LOCAL CONNECTORS

OPERATION TESTS

USING TEST SET SD-31859-01 (J34722B)

AND TEST LINE SD-31857-01

STEP-BY-STEP OFFICES

1. GENERAL

1.01 This section describes a method of testing the operating features of local connectors and local operating features of combination connectors of the 100- and 200-point type in No. 355A and 35-E-97 offices by means of test set SD-31859-01 and test line SD-31857-01.

1.02 This section is reissued to add a method of testing the ringing control features of 200-point rotary hunting connectors.

1.03 The tests covered are:

A. Busy Line Test — Leak: This test checks the stepping features of a connector under a leak condition and its ability to return busy tone, busy flash if provided, and to release.

B. Idle Line Test — Loop — Other Than 8-Party Semiselective Connectors: This test checks the stepping features of a connector under a loop condition and its ability to ring, trip, reverse battery, provide a proper transmission path, and to release, including the timed release of a connector when the calling party fails to hang up. A false ground test is also made on the timed-release feature. Connector ringing is indicated by a relay buzzer in the test set. On 200-point connectors, cut through to machine intercept is checked.

C. Idle Line Test — Loop — 8-Party Semiselective Connectors: This test checks the stepping features of a connector under a loop condition and its ability to ring, trip, reverse battery, provide a proper transmission path, and to release, including the timed release of a connector when the calling party fails to hang up. A false ground test is also made on the timed release feature. It also makes a complete check of 100-point local connector H and J relays, or combination connector K and N relays and 200-point local connector G and L relays, or combination connector G and N relays when testing terminal-per-station connectors. Connector ringing polarity is checked either by means of test line bells or by lamps on the test set. On 200-point connectors, cut through to machine intercept is checked.

D. Reverting Call Test: This test checks the reverting call feature of both 10-party terminal-per-station and 10- or 20-party terminal-per-line connectors.

E. Free Service Feature — Rotary Hunting Connectors: This test checks that rotary hunting connectors arranged for free service on certain levels will not reverse the battery on the calling line.

1.04 *100-Point Connectors:* This test line for these connectors is connected to terminal 99, except in the case of rotary hunting connectors and, in some cases, 20-code ringing connectors as described in 1.07. In rotary hunting groups, terminal 99 is made busy and the test line is connected to terminal 90. The hunting feature is checked by dialing 99 and also an additional digit, where required, and noting that the switch steps to 90 (see 1.07).

1.05 *200-Point Connectors:* The test line for nonrotary hunting connectors is connected to terminal 99 of the upper and lower banks. The test line for rotary hunting connectors is connected to terminal 99 of the upper banks and to

terminal 90 of the lower banks, terminal 99 of the lower bank being made busy. The rotary hunting feature of the switch is tested, with the test set LO-UP key in its normal position, by directing the switch to terminal 99 and having it step to 90 (see 1.07).

Caution: If the connector stops on any other terminal, immediately release the connector so as to avoid ringing on a customer line.

1.06 For regular connectors, the disconnect time is within 12 to 30 seconds; for rotary hunting connectors, the disconnect time is within 25 to 37 seconds.

1.07 When testing 20-code ringing connectors, codes 11 to 20 must be used to make a complete check of the ringing. If the ninth level is arranged to close the normal post springs, codes 11 to 20 will be tested by dialing 99. If the ninth level is not so arranged, cross connect the test line circuit to a nonworking terminal on a level which is arranged to close the normal post springs and use this nonworking terminal as the test terminal.

1.08 In Tests B and C, spaces are provided in the steps for writing in the interval during which the pretrip and trip tests are to be made, as indicated in Table A or B.

1.09 When testing connectors which have a 60- to 75-volt silent interval tripping battery and for which ac requirements are specified, any ring trip relays which fail on the pretrip or trip test (test set or test line test resistance values) shall be readjusted to meet the requirements specified in Sections 040-803-701 and 040-236-701 and the readjust ringing current values provided by the test line. These values are obtained, as indicated for READJUST in Tables A and B, by connecting the TL jack of the test set to the AC jack of the test line.

