KS-16990, LIST 1 TEST SET

1.00 INTRODUCTION

This section covers the description and connections of the KS-16990, List 1 test set.

2.00 GENERAL

2.01 The KS-16990, List 1 test set should not be used on working lines, except for Tip and Ring and line verification test.

2.02 The KS-16990 test set may be used to:

- Trace conductor pairs which cannot be traced readily by sight.
- Detect presence of shorts, crosses, and grounds.
- Identify Tip and Ring.
- Identify stations associated with 2-party service.
- Identify stations associated with 4-party selective service (tubes).
- Test for line verification.

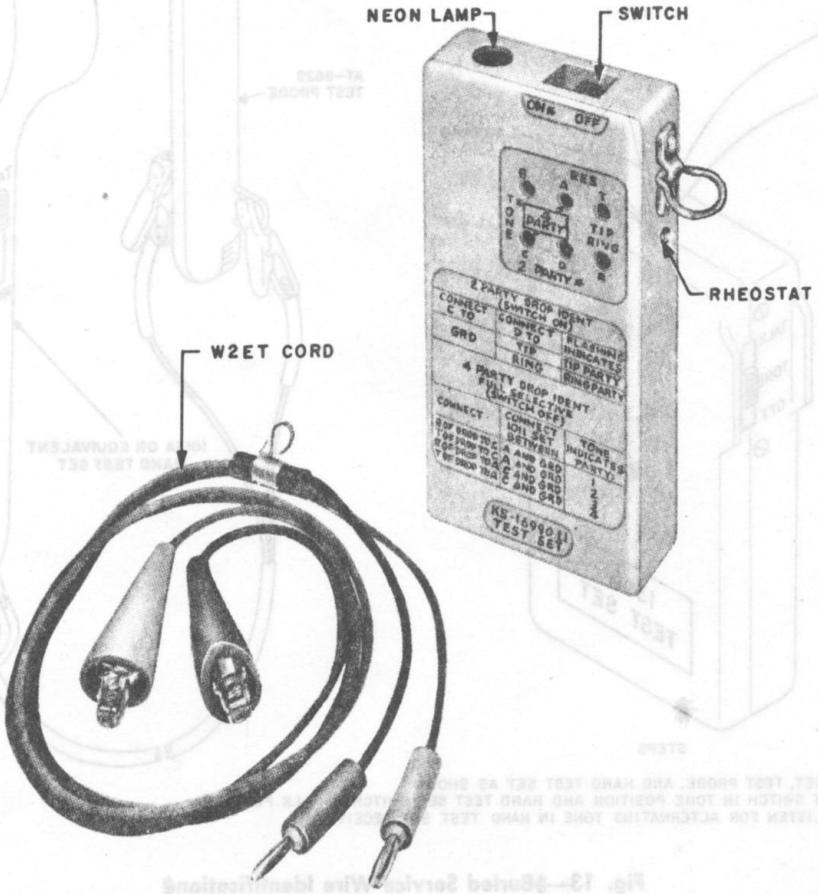


Fig. 1 — KS-16990, List 1 Test Set

3.00 DESCRIPTION

3.01 The KS-16990, List 1 test set (Fig. 1) consists of an ON-OFF switch, neon lamp, printed wiring board, and six jacks to which the test leads may be connected. Space is provided in the plastic case for five KS-15936 batteries.

3.02 A W2ET cord is provided for use with the KS-16990, List 1 test set (Fig. 1).

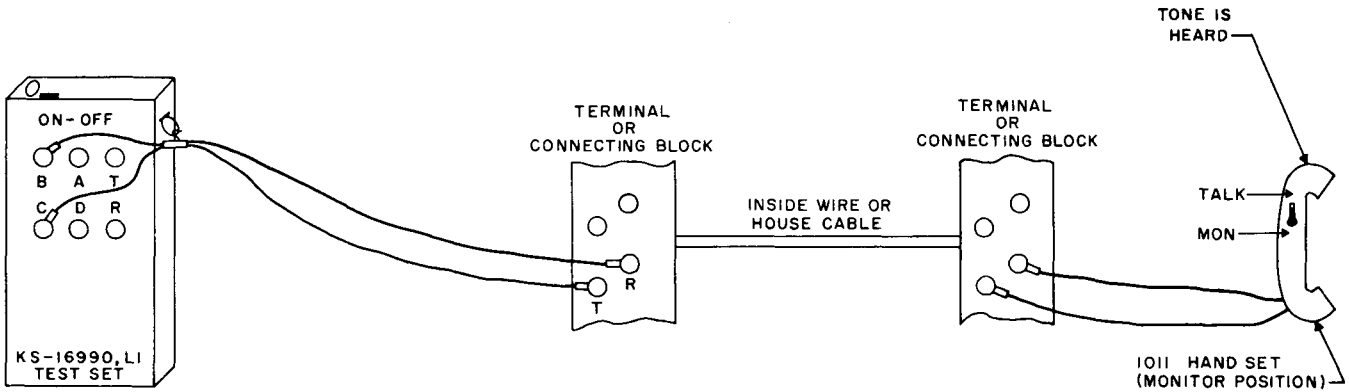
3.03 To check for proper operation of test set, proceed as follows:

