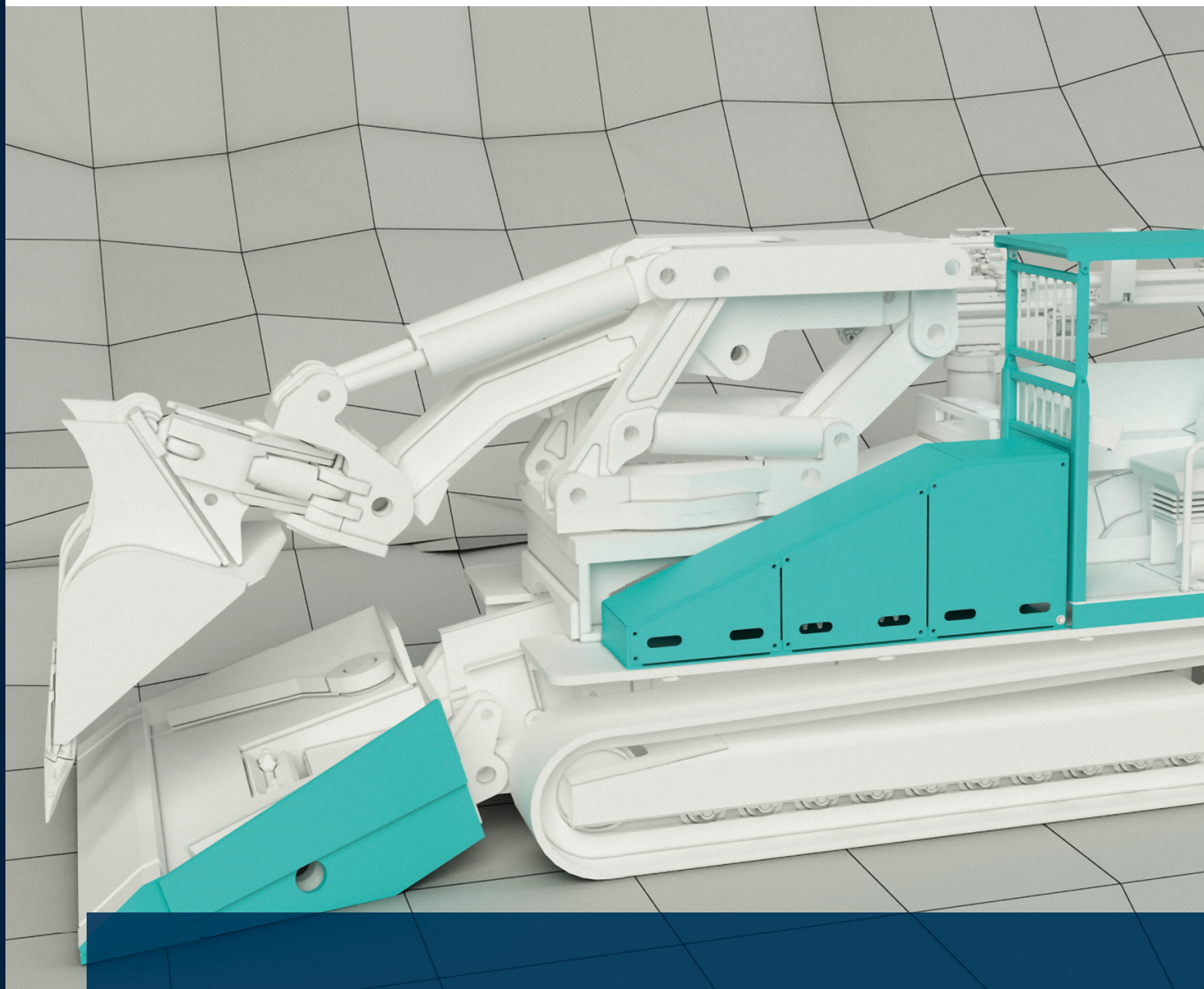
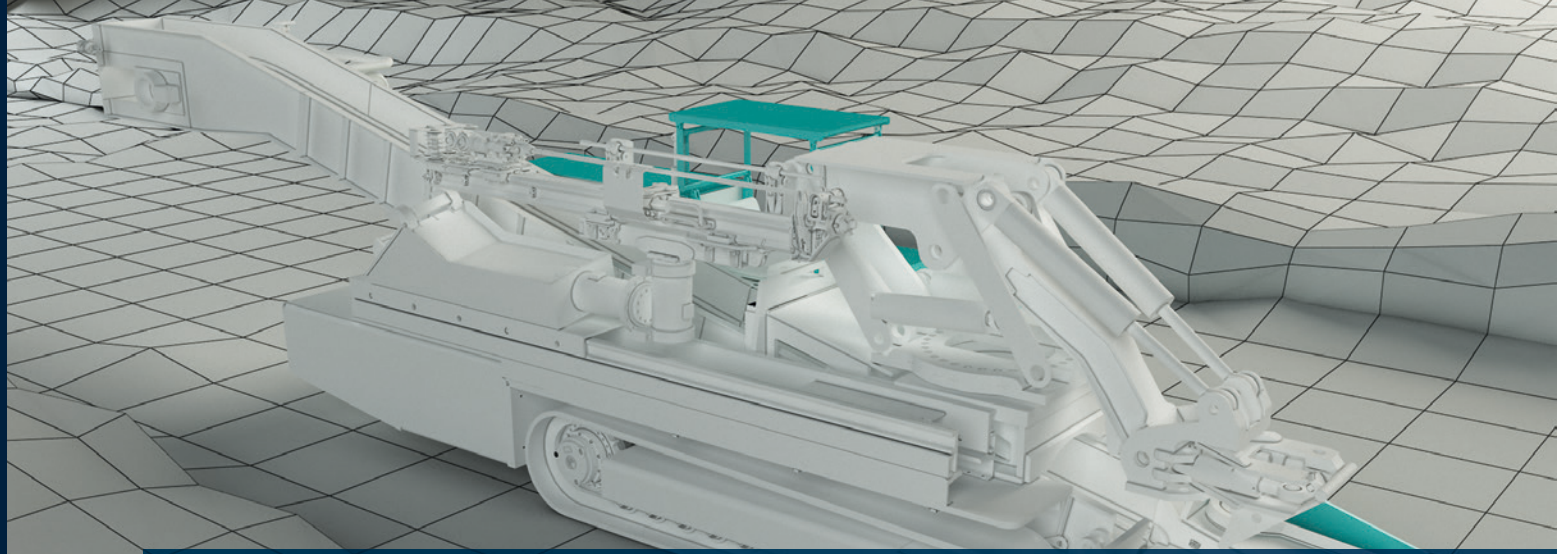
HAZEMAG