1.10 When testing connectors arranged for 1400- or 1500-ohm maximum external subscriber loop, any ring trip relay which fails on the pretrip or trip test (test set resistance values) shall be readjusted mechanically and electrically to meet the requirements specified in Sections 040-803-701 and 040-236-701 and in the circuit requirements table. Repeat the test. If the relay continues to fail, operate the test keys as indicated for READJUST in Table B to apply the test set readjust resistance values, and again repeat the tests, changing the tension of the No. 1 spring as required.

1.11 When testing connectors arranged for busy flash over a fourth wire and also when testing the operation of the D relay on those switches arranged for free service on the ninth level, it is necessary for the connector "F" lead to be wired to No. 5 spring of the connector test jack, and the test set must be equipped with a TR1 key.

1.12 Test E is intended as a means for making a check of the free service feature of rotary hunting connectors. The method involves the removal of the switch cover, but it is expected that the test will be made at rather infrequent intervals or in connection with checking the performance of individual switches on which trouble may have been encountered.

1.13 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.

1.14 ***Lettered Steps:*** A letter a, b, c, etc, added to a step number in Part 3 or 4 of this section, indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

1.15 Local instructions should be followed for recording and reporting any register operations caused by performing these tests.

2. APPARATUS

All Tests

2.01 Test set SD-31859-01.

2.02 Connector test line circuit SD-31857-01.

2.03 1011G handset (dial hand test set), equipped with a 2W39A cord, consisting of a W2CL cord, a 471A jack, and a 240A plug (for use with test set).

Test Set Equipped With B and R Jacks

2.04 Patching cord, P3E cord, 6 feet long, equipped with two 310 black-shelled plugs (3P6D cord).

2.05 Patching cord, P3E cord, 6 feet long, equipped with two 310 red-shelled plugs (3P7A cord).

Tests A, B, and C

2.06 Patching cord, P4K cord, 12 feet long, equipped with a 289B plug and a 240B plug (4P4A cord) (for use when connectors are arranged for busy flash or to test operation of the D relay when free service is provided on the ninth level).

2.07 Patching cord, P3H cord, 10 feet long, equipped with a 310 plug and a 240A plug (3P2A cord) (for use when 100-point connectors are ***not*** arranged for busy flash or for testing operation of the D relay when free service is provided cn the ninth level).

2.08 Patching cord, consisting of two 10-foot P3H cords equipped with 310 plugs with both cords connected to a 240B plug (5P3B cord) (for use with 200-point connectors).

Tests B and C

2.09 Patching cord, P3E cord, 1 foot long, equipped with two 310 plugs (3P6A cord) (for use when test set is provided with PTR key).

2.10 Patching cord, P3E cord, 6 feet long, equipped with two 310 plugs (3P7A cord) (for use when test set is provided with NTR key, also when readjusting relays with ac readjust requirements).

2.11 1011G handset (dial hand test set), equipped with a 2W39A cord, consisting of a W2CL cord, a 471A jack, and a 240A plug (for use with timed disconnect false ground test).

2.12 Insulating tools, as required. Use tools and apply as covered in Section 069-020-801. ←

Test C

2.13 Patching cord, P3E cord, 6 feet long, equipped with two 310 plugs (3P7A cord) (for use when test set is arranged for visual ringing).

Tests D and E

2.14 Patching cord, P3H cord, 10 feet long, equipped with a 310 plug and a 240A plug (3P2A cord).

Test E

2.15 KS-6780 connecting clip, or equivalent.

2.16 Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord) and two 419A tools.

2.17 Blocking tools, as required. Use tools and apply as covered in Section 069-020-801.

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3. PREPARATION

STEP	ACTION	VERIFICATION
All Tests		
1a	If test set equipped with B, R jacks — Connect test set B jack to connector test line B jack using P3E cord equipped with black-shelled plugs.	

