

MEASURING THICKNESS OF COMPRESSOR'S BLADE

Blades of axial compressor, as a result of GTE exploitation, are the most subjected to damage part of the compressor. Therefore, determination of its technical conditions and their replacement in the right time is the priority at GTE exploitation.

The most common cause of damage of blades are foreign particles in GTE. As a result, the blade can get a scratch, which leads to a decrease in the efficiency of whole engine operations or even to an emergency situation. To prevent this, it is necessary to analyze the surface of the blade, that is, to determine which properties and parameters of the blade have changed in comparison with the previous ones. By means of visual inspection it is impossible to determine if blade was damaged, that's why one uses special methods of defectology, that is, defectoscopy. In general, we use these methods of defectoscopy:

- Wind-current flow detection (allows to determine the changes in the electrical conductivity of the shoulder blade);
- Acoustic defectoscopy (allows to determine the specific acoustic resistance);
- Electrical defectoscopy (allows to determine the changes in the properties of the material).

Wind-current flow detection is the principle of operation based on the method of eddy currents, which consists in excitation of eddy currents in the local control zone and recording changes in the electromagnetic field of the eddy currents caused by the defect and the electrophysical properties of the monitoring object. It is characterized by a small depth of control, that is, cracks and discontinuities of the material at a depth of 2 mm.

Acoustic defectoscopy uses different methods of measuring, such as the echo method and the shadow method.

The echo method is based on sending short pulses of ultrasonic vibrations to the product and recording the intensity and time of arrival of echoes reflected from discontinuities. To control the product the sensor of the ejectofectoscope scans its surface. The method makes it possible to detect surface and deep defects with different orientations.

The shadow method is that ultrasonic vibrations, encountered in their path defect are reflected in the opposite direction. The presence of a defect is judged by decreasing the energy of ultrasonic vibrations or by changing the phase of ultrasonic oscillations enveloping the defect. The method is widely used to control welds, rails, etc.

Electrical defectoscopy is based on the electrical breakdown of air gaps between the touching surface of the insulation coating with a probe connected to one pole of a high voltage source and a diagnosed object connected to another pole of a high voltage source directly or through a ground using a grounding electrode.

This detailed analysis gives us an opportunity to obtain the information about the surface state of blade and to determine whether the blade will further operate or be replaced.

References

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UDC 061.1 (043.2)

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TNC IN THE CONDITIONS OF GLOBALIZATION

One of the most relevant processes that determines the trends of the modern world community is globalization, which penetrates into all spheres of society from TNC to the person on which the political and economic integration processes in the world depend.

At the present stage, the development of globalization consists in expanding and complicating the interconnections and interdependence of both people and states, which is expressed in the formation of the planetary information system, the world capital market, goods and labor, and so on. The prevailing system of global society has led to the need to coordinate all processes of social activity at the global level: the global economy, ecology, the political structure of the world community, human rights and the sovereignty of national states.

Globalization is an all-encompassing and irreversible process. Economies of the countries of the world year after year form a single state-owned economic system. As a result, multidirectional ties between national economies and the world economy arise, their deep interdependence and interconnectivity. The development of economies in each of the countries leads to increasing trends in the functioning of the world economy as a whole. The effect of the globalization process is manifested in the transition of the world economy to a new level of quality, the manifestation of which is the development and operation of transnational corporations.

The globalization of economic life is characterized by a sharp increase in the number and growth of the role of transnational corporations in the global economy. It follows that the processes of transnationalization of production and capital, the expression of which have become multinational corporations, is the basis and the driving force of the modern globalization of the world economy. At the same time, globalization leads to the emergence of economic interdependence of states, resulting in a gradual destruction of national economic state sovereignty and the extinction of new supranational economic entities – global corporations – transnational administrative structures.

Modern multinational companies pay little attention to national borders and do not feel favored by certain governments. They are global in scale, because they produce products, sell them and draw financial resources wherever and whenever they want it, but it is best suited to their long-term strategic plans. They are capable of mobilizing