DESCRIPTION • OPERATION • MAINTENANCE

INSTRUCTIONS

TRA RELAY FORCED AIR COOLING CONTROL

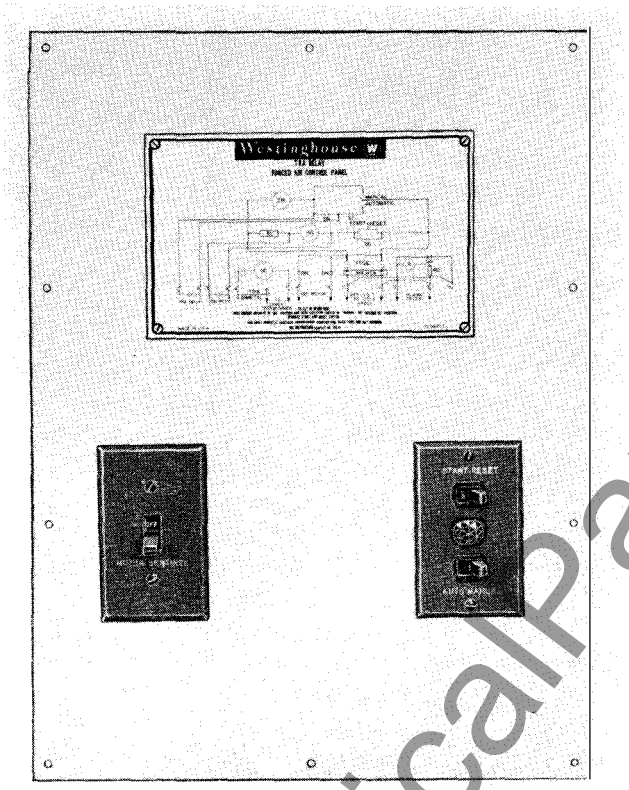

FIG. 1. Front View, TRA Relay Forced Air Cooling Control

THE TRA RELAY CONTROL provides either manual or fully automatic control of fan installations for cooling of type ASL transformers. A selector switch is provided on the control panel so that the operator may choose at will either the manual or automatic control.

With automatic control, the fans are called upon for additional cooling air only when the transformer is approaching its limiting operating temperature under the condition of normal self-cooled operation. Once started, the fans continue to run until the transformer load is reduced to the normal self-cooled rating of the transformer. At this point the fans will be switched off. This cycle may be repeated indefinitely, and the frequency and duration of the forced air cooling periods will depend on the transformer load cycle characteristics.

If the fans do not start when called upon by the control system, the transformer temperature will continue to rise. Before the limit of the transformer operating temperature is reached, the alarm circuit is energized at the control panel, to actuate suitable devices calling for investigation and corrective action.

THE TRA RELAY

The protective features of this control are initiated by the TRA relay. The TRA relay is a temperature-operated device which, when applied on forced air cooling controls, will turn on the fans whenever the transformer approaches a limiting operating temperature. The operating temperature of the relay is coordinated with the hot spot temperature of the transformer windings. A bimetal thermal tripping device is heated by the hot air from the coil cooling ducts, and also by current from the secondary of a current transformer in the load circuit. First, one bimetal arm trips and energizes the circuit for starting the fans; then, if the fans do not act to cool the transformer, the other bimetal trips at a slightly higher temperature, energizing an alarm circuit.

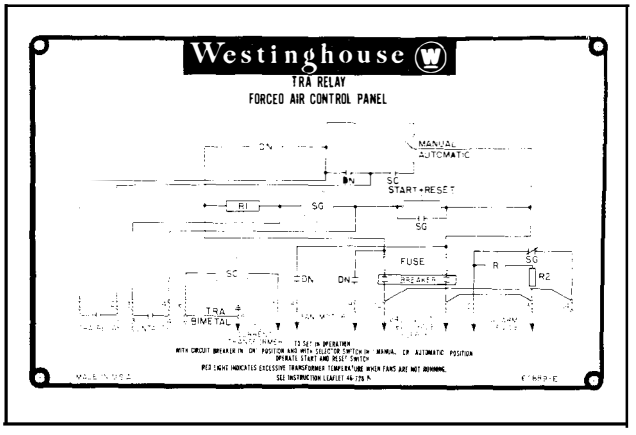

FIG. 2. Typical Wiring Diagram

should be made to insure that pitting and inclusions of dirt have not occured. Also, a periodic check of the fan circuit operation can be made simply by throwing the control selector switch to the "manual" position.

