

SERVICE • PRODUCTION • AUTOMATIZATION • EQUIPMENT SUPPLY



ВОЛЬНА | **CATALOG**



CJSC "VOLNA"

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VALUES:

KNOWLEDGE
AND
EXPERIENCE

OPENNESS
AND MOVEMENT

QUALITY
AND WARRANTIES

INTELLIGENCE
AND GOOD DECISIONS

PROACTIVE TEAM
OF LIKE-MINDED PEOPLE



ABOUT THE COMPANY:

Since 1994, **Volna** has grown, expanded and developed, providing its customers with quality service of electrical machines, automation and dispatching of production facilities, technological innovative equipment.

Today, our customers expect more from us: fast and personalized problem analysis, reliable estimation of the required scope of work, quality implementation of solutions in electrical machinery service and industrial equipment manufacturing. We communicate in the language of the customer and solve problems together.

This is how we win together as a team.

OVERVIEW:

- Metal processing and special machine tools, lathes, milling, balancing machines: metal processing up to 3000 mm in diameter and length up to 5000 mm
- Equipment for banding, electric machine manifold penetration, hydraulic presses for various purposes
- Machines for winding and body insulation, for manufacturing and forming sections of electrical machines of various sizes
- Balancing equipment with lifting capacity up to 12 tons
- Laser cutting machines
- Welding equipment and devices: welding of products, including submerged-arc and argon-arc welding in automatic mode, diameter up to 4000 mm and dimensions up to 8000 mm
- Impregnation-drying complex: vacuum impregnation plant (VPI technology), drying ovens
- Pyrolysis furnace (annealing): operating temperature up to +450 °C with afterburning of gases
- Availability of fixtures and lifting equipment up to 100 tons
- Accredited testing laboratory
- Own fleet of trucks and cars
- Washing chamber



COMPETENCIES:

5 PRODUCTION SITES
WITH A TOTAL AREA
OF MORE THAN 7000M2

QUALITY
MANAGEMENT
SYSTEM ISO 9001

OFFICIAL PARTNER
AND SERVICE CENTER
OF THE WORLD COMPANY

OVER 300 HIGHLY
QUALIFIED SPECIALISTS

ENGINEERING
SERVICE - MORE THAN 50 PEOPLE

SERVICE OF ELECTRICAL MACHINES AND APPARATES

ELECTRIC MOTORS
AND GENERATORS

TRANSFORMERS

PUMPS

TURBOGENERATORS

COMPRESSORS

OTHER ELECTRICAL
EQUIPMENT

MANUFACTURING EQUIPMENT

INDUSTRIAL CHAMBER
ELECTRIC FURNACES

AUTOCLAVES
AND IMPREGNATION
UNITS

TEST BENCHES

CLADDING MACHINES
FOR BODIES OF ROTATION

HARDENING BATHS

OTHER EQUIPMENT
TO EQUIP PRODUCTION
SHOPS

AUTOMATION AND DISPATCHING OF

PRODUCTS

PROCESSES

EQUIPMENT

SUPPLY OF EQUIPMENT

EQUIPMENT
FOR INDUSTRIAL
AUTOMATION OPTIMUS DRIVE,
DELTA ELECTRONICS

ELECTRIC MOTORS
GOST STANDARD

ELECTRIC MOTORS
DIN STANDARD



SERVICE OF ELECTRICAL MACHINES AND APPARATES

In situations where electrical equipment must run perfectly, it needs to be in perfect condition and properly maintained.

In this case, **Volna** is a responsible and professional partner.

RANGE OF SERVICES:

REPAIR, AUTOMATION,
RETROFIT

DEVELOPMENT
OF TECHNOLOGICAL
DOCUMENTATION
OR WORK EXECUTION

DESIGNING

PRODUCTION
OF SPARE PARTS SUPPLY

INSTALLATION
AND COMMISSIONING

FIELD SERVICE





TEST LABORATORY

Accreditation in accordance
with GOST ISO/IEC 14025-2019

Adjustable DC power supply
up to 750 V and 1000 A

Adjustable AC power supply
up to 10kV and 800A

Direct and reciprocal
load tests

Determination of insulation life
by partial discharge method

Non-destructive
metal testing

Television control

Hydraulic testing
of explosion-protected
and direct equipment

ELECTRIC MOTORS AND GENERATORS

Hard work, continuous development and partnerships with global companies have ensured that Volna is today one of the leading competitors in the field of electric motors and generators service.

Large equipment, explosion protection, high or low power - all this is not a problem for Volna, because our capabilities can fully meet the demand of the most demanding customers.

EQUIPMENT:

