

CORD AND POSITION CIRCUIT
OPERATION TESTS
USING TEST CIRCUIT SD-66758-01
608A PBX

1. GENERAL

1.01 This section describes a method of testing the operating features of the cord and position circuit using cord test circuit SD-66758-01. Miscellaneous tests are included which do not require the use of the test circuit.

1.02 The tests covered are:

A. Position Telephone Circuit: This test checks the attendant telephone jacks for cutouts, position disabling and release, and the TALK key chain circuit.

B. Attendant Dial Circuit (PBX Equipped With Standard Dial): This test checks the attendant dial circuit on the front and back cords.

C. Attendant Dial Circuit (PBX Equipped With Pushbutton Dial): This test checks the attendant dial circuit on the front and back cords.

D. Station-to-Station Condition: This test checks the supervisory features with a low sleeve condition on the front and back cords.

E. Central Office Trunk-to-Station Condition: This test checks the supervisory features with a high sleeve condition on the back cord and a low sleeve condition on the front cord.

F. Station-to-Central Office Trunk Condition: This test checks the supervisory features with a low sleeve condition on the back cord and a high sleeve condition on the front cord.

G. Ringing Feature: This test checks automatic machine ringing on the front cord, tripping, and manual ringing on the front and back cords.

H. Trip of Machine Ring With Attendant Dial: This test checks that the interrupted machine ring is tripped when dialing with a low sleeve condition on a front cord.

I. Split Operation: This test checks that the split feature separates the back cord from the front cord.

J. Thru-Dial Feature: This test checks the removal of talking battery from the cord circuit, and the through connection from back to front cord.

K. Central Office Trunk Holding Bridge: This test checks the continuity of the holding bridge on a back or front cord.

L. Busy-Test Feature: This test checks the busy-test feature on a front or back cord.

M. AC Continuity: This test checks the continuity and balance of the talking path.

N. Transfer Function: This test checks the transfer of the attendant position to an adjoining unattended position.

O. Noninterference Feature: This test checks the ability of cord circuits not to connect to an established central office connection by overplugging.

1.03 The cord circuit tests and the position circuit tests are combined because of the electrical interlocking of the circuits.

1.04 When performing tests, the BAT key must be operated to the ON position. If the key is in the OFF position, all back cord circuit lamps will flash momentarily when the key is operated.

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- 1.05 When using the 32B test set, the TRIP key is red and the PRE-TRIP key is white.
- 1.06 When delayed-through supervision is not provided, such as a PBX equipped with a pushbutton dial, spare supervisory lamp and 120 ipm recall lamp will not operate in tests where indicated.
- 1.07 When routine tests are performed, Tests A, B, C, and N are required once per position. All other tests should be applied to each cord circuit.

2. APPARATUS

All Tests

- 2.01 Attendant telephone set connected to either pair of PBX telephone jacks.

Tests D Through J

- 2.02 32B test set. (See 1.05.)

Tests D Through M

- 2.03 Test circuit, SD-66758-01.

Test G

2.04 When test circuit is not equipped with permanent ringer or indicator, use portable ringer, 687A-3 subset or equivalent connected to an S3H (switchboard) cord 5 feet long equipped with a 309 plug. The sleeve conductor of the cord should be taped and dead-ended at the subset. If the sound of the ringer is considered undesirable in the PBX operating room, a 21B-3 indicator similarly connected to an S3H cord and 309 plug may be substituted for the portable ringer.

Test M

- 2.05 Test receiver, 716C receiver, attached to an R2CU cord, 6 feet long, equipped with a 309 plug (2W29A cord).