The motors used with this control have ball bearings designed to operate for long periods of time without greasing. Over-greasing a ball bearing assembly is an invitation to trouble. It is recommended that the threaded plug at each bearing hub be removed at about two-year intervals. Fill the plug hole with grease, press in firmly with the thumb and replace the plug. A high grade of grease, such as Westinghouse grease #5612-2, should be used as a lubricant.

RENEWAL PARTS

If, for any reason, renewal parts are required, transmit the description of the particular part and the transformer serial number to the nearest District Office or Service Shop of the Westinghouse Electric Corporation.

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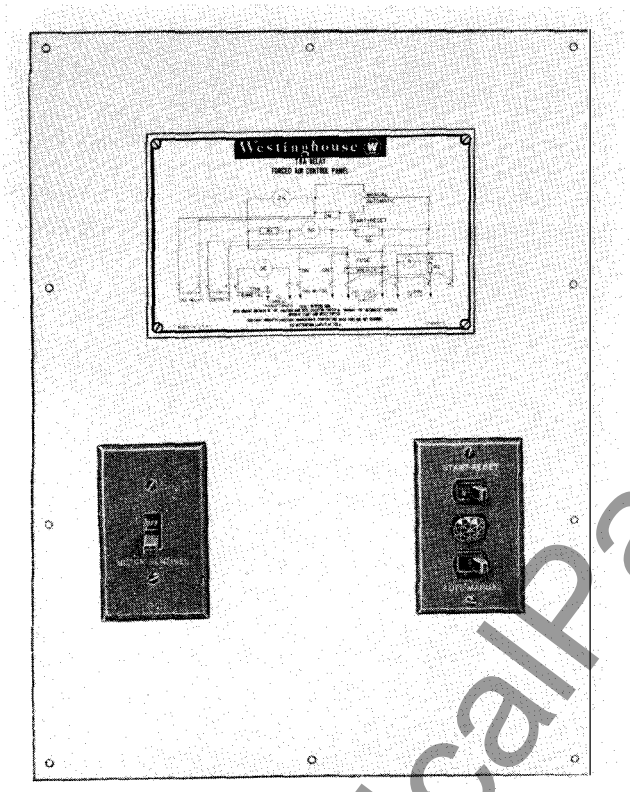

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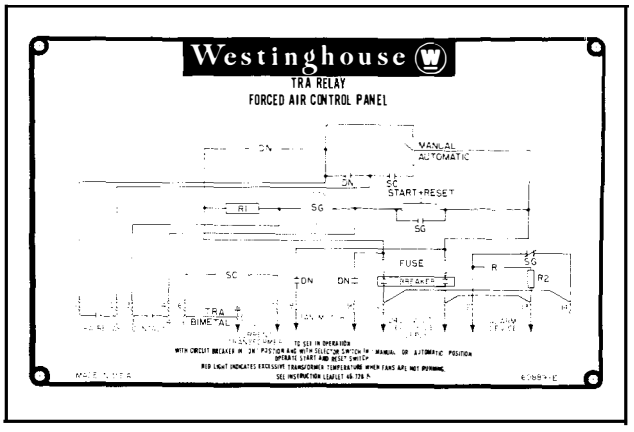

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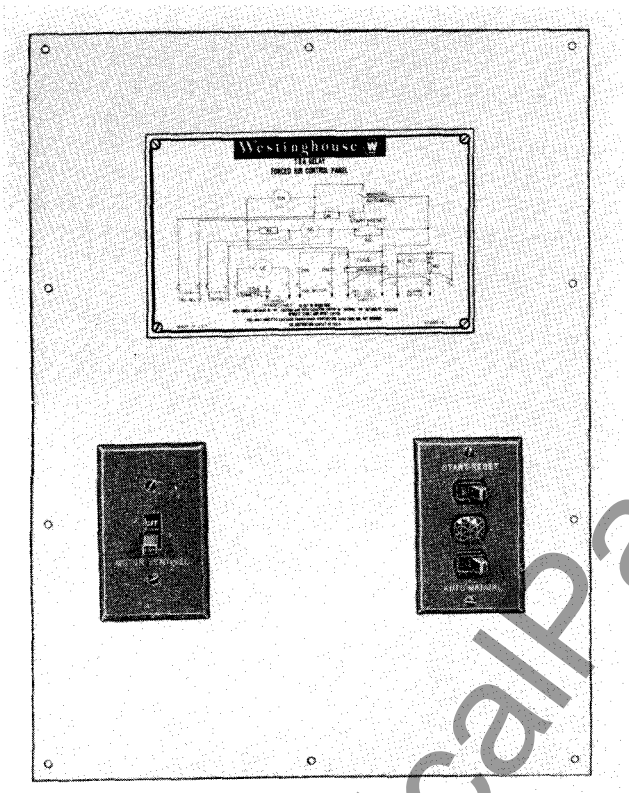

