



University of Banja Luka
Faculty of Mechanical Engineering
26th - 28th May 2011

DEMI 2011

*10th Anniversary International conference
on accomplishments in
Electrical and Mechanical Engineering and
Information Technology*

PROCEEDINGS

ZBORNIK RADOVA

BANJA LUKA, May 2011.



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**PROCEEDINGS OF THE 10th ANNIVERSARY INTERNATIONAL CONFERENCE ON
ACCOMPLISHMENTS IN ELECTRICAL AND MECHANICAL ENGINEERING AND
INFORMATION TECHNOLOGY**

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TEST BENCH FOR NON-STANDARD MEASUREMENT CHARACTERISTICS OF RECIPROCATING COMPRESSOR

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Summary: A dynamic test of the reciprocating compressor requires non-standard measurement of input parameters (pressure, temperature, flow, and humidity), output parameters (pressure, mass of compressed gas) and process parameters (pressure in the cylinder, piston position) of reciprocating compressors. For non-standard testing is necessary to establish a special test bench. Non-standard measurements required automatic adjustment of power unit and actuators parameters in the test bench to enable the change of compressor working point and to control input and output compressor parameters in order to be constant during a measurement time. The paper describes the test bench and some results of non-standard measurement characteristics of reciprocating compressor. Presented solution enables the automation of the test process through setting of the operating regimes, control of operation conditions, measurements, and data processing.

Key words: Test bench, Reciprocating compressor, Measurement

1. INTRODUCTION

Testing of all produced parts is essential to achieve the optimal product with respect to ecology, economy and their utility and exploitation characteristics. In order to perform the necessary tests, test bench is necessary to conduct measure characteristics of these parts. For each part testing, it is necessary to develop a specific measurement installation. Depending on the testing type, test benches can be classified into: standardized test benches where typical, standard parameters of produced parts are tested and non-standard test benches where testing parameters and characteristics are not covered by standard tests. Non standard tests are necessary in the product development phase and in post production phase when it is necessary to improve parts characteristics and to monitor parameter changes in use.

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