
Comparative estimation of efficiency of the pneumatic drives throttle regulation

© K.D. Efremova

Bauman Moscow State Technical University, Moscow, 105005, Russia

The paper presents two ways of the output link of pneumatic drive velocity control by the throttle. Pneumatic cylinder is considered as a commonly used pneumatic or electric pneumatic drive. A comparative analysis of energy efficiency in the cases of primary and secondary regulation is done via comparison of performance. Different thermodynamic processes of compressed gas are considered. The formula for real gas flow calculation through a throttle is presented. It is shown that the greatest flow is obtained at the critical value of a critical index.

Keywords: *pneumatic drive, pneumatic cylinder, primary regulation, secondary regulation, direct stroke.*

Efremova K.D., Assoc. Professor of the Hydromechanics, Hydraulic Machines and Hydropneumoautomatics Department of Bauman Moscow State Technical University. Author of more than 70 publications in the field of fluid mechanics and pneumoautomatics. e-mail: kde@bmstu.ru