

DESIGN OF THE EXPANSION CHAMBER ASSEMBLY

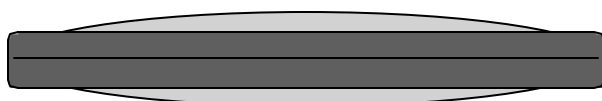
The Ritz oil-filled transformer designs are hermetically sealed units that incorporate an expansion bellows system to manage the oil expansion throughout the operating temperature range.

One or more diaphragm elements are connected in series with the interior of the transformer; the number of elements being dependent on the total oil volume. Each diaphragm element consist of two corrugated stainless steel half shells which are resistance welded together. The welded edges of the elements are essentially unstressed during expansion and contraction. Each expansion chamber is tested for leaks to ensure quality. The expansion chamber elements are securely clamped to prevent shifting. These supporting claw structures are made of non-aging materials and rigidly bolted to the upper cover plate of the transformer head housing.

The corrugated profile of the expansion chamber guarantees a uniform expansion throughout the operating temperature range. The expansion chamber offers almost pressure-free operation over a wide temperature range. The design allows for a pressure range of +3 to -3 PSI.

The diaphragm elements are connected by means of union fittings to the tubing system that connects the individual elements with the transformer oil chamber. The tubing connecting the expansion elements is gas welded into the rebounding or pressure plate. An upper plate with an O-ring gasket in the transformer head housing completes the sealing process.

The total oil expansion assembly is protected by an aluminum alloy metal cover. This cover is bolted to the upper cover plate of the head housing and is easily removed.



Expansion at maximum temperature.



Normal position at medium temperature



Shrinkage at minimum temperature