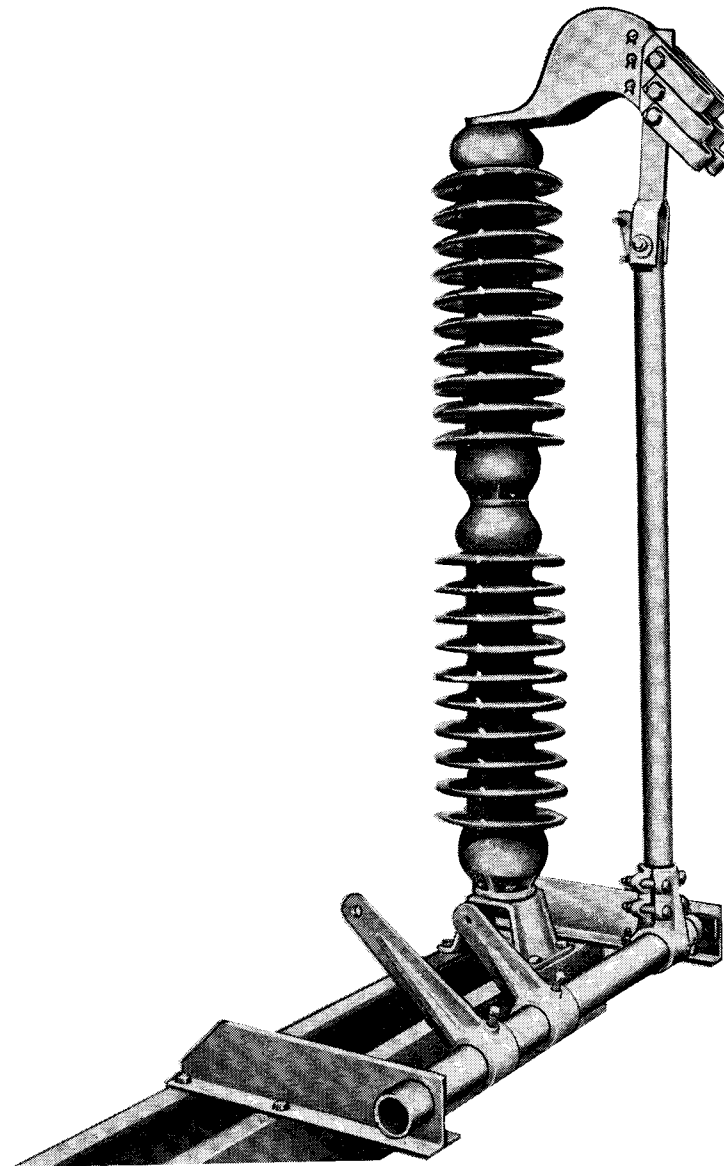


AIR SWITCHES – OUTDOOR

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**INSTRUCTIONS**

AG-7 GROUP-OPERATED  
GROUNDING SWITCH  
69 THRU 230 KV



**I-T-E CIRCUIT BREAKER COMPANY**



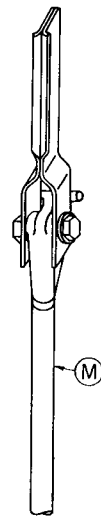
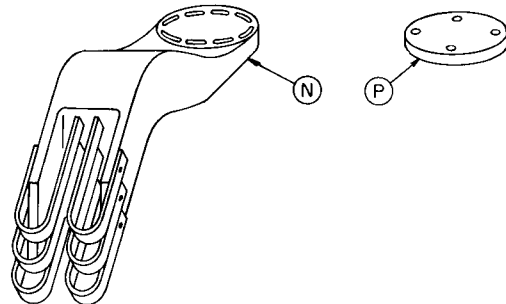
### ASSEMBLY AND ADJUSTMENT OF SINGLE-POLE AG-7 GROUNDING SWITCH

Omit steps 2, 3 and 4 for assembled switches.

