

PRESSURE RELIEF DEVICE

The mechanical self-resetting pressure relief device is used on transformers to protect the tank against excessive and dangerous pressures which may build up inside the transformer tank. When a predetermined pressure is exceeded, the force of the pressure build-up lifts the diaphragm and vents the tank. The pressure relief device is normally mounted on top of the transformer either on the main cover or on a manhole cover. It is occasionally used on associated liquid-filled compartments.

DESCRIPTION

The pressure relief device consists of a dome-shaped stainless steel diaphragm held in place by compression springs, suitable gaskets, a protective hood, and a lightweight plastic pin which gives visual indication that the unit has operated. See Fig. 1.

OPERATION

When the force of the pressure build-up within the tank against the stainless diaphragm in the pressure relief device exceeds the force of the compression springs, the diaphragm lifts slightly and gas is exhausted through the space between the diaphragm and the lower casting. The tank pressure then spreads over the entire diaphragm area, causing the device to open rapidly and remain open until the pressure within the tank falls well below the tripping pressure. Then the diaphragm reseats and seals the tank to prevent entrance of moisture or foreign material.

As the diaphragm rises during operation it lifts and brings into view a color-coded plastic pin located in the center of the cover. This indicates that the relief device has operated. This pin will remain visible until reset manually by being pushed down flush with the top of the pressure relief cover. The pin is yellow for oil-filled units and red for Pyranol[®] filled units.

The pressure at which the relief is set to operate is determined by the operating pressure of the transformer tank. The tank operating pressure is shown on the transformer nameplate and is also embossed on the relief device. Tanks operating up to 5 psi have reliefs set at approximately 8 psi, and 7.5 psi tanks have their reliefs set at approximately 11.5 psi.

GAS ABSORBERS AND VENT PIPES

If a Pyranol[®] filled transformer is located in a poorly ventilated indoor area, provisions should be made either to absorb or to carry off any discharged gases. Refer to the National Electric Code for regulations pertaining to the indoor installation of Pyranol[®] filled transformers.

Gas absorbers are designed for mounting directly on top of the pressure relief. Instructions for installing and filling the absorber are furnished with that device.

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company.

A special adapter flange with gasket and reducer, is available upon request for connecting a vent pipe to the relief device. See Fig. 2. If the vent pipe adapter flange is ordered with the transformer, the bolt circle shown in Fig. 2 is furnished. If the vent pipe adapter is not furnished with the transformer and added as a supply part, studs will have to be added to the cover to give bolt circle shown. Order vent pipe adapter by drawing number 112A4035 G4 through nearest Apparatus Sales Office of the General Electric Company.

CAUTION

Painting. If pressure relief device is painted in the field, care must be taken that paint is kept away from the space between diaphragm and flange, and away from the indicator bushing.

Disassembly. Should it be necessary to disassemble the pressure relief device, caution must be exercised when removing the protective cover because the springs are under compression. If the device is mounted on the transformer, the internal tank pressure is also acting on the diaphragm. Bleed the pressure out of the tank before removing the pressure relief device.

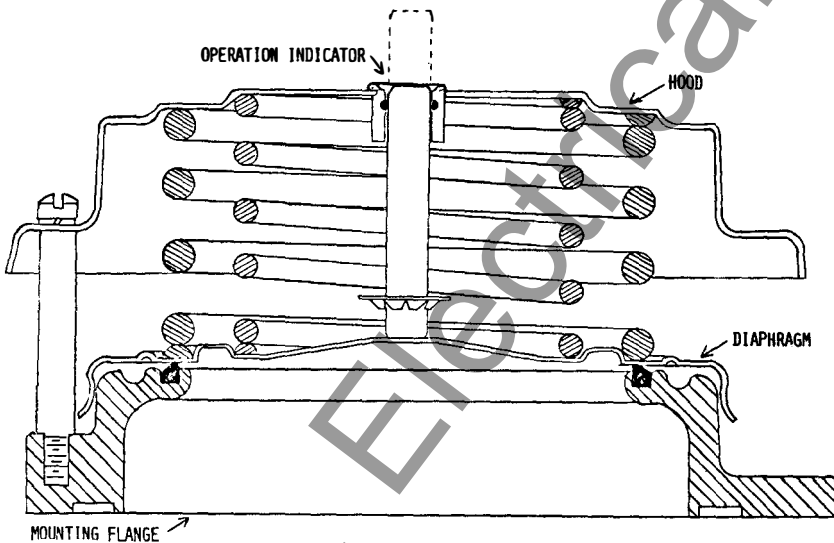


FIG. 1. PRESSURE RELIEF DEVICE

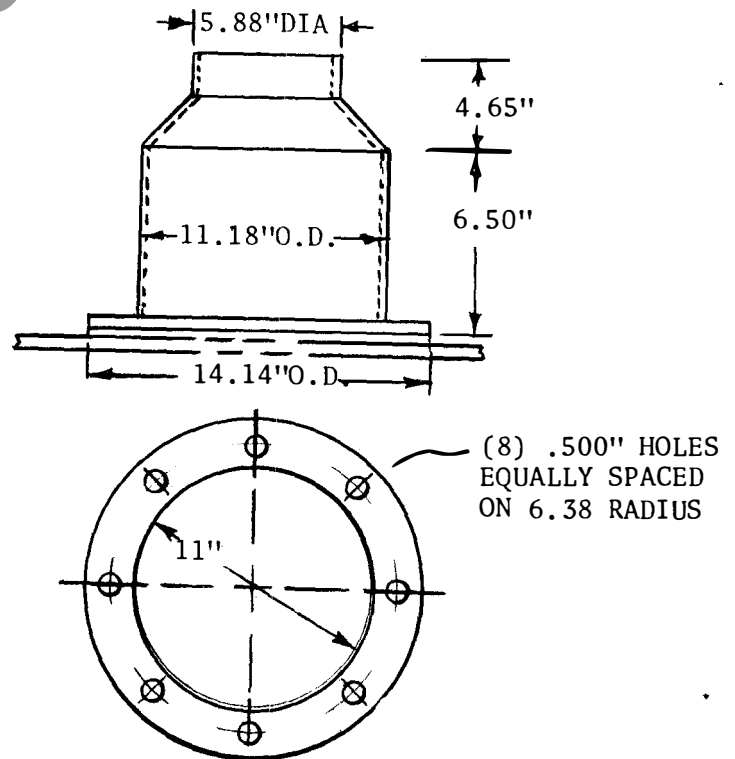


FIG. 2. VENT PIPE ADAPTER