

## REPEATED DIALING TOLL CONNECTOR OPERATION TESTS

## USING CONNECTOR TEST SET SD-31637-02

## STEP-BY-STEP SYSTEMS

## 1. GENERAL

1.01 This section describes a method of performing operation tests on toll connectors and on the toll side of combination connectors in repeated dialing or combination repeated and loop dialing trains, by means of the box-type connector test set SD-31637-02. It also indicates the key operation required in order to apply the readjust values of resistance to the ring-trip relays.

1.02 This section has been issued:

- (a) To specify the use of test set SD-31637-02.
- (b) To provide a method for making these tests from the toll intermediate selector immediately preceding the connector in the toll train.

1.03 The tests and the features tested are:

- (A) Busy Line Test: This test checks the ability of the connector to test a busy line and return the proper indication.
- (B) Idle Line Test: This test checks the ringing, pretrip, trip, and transmission features.

1.04 The dial on the connector test set, or the dial on the remote control set may be used to direct the connector to the test line.

1.05 The test line employed in making these tests is connected to terminal 99 except in the case of rotary hunting connectors. In rotary hunting connector groups, terminal 99 is made busy and the test line is connected to terminal 90. The hunting feature of the switch is checked by directing the switch to terminal 99 and having it step to terminal 90.

1.06 Wherever the preparation or method calls for the operation of the STP, PLS, or RLS key, or the dial, it is understood that either the STP, PLS, or RLS key or the dial, of the connector test set, or the STP (No. 1), PLS (No. 2), or RLS (No. 3) key, or the dial of the remote control test set is meant, depending upon whether or not the remote control test set is being used.

1.07 The testing methods require that the test circuit be advanced through the various positions in which the proper conditions for the tests are applied. This is accomplished by momentarily operating the STP key. The progress lamps designated, BSY-L, IDLE-L, DEL-R, PRE-TRIP, RING, T-TRIP and T-CO indicate the particular test which is applied at the time the lamp is lighted.

1.08 From all positions except the BSY-L and IDLE-L positions, the test circuit can be returned to normal by operating and holding the RLS key until none of the progress lamps are lighted. If the test circuit is in the BSY-L or IDLE-L position, it is necessary to advance the test circuit beyond these positions by means of the STP key, where the RLS key may be used.

1.09 When testing connectors arranged for 1400-ohm or 1500-ohm maximum external subscriber loop, any ring-trip relays which fail 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 requirement table. Repeat the test, and, if the relay continues to fail, operate the test set keys as indicated for READJ in Table 1 to apply the test set readjust resistance values and change the tension in the No. 1 spring, as required.

## 2. APPARATUS

## All Tests

- 2.01 Connector Test Set J34719A (SD-31637-02).
- 2.02 No. 40B (or No. 40A) Test Set (remote control) (optional).
- 2.03 No. 723A Receiver attached to an R2DB Cord equipped with a No. 347A Plug (or equivalent).
- 2.04 Patching Cords - two P3E Cords, 6 feet long, each equipped with two No. 310 Plugs (3P7A).
- 2.05 Patching Cord - P4K Cord equipped with No. 240B Plug and No. 289A Plug (4P4A).

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3. PREPARATION

All Tests

STEP	ACTION	VERIFICATION
1	Connect test set jacks 3 and 4 to correspondingly numbered test line jacks on the toll intermediate selector bay associated with the group of connectors to be tested, using two 6 foot P3E cords.	
2	If remote control set is used - insert remote control set plugs, red, gray and black, into test set jacks R, G, and B, respectively.	
3	Connect receiver to test set jack TEL.	
4	Operate TOLL key.	
5	Operate and hold RLS key long enough to extinguish any progress lamps that may be lighted, or if necessary, operate and release STP key required number of times.	All lamps extinguished.
6	Using P4K cord, connect TT jack of test set to test jack of a normal toll intermediate selector.	GD lamp does not light.

Test B

- 7 Operate test set keys as indicated for TEST in Table 1 to provide the proper pretrip, and trip conditions in the test set.

NOTE: The silent interval tripping battery shall be within the voltage limits shown in the table.

