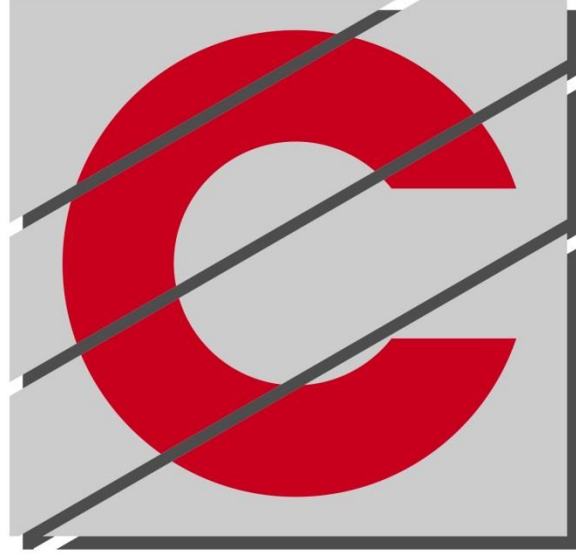


Comel



since 1990



COMEL

Since a long period of successful production Minel Transformers, as a well known producer of power transformers, entered a period of restructuring. After this transit period Minel Transformers and Comel d.o.o. started cooperation in 2015. with the same goal, to preserve Minel Transformers brand and it's main product-power transformer.



Comel



since 1990

Minel Transformers begin producing transformers since 1948 under license of Westing House, then our designers ourselves developed their own design. First unit, was made for the railways, and that unit, until now working in the traction substation.

The main product program, factory Comel in Ripanj, is oil transformers:

1. Production of the new power transformer up to 420 kV

- **Power transformers for the distribution network**
- **Middle voltage, High and auto-transformers for network connection**
- **Step-Up (generator) transformers,**
- **Special transformers with a special design for industrial purposes (furnance, rectifiers, transformers for railways, etc.).**
- **Different types of reactors**

2. Repair of transformers witch were in operation

- **Diagnostics (definition) of failure**
- **Repair and upgrading on transformers in operation**
- **Technicals solution**
- **All kinds of tests**

POWER TRANSFORMERS FOR DISTRIBUTION NETWORK



Comel produce power transformers for the distribution network. The voltage level power transformers is up to 110 kV, but in most cases voltage reaches 35 kV.

Comel have standard solution for power transformers up to 12.5 MVA, but, by necessity and agreement with the end users, we are able to produce power transformers with requested characteristics up to 40 MVA and level voltage 35 kV.

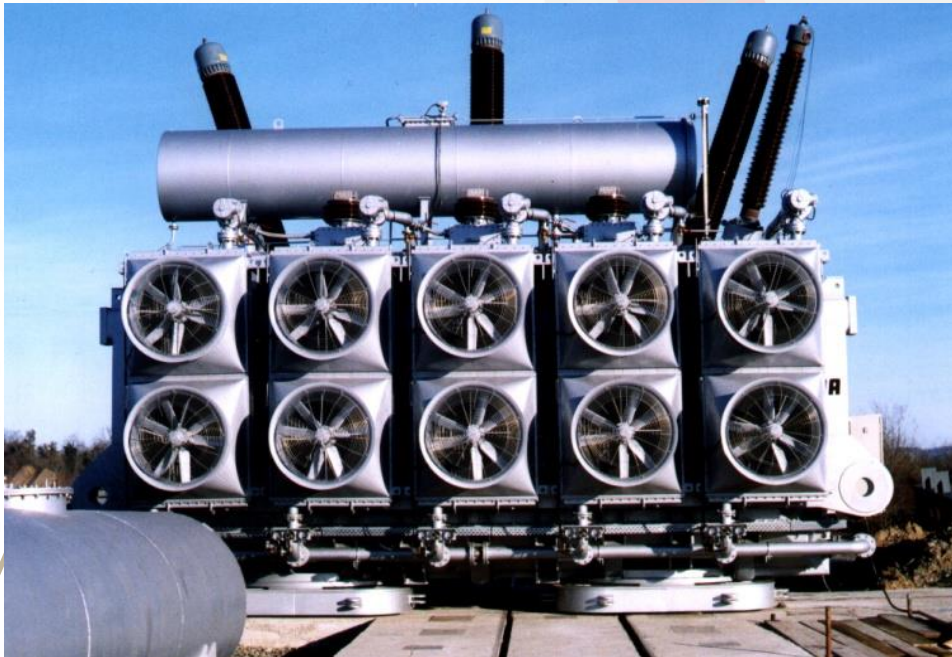
POWER TRANSFORMERS VOLTAGE LEVEL 110 kV

Comel produce power transformers with 110 kV voltage level. These transformers are most frequently in use in power systems, and our designers are developpe new type power transformers with improving characteristic for the needed of end users.