1. Review equipment drawing supplied for mounting.
2. Mount support sections (A) and (B) to switch base with bolts finger-tight.
3. Assemble sealed-pressure hinge (L) as follows:
  - a. Insert pressure spring (F), insulating disc (G), and O-ring seal (R) into hinge casting (E).
  - b. Insert hinge-pin (H) through opening in bearing support (B), and nut-bar (J) and screw hinge-pin into hinge casting (E), until proper clearance is obtained between hinge casting and nut-bar, see (L).
  - c. Bolt hinge-pin to bearing support (B), with nut-bar (J), bolts (K), and lockwashers.
4. Insert operating shaft (D), into idler support (A) and through interphase crank (C) and main driving crank on driving switch, and then into hinge casting (E). Secure operating shaft to hinge casting with piercing set screws. Tighten set screws until pipe is completely pierced and screws become easier to turn, then continue until screws are tight again.
5. Insert blade (M) into hinge casting and bolt finger-tight. Check drawing for position and elevation of blade end.
6. Mount switch jaw (N) on top of insulator stack with bolts finger-tight. When mounting grounding switch to main switch, add spacers (P) to other insulator stacks of main switch to assure leveling of current carrying parts.
7. Move switch blade into jaw to fully closed position (against the three nylon stops).
8. Jaw and blade should align in operating position. Bolt jaw tightly to insulator stack. Bolt blade tightly to hinge casting.
  - a. Some horizontal or angular adjustment may be required in the jaw mounting before bolts are tightened with a wrench.
  - b. Vertical alignment is complete when switch blade fully engages all contact fingers. Blade can be moved in or out of hinge casting for required alignment.
9. Tighten all bolts, making sure there is no binding.
10. With switch blade closed, set interphase crank (C) at proper location and to an angle of 45 degrees past vertical centerline, in closed position indicated, then pierce pipe with set screws as described in step 4.

### IDENTIFICATION OF AG-7 PARTS (Fig. 1)

- A — Idler support
- B — Bearing support
- C — Interphase crank
- D — Operating shaft
- E — Hinge casting
- F — Hinge-contact pressure spring
- G — Insulating disc
- H — Hinge pin
- J — Nut bar
- K — Stainless-steel bolts and lockwashers
- L — Sealed-pressure hinge assembly
- M — Blade and toggle contact assembly
- N — Jaw assembly
- P — Spacer
- R — O-ring seal



NOTE - CONTACT COATING  
ON JAW AND BLADE  
SHOULD NOT BE REMOVED.

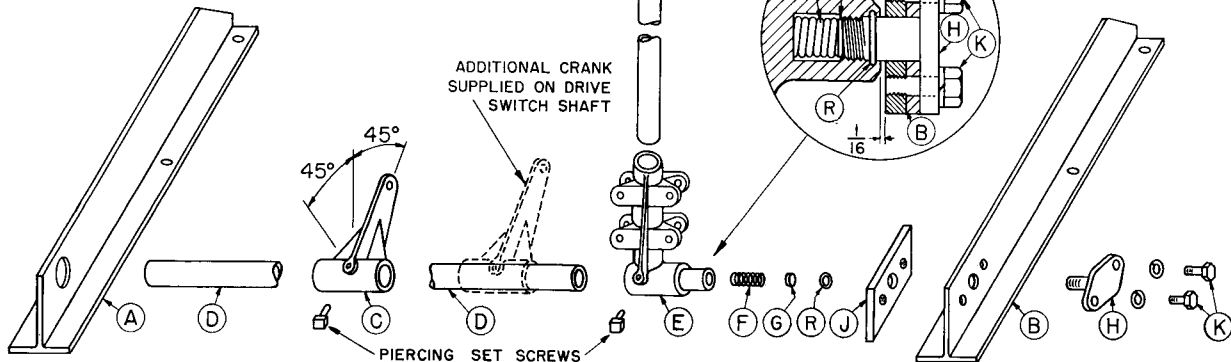
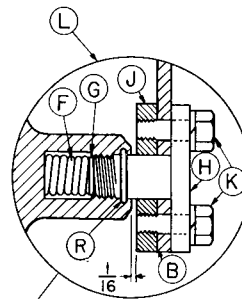
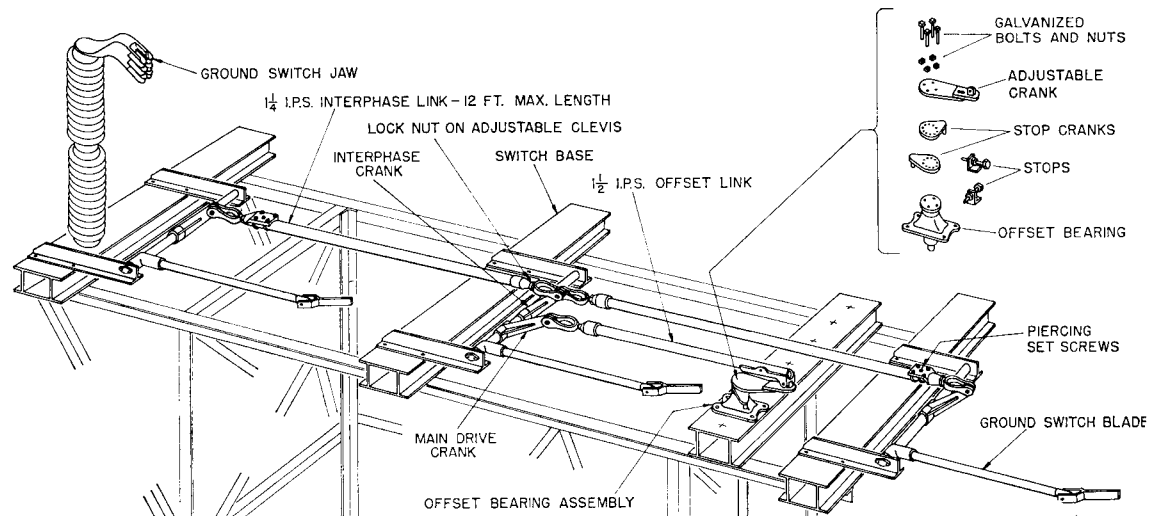