HIGH-VOLTAGE SYNCHRONOUS
AND ASYNCHRONOUS ELECTRIC MOTORS

- general industrial
- explosion-proof

LOW-VOLTAGE SYNCHRONOUS
AND ASYNCHRONOUS ELECTRIC

- general industrial
- explosion-proof

DC ELECTRIC MOTORS

GENERATORS

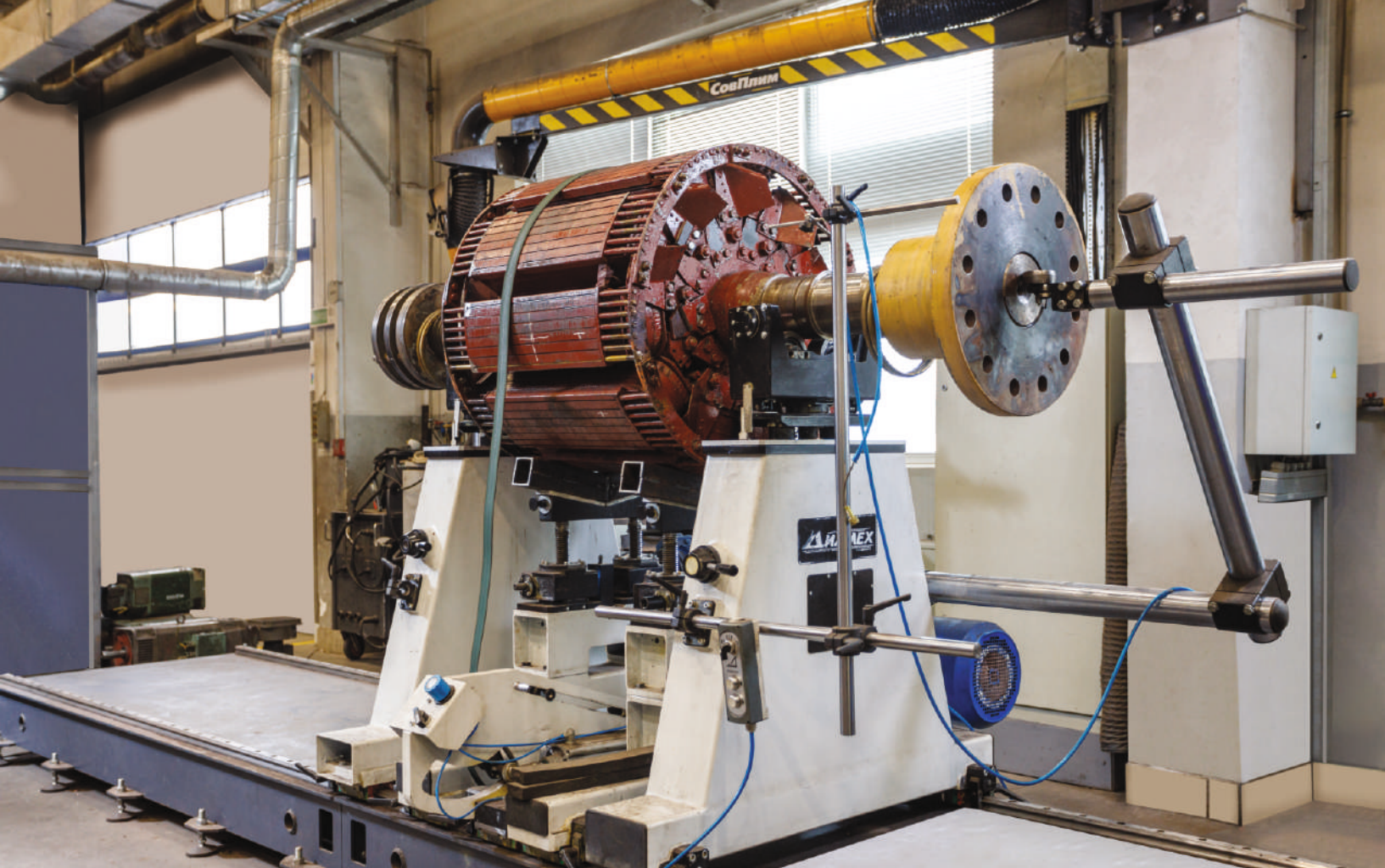
MANUFACTURING:

COILS OF ROTOR
AND STATOR WINDINGS
OF ELECTRIC MACHINES

PROTOTYPES
ACCORDING TO DESIGN
DOCUMENTATION

SPARE PARTS
AND COMPONENTS
OF ELECTRIC MACHINES





SERVICE:

- Basic monitoring, dynamic and static defect inspection, non-destructive testing
- Current, medium, overhaul, emergency repair of electric motors and generators
- Repair of electrical equipment using materials of insulation class F, H, 200, 220
- Replacement of DC and AC machine windings
- Impregnation of windings with VPI compounds
- Dynamic balancing of rotating assemblies and components
- Laser shaft alignment
- Automatic cladding of shafts
- Vibrodiagnostics
- Set of tests after repair

TRANSFORMERS

Volna is an expert in the field of maintenance, service, current and overhaul of power transformers both in factory conditions and at the place of equipment installation

EQUIPMENT:

POWER TRANSFORMERS WITH VOLTAGE CLASS UP TO 330 KV

DISTRIBUTION TRANSFORMERS

SPECIAL PURPOSE TRANSFORMERS

- traction
- rectifier
- furnace transformers

REACTORS, INDUCTORS, GROUNDING DEVICES, SPOT WELDING TRANSFORMERS

EQUIPMENT:

BRAKE, SHUNT, EQUIPMENT COILS AND TRANSFORMER COILS MADE OF ROUND AND RECTANGULAR COPPER OR ALUMINUM WIRES

INDUCTORS MADE OF RECTANGULAR, ROUND AND TUBULAR PROFILES FOR HEATING WORKPIECES

INDUCTORS FOR MELTING FURNACES





SERVICE:

