

182-M MINING SHOVEL

Deep section lower frame with full depth bulkhead under the roller circle.
Independent, dual motor lower frame propel.
Planetary final propel drive.
Alloy steel crawler shoes.
Roller circle with self lubricating nylon bushings and thrust washers.
Cold weather steel in all front end structures.
Equalized suspension cables.

Manganese steel dipper lip.
Disc snubber for controlled dipper door closing.
Insulated operator's cab with tinted glass.
Through hardened gearing flame hardened rope grooves.
Disc brakes on swing hoist crowd and propel.
Propel alarm.
Boarding signal.



Dipper capacity : 10 cu.m.

Operating weight : 353,800 kg.

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The BEML 182-M mining shovel is a proven performer with advanced technical features that enable it to produce reliably in tough digging conditions. Available with dippers ranging from 9 to 23 cubic yards (7-18 m³), the 182-M can be matched with a wide range of truck sizes and output requirements.

The 182-M's superior operating performance is the result of a machine design which employs the latest technology to combine the right hoist, crowd and swing power with the optimum dipper capacity to effectively handle your digging conditions. A dual motor DC electric drive propel system with elevated drive sprocket design is employed to allow unparalleled machine maneuverability and elimination of digging forces and steering loads on the drive sprocket. This high degree of maneuverability and ease of control will enable operators to maintain the proper shovel position in relation to the face and haul truck, allowing an improvement in cycle time as well as dipper fill factor.

The 182-M structures and components have been designed and field proven for long service life and high availability. Many of the machine's features help to reduce maintenance and service costs including modular bolt-on crawler assemblies (permitting the off-site rebuild of these components); the use of field-proven DC generator sets allowing greater incoming power variation; the use of rack and pinion crowd with adjustable air clutch to avoid excessive shock loads during crowding instead of wire ropes or belts; and the elimination of oil pumps in the swing gear cases.

These and many other features give the 182-M Mining Shovel an advantage in sustaining high availability under the most difficult mining conditions.

This combination of superior operating performance, high availability and improved maintainability make the BEML 182-M the right shovel for a profitable mining operation

ELECTRICAL SYSTEM ADVANTAGES

DCAV provides better performance, sharply lower energy consumption and lower operating costs than ECC (Eddy Current Clutches) shovels.

Bail pull is much greater at low speeds than ECC-equipped shovels.

Peak digging horsepower is over 30% greater than the competitive ECC shovel.

Higher stall bail pull and higher top speed yields a minimum of 30% more material for the same power consumption.

The BEML 182-M utilizes DC Adjustable Voltage (DCAV) power conversion system (Ward Leonard) for all motions. The motor generator set is driven by one 800 HP (600Kw) AC induction motor arranged for operation on 3.3/6.6 KV, 3 -phase, 50 Hz AC incoming power (see OPTIONS for alternate power supply). The driving motor is full voltage started and stopped by an automatic pushbutton starter.

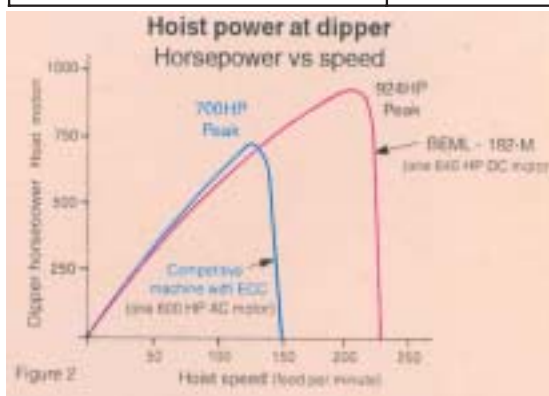
The system is significantly more productive and energy efficient than competitive machines that use ECC to power the hoist motion. Because the ECC system uses an AC motor run at nearly constant speed to drive the hoist, the ECC coupling must slip to obtain reduced speeds when digging. This slippage causes a corresponding loss of power proportional to the slippage. Not only is power wasted, but a special ventilating system is required to dissipate heat.

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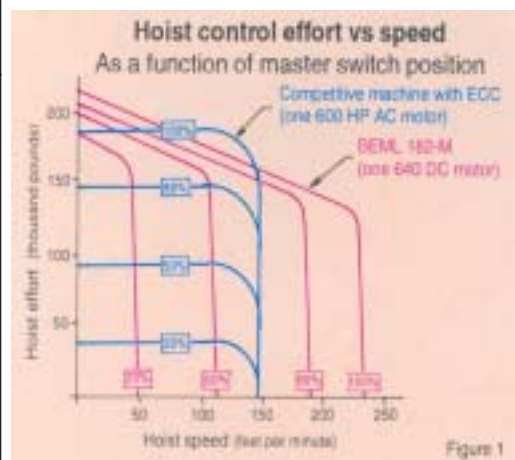
PROVEN PERFORMANCE ADVANTAGE
In actual operating conditions, for a given amount of material that a mine has to move, the 182-M DCAV system's superiority has been proven over and over again in customer-sponsored and independent tests in a wide variety of applications; the ECC system uses TWICE the energy to move the same material as the 182-M DCAV system

COMPARISON OF ENERGY USAGE	
Energy used by ECC shovel as a % of BEML DCAV shovel	
United Kingdom mine	190%
US non ferrous mine	200%
US iron mine	218%
Eastern US mine	190%
Eastern Canada	195%
The philippines	185%
Turkey	166%

