A common European quality system and Engineering Team at Your service

Two continents, two headquarters, service centers all across the World

From West Europe to West Africa
Energizing the future from A to West

Energizing the future for us means infusing passion in what we do to build relationships of trust and respect with all our clients.
Dear Friends,

It is a pleasure to introduce what for me has become a major life project, of which I’m very proud:

Westrafo, my Company, is the result of the work and commitment of 50 years and two generations in the electro-mechanical sector.

The origins of Westrafo can be traced back to 1967, when my father, Mr. Antonio Cracco, a young and inexperienced engineer, started working in an important Italian transformer company as Technical Designer, soon becoming Technical Manager.

In a span of few years, his competence and reliability earned him the post of Technical Director and then Managing Director in important companies of the electro-technical sector, including multinationals and foreign companies.

In his career, he has designed and coordinated the production of transformers up to the power of 63 MVA: products designed by his teams have undergone and passed type and special tests by accredited bureaus and are certified to be top quality transformers.

A know-how passed from my father to me in years of cooperation, that evolved into the creation of a project unifying great technical skill deriving from experience with advanced technology and new efficiency standards, to produce high quality and highly reliable transformers.

Today, Westrafo is a multinational company with an italian and a ghanese headquarter, manufacturing a great range of transformers in the respect of high quality standards and of all the people working with us.

Together, we paved the road to our success with great collaborators and ambitious projects, devoted to our clients and always attentive to the environmental impact of our production.

We’re ready for new challenges and would be honoured to have you on our side as customers.

We will be happy to let you visit our production facilities and test first hand the efficiency of our products.

Westrafo. Energizing the future from “A” to West.

Alberto Cracco
Managing Director - Westrafo Srl
WESTRAFO SRL
ITALIA
Halfway between the Garda Lake and the city of Venice, our plant is precisely located in Chiampo, and can be visited by all the customers who want to know more about our production processes and the quality standards of the company.

The Italian production facility has been designed to achieve top results and to maximize production capacity by creating a flexible structure that can be managed according to production schedule and type of products. The facility is the siege for Westrafo’s administrative Headquarters and the main Italian production branch, complete with assembly, treatment, testing and warehousing areas. The headquarter has been customized with the presence of a high capacity crane and a technologically advanced Testing Room, to perform routine and type tests. Here are also the departments of Engineering and Purchasing of Westrafo Ghana LTD, ensuring a European quality to competitive African-made products, unifying all Westrafo’s products under a common quality policy.
Ghana is a multicultural nation, and its growing economic prosperity and democratic political system has made it a regional power in West Africa, especially for its political stability, the richness of its resources and its vibrant private sector and strong civil society.

In this wonderful country, combining a great nature and wildlife with very good commercial trades and communication channels, Westrafo Ghana was officially established in 2014. The only company in West Africa to produce its transformers according to European standards, Westrafo Ghana LTD was created to compete in Africa with local market prices, offering highly reliable products and European standards, manufacturing IEC transformers and selecting carefully its raw materials. The product range spans between 25 KVA and 2000 KVA, offering Cl. 12, 24 and 36 KV standard distribution transformers. The Engineering and purchasing of Westrafo Ghana LTD are carried on in our European siege in Italy, coordinating the african production. With an internal winding department endowed with new European low voltage and medium voltage winding machines, a complete set of machines for drying treatments, a carpentry and an automatic testing room, the productive process can be completed in our production facility, allowing a better control of the quality and production process. Westrafo Ghana LTD is located on the main Accra-Aflao Road, in the Central University College area in Prampram near Accra.
Westrafo Ghana and Westrafo Italy are united by a common quality system, involving the procurement process, the monitoring of suppliers and supply of material, and especially every stage of production and management in the production facilities.

Westrafo SRL is certified ISO9001:2008 and it is with this same high standard that procurement and engineering are carried on for Westrafo Ghana LTD. Every process in Westrafo SLR and Westrafo Ghana is coded through quality procedures ensuring the traceability and transparency of procurement and manufacture. Every transformer is carefully checked by our quality control department and tested in our testing rooms: in case of third party certification our tests are made in CESI.