TABLE 1

Max. Ext. Sub Loop (Ohms)	Trip Bat Volts	For Keys Operated						
		Test	Readj.	1000A	1000B	1400A	1400B	Adj.
1000-1115	48.5-50	x		x				
1400-1500	48.5-50	x	x			x		x

4. METHOD

STEP	ACTION	VERIFICATION
<u>(A) Busy Line Test</u>		

- 7 Operate and release STP key to advance test circuit to BSY-L position.
  - BSY-L (busy line) lamp lights.
  - GD (guard) lamp lights.
  - C (control) lamp lights.

STEP	ACTION	VERIFICATION
8	Dial the toll intermediate selector to the level associated with the connector group being tested.	BSY-L lamp remains lighted. GD lamp remains lighted. C lamp remains lighted.
9	Dial 99.	BSY (busy) lamp lights. C lamp remains lighted. NOTE: In the case of loop dialing connectors in combination loop and repeated dialing trains, the CT lamp will flash at a 60 IPM rate and the C lamp will be extinguished.  Busy tone heard in receiver.
10	Manually hold operated A relay of selector used in test and momentarily operate C relay.	Selector steps to next idle trunk. BSY lamp is extinguished. GD lamp is extinguished momentarily. Busy tone is removed.
11	Repeat steps 8, 9 and 10 until all connectors in group have been tested.	
12	Operate RLS (release) key momentarily.	Selector release.
13	Remove plug from test jack of selector unless other tests are to be made with this switch.	

(B) Idle Line Test

8	Operate and release STP key to advance test circuit to IDLE-L position.	IDLE-L (idle line) lamp lights. GD lamp lights. C lamp lights.
9	Dial the toll intermediate selector to the level associated with the connector group being tested.	IDLE-L lamp remains lighted. GD lamp remains lighted. C lamp remains lighted.

Line Seizure and Ringing Test

10	Dial 99.	BSY lamp lights. C lamp is extinguished. Audible ring is not heard in receiver.
11	Operate and release STP key.	DEL-R (delayed ring) lamp lights. IDLE-L lamp is extinguished. RS (ringing signal) lamp lights during ringing intervals. Audible ring is heard in receiver. NOTE: When testing 2-ring connectors, check that the first audible ring is a full code ring in order to check the pickup feature.

Pretrip Test

12	Operate STP key momentarily at start of (silent) interval. This test shall be completed within the same interval by performing Step 13.	PRE-TRIP lamp lights. DEL-R lamp is extinguished.
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STEP	ACTION	VERIFICATION
<u>Pretrip Test (Cont'd)</u>		
13	Operate and release STP key.	RING lamp lights. PRE-TRIP lamp is extinguished. RS lamp lights during ringing intervals. Audible ring continues to be heard in receiver.
<u>Tripping Test</u>		
14	Operate and release STP key at start of (Silent) interval.	T-TRIP (tone trip) lamp lights. RING lamp is extinguished. Check that the audible ringing signal is not heard again in the receiver. The RS lamp is disconnected when this test is applied and cannot be considered as an indication that the ringing has tripped. Proper transmission tone is heard in the receiver CT lamp light. REV-C lamp lights.
15	Operate and release STP key.	T-CO (tone cutoff) lamp lights. T-TRIP lamp is extinguished. Tone is removed. CT lamp is extinguished. REV-C lamp is extinguished.
16	Manually hold operated cut through relay of selector used in test and momentarily operate RLS key.	T-CO lamp is extinguished. BSY lamp is extinguished. GD lamp is extinguished.
17	Still holding cut through relay of selector, operate and release STP key to advance test circuit to IDLE-L position. Release cut through relay.	IDLE-L lamp lights. GD lamp lights. C lamp lights.
18	Manually hold operated A relay of selector and momentarily operate C relay.	Selector steps to next idle trunk. IDLE-L lamp remains lighted. GD lamp remains lighted. C lamp remains lighted.
19	Repeat steps 10 through 20, until all connectors in group have been tested.	
20	Remove plug from test jack of test selector unless other tests are to be made with this switch.	