Westinghouse

I.L. 17–000–2

TYPE WGM
ISOLATING SWITCH

1500 VOLTS

150 AMPERES MAXIMUM

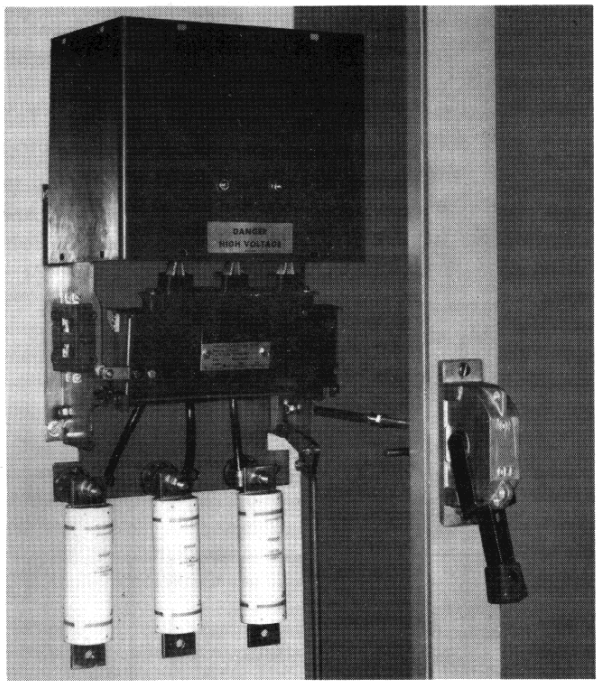

Fig. 1 Type WGM Isolating Switch Shown in the OFF Position. (Photo BD71-0170)

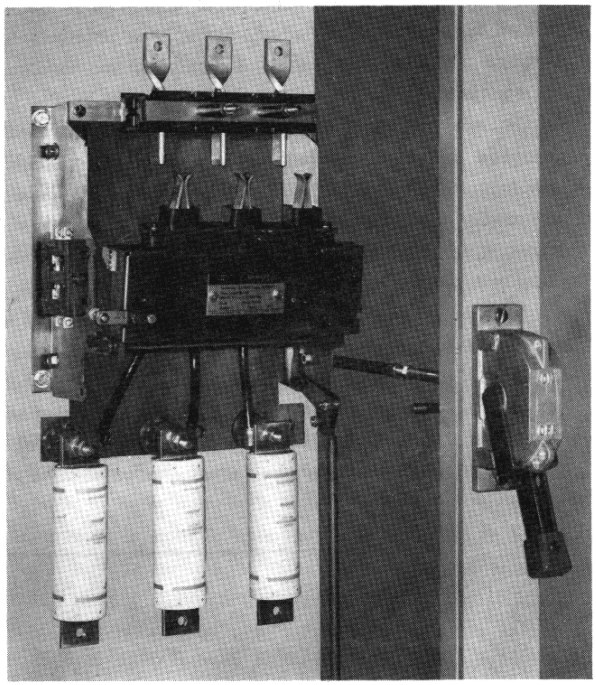

Fig. 2 Type WGM Isolating Switch Shown in the OFF Position with Line Terminal Barrier Removed. (Photo BD71-0171)

APPLICATION AND RATING

The Type WGM ISOLATING SWITCH is a manually operated Non-Load break switch designed for use on power systems up to 1500 volts and at load currents up to 150 amperes.

DESCRIPTION

The Type WGM ISOLATING SWITCH is a unit mounted device having all parts except the operating handle assembly mounted on a steel base.

Power circuit insulating details are molded from Glass-Polyester materials having high arc and track resisting qualities. Arcing and creepage distances meet or exceed minimum values established by NEMA standards for 1500 volt equipment.

Load terminal spacing and hardware details have been selected to permit load terminals to be used as the upper fuse support when the isolating switch is to be used with fuses.

A two circuit electrical interlock is provided, which operates before the main contacts to unload the isolating switch before it is opened or for use in other auxiliary circuits.

Mechanical interlocks are available which provide

mechanical interlocking between the isolating switch and the enclosure door, and also with Type WG and WGD Magnetic Contactors.

