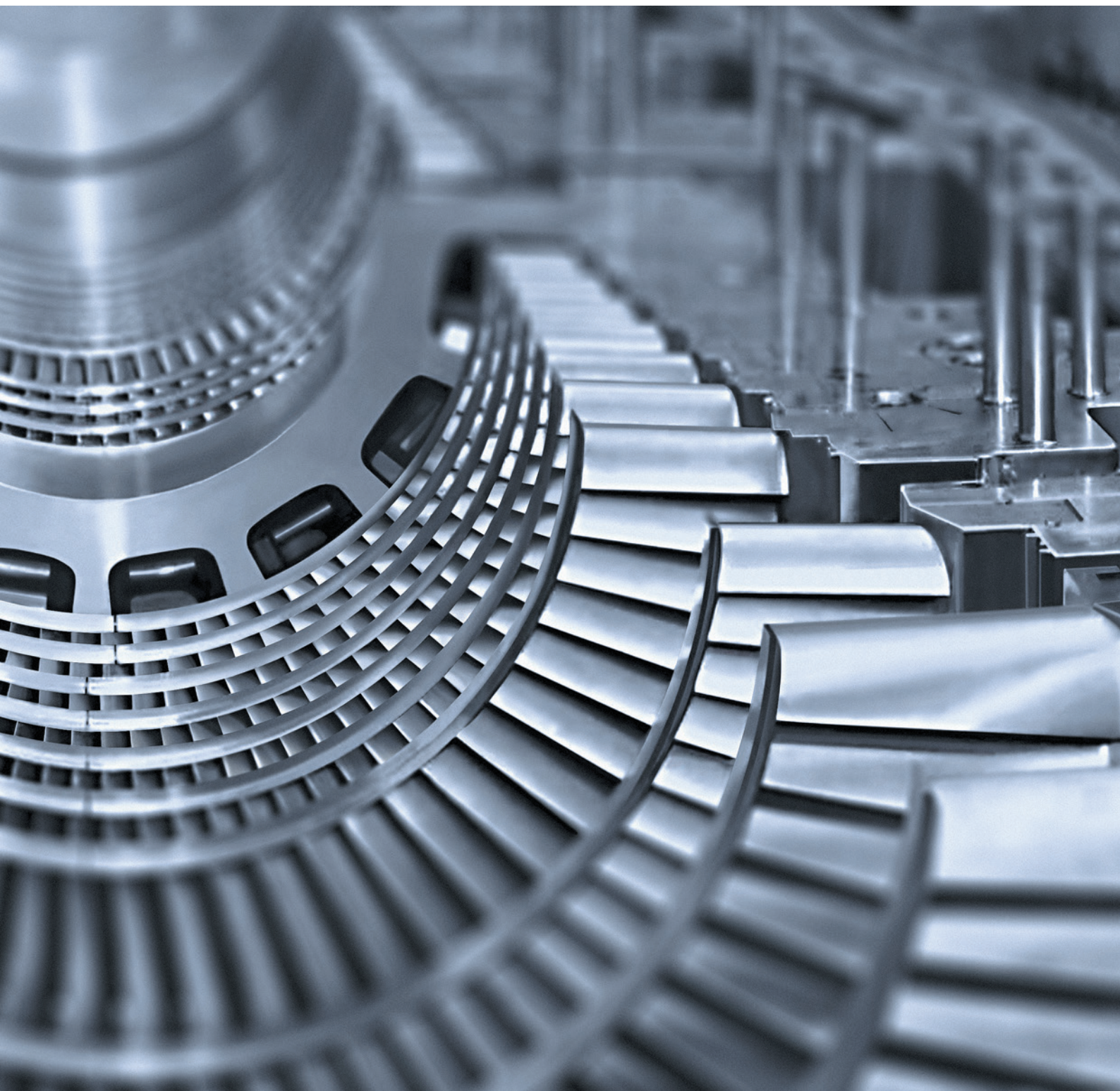


INDUSTRIAL EQUIPMENT  
ENGINEERING AND MANUFACTURING

***DALENERGOMASH***







# COMPANY AT A GLANCE

PUBLIC JOINT-STOCK COMPANY 'FAR EASTERN POWER ENGINEERING PLANT' ('DAENERGOMASH')  
DESIGNS AND MANUFACTURES INDUSTRIAL EQUIPMENT OF THE FOLLOWING THREE TRADE MARKS:



