

PBX TRUNKS FROM SELECTOR LEVELS SD-31757-01

OPERATION TESTS

USING TEST SET ES-241798, SD-30502-01 (J34711A),

SD-31637-01 OR SD-31637-02 (J34719A)

STEP-BY-STEP SYSTEMS

1. GENERAL

1.01 This section describes a method of performing operation tests on outgoing PBX trunks from selector levels SD-31757-01. Test set ES-241798, SD-30502-01, SD-31637-01 or SD-31637-02 may be used.

1.02 This section is reissued to revise Tables A and C.

1.03 The tests covered are:

A. Busy Line (Simultaneous Seizure) Test:

This test checks that busy tone is returned to the calling party over the selector multiple if the trunk is seized simultaneously by a selector and a connector.

B. Idle Line Test: This test checks the ability of the trunk to absorb dial pulses, to ring, trip, and provide a proper transmission path.

C. Time-Out Release and Supervisory Signaling Test: This test checks that a supervisory signal is received after a time interval if the calling party fails to disconnect. It also checks the ability of the circuit to free the trunk and connector multiple after a time interval, and return busy tone on a call over the selector multiple when the operator disconnects and the calling party fails to disconnect.

D. Automatic Disconnect on Calling Party Hold Test: This test checks that the trunk will automatically release the preceding switches on calls over the selector multiple and also free the trunk and connector multiple within a predetermined time when the operator disconnects but the calling party fails to disconnect.

1.04 These tests can be made with the 40A or 40B remote control test set connected to the test set, or without it. The STP and RLS keys of the remote control and connector test set perform the same function.

1.05 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.

1.06 **Lettered Steps:** A letter a, b, c, etc, added to a step number in Parts 3 and 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.

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

2. APPARATUS

All Tests

2.01 Connector test set ES-241798, J34711A (SD-30502-01), or J34719A (SD-31637-01, SD-31637-02).

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- 2.02 40A or 40B (remote control test set).
- 2.03 Test receiver, consisting of a 723A receiver attached to R2DB cord, 6 feet long, equipped with a 347A plug (2W32A cord).
- 2.04 Patching cord, P3H cord, 10 feet long, equipped with a 310 plug and a 240A plug (3P2A cord).
- 2.05 477A (or 375A) (make-busy) tools, as required.
- 2.06 Patching cord, P1D cord, 6 feet long, equipped with two 310 plugs (1P6A cord) to be used when shelf alarm circuit is equipped with PS jack.
- 2.07 Testing cord, W1B cord, 10 feet long, equipped with a KS-6780 connecting clip and a 310 plug (1W5A cord) to be used when shelf alarm circuit is not equipped with PS jack.
- 2.08 Testing cord made up locally, as shown in Fig. 1, where a frame battery supply jack is available; or Fig. 2 where the battery supply must be obtained by connecting to a fuse.

