LOCAL AND COMBINATION CONNECTORS
RAPID OPERATION TEST
USING CONNECTOR TEST SET SD-30502-01 (J34711A)
AND PULSING TEST SET SD-31481-01 (J34717A)
STEP-BY-STEP SYSTEMS

1. GENERAL

1.01 This section describes a method of performing a rapid operation test of local connectors and of combination connectors (local side only) by means of the wagon-type connector test set SD-30502-01 equipped with an ROT key, and pulsing test set SD-31481-01.

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 and the features tested are:

(A) Nonlevel Hunting Connectors: This test checks the stepping features of a connector without margins. It also checks the supervisory, transmission, called hold, and release features.

(B) Level Hunting Connectors: This test checks the trunk hunting features of a connector. It also checks the supervisory, transmission, called hold, and release features.

1.04 These tests are intended as a means for testing these fundamental features at more frequent intervals to supplement the complete operation tests covered in Sections 226-415-501 and 226-410-501.

1.05 Lettered Steps: The letters a, b, c, etc, are added to a step to indicate that the step covers an action which may or may not be required, depending upon local conditions. The conditions under which a lettered step or series of steps should be made are given in the action column and all steps governed by the same condition are designated by the same letter. When a condition does not apply, the associated steps should be omitted.

1.06 Wherever the preparation or method calls for the operation of the STP, PLS, or RLS keys, or the dial, it is understood that either the STP, PLS, or RLS keys, or the dial, of the connector test set, or the STP (No. 1), PLS (No. 2), or RLS (No. 3) keys, 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 From all positions except the BSY-L (BUSY LINE), WT-R (WAIT RING), and PRE-TRIP positions, the test circuit can be returned to normal by operating and holding the RLS key until none of the progress lamps is lighted. If the test circuit is in one of the above mentioned positions, it is necessary to advance the test circuit beyond these positions by means of the STP key, where the RLS key may be used.

1.08 Test (A): The test line employed is connected to terminal 99, except in 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 connector is checked by directing the switch to terminal 99 and having it step to terminal 90. The dial on the connector test set, the dial on the remote control test set or, where the connector test set is so arranged, the pulsing test set may be used to direct the connector to the test line.

Caution: When dialing or pulsing the test line number, if the connector stops on any other terminal, immediately release the connector so as to avoid ringing on a subscriber line.

1.09 When testing 10-party terminal per line connectors arranged for cut-through following the completion of code selector pulsing, it will be necessary to dial or pulse an extra digit following the test number. If the extra digit is to be dialed, and the test set is not arranged to permit the use of the dial while the pulsing test set is connected, remove the plug from the A jack of the test set before dialing.

1.10 Test (B): The test line employed is ordinarily connected to terminal 91, except when the connectors are wired so as to hunt over a group of 100 trunks, in which case terminal 11 is used as the test line number. The

pulsing test set is not used when making this test, the dial on the connector test set being used to direct the connector to the test line. However, if the pulsing test set is connected to the connector test set for making Test (A), the connector test set may be so arranged that it is necessary to disconnect it in order to make Test (B).

1.11 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

ALL TESTS

2.01 Connector Test Set J34711A (SD-30502-01).

2.02 No. 40B Test Set (Remote Control) (Optional).

2.03 No. 723A Receiver attached to an R2DB Cord equipped with a No. 347A (or No. 47A) Plug.

2.04 P3H (or P3C) Cord, equipped with No. 240A Plug and No. 310 Plug (3P2A).

TEST (A)

2.05 Two P3E Cords, 6 feet long, each equipped with two No. 310 Plugs (3P7A).

When Using Pulsing Test Set

2.06 Pulsing Test Set J34717A (SD-31481-01).

2.07 P2J Cord, 6 feet long, equipped with two No. 310 Plugs (2P9B), used where a battery supply jack is available.

2.08 W2M Cord, equipped with No. 310 Plug, tip and sleeve connections, two No. 59 Cord Tips (2W12A) and two No. 108 Cord Tips - used where a battery supply jack is not available.

2.09 P3E Cord, 6 feet long, equipped with two No. 310 Plugs (3P7A).

2.10 P4N Cord, 6 feet long, equipped with two No. 289B Plugs (4P8B).

TEST (B)

2.11 P3E Cord, 6 feet long, equipped with two No. 310 Plugs (3P7A).

2.12 W2W Cord, 6 feet long, equipped with No. 310 Plug, No. 360B Tool, and No. 360C Tool (2W17A); W2CF Cord equipped with No. 310 Plug (replace red shell with black shell), No. 360B Tool, and No. 360C Tool (2W17D); two W1C Cords, each 12 feet long; two No. 360C Tools; No. 240A Plug; three No. 141 Cord Tips. Connect to form Special Cord as shown in Fig. 1.