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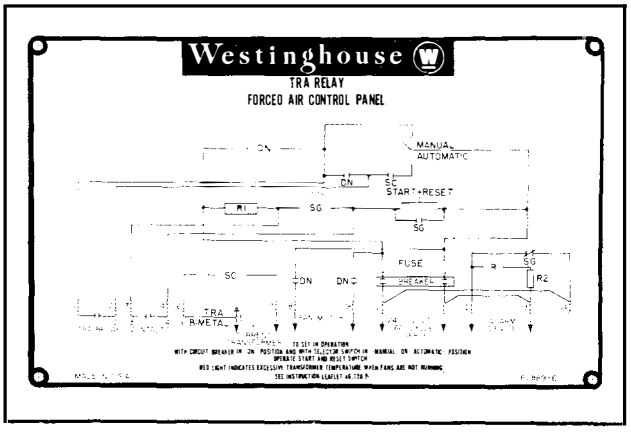

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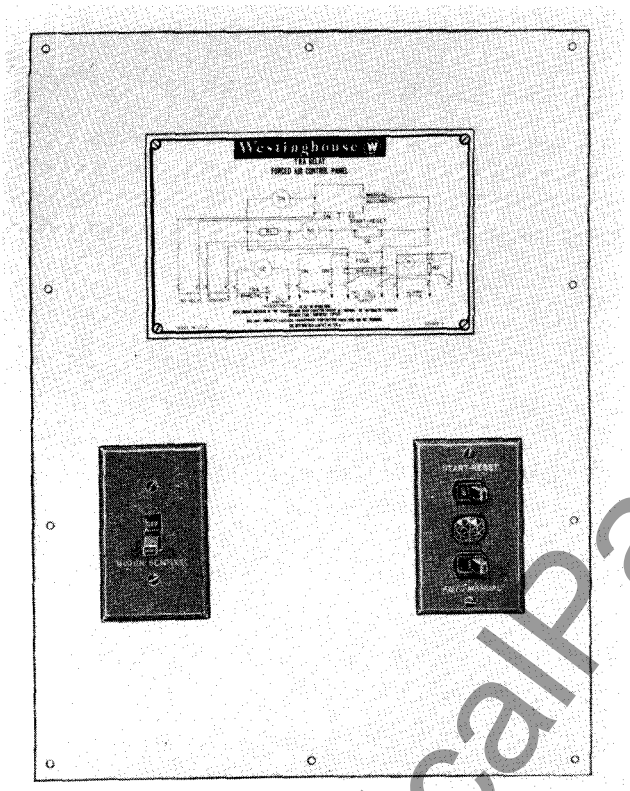

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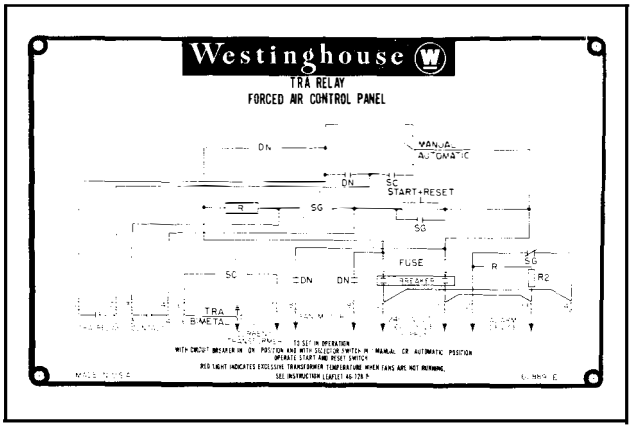

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