

# ROTOR BLADE COMPRESSOR WORKING PROCESS ANALYSIS

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The paper presents the analysis of the rotor blade compressor (RBC) working process. The main characteristics of the working process are defined on the basis of the accepted structural parameters. The use of RBC is shown to be promising for the compressor unit of the microcryogenic cooling system of infra-red imaging equipment.

*Rotor blade compressor, characteristics, air-tightness coefficient, overflow productivity, chamber volume, groove seal.*

## References

1. Frenkel, M. I. Piston compressors. Theory of design and designing fundamentals / M. I. Frenkel. – Leningrad: Mashinostroyeniye, 1969. – 744 pp.
2. Nikitin, G. A. Groove and labyrinth seals of hydraulic units / G. A. Nikitin. – Moscow: Mashinostroyeniye, 1982. – 135 pp.
3. Seals and sealing equipment Reference book / L. A. Kondakov, A. I. Golubev, V. B. Ovander; edited by A. I. Golubev. – Moscow: Mashinostroyeniye, 1994. – 448 pp.

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