

OPTIMIZATION OF MODES OF ULTRASONIC CLEANING OF TORCH'S  
DEVICES ON THE BASIS OF THEIR MODELLING INTENSE THE DEFORMED  
STATE

I.V. Zlobina, A.M. Sarsengaliyev

Yuri Gagarin State Technical University of Saratov  
e-mail: taktokonechno@gmail.com

As a result of the pilot studies carried out in 2012-2013 in common with specialists of JSC Gazprom transgaz Saratov we proved possibility of restoration to 98-100% of passport characteristics not developed a passport resource the torch's of devices to gas-distributing units by their ultrasonic cleaning according to the special new scheme at which the object of cleaning representing a difficult multirod design, is in rigid contact with an ultrasonic radiator. Experimentally with use of a method of Boxing Wilson the optimum frequency of fluctuations of a radiator, a component for a studied standard size the torch's of devices of 17,8 kHz is determined.

In work the problem of determination of optimum value of amplitude of fluctuations of the radiator is considered, providing demanded intensity of ultrasound and in too time – integrity of welded seams in a joint of gas outlet tubes and the central body was solved by modeling and the analysis a method of final elements intense the deformed condition of area of a joint by means of the license APM WinMachine software product (Structure-3D module) of development of automated workplace firm of. Korolev. The solid-state model of a single element of a design (fig. 1) in the program environment Kompas-3D V12 and then транслирована in the Structure-3D module was constructed.

The executed computer modeling and pilot studies allowed to define the following optimum technological modes of ultrasonic cleaning the gorelochnykh of devices for GPA: amplitude is 8-9 microns, frequency is 17,8-18,0 kHz, duration of cleaning is 2-3 minutes.