



DESCRIPTION • OPERATION • MAINTENANCE INSTRUCTIONS

DIAPHRAGM RELIEF DEVICE

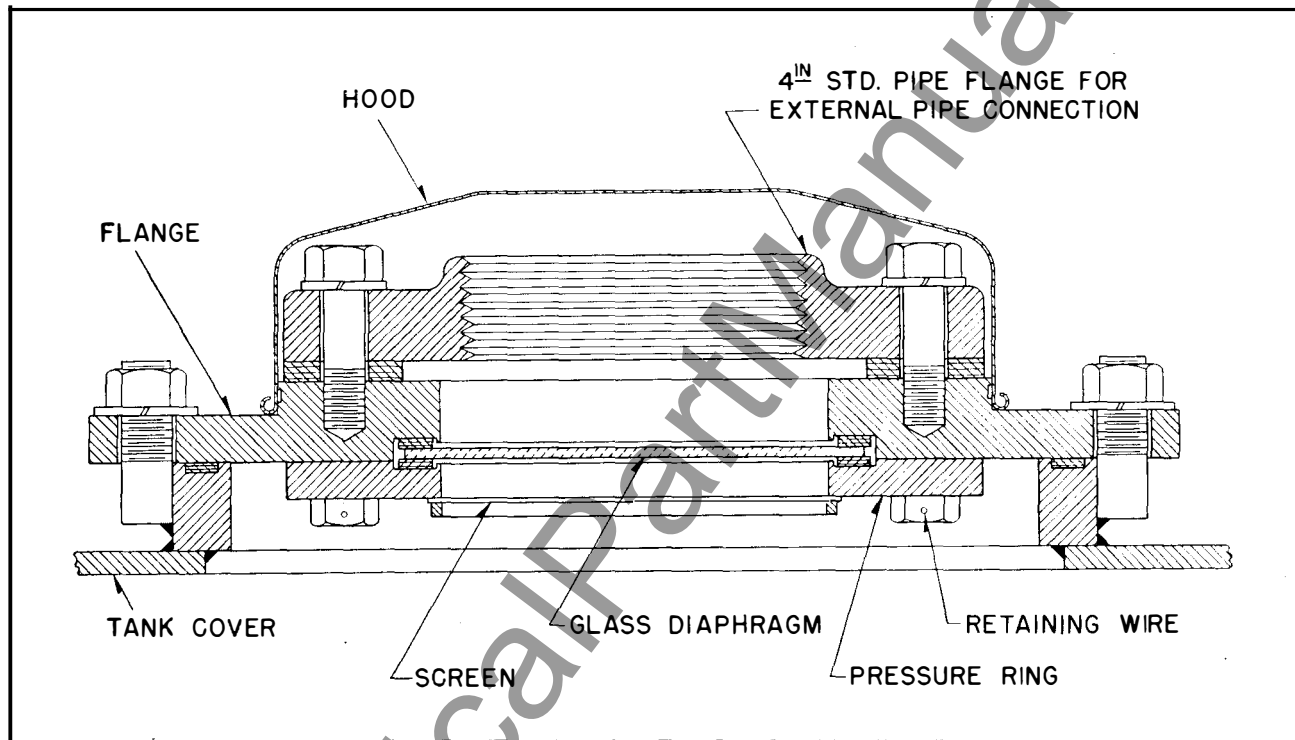


FIG. 1. Type "SL" Transformer Diaphragm Relief Device.

THE DIAPHRAGM RELIEF DEVICE for indoor Inerteen Transformers consists of a sheet of glass mounted in a special manhole cover on top of the transformer case. The diaphragm ruptures at abnormal pressures, which are relieved by the blowing off of a hood which fits tightly over the exhaust opening or exhausting through a vent pipe. Except for replacing a ruptured diaphragm, it is only necessary to inspect the diaphragm occasionally by removing the hood or companion flange. See Fig. 1.

CONSTRUCTION

The relief device is of simple construction. It consists essentially of an annular cast alloy flange, the bottom surface of which is machined to act as a retainer for the upper diaphragm gasket and tapped to take the diaphragm clamping ring studs. The glass diaphragm, each side of which is gas-

keted, is held securely between the flange and clamping ring. The upper side of the main flange is machined to take a hood which fits snugly over the edge and a companion flange and gasket for vent pipe connection.

The selection of a suitable material for the diaphragm is a matter of some importance. In order to be reliable it must have a uniform rupturing characteristic, under the conditions presented, in relieving abnormal pressures. It must, at the same time, be a material of sufficiently substantial nature to be handled easily without danger of accidental breakage.

Westinghouse glass diaphragms are rugged enough to be readily handled and installed without breakage if instructions are carefully followed. Glass is entirely free from aging, and the glass diaphragms are designed to break at from 12 to 18, and 16 to 22 pounds per square inch.

