

5.1.22. HARDWARE-SOFTWARE COMPLEX «TRAINING APPARATUS OF THE OPERATOR OF DEVICES OF NONDESTRUCTIVE TESTING»

Shaternikov V.E., Didin G.A., Filinov A.V., Arakelov P.G.,
MGUPI, Moscow, Russia

In modern mechanical engineering sharply there is a question on quality flaw detection electromagnetic and magnetic methods of non-destructive control. One of ways of improvement of quality of diagnostics is qualitative training and improvement of professional skill of operators of devices non-destructive control.

In these purposes the hardware-software complex “Training apparatus of the operator of devices of non-destructive control” has been developed. It consists from:

- The coordinate scanner with management from the personal computer;
- program “Scanner”;
- program “Training apparatus”.

The coordinate scanner allows to move the primary converter in spatial Cartesian system of co-ordinates. Scanner servo-drivers are supplied by step-by-step engines of a Russian production. Management of the scanner is carried out on technology step-dir through parallel port of the personal computer. The module is applied to scanning of cylindrical objects with the fastening rotating round a vertical axis.

The working volume of the co-ordinate scanner makes 210×210×210 mm, a scanning step – from 0.08 mm.

Data exchange with device non-destructive control is carried out through a personal computer serial port. Thus the data remains on a personal computer hard disk.

The scanner design allows to establish various gauges from various devices, and the modular system “Scanner” is easily modernized under the corresponding device.

After scanning carrying out the obtained data appears on the personal computer screen, including in a kind 3D object. The further data processing is spent with use of modern programs, for example, Matlab.

Scanning of various products from a steel, aluminum, titan with use of serial devices and gauges (the GALS, VD-96, the PION) with good results on revealing of defects) has been at present spent.