Company presentation
Company Profile
Tradition · Innovation · Quality

• Established in 1950 with more than 60 years of experience in manufacturing and rehabilitation

• Joint Stock Company, listed on BSE Sofia - member of Industrial Holding Bulgaria Group

• Founder of the electrical machinery manufacturing industry in Bulgaria

• The largest manufacturer of rotating electrical machines in the region

• More than 500,000 electrical motors and hydro generators are manufactured

• Hydro generators made by IHB Electric operate in more than 200 HPP on 5 continents
Products and services
The largest manufacturer of rotating electrical machines in the region

Manufacturing of Hydro Generators

Hydro generators from 100 kVA up to 235 MVA, based on classical, repeatedly verified in production design and operation schemes and the latest development in technology.

Manufacturing of Electric Motors

• Wide range of asynchronous low, medium and high voltage squirrel cage electric motors.
• Asynchronous and synchronous slip – ring special purpose motors

Manufacturing of Active parts

Producing of active parts thanks to own VPI line, HVP line, automatic coil-winding machine (Mication Co.), automatic stamping and varnishing line, laser-cutting machine TRUMPF.

Rehabilitation and Modernization

Rehabilitated by us rotating electrical machines are distinguished by long operational life, high quality, accompanied by increased energy efficiency.
We have three different design departments with extensive experience in designing of synchronous and asynchronous rotating electrical machines.

Whether it’s pumps, compressors, ball mills, movers, fans, blowers and belt conveyors or special applications, our motors and hydro generators are specifically designed to meet our high standards and to satisfy customers needs.

Our machines are distinguished with long operational life, outstanding performance and reliability.
The Chaira Pumped Storage Hydro Power Plant (Chaira PSHPP) was built in Rila mountains. Chaira has generating capacity of 864 MW and a pumping capacity of 788 MW, and is thus the largest pumped-storage plant in southeast Europe.

The motor-generators are manufactured in IHB Electric and put into operation in 1999.

- Rated power output – 235 MVA
- Rated voltage Un = 19 kV
- Power factor cosφ = 0.85
- Frequency f = 50 Hz
- Rated speed n = 600 min-1

Based on the design and manufactured under supervision of Toshiba.
Produced and supplied Hydro generators in Bulgaria

Some of the completed projects during the last 5 years

HG 5 for HPP Studen Kladenets
one hydro generator

- Rated power output $S_n = 23$ MVA
- Rated voltage $U_n = 10.5$ kV
- Power factor $\cos \phi = 0.85$
- Frequency $f = 50$ Hz
- Rated speed $n = 300$ min$^{-1}$

Based on the design and manufactured for

HPP Tsankov Kamuk
two hydro generators

- Rated power output $S_n = 50$ MVA
- Rated voltage $U_n = 10.5$ kV
- Power factor $\cos \phi = 0.85$
- Frequency $f = 50$ Hz
- Rated speed $n = 428.6$ min$^{-1}$

Based on the design and manufactured for

HPP Yahinovo
one hydro generator

- Rated power output $S_n = 7.66$ MVA
- Rated voltage $U_n = 6.3$ kV
- Power factor $\cos \phi = 0.90$
- Frequency $f = 50$ Hz
- Rated speed $n = 750$ min$^{-1}$

Produced and supplied Hydro generators in Bulgaria

Some of the completed projects during the last 5 years
Produced and supplied Hydro generators worldwide
6 months · 3 continents · 3 projects

HPP Bugoye - Uganda
two hydro generators
- Rated power output $S_n = 8.4$ MVA
- Rated voltage $U_n = 6.6$ kV
- Power factor $\cos \phi = 0.85$
- Frequency $f = 50$ Hz
- Rated speed $n = 600$ min$^{-1}$

HPP Konal - India
two hydro generators
- Rated power output $S_n = 6.111$ MVA
- Rated voltage $U_n = 6.3$ kV
- Power factor $\cos \phi = 0.85$
- Frequency $f = 50$ Hz
- Rated speed $n = 600$ min$^{-1}$