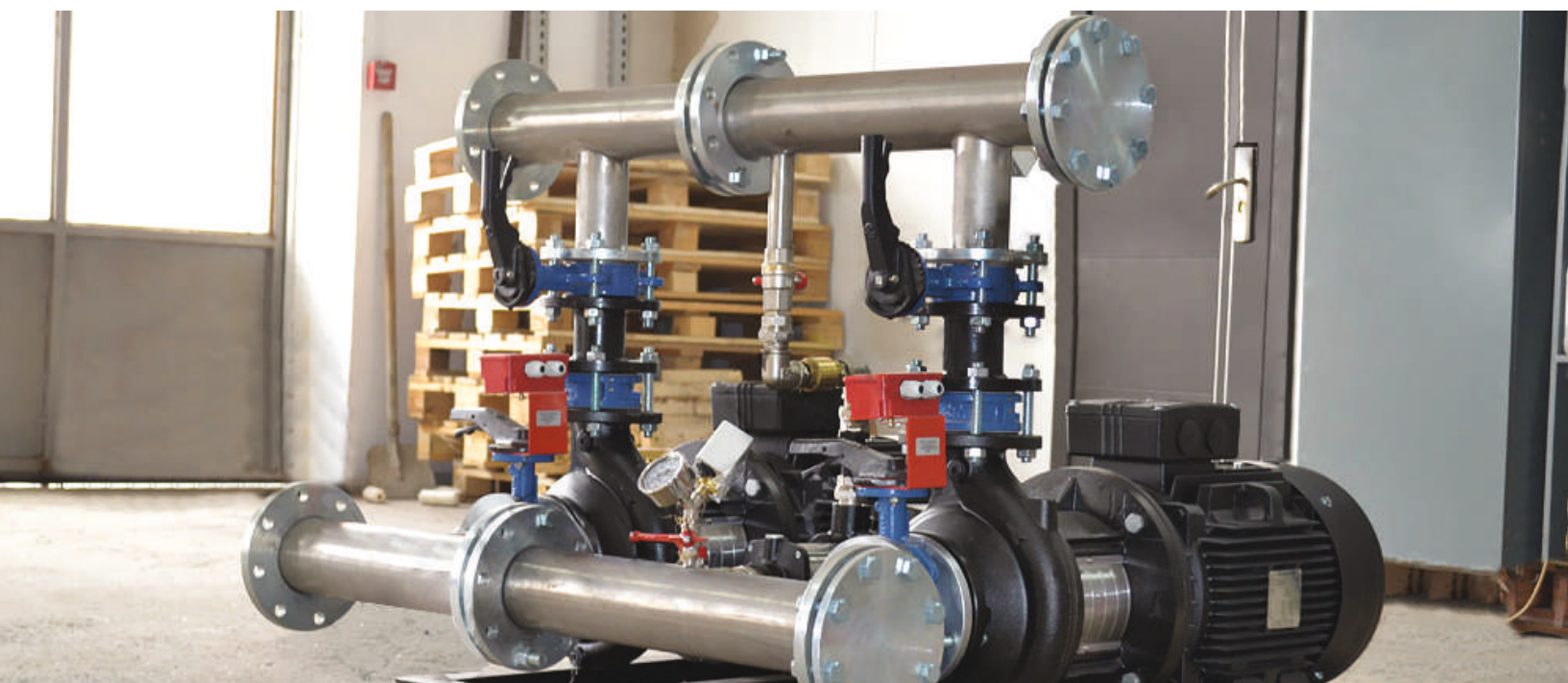
- Service of dry-type, oil-filled and cast-in-place transformers _____
- Diagnostics and pre-repair testing of transformers _____
- Disassembly of the active part with stripping of the magnetic core and removal of windings _____
- Measurements and tests of the active part on an open transformer _____
- Manufacture of high and low voltage windings _____
- Manufacture of main, longitudinal and equalizing insulation _____
- Drying, cleaning and degassing of transformer oil _____
- Assembly, restoration of paint coating _____
- Set of tests after repair _____

PUMPS

If pumping equipment service is required, we are always ready to offer maintenance, repair and optimization of the entire pumping station.

SERVICE:

- Diagnosis and preliminary damage assessment
- Repair and maintenance, including service of equipment operating in aggressive environments
- Repair of electric motors of pumping equipment
- Hydraulic system repair, rebuilding and laser alignment of shafts, blades, replacement of components
- Finalization of design and parameters of the equipment in accordance with customer requirements
- Commissioning and warranty service
- Supply of spare parts and new equipment
- Field service
- Development of a project for automation of pumping equipment operation process both at industrial facilities and civil infrastructure facilities
- Automation and dispatching of pumping stations, treatment plants, wells, etc.





OTHER ELECTRIC EQUIPMENT EQUIPMENT

TURBOGENERATORS

INDUSTRIAL
COMPRESSORS

FANS

CARGO MAGNETS

ELECTRIC WELDING EQUIPMENT

BRAKE COILS, CONSOLES,
CABINETS AND CONTROL PANELS

NON-STANDARD
EXPLOSION-PROOF ELECTRICAL EQUIPMENT

SERVICE:

- Diagnostics, testing
- Dismantling, disassembly of equipment
- Reconfiguration of electrical equipment
- Maintenance
- Current, medium, overhaul, emergency repairs
- Shaft restoration by cladding
- Balancing and laser shaft alignment
- Visual, eddy current, magnetic particle, thermal, ultrasonic and vibrodiagnostic inspection

EQUIPMENT DESIGN

Volna has its own **design service of experienced designers**, where each specialist undergoes periodic knowledge testing for compliance with the requirements of legislation in the field of industrial safety

The basis for the development of equipment is the individual needs of the customer. Each of our projects is individual, as we offer solutions for non-standard tasks that cannot be realized with standard equipment. Our design engineers take a deep dive into each customer's project

