

REHABILITATION OF HELICAL ASSEMBLY (WHEEL BRACKET CUP HOLDER) COAL EXTRACTION MACHINE M4A Part II

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ABSTRACT: In this paper we present the technical state in which is found the helical assembly of a coal suction machine, following the technical expertise. The rehabilitation to which the helical assembly will be subjected will be done through the execution of the intervention works that will restore to the normal operating parameters of both the structural part and the functional part. The paper presents: the modalities of verification of the mechanism as well as the proposed technical solutions for the repair of the assembly.

KEY WORDS: machine, coal, rehabilitation, interventions, assembly, helical

1. PRESENTATION OF WELDED JOINTS

The connections with IP screws (IR) between Section I (the part that is bolted on the rotating platform) and Section II (the part that is attached to the Tiant I)

respectively from sketch no. 1 and sketch no. 2 are non-conformities that we are presenting below.



Fig.1 Screw connections

The screws that at the impulse and vibration test have oscillations that denote that there has been weakening of the assembly are painted in red. On the upper soles in both beams (left and right) The ecclesiastics were deformed due to the appearance of rust between the ecclesia and

the sole of the beam on both the upper and lower ones. At repair, the node will be dismantled and depending on the degradation it will be decided eventually to replace the strap, but it may even replace a portion of the sole of the beam.

The screws will be replaced at the opening of the church. The connections with IP screws (IR) between the Section II and the Support of the wheel-cup

mechanism presents at the joints with deficient screws that will have to be removed at a future repair.



Fig.2 The Catching from the section X2-X2

The clamping in section X2-X2 of sketch no.3 is from corners placed in x, it has

screws that vibrate at the impulse test, or painted in red.



Fig.3 The Catching from the section X1-X1

The clamping from section X1-X1 of sketch no.3 has screws that vibrate at the impulse sample, or painted in red on both the vertical middle of the beam and on its soles.

There are short screws that do not meet the requirements of C 133, these will be replaced with screws corresponding in length, or painted in red.



Fig.4 Lateral nerves of the main beam

Lateral nerves of the main beam from "Section II" partially missing (on the st.) From fabrication or uncut for installation, for unknown causes, they will be

executed and welded instead of the ones presented (they are not painted because they are without access to respect the safety at work).



Fig.5. Lateral diagonals from "Section I" with unadjusted parts at lower sole grip

They will be adjusted according to the rules imposed in the connections with pre-tensioned screws (Order C 133).

The same deficiency is found on the left side.

2. CONCLUSIONS

1) The welding assemblies do not present deficiencies that indicate the degradation of the assembly, "Elinda" - the main beam (T2052-78 / b-1.0 + 2.0 + 3.0 [25.0]) as an ensemble of the 3 subassemblies. The assembly itself, the breached space beam, is strongly correlated with affected areas and which will be remedied by cleaning and corrosion protection. In places where cleaning with metallic gloss will not be possible due to the narrow spaces, rust will

be removed by hammering with a suitable hammer, and similar to removing the slag from electric welding with coated electrode, followed by paint protection "3 in 1" which has the ability to inhibit and stop rusting of the surface on which it is applied. The anticorrosive protection of these areas will be done with the brush in 1-3 layers with the final coating on a thickness of 240- 290 μm dry layer of paint.

We present below such areas.

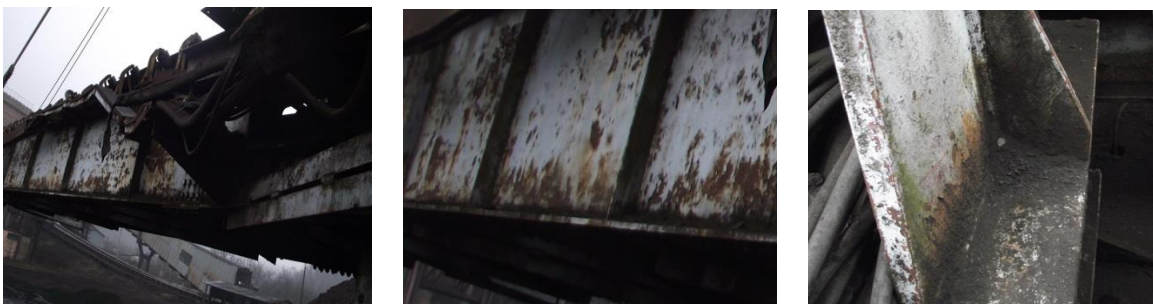


Fig.6 a. Welded joints with rust



Fig.6 b. Welded joints with rust

Corners with the intersection of sheets that are almost impossible to clean with metallic gloss ((cleaning can be done in a specialized factory) but not in site conditions, which will probably be arranged at the end of the coal deposit for crushing, a place where sandblasting it

cannot be arranged in the concrete conditions.

The places are generally from the lower sole of the beams at the intersection with its middle and especially where there are various reinforcement boxes, but also at the ear of the mast (the anchor pole of the main tie) on the elinda .

BIBLIOGRAPHY:

1. Elaboration of documentation for the "Rehabilitation and modernization of the M4 A Coal extraction machine - including running track" - S.E. Rovinari, CPV Code 71321000-4, contract no. 2490 / CEOs / 11.15.2016.
2. Cîrțină Liviu Marius, Rădulescu C., Stăncioiu A., ASPECTS REGARDING EXPERTISE THE MECHANISM OF RIDING OF ELINDE FROM THE COAL EXTRACTION MACHINE, pag.115-118
3. Marius Liviu CÎRȚÎNĂ, Alin STĂNCIOIU, Constanța RĂDULESCU: ASPECTS REGARDING THE TECHNICAL EXPERTISE OF ELECTRIC EQUIPMENT CABIN OF THE COAL MINING MACHINE, 12th Symposium Durability and Reliability of Mechanical Systems SYMECH 2019 Targu Jiu, 17-18 may 201, pg.81-84
4. Rădulescu C., Cîrțină L.M., Stăncioiu A.,ASPECTS REGARDING THE EXPERTISE OF LIFTING-DESCENT MECHANISM PLATFORM OF A COAL EXTRACTION MACHINE –

- Part II, „Universitatea "Constantin Brâncuși" din Târgu-Jiu, University's Annals Engineering Series, Issue 2/2018, pag.153-456
- 5.. Stăncioiu A., Cîrțină L.M., Rădulescu C., ASPECTS RELATING TO EXPERTISE OF THE MAST COAL MINING MACHINES – THE FIRST PART, „Universitatea "Constantin Brâncuși" din Târgu-Jiu, University's Annals Engineering Series, Issue 2/2018,pag.167-170
- 6.. Stăncioiu A., Cîrțină L.M., Rădulescu C., ASPECTS RELATING TO EXPERTISE OF THE MAST COAL MINING MACHINES – THE SECOND PART, „Universitatea "Constantin Brâncuși" din Târgu-Jiu, University's Annals Engineering Series, Issue 2/2018, pag.171-174
7. Stancioiu A., Cîrțina L.M., Radulescu C.: ASPECTS RELATING TO EXPERTISE OF THE MAST COAL MINING MACHINES – THE SECOND PART, Annals of the „Constantin Brancusi” University of Targu Jiu, Engineering Series , No. 2/2018, pg.171-174