The ultrasonic non-destructive method under consideration is intended for measurements of uniaxial and two
axial stresses in the near-the-surface layers of relatively rigid materials (metals, alloys and similar material). This
method is intended for measurements of the actual, assemble, operating, preload prestress and other
stresses. Above mentioned stresses must be considered as initial or residual stresses taking into account
the theory [1] under consideration. In this case the disturbances (displacements and stresses of the 3-D
linearized theory [1] of elastic waves in bodies with initial or residual stresses) arise due to ultrasonic vibrations.
Description of the non-destructive method under consideration and information on instruments and devices for
measurements are presented. Some examples of non-destructive determination of stresses in near-the-surface
layers of materials are presented also as applied to the residual stresses arising at electric welding and to the