

## **Absract**

The diploma project provides for the modernization of the electric drive of the compressor unit in accordance with the task.

The paper provides General information about the compressor, formulated requirements for their electric drives and control systems. The system "frequency Converter-asynchronous motor" was chosen as the electric drive system of the compressor.

In accordance with the requirements, the compressor loads were calculated and a closed rotor asynchronous motor with a capacity of 55 kW was selected. In this diploma project, the parameters of the engine replacement scheme were determined and its natural and artificial mechanical and Electromechanical characteristics were established.

In this paper, the power circuit of an automated electric drive is designed, a frequency Converter is selected and the parameters of its elements are determined. A mathematical model of the engine is given, parameters of the control object are calculated, and a block diagram of the compressor electric drive is presented. To analyze the dynamic characteristics of the electric drive, a simulation model is developed and the dynamics of transient processes is presented.

The work provides for safety measures against air pollution, as well as noise and vibration of the unit and calculated the economic efficiency of the proposed electric drive.