STEP	ACTION	VERIFICATION
2a	Connect test set R jack to connector test line R jack using P3E cord equipped with red-shelled plugs. *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.	
3b	If test set ***not*** equipped with B, R jacks — Insert black-, red-shelled plugs of cords permanently associated with test set into B, R jacks, respectively, of connector test line.	
4	Insert 240A plug of handset into test set TJ jack.	
Tests A, B, and C		
100-Point Connectors Only		
5c	If testing connectors ***not*** arranged for busy flash or to test operation of D relay when free service provided on ninth level — Connect test set T jack to test jack of connector under test using P3H cord.	C lamp does not light. *Note:* If C lamp lights, remove plug from test jack and proceed to another switch.
6d	If testing connectors arranged for busy flash or to test operation of D relay when free service provided on ninth level — Insert 289B plug with stay cord down into test set TT jack, 240B plug into test jack of normal connector to be tested using P4K cord.	C lamp does not light. *Note:* If C lamp lights, remove plug from test jack and proceed to another switch.
200-Point Connectors Only		
7	Connect 310 red-, black-shelled plugs to test set T, FR jacks, respectively, 240B plug to test jack of connector to be tested using 5P3B cord.	C lamp does not light. *Note:* If C lamp lights, remove plug from test jack and proceed to another switch.
Tests B and C		
8e	If test set provided with PTR key — Connect TL jack of test set to proper test jack using 1-foot P3E cord as shown in Table A.	

STEP	ACTION	VERIFICATION
9e	Operate S key.	
10f	If test set provided with NTR key — Connect test set TL jack to test line SUP or AC jack, after consulting Table B using 6-foot P3E cord and/or operate proper keys in test set.	
11g	If making false-ground test on timed-disconnect feature — Determine from office records proper connector and terminal to dial to seize intercepting trunk which provides timed-release ground to connector under test. Make tests as described.	

TABLE A

TEST SET PROVIDED WITH PTR KEY

KIND OF RING	MAX EXT SUB LOOP (OHMS)	TRIP BAT. VOLTS	CONNECT TL JACK TO		PRETRIP (INTERVAL)	TRIP (INTERVAL)
			TST SET JK	TST LINE JK		
			TEST	READJUST		
SUPER-IMPOSED	750-900	60-75	TR1	AC	RINGING	RINGING
	1000-1115		TR2			
		45-52	TR3	—		SILENT
AC-DC			TR4	—		

TABLE B

TEST SET PROVIDED WITH NTR KEY

KIND OF RING	MAX EXT SUB LOOP (OHMS)	TRIP BAT. VOLTS	CONNECT TL JACK TO TEST LINE JACK FOR		KEYS OPERATED		PRETRIP (INTERVAL)	TRIP (INTERVAL)
			TEST	READJUST	TEST	READJUST		
SUPER-IMPOSED	750-900	60-75	SUP	AC	S	S	RINGING	RINGING
	1000-1115	48.5 TO 50.0	—	—	S TR2-L TR3-L	—	SILENT	SILENT
AC-DC			—	—	L TR2-L TR3-R	L TR2-R TR3-R		
SUPER-IMPOSED	1400-1500	66-75	—	—	L TR2-L TR4-L	L TR2-R TR4-L		

STEP	ACTION	VERIFICATION
→ 12h	If testing ringing control features of 200-point rotary hunting connectors — Insulate 1L and 2L contacts of normal post spring.	
Test C		
13i	If test set arranged for visual ringing — Determine if test set provided with M or K wiring, then connect 8R jack of test set to T jack of test line using 6-foot P3E cord. *Note:* Operate TR4 key to R position and, using a test receiver, check for ground on the sleeve of the 8R jack. If ground is present, M wiring is provided. If not present, K wiring is provided.	
14j	If testing terminal-per-station connectors — Operate connector test line OP-MG, NOR, NO-MG key to one of three positions, using different position on each routine test cycle. *Note:* By using position NO-MG, an operate test of the local connector H relay, or the combination connector K relay is applied; by using position OP-MG, an operate test of local connector J relay, or the combination connector N relay is applied; and by using position NOR, a nonoperate test of the J or N relay is applied. It may be desired to impose all three conditions on each connector tested. In any case, this complete test should be made when clearing specific cases of trouble.	
Tests D and E		
15	Insert 310 plug of P3H cord into test set T jack.	
16	Insert 240A plug of P3H cord into jack of normal connector to be tested.	C lamp does not light.

