

## Shipment in Oil and Instructions for Unpacking

### INSTRUCTIONS

#### SHIPMENT

When transformers are shipped in oil they are usually shipped in their own tanks, but sometimes when other requirements make it desirable the transformer may be shipped in a special shipping tank.

Transformers with radiators are usually shipped in their own tank, but with some or all of the radiators removed. The radiator flanges on the tank are covered by blind flanges or by radiator valves and blind flanges. The detached radiators are always crated and shipped separately. Where radiator valves are used it is unnecessary to drain the oil from the tank to install the radiators.

On the larger transformers the bushings are always shipped separately. The openings in the cover or tank walls are covered with blind flanges for shipment. The bushings and all details such as thermometer, oil gauges, hot spot temperature equipment, Inertiaire or expansion tanks are always boxed separately and are to be mounted when the transformers are installed.

It is frequently necessary with large transformers to have a joint in the tank so that the top section may be removed for shipment. Either the regular cover or a special shipping cover is bolted on

the top of the lower section of the tank for shipment. If a special cover is used it is sometimes made with a box-like structure which makes room for terminal boards, etc., which extend up beyond the top of the lower section of the tank. If shipped in oil, this tank is usually filled until the oil extends up into this box.

**Care must be taken to lower the oil below the joint before removing this cover.**

Some of the bracing in a transformer is put on for shipment only. The transformer core is always tied securely to the tank wall in large transformers to take care of shocks received in shipment. If the transformer is removed from the tank for inspection during installation, it is unnecessary to replace these ties.

On shell form transformers vertical braces are placed against the stacked iron punchings to brace them for shipment. These vertical braces known as punching braces are required for shipment only and may be removed when installed. It is not essential that they be removed, but since they perform no useful function once the transformer is installed, they may be removed, if readily accessible during installation, and if there is no possibility of reshipment.

If a shell type transformer is shipped with the plane of the opening in the

tongue at right angles to the length of the car, it is usually necessary to place a wood block at each end of the opening in the tongue behind the coil support rods. Where these braces are used, it is recommended that they be removed during installation.

#### UNPACKING

When a transformer is shipped with oil, unpacking is a simple matter. The transformer is ready to be set in place when the crating or bracing is removed.

When shipped separate from the tank the transformer should not be unboxed until the case is in place ready to receive it. **It should not be opened up until the temperature of the transformer is the same as or higher than the air temperature.**

During the time that the boxed transformer is stored, it must be kept in a dry place and not allowed to stand where it is exposed to dampness or weather.

All boxes containing accessories must be stored carefully and thoroughly protected against moisture.

When the transformer is unpacked it should be examined carefully to ascertain whether it has been damaged in shipment and whether all parts are in place and in good condition.

**Westinghouse Electric & Manufacturing Company**

Sharon, Pa.

WESTINGHOUSE PRESS  
Printed in U.S.A.  
Reprinted (1-43)

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