3. METHOD

| STEP | ACTION | VERIFICATION |
|--------------------------------------|---|---|
| A. Position Telephone Circuit | | |
| 1 | Operate TALK key. | TALK lamp lights. Sidetone heard. |
| 2 | Shake, slightly twist attendant telephone set cord between fingers, move plug in jacks, shake gently. | No clicks or scratchy noise heard. |
| 3 | Remove plug of attendant telephone set from jack. | TALK lamp extinguished. |
| 4 | Insert plug of attendant telephone set in other pair of telephone jacks. | |
| 5 | Operate TALK key of first cord pair. | First TALK lamp lights. Sidetone heard. |
| 6 | Repeat Step 2. | Same as Step 2. |
| 7 | Operate TALK key of second cord pair. | First TALK lamp extinguished. Second TALK lamp lights. |

| STEP | ACTION | VERIFICATION |
|------|--|---|
| 8 | Operate TALK key of each pair of cords in succession until TALK key of last cord pair is operated. | Previously lighted TALK lamps extinguished. Successive TALK lamps light. |
| 9 | Operate RLS key. | Last lighted TALK lamp extinguished. |

B. Attendant Dial Circuit (PBX Equipped With Standard Dial)

| | | |
|----|--|------------------------------|
| 1 | Operate TALK key. | TALK lamp lights. |
| 2 | Insert plug of front cord in jack of idle trunk. | Dial tone heard. |
| 3 | Pull dial slightly off normal. | Dial tone not heard. |
| 4 | Restore dial to normal. | Dial tone heard. |
| 5 | Dial test desk or dial speed test code. | Satisfactory test obtained. |
| 6 | Remove plug of front cord from trunk jack. | |
| 7 | Insert plug of back cord in jack of idle trunk. | Dial tone heard. |
| 8 | Operate DIAL BACK key. | DIAL BACK lamp lights. |
| 9 | Repeat Steps 3, 4. | Same as Steps 3, 4. |
| 10 | Dial test desk or test tone number. | Call completed. |
| 11 | Operate DIAL BACK key. | DIAL BACK lamp extinguished. |
| 12 | Operate RLS key. | TALK lamp extinguished. |
| 13 | Disconnect cord. | |

C. Attendant Dial Circuit (PBX Equipped With Pushbutton Dial)

| | | |
|---|--|--|
| 1 | Operate TALK key. | TALK lamp lights. |
| 2 | Insert plug of front cord into jack of idle trunk. | Dial tone heard. |
| 3 | Operate START key on pushbutton dial. | START lamp lights. Dial tone removed. |
| 4 | Key pulse test desk or test line. | |
| 5 | Operate END key on pushbutton dial. | Connection established. |
| 6 | Remove plug of front cord from trunk jack. | |

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| STEP | ACTION | VERIFICATION |
|-------------|---|------------------------------|
| 7 | Insert plug of back cord into jack of idle trunk. | Dial tone heard. |
| 8 | Operate DIAL BACK key. | DIAL BACK lamp lights. |
| 9 | Repeat Steps 3, 4, 5. | Same as Steps 3, 4, 5. |
| 10 | Operate DIAL BACK key. | DIAL BACK lamp extinguished. |
| 11 | Operate RLS key. | TALK lamp extinguished. |
| 12 | Disconnect cord. | |

D. Station-to-Station Condition

| | | |
|----|--|---|
| 1 | Operate TALK key. | TALK lamp lights. |
| 2 | Make following connections to test circuit. 32B test set to T jack. Back cord to S jack. Front cord to FC jack. | Front lamp flashes at 30 ipm. |
| 3 | Operate RLS key. | TALK lamp extinguished. Back lamp lights. |
| 4 | Operate TRIP key. | Front lamp extinguished. |
| 5 | Release TRIP key. | Front lamp lights. |
| 6 | Hold operated TRIP key. | Front lamp flashes at 120 ipm. |
| 7 | Operate TALK key. | TALK lamp lights. Front and back lamps extinguished. |
| 8 | Release TRIP key. | Front lamp lights. |
| 9 | Disconnect cords from S, FC jacks. | Front lamp extinguished. |
| 10 | Make following connections to test circuit. Back cord to FC jack. Front cord to S jack. | Front lamp flashes at 30 ipm. |
| 11 | Operate RING FRONT key. | Front lamp steady. |
| 12 | Hold operated TRIP key. | |
| 13 | Operate RLS key. | TALK lamp extinguished. |
| 14 | Release TRIP key. | Back lamp lights. |