One of our distribution transformers during short circuit test in CESI
The strength of Westrafo lies in the quality of its transformers. To get the most for our products we rely on first class equipment installed in our production facility and those of our supply chain partners.

**DESIGN** Westrafo engineers design each single part of the transformers using our internal simulation software, and the mechanical development is executed using a 3D CAD system: all materials are ordered by Westrafo Purchasing team from valuable and qualified approved suppliers.

**CORES** Both for oil transformers and for cast resin transformers Westrafo orders completely assembled cores. All of them are produced with the innovative step-lap construction technology and can be customized according to circular or oval design. The parts are tested before arriving in our production facility to avoid possible misfunctionings during the testing phase.

**WINDINGS** The technology used to manufacture our windings is supported by different winding machines available such as:
- Vertical and horizontal power winding machines (CTC and helical type)
- Winding machines for copper and aluminium
- Foil strip winding machines (copper and aluminium)
- Winding machines for enameled wire

The assembly of Westrafo windings is guaranteed to be compliant with design specifications thanks to top quality assembly equipment:
- Hydraulic press for hot/cold stabilization of power windings
- Manual press for for hot/cold stabilization of distribution windings
- Drying gas oven

**TREATMENTS** Westrafo’s transformers are treated in two ways depending on final use and power:
- Drying oven plus treatment in pressurized vacuum room
- Double step treatment in pressurized and drying room, allowing a significant saving of time and a reduction of costs.

**TEST ROOMS** Each transformer in Westrafo is tested according to IEC 60076 standard in our automatic testing room. Here, after the multiple checks and tests during the production process, the transformers pass the final test before the delivery to the final customer. Westrafo can also perform type and special tests according to customer needs. Tests according to other norms (AINESSI, etc.) are possible and usually discussed with the customer time by time.
Standard high quality features for a uniquely customized product

Westrafo designs power transformers with a maximum voltage of 145 KV and power up to 40 MVA. We are specialized in Medium and High Voltage Power Transformers, highly customized in order to satisfy the specific needs of EPCs, Industries, Power Companies, Municipalities etc, providing transformers for Utilities, Step-up unit generators, Step-down Substations, Network line interconnections, Auto transformers and many more applications. Each transformer is personalized according to the specifications provided by the customer.

- Maximum voltage of 145 KV and power up to 40 MVA.
- Only European suppliers
- Standard C3 (or higher) painting cycle to ensure maximum protection
- Only PCB-free oil
- With or without on load tap charger
- Customized according to customer’s specifications

- Power should never be without control. That’s why Westrafo’s transformers come with a full range of accessories selected from European suppliers: Each power transformer is endowed with a set of high quality protection, monitoring and safety devices supplied by certified European companies.
- Our engineering team works constantly to propose tailored solutions taking into account the use of the transformer, the environment in which it is installed and the international safety standards.
Flexible power for every application

In environments where power is the major resource for manufacture, like in Furnaces, Refineries and Steel Factories, a conversion transformer is needed to supply the necessary power starting from low voltage levels. Our converter transformers are designed for both continuous and interrupted load and are tailored to the specific needs of each single drive.

- Both hermetic or conservator type, water or air cooling, mineral oil or epoxy resin insulation.
- The windings forming the core of the converter transformer are reinforced to withstand the stress caused by the high temperatures.

- Converter Transformers for large drive applications are usually combined with a thyristor rectifier for variable speed drive systems.
- The converter transformers can be customized reducing or increasing the number of switches and enhancing the endurance to stress and high temperatures.
**We took excellence and made it our standard**

We chose to design and produce distribution transformers with high quality standard features, not only complying with IEC60076-1 Norms, but also enhancing the durability and the efficiency of the transformer. The use of the latest manufacturing technologies such as step-lap cores and oval technology guarantees the maximization of the power/losses rate. The oil filling the transformers is certified IEC and every transformer is endowed with a certification of PCB and PCT-free oil.

