

WESTINGHOUSE

METAL CLAD SWITCHGEAR
(Lift Type)

for

MAHONING VALLEY SANITARY DISTRICT
MEANDER CREEK PUMPING STATION

G.O. YG-66295

S.O. 1-F-590

INSTRUCTION BOOK 5322-244

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
EAST PITTSBURGH WORKS EAST PITTSBURGH, PA.

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Westinghouse Electric & Manufacturing Co.
East Pittsburgh, Pa.



I.B. 5322-244

DRAWING LIST

23-B-44	-	Floor Plan
25-A-789	-	Wiring Diagram
25-A-790	-	Wiring Diagram
14-D-306	-	Wiring Diagram of Test Rack
25-A-788	-	General Assembly
823949	-	Taping Instructions

INSTRUCTION BOOKS

I.B. 5326	-	Metal Clad Switchgear
I.B. 5319	-	Induction Type Overcurrent and Directional Overcurrent Relays.

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through the entire length of the switch structure and carries the exhaust gasses from the circuit-breakers.

MAIN CONTACTS

The main disconnect contacts are arranged in two rows across the housings and are mounted on a heavy sheet metal base. The assembled stationary contact and bushing may be withdrawn from the cell by removing both the insulating tubes enclosing the lower half of the main contact and the nut securing the upper end of the contact bushing to the bus or line copper connection. The studs fastening the contact bushing to the cell roof sheet can now be removed and the contact and bushing lowered from the cell. These main contacts and bushings are assembled in the cells at the factory by means of jigs to insure interchangeability of the breaker units therefore, they should not be disturbed unless it is absolutely necessary. In case one of these main contacts is disturbed, extreme care must be used in its replacement in order to obtain proper electrical contact between the fixed and moving main contacts not only of the breaker unit for this particular cell but also of any other breaker unit which may be used in this cell.

In ordering replacement parts for contacts, a full description should be given, including the ampere capacity and the particular cell for which the contact or parts are intended.

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CIRCUIT-BREAKER UNITS

The circuit-breakers used with the breaker units are type B-16-A.

The main disconnecting contacts are mounted directly on the circuit-breaker studs and engage the stationary main cell contacts when the breaker unit is raised to the operating position. These disconnecting contacts have sufficient flexibility to compensate for any slight misalignment between the stationary and movable parts.

The circuit-breaker unit is held in the operating position by two long rods, one on each side, which are inserted through holes in four lugs welded to the breaker unit frame and four corresponding lugs welded to the side of the housing. These rods are threaded into one set of the front lugs and, when screwed up tightly by means of a socket wrench, hold the breaker unit rigidly in place.

A lifting truck is used to raise or lower the breaker units in the cell or to transport them from cell to cell or to the inspection rack.

A heavy copper ground connection is bolted to the breaker unit frame and is carried to the ground bus in the stationary housing through the copper plate on the breaker unit and a finger type contact mounted on the side of the housing. This insures that the breaker unit is properly grounded at all times when the main disconnect contacts are engaged.

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BREAKER LIFTING TRUCK

The breaker units are handled by means of a carriage which operates both as a truck and a lifting device, the vertical movement of which is obtained by means of a screw and nut elevating device. When the breaker unit is supported on the lifting arms of the carriage, the lugs on the lifting arms must be between the guide strips on the under side of the breaker frame channels and against the rear stop block.

The breaker tank can be removed and the contacts examined by removing the breaker unit from the cell and lowering it until the tank rests upon the floor. Now remove the bolts securing the tanks and then elevate the unit to such height as is necessary to examine the contacts or to allow the contacts to clear the tank so the breaker can be removed for inspection or testing.

MECHANICAL INTERLOCKS

A mechanical interlock is provided which will automatically trip the breaker before the main contacts separate if it is closed and an attempt is made to lower it from the operating position. Also, if the breaker is closed when in the test position, and an attempt is made to raise it to the operating position, the breaker will be automatically tripped while the fixed and moving contacts are still a safe distance apart. This mechanical interlock also pre-

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breaker unit frame and against the stop, and the lifting carriage is in its lower position. Move the breaker carefully into the housing until the projections on the breaker engage the guides on the housing. The breaker should then be raised by means of the lifting carriage until it is in its proper operating position which is determined when the holding lugs on the breaker line up with the corresponding lugs on the housing. The holding bolts should now be put in place and tightened and lifting carriage should then be lowered and withdrawn. If it is desired to test the operation of the breaker while disconnected from the main contacts, the breaker can be lowered to its test position, and the test jumper inserted between the secondary contacts. In this position, the distance between the main disconnect contact on the breaker and those in the housing is sufficiently great as to safely insulate the breaker from the main bus. All secondary connections are intact when the breaker is in this position and the breaker can be operated electrically for testing if this is desired.