MAINTENANCE AND REPAIR

This industrial type control is designed to be installed, operated, and maintained by adequately trained workmen. These instructions do not cover all details, variations, or combinations of the equipment, its storage, delivery, installation, check-out, safe operation, or maintenance. Care must be exercised to comply with local, state, and national regulations, as well as safety practices, for this class of equipment.

A maintenance program should be initiated to provide for a periodic inspection of the isolating switch. After the isolating switch has been inspected a number of times and the condition noted, the frequency of inspection can be increased or reduced to suit the conditions found.

The insulation resistance between poles and from each pole to ground should be measured and recorded. It is not feasible to establish the correct or absolute value of this reading since it is dependent on other connected apparatus and conditions of environment. However, any abrupt reduction in this value from the previous reading would indicate a possible source of trouble and the cause should be established and corrected.

CONTACTS

Contacts should be lubricated with a thin film of vaseline or silicone grease to reduce friction and increase the life of the parts.

In the event rough spots appear on the contact surfaces, they should be removed with a fine file.

Contact fingers should be checked for discoloration due to overheating, which is an indication of low contact force, dirty contacts, or overloading of the switch.

When the switch is closed, both contact fingers should deflect an equal amount. When the switch is opened, the fingers should spring together and touch at their contact point. If the contact fingers spring together in the open position, sufficient contact force will be developed when the switch is closed. If fingers remain open, entire molded finger block assembly should be replaced.

OPERATING MECHANISM

The handle, mechanical interlocks, and isolating switch assemblies should be checked to see that

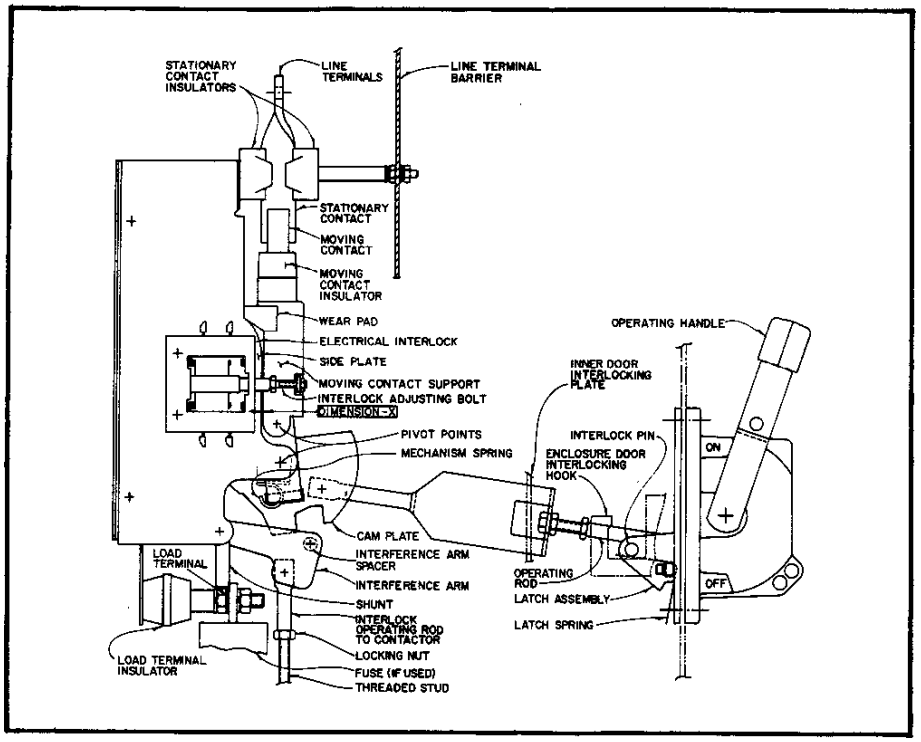

Fig. 3 Operating Mechanism Adjustment.
(Dwg. 6355D82)

hardware is tight and that the various moving parts move freely. Pivot points may be lubricated if necessary to reduce friction.

The operating rod length should be adjusted if necessary, to provide a gap of approximately .125 inch between the moving contact support and the isolating switch side plate, measured at point "X" of Fig. 3, when the operating handle is against the ON position stop.

After the desired rod length adjustment has been made, the stud is screwed back into the free fitting approximately .50 inch (9 full turns) and the two lock nuts are tightened against the end fittings.

