

CIRCUIT DESCRIPTION

CD-31773-01  
Issue 2-D  
Appendix 7-D  
Dwg. Issue 11-D

STEP BY STEP SYSTEMS  
NO. 1, 350A, 355A OR 356A  
TEST CONNECTOR CIRCUIT  
FOR USE WITH MULTI PARTY  
ONE OR TWO TERMINAL PER LINE SERVICE

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The rating of this circuit for 356A  
offices is changed to A&M Only since  
it is expected that there will be no further  
demand for new 356A dial offices.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2336-JPD-RCD-AC

CIRCUIT DESCRIPTION

CD-31773-01  
Issue 2-D  
Appendix 6-D  
Dwg. Issue 10-D

STEP BY STEP SYSTEMS  
NO. 1, 350A, 355A OR 356A  
TEST CONNECTOR CIRCUIT  
FOR USE WITH MULTI PARTY  
ONE OR TWO TERMINAL PER LINE SERVICE

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The use of "X" option is rated Mfr. Disc. and is superseded by "W" option to interchange the wiring to VON contacts 1 and 2 of the 197K switch so that the release magnet is connected to the No. 1 spring and

ground on the No. 2 spring in order to obtain increased contact life.

D.2 Options "X" and "W" are added to Note 103.

D.3 Circuit is rated Mfr. Disc. for No. 1 & 350A.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2315-IMF-RCD-NP

CIRCUIT DESCRIPTION  
SWITCHING SYSTEMS DEVELOPMENT DEPARTMENT

CD-31773-01  
Issue 2-D  
Appendix 5-D  
Dwg. Issue 9-D

STEP BY STEP SYSTEMS  
NO. 1, 350A, 355A OR 356A  
TEST CONNECTOR CIRCUIT  
FOR USE WITH MULTI PARTY  
ONE OR TWO TERMINAL PER LINE SERVICE

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Leads to the fuse panel on the  
relay rack are added in cross  
connection figure 54.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3310-MKS-RLL-WU

DO NOT BE USED AS AN ORIGINAL  
BY THE REPRODUCTION PRINT SHOP

STEP-BY-STEP SYSTEMS  
NO. 1, 350A, 355A OR 356A  
TEST CONNECTOR CIRCUIT  
FOR USE WITH MULTI PARTY  
ONE OR TWO TERMINAL PER LINE SERVICE

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 Title is changed to add 356A.
- D.2 Connecting information on "RLS BAT" lead is changed to read "To Alm. Ckt., Sw. Tbl. Alm. Ckt., Alm. Ckt. for Conn. Shelves or to Misc. Alm. Ckt."
- D.3 Note 101 is changed to show 48V Sig. Bat.
- D.4 Working limits on battery symbol were previously shown 45-50V.
- D.5 Fig. 51 title formerly read "(For Fig. 1) One Per Ckt.".
- D.6 Figs. 52, 53 and 54 are added.

- 4.1 Test Distributor - SD-32007-01.
- 4.2 Distributor - SD-31851-01 and SD-30980-01.
- 4.3 Connector Bank Multiple Circuit SD-32128-01.
- 4.4 Intercepting Trunk - SD-31995-01.
- 4.5 Switch Trouble Alarm Circuit - SD-32045-01.
- 4.6 Alarm Circuit for Connector Shelves ES-30285-01.
- 4.7 Alarm Circuit - SD-32145-01.
- 4.8 Misc. Alarm Circuit - SD-32045-01.

4. CONNECTING CIRCUITS

When this circuit is listed on a key-sheet the connecting information thereon is to be followed.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3320-LAH-RCD-LI

STEP-BY-STEP SYSTEMS  
NO. 1, 350A, OR 355A  
TEST CONNECTOR CIRCUIT  
FOR USE WITH MULTIPARTY  
ONE OR TWO TERMINAL PER LINE SERVICE

CHANGES

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER  
THAN THOSE APPLYING TO ADDED OR  
REMOVED APPARATUS

- C.1 The soak adjustment for relays (A),  
(B) and (E) was formerly (A) 100,  
(B) 50 and (E) 30.
- C.2 The timing requirements for relay  
(D) were formerly hold readjust  
.125, release; test, .200, readjust  
.175.
- C.3 In Test Note 3 reference was  
formerly made to 22B bank (Fig. B)  
instead of 4 wire bank.

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 Figs. A and B are rated MFR. DISQ.  
and connecting information for  
the connector multiple bank circuit is  
added to Fig. 1 since the connector  
bank wiring is now shown on a separate  
drawing. Note 103 was revised ac-  
cordingly.
- D.2 The replacement note was added.

D.3 The second line of the title was  
formerly "NO. 355A."

D.4 These changes are made to provide  
the same test connector in No. 1,  
350A and 355A offices.

4. CONNECTING CIRCUITS

When this circuit is listed on a  
keysheet the connecting information  
thereon is to be followed.

