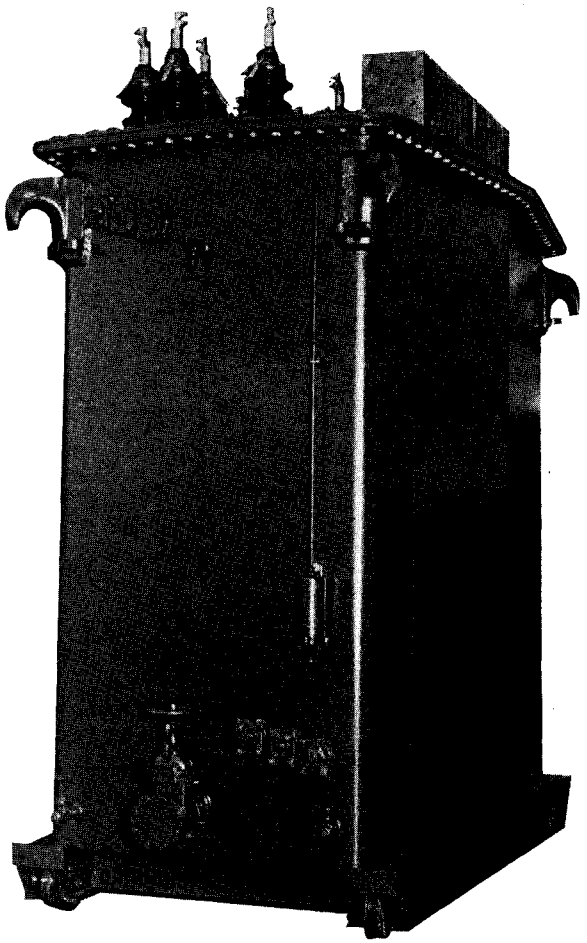
IL-3164

Westinghouse

Oil Immersed Furnace Transformer

INSTRUCTION BOOK



WATER COOLED FURNACE TRANSFORMER

Westinghouse Electric & Manufacturing Company
Sharon, Pa.

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Oil Immersed Furnace Transformer

INSTRUCTIONS

Furnace transformers, in general, are subjected to a fluctuating load cycle which produces increased breathing, that is, increased passage of air in and out of the tank as the temperature and volume of the oil changes. This breathing will proceed freely because the form of the high current bars brought out through the cover does not permit a gas tight seal to be obtained. As a result there is a greater tendency toward sludging and contamination of the oil. For this reason more frequent examination of the oil should be made and, when necessary, the oil should be purified.

The low voltage leads of the transformer are usually brought through the cover as flat copper bus bars. The opening in the cover around the bars is closed by an assembly of fullerboard and asbestos rope packing finished externally with a sealing compound. This compound should be examined from time to time and if it is not in good condition it should be repaired. This is especially important if there is any possibility of metallic particles or moisture reaching the cover because the transformer is located near or under parts of the building through which such things could enter.

Leads carrying the low voltage current from the transformer to the furnace should not parallel steel structures. They should be located far enough away from the transformer tank and other metallic parts to prevent excessive stray loss and heating in those parts. It is recommended that non-magnetic bolts and clamps be used in making bus structure connections.

Since the currents carried by the low voltage leads are normally large and vary widely, frequently approaching short circuit values, these leads should be exceptionally well braced to prevent distortion resulting in a short circuit or flashover between leads.

Where bolted connections are used in the low voltage lead structure, care should be taken to have the contact surfaces clean and the bolts tight. These connections should be frequently inspected and cleaned or tightened as necessary.

Metallic dust should not be allowed to collect on the high voltage bushings, low voltage connections or on the cover around or between the low voltage bars.