INSTALLATION • ADJUSTMENT

INSTRUCTIONS

WESTINGHOUSE TYPE "RL" SWITCHES

7.5 through 69 KV - 600 and 1200 Amperes

Standard Duty, 3" Bolt Circle Insulators

WESTINGHOUSE ELECTRIC CORPORATION

ASSEMBLED SWITCHGEAR & DEVICES DEPARTMENT

Switchgear Devices Section, 10-N East Pittsburgh, Pa.

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INTRODUCTION

It is the purpose of this book to assist in the proper installation and adjustment of the Type "RL" Switch with ratings from 7.5 thru 69 KV, 600 and 1200 amperes.

By closely following the instructions in this book the Purchaser will, in a minimum amount of time, be able to install these switches correctly and insure proper performance and low operating effort.

INSTALLATION AND ADJUSTMENT

1. HANDLING AND STORAGE

When the equipment is received it should be carefully examined to determine any loss or damage in shipment. The carrier should be notified immediately of any claims.

Disconnecting switches rated 7.5 thru 46 KV are shipped with the insulators completely assembled on the pole units. Insulators for the 69 KV pole units are shipped separately and must be assembled in the field, as shown on Dwg. 302C905 supplied with the switch. Since these are outdoor switches, they may be stored either indoors or outdoors. When storing outdoors, all components should be removed from their packing.

2. ADJUSTMENT AND ERECTION OF POLE UNITS

Check each pole unit to be sure the "Stops" are set correctly. This "Stop" is located at the base of the rotating insulator. The blade should stop directly on the centerline through the base, as shown on the outline drawing. If necessary, adjust the length of the stop bolt to stop the blade in this position.

Rub a small amount of silicone base grease onto the break jaw contact surfaces. Close and open the switch blade several times to wipe the grease into the pores of the metal. The excess grease should then be wiped off so that dirt does not collect on the contact surfaces.

The pole units should now be mounted in place on the structure. The pole unit next to the outboard bearing may require a "Universal Lever". If this is required, it will be shown on the field erection drawing. This "Universal Lever" may be mounted on the pole unit at the factory, or it may be crated with the operating mechanism. Its purpose is to allow the connection of the outboard pipe at the optimum angle for ease of operation. Make certain that this "Universal Lever" is mounted in the proper position with respect to the outboard bearing as shown on the field erection drawing. By inverting the Universal Lever it is possible to obtain finer angular positioning.

Care should be taken to avoid warping the switch bases when mounting them on the structure. If the mounting surface is uneven, shims should be used as spacers beneath the base before it is tightened down.

In making electrical connections to the switches, avoid placing stress on the insulators. Use strain insulators or bus supports where necessary.

3. ADJUSTMENT OF THE TORSIONAL TYPE (TP) MECHANISM

When installing the various components of the operating mechanism, make certain that all parts are in correct mechanical alignment. The outboard bearing, if one is used, should be reasonably level. The guide bearings and operating handle should be positioned properly so that the vertical pipe is free to rotate. Do not drill the pipe and fasten the operating handle at this time.

(a) On an offset mechanism, one in which an outboard bearing is used, set the outboard bearing lever in a position so that it points directly toward the hole in the driven pole unit operating lever when the pole unit is closed. This setting is shown in Figure 1.

(b) Adjust the rod ends on the outboard connecting pipe so that the pipe will fit between the driven pole unit lever and the outboard bearing lever. Tighten only the clamping bolts

on the rod end at this time. Do not tighten the set screws. When making this pipe connection the driven pole unit blade must be completely closed and the outboard bearing lever must be in toggle as shown in Figure 1.

(c) Set the operating handle to the closed position shown on the erection drawing. With the handle in this position, drill a 11/16 diameter hole in the vertical pipe and bolt the operating handle securely to the pipe.

(d) The driven pole unit can then be operated from the ground by means of the operating handle. Adjust the length of the "Stop" bolt on the operating handle so that the blade stops at the correct "Open" position as shown on the erection drawing. Adjust the length of the other "Stop" bolt on the operating handle to coordinate with the closed position stop on the pole unit.

(e) For direct connected mechanisms, in which no outboard bearing is used, the vertical pipe is coupled directly to the bearing shaft extension beneath the driven pole unit. Connect the operating handle and set the stops as described in Paragraphs "c" and "d".

(f) With all three pole units in the fully closed position, the interphase pipes should be connected in place. All three pole units now may be operated from ground level. Open and close the switch. Check to be sure that all three pole units completely close against the stops. It may be necessary to adjust the length of the interphase pipes slightly to get all three pole units to close properly. After proper operation is obtained, tighten the set screws in the rod ends so that they pierce the pipe, and the head of the set screw rests against the body of the rod end.

4. ADJUSTMENT OF THE RECIPROCATING TYPE (RP) MECHANISM

When installing the various components of the mechanism make certain that all parts are in correct mechanical alignment. The bell crank, the idler assemblies, and the operating handle should be positioned properly so that the vertical pipe can move up and down freely.

(a) Set the driven pole to the fully closed position.