- 4.1 Test Distributor - SD-32007-01.
- 4.2 Verification Distributor -  
SD-31851-01.
- 4.3 Connector Bank Multiple Circuit -  
SD-32128-01.
- 4.4 Intercepting Trunk - SD-31995-01.
- 4.5 Switch Trouble Alarm Circuit -  
SD-32045-01.
- 4.6 Alarm Circuit for Connector Shelves  
ES-30285-01.

All other headings, No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3330-OGH-WLF

STEP BY STEP SYSTEMS  
NO. 355A  
TEST CONNECTOR CIRCUIT  
FOR USE WITH MULTI PARTY  
ONE OR TWO TERMINAL PER LINE SERVICE

CHANGES

B. CHANGES IN APPARATUS

B.1	Superseded	Superseded by
	1 M.F. Cond. & 81B Res. (C) "Z" Option	NETWORK (C) "Y" Option

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 Separate condensers and resistors formerly used where superseded by the condenser-resistor networks indicated in B above to provide a cheaper and more convenient apparatus unit.
- D.2 Note 103 was added.
- D.3 The first line of the title was formerly STEP BY STEP SYSTEM.

All other headings, No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3350

OCH)  
RSW)WV

STEP-BY-STEP SYSTEM  
NO. 355A  
TEST CONNECTOR CIRCUIT  
FOR USE WITH MULTIPARTY  
ONE OR TWO TERMINAL PER LINE SERVICE

CHANGES

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING TO  
ADDED OR REMOVED APPARATUS

C.1 The timing requirements for relay (D) were formerly

	Test	Readjust
Hold	-	.100
Release	.155	.140

C.2 Test Operate for relay (E) was .29.

C.3 Test Note 8 was added.

All other headings, No change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 332

OCH)PP  
RSW)

STEP-BY-STEP SYSTEM  
NO. 355A  
TEST CONNECTOR CIRCUIT  
FOR USE WITH MULTI PARTY  
ONE OR TWO TERMINAL PER LINE SERVICE

CHANGES

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING  
TO ADDED OR REMOVED APPARATUS

C.1 Timing requirements have been added for the following  
relays:

(B) - 248A  
(C) - 221CK  
(D) - 222CK

C.2 Test note 4 and the references to it have been added.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Leads S, R and T connected to jack terminals 9, 1 and 2  
and 15, 19 and 20 now cross-connect to the verification  
distributor banks as well as to the test distributor banks.

D.2 Pulsing test set requirements have been added to the cir-  
cuit drawing.

D.3 The circuit title has been changed. It formerly read:

STEP-BY-STEP SYSTEM  
355A DIAL OFFICE  
TEST CONNECTOR CIRCUIT  
FOR USE WITH MULTI PARTY  
ONE OR TWO TERMINAL PER LINE SERVICE

D.4 Cross connection Figure 51 has been changed.

All other headings under "Changes", no change.

1. PURPOSE OF CIRCUIT

- 1.1 This circuit is for use in establishing connections between the test desk and subscriber lines for purposes of testing and between a master office and subscriber lines for purposes of verification.

2. WORKING LIMITS

- 2.1 None.

3. FUNCTIONS

- 3.1 This circuit is used to establish connections between a test desk or a master office and subscriber lines.
- 3.2 Selection of proper subscriber lines.
- 3.3 Establishing a clear circuit directly to the subscriber line with all central office equipment removed.
- 3.4 Returning to normal.

4. CONNECTING CIRCUITS

- 4.1 Test distributor circuit.
- 4.2 Verification distributor circuit.
- 4.3 Misc. Alarm circuit.
- 4.4 Subscriber line circuit.

DESCRIPTION OF OPERATION

5. SEIZURE

When this circuit is seized by a test or verification distributor or by a test through springs 1 and 2 of the test jack, relay (A) operates and in turn operates relay (B) which grounds the sleeve as a busy condition.

6. VERTICAL SELECTION

Relay (A) will follow the pulses from the dial and in turn operate the (D) relay and vertical magnet.

7. ROTARY SELECTION

After the (D) relay releases on the termination of the vertical impulses the pulsing circuit is changed to the rotary magnet. Relay (A) will again follow the pulses and operate the rotary magnet and relay (C). Relay (C) operated, operates relay (E) and maintains a path for operating the rotary magnet.

8. TESTING

When the last rotary impulse has ceased the test wipers will be connected to the tip and ring of the subscriber line and the sleeve will be grounded through the S wiper. Relay (E), having operated, locks and relay (C) releases after the rotary impulsing thus preventing further operation of the rotary magnet.

9. RETURN TO NORMAL

When the short circuit is removed from the (A) relay, the (B) relay will also release and in turn the release magnet will be energized and the switch will return to normal.

10. SPRINGS OF TEST JACK

Springs 5, 6 and 7 of the test jack are provided as a means of allowing access to subscriber lines by portable test sets. The line and cut-off relays are thus tested from the banks of the test connector. Springs 3 and 4 are for making the switch busy and springs 1 and 2 are for test purposes.

11. PROTECTION

Condenser (C) is for spark protection on the contacts of relay (A).

BELL TELEPHONE LABORATORIES, INC.

DEPT. 332

GNQ)RJ  
WLF)