SELECTORS
ROTARY TEST
USING TEST SET SD-31616-01 (J34716A)
STEP-BY-STEP SYSTEMS

1. GENERAL

1.01 This section describes a method of testing the rotary action of local and toll selectors using SD-31616-01 (J34716A) test set. It also covers the purpose of each test.

1.02 This section is reissued to incorporate material from the addendum in its proper location. In this process marginal arrows have been omitted.

1.03 The tests covered are:

A. Rotary Action Test

B. Stop on Idle Trunk Test

1.04 Test A checks the ability of a selector to pass a busy trunk.

1.05 Test B checks the ability of a selector to stop on an idle trunk.

1.06 A different level should be used each time the tests are performed, so that eventually every selector will have been tested on each working level.

1.07 Vacant levels, levels to out trunk switches, levels on which a digit is repeatedly absorbed or "blocked", levels that send back "no-such-number tone" and restricted service levels should be omitted when performing these tests.

1.08 When testing an incoming selector, the trunk should be made busy in the approved manner.

1.09 When testing a first selector in a line switch office, the master switch having direct access to it should be rotated to pick up any disengaged plungers.

1.10 When testing selectors arranged to absorb the first digit on all levels or the first digit on the level under test, it will be necessary to dial an extra digit.

Caution: Care should be taken to see that primary or secondary line switches are not held when first selectors are made busy.

1.11 These tests should preferably be made during periods of light traffic.

1.12 The test equipment specified in this section is designed to apply proper marginal tests (simulated critical circuit conditions) when the circuit under test and the test equipment have an applied voltage of 48.5 to 50. In those offices where power plants are normally operated at more than 50 volts, the battery voltage should be reduced and maintained within the required limits while the tests are being made.

2. APPARATUS

Tests A and B

2.01 Selector test set circuit J34716A (SD-31616-01).

2.02 Patching cord - P3K cork 6 feet long, equipped with two No. 310 plugs (3P15A cord) (for battery supply jack connection).

2.03 Testing cord - W2M cord, equipped with a No. 310 plug and two No. 59 cord tips (2W12A cord), and two No. 108 cord tips - (Used where a battery supply jack is not available).

2.04 No. 1011G dial hand test set (or equivalent), equipped with a No. 2W40A cord assembly consisting of a W2CL cord, a No. 471A jack and one No. 240H plug with terminals 3 and 4 of the No. 240H plug strapped together.

2.05 Testing cord - W1C cord, 12 feet long, equipped with a No. 1B or a No. 1C plug (or the replaced No. 116 plug) and a No. 360B tool (1W6A cord).

2.06 KS-6278 connecting clips for use where the wiper cords do not terminate at the test jack assembly.

2.07 No. 477A (or No. 375A) (make busy) tools as required.

Test B

2.08 Testing cord - W1C cord, 20 feet long, equipped with a No. 1B or 1C plug (or the replaced No. 116 plug) and a No. 360B tool (1W6B cord) and a No. 419A tool.

3. PREPARATION

Tests A and B

3.01 Connect the B jack of the test set to a 48-volt battery and ground frame jack supply using the P3K cord. If a jack is not available use the W2M cord.

Note: To avoid possible grounding of the battery supply lead, connect the cord to the test set first and, when disconnecting, remove the cord from the test set last.

3.02 Insert the plug of the 12 foot W1C cord into the W jack of the test set.

Note: Where the wiper cords do not terminate at the test jack assembly, connect the KS-6278 connecting clip to the No. 360B tool of this cord and connect directly to the terminal end of the sleeve wiper.

4. METHOD

A Rotary Action Test

4.01 Observe that the selector under test is idle, then insert the No. 240H plug into the test jack and operate the TALK switch of the dial hand test set.

4.02 Adjust the auxiliary spring of the No. 240H plug to make firm contact with the sleeve wiper cord terminal, then connect the No. 360 tool of the W1C cord to the No. 30 cord tip associated with the auxiliary spring of the No. 240H plug.

4.03 With the TALK switch operated, dial the number of the level under test. Observe that the selector steps to the level dialed and rotates with positive and smooth action at a uniform rate of speed to the 11th rotary position.

Note: This is a test for the "operate" of the interrupter relay E and the "non-operate" of the cut-through relay D. The use of the resistance in the sleeve circuit of the test circuit usually results in slower rotary action than is normally experienced in service, but if the action is positive, smooth and uniform, slow speed is not an indication of trouble.

4.04 Listen in the receiver of the dial hand test set during the rotary action of the selector. A clicking noise in the receiver usually indicates faulty cam spring adjustment or faulty back contact pressure on the D relay.

4.05 As soon as the selector reaches the 11th rotary position, remove the plug from the selector test jack to avoid excessive vibration of the rotary magnet. Observe that the selector releases properly. Operate the dial hand test set switch to the MON position.

4.06 When the testing is completed, remove the No. 360 tool from the No. 240H plug.

4.07 If no further tests are to be made, disconnect all cords.

B Stop on Idle Trunk Test

4.08 Insert the plug of the 20 foot W1C cord into the T jack of the test set. Connect the No. 419A tool attached to the cord directly to the sleeve of the fourth or fifth trunk on the level under test, making the connection at the distributing terminal or bank terminal strip.

4.09 Operate the IDLE key on the test set and observe that the BY (busy) lamp does not light, indicating that the trunk selected for the test is not busy. If the BY lamp lights select another trunk for the test.

4.10 Insert the No. 240H plug into the test jack of the selector and operate the TALK switch of the dial hand test set.

4.11 Adjust the auxiliary spring of the No. 240H plug to make firm contact with the sleeve wiper cord terminal, then connect the No. 360 tool of the W1C cord to the No. 30 cord tip associated with the auxiliary spring of the No. 240H plug.

4.12 With the TALK switch operated, dial the number of the level under test. Observe that the selector steps to the level dialed and rotates smoothly to the trunk selected for test and that the BY lamp lights after the selector cuts through on the idle trunk.

Note: Stopping on the "idle" trunk is a test for the "non-operate" of the interrupter relay E and the "operate" of the cut-through relay D. The use of the resistance in the sleeve circuit usually results in slower rotary action than is normally experienced in service but if the action is positive, smooth and uniform, slow speed is not an indication of trouble.

4.13 Listen in the receiver of the dial hand test set during the rotary action of the selector. A clicking noise usually indicates faulty cam spring adjustment or faulty back contact pressure on the D relay.

4.14 Remove the plug of the dial hand test set from the selector test jack and observe that the selector releases properly.

4.15 Restore the Idle key on the test set.

4.16 When the testing is completed, remove the No. 360 tool from the No. 240H plug, and disconnect the cord from the trunk sleeve terminal and the test set T jack.

4.17 If no further tests are to be made, disconnect all cords.