**'Dalenergomash'**

Centrifugal Compressor Machines  
and Gas Process Turbines



**'Amurlitmash'**

Wheelblast and Blast  
Cleaning Equipment



**'KZPTO'**

Bridge Cranes and Gantry Cranes,  
including those for special purposes

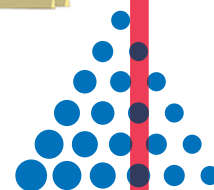
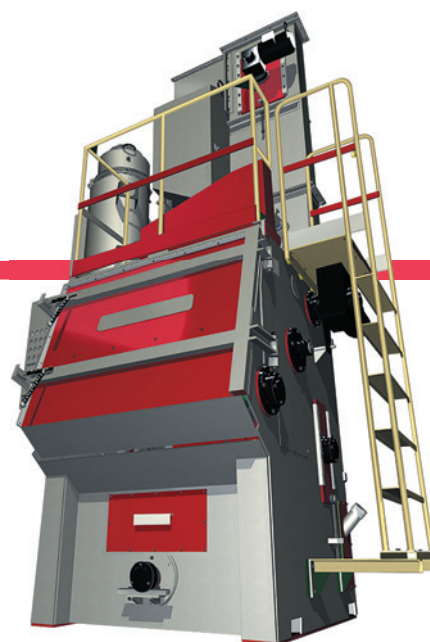
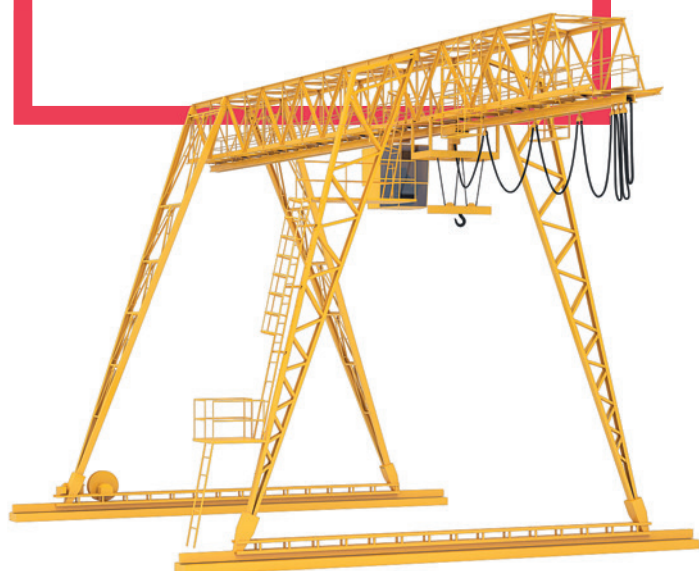
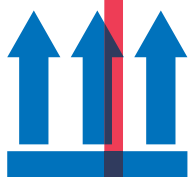


**ISO-9001:2008** 'DAENERGOMASH' QUALITY MANAGEMENT SYSTEM IS CERTIFIED  
IN ACCORDANCE WITH STANDARD **ISO-9001:2008**

# KEY FACTS

**1.1 billion tons**

OF LOADS ARE TRANSSHIPPED  
BY 'KZPTO' CRANES ANNUALLY



**45.5 billion tons**

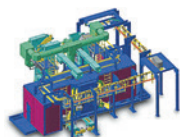
OF METAL PRODUCTS ARE CLEANED BY  
'AMURLITMASH' MACHINES ANNUALLY

2008

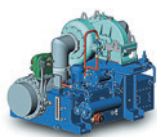
2009

2010

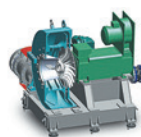
2011



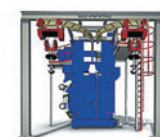
Upgraded wheelblast chamber 42735N has been manufactured for cleaning of car casting