HPP Upper Clowhom - Canada
one hydro generator
- Rated power output $S_n = 12.25$ MVA
- Rated voltage $U_n = 13.8$ kV
- Power factor $\cos \phi = 0.90$
- Frequency $f = 60$ Hz
- Rated speed $n = 300$ min$^{-1}$
Supplied hydro generators worldwide
During the past few years IHB Electric JSC designed, manufactured, delivered and successfully commissioned hydro generators for more than 50 hydro power plant projects.
Rehabilitation and modernization
Our production capacity and technologies meet the latest world achievements in our manufacturing field

Besides manufacturing of new electric rotating equipment, IHB Electric JSC does the following rehabilitation services of existing electrical machines:

• Repair and refurbishment of stator and rotor windings
• Replacement or partial repair of stator core
• Replacement of bearings and bearing assembly
• Preliminary and final machining of large-scale details, such as stator frames, shafts etc.
• Replacement of the windings at site, providing high experienced technicians and supervisors
• The latest modern methods of quality assurance control during manufacturing process, on-site installation, assembly and commissioning procedures.
Production and technical capacity
Our production capacity and technologies meet the latest world achievements in our manufacturing field

- Hydro vacuum impregnation equipment (resin-rich technology)
- Complete line for **Global VPI** Insulation system
- Complete line for production of pole coils—made by **MICAMATION**
- Fully automatic stamping, varnishing, baking and cooling continuous production line for rotor and stator segments—**TOSHIBA** technology
- Semi-automatic insulation tape-applying line for stator windings and bars production—**RIDGEWAY**;
- Gas-cutting machine, computer controlled—“**Zinser**”
- Horizontal lathes up to 2000x10000 mm
- Vertical lathes up to Ø = 8000 mm
- Horizontal drills with rotating platforms up to 4 m and mandrel diameter up to 200 mm
- Flat, round and profile grinding machines
- Laser-cutting machine—**TRUMPF**
- Lifting devices—2,5 / 5 / 12,5 / 25 / 32 / 50 и 160 t
- Profiled equipment and apparatuses for high- and low-voltage tests—“**TOSHIBA**”
- Kenotrons for increased DC voltage
- Mobile device for induction brazing—“**MINAC**”
- Fully equipped test room up to 110 kV
Production and technical capacity

Automatic line for rotor coil manufacturing – Micamation
2000 tons 6-column oil hydraulic press – KURIMOTO HR-2000

- Pressing capacity: 2000 tons
- Slide area: 4000 x 1200 mm
- Allowable load weight: 5000 kg

Internal length – 600–3000 mm
Internal width – 150–800 mm
Height – up to 345 mm
Rim thickness – 3–5 mm
Rim width – 25–120 mm
Production and technical capacity

Automatic continuous production line for varnishing, baking and cooling of rotor and stator segments – TOSHIBA technology

Application: bilateral varnish coating of rotor and stator segments with controlled thickness of varnish layer of 4 to 2 µm.
Production and technical capacity
400-ton automatic press line - FUKUI

Suitable for precise cutting, stamping, forging, blanking and other activities

Capacity: 400 tons
Die height: 450 mm
Slide area: 1500 x 1500 mm
Electronic control
Line includes:
• Uncoiling device
• Straightening device
• Feeding device
• Rich variety of dies
• Scrap removal system
• Auxiliary equipment
Service and Support
Our technical team is never more than a phone call away

- After sales service and support includes installation, supervision and commissioning
- Preventive maintenance and monitoring – service contract for extended warranty
- Emergency assistance and repair – 24 hour 7 days a week
- We also offer renewal and spare parts
- Technical support for all motors and generators in solving technical problems
- Dynamic balance
- Precision laser-cutting of steel parts with maximum 1500 x 3000 mm
- Machining of large-scale details
- Measurement and alignment of corpus-prismatic parts with laser tracker
The electric motors of IHB Electric JSC have wide range of use in the steel, chemical, hydro, mining, energy, food-processing and other industries.

