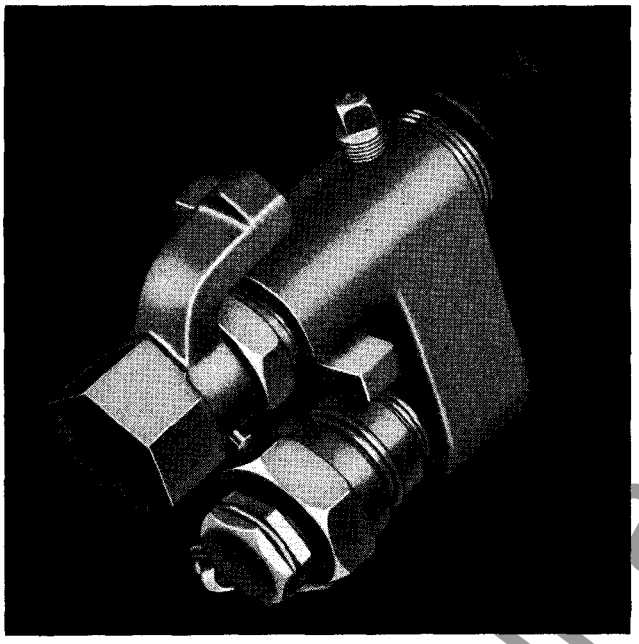
OPERATION • MAINTENANCE

INSTRUCTIONS

ROTARY TYPE SAMPLING DEVICE



THE ROTARY TYPE SAMPLING DEVICE supplied on Inerteen transformers provides a convenient means of obtaining a sample from the surface of the Inerteen for test purposes. It also affords a means of applying pressure tests or testing for leaks as outlined under "OPERATION".

Due to the high specific gravity of Inerteen, water tends to collect on its surface. Therefore, in order to obtain a sample that will be representative of the surface Inerteen in the transformer, the sampling valve is located near the Inerteen level, and arranged so that it will skim a sample from the surface.

OPERATION

An extension on the operating knob serves as a position indicator, and the stops on the body of the device, limits the travel to 90°. The vertical position of the tube is indicated by the vertical position of the indicator arm. Leakage of Inerteen along the operating shaft is prevented by a packing gland. When the knob is turned to the right, the end of the tube passes under the Inerteen level, allowing the Inerteen to enter the tube and flow to the sampling-plug.

The device may be equipped with a plug type Belknap sampling valve, Belknap Catalog Figs. 990-A or 992, a spring-closing Belknap valve, Figs. 993 or 994. A spring-closing Waterbury valve ⁎108 may also be used.

Pressure Tests. When pressure tests are required, they should be made before withdrawing samples of Inerteen. When making a pressure test the indicator arm should be in the vertical position. Operate the sampling device according to instructions for the particular type of device as follows:

Belknap Fig. 990-A and 992—Connect pressure gauge to the sampling device through a metal tube or hose. Open the valve (Fig. 990-A) with a screw driver or coin and open the Belknap valve, Fig. 992, by turning knurled knob and note pressure. If gas sample is desired, connect hose to suitable container.

Belknap Figs. 993, 994 and Waterbury ⁎108—These are spring-closing valves and are operated by a special operating device.

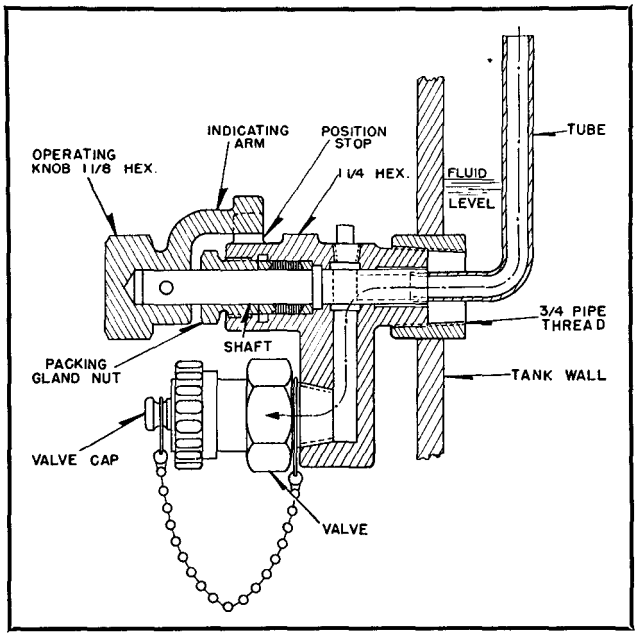


FIG. 1. Rotary Type Sampling Device—Sectional View

Testing for Leaks. Belknap Fig. 993—Remove the protecting covers from Fig. 993 T.D.C. with the pressure gauge, and attach to Fig. 993 on the rotary sampling device. With the valve closed, the gauge will register the pressure in the tank. To increase the pressure attach a suitable hose to a Fig. 993-O device and to a nitrogen cylinder having a reducing valve. Then, attach the Fig. 993-O device to the Fig. 993 T.D.C. and open nitrogen cylinder valve. To test for leaks increase pressure to 7 or 8 pounds and close valve. Loss of pressure usually indicates a leak or leaks which can be located by application of soap and water to suspected areas.

