

Western Electric Co., Incorporated,  
Engineering Dept.,  
New York.

*No Count*  
(2 Pages) Page #1.  
Issue 1 - BT-431300.  
March 1, 1920.

### METHOD OF OPERATION LINE CIRCUIT

Test To Last Position Toll Or Local Switchboard Or Head - Of Toll Switchboard - Arranged For Cross Connection In Rear Of Section - Relays On Relay Rack - Local Test Desk - Full Mechanical Power Driven System

### GENERAL DESCRIPTION

1. This circuit is used for connecting jack ended line or trunk circuits through to the local test desk for testing purposes. It terminates at the foot of the local or toll board or at the head of the toll board, in a cord and plug and is used with jack ended circuits whose sleeves are grounded through a maximum resistance of 110 ohms.
2. When the line terminates at the foot of the local or toll board, the test man orders a connection up and down over a call circuit.
3. When the plug of the line is inserted in a line or trunk jack at the local or toll board the line lamps at the test desk light as busy signals. When the plug of the line is withdrawn from the line or trunk jack the lamps are extinguished.
4. When the line terminates at the head of the toll board, the circuit functions the same except that a disconnect key and lamps are provided for giving a disconnect signal at the toll board. When the connection is taken down at the toll board, the disconnect lamp is extinguished.

### DETAILED DESCRIPTION

#### OPERATION

5. When the plug of the cord located at the foot of the toll or local switchboard is inserted in a jack of a line or trunk to be tested, the E290 relay operates and lights the red busy lamps at the test board. When the plug of the cord is removed from the jack, the E290 relay releases, extinguishing the red busy lamps, restoring the circuit to normal.

#### "X" WIRING

6. When the plug of the cord located at the head of the toll board is inserted in the jack of the line or trunk under test, the E290 relay operates and closes a circuit to light the red busy lamps at the test board.
7. When the disconnect key is operated, the E31 relay operates under control of the E290 relay lighting the disconnect lamp at the toll board. When the plug of the cord is removed from the jack, the E290 relay releases, in turn releasing the E31 relay. The release of the E290 relay also extinguishes the red busy lamps at the test board and the disconnect lamp at the toll board, restoring the circuit to normal.



(2 Pages) Page #2.  
Issue 1 - BT-431300.  
March 1, 1920.

CIRCUIT REQUIREMENTS

	<u>OPERATE</u>	<u>NON-OPERATE</u>	<u>RELEASE</u>
E31	Test .025 amp. Readj. .012 amp.		Test .0038 amp. Readj. .0040 amp.
E290 Wdgs. in Parallel	Test .039 amp. Readj. .014 amp.		Test .0028 amp. Readj. .003 amp.

ENG. - WCD-JO.  
7/16/21.

CHK'D. - CWP.

APPROVED - C. L. SLUYTER, G. M. L.