Single-block blower CNV 300/1.6 (1.8) has been designed and mastered



Sample of centrifugal blower unit ANC 100/1.6 has been manufactured and tested

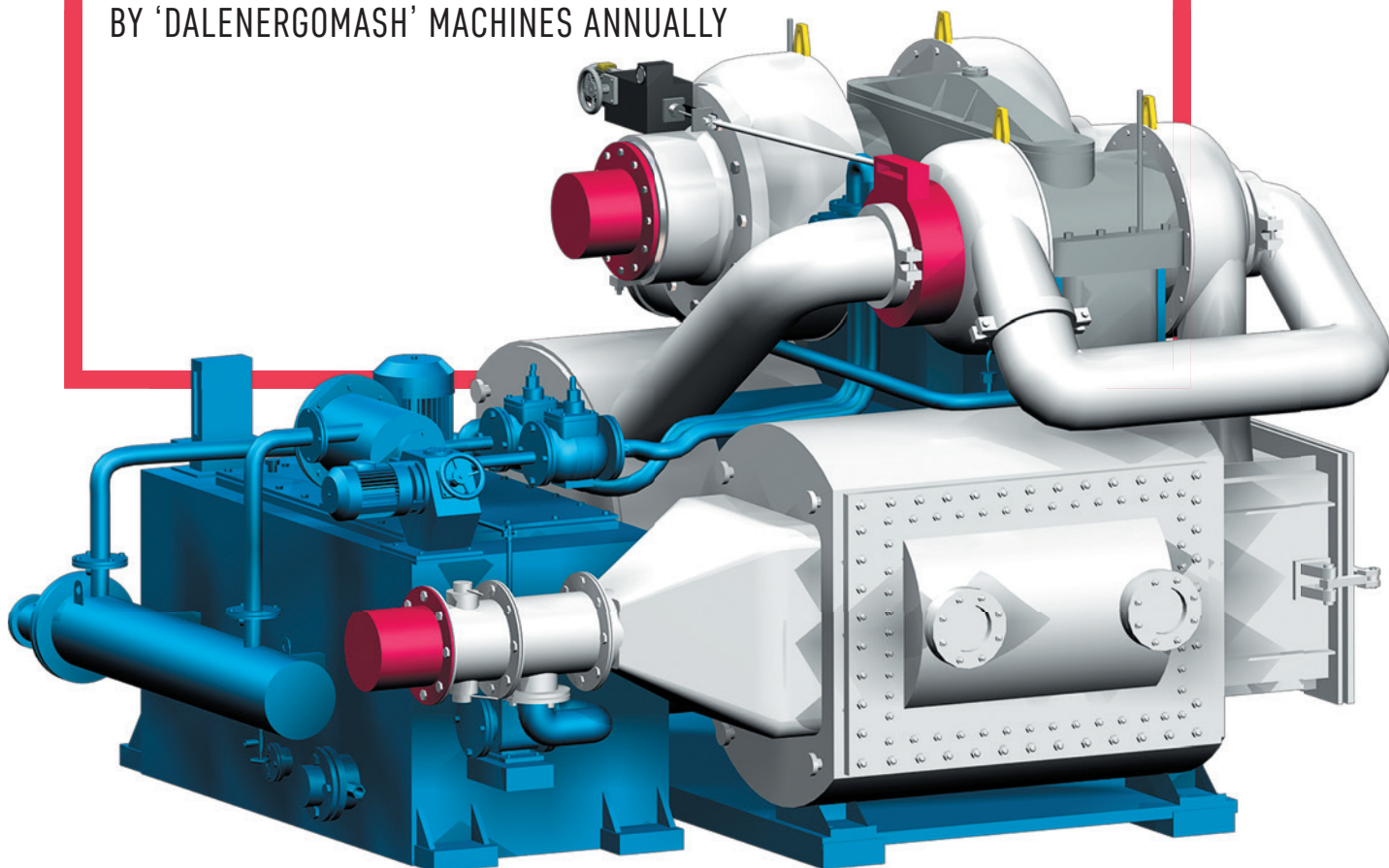


Upgraded wheelblast chamber 2R887 has been manufactured with new scheme for loading and unloading of products



# 2.3 trillion m<sup>3</sup>

OF COMPRESSED GAS AND AIR IS MANUFACTURED  
BY 'DALENERGOMASH' MACHINES ANNUALLY

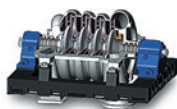


2012



New widespan gantry crane has been manufactured with lifting capacity of 12.5 tons and working span 44 m

2013



Upgraded nitrous gas blower 1150-42-1 has been manufactured and furnished

2014



New-generation turbo-compressor 'Avangard' has been started-up to be manufactured

2015



Innovation gas-turbine unit GTT-9 has been started-up to be manufactured

# PRODUCTS AND SERVICES



## ENGINEERING

- upgrading designs of gas turbines and blowers for nitrogenous fertilizer production lines;
- designs of new air blowers for aeration systems at sewerage facilities;
- modernization designs of gas blowers for coke and by-product plants;
- new designs for lifting and transporting equipment for metallurgy;
- designs for wheelblast and blast cleaning equipment upon customer's individual requirements.



## MANUFACTURE

- centrifugal air compressors as well as air and gas (sulfur, coke, etc.) blowers;
- gas turbine equipment for weak nitric acid production lines;
- wheelblast and blasting equipment;
- overhead and gantry cranes including those for special uses;
- spare parts to all equipments;
- foundry production.



