



Company brochure

Turbotect
Saint-Petersburg Ltd.

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TURBOTECT® ТУРБОТЕКТ®

Turbotect Saint-Petersburg Ltd. was founded in 1998 in Saint-Petersburg as a fully integrated company with in-house analytical, design, engineering, manufacturing and service departments. Turbotect Saint-Petersburg provides solutions to enable its clients to meet the increasingly demanding environmental regulations and maintain the efficiency and productivity of their power plants as close as possible to the nominal values.

Turbotect Saint-Petersburg is focused on the development and manufacturing of washing systems for gas turbine axial compressors and gas coolers, washing detergents and antifreeze agents, electrostatic oil cleaners, oil-filling and oil-collecting units for compressors and power stations.

Relying on its flexible organizational structure, Turbotect Saint-Petersburg offers customized solutions for the needs and requirements of its customers. Installation and maintenance services are available upon request and regular field visits by its engineers ensure continuous improvement and development of the company's products based on the needs of its customers.

Turbotect Saint-Petersburg guarantees the supply of spare parts and consumables over the entire lifetime of its products.



Highly qualified and skilled specialists guarantee state of the art design, high quality engineering, and efficient manufacturing in accordance with international quality standards. Reliability and quality are further guaranteed by individually designated testing procedures. Turbotect's specially trained and experienced field engineers perform erection and commissioning on site.

Turbotect Saint-Petersburg has built its long-term success on extensive R&D activities. Possessing state of the art tools and equipment and its own test rig ensures the company has access to the latest developments. The R&D department maintains close cooperation with various technical institutes and universities in Russia as well as in Europe.

Turbotect Saint-Petersburg's headquarters and manufacturing facilities are located in the city of Saint-Petersburg.

In 2006 Turbotect Saint-Petersburg Ltd. has implemented a quality management system certified to ISO 9001:2008. Starting 2014 the quality management system complies to ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007.

Turbotect Saint-Petersburg has dedicated design and research departments responsible for the development and constant upgrade of its products

Every new development must pass through the following stages:

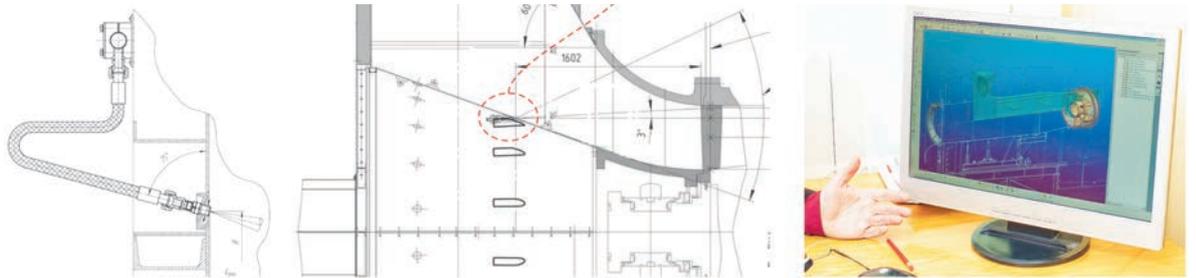
- Computational modelling (CFD)

- Pre-production model design

- Shop testing

- Industrial on-site testing

- Line production



Turbotect Saint-Petersburg has its own unique concept of calculation for various hydraulic processes and CFD-modelling of axial compressor cleaning

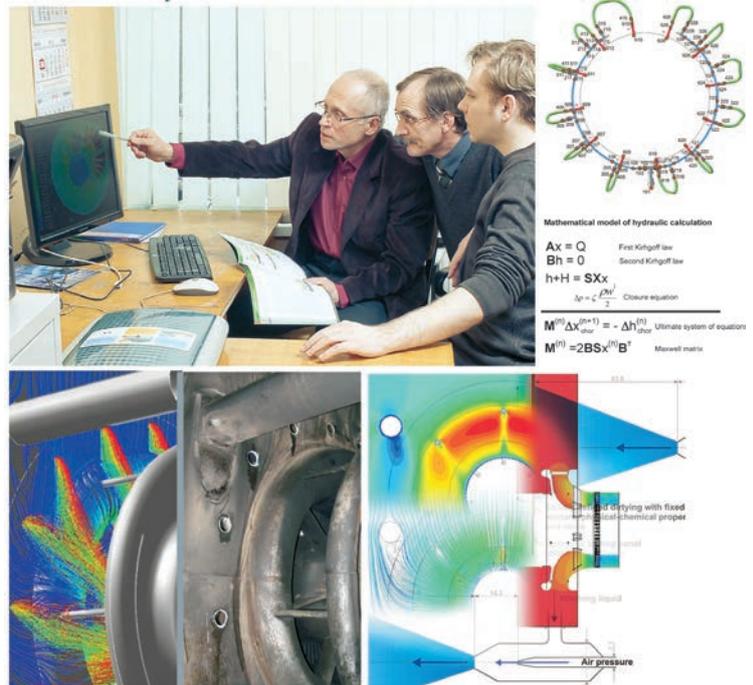
CFD-modelling includes:

- Target setting and gathering of input data

- Geometrical and grid model construction

- Definition of the number and type of nozzles, deciding on their location and alignment, definition of fluid pressures etc.