STATE INDUSTRIAL SUPERVISION
LICENSE NO. 33133/629-1 FOR DESIGN

INDIVIDUAL DESIGN
OF EACH OBJECT

DESIGN PREPARATION
OF PRODUCTION

OVER 300 REALIZED
PROJECTS





FULL-CYCLE DESIGN - FROM IDEA TO PRODUCTION:

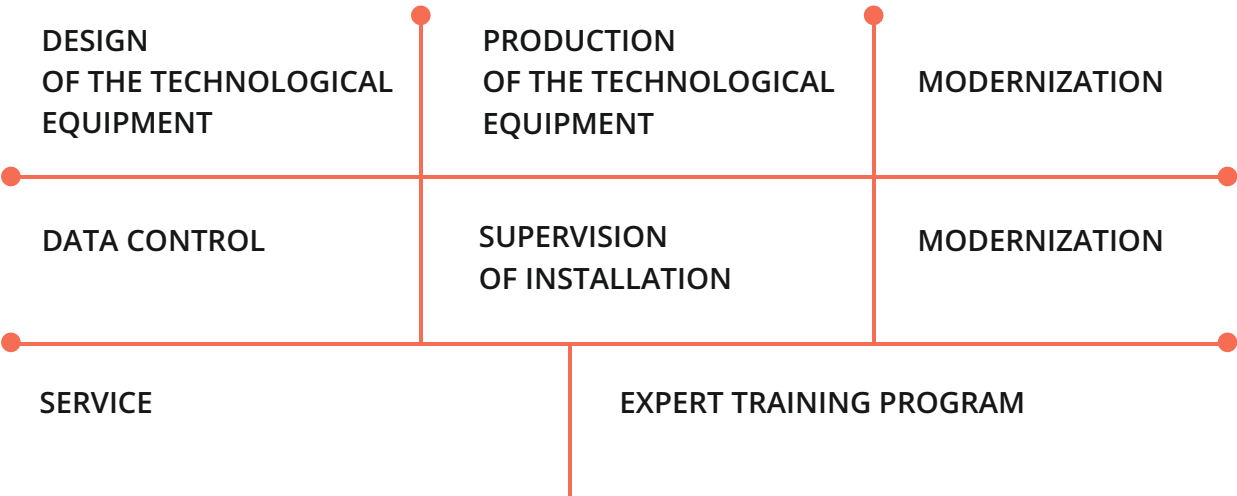
- Product development from scratch: when the customer needs a unique solution to meet their individual needs
- Creation of new and modernization of product designs (complexes, machines, apparatus, devices, mechanisms) of the existing production facilities
- Creation of technological test benches for testing of devices produced by the company
- Finalization of the finished solution: customization of the products to meet the customer's requirements
- Ensuring high competitiveness of manufactured products
- Adoption of advanced design developments and the latest materials in production
- Ensuring compliance of new and upgraded designs with technical specifications, standards, requirements of rational organization and occupational health and safety, safety norms
- Development of design solutions to improve the quality and reliability of products, their manufacturability, environmental friendliness, reduction of their cost, labor and material intensity
- Participation in assembly, testing, adjustment and commissioning of new product designs
- Author's supervision over the manufacture of products and their operation
- Organization of consultations to resolve individual technical issues

PRODUCTION OF THE EQUIPMENT

Innovative developments, professional quality management and optimal design guarantee our Customers the production of equipment that meets technical requirements to the latest standards technology.

The result of our work is innovative solutions and professional competencies of nowadays for mechanical engineering in future.

LIST OF SERVICES:





PRODUCTION:

INDUSTRIAL ELECTRIC FURNACES	INSTALLATIONS OF VACUUM PRESSURE IMPREGNATION (VPI)	PYROLYSIS FURNACE (ANNEALING)
AUTOCLAVES FOR DIFFERENT INDUSTRIAL FIELDS	TEST STATIONS (STANDS) OF AC AND DC ELECTRIC MOTORS	HARDENING TANK
AUTOMATED INSTALLATIONS FOR SURFACING WELDING OF BODIES ROTATIONS	WINDINGS FOR ELECTRIC MACHINES (AC AND DC ENGINES AND GENERATORS)	EQUIPMENT FOR REPAIR WORKSHOPS AND FOR PRODUCTION OF ELECTRIC MACHINES

IMPREGNATION UNITS, INDUSTRIAL AUTOCLAVES

From the aviation and automotive industry, the glass and construction industry, the energy industry, right through to wood and rubber processing - Volna offers first-class solutions for all major industries: autoclaves, vacuum impregnation systems that optimally meet individual requirements..

MANUFACTURE:

VACUUM-PRESSURIZED IMPREGNATION UNITS	AUTOCLAVES FOR GLASS. TRIPLEX
VACUUM IMPREGNATION UNITS	AUTOCLAVES FOR VACUUM DRYING
VACUUM IMPREGNATION UNITS FOR CASTINGS	AUTOCLAVES FOR VULCANIZATION OF RUBBER
AUTOCLAVES FOR COMPOSITES	AUTOCLAVES FOR WOOD IMPREGNATION





FUNCTIONALITY:

- Quick-acting bayonet shutter
- Vacuum and air line
- Sensors for continuous monitoring of pressure, air, temperature, viscosity, impregnation level
- Heating system, cooling system
- Degassing unit
- Programmed blocking of autoclave lid opening in the presence of pressure, vacuum
- Manual and programmed locking of the lid opening
- Automated control and dispatching system of autoclave (ACS).
Remote process control and reporting

