

ASPECTS REGARDING THE EXPERTISE OF LIFTING-DESCENT MECHANISM PLATFORM OF A COAL EXTRACTION MACHINE – Part II

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ABSTRACT: In this paper presents the technical state of the platform of uplift-descent the mechanism of the coal-mining machine, n following technical expertise. The rehabilitation to which will be subjected of the platform of uplift-descent the mechanism will be done by performing the intervention works which will restore in the normal operating parameters both the structural part and functional part. Also, in the paper are presented: the verification methods of the mechanism as well as the proposed technical solutions for the repair of the mechanism.

KEY WORDS: mechanism, expertise, coal extraction machine

1. INTRODUCTION

For to achieve the repair of uplift-descent mechanism it was necessary to make his technical expertise [4], [5]. In this paper we will present the records of the measurements made for hardness control from the welding area on the upper left sole and on the upper right sole and implicitly hardness in the welding area for the roller block attachment ears which supports the lift mechanism cable, as well as their graphic analysis.

2. DEFECTS OF THE SUBSAMBLE LIFTING MECHANISM

To determine defects were checked joints with welding of the sole of the platform. As has been specified in Part I, verification of welded joints was carried out using a modern, non-destructive control method namely the control with ultrasound or the ultrasonic control, fig.1



Fig.1. Verification of welded joints

Thus the hardness values controlled in the thermal influence zone and in the base material as well as in the welding cord are highlighted in tab.3 and tab.4 and graphics from fig.2 and fig.3

Tab. 1 *The hardness value measured on the top left upper sole in the welding area.*

	Point 1	Point 2	Point 3	Point 4
MB 1 st	128	120	130	131
ZIT 1 st	117	113	117	120
MA st	113	103	113	105
ZIT 2 st	107	109	121	114
MB 2 st	115	112	115	117

Tab. 2 *The hardness values measured on the right upper sole in the welding area.*

	Point 1	Point 2	Point 3	Point 4
MB 1 st	118	116	117	119
ZIT 1 st	137	140	132	122
MA st	126	133	143	141
ZIT 2 st	112	121	120	125
MB 2 st	119	128	133	131

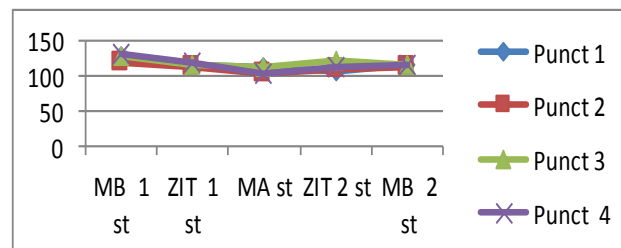


Fig.2. *Graphic representation of the hardness values on the upper left sole in the welding area*

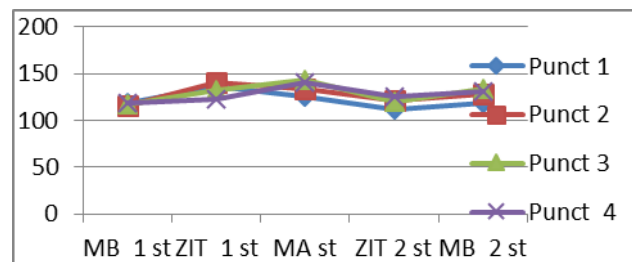


Figure 3. *Graphic representation of hardness values on the upper right sole in the welding area*



Figure 3. *Verification of welds for the ears of grip*

Hardness control in the welding area in the 3 welding components and areas of thermal influence have been achieved for each of the 4 ears, and then it was drawn

Tab.3 *The hardness value to the left ear 1 in the welding area.*

	Point 1	Point 2	Point 3	Point 4
MB 1 st	152	138	147	154
ZIT 1 st	141	133	146	144
MA st	155	133	143	134
ZIT 2 st	143	147	130	138
MB 2 st	154	135	153	148

for each the graph of interpretation, these being shown in fig.4. The recorded values are shown in tab. 3, 4, 5 and 6, and the graphical representations in fig.5, 6, 7 and 8.