2.13 Special Insulator 1/2-inch by 2-1/2 inches (the KS-7187 Bell Seal Bond No. 20 Relay Cleaning Paper may be used.

When Connector Test Line Number Is 11

2.14 No. 893 Cord, 6 feet long, equipped with two No. 360A Tools (1W13B) and two No. 365 Tools.

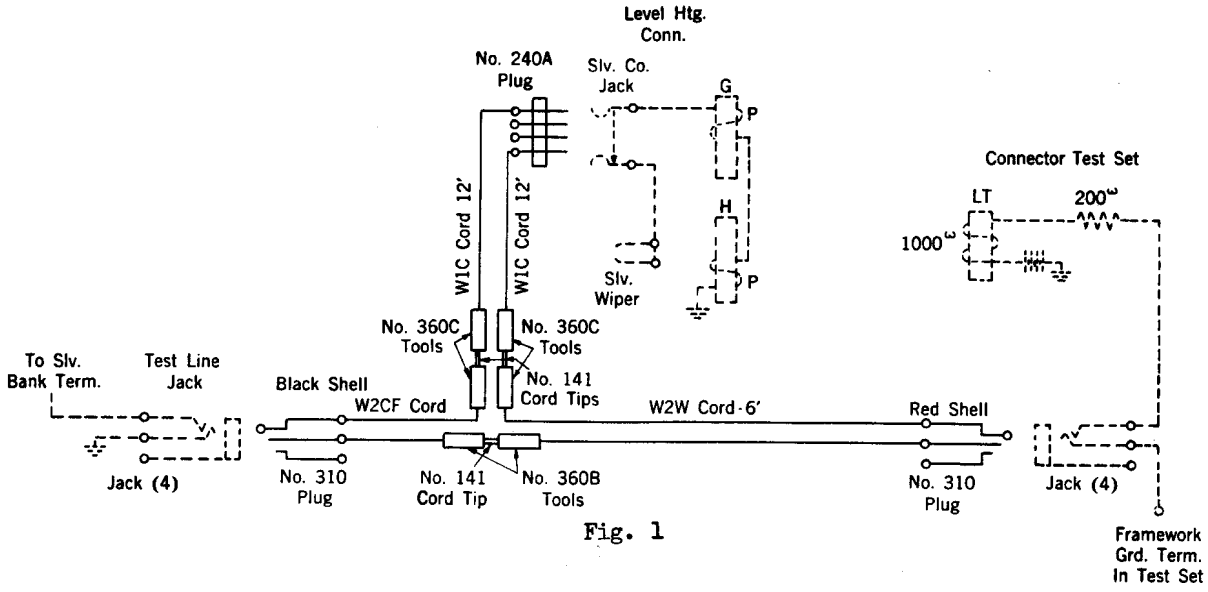

Fig. 1

TABLE 1

TEST SET NOT EQUIPPED TO TEST CONNECTORS ARRANGED FOR 1400-1500 OHM LOOP

KIND OF RING	MAX. EXT. SUB. LOOP (OHMS)	TRIP BATT. VOLTS	KEYS OPERATED			
			NOT USING FIG. G		USING FIG.G	
			8P TST	ADJ	SS	TST
AC-DC	1000-1115	46-50			X	X
SUPER IMPOSED	1000-1115	46-50		X		X
		60-75	X			

SS and TST keys ineffective when testing 10-PTY TPL connectors. 8P TST key is provided only for testing 8-PTY semi-selective ringing connectors in an ac-dc office.

TABLE 2

TEST SET EQUIPPED TO TEST CONNECTORS ARRANGED FOR 1400-1500 OHM LOOP

KIND OF RING	MAX. EXT. SUB. LOOP (OHMS)	TRIP BATT. VOLTS.	KEYS OPERATED			
			1000A	1000B	1400A	1400B
AC-DC and/or SUPER IMPOSED	1000-1115	48.5-50	X			
		60-75		X		
	1400-1500	48.5-50			X	
		66-75				X

3. PREPARATION

ALL TESTS

STEP	ACTION	VERIFICATION
1a	If remote control set is used - Insert remote control set plugs, red, gray, and black into test set jacks R, G, and B, respectively.	
2	Connect receiver to test set jack TEL.	
3	Insert No. 310 plug of P3H cord into TST jack of test set.	
4	Connect test set jack 3 to test line jack 3 on connector frame, using P3E cord.	
5b	If testing nonlevel hunting connectors - Connect test set jack 4 to test line jack 4 on connector frame, using P3E cord.	
6c	If testing level hunting connectors - Insert black shelled No. 310 plug of special test cord (Fig. 1) into jack 4 of test line (level hunting) on connector frame, and insert red shelled No. 310 plug of special test cord (Fig. 1) into jack 4 of test set.	
7	Operate test set keys as indicated in Table 1 or 2 to provide proper test condition in test set. Also operate the RR key when testing 10-party terminal per line connectors.	
8	Operate and hold RLS key long enough to extinguish any progress lamps that may be lit or, if necessary, operate and release STP key required number of times.	All lamps extinguished.
9	Operate ROT key.	
10	Holding RLS key operated, insert No. 240A plug of P3H cord into test jack of normal connector under test.	GD (GUARD) lamp does not light.
11	Restore RLS key.	GD (GUARD) lamp lights.
12d	Where test set is arranged for monitoring - If it is desired to monitor on an off-normal connector, hold RLS key operated and insert No. 240A plug of P3H cord into test jack of off-normal connector and listen in receiver.	GD (GUARD) lamp lights. Conversation is heard. Note: When monitoring on a combination connector, if no conversation is heard it may indicate that the connector is being held over the toll train.
13e	If testing connectors arranged for free service, with 1400-B key provided - Operate NON-REV key.	

