | Steering angle | 50° |
| Turning radius, inner | 2 830/4 230mm | Operating weight | 13 090/13 226kg |
| Turning radius, outer | 5 330/7 350mm | Load capacity | 8 000kg |
| Ground clearance | 335/430mm | Tyres | 12.00 x 20 |

* Option: TransVers Dual Lift Long



11. TRANSVERS HANDLER 4WD 4WS

Transporter with crane for auxiliary work

Features

Independent turning of front and rear wheels; counter-steering of front and rear wheels; crab wheels; cargo platform 4,7 x 2m, floor level 750mm, crane 7,3 ton

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|----------|------------------|------------|
| Length | 10 050mm | Max. speed | 12km/h |
| Width | 2 000mm | Approach angle | 14° |
| Height | 2 700mm | Departure angle | 16° |
| Turning radius, inner | 3 740mm | Break-off angle | 7° |
| Turning radius, outer | 7 465mm | Operating weight | 13 000kg |
| Ground clearance | 415mm | Load capacity | 7 000kg |
| Wheelbase | 5 736mm | Tyres | 12.00 x 20 |



12. TRANSVERS DUAL LIFT MOBISHOP

Underground personnel, cargo and tools transporter with crane

Features

Crane lifting capacity of 2 tons with outriggers; 4-seat passenger capacity (optional 8 seats)

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------|------------------|------------|
| Length | 8 810mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 18° |
| Height | 2 300mm | Steering angle | 1 646mm |
| Turning radius, inner | 3 300mm | Operating weight | 13 520kg |
| Turning radius, outer | 6 200mm | Load capacity | 8 000kg |
| Ground clearance | 316mm | Tyres | 12.00 x 20 |





13. HENCON TRIDENT D8T

Underground diesel locomotive

Options: Welding machine; compressor; 1 or 2 cabins

Transmission: Dual speed range hydrostatic drive

| | | | |
|--------------------------------------|---------|---------------------------------------|----------|
| Length | 5 550mm | Railway incline | 0.005 |
| Width | 1 430mm | Max drive speed (forward and reverse) | 15km/h |
| Height | 1 555mm | Weight | 8 000kg |
| Wheel base | 1 425mm | Full train weight | 64 000kg |
| Track gauge | 900mm | Max traction force | 20kN |
| Ground clearance | 150mm | Max braking force | 20kN |
| Clearance between frame and railhead | 140mm | Wheel tread diameter | 610mm |
| Railway curve radius | 15m | Wheel tread width | 100mm |



14. HENCON MAVERICK

Vehicle intended for comfortable and safe transportation of linear engineering staff

Features:

- Five-man capacity cabin
- 1 500kg payload capacity
- Air-cooled diesel engine
- Power-shift transmission
- Differential type axles

| | | | |
|-----------------------|---------|--------------------|----------|
| Length | 5 080mm | Max. speed | 40km/h |
| Width | 2 080mm | Ground clearance | 285mm |
| Height | 2 120mm | Capacity | 1 500kg |
| Turning radius, inner | 4 150mm | Weight loaded max. | 6 000kg |
| Turning radius, outer | 7 200mm | Tyres | 12.50-37 |



15. TRANSVERS DUMPER

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | |
|------------------------------|-----------------------|
| Capacity | 20 000kg |
| Length x Width x Height, mm | 9 286 x 2 200 x 2 500 |
| Operating weight | 25 000kg |
| Clearance | 380mm |
| Turning radius outer / inner | 6 900/3 100mm |

16. TRANSVERS MULTIRAIL CLEANER

Designed to clean excavation debris from ore fines, packing material and strip areas between and on the sides of railways

Features

Can operate in relative high humidity (75-100%) and ambient temperatures from -15 to +35°C; 3 types of buckets with a capacity of 0.06 m³ min; articulated boom

Transmission

Hydraulic pump with variable displacement transfers power from the engine to the hydraulic motors mounted on the axle reducers

| | | | |
|--------------------------------------|---------|----------------------|------------------------------------|
| Length | 7 460mm | Track gauge | 750mm |
| Width | 1 630mm | Railway curve radius | 18m |
| Height | 1 700mm | Railway incline | 0,005 |
| Wheel tread diameter | 680mm | Weight | 13 350kg |
| Wheel tread width (to the flange) | 140mm | Engine | Diesel Deutz TD2012 Max power @ |
| Ground clearance | 220mm | Max. power output | 2500 rpm – 64 kW |
| Clearance between frame and railhead | 220mm | Fuel capacity | 120L |
| Wheel base | 1 500mm | Max. speed | 12km/h |