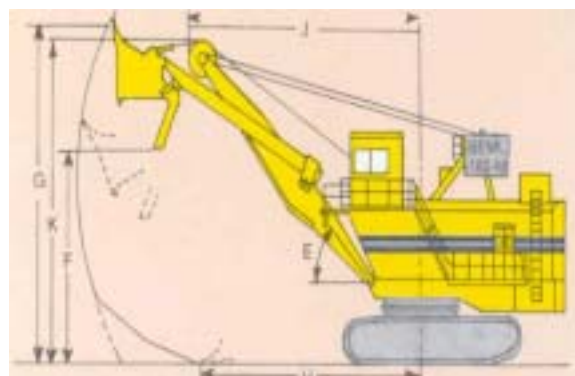
HOIST POWER AT DIPPER.
Another comparison that can be made is "useable" horsepower. Figure 2 compares dipper horsepower Vs speed. The 182-M shovel develops more horse power (924) at higher speeds than does the ECC equipped shovel.



HOIST CONTROL EFFORT Vs. SPEED
A factor to consider when comparing the digging efficiency of the 182-M is the operator's ability to use the power provided. Figure 1 compares hoist effort Vs. speed for various master controller positions. If the operator is to avoid heavy shock loading and resultant high maintenance cost, he must cause the dipper to enter the bank at a slow speed. The only way the operator can get slow speed is to pull the master controller back to less than "full on" position. The 182-M system permits almost 100% of bail pull at any reduced speed position. On the ECC system, the operator's controller only reduces bail pull, not speed. Therefore, at light load (before dipper enters the bank) full speed results from any controller position.



WORKING RANGE (Standard)		
Description	English	Metric
E-Boom angle	45°	45°
F-Dumping height maximum	26' 6"	8.1 m
G-Cutting height maximum	42' 9"	13.0 m
H-Radius of clean-up	36' 5"	11.1 m
J-Clearance radius outside boom point sheave	39' 2"	11.9 m
K-Clearance height over boom point sheave	41' 1"	12.5 m

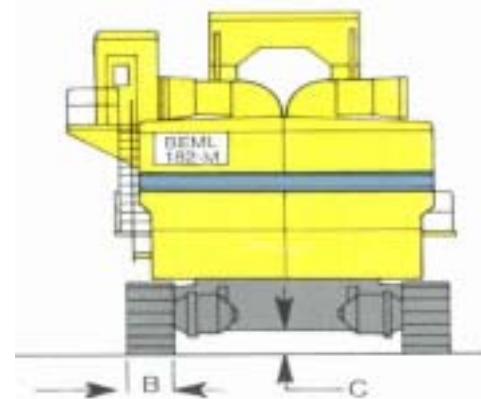
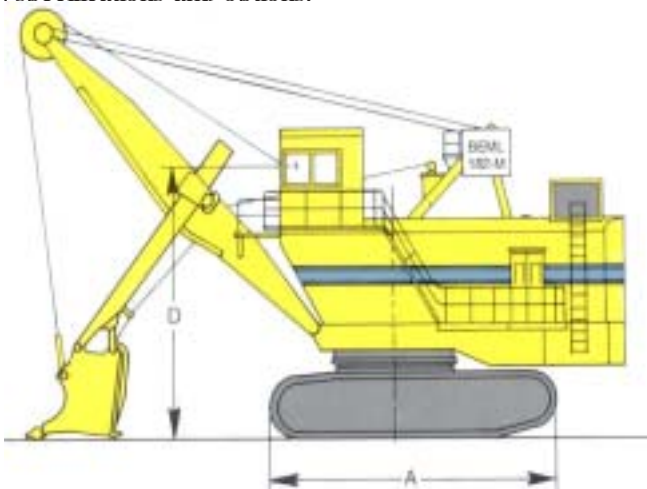


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DIMENSIONS		
Description	English	Metric
Boom-handle dipper		
Boom length	40' 2"	12.2 m
Dipper hadle length	27'	8.2 m
Dipper capacity range .	9-23 c.y	6.9-17.6 m ³
Crawlers and lower frame		
A-Crawler length	29' 8"	9.0 m
B-Belt width, standard	39"	1.0 m
C-Clearance under lower frame	2'	0.6 m
Upper frame		
D-Eye level, operator's cab std.	25' 2"	7.6 m
Hoist rope diameter (double line)	2"	51.0 mm
Boom support rope (quadruple)	2"	51.0 mm
Electrical equipment		
Hoist motor, 640 HP, 475 V, total	640 HP	477Kw
Swing motors, two, 130 HP, at 475 V, total	260 HP	194Kw
Propel motors, two, 195 HP, at 475 V, total	390 HP	290Kw
Crowd motors, 130 HP, 475 V, total	130 HP	97Kw
Weights *		
Working weight	722,000 lbs	353,800 kg
* Machine weight will vary depending upon model specifications and options.		

OPTIONAL EQUIPMENT

Automatic lubrication system
 Open gear lubrication system
 Bulk lubrication storage reservoirs
 Wider crawler shoes
 Electric winch for cable reeving
 One-ton capacity jib hoist
 Propel blown motors
 Crowd hoist and boom limit switches
 Air-conditioned operator's cab
 600 HP AC driving motor
 Cable reel
 Long range boom and handle
 Weld plug
 Cusomer-selected paint scheme



- 1) Materials & specifications are subject to change without notice.
- 2) Illustrations may include optional equipment and accessories and may not include all standard accessories.
- 3) All the specifications meets relevant ISO standard