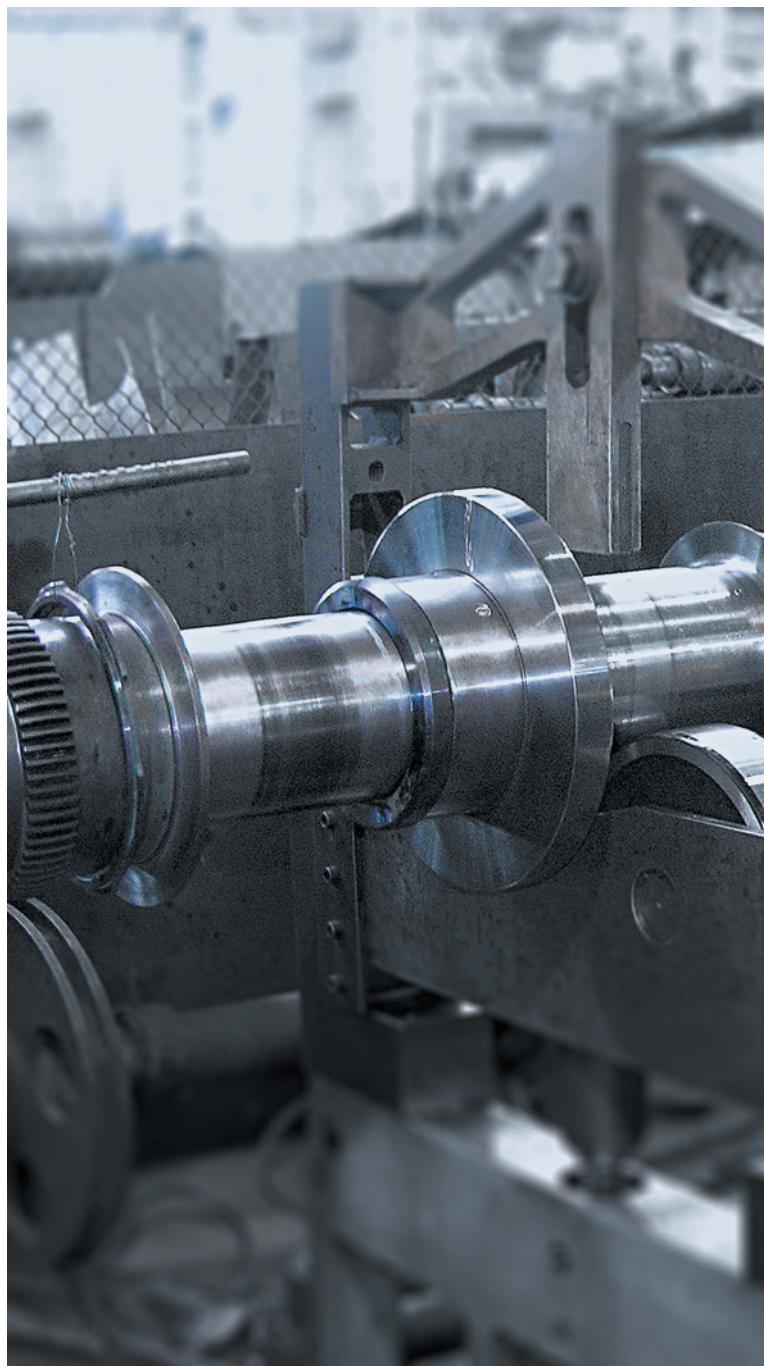
## INSTALLATION AND COMMISSIONING

- commissioning of the equipment at the customer's site supervised by the Company's representative;
- guarantee of quality work during installation and commissioning.