POWER TRANSFORMERS VOLTAGE LEVEL 242-420 kV

Power transformers high voltage level up to 242 kV and 420 kV



Power transformers rated power 400 MVA



Power transformers 90 MVA,
city Harare - Zimbabwe

AUTOTRANSFORMERS

Comel, have huge experience in the design of autotransformer, as well as in their production, testing and commissioning work.



**Power transformers rated power 150 MVA,
Power Station – Belgrade 8 - Jajinci**



**Step-Up transformers, rated power 400MVA
Power Plant - KOLUBARA B**

SPECIAL TYPE OF POWER TRANSFORMERS

Comel produce transformers with special designs, and special purpose, all in according to the request of customers. The factory itself produce power transformers for: Railway, factory for the production of aluminum, factory for the production of iron and so on. Our factory is ready and able to produce various transformers for special purpose only.



OVERHAUL POWER TRANSFORMERS

Comel pay particular attention to the repair of transformers and the providing of services to our clients. Besides increasing rated power of the transformers and improvement performance, our factory is engaged in:

(testing, removal failure without open cover of transformer, inspect On-load tap changer, drying of the transformer, commission, the development of production documentation, maintenance of active parts, relay protection....)

Comel can repair power transformers of any production

- **Power Transformer 725 MVA, 400 kV, “CEM” (manufacturing coils)**
- **Power Transformer 240 MVA, 230 kV, “Oerlikon” (manufacturer of magnetic circuit and a new development of windings)**
- **Power Transformer 360 MVA, 220 kV, “ŠKODA” (manufacturing coils)**
- **Power Transformer 360 MVA, 220 kV, “Končar” (manufacturing coils)**
- **Auto transformer 300 MVA, 400 kV, type 3ABZ (4 pieces - making windings with improved performance and increased power.**
- **Auto transformer 250 MVA, 220 kV, “ELTA” (manufacturing coils)**
- **Power Transformer 380 MVA, 400 kV, “ASEA” (installation of a spare coil and testing on the site)**

LABORATORY FOR POWER TRANSFORMERS



Comel have a very good laboratory with skilled workers who can do testing of any power transformers and the site, and at the factory.



- The impact generator in 2.400.000, 64 kJ
- Cascade transformer 1.000.000, 50 Hz, 1 MVA
- High-voltage transformer 300 kV, 50 Hz, 0.3 MVA
- Three-phase motor generator of 450 KVA, 50 Hz
- Three-phase motor generator of 600 KVA, 200 Hz for testing the induced voltage
- Condensing Group 32 MVar to experiment on heating
- Equipment for measuring partial discharge
- Equipment and tools necessary to conduct all types of required tests

The list of standard equipment:

- **Marshaling kiosk and signalization**
- **“Buhole” relay with two contacts**
- **Gas relay switch adjusting**
- **Oil level indicator**
- **Dehydration with silicone gel**
- **Safety valve**
- **Plate tech. characteristic**
- **The four pockets for thermometers**
- **Oil drain valve**
- **Two connections for vacuum and filtering**
- **Thermostats to control the cooling system**
- **Indicator of the tap-changer switch**
- **Sparks gap for bushing**
- **Two connections for grounding**
- **Three tap for sampling oil with different levels of**
- **Two foot pedals for mounting transformer**
- **Thermal Imaging for installation on the transformer**
- **The current transformers for protection of tank**
- **Current transformers for protection and measurement**
- **Automatic valve to prevent oil leakage from the conservative**
- **Contact thermometer for temperature indication**



REFERENCES



ЈАВНО ПРЕДУЗЕЋЕ
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