1. Place batteries in holders observing specified polarity and reassemble.
2. Place banana plugs of test cord in jacks *A* and *T* of test set.
3. Slide ON-OFF switch to OFF position.
4. Connect clip ends of test cords together.
5. Turn adjusting screw of rheostat (located in upper right side of case) until flashing occurs. Then turn adjusting screw clockwise one full turn beyond where the lamp glows steadily.
6. When no further adjustment of rheostat will cause the lamp to glow steadily, replace batteries.
7. *After* placing new batteries, repeat Steps 2 through 5.

3.04 When test set is not in use, disconnect test leads and slide ON-OFF switch to OFF position.

3.05 Do not short test leads together while inserted in jacks *A* and *C* of test set. This will short-circuit the batteries of test set.

4.00 CONNECTIONS (Fig. 2 through 7)



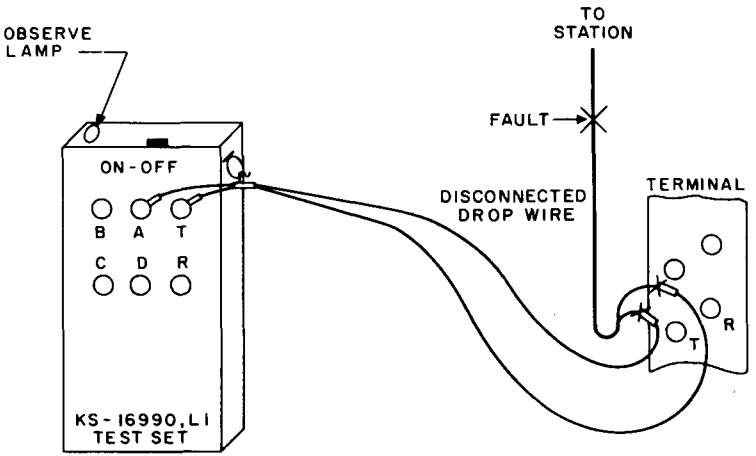
1. Place banana plugs of test cord in jacks *B* and *C* of test set.

2. Slide ON-OFF switch to ON position.

3. Connect clips of test cord to conductors to be tested. A common ground may be used as one conductor for single-wire identification.

4. At opposite end use 1011 hand set (switch in monitor position) to find tone and identify pair.

Fig. 2 — Tracing Conductor Pairs



1. Place banana plugs of test cord into jacks *A* and *T* of test set.

2. Slide ON-OFF switch to OFF position.

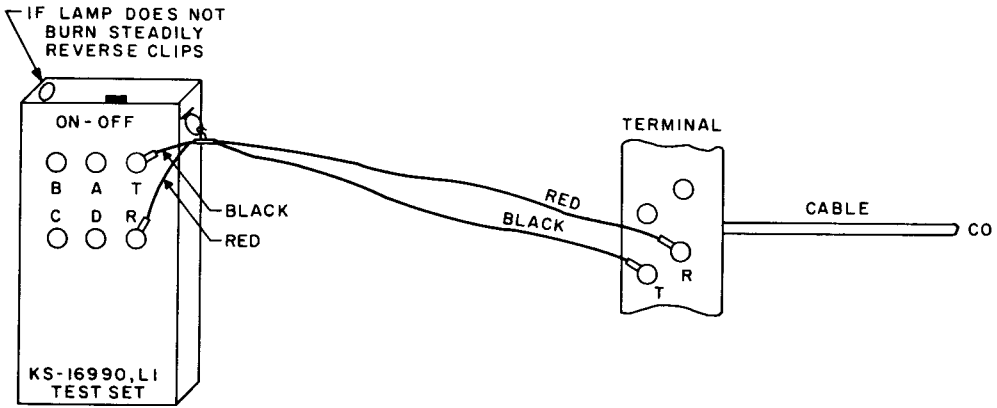
3. Connect clips of test cord to conductors to be tested. Ground should be considered as a conductor in cases where it is involved in the trouble.

