

Alpine Reef Miner ARM 1100

The ALPINE REEF MINER ARM1100 is a disc cutting mining machine and designed for mining narrow reefs of hard and abrasive rock. Therefore this machine can exceed limits of the operational range as given for other mining machines, but it is nevertheless also faced with the ultimate limits set by the machine rock interaction under extreme conditions.

The ALPINE REEF MINER is electrically powered. Optimum comfort and safety for operators are provided due to fully remote control.

The ARM1100 was designed as a combination of the principles of VOEST-ALPINE roadheaders and VOEST-ALPINE tunnel-borers, resulting in a machine with high performance rates in hard and abrasive rock conditions.



Technical data ARM 1100*

General

Length (without belt & roof-bolter)	9800 mm
Length (with roof-bolter&without belt)	13200 mm
Length (with belt & roof-bolter)	15800 mm
Height in operation	1100 mm
Minimum height	1000 mm
Minimum machine width (without belt)	2720 mm
Machine width in operation	4300 mm
Total weight approx.	32 t
Ground pressure under main gripper	
bottom max.	12 MPa
top max.	6 MPa

Cutting profil with 1100mm diameter cutterhead

Cutting height	1100 mm
Cutting width	4327 mm
Cross-section	4.6 m ²

Navigable Area of Application

Cone radius, min.	50 m
Basin radius, min.	50 m
Slope side max.	±15 / ±16,6 °/gon
Slope upgrade / incline	±15 / ±16,6 °/gon

Forces

Force at sump cylinder extend/retract	490/290 kN
Cutterarm force –horizontal max.	320 kN
Main gripper top max.	490 kN
Main gripper bottom max.	1100 kN
Operational hydraulic pressure, max.	320 bar