17. TRANSVERS CHARGER EF

Emulsion charger with robotic arm

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|----------|------------------|------------|
| Length | 11 440mm | Max. speed | 25 km/h |
| Width | 2 000mm | Gradient | 15° |
| Height | 2 580mm | Steering angle | 50° |
| Turning radius, inner | 3 100mm | Charging height | 8 500mm |
| Turning radius, outer | 7 300mm | Operating weight | 12 680 kg |
| Ground clearance | 405mm | Tyres | 12.00 x 20 |



18. TRANSVERS CHARGER F LIFTER/LONG BOOM

Lifting machine for high-altitude work

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|----------|---------------------|------------|
| Length | 10 040mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 18° |
| Height | 2 300mm | Steering angle | 50° |
| Turning radius, inner | 3 000mm | Boom lifting height | 6 600kg |
| Turning radius, outer | 6 200mm | Boom load capacity | 500kg |
| Ground clearance | 400mm | Tyres | 12.00 x 20 |





19. TRANSVERS CHARGER ANFO

Lifting machine for high-altitude work, with charging machine for prilled explosives (ANFO type)

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|----------|------------------|------------|
| Length | 10 040mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 15° |
| Height | 2 300mm | Steering angle | 50° |
| Turning radius, inner | 3 000mm | Operating weight | 16 900kg |
| Turning radius, outer | 6 100mm | Capacity | 500kg |
| Ground clearance | 335mm | Tyres | 12.00 x 20 |



20. TRANSVERS CHARGER EMULSION

Lifting machine for high-altitude work, with a platform for the installation of a charging machine for emulsion type explosives

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------|------------------|------------|
| Length | 9 600mm | Max. speed | 25km/h |
| Width | 2 000mm | Gradient | 15° |
| Height | 2 550mm | Steering angle | 50° |
| Turning radius, inner | 3 100mm | Operating weight | 15 690kg |
| Turning radius, outer | 6 000mm | Capacity | 300kg |
| Ground clearance | 405mm | Tyres | 12.00 x 20 |



21. TRANSVERS TH

Mobile underground tyre fitting vehicle

Transmission

Dual speed range hydrostatic drive with hydraulic diff-lock

| | | | |
|-----------------------|---------|------------------------------|---------|
| Length | 9610 mm | Boom lift height | 3 500mm |
| Width | 2200 mm | Lifting capacity | 3 000kg |
| Height | 2400 mm | Rotation angle of the boom | ±15° |
| Turning radius, inner | 3080 mm | Rotation angle of the device | 390mm |
| Turning radius, outer | 5900 mm | Outriggers | + |
| Ground clearance | 400 mm | Max. speed | 25 km/h |

22. TRANSVERS SCALER RB 1

Vehicle for breaking large pieces of rock and rubble; type and model of the breaker built according to the client's specification



| | | | |
|-----------------------|----------|-------------------------------|-------------|
| Length | 11 900mm | Max. speed | 25km/h |
| Width | 2 200mm | Gradient | 15° |
| Height | 2 500mm | Steering angle | 42° |
| Turning radius, inner | 3 000mm | Boom lifting / lowering angle | +55/-10° |
| Turning radius, outer | 5 800mm | Max work height | 6 000mm |
| Ground clearance | 325mm | Tyres | 14.00 x 24c |

23. TRANSVERS SCALER

Machine for mechanised scaling of hanging walls, pits and faces in underground mines and tunnels



| | | | |
|-----------------------|----------|------------------|-----------------------|
| Length | 12 900mm | Max. speed | 25km/h |
| Width | 2 600mm | Gradient | 15° |
| Height | 2 450mm | Steering angle | 50° |
| Turning radius, inner | 3 300mm | Impact rate | 600 - 1 400 blows/min |
| Turning radius, outer | 6 000mm | Mixer's capacity | 8 780mm |
| Ground clearance | 300mm | Tyres | 17,5 x 25 |

24. HENCON SHOTCRETE VEHICLE

Machine designed to spray a wet concrete mixture onto the walls of underground tunnels for reinforcement.



| | | | |
|-------------|-----------|------------------------------------|---------------------|
| Length | 11 700 mm | Ground clearance | 405 mm |
| Width | 2 000 mm | Approach angle | 16° |
| Height | 2 900 mm | Departure angle | 14° |
| Wheel base | 4 000 mm | Turning radius, outer inner radius | 6 300 mm 3 000mm |
| Full weight | 20 000 kg | Gradient | 15° |
| Max speed | 20 km/h | Fuel tank capacity | 240L |

The Hencon Group sets new standards in the market in engineering, manufacturing and servicing of reliable special and custom made mobile equipment for the aluminium industry, mining industry and forestry industry.