GHH FAHRZEUGE



HAZEMAG Roadheading Excavator | HRE

MinPro HAUSHERR Salzgitter TURMAG



Roadheading Excavator | HRE
Innovative high-performance tunneling system

Especially designed for the effective drifting of tunnels and galleries with small cross sections of 9 m^2 to 22 m^2 the HRE combines the advantages of

- A road heading machine
- A flexible drilling jumbo
- An effective excavator

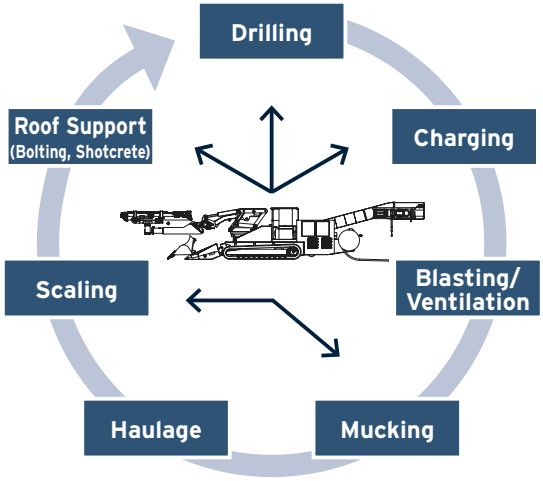
All components have already been successfully used in mining or tunneling under tough conditions.

Blast hole drilling as well as charging, loading, scaling and rock support are possible with only one machine.

Thus any passing situations in tunneling are completely avoided.

Quick loading, minimal space requirement as well as an optimized switching from mucking to drilling operation clearly distinguish the HRE from conventional systems.

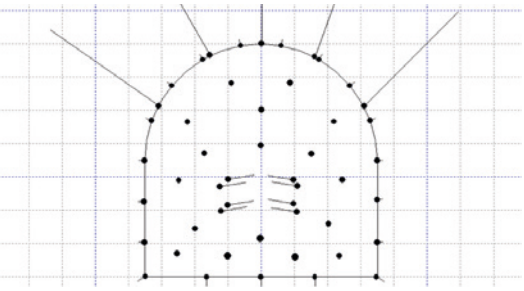
It is the innovative boom which especially determines the performance. It is fitted with a vertically as well as horizontally working parallel holding kinematic system. Besides the bucket and the drilling unit nearly all attachment devices such as hydraulic breaker and cutter heads may be installed via a hydraulic quick-change unit.