4. METHOD

STEP	ACTION	VERIFICATION
	A. Busy Line Test — Leak	
8	At test set — Operate LEAK key.	
9	With handset switch cord in ON position — Operate handset switch to TALK position.	C lamp lighted.

STEP	ACTION	VERIFICATION
10	Dial 99. *Note:* Dial an extra code digit if testing terminal-per-line code ringing connectors.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Busy tone heard in receiver.
11k	If connector arranged for busy flash — Operate TR1 key to L position.	C lamp flashes at 60 ipm.
12l	Restore TR1 key.	C lamp lights steadily.
13	Operate handset switch to MON position.	Connector releases. C lamp extinguished.
14	Unless other tests to be made on this switch — Remove all test connections, restore all keys.	

B. Idle Line Test—Loop—Other Than 8-Party Semiselective Connectors

13	With switch on handset cord in OFF position — Operate handset switch to TALK position.	C lamp lighted.
200-Point Connectors Only		
14	Operate LO-UP key to UP position.	
15	Operate MI key.	
16	Dial 99.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Switch cuts through to machine intercept circuit. Recorded message heard in receiver.
17	Operate handset switch to MON position.	Connector releases. C lamp extinguished.
18	Restore MI, LO-UP keys.	
All Connectors		
19	Operate handset switch to TALK position.	C lamp lighted.
20k	If testing other than code ringing terminal-per-line connectors — Dial 99.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Audible ringing heard in receiver. Buzzer relay sounds, follows ringing code. *Note:* When testing 2-ring or code ringing connectors, check that first audible ring is a full code ring in order to check pickup feature.

STEP	ACTION	VERIFICATION
21l	If testing code ringing terminal-per-line connectors — Operate REV-L key.	
22l	Dial 99, then dial code digit for ringing over tip.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Audible ringing heard in receiver. Buzzer relay sounds, follows ringing code.
23l	Operate handset switch to MON position.	Connector releases. C lamp extinguished.
24l	Operate handset switch to TALK position.	C lamp lighted.
25l	Restore REV-L key.	
26l	Dial 99, then dial code digit for ringing over ring. *Note:* Different code digits should be dialed on each routine test cycle so that eventually all codes will have been tested on each switch.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Audible ringing heard in receiver. Buzzer relay sounds, follows ringing code. *Note:* Check that first audible ring is a full code ring in order to check pickup feature.
27	Operate handset switch to ON position.	
28m	If testing connectors arranged to test operation of D relay when free service provided on ninth level — Operate TR1 key to L position.	C lamp extinguished.
29n	If testing connectors in offices in which generator connected to ground — Operate REV-L key. *Note:* These three Steps, 29n through 31n, should be made during one ( ) interval.	
30n	Operate PTR or NTR key momentarily.	
31n	Restore REV-L key.	Buzzer relay responds to next ringing period.
32o	If testing connectors in offices in which generator connected to superimposing battery — Operate PTR or NTR key momentarily at start of ( ) interval.	Audible ringing continues to be heard in receiver. Buzzer relay responds to next ringing period.

STEP	ACTION	VERIFICATION
33	Operate TR key at start of ( ) interval.	***Test Applied in Silent Interval —*** Audible ringing, buzzer relay not heard again. ***Test Applied in Ringing Interval —*** Audible ringing, buzzer relay stop immediately. ***Connector Arranged to Reverse Battery on Ninth Level —*** REV-BAT lamp lighted. ***Connector Arranged to Test Operation of D Relay When Free Service Provided on Ninth Level —*** C lamp lighted.
34p	If REV-BAT or C lamp did not light in Step 33 when testing connectors in superimposed ringing offices using 66- to 75-volt silent period tripping battery — Operate TR3 key to R position momentarily.	REV-BAT or C lamp lighted momentarily.
35	Restore TR1 key to normal.	C lamp lighted.
36q	If testing connectors not arranged to test operation of D relay when free service provided on ninth level — Remove switch cover.	D relay operated.
37r	If D relay does not operate when testing connector in superimposed ringing offices using 66- to 75-volt silent period tripping battery — Operate TR3 key to R position, then operate TR key momentarily.	D relay operated.
38r	Replace switch cover.	
39	Restore TR key.	
40	Operate ANS key. ***Note 1:*** It may be necessary to restore the ANS key momentarily to start the tone. ***Note 2:*** Operate REV-LA key for connectors in 35-E-97 offices.	Tone heard in receiver. REV-BAT lamp lighted when testing connectors arranged to reverse battery on ninth level.
41s	If testing connectors arranged for calling party control without timed-release feature — Restore ANS key.	REV-BAT lamp extinguished, if lighted.