DIAPHRAGM RELIEF DEVICE

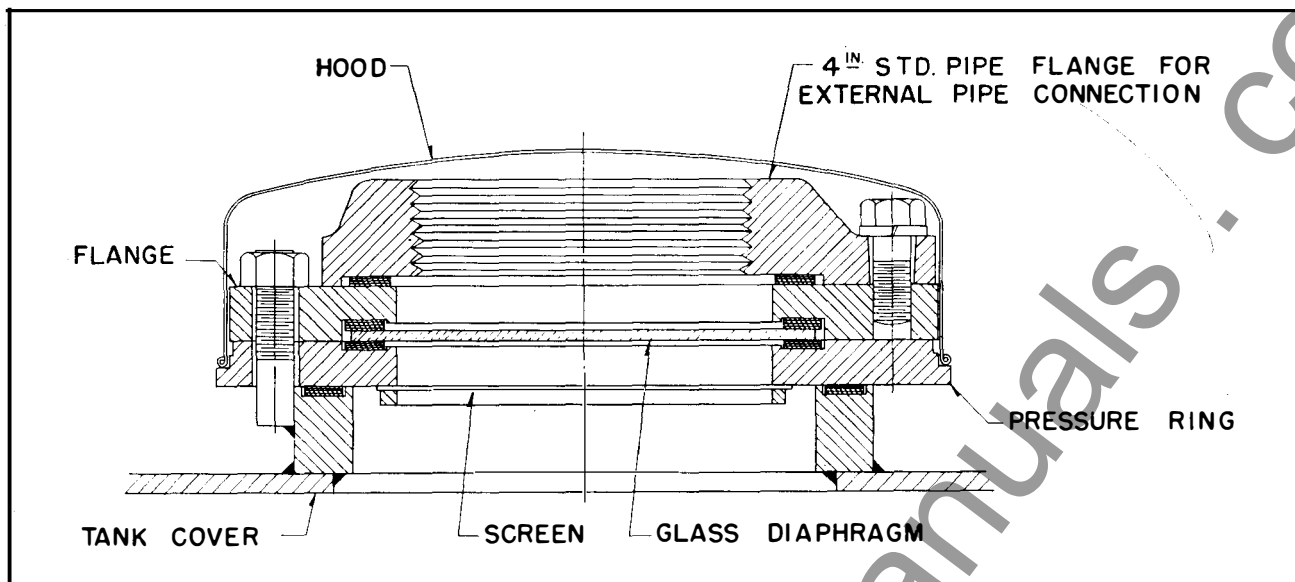


FIG. 2. Type "S" Transformer Diaphragm Relief Device.

INSTALLATION

The relief device is shipped mounted on the transformer cover.

The diaphragm is located under the main relief device flange approximately $1\frac{1}{4}$ " above the level of the transformer cover.

OPERATION

When the pressure in the tank rises above normal, the diaphragm bursts and either the hood is in turn blown off, or the gases are exhausted through a vent pipe when used, thereby relieving the pressure.

When the handhole opening is to be used for entrance into the transformer case, the outer row of bolts is removed and the complete assembly withdrawn, leaving a full-size opening in the cover.

MAINTENANCE

The diaphragm may be inspected by removing the hood or companion flange. If, for any reason, the diaphragm ruptures it should be replaced at once.

In replacing a glass diaphragm, every precaution should be taken to mount it in such a way that it will be centrally located on its gaskets with uniform pressure around its edge. In order to accomplish this, the glass should be placed on the gasket next

to the relief device body after the cement has become quite tacky and it should be carefully placed with maximum clearance to studs at all points. The gasket next to the relief device body should be replaced. See Instruction Leaflet I.L. 47-600-11A, "Gaskets", for method of replacing gaskets. Excess cement should be kept off the diaphragms as it will affect their breaking strength. It is not necessary or desirable to use gasket cement on the gasket located between the glass and clamping ring. The studs should be tightened uniformly, turning each screw not more than $\frac{1}{3}$ of a turn at a time until the gasket stop is reached. On Type "SL" Relief Device (Fig. 1) thread 24 inches of #14 soft steel wire through the lower ends of the studs and twist ends together. On Type "S" Relief Device, (Fig. 2) this is not necessary, as the flange is held by bolts from the top.

RENEWAL PARTS

Spare diaphragms, gaskets, and cement should be kept on hand. A limited supply is furnished with the transformer. Gaskets should not be kept in stock more than two years. For additional parts, order from the nearest Westinghouse Office or from the Sharon Plant, giving serial number and also the complete transformer information as stamped on the nameplate.

TRANSFORMER	NOMINAL DIAMETER	FLANGE GASKET	DIAPHRAGM	HOOD	ADAPTER GASKET	DIAPHRAGM GASKET
Type SL	9 inches	S# 1165 894	S# 1165 795	S# 1609 323	S# 1166 410	S# 1165 860
Type S	6 inches	S# 1165 411	S# 1165 795	S# 1609 323	S# 582 455	S# 1165 860



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