Pressure Corrections. To reduce excessive pressure on a tank simply attach Fig. 993-O to Fig. 993 valve, and hold until pressure is relieved.

Belknap Fig. 994—Use Fig. 994 T.D.C. and Fig. 994-O and proceed as above for Fig. 993.

Waterbury 108—Use Waterbury Fig. 183 testing assembly and Fig. 186 sampling device with the above procedure.

Fluid Sampling. If the Inerteen is above the 25°C. level, the pressure will be somewhat above atmosphere pressure, while if the Inerteen is below the 25°C. level there will be a partial vacuum in the tank. It is, therefore, advisable to take the sample when the gauge shows the Inerteen to be at, or slightly above the 25°C. level. If the sample is taken at a higher or lower Inerteen level, provision should be made to relieve any pressure or vacuum which may be created. This may be done by restoring the pressure to the proper point by forcing air into or pumping air out of the tank. This should be done with the tube of the sampling device in a vertical position.

The valve must be opened* and the operating knob of the device rotated slowly in a clockwise direction, using a 1⅛" wrench, until the Inerteen begins to flow. At this point, the rotation should stop to insure obtaining a true sample of the top liquid.

Important. **Return the knob to the upright position before closing the valve, so as to prevent any liquid standing in the tube, otherwise this liquid may flow into the pressure gauge when a pressure test is made at some later date. Always keep the tube in the vertical position when not in use.**

* Opening Valves.

Belknap Fig. 990-A—This valve is opened by turning with screw driver placed in slot in end of valve.

Belknap Fig. 992—Operate by turning knurled knob by hand.

Belknap Fig. 993—Operate after removing dust cap by using Belknap Fig. 993-O operating device.

Belknap Fig. 994—Operate after removing dust cap by using Belknap Fig. 994-O operating device.

Waterbury Fig. 108—Operate after removing dust cap using Waterbury Fig. 108 operating device.

MAINTENANCE

This device will require very little maintenance. If in time leakage occurs at the shaft, tighten the packing gland nut using a 1" thin-nose open-end wrench until it ceases. If tightening the gland does not stop this leakage, the packing should be replaced.

Renewing Packing. Lower liquid level to a point below the sampling device. Remove the taper pin that holds the operating knob to the shaft. Using a 1" wrench, remove the gland nut. Pull outward on shaft to loosen packing. Remove steel ring from shaft and then remove old packing. Slip new ring of packing in place. Slide steel ring into place and push shaft back into its seat. Tighten packing gland nut and replace knob nut and taper pin.

NOTE—Care must be taken that shaft has not turned from correct position while knob is off. The only stops on the shaft are provided by the knob.

Removing Complete Sampling Device. On transformers manufactured after August 1, 1939, the sampling device can be removed without opening the transformer or chamber cover.

Remove knob nut and hold shaft by inserting a pin through hole in shaft. Shaft must not turn while removing device. Use 1¼" open end or adjustable wrench on hexagon on body of device. (See Fig. 1). Unscrew entire device until the end of the thread clears the tank coupling. It is now necessary to tilt the outer end of the device upward and slide forward. Continue in this manner until bend in tube clears the coupling in the tank wall. Study of Fig. 1 will help operator understand this procedure.

On older type devices it is necessary to open up compartment and unscrew the tube from the shaft since tube is not bent and cannot pass through coupling. With tube removed, unscrew device from outside.

VALVE IDENTIFICATION TABLE

VALVE	CATALOG FIG.	WESTINGHOUSE STYLE NO.
Plug Type Sampling Valve (Belknap)	(Belknap) 990-A	651245
Spring-Closing Valve (Belknap)	(Belknap) 993	777247
Operating Device (Belknap)	(Belknap) 993-O	804515
Spring-Closing Valve (Belknap)	(Belknap) 994	893462
Operating Device (Belknap)	(Belknap) 994-O	1243886
Spring-Closing Valve No. (Waterbury)	(Waterbury) 108	851548

REPLACEMENT

To reorder packing, refer to S# 1066507. When reordering a complete device give the S.O. number and serial number that appears on the transformer nameplate. Address all communications to the nearest Westinghouse District Office.

WESTINGHOUSE ELECTRIC CORPORATION

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