INDUSTRIAL CHAMBER ELECTRIC FURNACES

Volna produces industrial chamber furnaces for production tasks and needs of the customer, taking into account the specifics of the technological process. Our work is based on well-proven in practice technical solutions that allow us to optimally realize the technological process ensuring high quality of products

OVERVIEW OF APPLICATIONS:

PREHEATING BEFORE IMPREGNATION
AND DRYING (POLYMERIZATION)
AFTER IMPREGNATION
OF ELECTRIC MACHINE WINDINGS

DRYING
AFTER PAINTING

POLYMERIZATION
OF COMPOSITE MATERIALS

PYROLYSIS (ANNEALING)
OF INSULATING MATERIALS,
ELECTRIC MACHINE

WINDINGS ANNEALING OF PAINT,
POLYMER OR OTHER COATINGS
FROM METAL PRODUCTS

POLYMERIZATION OF MATERIALS

DRYING OF TRANSFORMER
INSULATION USING
VACUUM TECHNOLOGY

HEATING OF METALS FOR HEAT
TREATMENT AND PLASTIC
DEFORMATION





MANUFACTURE:

● INDUCTION DRYING FURNACE

Designed for drying and preheating of products for various purposes, including windings of electrical equipment in an air environment at temperatures from +50 to +280 ° C in stationary conditions by the method of magnetization losses of internal walls

● PYROLYSIS ANNEALING FURNACE

Designed for thermal decomposition of organic and many inorganic compounds under oxygen deficiency (pyrolysis process)

● COMPOSITE POLYMERIZATION FURNACE

Designed for heat treatment, including molding prepregs in it in vacuum bags, at elevated temperature of circulating hot air and controlled cooling

● VACUUM FURNACE FOR DRYING TRANSFORMER INSULATION

Designed for deep drying of the active part of power transformers (power windings), windings of electrical machines and other equipment

● RESISTANCE FURNACE

Designed for heat treatment of products for various purposes at temperatures from +50 to +550 ° C

CLADDING SYSTEMS FOR ROTATING BODIES

Cladding units for bodies of rotation made by Volna are designed for surface restoration of bodies of rotation, as well as coating by electric arc cladding (in shielding gas and submerged arc) depending on the functional purpose, the units are completed with the appropriate welding equipment: positioner, inverter, tractor, as well as support rollers and linear travel systems..

RECOVERY:

WHEELSETS
OF RAILWAY TRAINS

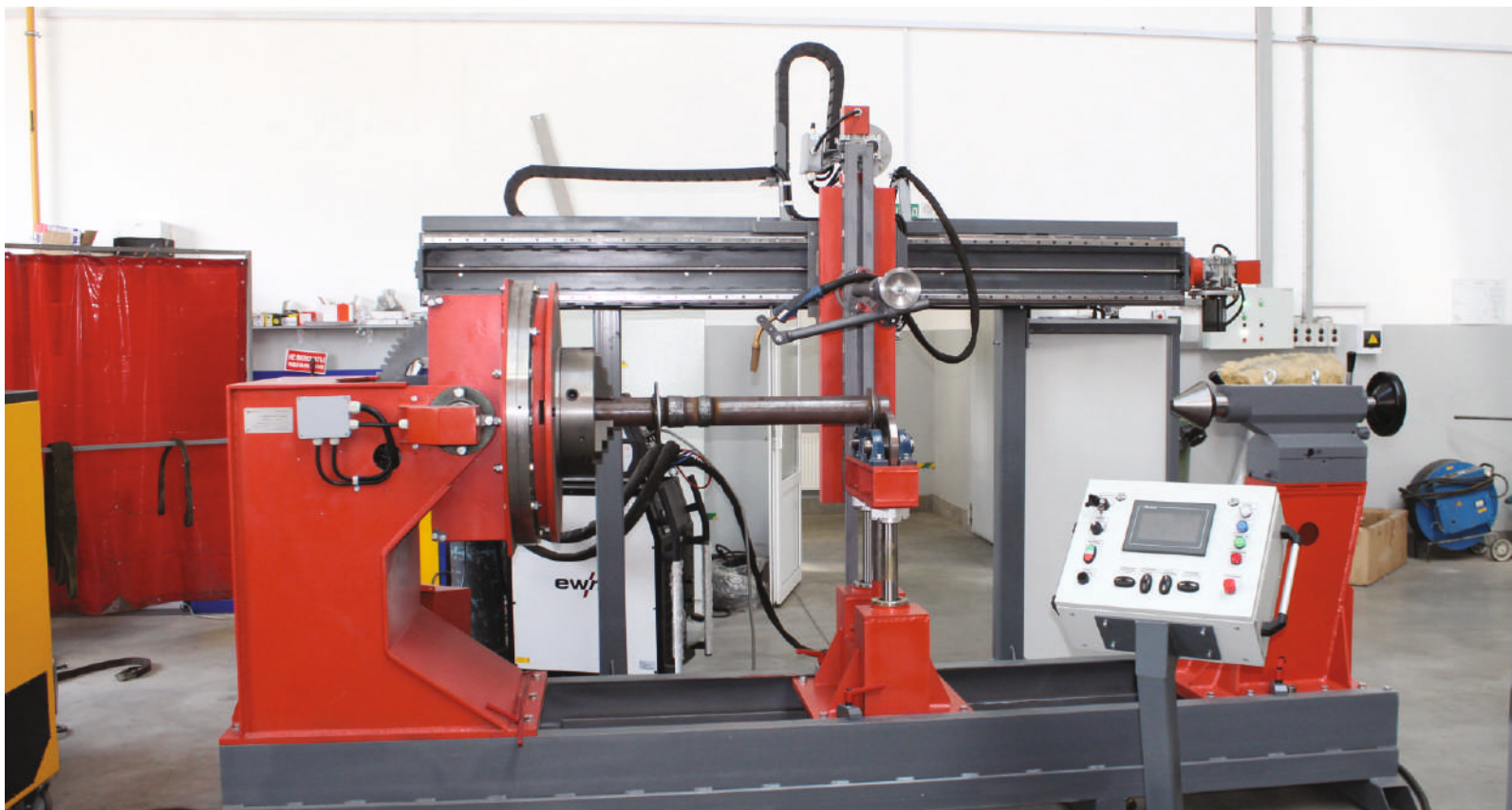
CYLINDRICAL SURFACES
OF RODS AND SPINDLES

