

TRUNKS FROM LOCAL SELECTOR LEVELS
CONTINUITY TESTS
USING DIAL HAND TEST SET
STEP-BY-STEP SYSTEMS

1. GENERAL

1.01 This section describes a method of testing the continuity and polarity of trunks outgoing from selector levels and the paths busy tone feature of selectors by means of a dial hand test set. This method is not applicable to toll 4-wire selectors, such as toll transmission, A-B toll transmission, and toll intermediate selectors which are covered in other sections.

1.02 This section is reissued principally to change the testing procedures in Tests A and B for the SD-32183-01 selectors and to expand the method used on other selectors when making trunk continuity tests.

1.03 The tests covered are:

A. Continuity Test: This test checks selector levels for open or crossed trunk leads.

B. Polarity and Continuity Test: This test checks the selector levels for open or crossed trunk leads and checks the trunk polarity by means of a lamp indication.

1.04 These are alternate tests, intended to be scheduled at different intervals.

1.05 Tests should be made on all levels (including those to operators and plant department desks), except to levels where the selector is arranged for repeated digit absorbing, to block and send back no-such-number tone on the first and second digits, and on levels restricted to all incoming calls to the selector.

1.06 When connecting to a selector test jack, first observe that the switch is in the normal position and then monitor on the circuit. If there is an indication that the selector has been seized, disconnect from the test jack.

1.07 Tests should be made on one selector on each shelf or on each half shelf of ten selectors, and a different selector should be used each time the test is performed so that eventually all switches will have been tested. On five switch multiple subgroups it is desirable that the tests be made in the following order, 1,6,2,7,3,8,4,9,5,10, in order that the tests may be alternated between the two groups of five selec-

tors on the shelf. This order may be followed throughout the entire group of selectors in order to distribute the tests of the shelf multiple more evenly over the period necessary to test the complete shelf multiple.

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, rotate the master switch having direct access to it in order to pick up any disengaged plungers.

1.10 When testing selectors arranged to absorb the initial digit once only on the level under test, dial an extra digit before proceeding with the trunk tests in Test A or B.

1.11 When testing selector levels arranged to absorb the first and second digits before trunk hunting, dial these digits before proceeding with the tests in Test A or B.

1.12 This test should preferably be made during periods of light traffic.

1.13 Local instructions should be followed with reference to recording any register operations caused by performing these tests.

2. APPARATUS

Test A

2.01 No. 1011G dial hand test set (or equivalent), equipped with one W2CL cord, one No. 471A jack, and one No. 240A plug (2W39A cord).

Test B

2.02 No. 1011G dial hand test set (or equivalent), equipped with a W2CL cord, a No. 471A jack, and a No. 240A plug (2W39A cord). Modify by replacing the No. 240A plug with a No. 240F plug with a No. 2T lamp (or equivalent), bridged from the tip to the No. 4 contact of the plug.

Tests A and B

2.03 Two No. 893 cords, 3 feet long, equipped with two No. 360A tools (1W13A cord), a No. 365 tool, and one

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No. 419A tool (required only when testing 4-wire selector trunks or certain digit absorbing selectors).

2.04 KS-6320 orange sticks, as required.

2.05 Toothpicks, as required.

3. PREPARATION

Tests A and B

3.01 If the selector to be tested is normal, remove the switch cover. With the switch of the dial hand test set in the MON position, and the cord switch depressed to the ON position, insert the cord plug into the selector test jack.

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

3.02 Operate the dial hand test set switch to TALK position.

Note: If performing Test B, observe that the test lamp is dimly lighted.

3.03 When the trunks being tested are the 4-wire type and depend on a ground indication over the fourth wire (A lead) from a circuit preceding the selector used in the test, connect the No. 365 tool of the No. 893 cord to terminal 4 of the test plug and connect the No. 419A tool to the A lead at its first termination (normal post springs or cut-through relay).

4. METHOD

A. Continuity Test

4.01 Dial the selector to the first working level and observe that the selector cuts through on the first idle trunk without chattering.