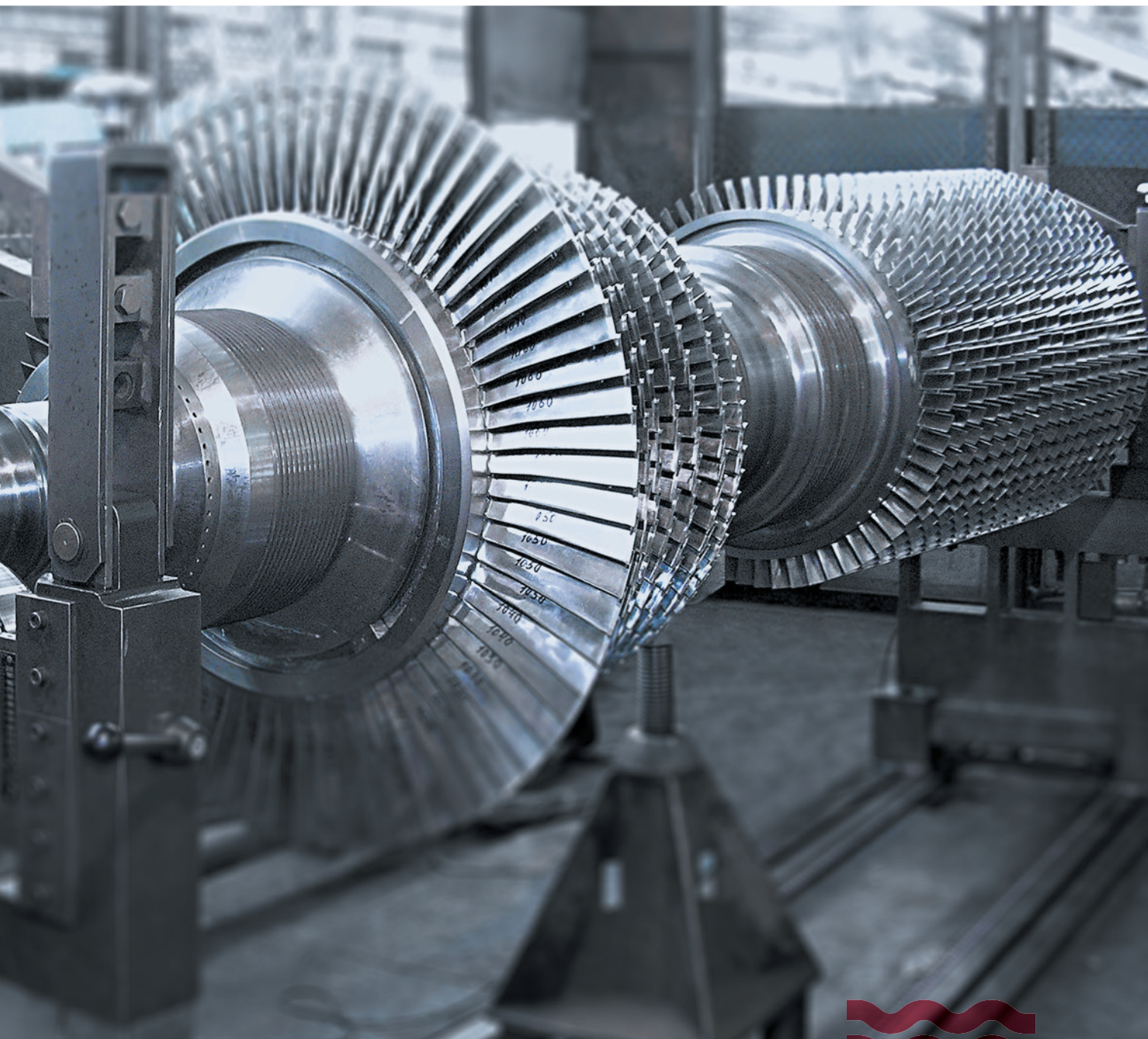
## SERVICE

- technical support by Company's specialists during the product lifecycle;
- capital repairs of equipment;
- modernization of equipment;
- original spare parts delivery.



**600** **OVER 600**  
**HIGHLY-QUALIFIED**  
**SPECIALISTS**



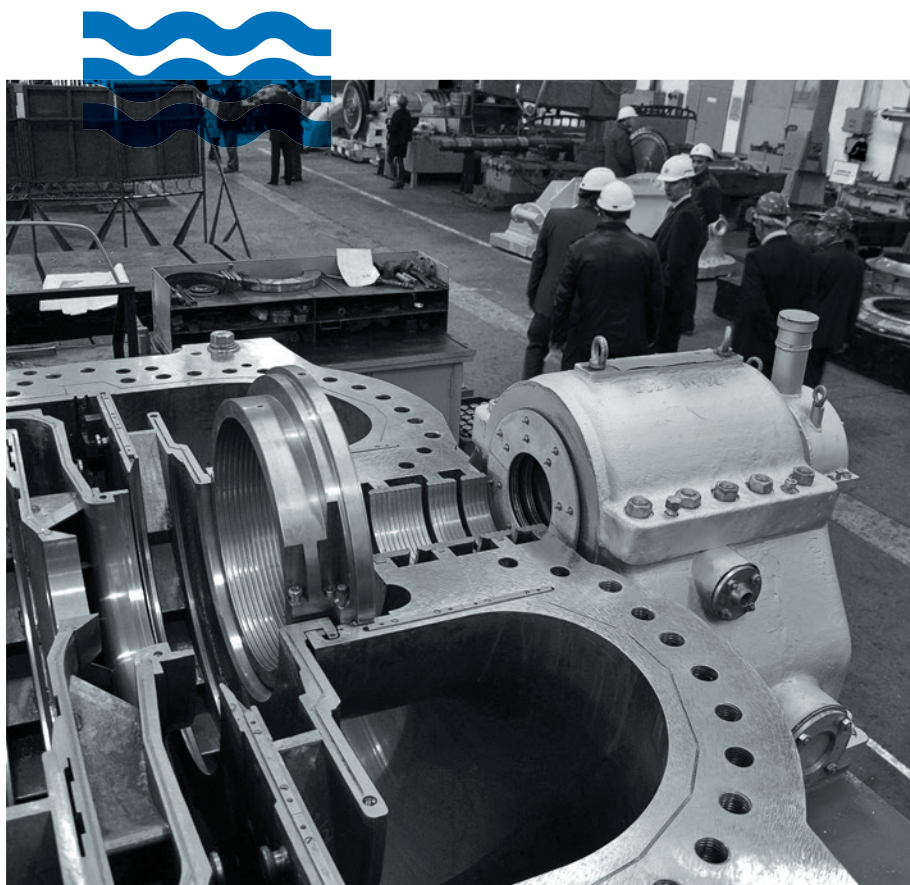


## Core Competencies and Strengths

- integrated service from project design to guarantee of equipment's work efficiency in line with the required parameters;
- particular attention to each project and customer-tailored solutions;
- availability of qualified and experienced staff;
- only certified materials and component parts are used in manufacturing;
- research & development team;
- manufacture of unique products, which have no parallel in home industry;
- lean manufacturing and cost saving programs in effect.

# GAS PROCESS TURBINES

**TURBINE MANUFACTURE IS THE MOST SOPHISTICATED LINE OF 'DAENERGOMASH' PJSC ACTIVITY. DURING MORE THAN 45 YEARS THE COMPANY HAS BEEN PRODUCING GAS-TURBINE UNITS FOR CHEMICAL INDUSTRY.**



Wide experience in turbine construction enables the Company to solve many engineering challenges: from gas-turbine unit design optimization to maintenance of process line operating conditions.

Some hundreds of gas-turbine units are in use by nitrogenous fertilizer companies in Russia and overseas.

Design and research works are constantly in progression to improve parameters of formerly manufactured equipment in accordance with customer's changeable requirements.

## NEWLY-DESIGNED PRODUCT

The Company offers upgraded and technically improved gas-turbine units. The new development is the gas process turbine GTT-9 intended for replacing of already used turbines GTT-3M in process lines UKL-7.

## ADVANTAGES OF GTT-9

- at least 5 % efficiency upgrading;
- life gain by more than 40 %;
- airflow regulation;
- repair work labor saving by 50 %;
- operating cost saving by 40 %;
- operating life is more than 20 years.