25. SLAGPOT TRANSPORTER AND TILTING VEHICLE

Vehicle is designed to pick up, transport and tilt pots with slag. The configuration is an articulated frame with cabin and power pack on the tractor and pick-up and tilting frame on the trailer.

| | | | |
|------------------------|---------|--------------------|----------|
| Length | 8 400mm | Max. speed | 15km/h |
| Width | 4 350mm | Gradient | 4% |
| Height tractor | 4 050mm | Weight empty | 21 170kg |
| Height trailer | 2 800mm | Weight loaded max. | 45 000kg |
| Turning radius outside | 6 300mm | Full pot weight | 23 000kg |
| Wheelbase | 4 948mm | Tyres front | 14.00x24 |
| Ground clearance | 230mm | Tyres rear | 18.00x25 |



SLAGPOT
TRANSPORTER
AND TILTING
VEHICLE

UNDERGROUND
VACUUM
INSTALLATIONS
DRAINING PITS
CLEAN-UP



26. UNDERGROUND VACUUM INSTALLATIONS DRAINING PITS CLEAN-UP

Hencon has developed a diesel vacuum rail mine design (SDVR) system for the cleaning of drainage grooves. Its performance is at least four times better than the most modern excavator-type shovels typically used in these operations.

The system includes: locomotive with a manipulator, vacuum cars (up to five), cyclone filter and vacuum unit.

Technical parameters of SDVR

| | | | |
|----------------------|---------------------------|-----------------------|-------------------------------|
| Length | 4 495mm | Filtration system | IVC system |
| Width | 1 350mm | Filter surface area | 24m ³ |
| Height | 1 650mm | Filter material | Polyether needled membrane |
| Engine | Deutz BF6L 914C, 141kW | Filtration efficiency | Particles down to 0.3 micron |
| Vacuum pump | Roots type | Vacuum hose diameter | 150mm |
| Air consumption max. | 4 800m ³ /hour | In-vehicle network | 24V |
| Maximum depression | -90kPA (sea level) | Operating weight | 7 200kg |
| Fuel tank capacity | 200L | Transported material | Friable material and effluent |

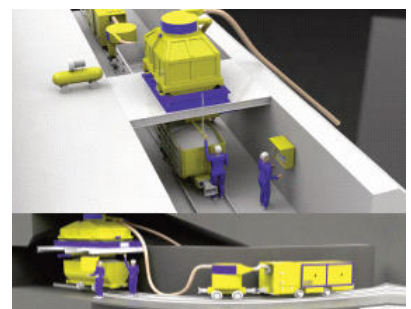
Underground vacuum installations, in combination with self-propelled mining vehicles, solve many of the problems encountered by other types of equipment.

For example, collecting and removing spills of transport conveyors with unloading of the collected material to the conveyor without stopping the process.

The vacuum method is very effective in cleaning the draining pits and shaft bottom spillages of vertical shafts. For these purposes, stationary vacuum bins with unloading in standard cars are installed near the draining pits. The bins are connected to the vacuum line of the vacuum railing machine and to the portable nozzles with flexible hoses for collecting material.

Technical parameters of vacuum bin

| | | | |
|---|---|--------------------|---|
| Length x Width x Height, mm | 3 814 x 2 717 x 2 851 | Total weight (net) | 4 500kg |
| Cyclone | 880mm diameter | Vacuum nipple | For 150mm hosepipe with quick-release connection |
| Cyclone version | Integrated to bin's body, armoured in places of max. abrasion injury | Bin capacity | 4m ³ |
| Feeding | Vibrator for materials grading | Unloading of bin | 2 pneumatic gate valves and 2 hand gate valves |
| Ease of unloading | Ease of unloading | Bin supports | Vibration-damping springs |
| Transportation to the place of installation | Bin is divided into several separate parts to ensure delivery to installation and assembly site | Energy carrier | Vacuum hopper operates from a 24V network of the vacuum unit, connected to vacuum line and air compressor |
| Pneumatic equipment | Fluid pressure cylinder of gate valves and sliding valve | Electrics | Control panel, hermetic/ bin fill level sensor |



27. LOW PROFILE CASSETTE CARRIER

The vehicle's maximum incline ability is 15° (26%)