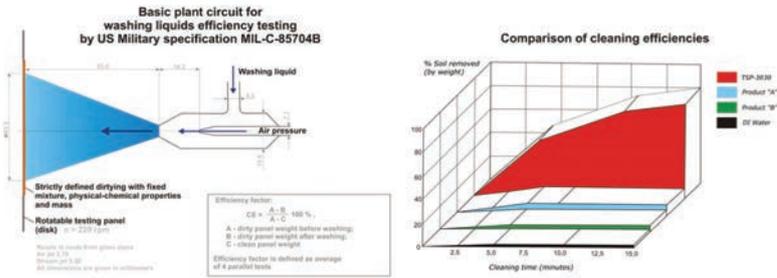
- Calculation, result analysis and evaluation



The calculation models are subject to continuous improvement and verification by experiment

Through its own scientific research Turbotect Saint-Petersburg has accumulated knowledge including:

- Simulation of the compressor cleaning process using a test bench with simplified air inlet duct and manifold
- Verification of data through nozzles and manifolds mounted on test beds of various gas turbine manufacturers
- Determination of nozzle characteristics and spray behavior
- Evaluation of the efficiency of cleaners



Turbotect Saint-Petersburg offers turnkey solutions with a dedicated team providing mounting and technical services including:

- Mounting, startup, adjustment and turnkey installation of all equipment
- Training of clients' operating staff
- Guarantee and post-guarantee service



Compressor wet cleaning

The objective:

- Restoration to near nominal values of gas turbine thermal characteristics lost to degradation due to blade fouling
- Reduction of operating costs through improving the efficiency of gas turbines

We offer:

- Integrated solutions for compressor blade cleaning using a combined technology of "ON LINE" and "OFF LINE" nozzle systems
- Cleaning systems adapted to the individual construction features of various gas turbines

The cleaning system includes:

- Set of nozzles for "OFF LINE" cleaning
- Set of nozzles for "ON LINE" cleaning
- Skid for the preparation and injection of cleaning fluid
- Cleaning fluids

The impact:

- Preservation of gas turbine capacity (power and efficiency) at levels close to nominal
- Decreased fuel consumption
- Reduction of emissions



Oil cleaning

We offer:

- Compact mobile oil cleaning skids with a low level of energy consumption
- 6th class of oil cleaning according to GOST 17216, code -/11/9 according to ISO 4406, 3rd class according to NAS 1638
- Complete water removal from oil (up to 10 ppm)
- Deceleration of oil degradation
- A processing capacity of 500 litres / hour
- Hydraulic systems made of stainless steel
- Automated control of oil cleaning regimes
- Continuous lube oil cleaning during turbine operation
- Options to clean other non-conductive liquids

The impact:

- Deceleration of oil oxidation, preservation of oil characteristics and extension of its lifetime;
- Reduction of wear and tear of rubbing parts through immediate removal of fouling

External cleaning of recuperator gas cooler tubes

Facts:

- Surfaces of gas cooler tubes become dirty over time
-
- Reduced airflow from the fan through tube rows
-
- Decreased cooling efficiency

We offer:

- Cleaning equipment and cleaning services on request
-
- Treatment of up to six rows of gas cooler tubes
-
- Maximum efficiency during the annual maintenance

The impact:

- Increase of airflow by up to 10 percent, which means saving as much as 30 percent on electricity consumption of fan drives



Internal cleaning of recuperator gas cooler tubes

Facts:

- Inner surfaces of gas cooler tubes become dirty over time
-
- Decreased cooling efficiency

We offer:

- Cleaning services and equipment
-
- Simultaneous cleaning of two sections

The impact:

- Increase of cooling efficiency by up to 8 percent



Oil-refilling

The objective:

- Filling of the skid from standard casks or oil storage tanks
- Oil transportation to the gas turbine
- Oil heating inside the skid tanks
- Refilling of gas turbine tanks and blower with oil
- Operation with two types of oil

We offer:

- Mobile skid for indoor operation
- Towed mobile skid for outdoor operation
- Towed mobile skid for outdoor operation in arctic climate conditions

The impact:

- Convenience and flexibility of oil tank refilling
- Savings compared to a stationary oil supply system



Storage tank for cleaner



A mobile unit for storage and transportation of cleaning fluid to the skid for axial compressor cleaning



Drain tank for effluent

A mobile unit for recovery, storage and transportation of drainage liquid after compressor cleaning to the waste recycling facility

Container for skid (outdoor applications)

A dedicated shell designed to protect the skid from the effects of adverse weather conditions





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