STEP	ACTION	VERIFICATION
42s	Operate handset switch to MON position.	Connector releases. C lamp extinguished.
43t	If testing connectors arranged for joint control (100-point connectors only) — Operate handset switch to MON position for at least 2 seconds.	Connector does not release. C lamp extinguished momentarily. REV-BAT lamp may be extinguished, if lighted.
44t	Restore ANS key.	REV-BAT lamp extinguished, if lighted. Connector releases. C lamp extinguished.
45	Operate handset switch to MON position.	
46u	If testing connectors arranged for calling party control with timed-release feature — Restore ANS key.	REV-BAT lamp extinguished, if lighted. Within timed interval, note that C lamp extinguished momentarily, indicating that disconnect feature functioned (see 1.06).
47u	Operate handset switch to MON position. *Note:* When performing this test, proceed to Steps 48v through 53v and, if applicable, perform test on one connector per shelf.	Connector releases.
48v	If testing connectors arranged for timed-disconnect feature under control of intercepting trunk — Insert plug of handset into test jack of any connector having access to intercept trunk associated with connector to be tested.	
49v	Dial terminal connected to intercept trunk.	Connector stops on proper terminal. Audible ringing heard. At operator position — Call answered, ringing silenced.
50v	At operator position — Disconnect when disconnect signal received.	
51v	Perform Step 46u.	Note that C lamp does not extinguish momentarily within timed interval, indicating that disconnect feature did not function (see 1.06).
52v	Disconnect handset from connector used in test.	Connector releases.
53v	Operate handset switch to MON position.	Connector under test releases.
54	Unless other tests to be made on this switch — Remove all test connections, restore all keys.	

STEP	ACTION	VERIFICATION
	C. Idle Line Test—Loop—8-Party Semiselective Connectors	
15	With handset cord switch in OFF position — Operate handset switch to TALK position.	C lamp lighted.
	8-Party Semiselective Terminal-per-Line Connectors	
16k	If test set arranged for audible ringing — Operate REV-L key.	
17k	Operate BELL-T key.	
18k	Dial 99, then dial code digit for ringing over tip.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Audible ringing heard in receiver. R+ or R— bell rings. Buzzer relay sounds, follows ringing code.
19k	Operate handset switch to MON position.	Connector releases. C lamp extinguished.
20k	Operate handset switch to TALK position.	C lamp lighted.
21k	Restore REV-L key.	
22k	Operate BELL-R key.	
23k	Dial 99, then dial code digit for ringing over ring. *Note:* Different code digits should be dialed on each test cycle so that eventually all codes will have been tested on each switch.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Audible ringing heard in receiver. R+ or R— bell rings. Buzzer relay sounds, follows ringing code. *Note:* Check that first audible ring is a full code ring in order to check pickup feature.
24i	If test set arranged for visual ringing — Operate REV-L, T keys.	
25i	Dial 99, then dial code digit for ringing over tip.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Audible ringing heard in receiver. (+) or (—) lamp lights. Buzzer relay sounds, follows ringing code.
26i	Operate handset switch to MON position.	Connector releases. C lamp extinguished.
27i	Operate handset switch to TALK position.	C lamp lighted.
28i	Restore REV-L, T keys.	
29i	Operate R key.	