Our machines are mainly used for driving of mills, compressors, irrigation water pumps, gates, driving blowers and belt conveyors and others. The reliability and quality of our production make it desirable and applicable also for driving water-cooling pumps in Nuclear Power Plants, where the reliable operation is crucial.

IHB Electric JSC motors are produced to the highest quality standards. This makes them the best choice for every standard application as well as applications under the most severe environment.
Low-voltage electric motors

Common industrial usage. Different forms of execution and supply of voltage.

Series M
Power rating: 45 – 315 kW
Voltage: 400 V
Number of poles: 2 – 10
Insulation class: F/H
Protection: IP 23
Frame size: 250 – 315 mm
Type of cooling: C 01
Energy efficiency: IE 1

Series M0
Power rating: 18.5 – 315 kW
Voltage: 400 V
Number of poles: 2 – 10
Insulation class: F/H
Protection: IP 44 - 55
Frame size: 200 – 355 mm
Type of cooling: IC 411
Energy efficiency: IE 1

Series MOM
Power rating: 15 – 132 kW
Voltage: 400 V
Number of poles: 2 – 8
Insulation class: F/H
Protection: IP 55
Frame size: 200 – 315 mm
Type of cooling: IC 411
Energy efficiency: IE 1

Series AD
Power rating: 4 – 200 kW
Voltage: 400 V
Number of poles: 2 – 8
Insulation class: F/H
Protection: IP 55
Frame size: 132 – 315 mm
Type of cooling: IC 411
Energy efficiency: IE 2
High-voltage and special purpose electric motors

Our machines are specially designed to meet our client’s particular needs

Series A / VA
- Power rating: 200 – 1 000 kW
- Voltage: 6 000 V
- Number of poles: 2 – 6
- Insulation class: F/H
- Protection: IP 23
- Frame size: 355 – 450 mm
- Type of cooling: IC 01

Series A O / VA O
- Power rating: 200 – 1 500 kW
- Voltage: up to 6 000 V
- Number of poles: 2 – 12
- Insulation class: F/H
- Protection: IP 55
- Frame size: 355 – 630 mm
- Type of cooling: IC 511; IC 611

Series A O N / VA O N
- Power rating: 50 – 5 000 kW
- Voltage: up to 10 000 V
- Number of poles: 2 – 16
- Insulation class: F/H
- Protection: IP 55
- Frame size: 315 – 1 000 mm
- Type of cooling: IC 511; IC 611; IC 81 W

Special motors - MON, MONS, SD, VSD, AD, VAD
- Power rating: up to – 10 000 kW
- Voltage: up to 13 800 V
- Number of poles: 2 – 36
- Insulation class: F/H
- Protection: IP 23 / IP 54 / IP 55
- Frame size: 315 – 1 000 mm
- Type of cooling: IC 01 (11,21,31); IC 411; IC 511; IC 611; IC 81 W
Produced and supplied electric motors
Some of our recent projects for delivery of electric motors

<table>
<thead>
<tr>
<th>Type</th>
<th>VAON 118/65-14</th>
<th>AOR 355 X-4</th>
<th>AO 825 X-12 DK</th>
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<tr>
<td>Rated power</td>
<td>630 kW</td>
<td>250 kW</td>
<td>660 kW</td>
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<tr>
<td>Rated voltage</td>
<td>6000 V</td>
<td>6000 V</td>
<td>6000 V</td>
</tr>
<tr>
<td>Cooling type</td>
<td>IC 611</td>
<td>IC 511</td>
<td>IC 511</td>
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<tr>
<td>Rated speed</td>
<td>424 min⁻¹</td>
<td>1500 min⁻¹</td>
<td>485 min⁻¹</td>
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<tr>
<td>Protection</td>
<td>IP 55</td>
<td>IP 54</td>
<td>IP 54</td>
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</tbody>
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Quality

IHB Electric JSC is certified according to the ISO Standards
41 Rojen Blvd, Sofia 1271, Bulgaria
T.: +359 2 936 0753
F.: +359 2 936 0347
E.: office@ihbelectric.com

www.ihbelectric.com