SHAFTS, PROPELLER SHAFTS
OF SEA AND RIVER VESSELS

RINGS

CRANE WHEELS

ROLLERS ETC.





TECHNICAL SOLUTIONS:

- Cladding of external and internal diameters, without length restrictions
- Burner movement in three X, Y, Z coordinates in both manual and automatic mode
- Integration of the required welding equipment into the plant design at the customer's request
- Use of a wide range of welding consumables (flux cored wire, solid drawn wire, etc.)
- Cladding both under flux and in shielding gases
- The plant control system is based on an industrial controller

MOTOR TEST STANDS

Volna manufactures test benches to perform acceptance and qualification tests of electric motors in accordance with the requirements of the relevant methods, providing the required test modes for speed and load..

EQUIPMENT:

TEST STAND FOR ASYNCHRONOUS
AC ELECTRIC MOTORS,
POWER

- from 55 KW
- from 400 KW
- up to 100 kW
- up to 1 MW

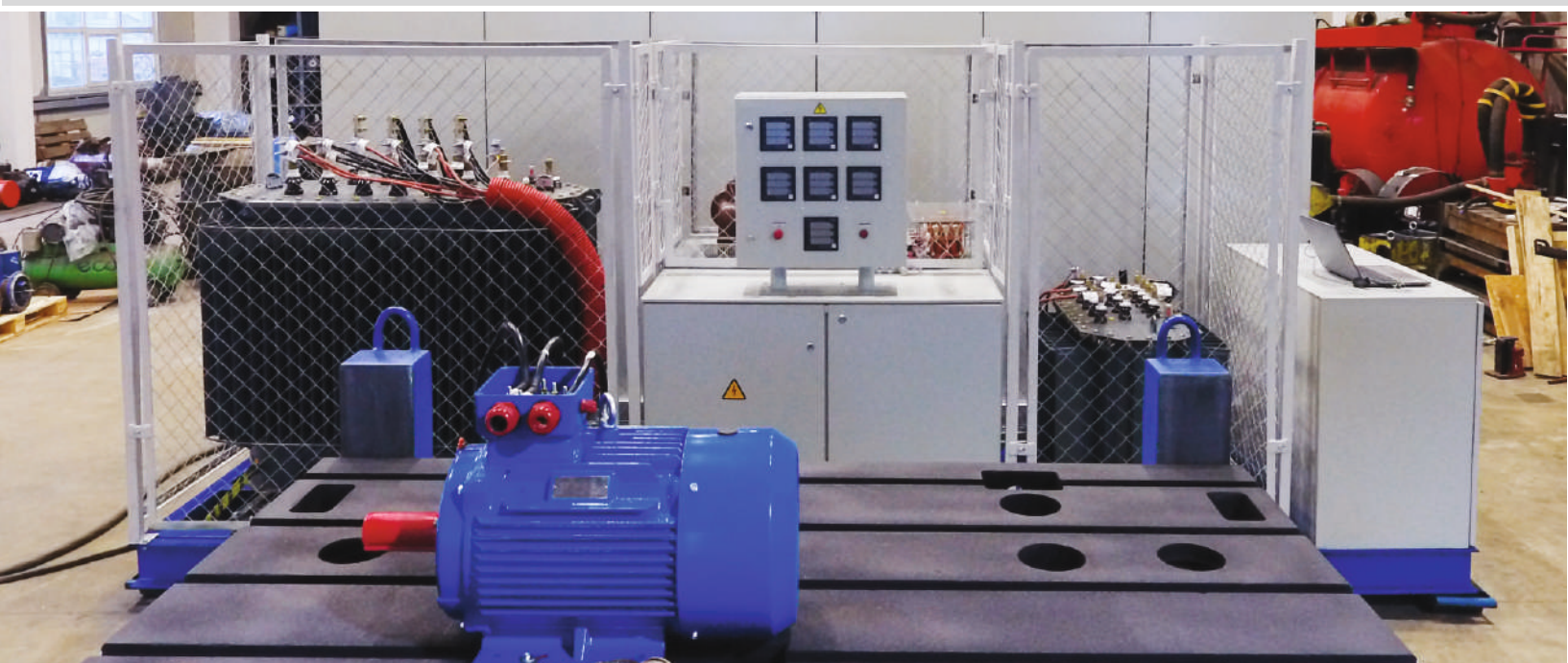
TEST STAND FOR AC INDUCTION MOTORS.
UNDER LOAD