STEP	ACTION	VERIFICATION
30i	Dial 99, then dial code digit for ringing over ring. *Note:* Different code digits should be dialed on each routine test cycle so that eventually all codes will have been tested on each switch.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Audible ringing heard in receiver. (+) or (—) lamp lights. Buzzer relay sounds, follows ringing code. *Note:* Check that first audible ring is a full code ring in order to check pickup feature.
8-Party Semiselective Terminal-per-Station Connectors		
31k	If test set arranged for audible ringing — Operate BELL-R key.	
32k	Dial 99.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Audible ringing heard in receiver. R— bell rings during ringing interval when OP-MG, NOR, NO-MG key is in either NO-MG or NOR position. R+ bell rings during ringing interval when OP-MG, NOR, NO-MG key is in OP-MG position. Buzzer relay sounds during ringing interval. *Note:* When testing 2-ring connectors, check that first audible ring is a full code ring in order to check pickup feature.
33i	If test set arranged for visual ringing — Operate R key.	
34i	Dial 99.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Audible ringing heard in receiver. (—) lamp lights during ringing interval when OP-MG, NOR, NO-MG key is in either NO-MG or NOR position. (+) lamp lights during ringing interval when OP-MG, NOR, NO-MG key is in OP-MG position. Buzzer relay sounds during ringing interval. *Note:* When testing 2-ring connectors, check that first audible ring is a full code ring in order to check pickup feature.
35	Operate switch on handset cord to ON position.	
36l	If testing connectors arranged to test operation of D relay when free service provided on ninth level — Operate TR1 key to L position.	C lamp extinguished.

STEP	ACTION	VERIFICATION
37k	If test set arranged for audible ringing — Restore BELL-R key.	R+ or R— bell stops ringing. Buzzer relay continues to sound during ringing interval.
38i	If test set arranged for visual ringing — Restore R key.	(+) or (—) lamp extinguished. Buzzer relay continues to sound during ringing interval. *Note:* If (+) or (—) lamp remains lighted, proceed to Step 39m or 40n.
39m	If test set provided with M wiring — Remove plug from 8R jack momentarily.	(+) or (—) lamp extinguished.
40n	If test set provided with K wiring — Operate TR4 key to R position momentarily.	(+) or (—) lamp extinguished.
41	Operate PTR or NTR key momentarily at start of ( ) interval.	Audible ringing continues to be heard in receiver. Buzzer relay does not sound while key operated.
42	Operate TR key at start of ( ) interval.	***Test Applied in Silent Interval —*** Audible ringing, buzzer relay not heard again. ***Test Applied in Ringing Interval —*** Audible ringing, buzzer relay stop immediately. ***Connector Arranged to Reverse Battery on Ninth Level —*** REV-BAT lamp lighted. ***Connector Arranged to Test Operation of D Relay When Free Service Provided on Ninth Level —*** C lamp lighted.
43o	If REV-BAT or C lamp did not light in Step 42 when testing connectors in superimposed ringing offices using 66- to 75-volt silent period tripping battery — Operate TR3 key to R position momentarily.	REV-BAT or C lamp lighted.
44	Restore TR1 key.	
45p	If testing connectors ***not*** arranged to test operation of D relay when free service provided on ninth level — Remove switch cover.	D relay operated.

STEP	ACTION	VERIFICATION
46q	If D relay does not operate when testing connectors in superimposed ringing offices using 66- to 75-volt silent period tripping battery — Operate TR3 key to R position momentarily.	D relay operates.
47q	Replace switch cover.	
48	Restore TR key.	REV-BAT or C lamp extinguished.
49	Operate ANS key (or REV-LA key for connectors in 35-E-97 offices). *Note:* It may be necessary to restore the ANS key momentarily to start the tone.	Tone heard in receiver. REV-BAT lamp lighted when testing connectors arranged to reverse battery on ninth level.
50r	If testing connectors arranged for calling party control without timed-release feature — Restore ANS key.	REV-BAT lamp extinguished, if lighted.
51r	Operate handset switch to MON position.	Connector releases. C lamp extinguished.
52s	If testing connectors arranged for joint control (100-point connectors only) — Operate handset switch to MON position for at least 2 seconds.	Connector does not release. While switch is in MON position — C lamp extinguished. REV-BAT lamp may be extinguished, if lighted.
53s	Restore ANS key.	REV-BAT lamp extinguished, if lighted.
54s	Operate handset switch to MON position.	Connector releases. C lamp extinguished.
55t	If testing connector arranged for calling-party control with timed-release feature — Restore ANS key.	REV-BAT lamp extinguished, if lighted. Within timed interval, C lamp extinguished momentarily, indicating disconnect feature functioned (see 1.06).
56t	Operate handset switch to MON position. *Note:* When performing this test, proceed to Steps 57u through 62u and, if applicable, perform test on one connector per shelf.	Connector releases.
57u	If testing connectors arranged for timed-disconnect feature under control of intercepting trunk — Insert 240A plug of handset into test jack of any connector having access to intercept trunk associated with connector to be tested.	

