

MANUAL EXTENSION LINES
RELAY, JACK AND LAMP CIRCUIT TESTS
700C PBX
(MANUAL SWITCHBOARD)

1. GENERAL:

1.1 This section covers tests of the line lamp, line relay (if provided), jacks for cut-outs, lamp jack frame for crosses, sleeve circuit, cut-off relay and break contacts of jacks.

2. APPARATUS:

2.1 Test Receiver (No. 528 or equivalent) equipped with cords and clips, No. 760 Cord, Test Plug (minimum size) and a No. 2-Y lamp in a No. 38-B Lamp Socket.

3. METHOD:

3.1 **Line Lamp Test:** Connect test receiver across the manual extension line terminals at the main frame. The line lamp should light with proper brilliancy. Disconnect the test receiver.

3.2 **Line Relay Test:** If the manual extension line is equipped with a line relay, connect test lamp across the line terminals at the main frame. The line lamp should light with proper brilliancy, indicating that the line relay operates properly. When a more critical test of the line relay is required, a current flow check should be made.

3.3 **Test of the Manual Extension Line Jack for Cut-outs:** If the manual extension line is wired without connector multiple, or if wired with connector multiple and connected to a non-multiple board, make the following test: Connect one clip of the test receiver to the sleeve of an idle back plug and connect the other clip of the receiver to the ring terminal of the test plug. Connect the tip terminal of the test plug to the tip of an idle plug. Using the No. 760 cord, short-circuit the manual extension line at the main frame, insert the test plug into the jack and manipulate the test plug to determine whether the jack cuts out. This should be done by grasping the plug at the cord end and while applying a sideward pressure (that is, away from the centre of rotation), move the plug through a complete circle. Remove the short-circuit and disconnect the test plug after testing all the jacks on the manual extension line.

3.4 In multiple boards with manual extension line circuits wired to connector multiple, make the test as follows: Connect the test receiver across the tip and ring terminals of the test plug. Insert an idle back plug into one jack of the circuit under test and insert the test plug into an associated jack. Manipulate the test plug to determine whether the jack cuts out, as described in 3.3. Disconnect testing apparatus from the circuit after all multiple jacks have been tested.

3.5 **Test of the Lamp Jack Frame for Crosses:** On circuits not equipped with line relays, connect one clip of the test receiver to the tip of an idle back plug and touch the other clip to the metal frame of the manual extension lamp cap. No click should be heard. Disconnect the test receiver.

3.6 On circuits equipped with line relays, connect one clip of the test receiver to the sleeve of an idle back plug and touch the other clip to the metal frame of the manual extension lamp cap. No click should be heard. Disconnect the test receiver.

3.7 **Sleeve Circuit and Cut-off Relay Test:** To test that the sleeve ground contacts are open, make a busy test on the sleeve of a jack of the manual extension line circuit. No click should be heard.

3.8 Insert an idle back plug into a jack of the manual extension line circuit. The supervisory lamps should light. If a multiple board, repeat the test at any multiple jack appearances. This tests that the tip make contacts of the jack close through the sleeve ground, and if the manual extension line circuit is wired to the connector multiple, the make contact of the cut-off relay.

3.9 If the manual extension line is connected to a multiple board, also make the following test: With an idle back cord in a jack of the manual extension line, make a busy test at all multiple jack appearances. A click should be heard. This tests the continuity of the sleeve circuit. Disconnect the idle cord from the jack.

3.10 **Test of the Break Contacts of Manual Extension Line Jack:** If the manual extension line is wired without connector multiple, make the following test: Short-circuit the tip and ring terminals of the test plug and insert the plug into the manual extension line jack. Connect one clip of the test receiver to the short-circuited tip and ring terminals of the test plug and touch the other clip alternately to the tip and ring of an idle plug. No clicks should be heard. Test any associated jacks, then disconnect the testing apparatus.

4. REPORTS:

4.1 The required record of these tests should be entered on the proper form.