



MINING COMPLEX "KOLUBARA" LAZAREVAC

Branch of KOLUBARA METAL

Diše Đurđevića Rusa 32 11560 Vreoci



STATEMENT

About using Polytron product: Polytron EP 2 unguent and Polytron PL

For Mr: Mr Ivana Stankovica/President of Melmak coo

In Mining complex "Kolubara", biggest mining for producing lignite in this part of Europe, it employees a huge number of mining machines for excavation the tailings and coal. All those machines are working under the extreem condition , huge enviroment of dust, abrasive dirt, high temperature, humidity, which affects the work parts and components of machines.

One of that machines that works on Surface mine "Tamnava" West Field and that on the excavation of coal is Bucket excavator ERs 1000/20, image 1.



Image 1 - Bucket Excavator ERs 1000/20

Business organization for production, processing and transport of coal, Mining complex "Kolubara" d.o.o. Lazarevac. Place: **11550 Lazarevac, St. Sava number 1** (single-member company), registered in the Register Busines Entities in the Business Registers Agency of Republic of Serbia, registration number BD. 102741/2006 ID number: 07788053; PIB: 101138490; Paid and recorded / Recorded basic capital: 279.633.393,00 € Rn.number: 180-1491210007008-53 Alpha Bank a.d. Belgrade; **Founder: JP "Electric Power Industry of Serbia" Belgrade.**

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His characteristics are:

Theoretical Capacity	1800[m ³ /h]
Excavatorial Material	Ugalj
Number of buckets for entire chain.....	43
Volume of buckets (buckets with two teeth).....	1000[l]
<u>Deponent Strip – Strip 2</u>	
axial distance of reels.....	39500[mm]
Strip Latitude	1600[mm]
Movement speed of strip.....	4,2[m/s]
<u>Lifting mechanism for strip transshipment:</u>	
Piston – Ø	400/180[mm]
Lifting the piston	2230[mm]
Max. Operating pressure on piston side.....	30[bar]
Max. Operating pressure on connecting rod side..	180[bar]
Working mass.....	1580980[kg]

Major dimensions were given at image 2;

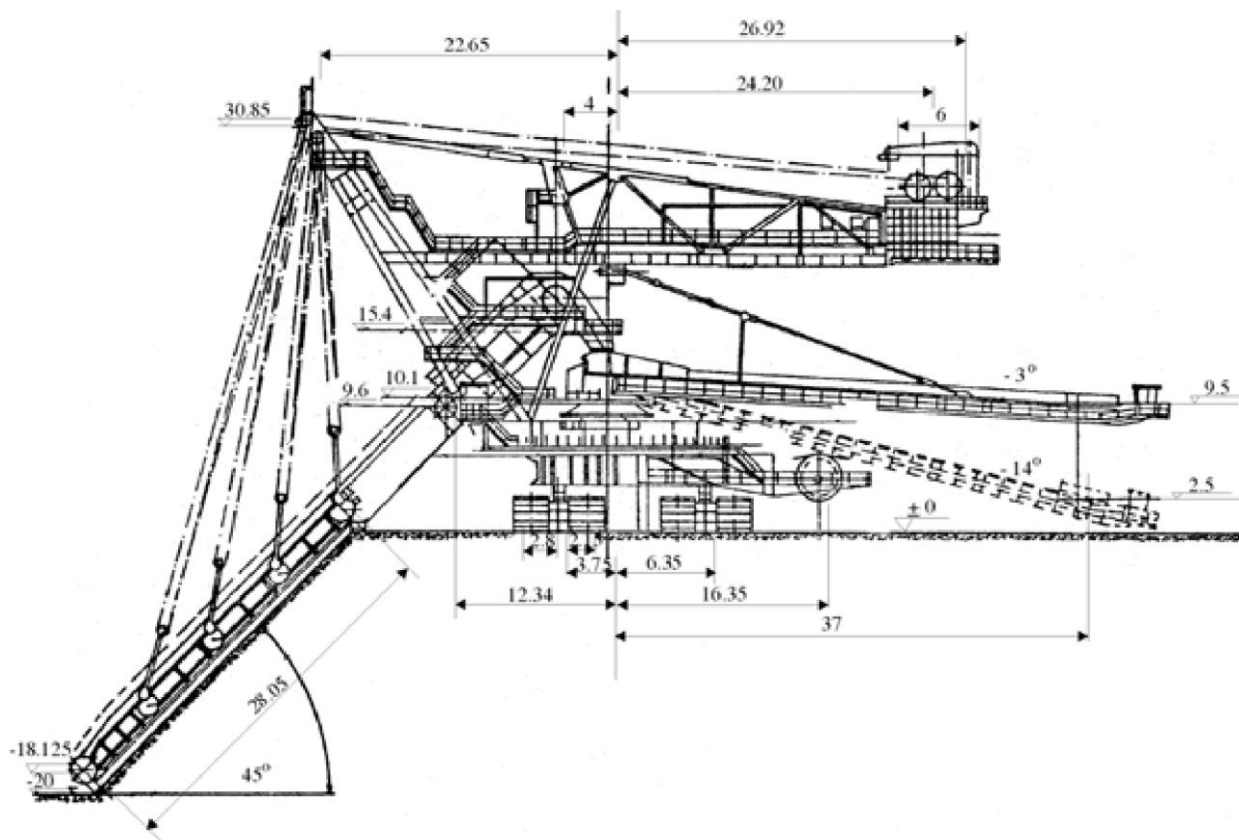


Image 2 – Major dimensions of Bucket excavator ERs 1000/20

During the year of 2012 in scheduled time performing overhaul on mining machines of the Mining complex "Kolubara" at Surface mine "Tamnava" West Field it has been performed the overhaul of Bucket Excavator ERs 1000/20 for mining coal during the period May to June 2012.

One of the operations was also and removal, regeneration and montage of angular ball bearing from wearing deponent strips, Strip 2 – Image 3 and Image 4.

The main reason of performing the operation was that because during the work started to appear huge resistances during the rotation of deponent Strip 2, that was indicated on the damage of angular ball bearing.



Image 3



Image 4

After dismantling and transport at workshops of "Kolubara Metal" was performed dismantling of angular ball bearing, cleaning and washing, and also defectation. Image 5 and 6.



Image 5



Image 6

The usage of Polytrone product was performed under direction of Yours representative, Mr Ivana Stankovica. The usage of Polytron product was carried out in first week of June in 2012.

Two products were used: Polytron EP2 – unguent and Polytron PL, which were handled by and used on angular ball bearing Strip 2 Bucket excavator, see the images from 7th to 18th.



Image 7



Image 8



Image 9



Image 10



Image 11



Image 12



Image 13



Image 14



Image 15



Image 16



Image 17



Image 18

From commissioning Bucket Excavator ERs 1000/20, June 2012, until today, March 2014, at already mentioned construction, angular ball bearing of wearing the Strip 2, there was no stoppages neither are done some interventions. It hasn't been noticed any abnormality viz.(videlicet) it hasn't been noticed any indicator that would shown that construction has some technical defects.

Anyway the products of Polytron helped us many times in perventive maintence.

Contributions:

Contribution 1 – STATEMENT OF CONDITION OF ANGULAR BALL BEARING FROM WEARING STRIP 2 ON BUCKET EXCAVATOR ERs 1000/20.

Contribution 2 – CERTIFICATE OF ACCREDITATION Department for Laboratory measurments and Tests.

Report made by:

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Docent on The Cathedra for Industrial and Systems engineering on the Technical College in Cacak,
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March, 2014.