STEP	ACTION	VERIFICATION
58u	Dial terminal connected to intercept trunk.	Connector stops on proper terminal. Audible ringing heard. At operator position — Call answered, ringing silenced.
59u	At operator position — Disconnect when disconnect signal received.	
60u	Perform Step 55t.	Note that C lamp does not extinguish momentarily within timed interval, indicating that disconnect feature did not function (see 1.06).
61u	Disconnect handset from connector used in test.	Connector releases.
62u	Operate handset switch to MON position.	Connector under test releases.
200-Point Connectors Only		
63	With handset cord switch in OFF position — Operate handset switch to TALK position.	C lamp lighted.
64	Operate LO-UP key to UP position.	
65	Operate MI key.	
66	Dial 99.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Switch cuts through to intercept circuit. Recorded message heard in receiver.
67	Operate handset switch to MON position.	Connector releases. C lamp extinguished.
68	Restore MI, LO-UP keys.	
69	Unless other tests to be made on this switch — Remove all test connections, restore all keys to normal.	

D. Reverting Call Test

17	Operate LEAK key.	
18	Operate handset cord switch to ON position.	
19	Operate handset switch to TALK position.	C lamp lighted.
20k	If testing 200-point connectors — Operate LO-UP key to UP position.	

STEP	ACTION	VERIFICATION
21	Dial 99. *Note:* Dial an extra digit if testing terminal-per-line code ringing connectors.	Connector steps smoothly to ninth level, rotates smoothly to test line terminal. Busy tone heard in receiver.
22	Operate 10-PTY-TPS-RC key momentarily.	
23	Restore LEAK key.	
24	Operate switch on handset to MON position.	C lamp extinguished momentarily. Busy tone not heard in receiver. Buzzer relay sounds, follows test line code.
25	Operate REV-L key.	Buzzer relay sounds, follows reverting call code.
26	Operate ANS key.	Buzzer relay stops.
27	Restore ANS, REV-L keys.	Connector releases. C lamp extinguished.
28	Unless other tests to be made on this switch — Remove all test connections, restore all keys.	
	E. Free Service Feature — Rotary Hunting Connectors	
17	For 200-point connectors — Operate LO-UP key to UP position.	
18	Remove cover of switch under test.	
19	With switch on handset cord in ON position — Operate handset switch to TALK position.	C lamp lighted.
20k	If testing connectors in which locking ground of cut-through relay (such as M or K) open when switch normal — Connect ground to No. 1 (or 4 on 200-point connector), V.O.N. spring.	
21	Block nonoperated L relay.	
22	Operate cut-through relay momentarily.	Relay locks in operated position.
23	Short circuit tip, ring wiper at point near hub, using KS-6780 connecting clip.	F, D relays operated. REV-BAT lamp lighted.
24	Block operated C relay.	
25	Dial digit 1.	Connector steps to first level.
26l	If connector arranged to charge (reverse battery) on this level —	REV-BAT lamp remains lighted.

STEP	ACTION	VERIFICATION
27m	If connector arranged for free service (battery not reversed) on this level —	REV-BAT lamp extinguished.
28	Dial another digit 1 to step connector to next level.	Note REV-BAT lamp verification as in Steps 26l, 27m.
29	Repeat Step 28 until all levels tested.	
30	When tenth level dialed and connector arranged for joint control and free service (100-point connectors only) —	REV-BAT lamp extinguished. Relay A in connector remains operated.
31	Remove block from C relay.	
32	Remove clip from tip, ring wiper.	
33	Operate handset switch to MON position.	Connector releases. REV-BAT lamp extinguished, if lighted. C lamp extinguished.
34	Unless other tests to be made on this switch — Remove all test connections, blocking tool from L relay, replace switch cover.	