



Marine electric motors and solutions

Your expert
in electric motors and drives





We know all about electric machines

Ruselprom Group is one the leading developers, manufacturers and suppliers of modern technological solutions and electrical machines in Russia. Our company incorporates 12 enterprises which allow us to offer you the best expertise and greatest experience in the research, development and production of alternating current electrical motors.

Every third AC motor in Russia produced by plants of the Group.

Our experience allows our equipment to work in extreme conditions

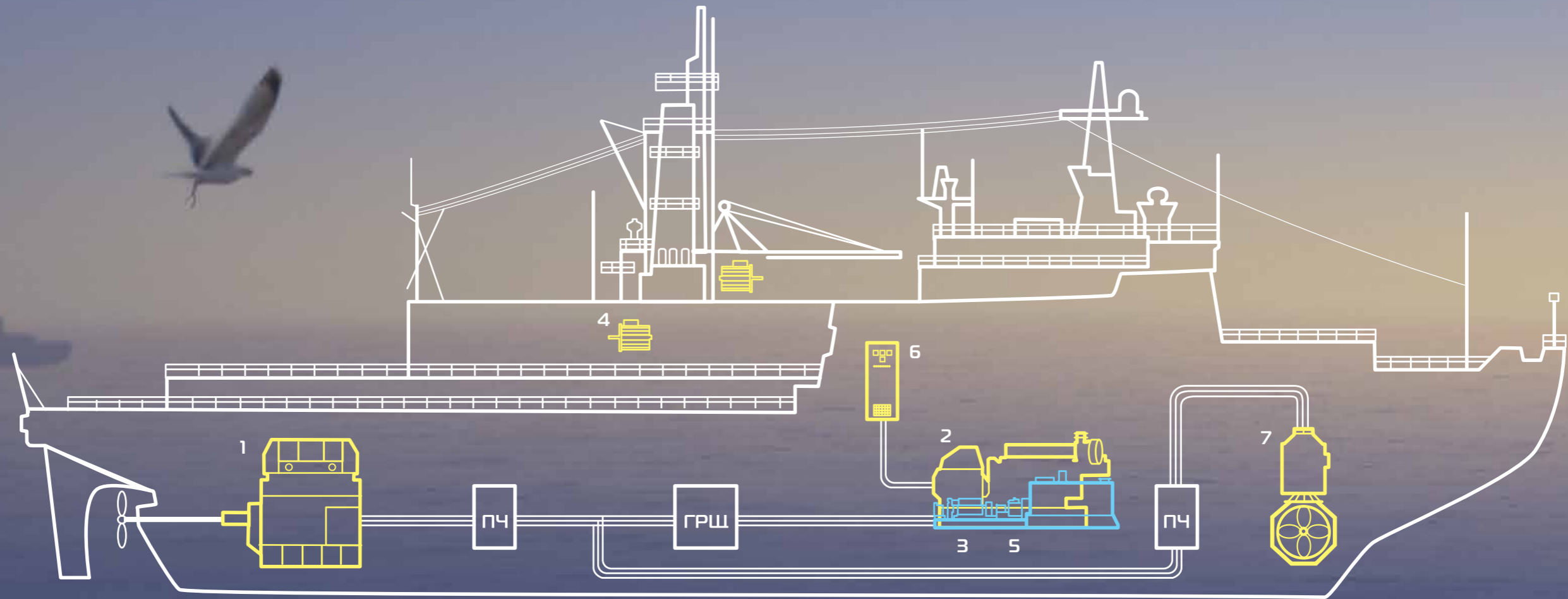
Ruselprom Group offers more than 3000 product positions: wide product range of electric motors from 0,25 kW up to 20 MW, generators up to 200 kW, digital excitation systems, frequency converters, reduced current starters etc.

There are strong designers and engineering divisions in our company and the high quality of our staff gives us opportunities to develop and offer to our clients both standard and customized products and solutions which perfectly match to individual customers specific requirements.

Many customers prefer to choose our electric machines in equipment such as air and water pumps, compressors, ventilators, crushers, ball mills, grinding mills, transport lines and conveyors, elevators, cranes and these machines operate in wide variety of production facilities across many different industries.

Ruselprom products are used in mining and metallurgy, oil & gas, electro and nuclear power plants, hydro power stations, industrial machinery engineering and manufacturing, green power technologies, civil engineering, shipbuilding and other industries ensuring the design, production and supply different electric machines and solutions for any particular application.