- UP TO 200 KW
- UP TO 400 KW

TEST STAND FOR DC TRACTION MOTORS BY MUTUAL LOAD

TEST BENCH FOR DC MOTORS BY DIRECT LOAD METHOD

TEST STAND FOR AUXILIARY ELECTRIC MACHINS





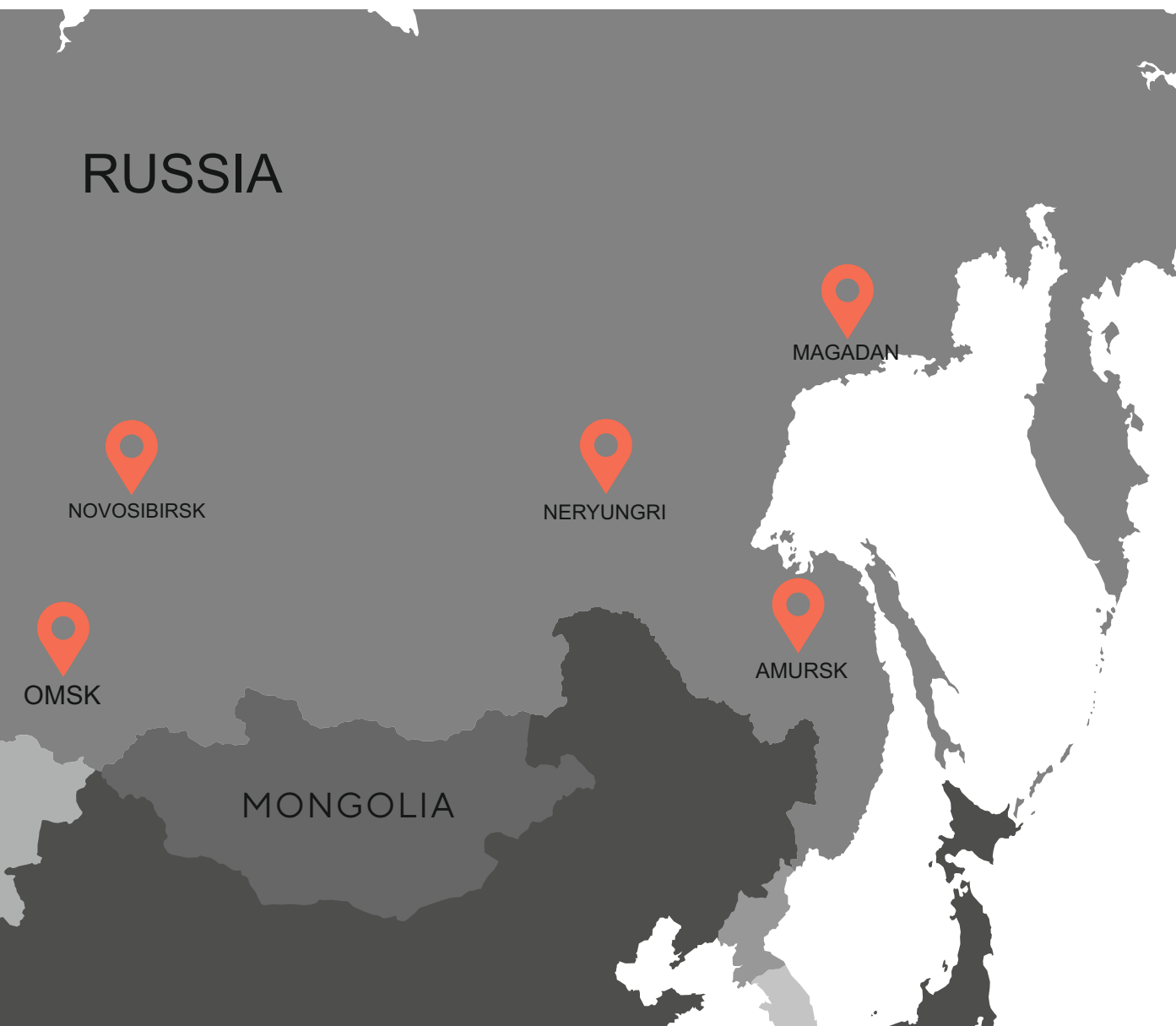
FUNCTIONALITY:

- Measurement of insulation resistance of electric motor windings _____
- Measurement of winding resistance to direct current _____
- Check of inter-turn insulation of windings _____
- Determination of rotor winding cores condition _____
- Testing of electric motors at idle speed _____
- Short circuit experience _____
- Determination of the initial starting torque _____
- Determination of maximum torque _____
- Determination of efficiency factor, power factor _____
- Tests under load _____
- Verification of electric motors performance at extreme deviations of supply voltage and frequency from nominal values _____
- Mechanical strength test at higher speeds _____
- Determination of insulation life by partial discharge method _____
- Automatic generation of the test report _____

GEOGRAPHY OF SUPPLY



- BELAZ OJSC
- Dolomiti OJSC
- Republican unitary manufacturing enterprise "Granit"
- Grodno Azot OJSC
- Belshina OJSC
- Mozyrsol OJSC
- Belaruskaliy OJSC
- Mozyr oil refinery OJSC
- Mogilevkhimvolokno OJSC
- Svetlogorsk pulp-and-cardboard mill OJSC
- SE "Minsk Metro"
- Polotsk-Steklovolokno OJSC



- Naftan OJSC
- Minsk Automobile Plant OJSC
- Belarusian Metallurgical Plant OJSC
- Minsk Tractor Plant OJSC
- SE "Belarusian Railways"
- SE "Management Company of Belarusian Cement Company" Holding Company

AUTOMATION AND DISPATCHING

Volna offers a full cycle of works on automation of units, processes and control systems both at industrial enterprises and civil objects, starting from pre-project surveys and audit and finishing with equipment of control rooms and workplaces of process operators.

