



Inquisitional on a Novel Power Economy Advanced Performance Amplifier

XhingZhiwang^{1*}, Xuchao²

¹*Zhengzhou University, Institute of Porus Flow and Fluid Mechanics,
4500002 Zhengzhou, China*

²*Guangzhou University, Research Institute of Petroleum Exploration and Development,
510935 Guangzhou, China*

Received: 17April 2012; Accepted: 19 May 2012

Abstract

In this paper, a mathematical model of the two kinds of boosters is set up and a new energy consumption evaluation criterion of pneumatic systems, air power, is briefly introduced. After that, the air power efficiencies of the two kinds of boosters are studied through simulation and experimental results, which are shown and discussed. Finally, the EEU regulator is introduced, which researched based on the characteristics of EEU booster. Pressure-boosting technologies have been used in many fields, such as the pneumatic systems cryogenics engineering, vacuum machinery, and petroleum. They are widely used in local pressure-boosting applications where there is a need for a small amount of higher pressure gas. In this paper, based on the analysis of the working principle of the IPR booster a new type of booster, expansion energy used booster, was proposed which made use of the expansion power of the compressed air in driving chambers to improve output flow power.

Keywords: Power economy; performance amplifier; cryogenics engineering; vacuum machinery