
The development of the vortex regulator

© A.Yu. Uss, A.A. Starodubtsev, A.V. Chernyshev

Bauman Moscow State Technical University, Moscow, 105005, Russia

The article discloses relevance and areas of application of vortex regulators. It considers the status of the issue for today concerning use and development of vortex regulators, and shows a diagram the vortex. Based on the analysis of published data and on preliminary numerical calculation of the gas flow in the working cavity of the vortex regulator we defined its geometric parameters, developed a three-dimensional model. Applying of additive technologies we made a prototype of vortex regulator and we produced an experimental stand to conduct its tests.

Keywords: vortex regulator, control jet, locking of regulator.

REFERENCES

- [1] Zalmanzon L.A. *Teoriya elementov pnevmoniki* [The theory of pneumonics elements]. Moscow, Nauka Publ., 1969, 508 p.
- [2] Lebedev I.V., Treskunov S.L., Yakovenko V.S. *Elementy struynoy avtomatiki* [Elements of jet automation]. Moscow, Mashinostroenie Publ., 1973, pp. 289–314.
- [3] Bugaenko V.F. *Pnevmoavtomatika raketno-kosmicheskikh sistem* [Pneumatic automation of space rocket systems]. Budnik V.S., ed. Moscow, Mashinostroenie Publ., 1979, 168 p.
- [4] Popov D.N. ed. *Issledovaniye i raschet struynykh elementov i tsepey sistem avtomaticheskogo regulirovaniya* [Research and calculation of jet elements and circuits of automatic control systems]. Trudy MVTU — Works of BMHTS, 1977, no. 244, 79 p.
- [5] Belova O.V., Starodubtsev A.A., Chernyshev A.V. Вихревой регулятор давления газа. *Inzhenernyy vestnik — Engineering Gazette*, 2014, issue. 5. Available at: <http://engbul.bmstu.ru/doc/740398.html>

Uss A.Yu., a student of the Department “Vacuum and Compressor Equipment of Physical Installations” at Bauman Moscow State Technical University.

e-mail: uss25.ru@hotmail.com

Starodubtsev A.A., postgraduate student of the Department “Vacuum and Compressor Equipment of Physical Installations” at Bauman Moscow State Technical University.
e-mail: Starodubtsev532@rambler.ru

Chernyshev A.V., Dr. Sci. (Eng.), Professor of the Department “Vacuum and Compressor Equipment of Physical Installations” at Bauman Moscow State Technical University.
e-mail: av-chernyshev@yandex.ru