Technical parameters

| | | | |
|--|---|------------------------|---|
| Length | 8 655mm | Max. speed | 25km/h (adjustable) |
| Width | 2 595mm | Articulation angle | 50° |
| Height to top of cabin | 1 550mm | Oscillation tilt angle | 10° |
| Height to top of mixer drum | 1 540mm | Approach angle | 12° |
| Turning radius, inner | 3 874mm | Ramp angle | 17° |
| Turning radius, outer | 7 200mm | Departure angle | 13° |
| Ground clearance Below axles (diff) | 280mm 233mm | Tyres | 9.00 x 20 heavy duty mine application tyres |
| Wheel track | 1 650 /2 300mm | Operating weight | 16 000kg |
| Fuel tank capacity | 240L | Carry capacity | 6 tons |
| Engine | Deutz TCD 2013 L04 2V EC Step III and Tier 3 126 KW | Drive axle type | Kessler D71 with Diff Lock |
| Hydraulic Pump Drive Gear | Brevini BZ3-340 | Hydraulic Drive | Linde HPV 210 Travel Pump and Travel Motor |
| Drive System | Hydrostatic | | |

Changeable cassettes

| | | |
|----------------------------------|-----------------------------------|----------------------------|
| Concrete mixer 1 | Scissor lift 2 | Fuel tank 3 |
| Fuel and grease transporter 4 | Personnel transporter 5 | Explosive transporter 6 |
| Cargo transporter 7 | Cargo transporter with crane 8 | Water cistern 9 |
| Mobile workshop 10 | | |

28. HENCON VOLT



An increase in the scale of underground mining and the inevitable deepening of mining activity necessitates sufficient oxygen supply, which entails a significant increase in the cost of mining and capital works.

One solution is the transition of self-propelled vehicles to electric traction.

Hencon has developed auxiliary self-propelled vehicles on an electric drive, powered by on-board batteries. Some functions are still performed with the help of hydraulic actuators, which are driven by hydraulic pumps with electric drive.

The battery pack (with a maximum capacity of 150kW) is installed as a replaceable cassette on the front half-frame of the machine in a sealed compartment that protects the battery from the corrosive effects of dust and the mine atmosphere. Battery cell temperature is monitored inside the cassette.

The chemical composition of the battery provides maximum safety and high performance, allowing flexibility when recharging and charging at a favourable opportunity, in the absence of a memory effect. The system is equipped with all internal protection devices necessary for efficient and safe operations. Simple and fast charging is possible at any time without compromising the battery life.

Battery charger The battery pack can be changed, but it will also allow for fast charging when opportunity arises. The batteries can be charged manually whenever the machine is not in use by connecting the cable from the charger to the machine. Charging stops when the battery has reached full capacity.

The maximum charging capacity depends on the capacity of the battery pack. The required voltage for connecting the charger is 400-415V AC 3-phase 50Hz. Fast-charging is possible at any time without compromising battery life. During fast charging, the battery can be charged completely or in separate short intervals:

- Full charge in 2 hours (using a special charger)
- Partial charging and discharging is allowed
- No memory effect
- Maintenance-free

The battery status can be easily monitored through the built-in diagnostic system. Integration capabilities exist with the automatic 3G monitoring system on the Hencon portal.

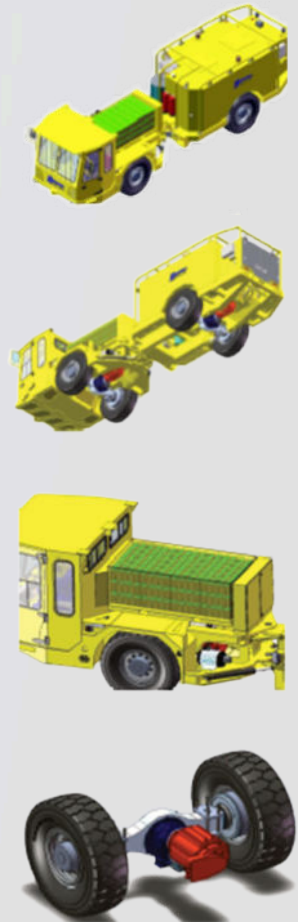
- Long service life of over 3 000 cycles
- Operating temperature range (-10°C +45°C)
- Monitoring each element using the battery management system protects the battery pack from overcharging, deep discharge, as well as operation at excessively low or high temperatures.

A closed-cycle cooling system is installed inside the battery compartment to maintain an optimal temperature. By taking temperature readings with the battery management system, the cooling system is controlled so that cooling occurs only when necessary to extend the battery life.

Power electronics

Electric motor controllers ensure heavy-duty operation with shock and vibration protection. These are installed on heat-absorbing radiators and cooled together with the battery pack. DC/DC converters are installed to power systems with a voltage of 24 volts.

Power electronics (i.e. components operating under voltage over 24VDC) are installed in a separate electrical cabinet, which clearly distinguishes it from 24-volt systems. Motor voltage 400 VAC Motor protection class IP67K.



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