

SUMMARY

The quality of welded joints and their condition during the service life are important issues of safety and reliability in mechanical engineering, transport, and industry in general. The purpose of this diploma thesis is to analyze the existing devices for inspection of welded joints and the development of a modern ultrasonic device, its structural and functional schemes.

An overview of existing methods for solving this task is presented in the thesis. The type of the probe is chosen and substantiated, its calculation is carried out, the structural and functional schemes are developed, the design of the probe and the method of information signal processing, which is the basis of the electrical scheme, is described. In addition, the assembly drawing of the primary probe and the design of the device are developed, and also detailing (housing, cover) is performed. In general, the diploma thesis is based on modern developments and requirements for such devices.