We successfully work both with Russian and foreign customers. Our machines operate in 52 countries.



1. Electric propulsion motors.
2. Synchronous generators for diesel engines.
3. Synchronous generators for steam and gas turbines.
4. Low- and high-voltage motors for auxiliaries.
5. Gear-gen module with output up to 8 MW.
6. Brushless excitation systems for marine diesel and turbo generators.
7. Motors for azimuth thrusters.

Control under sea – sufficient shaft internal torque

Shipbuilding is the industry that is saturated by new technologies products and one of the most important is the vessel electrical system. Ruselprom Group in cooperation with partners offers products for vessel power system and it agrees with Russian Maritime Register of Shipping.



Our electrical machines put into operation following vessel equipment:

- Marine powerplants units – gasturbogenerators, steam turbogenerators, diesel generators;
- Propulsive equipment – propulsive induction motors
- Equipment for azimuth thrusters – induction motors for electrical and mechanical thrusters, water jet propeller motors
- Auxiliary equipment – marine motors for ventilators, compressors, air and water pumps, hoist etc.

Ruselprom Group offers the total power solution for vessels which is controlled by one control system. In order to make it we cooperate with well-known partners that have rich experience in their products and strong leading position in the Russian shipbuilding market.

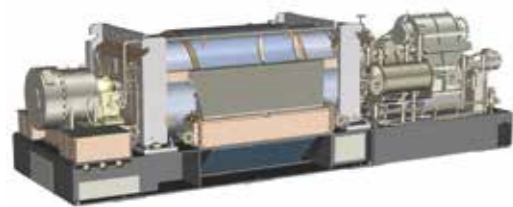
Our electrical machines are used in the following vessels:

- Icebreakers and tugs
- Gas carriers and tankers
- Trawlers and containerships
- River boats and fishing crafts
- High speed vessels, cruisers
- Float boat and passenger ship
- Floaters
- Research ships and bathyscaphe etc.



Equipment for powerplants

Synchronous turbogenerators



Geared Generating Module (GGM)

Output ratings	8 000 kW
Voltage	6 300 V
Speed	3 000 rpm
Excitation	brushless
Cooling	air-water

This generating module is made for alternating-current power generation from the gas turbine engine with methane fuel. The designed power outputs of this module are 8 MW and it operates with gas turbine engine. The main advantage of this product is that the weight is lighter and the size is more compact than the classic size and weight of diesel generators. It obtains because of the compact design both generator (generator, gear, oil system, cooling system and control are made on the common frame) and engine. Other important advantages are the reduced environmental impacts and low operating costs.



Synchronous turbogenerators for steam turbine

Output ratings	36 000 kW
Voltage	10 500 V
Speed	3 000 rpm
Excitation	brushless
Cooling	air-water

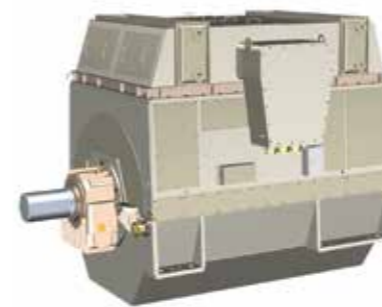
This type of generator is designed and made for operation in the high vibration and overloaded heavy duties that occur in the icebreakers.

Synchronous diesel generators

Usually the diesel generator is the main source of power in a vessel (excluding high-speed boats). The main requirements for this equipment are:

- life cycle not less than 30 years
- low operating costs
- low weight and compact size.

Taking into consideration these requirements we offer two generator types: high and low power diesel generators.



High power synchronous diesel generators (SGDM)

Output ratings	3000 - 8000 kW
Voltage	690 V, 3000 V, 6000 V
Speed	750 rpm
Excitation	brushless
Cooling	air-water

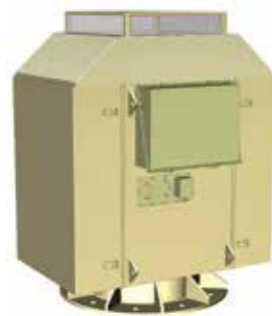


Low power synchronous diesel generators (SG3)

Output ratings	350 - 2000 kW
Voltage	400 V
Speed	1000 rpm, 1500 rpm
Excitation	brushless
Cooling	air-water



Equipment for propulsive systems and azimuth thrusters



Vertical induction motors for azimuth thrusters

Output ratings	300 – 2500 kW
Voltage	380 V, 690 V
Speed	up to 1000 rpm
Cooling	air/air-water

These motors are used in azimuth thrusters and installed in the bow vessel part and it ensures excellent maneuverable capacities. The main advantages of our offer are:

- high durability
- compact size (designed including to work in ice extreme conditions)



Induction motors for propulsive systems

Output ratings	750 – 20 000 kW
Voltage	690 V, 3000 V, 6000 V, 10 000 V
Speed	180 rpm, 750 rpm, 1000 rpm, 1200 rpm
Cooling	air -water

Electric transmission with induction motors and drive has strong advantage in comparison with the mechanical transmission. High dynamic capacities and improved controllability.