Note: Chattering usually indicates an open tip, ring, or sleeve of the trunk.

4.02 If the trunks are of the 4-wire type and are used to give a class-of-service indication to the next succeeding circuit, check that the proper indication is received. In some cases, it may be necessary to dial one or more additional digits to verify the continuity of the fourth wire and to check with the operator, as the indication may not always be received by the tester.

4.03 When testing switches other than SD-32183-01, rapidly open and close the off-normal spring by means of the KS-6320 orange stick applied to the tip of the off-normal finger. Observe that the selector rotates to the next idle trunk and cuts through without chattering (see note B).

Note A: On the SD-32183-01 selector, after this switch has been dialed and the first idle terminal has been seized, it will be necessary to block the VON springs nonoperated (normal position). To step the selector to the next idle terminal, rapidly open and close the rotary interrupter springs by means of an orange stick. When the level has been tested, remove the blocking tool from the off-normal lever to close the release path.

Note B: On the following digit-absorbing selectors, it will be necessary to block the following relays as indicated while the selector is being stepped to prevent the selector from releasing:

<u>Selector</u>	<u>Block Relay</u>	<u>Operate</u>
SD-30976-01	F Nonopr	VON Spg
SD-31022-01	F Opr	VON Spg
SD-31784-01	F Opr	VON Spg
SD-31933-01	D Opr	VON Spg
SD-32077-01	F Opr	VON Spg

4.04 Proceed as in 4.02 and 4.03, testing each idle trunk on the level until the eleventh rotary position is reached.

4.05 Operate the dial hand test set switch to MON position and observe that the selector restores properly.

4.06 Repeat the operations described in 4.02 to 4.05 on each successive level until all trunks on all levels have been tested. Check on at least one level (preferably the tenth for paths busy tone) before releasing from the eleventh rotary position.

4.07 Remove the plug from the switch jack and the No. 893 cords from the relay and A lead, if used.

B. Polarity and Continuity Test

4.08 Dial the selector to the level under test and observe that the selector cuts through on the first idle trunk without chattering and that the lamp is still dimly lighted.

Note A: Chattering usually indicates an open ring or sleeve lead. Decreased brilliancy in the lamp usually indicates a grounded tip lead.

Note B: If the lamp is brilliantly lighted after the selector has cut through, it usually indicates an open tip lead, a ring lead crossed with battery, or a reversed trunk.

4.09 If the trunks are of the 4-wire type and are used to give a class-of-service indication to the next succeeding circuit, check that the proper indication

is received. In some cases, it may be necessary to dial one or more additional digits to verify the continuity of the fourth wire and to check with the operator, as the indication may not always be received by the tester.

4.10 When testing switches other than SD-32183-01, rapidly open and close the off-normal spring by means of the KS-6320 orange stick applied to the tip of the off-normal finger. Observe that the selector rotates to the next idle trunk and cuts through without chattering. The lamp indications are the same as in 4.08 (see note B).

Note A: On the SD-32183-01 selector, after this switch has been dialed and the first idle terminal has been seized, it will be necessary to block the VON springs nonoperated (normal position). To step the selector to the next idle terminal, rapidly open and close the rotary interrupter springs by means of an orange stick. When the level has been tested, remove the blocking tool from the off-normal lever to close the release path.

Note B: On the following digit-absorbing selectors, it will be necessary to block the following relays as indicated while the selector is being stepped to prevent the selector from releasing:

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SD-31933-01	D Opr	VON Spg
SD-32077-01	F Opr	VON Spg

4.11 Proceed as in 4.09 and 4.10, testing each idle trunk on the level until the eleventh rotary position is reached.

4.12 Operate the dial hand set switch to MON position and observe that the selector restores properly.

4.13 Repeat the operations described in 4.08 to 4.12 on each successive level until all trunks on all levels have been tested. Check at least one level (preferably the tenth) for paths-busy tone in the receiver before releasing from the eleventh rotary position.

4.14 Remove the plug from the test jack and the No. 893 cords from the relay and A lead, if used.