The Company engages constantly in activities to improving technical and operational characteristics of gas turbine units and their modernization using modern control, management, and surveillance systems.



# COMPRESSOR EQUIPMENT

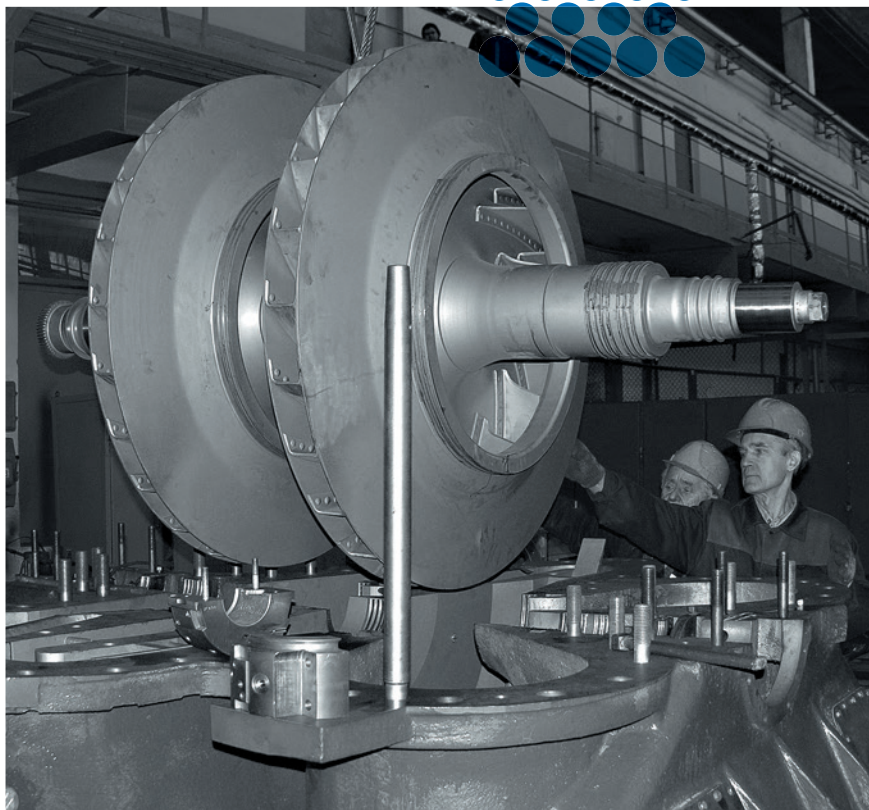
**‘DAENERGOMASH’ OFFERS EFFECTIVE SOLUTIONS IN AREA OF COMPRESSED AIR AND GAS SUPPLY FOR MANUFACTURING PROCESSES OF ENTERPRISES OF DIFFERENTE INDUSTRIES.**

The Company produces a wide range of centrifugal compressors and blowers for integration into existing process lines, as well as for operation in new-built industrial facilities.

The compressor equipment of ‘Dalenergomash’ comply with all the national and international standards. Over 4,000 compressor units have been installed and successfully used in Russia and overseas.

All the machines are equipped with modern automatic control systems and have Russian and international certificates of quality.

Within 60 years the delivered equipment of ‘Dalenergomash’ has proved to be a sample of reliability and ease of operation.



## KEY FEATURES

- completely oil-free air;
- high efficiency value;
- simplicity and ease of maintenance;
- rational and compact construction;
- functional and effective operating system;
- minimum level of manufacturing charges for 1m<sup>3</sup> air;
- maximum run between repairs.

## SPECIFICATIONS

- air compressors productivity: from 35 to 525 m<sup>3</sup>/min.;
- air and gas blowers productivity: from 35 to 1800 m<sup>3</sup>/min.;
- maximum pressure: to 12 kgf/cm<sup>2</sup>.



Compressor equipment range includes a wide scale of single-shaft and multi-shaft centrifugal compressors, air and gas blowers (blast-furnace, coke, sulphur, etc.).

# WHEELBLAST AND BLAST CLEANING EQUIPMENTS

**'AMURLITMASH' IS THE ONLY PLANT IN RUSSIA WHICH OFFERS FULL PRODUCT LIFECIRCLE MANAGEMENT OF SHORT-BLASTING AND BLAST CLEANING EQUIPMENT FOR MORE THAN 60 YEARS.**



The Company has created a wide range of standard units for cleaning and treating of metal ware surfaces from rust, scale, oxides, and other contaminants.

Using the experience accumulated for over ten decades of development and manufacture of cleaning machines the Company offers equipments with a high level of technical solutions for different industries including individual solutions according to customers' requirements.

## KEY FEATURES

- wide product line;
- high rate of productivity;
- high cleaning performance
- unique scheme of cleaning;
- modern control system;
- easy servicing;
- integration into a conveyer line;
- low operating costs;
- compliance with national standard requirements.

## AREAS OF USE

- cleaning of surfaces of steel-, iron-, and aluminum -wares, and special alloys;
- cleaning of all-metallic and build-up constructions;
- cleaning of casts from molding sand, gritty and iron scales;
- cleaning and working of pipes, as well as of other cylinders;
- cleaning of large-sized constructions.