4. A constant glow of lamp indicates fault is less than approximately 100,000 ohms.

5. A flashing lamp indicates fault is greater than 100,000 ohms and less than about 2,500,000 ohms. As the fault resistance increases from 100,000 ohms to 2,500,000 ohms, the flashing will slow down.

6. When the fault resistance is greater than about 2,500,000 ohms, the lamp will go out.

Fig. 3 — Detecting Shorts, Crosses, and Grounds



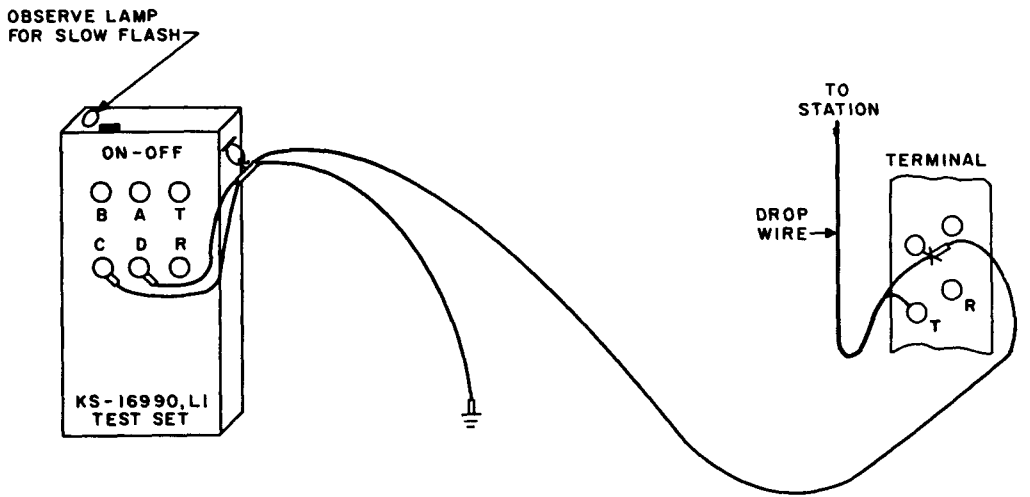
1. Place banana plugs of test cord in jacks *T* and *R* of test set.

2. Slide ON-OFF switch to OFF position.

3. Connect clips of test cord to line to be tested.

4. Test lamp will glow steadily if test lead in *R* jack of test set is connected to Ring and test lead in *T* jack is connected to Tip.