| STEP | ACTION | VERIFICATION |
|---|---|---|
| 15 | Hold operated TRIP key. | Back lamp flashes at 120 ipm. |
| 16 | Operate TALK key. | Back lamp extinguished. TALK lamp lights. |
| 17 | Disconnect all test connections. | Front lamp extinguished. |
| 18 | Operate RLS key. | TALK lamp extinguished. |
| E. Central Office Trunk-to-Station Condition | | |
| 1 | Operate TALK key of spare cord. | TALK lamp of spare cord lights. |
| 2 | Make following connections to test circuit. 32B test set to T jack. Front spare cord to S jack. | Front lamp of spare cord flashes at 30 ipm. |
| 3 | Operate RING FRONT key. | Front lamp of spare cord remains steady. |
| 4 | Operate TALK key of cord pair under test. | TALK lamp lights. TALK lamp of spare cord extinguished. |
| 5 | Make following connections to test circuit. Back cord to BT jack. Front cord to FC jack. | Front lamp flashes at 30 ipm. Front lamp of spare cord extinguished. |
| 6 | Operate RLS key. | TALK lamp extinguished. |
| 7 | Hold operated TRIP key. | Front lamp extinguished. |
| 8 | Release TRIP key. | If provided, after operational pause showing delayed-through supervision — Front lamp lights. Front lamp of spare cord lights. (See 1.06.) |
| 9 | Operate TALK key of spare cord. | TALK lamp of spare cord lights. |
| 10 | Operate RING FRONT key. | Back lamp flashes at 120 ipm. (See 1.06.) |
| 11 | Operate TALK key. | TALK lamp lights. TALK lamp of spare cord extinguished. Front and back lamps extinguished. Front lamp of spare cord extinguished. (See 1.06.) |
| 12 | Operate RLS key. | TALK lamp extinguished. Front lamp lights. |
| 13 | Operate, release, and hold operated TRIP key. | Front lamp of spare cord lights. Front lamp flashes at 120 ipm. |

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| STEP | ACTION | VERIFICATION |
|-------------|----------------------------------|---|
| 14 | Operate TALK key. | TALK lamp lights. Front lamp extinguished. Front lamp of spare cord extinguished. (See 1.06.) |
| 15 | Release TRIP key. | |
| 16 | Disconnect all test connections. | |
| 17 | Operate RLS key. | TALK lamp extinguished. |

F. Station-to-Central Office Trunk Condition

| | | |
|----|---|---|
| 1 | Operate TALK key of spare cord. | TALK lamp of spare cord lights. |
| 2 | Make following connections to test circuit. 32B test set to T jack. Front spare cord to S jack. | Front lamp of spare cord flashes at 30 ipm. |
| 3 | Operate RING FRONT key. | Front lamp of spare cord remains steady. |
| 4 | Operate TALK key of cord pair under test. | TALK lamp lights. TALK lamp of spare cord extinguished. |
| 5 | Hold operated TRIP key. | |
| 6 | Make following connections to test circuit. Back cord to FC jack. Front cord to BT jack. | Front lamp of spare cord extinguished. |
| 7 | Operate RLS key. | TALK lamp extinguished. |
| 8 | Release TRIP key. | If provided, after operational pause showing delayed-through supervision — Back lamp lights. Front lamp of spare cord lights. (See 1.06.) |
| 9 | Hold operated TRIP key. | Back lamp flashes at 120 ipm. |
| 10 | Operate TALK key. | TALK lamp lights. Back lamp extinguished. Front lamp of spare cord extinguished. (See 1.06.) |
| 11 | Release TRIP key. | Back lamp lights. |
| 12 | Operate TALK key of spare cord. | TALK lamp extinguished. TALK lamp of spare cord lights. |
| 13 | Operate RING FRONT key. | Front lamp flashes at 120 ipm. (See 1.06.) |

| STEP | ACTION | VERIFICATION |
|------|----------------------------------|--|
| 14 | Operate TALK key. | TALK lamp lights. TALK lamp of spare cord extinguished. Front lamp extinguished. |
| 15 | Disconnect all test connections. | Back lamp extinguished. |
| 16 | Operate RLS key. | TALK lamp extinguished. |

