

## **Annotation**

Diploma project on "Ultrasonic Flaw detector based on phased array for testing steel products" is dedicated to the development of ultrasonic flaw for testing steel products. This work was a student of the department "Devices and systems of nondestructive testing" (NTUU "KPI them. Igor Sikorsky ") Pohrebenko Olexandr.

The project scope consists of 72 pages of introduction, 6 chapters, general conclusions, list of references and contains 46 figures, 10 tables, 14 literature and applications.

In the first section of the project justified the choice of control method, with all the advantages and disadvantages. Development structural schemes in this section too. The second section contains a calculation of acoustic and electro-acoustic paths and delays to scan. Also it designed functional diagram and described the time diagrams of the device. In this chapter calculated electric circuit components (analog-to-digital converter (ADC), time sensitivity adjustment (TSA) random access memory (RAM), microcontroller, etc.). The third section is devoted to the development of the algorithm of the device. The fourth section includes the development of housing for piezoelectric transducer in compliance with all requirements. In the fifth chapter is calculated evaluation of the reliability of control. The sixth section contains a calculation of reliability.

This device can be used in industry to control steel products, which will effectively detect defects.