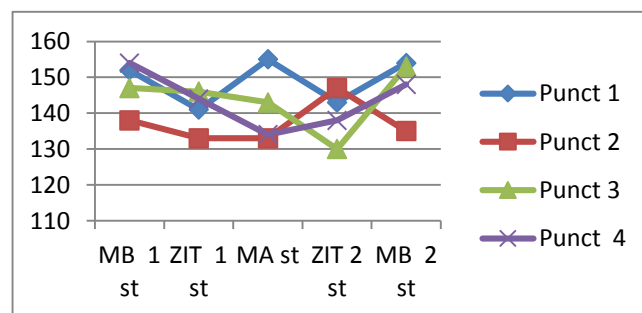
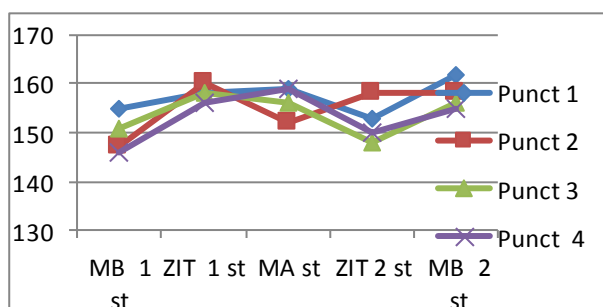


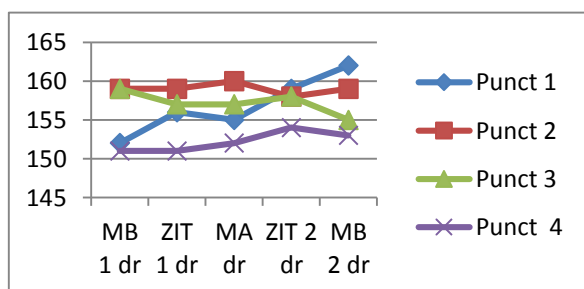
Fig.5. *Graphical representation of hardness values at the left ear 1 in the welding area.*

Table 4. The hardness values at the center 2 left ear in the welding area.

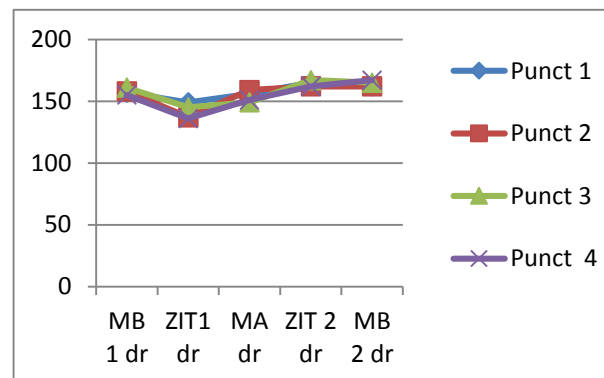
	Point 1	Point 2	Point 3	Point 4
MB 1 st	155	147	151	146
ZIT 1 st	158	160	158	156
MA st	159	152	156	159
ZIT 2 st	153	158	148	150
MB 2 st	162	158	156	155

**Fig. 6.** Graphical representation of hardness values at the left center ear 2 in the welding area.**Tab.5.** The hardness values at the right middle ear 3 in the welding area.

	Point 1	Point 2	Point 3	Point 4
MB 1 dr	152	159	159	151
ZIT 1 dr	156	159	157	151
MA dr	155	160	157	152
ZIT 2 dr	159	158	158	154
MB 2 dr	162	159	155	153

**Fig.7.** Graphic representation of hardness values at right ear 3 in the welding area.**Tab.6.** The hardness values at the right middle ear 4 in the welding area.

	Point 1	Point 2	Point 3	Point 4
MB 1 dr	157	158	161	155
ZIT1 dr	149	137	145	136
MA dr	156	159	149	151
ZIT 2 dr	165	162	167	162
MB 2 dr	162	162	165	167

**Fig.8.** Graphic representation of hardness values at right ear 4 in the welding area.

Also, it has been found that rust has attacked the paint in the base area, where the precipitation water has not drained properly. In the lateral area of the fixed roller block will be projected and will be executed a railing on the left and right of the platform, which will ensure proper protection against the possible slippage of the operating personnel (for compliance with health and safety standards at work).

1. CONCLUSIONS

The hardness values measured for ears 1 and 3 have scattering that denotes that the welding was not followed by a constant linear energy regime introduced during the execution of the joint.

It is mandatory ballast cleaning and measuring the thickness of the base of the box of ballast. Also, taking into account the technical project of the project and related technical documentation will be stipulated on that platform, water drains resulting from precipitation and from condensation.

In the same way, the cleaning the ballast it will be made to the mobile box of ballast.

The execution, repair and interventions on the metal construction of the upper platform of the lifting mechanism it is recommended to be done in the spring-summer-autumn months, when there are normal conditions for the operations of: welding, welding control, cleaning, corrosion

protection and repair.

The place of repair will be chosen at the southern end of the deposit, with recommendation for execution under real supervision from the leader the formation of works which to respect: the order of execution with the stopping points at the works that are not visible (defects that will be noticed during the main repair of the machine) but also the working technology for welding and / or corrosion protection operations.

All work of resistance on metal construction will be recorded and / or executed according to the protocol technologies.

Cutting executed untidy, obligatory will be adjusted and then recontrol with penetrating liquids (oxy-gas was performed).

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