G. Ringing Feature

| | | |
|----|--|--|
| 1 | Operate TALK key. | TALK lamp lights. |
| 2 | Make following connections to test circuit. 32B test set to T jack. Back cord to FC jack. Portable ringer to multiple FC jack. (See 2.04.) | |
| 3 | Operate RING-BACK key momentarily. | Ringer sounds momentarily. |
| 4 | Remove back cord, insert plug of front cord into FC jack. | Front lamp flashes at 30 ipm. Ringer sounds intermittently. |
| 5 | Hold operated PRE-TRIP key. | |
| 6 | Release PRE-TRIP key, hold operated TRIP key. | Front lamp extinguished. Ringer silenced. |
| 7 | Release TRIP key. | Front lamp lights. |
| 8 | Operate RING FRONT key momentarily. | Ringer sounds momentarily. |
| 9 | Disconnect all test connections. | Front lamp extinguished. |
| 10 | Operate RLS key. | TALK lamp extinguished. |

H. Trip of Machine Ring With Attendant Dial

| | | |
|---|--|---|
| 1 | Operate TALK key. | TALK lamp lights. |
| 2 | Insert plug of front cord into S jack of test circuit. | Front lamp flashes at 30 ipm. Ringing induction heard. |
| 3 | Dial or key pulse numeral 2. | Front lamp lights. Ringing induction removed. |
| 4 | Disconnect cord. | Front lamp extinguished. |
| 5 | Operate RLS key. | TALK lamp extinguished. |

| STEP | ACTION | VERIFICATION |
|-----------------------------|---|--|
| I. Split Operation | | |
| 1 | Operate TALK key. | TALK lamp lights. |
| 2 | Make following connections to test circuit. 32B test set to T jack. Back cord to FC jack. Front cord to BT jack. | Back lamp lights. |
| 3 | Operate TRIP key momentarily. | Click heard. Back lamp flashes momentarily. |
| 4 | Operate SPLIT key. | SPLIT lamp lights. |
| 5 | Operate TRIP key momentarily. | Back lamp flashes momentarily. <i>Note:</i> Faint click heard due to induction. |
| 6 | Operate SPLIT key. | SPLIT lamp extinguished. |
| 7 | Disconnect all test connections. | |
| 8 | Operate RLS key. | TALK lamp extinguished. |
| J. Thru-Dial Feature | | |
| 1 | Operate TALK key of spare cord. | TALK lamp of spare cord lights. |
| 2 | Make following connections to test circuit. 32B test set to T jack. Front spare cord to S jack. | Front lamp of spare cord flashes at 30 ipm. |
| 3 | Operate RING FRONT key. | Front lamp of spare cord remains steady. |
| 4 | Operate TALK key of cord under test. | TALK lamp lights. TALK lamp of spare cord extinguished. |
| 5 | Hold operated TRIP key. | |
| 6 | Make following connections to test circuit. Back cord to FC jack. Front cord to BT jack. | Front lamp of spare cord extinguished. |
| 7 | Operate THRU-DIAL key. | TALK lamp extinguished. |
| 8 | Release TRIP key. | Back lamp lights. Front lamp of spare cord lights. |
| 9 | Operate TRIP key. | Back lamp extinguished. Front lamp of spare cord extinguished. |
| 10 | Disconnect all test connections. | All lamps extinguished. |

| STEP | ACTION | VERIFICATION |
|---|--|---|
| K. Central Office Trunk Holding Bridge | | |
| 1 | Operate TALK key of spare cord. | TALK lamp of spare cord lights. |
| 2 | Insert plug of front spare cord into S jack. | Front lamp of spare cord flashes at 30 ipm. |
| 3 | Operate TALK key. | TALK lamp of spare cord extinguished. TALK lamp lights. |
| 4 | Insert plug of front cord into BT jack. | Front lamp of spare cord extinguished. Back lamp lights. |
| 5 | Operate RLS key. | TALK lamp extinguished. |
| 6 | Operate TALK key. | TALK lamp lights. |
| 7 | Disconnect front cord from BT jack. | Front lamp of spare cord lights. Back lamp extinguished. |
| 8 | Insert plug of back cord into BT jack. | Front lamp of spare cord extinguished. |
| 9 | Operate RLS key. | TALK lamp extinguished. |
| 10 | Disconnect all test connections. | |