Cleaning equipment range includes: shot-blasting chambers, electrohydraulic, shot-blasting and shotblast cleaning units, rotoblast barrels, shotblasters and spare parts, as well air-ventilation dust-catching units.



# LIFTING AND TRANSPORTING EQUIPMENT

**OVER 60 YEARS KOMSOMOLSKY PLANT OF LIFTING AND TRANSPORTING EQUIPMENT ('KZPTO') HAS BEEN PRODUCING STANDARD EQUIPMENT WITH MULTIPLE OPTION SET AND EQUIPMENT UPON INDIVIDUAL ORDER FOR MANUFACTURING ENTERPRISES.**

Within the framework of problem solving for transportation and performing of handling operations the Company produces crane equipment for operation with varying operation rate in the stocks, industrial buildings, and outdoors.

The Company offers a complete manufacture cycle from design and supply of individual cranes to engineering of integrated solutions for freight-handling terminals.

A team of highly qualified technical specialists of the Company develops designs for solving of customers' individual requirement using modern programming and computing systems.



## KEY FEATURES

- failure-free operation;
- higher level of reliability;
- control cargo function for higher safety and control accuracy;
- prevention of swinging and final cargo positioning;
- slow speed for smoothness of motion;
- integration of crane control system into plant's automation system;
- protection from high temperatures, corrosion, and pollutions.

## SPECIFICATIONS

- lifting capacity from 5 to 200 tons;
- width of span to 40 m;
- height of lift to 45 m;
- seismic resistance to 8 points;
- classification group from 3 K/A3 to 8 K/A8;
- maximal temperature range from +40° to -60°;
- special tools such as: spreader, electromagnet, automatic container grasp, and other grabs.



Manufacturing range includes overhead and gantry cranes of general and special purpose including grab, magnetic, magnetic-grab, trough-magnet, and container cranes, as well as metal constructions of any complexity made of sheet metal and section (piles, trusses, beams).

# AREAS OF EQUIPMENT USE



## Mining

The important area of using centrifugal compressors of 'Dalenergomash' is uninterrupted delivery of air into the production process at mining facilities. The grab cranes of 'KZPTO' in the mining industry are used for overloading, lifting, and transporting bulk or grab materials.



## Electric Power Industry

The lifting and transporting equipment of 'KZPTO' solves different problems for the electric power industry. Special gantry cranes are used for lifting and lowering of hydro-electric dam's gate. Grab cranes are used in coal mining and in handling at the coal terminals.



**20** PRODUCTION ARE DELIVERED  
TO MORE THAN 20  
**COUNTRIES WORLDWIDE**



**OVER 60 YEARS**  
COMPANY DESIGNS AND  
PRODUCES EQUIPMENT FOR  
METALLURGICAL INDUSTRY



## Metallurgy

The compressor equipment of 'Dalenergomash' is widely used for blowing compressed air to converters, blast and Martin furnaces for supporting of sustained and full combustion process, and also for gas extraction from coke furnace batteries.

The wheelblast equipment of 'Amurlitmash' is used for cleaning of bars from rust and scales, and for preparing for painting. The lifting and transporting equipment of 'KZPTO' are indispensable in the shops of metallurgical plant for transporting of mould with crushed metal and for handling it to steel-melting furnaces, and also for transporting of profiled steel, billets, waste metals, metal chips, scraps, and other materials.



## Mineral Fertilizer Manufacture

The essential area, which the Company gained prominence in, is the mineral fertilizer manufacture. The gas turbine equipment of 'Dalenergomash' have found application in the process lines for manufacturing weak nitric acid UKL-7 and AK-72 (M).

Most nitrogenous fertilizer manufacturers in Russia and in FSU Region use the gas process turbines manufactured by 'Dalenergomash'.





# AREAS OF EQUIPMENT USE



## Municipal Utilities

The centrifugal air blowers of 'Dalenergomash' are widely used at the aeration stations of water and sewer utilities (water and wastewater treatment plants).



## Machinery

The Company's equipment is extensively used worldwide by machine builders. The compressors of 'Dalenergomash' are used for air delivering and air handling in different manufacturing processes: from operating of pneumatic equipment and sandblast machine to cooling of tools and blowing of parts. The cranes of 'KZPTO' handle the units and finished products within the manufacturing line from one work site to another. The shotblasting equipment of 'Amurlitmash' is irreplaceable at the stages of manufacturing of new production, and also in the course of repairs and operation of equipment.





EXAMPLES OF COMPLETED PROJECTS

## UPGRADED NITROUS GAS BLOWER



By order of 'Neohim' AD (Bulgaria) an upgraded nitrous gas blower 1150-42-1 has been designed and manufactured for multipurpose machine assembly of the line AK-72(M) for manufacture of weak nitric acid.

The completely molded case of that blower design, and the appliance of the parts made of new anticorrosion material have increased operating life of the flow section of machine. The crest seals of the new design resistant to wear have decreased gas leakages between the stages of machine.

↑ *The final assembly stage of a nitrous gas upgraded blower 1150-42-1 at the plant 'Dalenergomash'*

The implemented changes have enabled technical and economic performance and upgraded efficiency of machine assembly operation.