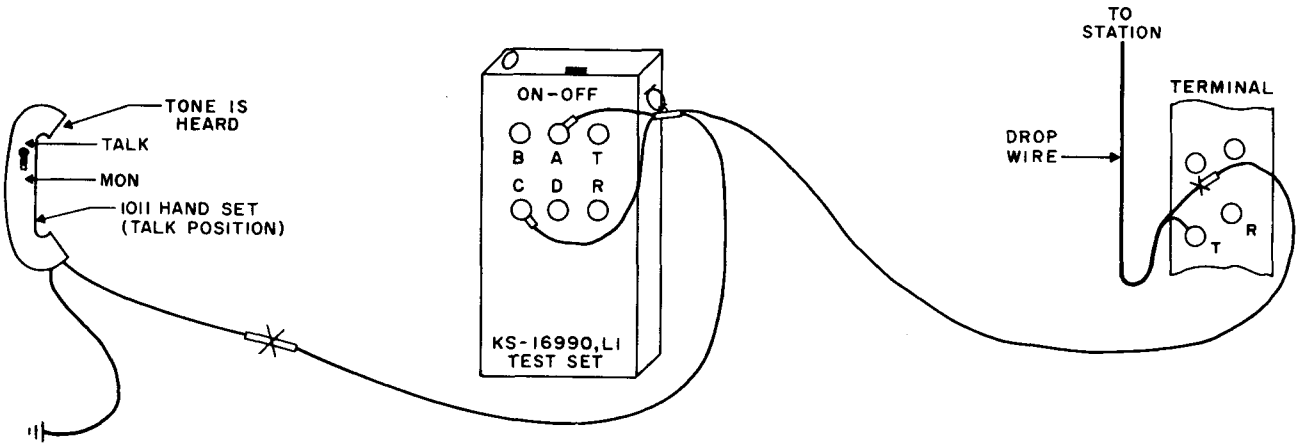
Fig. 4 — Identification of Tip and Ring



1. Identify Tip and Ring of line as described in Fig. 4 of this section.
2. Disconnect drops or cross connections from Tip binding post of terminal (for Tip party identification).
3. Disconnect drops or cross connections from Ring binding post of terminal (for Ring party identification).
4. Place banana plugs of test cord into jacks *D* and *C* of test set.
5. Slide ON-OFF switch to ON position. Lamp will glow steadily.
6. Connect one clip of test cord to ground.
7. Connect other clip of test cord to each disconnected drop or cross connection.
8. When test circuit is completed to ground over the conductor that is connected to ringer, lamp in test set will flash at a slow rate.
9. A steady glow indicates no ringer is connected to ground from the conductor under test.

Note: If extension ringers are connected, flashing rate will be slower.

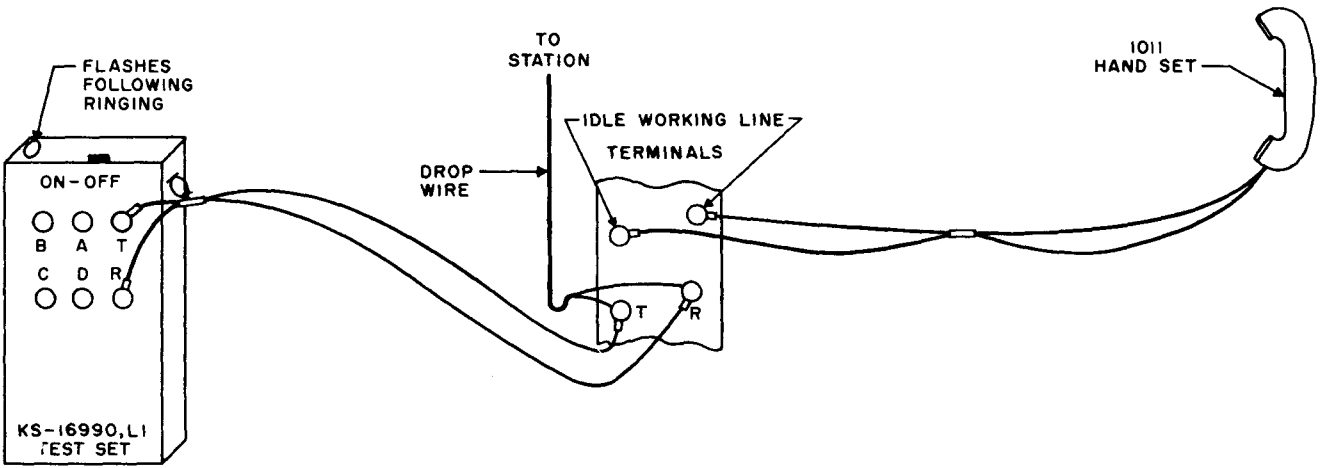
Fig. 5 — Identification of Stations on 2-Party Service



1. Identify Tip and Ring of line as described in Fig. 4 of this section.
2. Disconnect drop or cross connection from Tip binding post (for Tip parties' identification).
3. Disconnect drop or cross connection from Ring binding post (for Ring parties' identification).
4. Place banana plugs of test cord in jacks *A* and *C* of test set.
5. Slide ON-OFF switch to OFF position.
6. Connect clips of test set and 1011 hand set as shown below.
7. Place switch of 1011-type hand set to talk position.

Connect	Connect 1011 Hand Set Between	Tone Indicates Party
R of Drop to C	A and GRD	1
T of Drop to C	A and GRD	2
R of Drop to A	C and GRD	3
T of Drop to A	C and GRD	4

Fig. 6 — Identification of Stations on 4-Party Selective Service (Tube Sets)



1. Slide ON-OFF switch to OFF position.

2. Identify Tip and Ring of line as described in Fig. 4 of this section. Connect test set to the line so that the lamp glows steadily.

3. With 1011-type hand set, go in on another idle working pair in terminal and dial telephone number associated with pair to which test set is connected.

4. Ringing will cause lamp in test set to flash at ringing rate.

Fig. 7 — Line Verification