- Easy and fast reverse
- Flexibility in using components
- Strong reliability
- Low noise level.

Ruselprom motors for propulsive systems are designed for use with frequency converters and provide long term overload. It operates both delivering instance and power consistency. The electric machine can be deliver with spitted winding in order to provide excellent reliability and improved motor capacities.



Development and search

Electric motors for auxiliary equipment

There are different auxiliary equipment in the vessels such as pumps, ventilators, compressors, hoists etc. Ruselprom Group produces different motors in accordance with Russian Maritime Register. Further motor installation in the equipment is made on the makers production facilities. Our main goal is the optimum motor for our customers which meets to the specialized customers' requirements and particular using conditions. These motors can be managed with use of direct start or reduced current start or with frequency converter. Features of each electric machine are verified depending on the needed load: linear, quadratic, cubic etc.

Ruseprom produces wide range of low and high voltage motors for variety of auxiliary equipment. These products are optimized for particular needs required for excellent equipment use.



High voltage motors for auxiliary equipment

Output ratings	315 – 8000 kW
Voltage	6 000 V
Speed	3 000/1 500 rpm
Cooling	air/air-water

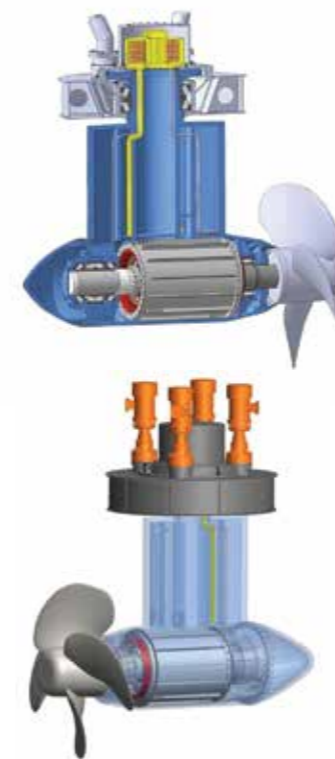


Low voltage motors for auxiliary equipment

Output ratings	0,75 – 2000 kW
Voltage	400 V, 690 V
Speed	3000/1500/1000/750/500 rpm
Cooling	air / air-water-air / air-water

We offer an extended range of low voltage induction motors for different type of auxiliary equipment that can be used in the river boats and it meets to the Russian Maritime Register.

Steerable propeller with electric motor inside a submerged pod



Hybrid propulsive equipment with electric motor was made for obtaining excellent maneuvering features. This system delivers high propulsive indicator and has a number of advantages comparing classic shaftline system with induction motor. This equipment is well accepted in icebreakers, tankers, float boats etc.

Ruselprom in cooperation with strong partner NPO Vint has made a range of these products. The prime motor for this system is induction motor that has several important advantages and disadvantages are minimized. The size of the submerged pod is comparable with the sizes of similar systems made by leading foreign makers. We could reach these sizes due to the new cooling system.

Steerable propeller with electric motor inside a submerged pod

Output ratings	9 000 – 20 000 kW
Voltage	3 000 V, 6000 V
Speed	200 rpm

Our partners

Now the implementation of the complex engineering tasks and challenges is possible with high level of cooperation between different makers. In cooperation with our partners we offer complete solutions for vessel propulsion and electrical system. Our partners are the companies having strong experience and impressive references in shipbuilding.

- Here are our key partners in shipbuilding:
- Krylov Shipbuilding Research Institute, Scientific & Technical Center
- NPO "Saturn"
- NPO "Vint",
- Kolomenskiy Diesel
- Zvezdochka shipyard
- SET Research Institute
- "PrivodnayaTechnika" and many others

Icebreaker mock-up.
The closing ceremony of the XI Winter Paralympic Games.
Russia, Sochi, 2014.



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Print date: September 2014

Version 2

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