STEP	ACTION	VERIFICATION
TEST (A)		
When Using Pulsing Test Set		
14f	If a battery supply jack is available - Connect 48-volt battery and ground to BAT-G jack of pulsing test set, using P2J cord. Note: To avoid possible grounding of battery supply lead, connect cord to test set first and, when disconnecting, remove cord from test set last.	
15g	If a battery supply jack is not available - Insert No. 310 plug of W2M cord into BAT-G jack of pulsing test set. Connect No. 59 cord tip of white (tip) conductor to equipment side of 48-volt battery fuse and red (sleeve) conductor to ground. Note: In no case should the fuse selected exceed 5 amperes.	
16	Connect TL jack of pulsing test set to A jack of connector test set, using P3E cord.	
17	Connect A and B jacks of pulsing test set to LK and LP jacks of connector test set, using P4N cord. Restore all keys on pulsing test set to normal.	
18	Operate PLS key momentarily.	
TEST (B)		
14	Operate LH key.	

4. METHOD

STEP	ACTION	VERIFICATION
	(A) Nonlevel Hunting Connectors	
19	Dial or pulse 99.	Connector steps smoothly to ninth level and rotates smoothly to test line terminal. BSY (BUSY) lamp lights.
20h	If testing connectors arranged to reverse battery, with 1400-B key normal or not provided -	Proper transmission tone heard in receiver.
21i	If testing connectors arranged to reverse battery, with 1400-B key operated -	Proper transmission tone heard in receiver. Note: If transmission tone is not heard, perform Step 22.
22i	If transmission tone is not heard - Operate PLS key momentarily.	Proper transmission tone heard in receiver.

STEP	ACTION	VERIFICATION
23j	If testing connectors arranged for free service, with 1400-B key not provided - Operate and restore NON-REV key.	Proper transmission tone heard in receiver.
24e	If testing connectors arranged for free service, with 1400-B key provided - Operate PLS key momentarily.	Proper transmission tone heard in receiver.
25k	If testing connectors arranged for calling party control - Remove plug from test jack of connector.	Connector releases. BSY (BUSY) lamp extinguished. GD (GUARD) lamp extinguished.
26k	Operate RLS key momentarily.	Transmission tone removed.
27m	If testing connectors arranged for joint control - Remove plug from test jack of connector.	Connector does not release. BSY (BUSY) lamp remains lighted. GD (GUARD) lamp extinguished.
28m	Operate RLS key momentarily.	Connector releases. Transmission tone removed. BSY (BUSY) lamp extinguished.
	(B) Level Hunting Connectors	
15	Insert No. 240A plug (stay cord to the right) of special test cord, Fig. 1, into sleeve cutoff jack of connector. Note: If sleeve cutoff jack wiring is reversed, reverse No. 240A plug.	
16	Insert special insulator between sleeve cutoff jack guard plate and front end of No. 240A plug flanges.	
17n	When connector test line terminal is 91 - Dial digit which will direct connector to ninth level.	Connector hunts smoothly and stops on test line terminal. BSY (BUSY) lamp lights.
18o	When connector test line terminal is 11 - Using No. 893 cord, connect ground to commutator terminal for level No. 1.	
19o	Dial any digit.	Connector hunts smoothly and stops on test line terminal. BSY (BUSY) lamp lights.
20h	If testing connectors arranged to reverse battery, with 1400-B key normal or not provided.	Proper transmission tone heard in receiver.
21i	If testing connectors arranged to reverse battery, with 1400-B key operated.	Proper transmission tone heard in receiver. Note: If transmission tone is not heard, perform Step 22.

STEP	ACTION	VERIFICATION
22i	If transmission tone is not heard, operate PLS key momentarily.	Proper transmission tone heard in receiver.
23j	If testing connectors arranged for free service, with 1400-B key not provided - Operate and restore NON-REV key.	Proper transmission tone heard in receiver.
24e	If testing connectors arranged for free service, with 1400-B key provided - Operate PLS key momentarily.	Proper transmission tone heard in receiver.
25o	When connector test line terminal is 11 - Remove ground from commutator terminal for level No. 1.	
26k	If testing connectors arranged for calling party control - Remove plug from test jack of connector.	Connector releases. BSY (BUSY) lamp extinguished. GD (GUARD) lamp extinguished.
27k	Operate RLS key momentarily.	Transmission tone removed.
28m	If testing connectors arranged for joint control - Remove plug from test jack of connector.	Connector does not release. BSY (BUSY) lamp remains lighted. GD (GUARD) lamp extinguished.
29m	Operate RLS key momentarily.	Connector releases. Transmission tone removed. BSY (BUSY) lamp extinguished.
30	Immediately remove plug and special insulator from sleeve cutoff jack of connector.	