Fig. 1 Exploded view of single-pole AG-7 grounding switch.



## ASSEMBLY AND ADJUSTMENT OF GROUP-OPERATING MECHANISM



With the 3 single-pole switches assembled and adjusted as per instructions on page 2, close all switches and proceed as follows:

1. Check switch operating mechanism drawing to locate offset bearing assembly.

2. Set adjustable offset bearing crank to proper length, aligning it with operating crank of driven switch. Install offset link as shown after cutting to proper length.

3. Set stop cranks of offset bearing at required position to permit complete opening and closing of grounding switch blade. Offset bearing crank should not travel more than 5 degrees past center in both closed and open positions.

4. Connect vertical operating pipe to rotor bearing shaft with coupling and pins provided.

5. Slide guide plate, pipe splice if required, and handle and lock plate on pipe and mount in position. Tighten mounting bolts, making sure pipe is not binding at any point.

6. Locate the centerline of the operating handle 4 inches above the lock plate and in a position which will permit operation of the switch. Clamp the handle to the pipe by slightly tightening the two piercing set screws for trial operation. Do not pierce the pipe.

7. Operate one switch pole which is now connected, and adjust offset bearing and link until switch operates properly.

8. Install interphase link to next switch pole and operate two poles connected. Interphase links are provided with clevis adjustment of one inch, plus or minus.

9. Install interphase link to third pole and operate all three switch blades, making adjustments as detailed previously for proper interphase length.

10. Locate the lock plate stops so that they provide some residual torque in the vertical operating pipe when the handle is engaged with the stops.

11. Relocate the handle if necessary so that it can be moved downward and engage the stops on the lock plate in both the open and closed positions. Securely connect handle to pipe by piercing the pipe and tightening set screws.

12. Check the wording on the lock plate stops to see that it is appropriate for the open and closed positions. If not

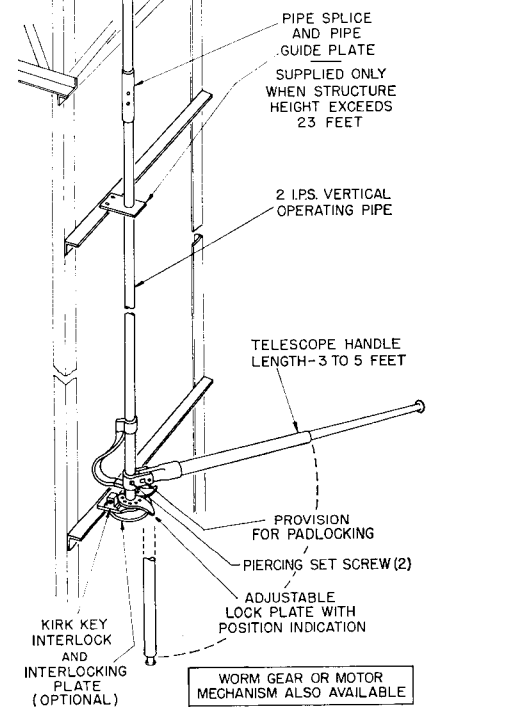


Fig. 2 Typical operating mechanism arrangement.

remove the stops, interchange them, and reassemble.

13. Check the installation. See that all bolts are tight.

14. If worm gear or motor mechanism is used, refer to switch operating mechanism drawing.

15. If Kirk key interlocks or other mechanical interlocks are required, they should be installed last in accordance with the instructions supplied with the interlock.

### SWITCH MAINTENANCE

Refer to NEMA Standards Publication SG6-1960, Part 9, Page 3, "Care of Outdoor Air Switches".



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 nearest I-T-E Sales Office.



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