

STUDY OF ATK 735 ROTOR RECONSTRUCTION LEADING HIGH PERFORMANCE GUARANTEE

Toirov Murtozo*¹, Avezmetov Sevinchbek², Rakhmonov Dilmurod², Usmonov Rustambek², Ne'matov Shakhobiddin², Karshiyev Dilshod² and Astonov Mukhiddin²

¹Lecturer at Mechanical Engineering Department, Navoi State Mining Institute, Navoi C.,
Uzbekistan.

²Student at Mechanical Engineering Department, Navoi State Mining Institute, Navoi C.,
Uzbekistan.

Article Received on 21/11/2018

Article Revised on 12/12/2018

Article Accepted on 02/12/2018

Corresponding Author*Toirov Murtozo**

Lecturer at Mechanical
Engineering Department,
Navoi State Mining
Institute, Navoi C.,
Uzbekistan.

ABSTRACT

This article provides for the reconstructions of ATK-735 compressors, which is used in the production of weak-nitric acid to produce ammonia slurry. The purpose of the reconstruction of compressors, snow production costs, energy and manpower. This reconstruction allows stable work and reducing the unplanned shutdown of the machine, maintain cleanliness in the places where repair personnel

work and preserve the global problem cleanliness of nature and people's health in the region.

KEYWORDS: Characteristics, centrifugal rotors, ATK-735, weak-nitric acid ammonium, slate, manufacturing worn, outdated parts, design improvements.

1. INTRODUCTION

It is desirable to constantly improve the main equipment of processing enterprises, allowing to produce low-cost, competitive, cheap and affordable products.

Each company must carefully examine its internal capabilities in order to avoid unnecessary costs, otherwise it will increase the cost of production, increase the likelihood of a negative impact on the efficiency of the enterprise, and product production in a market economy will complicate the process.

Today, the demand for every day is the use of alternative technologies of enterprises, at the same time to achieve high energy efficiency, low labor costs, low-cost production, negatively affecting the ecology of the environment.

The manufacture of basic parts of each machine and equipment for special orders at enterprises of foreign countries creates large costs for the enterprise.

Most of the equipment was monopolized in Central Asia, as well as in enterprises with a low content of nitric acid for ammonium nitrate, most of which were installed in the middle and the end of the last century and are mainly producers of Ukraine, Poland and Russia.

Liquid ammonium nitrate is the most important intermediate in the mining industry, and granulated ammonium nitrate is used as a mineral fertilizer to increase the yield of all crops.

Therefore, the fact that these enterprises have a manopen character should be used as an alternative, given that the neighboring countries of the Commonwealth also export mineral fertilizers for the production of agricultural products, as an important enterprise for the development of our economy.

Continuous updating of existing mechanisms of mechanisms in this system will improve the cost of products manufactured at the enterprise, increase demand in the world market, improve the financial condition of the enterprise and be able to obtain currency for the Treasury of the Republic.

2. MATERIALS AND METHODS

As we know, due to aggressive weathering of metal and mechanical metals in the machine and mechanical metals, various types of defects in metallic crystal lattices, loss of metallic properties and physical wear and tear of technological processes, are largely dependent on ATK-735 rotors.

The main reason for this is that parts of the unit are made of Ti-titan metal and provide a slight simplicity of the parts of the unit, as well as for the personnel who repair the technological process of complex repair of the unit.

The physical fatigue and emptiness of the working rotor in the aggressive environment, which causes the rotation of the rotor, causes a breakdown of fragile nails (zaklyopka), and the technological process can cause a lot of problems and costs for the enterprise.

Today, the same brand rotor and its mechanisms are produced on request from the Russian Federation.

At the request of the modern industrial enterprises of the Russian Federation, as a result of the new generation of modernized rotor, as a result of the creation of new ones and improvement of their old ones, the details of the production impossible at the enterprises are made on the basis of special order.

This, in turn, allows the rotor to increase the cost of repair and increase the cost of repair, which leads to the sharp decline in the cost of the prime cost of the produced goods in the warehouses of manufactured products.

3. RESULTS AND DISCUSSION

From a design engineer's point of view, the technological process of preparing the fragments of the rotor with the working condition of the rotors and the working environment, the study of the working temperature, can be studied in more depth by constructive drawing.

These fragments can be manufactured at the most advanced machine-building factories in the Republic, while Navoi Mining Administration's Navoi Mining Administration can also be produced at Navoi Machine-Building Plant, with a high-tech system, which reduces the cost of the enterprise and saves the national currency, resulting in currency savings, growth, high economic efficiency, and preventing any unforeseen stopping can lead to environmental pollution taken not allow GTL.