- Standard C3M Painting Cycle
- Step-lap cores
- Oval technology for Windings
- Personalization of Power rate
- Standard warranty extended from 24 to 36 Months
- Available in full ranges from 50 to 3150 KVA and for the voltage Classes up to 36kV.

At request, distribution transformers can be customized with the personalization of power rate, primary and secondary Voltage, Insulation class, PEI 2 or TIER 2 values, special accessories or set ups for special applications.
CAST RESIN TRANSFORMERS

Power and safety, resin inglobated

Cast resin transformers are a valid alternative to oil immersed transformers in the case of installation in proximity of people and in indoor environments because of their greater fire resistance and environmental safety, as the lack of cooling liquids eliminates the possibility of oil leaks. Used in a wide range of infrastructures and commercial or residential developments, our distribution MV Windings are inglobated in epoxy resin and respond to different customer needs.

- Available in full ranges of from 50 to 3150 KVA for the Classes up to 36 KV.
- Standard insulation system: F Degree
- Standard environmental classes C2-E2-F1
- High Quality standard features
- Integrated safety Device included
- Customized IP Protection Boxes

From year 2014, our cast resin transformers for the European market are compliant with the EU548/2014 standard on load and no load losses. The standard insulation system used is 155 degree Celsius Class “F” (International Electro technical Commission), and the standard environmental classes are C2-E2-F1, as stated by the IEC norms 60076-11 and EN 50541-1.
GREEN ENERGY TRANSFORMERS

As green as Westrafo

Westrafo designs transformers to be used in green energy plants such as wind power plants and solar plants, where the output of the generating set is controlled by inverter applications, or in hydroelectric, biogas or biomass plants where an engine is usually controlling the output of the plant.

Westrafo green energy solar and wind transformers can be designed with low voltage values starting from few volts up to 900 V for low voltage applications with power up to 10 MVA. They are also available in higher temperature class according to IEC 60076-14 standard.

- Few volts up to 900 V for low voltage applications with power up to 10 MVA.
- Highly customizable
- Eco-efficient and environmentally friendly
- Standard C3 or higher painting cycle

Our transformers are highly customizable according to the type of inverter used, the Nominal Power and Voltage needed and the kind of operational environment, all in the respect of high energy efficiency and low power losses.
Solid safety

Westrafo designs earthing transformers (standard reactors) to provide a neutral connection for the earthing of a three phase transformer connected to the power system. The earthing transformers can be equipped with auxiliary load. Core reactors and other special configurations are available on request: our Engineering Dept. can design the best solution according to your specifications.

- Thermal protection
- Control protection
- Winding manufactured with a zig-zag configuration
- Monitoring system
- Protective box

This particular transformer creates a neutral point for a network and its winding is usually manufactured with a zig-zag configuration. Westrafo earthing transformers are designed respecting international standards and customer specifications, and are endowed with high quality standard features such as thermal and control protection, monitoring systems and customized protective boxes.
**SERVICES**

Westrafo offers integrated solutions to improve your purchase and your consulting experience tailoring a complete range of services to your needs.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Packing and Shipping</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Customer assistance during commissioning</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Spare parts supply</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Troubleshooting and reparation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Substitution of old transformers</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Transformer rental</strong></td>
<td></td>
</tr>
</tbody>
</table>
DON’T JUMP IN THE DARK
DISCOVER WESTRAFO’S QUALITY POLICY

TRANSPARENCY AT ALL COSTS

Westrafo is born to be your trustworthy ally when it comes to transformers: the main goal of our Company is to deliver high quality products, never compromising on transparency and honesty.

At Westrafo:

You buy what you expect
On test report and on certificates are faithfully reported the characteristics of the transformers, both in calculation and in test phase. No difference between technical datasheets and test report values!

Your needs matter to us
Every time you come to us with a project, we design transformers fitting your needs and offer you the best solutions to solve your problems, without compromise and putting your requirements first. If you get what you need we win together with you!