

METHOD FOR CALCULATING PUMPING CHARACTERISTIC OF HIGH-VACUUM SYSTEM WITH TURBOMOLECULAR VACUUM PUMP

E. V. Svichkar, N. K. Nikulin, K. E. Demihov

Bauman Moscow State Technical University,
Russia, Moscow, 2-nd Baumanskaya st., 5/1, 105005

The pumping characteristic of a high-vacuum system depends on a number of factors: the pumping characteristics of a high-vacuum turbomolecular pump (TMN), the conductivity of connecting lines, the pumping characteristics of a for vacuum pumping system, the leakage of gas into the system, namely gas release streams, gas flows due to leakage of structural elements. The influence of these factors on the pumping characteristic of the vacuum system with TMN is considered in the work. A method for determining the parameters of a fore-vacuum pump providing an improvement in the vacuum characteristics of a vacuum system with TMN at elevated suction pressures is proposed.

Keywords: vacuum system, pumping characteristic, forvacuum, pressure, turbomolecular pump, conductivity, speed of action, flow.

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SVICHKAR Elena Vladimirovna, Candidate of Technical Sciences, Associate Professor of Vacuum and Compressor Equipment Department.
SPIN-code: 4532-7592
AuthorID (RSCI): 579811

NIKULIN Nikolai Konstantinovich, Candidate of Technical Sciences, Associate Professor of Vacuum and Compressor Equipment Department.

SPIN-code: 6857-8773; AuthorID (RSCI): 244267

DEMIHOV Konstantin Evgen'yevich, Doctor of Technical Sciences, Professor, Head of Vacuum and Compressor Equipment Department.

SPIN-code: 8411-3458; AuthorID (RSCI): 494874

Address for correspondence: svic@bk.ru

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The pumping characteristic of a high-vacuum system depends on a number of factors: the pumping characteristics of a high-vacuum turbomolecular pump (TMN), the conductivity of connecting lines, the pumping characteristics of a for vacuum pumping system, the leakage of gas into the system, namely gas release streams, gas flows due to leakage of structural elements. The influence of these factors on the pumping characteristic of the vacuum system with TMN is considered in the work. A method for determining the parameters of a fore-vacuum pump providing an improvement in the vacuum characteristics... The pumping characteristic of a high-vacuum system depends on a number of factors: the pumping characteristic of a high-vacuum turbomolecular pump (TMP), connecting lines conductivity, pumping characteristic of forevacuum pumping system, leakage of gas into the system, namely gas release streams and gas flows due to leakage of structural elements. The influence of these factors on the pumping characteristic of the vacuum system with TMP is considered in the work. A method for determining the parameters of a forevacuum pump providing an improvement in the vacuum characteristics of a vacuum syst... A new Technology for high performance Turbomolecular Drag Pumps. Agilent Technologies GmbH. Jan 2010. Proper methods for the calculation of conductance and pumping speed of high vacuum systems in molecular flow are reviewed with focus on techniques using the transmission probability, a , of vacuum components. The difference between conductance values of isolated components and components connected in series between a large chamber and a vacuum pump is explained using the concept of the [Show full abstract] metaconductance parameter, $a^* = a/(1-a)$. A new, simple approximation of a for straight tubes is introduced. Also provided online calculator for pump power calculation. Pump Efficiency and Pump Power Calculation Formulas with Examples. Contents. 1 Pump Efficiency and Pump Power Calculation Formulas with Examples. 1.1 Efficiency and Input Power of the Pump. 1.2 Specific Speed of Pump. Pump output power is called as Water Horse Power (WHP) or Hydraulic power and it is useful work delivered by the pump. and is usually expressed by the formula. Hydraulic power $P_h = \text{Flow rate} \times \text{Total developed head} \times \text{Density} \times \text{Gravitational constant}$. Pump Efficiency is the ratio of pump input and output power. i.e Efficiency of the pump is the ratio water horse power to break horse power. Pump input power calculation formula or pump shaft power calculation formula. Vacuum technology " Standard methods for measuring vacuum-pump performance " Part 4: Turbomolecular vacuum pumps. Buy this standard. Abstract Preview. This document, in conjunction with ISO 21360-1, specifies methods for the measurement of performance characteristics of turbomolecular vacuum pumps. It is applicable to all sizes and all types of turbomolecular vacuum pumps, including those. " with mechanical or magnetic bearings; " with or without an additional drag stage(s) or other pumping stages on the shaft; " with one or more inlet ports. Since turbomolecular vacuum pumps are backed by pri