In the event the stud cannot be turned freely by hand, the two locking nuts may be tightened against each other in the center of the stud to act as an adjusting nut.

MECHANICAL INTERLOCKS

(A) CONTACTOR INTERLOCK

This interlock is designed to prevent the isolating switch from either being opened or closed when the Type WG or WGD Contactor is closed.

A second function of this interlock is to prevent the contactor from being closed when the isolating switch is between the OFF and ON positions.

The interference arm of this interlock should be checked to be sure it is free of friction and does not interfere with the normal operation of either the isolation switch or contactor.

The length of the operating rod connecting the isolating switch and contactor should be adjusted so that the interference arm spacer clears the cam plate on the isolating switch by .062 inch when the contactor is open and the isolating switch is between positions.

When the isolating switch is either open or closed the interference arm spacer should move freely into notches provided in the cam plate to permit the contactor to close.

To adjust the length of the operating rod, it is not necessary to disconnect the fittings on either end of the rod, but instead the threaded stud in the center of the operating rod is unscrewed from either of the pipe fittings. The threads on the stud and in both fittings are right hand threads so that unscrewing the stud from one fitting will at the same time screw the stud farther into the second fitting so the stud will ultimately become disengaged from one or the other of the fittings.

When the stud becomes disengaged from one of the fittings it may then be screwed into the remaining fitting farther, to shorten the operating rod or unscrewed from the fitting to lengthen the rod.

(B) ENCLOSURE DOOR INTERLOCK

This interlock is designed to prevent the user from accidentally operating the isolating switch and energizing the starter when the enclosure door is open, or opening the enclosure door when the isolating switch is closed and the starter is energized.

Interlocking is accomplished by a spring loaded latch assembly mounted on the rear of the handle mechanism, which normally latches the operating handle in the "OFF" position.

When the enclosure door is closed this latch is released, but if the user wishes to close the isolating switch with the door open the latch must be deliberately cheated. This is done by holding the interlock pin forward while the isolating switch handle is moved to the "ON" position.

When the enclosure door is closed and the isolating switch is closed, this same latch assembly engages a hook mounted on the inside of the enclosure door to latch the enclosure door closed. In case of an emergency and it is necessary to open the enclosure door, it is possible to deliberately defeat this interlock by making the hook on the enclosure door ineffective by removing the two mounting screws which project through the enclosure door. Since the door hook is used to release the handle latch when the door is closed, it is necessary to replace this part before normal operation can be resumed.

(C) INNER DOOR INTERLOCK

When an inner door is provided to isolate the low voltage control circuit components from the main power circuit, it may also be interlocked with the isolating switch to prevent the isolating switch from being closed accidentially when the inner door is open, or to prevent the inner door from being opened accidentially when the isolating switch is closed.

The inner door interlock functions in a manner similar to the enclosure door interlock, except that to open the inner door when the isolating switch is closed it is necessary to remove the locking plate from the inner door.

CAUTION – Closing the isolating switch with the enclosure door open exposes the energized starter. The user should be fully aware of the hazards and take all appropriate safety precautions.

ELECTRICAL INTERLOCKS

Electrical interlocks should be adjusted so that the plunger is free to travel .016-.032 inch past the position taken when the handle is in the "ON" position to insure the plunger will not bottom.

The Type L-64 interlock is available with any combination of normally open or closed circuits by selection of the appropriate style from Fig. 4.

Interlock Style	Circuit Combination Provided By One Interlock Assembly
843D943G04	One normally open, One normally closed
843D943G05	Two normally open
843D943G06	Two normally closed

Fig. 4 Electrical Interlocks

CAUTION – Following any inspection procedure or after any maintenance work – **BE SURE TO REPLACE line terminal protective barrier and reactivate all mechanical interlocks.**

Name of Part	Identification No.	Number Used
Stationary Contact	3475C73H01	3
Moving Contact Assembly	2059A78G10	1
Pawl Spring	221A498H12	1
Mechanism Spring	2059A87H01	1
Handle Latch Spring	2059A81H01	1

Fig. 5 Renewal Parts

Westinghouse Electric Corporation
General Control Division
Buffalo, New York 14240

Printed in U.S.A.

5–72