ЕЛЕКТРОПРИВРЕДА СРБИЈЕ

MINING COMPLEX "KOLUBARA" L A Z A R E V A C

Branch of KOLUBARA METAL

Diše Đurđevića Rusa 32 11560 Vreoci

STATEMENT

About using Polytron products: Polytron EP-2 Lithium Complex Grease and Polytron PL

To: Mr. Stan Goodwill, Tech Support , EPTECH coo

In Mining complex ″Kolubara″, largest mining complex for production of lignite in this part of Europe. It operates a huge number of mining equipment for excavation of lignite and coal. all this equipment is operating under extreme conditions of abrasive dust, dirt, high temperatures and moisture, which shortens considerably its service life.

Bucket Excavator ERs 1000/20 (image 1) is one of those machines that operate in the quarry ″Tamnava″ West Field on excavation of coal.

Image 1 - Bucket Excavator ERs 1000/20

His characteristics are:

Theorical Capacity . . . . . 1800[m^3/h]

Business organization for production, processing and transport of coal, Mining complex ''Kolubara'' d.o.o.

Dir Branch: **+3811----------**
Commercial: **+3811----------** E-mail: komercijala@kolubarametal.com
Fax: **+3811----------** Web Page: www.kolubarametal.com

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;

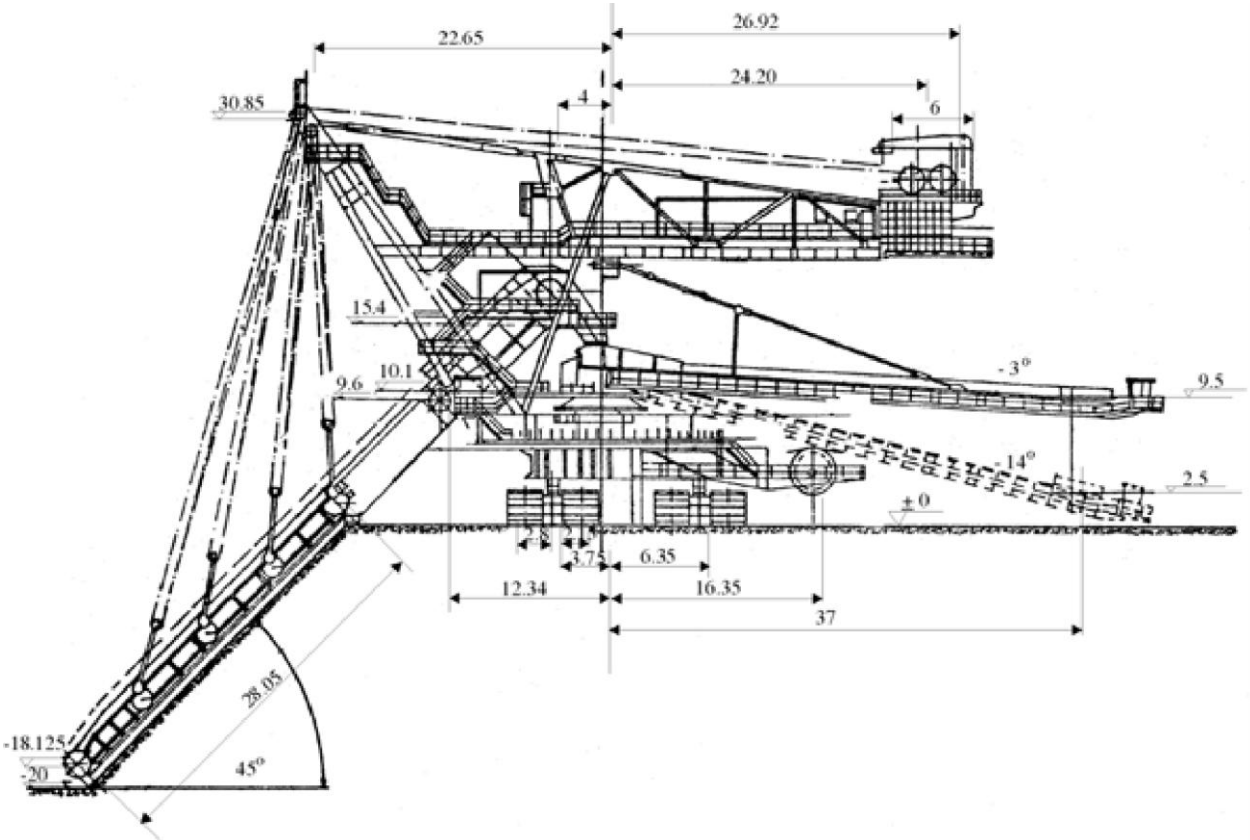

Image 2 – Major dimensions of Bucket excavator ERs 1000/20

During May to June 2012, this Bucket Excavator went through a scheduled overhaul, which included disassembly, reconstruction and assembly of angular ball bearing from wear strips, Strip 2 – Images 3 and 4.

The main reason for the above repair operation was appearance of inormous resistance to rotational motion of Wear Strip 2 indicating that its angular ball bearing was failing and required full repair.

Image 3

Image 4

ANGULAR BALL BEARING

The angular ball bearing was taken off the strip and brought to "Kolubara Metal" workshop , where it was disassembled, cleaned, washed and lubricated with Polytron PL and Grease as discribed below.

Image 5

Image 6

The application of Polytron products was done under the supervision of your representative in Serbia (see Images 5 to 18).

Image 7

Image 8

Image 9

Image 10

Image 11

Image 12

Image 13

Image 14

Image 15

Image 16

Image 17

Image 18

Since June 2012, when the above mentioned Angular Ball Bearing was repaired and lubricated with Polytron PL and Grease, until today, March 2014, it operated smoothly without interruptions and without any maintenance operations beyond routine lubrication, as opposed to need for some type of repairs every 6 months before Polytron products were applied.

Polytron products helped us many times in preventive maintenance, and we highly recommend them to any users of heavy duty equipment, especially those operating in harsh working conditions.

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:

Doc. Dr **Milorad Pantelic**, *mas B.Sc*

Head of laboratory for measurement and testing in the Kolubara Metal company in Vreoci

Docent on The Cathedra for Industrial and Systems engineering on the Technical College in Cacak, University of Kragujevac

March, 2014.