

## **CHECK LIST**

On receipt of equipment compare components against the following checklist. Notify supplier immediately of shortages or damage.

- Complete isolator per page 2: three phases per unit.
- Interphase coupling tube - 38mm square tube: 1 length.
- Vertical operating rods: 20mm bore pipe x 2m lengths: 3 lengths.
- Operating lever assembly.
- Operating rod insulating insert
- Reciprocating operating handle assembly.
- Flexible earthing strap.

**NOTE:** In cases where arc chutes have been removed for transportation, refit one to each Phase as described on page 5 of this pamphlet.

## **INSTALLATION**

Each isolator is factory aligned before dispatch, but to ensure years of trouble free operation, follow these instructions carefully: -

1. Place individual phases in position on the mounting framework. In the case of 11kV and 22kV isolators, ensure that the isolator pole fitted with adjustable hinge stops is mounted in the center phase position. This is important as the open and closed positions for all three phases are set by this phase.
2. Holding down bolts can be inserted, but not secured.
3. Loosen U-bolts on center hinge assemblies on each phase - removal is not necessary.
4. Position interphase coupling tube through square apertures in hinges, ensuring alignment with operating handle position and/or equal overlap through outer phase hinges.
5. Tighten U-bolts finger tight.
6. Open isolator, i.e. separate the main moving contact and the fixed contacts by pulling upwards on the main contact blade. All three contacts will open.
7. Close slowly, letting the moving contacts rest in the fixed contacts. Do not close completely.
8. Leaving the phase coupling tube free, align the three phase bases, and tighten the holding down bolts.
9. Tighten U-bolts on all phases.
10. Close isolator until the center phase moving contact is parallel to the base. Adjust the appropriate stop if necessary. Lock in position. At this point, ensure that the interrupter moving contact (Load break head, item 4) is not making contact with the arc chute internal contacts. It should not be necessary to adjust the open position stop.
11. Open the isolator slowly, checking that the arcing moving contacts have properly latched below the arc chute contacts, and remain below them until the main moving contacts are well clear of their fixed contacts.
12. Close the isolator slowly, checking that the arcing contacts on all phases latch below the arc chute contacts and once fully closed, do not touch them or the bottom of the arc chute. This setting is made by means of the eccentric stop.
13. Clamp the operating lever in the desired position on the phase coupling tube.
14. Place the operating mechanism handle in position, screw up bolts finger tight.
15. Fit rod guide in position on the structure
16. Attach one length of vertical operating pipe to the operating mechanism turnbuckle. Fit insulating insert (if supplied) to operating pipe.
17. Close operating mechanism.
18. Fit remaining operating rods, cutting top section to suit if necessary, Use pipe sockets and U-bolts on operating lever to secure.
19. Align operating mechanism handle and tighten fixing bolts.
20. With isolator in closed position and operating handle in the "ON" position, check that the center hinge is against the closed stop.
21. Tighten the operating mechanism turnbuckle until the operating pipe is taut. Secure in position with lock nuts.
22. Check all fasteners for tightness.
23. By means of operating mechanism, open and close the isolator a number of times to ensure a positive action exists.
24. Secure the operating mechanism earthing strap to the mechanism mounting base.
25. Secure incoming and outgoing conductors as required.

## MAINTENANCE

- At approximately 6-monthly intervals - particularly if the isolator has not been operated for an extended period, the isolator should be opened and closed several times to "wipe" the contacting surfaces, verify that the operation is correct, and ensure that the isolator and operating mechanism remain in good condition.
- Every two years - or shorter intervals under adverse atmospheric conditions, remove the isolator from service and perform the following operations: -
  1. Visually examine all contacts and replace damaged components if required.
  2. Clean all contacts, removing all dirt and old grease. Regrease the main contact surfaces only - arcing contacts should be left clean and dry.
  3. Lubricate operating mechanism and isolator hinge points.
  4. Clean the insulators.
  5. Check alignment of contacts, following the procedure set out in items 10, 11 and 12 of the installation procedure.

## LOAD BREAK UNITS

When load break heads are fitted, these are pre-set before dispatch from the factory and should require no further adjustment. However, it is possible that the settings could be upset as the result of knocks received during transportation or unpacking. In this event, checks and adjustment should be carried out as follows after assembly of the three phases of the isolator on its structure: -

- Ensure that all cardboard separation pieces are removed from the arc chute slot.
- If any of the stainless steel arcing blades have been bent, carefully straighten them by hand, or disassemble them for repair.
- Slip the blade into the arc chute, and using the M8 stainless setscrews supplied, fasten the arc chute to the pre-assembled galvanized bracket, with one flat washer under the setscrew head, and the other underneath the spring washer and nut, against the bracket.
- Ensure that the blades are centred within 3mm of the centerline of the arc chutes as they enter the chamber.
- With the isolator fully closed, ensure that the blades have properly latched below the chamber contacts, but do not touch them or the bottom of the chamber. This setting is made by means of the eccentric blade stop.
- Minor differences in the opening time of the three blades are permissible. If adjustment is necessary, slacken the insulator to base mounting channel mounting bolts and set as required, ensuring that the main moving contact remains centred between the main fixed contacts.