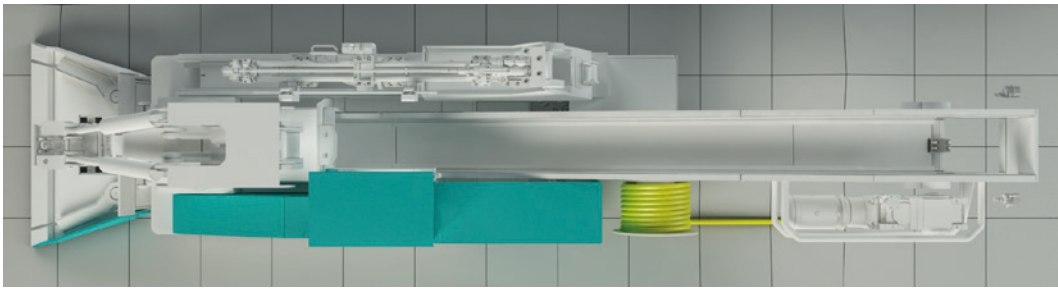


Conventional working cycle with the HRE

Your advantages at a glance

- Applicable in small cross sections from 3.3 x 3.3 m
- Electro-hydraulically driven
- Liftable and lowerable loading table
- Active loading support by means of hydraulically driven gathering arms
- Transfer segment of conveyor may be independently lifted and lowered
- Guiding device, e.g. for drilling system
- Multi-functional boom with horizontal and vertical parallel holding technique
- Remote control
- Direct loading in longitudinal axis of the tunnel
- Hand-operated hydraulic breaker in the front area
- Hand-operated impact wrench for being applied in the front and rear area
- Hydraulic quick-changing unit for an efficient tool changing

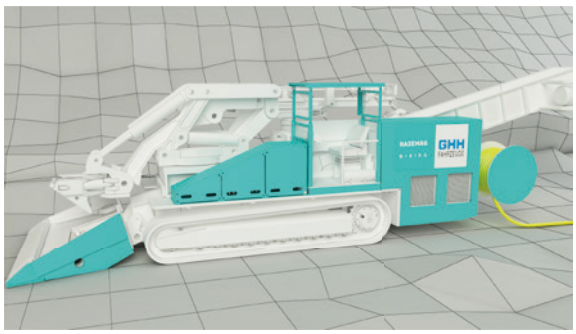




Example of use

	Rock strength in MPa (UCS)		
Attachment tool	**< 30**	**30 – 80**	**> 80**
Drilling system	–	–	■
Hydraulic breaker	–	■	–
Cutter head	■	–	–
Rock bucket (backhoe)	■	■	■
Rock bucket (face shovel)	■	■	■

Technical data – basic unit	
Length	12.5 m
Width	2.3 m
Height	2.7 m
Weight	40 t
Ground pressure	12 N/cm²
Drive capacity	90 kW
Total installed power	135 kW
Electrics	1000 V, 50 Hz
Capacity of cable drum	70 m
Operating liquid of hydraulics	HFCe (HLP 46)
Climbing ability for tramming	±18°
Tramming speed	2 km/h
Climbing ability for loading	+18° / -12°
Parallel working area	22 m²
Width of work. area in rectangle	4 m
Height of work. area in rectangle	3.5 m
Conveying channel, W x H	0.6 x 0.6 m
Throughput rate	460 t/h, 190 m³/h
Drop height	2.1 m e.G. GHH MK-A 20



Roadheading Excavator | HRE

Preliminary data

HRE – Your efficient tunneling system

Preliminary data

Attachement tools – configuration example

Bucket		
	Rock bucket (backhoe)	Rock bucket (face shovel)
Volume	0,3 m³	1 m³
Opening width	1.200 x 930 mm	1.130 x 1.043 mm

Drill carriage	
Double rotary drive	■ Horizontal ± 180° ■ Vertikal ± 105°
Exploration drillings	Ø 64 mm, effect. drilling depth 25 m
Blast hole drillings	Ø 43 mm, effect. drilling depth 2,2 m
Anchor drillings	Ø 36 mm, effect. drilling depth 4/6 m
Forepoling	Ø 43 mm, effect. drilling depth 4/6 m
Supplementary equipment	■ Catching device ■ Drill rod guidance ■ Gripper for extension borings ■ Extendible with adapter for shotcrete

Working platform	
Weight	Portable in modules
Dimension of thread (W x L)	1,200 x 450 mm
Feature	Adaptable to bucket

Rock bit	
Impact principle	Oil impactor
Service weight in kgs incl. bits, without adapter plate	655
Impact frequency	350 — 700 l/min.
Oil requirement	60 — 120 l/min.
Working pressure	125 bar
Bits	Ø 95 mm

Cutter head	
Type	Transversal with turning device
Power	45 kW
Cutting force	15 kN
Weight	610 kg
Width	680 mm
Diameter	450 mm

Options of the electric equipment

- Power input of conveyor motor
- Power input of percussion drill
- Temperature of hydraulics

In future – „HRE digital“

- Position and orientation of the machine in the drift
- Position and orientation of the drill carriage for exact heading
- Localisation of the operator in hazard areas
- Data telecommunication
- Maintenance planner

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