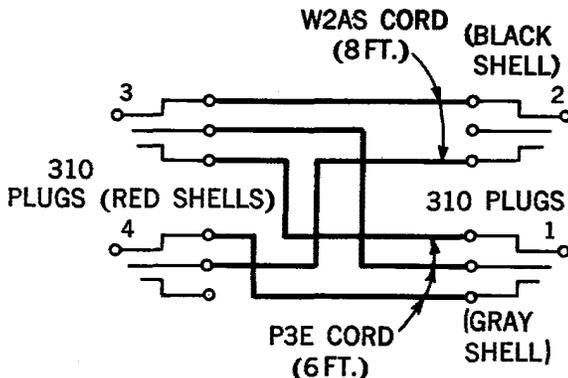


Fig. 1

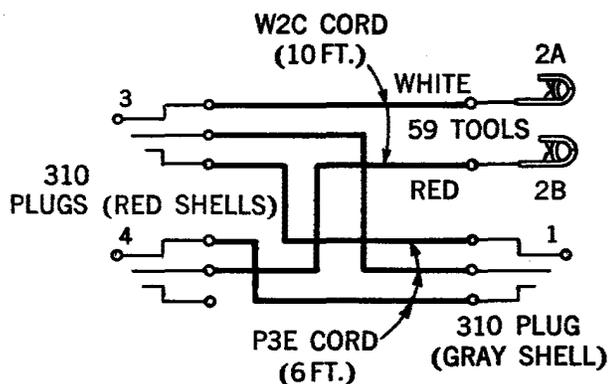


Fig. 2

3. PREPARATION

All Tests

STEP	ACTION	VERIFICATION
1a	If using 40-type remote control test set — Connect red, gray, and black plugs to R, G, and B jacks, respectively, of test set.	
2	Insert plug of test receiver cord into TEL jack of test set.	
3	Insert 310 plug of P3H cord into TST (or T) jack of test set.	
4b	If battery supply jack is available — Insert plugs 3 and 4 of the special cord per Fig. 1 into jacks 3 and 4 (or 4-100) of test set, respectively, and black shell plug 2 into BAT-GRD jack on the frame.	

STEP	ACTION	VERIFICATION
5c	<p>If battery supply jack is not available — Insert plugs 3 and 4 of the special cord per Fig. 2 into jacks 3 and 4 (or 4-100) of test set, respectively, and connect clip 2A attached to white conductor to equipment side of a fuse no larger than 3 amperes and clip 2B attached to red conductor to a frame ground.</p> <p><i>Note:</i> 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.</p>	

Test C

- 6d If shelf alarm circuit is equipped with PS jack —
 Using P1D cord, patch P jack of test set to PS shelf jack.
- 7e If shelf alarm circuit is not equipped with PS jack —
 Insert 310 plug of W1B cord into P jack of test set, and connect KS-6780 clip to trunk side of resistor A in shelf alarm equipment.

4. METHOD

STEP	ACTION	VERIFICATION
A. Busy Line (Simultaneous Seizure) Test		
6	Advance test circuit of test set to CLD-HLD position by operating and releasing STP key.	CLD-HLD lamp lighted.
7	Insert 240A plug of P3H cord into test jack A of trunk circuit to be tested.	GD lamp not lighted.
<i>Note:</i> If GD lamp lights, wait until lamp is extinguished or move plug to another trunk.		
8	Insert 477A tool between springs 5 and 6 of test jack A.	GD lamp lighted.
9	Remove 477A tool.	GD lamp extinguished.
10	Advance test set to BSY-L position.	BSY-L lamp lighted. GD lamp relighted.
11	Reinsert 477A tool between springs 5 and 6 of test jack A.	

STEP	ACTION	VERIFICATION
12	Insert gray shell plug 1 of special cord into test jack B of trunk circuit to be tested.	GD lamp remains lighted. Busy tone heard in receiver. <i>Note:</i> Under the above condition, this trunk circuit cannot be seized by a selector; however, the PBX can continue to originate calls, and receive calls over the connector multiple associated with the PBX trunk.
13d	If idle line test is to be performed — Proceed to Test B, Step 13.	
14	Remove 477A tool from springs 5 and 6 of test jack A.	
15	Unless other tests are to be performed on this trunk — Operate RLS key momentarily.	Circuit released.
16	Remove test cords from trunk test jacks A and B unless other tests are to be performed.	

B. Idle Line Test

6	Advance test circuit of test set to CLD-HLD position by operating and releasing STP key.	
7	Insert 240A plug of P3H cord into test jack A of trunk circuit to be tested.	GD lamp not lighted. <i>Note:</i> If GD lamp lights, wait until lamp is extinguished or move plug to another trunk.
8	Insert 477A tool between springs 5 and 6 of test jack A.	GD lamp lighted.
9	Remove 477A tool.	GD lamp extinguished.
10	Advance test set to BSY-L position.	BSY-L lamp lighted. GD lamp relighted.
11	Reinsert 477A tool between springs 5 and 6 of test jack A.	
12	Insert gray shell plug 1 of special cord into test jack B.	GD lamp remains lighted. Busy tone heard in receiver. <i>Note:</i> Under the above condition, this trunk circuit cannot be seized by a selector; however, the PBX can continue to originate calls and receive calls over the connector multiple associated with the PBX trunk.