The upgraded nitrous gas blowers have been also delivered to the enterprises of 'Minudobrenya' JSC and 'Dorogobuzh' JSC.

# 3000

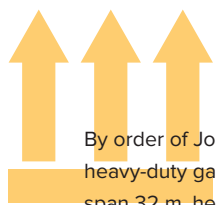
**NEARLY** 3000 ENTERPRISES  
ARE EQUIPPED WITH  
COMPANY'S EQUIPMENT





EXAMPLES OF COMPLETED PROJECTS

# GANTRY CRANES FOR OIL AND GAS INDUSTRY



By order of Joint Venture 'Sakhalin – Shelf – Service' LLC six heavy-duty gantry cranes with lifting capacity of 20 and 32 tons, span 32 m, height 14 m have been manufactured and mounted for unloading, stocking, and rehandling of large diameter pipes for construction of oil and gas pipe lines on a cargo area of Kholmsk fishing port.

The cranes have an optimal design: a double-beam bridge with bolted flange couplings, two fixed supports; a cargo cart is moved along span beams. Expanded support contour ensures augmented stability when operated at freights and makes altitude-and-freight performances to be exceptional. The cranes are equipped with special spreader beams with lifting capacity 20 tons, which take hold one of two pipes 12 m in length and to 1.2 m in diameter.

The cranes are intended for operation in areas with elevated wind loads and from exposure to earthquake effect to measure 8 points, so are equipped with a reinforced wind protection system.

↑ The gantry cranes with lifting capacity of 20 and 32 tons in operation at site of Joint Venture 'Sakhalin – Shelf – Service' LLC

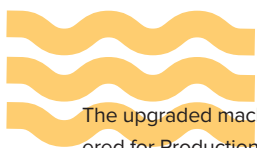
The delivered equipment enabled running of uninterrupted cargo handling operations during the construction of the Trans-Sakhalin oil-and-gas pipeline without accidents, schedule breakdowns, and damages to cargo.





EXAMPLES OF COMPLETED PROJECTS

# GAS-TURBINE POWER UNIT FOR CHEMICAL INDUSTRY



The upgraded machine unit KMA-2M was manufactured and delivered for Production Association 'Maryazot' (Turkmenistan).

Access to its essential components was simplified due to an improved design of the unit turbine section that has been enabled taking prophylactic measures within the shorter time. The developed and implemented changes of component designs in the unit have extended the time between overhaul for the machine during regular and thorough overhauls by 25-30 %. New insulating materials in the turbine section have enabled decreasing of insulation thickness and facilitating of machine assembly.

The productivity of the upgraded unit KMA-2M has gained almost by 10 % as compared to produced earlier GTT-12 and KMA-2.

An auxiliary piping, an oil distribution module, a set of control units, and a tool kit are furnished to a main machine.

↑ Assembling of upgraded machine unit KMA-2M  
at the plant 'Dalenergomash'

The upgraded turbo modules KMA-2(M) were delivered to the chemical plants of companies 'Akron' and 'Minudobreniya', as well as to 'Neohim' AD (Bulgaria).

**15 000** OVER 15 000 ITEMS OF TURBINE, COMPRESSOR,  
SHOTBLASTING AND LIFTING EQUIPMENTS  
OF GROUP OF COMPANIES 'DALENERGOMASH'  
**WORK ALL OVER THE WORLD**





EXAMPLES OF COMPLETED PROJECTS

# WHEELBLAST FOR STEELMAKING

↑ Mounting of wheelblast chambers  
in the shop of Bezhetsky steel factory



By order of the Industrial Company 'Bezhetsky steel factory' LLC the wheelblast chamber modifications of models 42735B-01 and 42735B-02 were manufactured. Their configuration and arrangement were made upon customer's technical enquiry. These models are development for a line of upgraded chambers for cleaning of large-sized cast products including a bolster and a side piece.

A unique scheme was designed and applied in design for cleaning of parts enabling to cut out direct fusillade of chamber walls with buckshot in a plume zone of wheelblast units. The electrical equipment is made on the base of a universal programmable controller intended for solving of middle level tasks suitable to operate in centralized networks. The operator's panel is

equipped with a touch-sensitive screen that with protection class rating IP65 enables to use the panel in proximity to process operation. The panel operation is based on using of operating system Windows CE that enables to solve operating control tasks for monitoring of output parameters' breakpoints, for servicing of operational and emergency messages, collecting and logging of messages, and password protecting.





## CONTACT INFORMATION

### MANUFACTURE AND SALE OF GAS TURBINES, COMPRESSORS AND BLOWERS



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[zavod@dalenergomash.ru](mailto:zavod@dalenergomash.ru)

Sales office: 8 (4212) 381-561, 381-894

[os@dalenergomash.ru](mailto:os@dalenergomash.ru)

[www.dalenergomash.ru](http://www.dalenergomash.ru)

### MANUFACTURE AND SALE OF WHEELBLAST AND SHOTBLASTING EQUIPMENT, AND CRANES



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[www.kzpto.ru](http://www.kzpto.ru)