Loading System

Loading device at face	1 scraper
Loading device at belt.	1 loading shovel

Conveying System

Conveyor width	400 mm
Conveyor capacity max.	200 m ³ /h

Hydraulic System

Pressure max.	320 bar
Number of hydraulic pumps	3

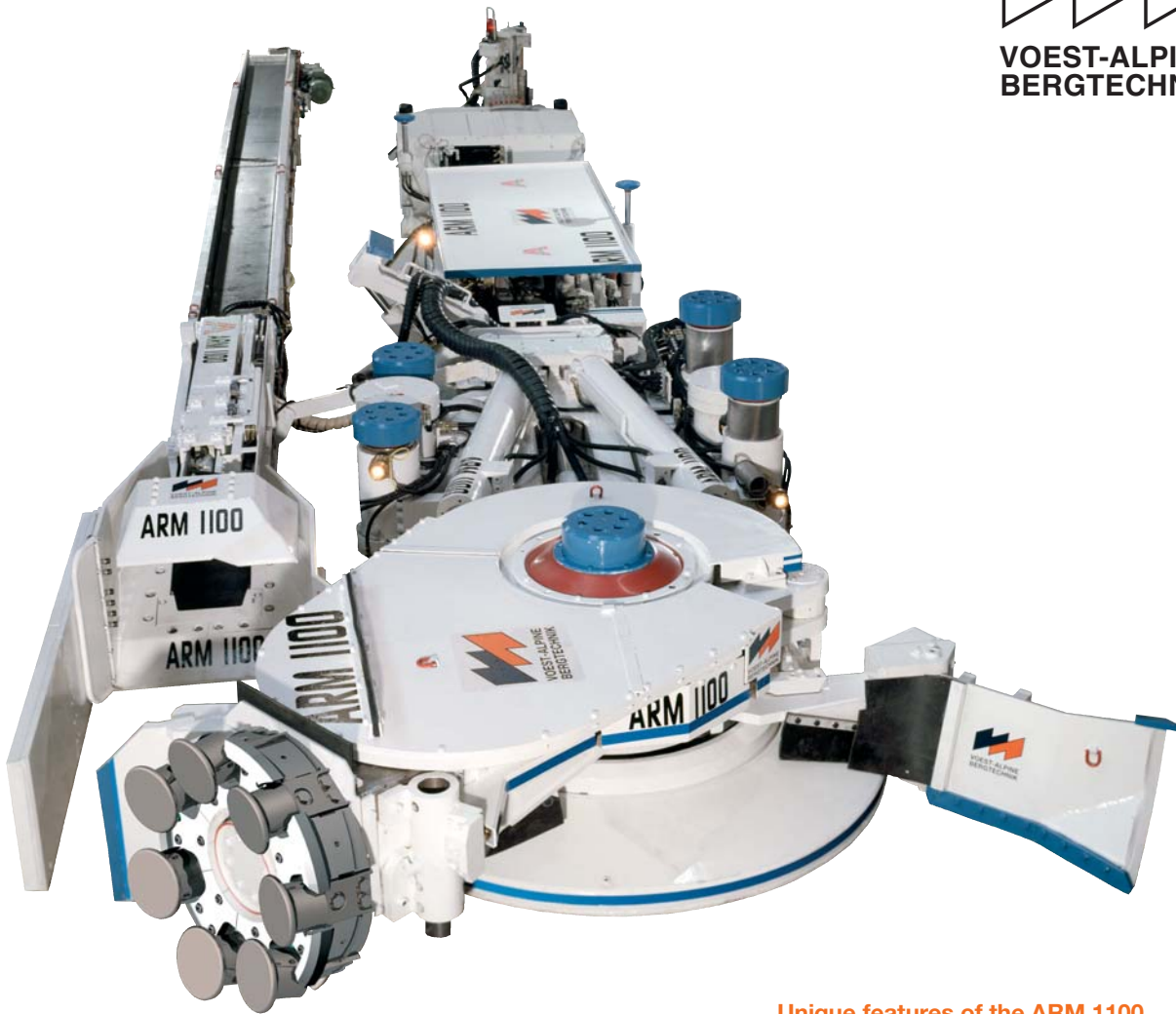
Speeds

Cutterarm speed	0.7 – 3.5 m/min
Cutterhead speed at 50rpm & 1100mm cutter-head	2.9 m/s
Conveyor speed	1.1 m/s

Electrical System

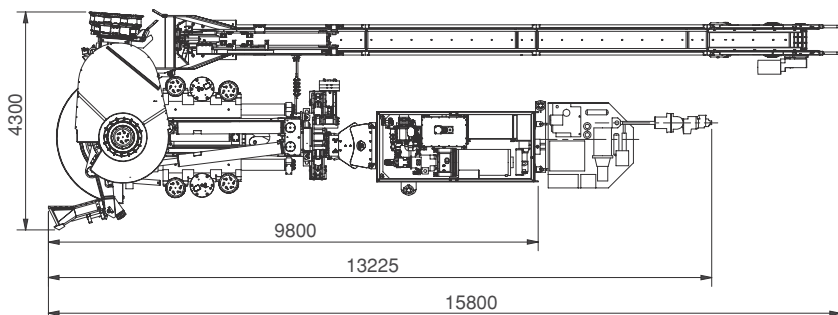
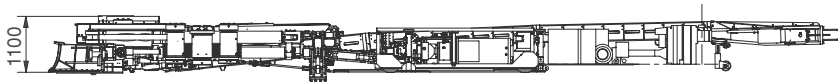
Electric potential	1000 / 50 V / Hz
Total incl. aux. exits	350 kW
Hydraulic motor – water-cooled	280 kW
Conveyor motor – air-cooled	7.5 kW
Exit for roof bolter	45 kW
Auxiliary exits (e.g. add. belt conveyor)	2x5.5 kW

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Unique features of the ARM 1100

- Disc cutting using the “undercutting” principle for efficient energy utilisation.
- Gripper system to transfer the high cutting forces while keeping machine weight low.
- Fully remote controlled and automated to a high extend for safe working conditions
- Simultaneous cutting and roof bolting



Field of application

Suitable for mining low height ore bodies , because of:

- Low machine dimensions
- Simple assembly and dismantling into its main components or transport units
- Using disc cutter working in undercutting mode
- Continuous mining process for high production rates
- Increased safety due avoiding blast-damage to the surrounding ground