RANGE OF SERVICES:

Audit of industrial facilities and equipment

Development of technical, technological and design and estimate documentation

Manufacture of equipment for documentation of facilities

Development of scada systems software

Installation, commissioning, personnel training

Technical support and maintenance

Warranty and post-warranty repairs

Spare parts supply





COMPETENCIES:

- Product compliance with technical regulations of the Customs Union 004/2011 "On the safety of low-voltage equipment" and 020/2011 "Electromagnetic compatibility of technical means"
- Certificate of own production for low-voltage complete distribution and control devices, including those with programmable logic controller with memory (PLC RU)
- Special permit (license) of Gospromnadzor of the Ministry of Emergency Situations of the Republic of Belarus for design (construction), installation, maintenance and adjustment of technical devices used at hazardous production facilities where permanently installed hoisting mechanisms (electrical equipment of overhead, gantry and tower cranes) are used
- The developed system of dispatch control and management of industrial facilities
- Service center in the Republic of Belarus for warranty and post-warranty maintenance of Optimus Drive, Delta Electronics products and control cabinets of own production

ADVANTAGES:



Remote real-time process control, monitoring and documentation anywhere in the world

Customized selection of monitored system parameters depending on customer needs

Prompt response and notification in case of critical changes in system parameters reduction of accidents by 5-7 times

Planning and distribution of utilization of operating equipment - increase of equipment service life by 1.5

Optimization of the number of on-duty personnel and the number of trips to emergencies Optimization of costs by 10-15%

Maintaining an event log and report archive





HOUSING AND UTILITIES

- Control systems for pumps and pump stations _____
- Control systems for deferrization stations _____
- Control systems for wastewater treatment plants, sewerage systems _____
- Ventilation control systems _____
- Control systems for group and individual metering of utility services _____

ENGINEERING:

- Control systems for machines, conveyors _____
- Control systems for hoisting equipment _____
- Control systems for industrial furnaces _____
- Control systems for shredders _____
- Control systems for autoclaves _____
- Control systems for press _____
- Control systems for injection molding machines _____

MINING INDUSTRY:

- Control systems for conveyors, augers _____
- Control systems for screens, crushers _____
- Control systems for compressors _____

FUEL AND ENERGY COMPLEX:

- Control systems for disconnectors _____
- Control systems for cooling towers _____
- Control systems for boilers _____
- Monitoring systems for process equipment _____

PETROCHEMICAL INDUSTRY:

- Control systems for extrusion lines _____
- Control systems for dysmembranes _____
- Control systems for dissolvers _____
- Control systems for drum vacuum filters _____

EQUIPMENT SUPPLY

Production and Trade Unitary Enterprise "Tehinvert" is a subsidiary organization of CJSC "VOLNA" that has been working in the market of electrical equipment and industrial automation for more than five years and is an **official partner** of such well-known companies as: OPTIMUS DRIVE, DELTA ELECTRONICS, WEG, WATT DRIVE, FENIXTA



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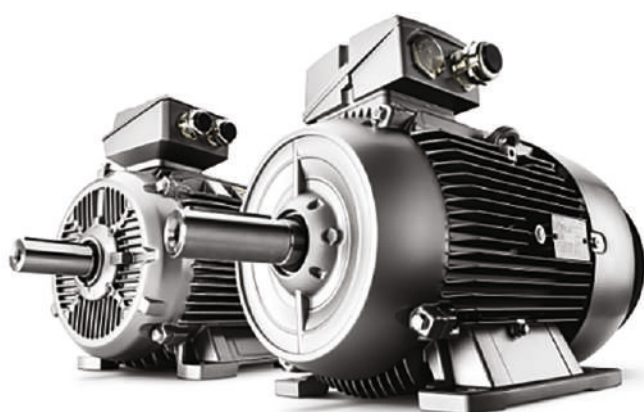


COMPLETE PACKAGE FROM
DESIGN TO DELIVERY
AND SERVICE

CONSULTATION AND SELECTION
OF NECESSARY (SIMILAR)
EQUIPMENT

LARGE WAREHOUSE WITH
ASSORTMENT IN STOCK

A SYSTEM OF LOGISTICS, TECHNICAL
AND TECHNOLOGICAL MUTUAL
ASSISTANCE HAS BEEN DEVELOPED



SIEMENS

СЗЭМО

OPTIMUS
DRIVE

ГРУППА КОМПАНИЙ
ЭЛЕКТРОМ



ELDIN

DELTA

ПОЛЕСЬЕЭЛЕКТРОМАШ



COMPANY TEHINVERT SUPPLIES:

AUTOMATION EQUIPMENT FOR OPTIMUS DRIVE, DELTA ELECTRONICS:

FREQUENCY CONVERTERS	SERVO DRIVES	PROGRAMMABLE LOGIC CONTROLLERS (PLCS)
POWER SUPPLY UNITS	CNC SYSTEMS	OPERATOR PANELS
SOFT STARTERS	LINE AND MOTOR CHOKES	FILTERS

ELECTRIC MOTORS OF GOST-STANDARD MANUFACTURERS:

- Mogilevliftmash _____
- Polesyeelektromash _____
- ELDIN _____
- Elcom _____
- SZEMO _____

ELECTRIC MOTORS OF DIN-STANDARD MANUFACTURERS:

- SIEMENS _____
- WEG _____
- Elcom _____
- SZEMO _____