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STRUCTURE AND PRINCIPLE OF OPERATION OF ASYNCHRONOUS ENGINES

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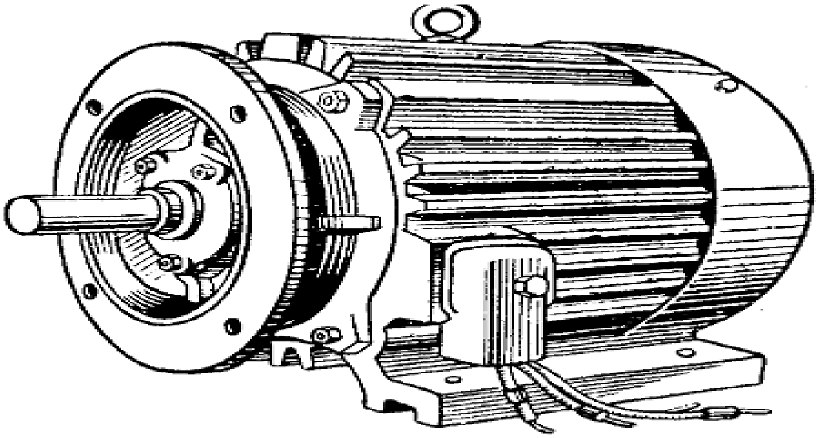
Abstract
This article provides a brief theoretical overview of the structure and how electric cars for students and students of kasib vocational college are used, namely asynchronous engines

Keywords: electric, asynchronous motor, machinery, generator, rotor swamp, stator

Electric machines are of two types according to their function. The first kind of machines provide mechanical energy by converting it into electrical energy. These machines are called electrogenerators. Steam or gas turbines, internal combustion engines (such as diesel) are the primary source of mechanical energy that drives generators. Generators are mainly used in power plants. The second type of electric machines that convert electrical energy into mechanical energy are called engines (motors). Electric motors are used in almost all areas of the national economy. It is called a variable current generator or engine in terms of the type of current that generators produce or that the engines consume. All electric machines have a reversible property, that is, they can work in a reversible process. For example, an electric motor can operate in generator mode, and a generator can operate in engine mode. Below we will consider a type of variable electric cars — asynchronous engines. Asynchronous motors (asynchronous Motor) provide electricity by converting it into mechanical energy. It is widely represented in all areas of industry, agriculture and the national economy due to the simplicity of the structure of engines, low cost, reliability in operation. Like any electric machine, the asynchronous engine can operate in generator mode. Previously, it was considered that the operation of the asynchronous engine in generator mode was not economically-technically expedient. But scientific research conducted in subsequent years, the generator of asynchronous machines showed that it has advantages. Currently, asynchronous machines are mainly used as three-phase engines.



The asynchronous engine is made up of an excitable part — a stator and a rotating part — a rotor. The stator was fitted with a spindle assembled from some electrotechnical steel plate, with three scrolls of copper wire pushed 120° in space into the ditches (pazlaiga) on its surface. The scrolls are attached to a three-phase electrical grid connected by an asterisk or triangle method. The resulting magnetic field of the Stator windings is rotating and crosses the rotor windings.

The rotor of the asynchronous engine is made in the form of a cylinder, and its core is also made of some electrotechnical steel plates. In its ditches (paces), the bulbs are arranged. Asynchronous engines boiin in two according to the operation of the rotor blade. Rotor short-circuit asynchronous motor, boiib made of aluminum steijens, the rotor of such asynchronous motor is called short-circuit asynchronous motor

If the rotor blade is made of ordinary copper or aluminum wires into three-phase, such an asynchronous motor is called a phase rotor asynchronous motor . Its tubes can be connected in an asterisk fashion, and all three phase resistors can be changed at once by means of a special mechanism. Phase rotor asynchronous motors have a number of advantages over short-circuit rotor asynchronous motors. We will talk about these advantages later.

The rate of rotation of the resultant magnetic field of Stator windings is found by the formula:

$n= 60*f/P$ in this

f— variable current frequency, p — the number of pairs of Poles tires is mainly used as three-phase engines.

This magnetic field crosses the rotoming bushings, Eik in the bushings, and therefore the vine is formed when the berk is contour. When we insert a current conductor into a magnetic field, this conductor is affected by mechanical force. Accordingly, a rotating moment is created that acts on the rotor. If the magnetic field and rotor rotate together, such a rotation is called synchronous rotation. In asynchronous engines, the rotor speed depends on the braking torque generated by the work machine on the axis (val) of the engine. Hence, the rotation speed of the rotor is different from the rotation speed of the magnetic field. This is how the magnitude that characterizes this difference is called "slip", and this magnitude is determined from the following formula:

S=(n2-n1)/n2

Where n2 is the rotation speed of the magnetic field , n1 is the rotation speed of the rotor .

When driving the engine, n=0; S = 1. In engine salt operation mode, n2=n1,S = 0.So the slip changes around S=1 or 0.

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