

Description of the installation Steam Phase Drying Autoclave

It is an installation for drying active parts of power electrical transformers.

The principle of drying consists in warming and submission to the active part to a very low absolute pressure (vacuum).

The calorific energy is obtained from combustion of natural gas in a burner that raises the temperature of oil contained in a close circuit.

This oil warms the chamber of the autoclave and in other circuit, it warms the fluid that is pulverized on the transformer active part, warming and impregnating all its elements. The fluid pulverized is a special kerosene with a very high point of combustion and point of inflammation.

This kerosene is warmed in a heat exchanger and then is pulverized inside the autoclave on the transformer active part. The kerosene transmits heat to the transformer active part inside the autoclave. The kerosene has high capacity of penetration, it impregnates deeply the insulating parts of the bobbins and of the rest of the active part.

Later a cycle of evaporation begins by means of increasing the level of vacuum. The kerosene drags towards outdoor the water molecules and both (kerosene and water) evaporate.

Finally there takes place a high-level cycle of vacuum for drying the active part up to levels lower than 0,5 % of dampness.

The steams of kerosene and water are condensed and these fluids separate in a decantation devise. The water is sent to a dirty water tank which is sending to a authorized recycler. The purified kerosene remains ready in the storage tank for use in other drying cycle.

There is a chimney on the air steams and kerosene condenser. This condenser is on the vessel of the vacuum pumps that contains kerosene.

The vessel of kerosene of the vacuum pumps receives the steams of extraction from the autoclave. The kerosene contained in the above mentioned steams becomes condensed. The air rises up through the condenser, which cleans the air and finally, ascends through the chimney up to the carbon active filter, placed in the roof.

The habitual temperatures of work for the warm kerosene can be of 120°C.