L. Busy-Test Feature

| | | |
|---|---|-------------------------|
| 1 | At multiple appearance of SP jack — Insert plug of back cord into SP jack. | |
| 2 | At position under test — Operate TALK key. | TALK lamp lights. |
| 3 | Touch tip of front and back cords to sleeve of SP jack momentarily. | Audible click heard. |
| 4 | Operate RLS key. | TALK lamp extinguished. |
| 5 | At multiple appearance of SP jack — Disconnect cord. | |

M. AC Continuity

Note: For this test, low volume or absence of tone in test receiver indicate normal condition. Clicks or changes in tone volume indicate trouble.

| | |
|---|--|
| 1 | Insert plug of test receiver into REC jack of test circuit. |
| 2 | Operate TALK key. |

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| STEP | ACTION | VERIFICATION |
|-------------|---|---------------------|
| 3 | Insert plug of front cord into CON FRONT jack. | |
| 4 | Hold plug in jack with one hand, shake cord with other hand. | |
| 5 | Turn plug in jack. | |
| 6 | Disconnect cord from CON FRONT jack. | |
| 7 | Insert plug of back cord into CON FRONT jack. | |
| 8 | Repeat Steps 4 through 5. | |
| 9 | Insert plug of front cord into CON REAR jack (back cord still connected into CON FRONT jack). | |
| 10 | Operate THRU-DIAL key. | |
| 11 | Operate TALK key. | |
| 12 | Disconnect all test connections. | |
| 13 | Operate RLS key. | |

N. Transfer Function

| | | |
|---|---|--|
| 1 | At right-hand position of two or more position switchboard — Operate TALK key. | At right-hand position — TALK lamp lights. |
| 2 | Insert plug of front cord into S jack of test circuit. | Ringing induction heard. |
| 3 | Operate TRFR key to L. | TALK lamp extinguished. Ringing induction removed. |
| 4 | At left-hand position with attendant telephone set removed — Operate TALK key. | At left-hand position — TALK lamp lights. |
| 5 | Insert plug of front cord into FC jack. | At right-hand position — Ringing induction heard. |
| 6 | At right-hand position — Operate TRFR key to OFF. | Ringing induction removed. At left-hand position — TALK lamp extinguished. |

| STEP | ACTION | VERIFICATION |
|------|---|--|
| 7 | Disconnect cord. | |
| 8 | At left-hand position with attendant telephone set connected — Operate TALK key. | At left-hand position — TALK lamp lights. |
| 9 | Insert plug of front cord into S jack. | Ringling induction heard. |
| 10 | Operate TRFR key to R. | Ringling induction removed. TALK lamp extinguished. |
| 11 | At right-hand position with attendant telephone set removed — Operate TALK key. | At right-hand position — TALK lamp lights. |
| 12 | Insert plug of front cord into FC jack. | At left-hand position — Ringling induction heard. |
| 13 | At left-hand position — Operate TRFR key to OFF. | Ringling induction removed. At right-hand position — TALK lamp extinguished. |
| 14 | Disconnect cord. | |

O. Noninterference Feature

| | | |
|---|--|---|
| 1 | Operate TALK key. | TALK lamp lights. |
| 2 | Insert plug of back cord into jack of busy central office trunk. | Conversation with existing connection impossible. |
| 3 | Repeat Step 1, using front cord. | Same as Step 1. |
| 4 | Operate RLS key. | TALK lamp extinguished. |