(b) Assemble the outboard connecting pipe and adjust its length to fit between the driven pole unit lever and the fixed length arm on the bell crank with the bell crank arms set at 45 degrees above horizontal. Only the clamping bolts in the rod ends should be tightened at this time. Do not tighten the set screws.

(c) Adjust the length of the adjustable bell crank arm to have a 7-1/4 inch radius. Connect the vertical pipe between the bell crank and the operating handle. If an idler is used, its arm should be set 30 degrees above the horizontal when connected to the vertical pipe.

(d) With the handle in the "Up" position, drill and pin the vertical pipe to the operating handle.

(e) Open the driven pole with the operating handle and observe the handle position as the switch comes fully open. If the operating handle is not in the fully down position when the switch is open, the radius of the adjustable bell crank arm should be increased. If the switch has not opened fully when the operating handle is down, the radius of the adjustable bell crank arm should be decreased. The rod end on the upper end of the vertical pipe should be adjusted to compensate for any change in the length of the bell crank arm.

(f) After the bell crank has been adjusted so that the full travel of the operating handle results in full travel of the driven pole unit, all three pole units should be set to the fully closed position. Assemble and connect the interphase pipes.

(g) All three pole units can now be operated from ground level. Open and close the switch. Check to be sure that all three pole units completely close against the stops. It may be necessary to adjust the length of the interphase pipes slightly to get all three pole units to close properly. After proper operation is obtained, tighten down the set screws in the rod ends so that they pierce the pipe.

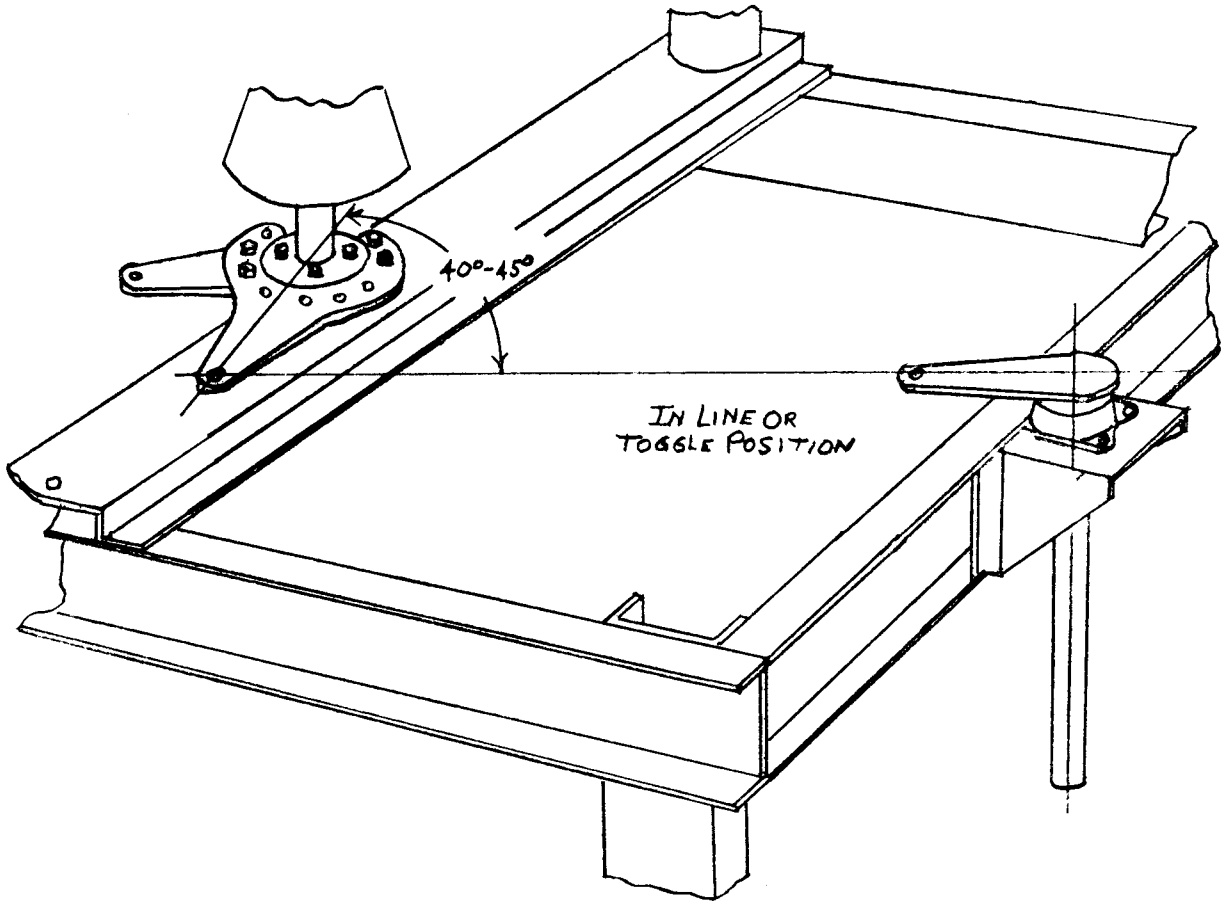

FIG. 1


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