TABLE B — TEST SET PER SD-31637-01						
	KIND OF RING	TRIP BAT VOLTS	MAX EXT SUB LOOP	KEYS OPERATED	PRE-TRIP	TRIP
FIG. A OR B	AC-DC		1000 or 1115	1200	RINGING PERIOD	SILENT PERIOD
	SUP	48	1000 or 1115	1200		
	KIND OF RING	TRIP BAT VOLTS	MAX EXT SUB LOOP	KEYS OPERATED	PRE-TRIP	TRIP
FIG. C	AC-DC	48	750, 850, 900	SS, TST	RINGING PERIOD	SILENT PERIOD
			1000 or 1115	SS, TST, 1200		
	SUP	48	750, 850, 900	TST		
			1000 or 1115	TST, 1200		

TABLE C — TEST SET PER SD-31637-02					
KIND OF RING	TRIP BAT VOLTS	MAX EXT SUB LOOP	KEYS OPERATED	PRE-TRIP	TRIP
AC-DC	48.5 to 50	1000 or 1115	1000A	SILENT PERIOD	SILENT PERIOD
		1400 or 1500	1400A		
SUP	48.5 to 50	1000 or 1115	1000A		
		1400 or 1500	1400A 1400B		
	60 to 75				

STEP	ACTION	VERIFICATION
14	Advance test circuit to IDLE-L (or WAIT-RING) position depending on test set used.	IDLE-L (or WAIT-RING) lamp lighted. GD lamp lighted. BSY lamp lighted.
15	Dial two digits.	Audible ring heard in receiver. RS lamp lighted or bell in test set sounded during ringing interval.
	<i>Note:</i> Some circuits may require only one digit be dialed.	<i>Note:</i> Busy tone will be heard until the last pulse of last digit.
16	At start of period (ringing or silent as indicated in Table A, B, or C) — Advance test set circuit to PRE-TRIP position. (The pre-trip test shall be completed within the period by performing Step 17.)	PRE-TRIP lamp lighted. IDLE-LINE (or WAIT-RING) lamp extinguished.
17	Advance test circuit to RING position.	RING lamp lighted. PRE-TRIP lamp extinguished. RS lamp lighted or bell in test set sounded during ringing interval. Audible ring continued to be heard in receiver.
18	At start of period (ringing or silent as indicated in Table A, B, or C) — Advance test circuit to T-TRIP position.	T-TRIP lamp lighted. RING lamp extinguished. RS lamp extinguished or bell in test set silenced. Audible ring removed. Transmission tone heard in receiver.
19	Advance test circuit to TCO or (R-T-CO) position.	TCO (or R-T-CO) lamp lighted. T-TRIP lamp extinguished. Transmission tone removed.
20d	If time-out release and supervisory signaling test is to be performed — Proceed to Test C, Step 9.	
21e	If automatic disconnect on calling party hold test is to be performed — Proceed to Test D, Step 7.	
22	Remove 477A tool from springs 5 and 6 of test jack A unless other tests are to be performed.	

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STEP	ACTION	VERIFICATION
23	Unless other tests are to be performed on this trunk — Operate RLS key momentarily.	Circuit released.
24	Remove test cords from trunk test jacks A and B unless other tests are to be performed.	
C. Time-Out Release and Supervisory Signaling Test		
8	Perform Steps 6 through 19 of Test B.	
9	Remove gray shell plug 1 of special cord from B jack of trunk.	BSY lamp extinguished. Within 30 seconds — P (or P1) lamp of test set lighted. Approximately 24 seconds after P (or P1) lamp lighted — Busy tone heard in receiver.
10	Operate RLS key.	Circuit released.
11	Remove 477A tool.	
12	Remove all cords and restore all keys.	
D. Automatic Disconnect on Calling Party Hold Test		
6	Perform Steps 6 through 19 of Test B.	
7	Remove 477A tool from springs 5 and 6 of test jack A.	
8	Remove gray shell plug 1 of special cord from B jack of trunk.	After 10 to 30 seconds — BSY lamp extinguished. GD lamp extinguished. Circuit released.
9	Remove all cords and restore all keys.	