It is desirable to work from -170 OS to -183 OS at the working temperature and it is desirable to prepare 12X18N10T 08X23N6T and 12X18N9T high-dumping austenitic steel, with their service life prolonged.^[1]

Liquid nitrogen is an extremely cold industry environment, and the aggregate can cause the metal crystal lattice to break free from the effects of a strong cold, or (crystalline crystalline corrosion) degradation of the crystal lattice FS 6032-75.

The chemical composition of FS 5632-72 indicates that the carbon content of 12X18N10T, 08X22N6T, 12X18N9T is austenite steel, and the coagulation and coldness of Austenite steel means that it can work at very low temperatures.

This capacitance can be regarded as one of the most advanced methods for solving the most pressing and problematic solution of the effects of the fragmentation of fragmentary nails by the result of the aggression of the aggregate into the working tire of solid crystals formed during the high speed rotation.

Chemical composition of alloys

Steel Grade	Chemical composition (medium) %								
	C	Si	Cr	Ti	Ni	Mn	S	P	Cu
12X18H10T	0,12	0,8	17,0-19,0	5.C-0,8	9,0-11,0	2,0	0,020	0,035	0,30
08X22H6T	0,08	0,8	21,0-23,0	5.C-0,65	5,3-6,3	0,8	0,025	0,035	0,30
12X18H9T	0,10	1,0	22,0-25,0	0,2	17,0-20,0	2,0	0,020	0,035	0,30

Mechanical properties of alloys

Steel Grade	FS	Profile MM	$\sigma_{0,2}$	σ_B	$\delta_5 (\delta_4)$	ψ	KCU, J / cm ²
			MIIa		%		
12X18H10T	5949-75	60	196	510	40	55	-
08X22H6T	5949-75	60	325	690	40	55	-
12X18H9T	5949-75	60	196	490	35	-	-

Mechanical properties when tested for durability (FS 5949-75)

Steel Grade	FS	Creep limit MPa, not less	Speed creep % / h	Test temperature, °C	Limit Durability, MPa not less	Duration trials h	Test temperature, °C
12X18H10T	5949-75	74 29-39	1/100 000	600 650	147 78-98	10 000	600 650
08X22H6T	5949-75	54 34 15	1/100 000	750 800 900	C _{B.98} * 49	100 1000	800
					C _{B.49} * 39	50 100	900
					23 11	1000 100 000	900
					19 8 3,5	100 1 000 10 000	1000
12X18H9T	5949-75	74 29-39	1/100 000	600 650	147 78-98	10 000	600 650

Evaluation of corrosion resistance

Persistence score	Durability, mm / year	Persistence category
1	<0,1	Highly resistant
2	0,1-1,0	Resistant
3	1,10-3,0	Low resistance
4	3,10-10,0	Low-resistant
5	10,1	Unstable

4. CONCLUSION

As a result of optimization, the average cost of repairing each rotor is dramatically diminished. According to economical estimates, it saves up to 6448000 sums or 25% of the cost of repairing each rotor.

The cost of a piece of parchin in the Russian State is 5-6 US dollars, while the cost of a dried apricot produced at the Navoi Machine-Building Plant is \$ 1-2, and transportation costs are reduced by 50-60%.

From this it can be seen that in order to ensure the smooth functioning of this rotor in the technological system, the domestic capacities of the enterprises operating in our country are widely used, I can say with confidence that high economic efficiency in all directions will be achieved and the exact cost of the product, we can say with the scribes.

In summary, I can say that all the basic chemicals and mechanisms of the chemical industry in our country are functioning physically and physically in the present day; purchases of machinery from other countries are in need of repair due to the cost increase of the products produced, needs to be improved.

We can draw conclusions from the fact that repair and improvement opportunities do not exist in the territory of all the Republic's enterprises, and each mechanism has its own constructive strain.

-The internal capacities of the machinery manufacturers with high technology capability in our country, if used in the above order, will save the cost of the enterprise.

-This improvement is a very important and time-consuming requirement in every country of the chemical industry of our Republic.

- This repair can increase the lifetime of the tubes.

The global ecological problem, which is a global problem, is maintained, and positively contributes to protecting the health of people living in the immediate vicinity of the enterprise.

Protection of the environment by the personnel of the premises shall be prevented by the professional disease of workers of the enterprise.

7. REFERENCES

1. Edited by .VG Sarokin “Marinator of steel and alloys Moscow” “Mechanical Engineering” 1989.