

# ADVANCE PRINTING

## AT-8629

### TEST PROBE

#### 1. GENERAL

- 1.01** This section provides identification, operation, and maintenance of the AT-8629 test probe.
- 1.02** This section is reissued to:
- Include new Fig. 1, 2, and 4, showing current production test probe.
- 1.03** The test probe can be used in most applications requiring identification or tracing of cables or wiring or of individual conductors from among a large number of wires.
- 1.04** Identification can be made without piercing or removing conductor insulation. A tone source and a 1011- or 1013-type hand test set are also required.

#### 2. IDENTIFICATION

- 2.01** The test probe (Fig. 1) is a pencil-shaped tool approximately 7 inches long and 1 inch in diameter. The matching halves of the plastic body are held together by the metal tip and a clip and screw. The bright yellow color serves as an aid in locating the probe if dropped in tall grass, snow, etc.

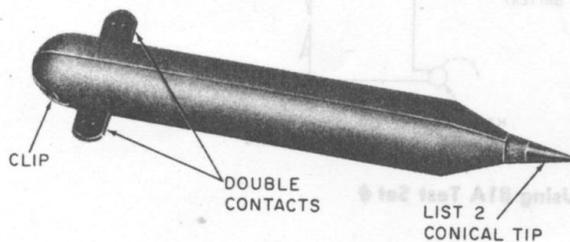


Fig. 1—AT-8629, List 1 Test Probe

#### Ordering Guide

- 2.02** The AT-8629, List 1 test probe is furnished equipped with a (List 2) conical tip. Extra (List 2) conical tips, (List 3) duckbill tips, battery, and (List 4) leather scabbard must be ordered separately as follows:
- Probe, Test, AT-8629L1
  - Tip, Conical, AT-8629L2
  - Tip, Duckbill, AT-8629L3
  - Battery, Eveready\* 206 (9-volt) or equivalent
  - Scabbard, AT-8629L4

\*Registered trademark of Union Carbide Corp.

- 2.03** The cone-shaped (List 2) tip allows the craft personnel to identify pair(s) appearing in a ready access cable, terminal, etc, and the List 3 can be inserted in larger cables or cables under tension where slack cannot be obtained.
- 2.04** Two contact tabs provide a means of connecting the clips of the hand test set. Connecting a clip to the tab also completes a circuit to apply power to the transistorized circuit.

- 2.05** Power is supplied by a replaceable transistor battery.

#### 3. OPERATION

- 3.01** The test probe can be used:
- To identify individual pairs in outside plant cables at terminals, closures, pedestals, etc.
  - To identify station wiring, cables, or key equipment in closets, distribution terminals, etc.

#### NOTICE

Not for use or disclosure outside the  
Bell System except under written agreement

- To identify drop wires or buried service wires at terminals and pedestals
- To locate prewiring after wall covering has been placed
- As an aid in locating opens.

**3.02** The probe requires a tone source in the range of 500- to 1200-Hz such as 76-type, KS-16990, 81A, or 139A test set or central office (CO) 1000-Hz tone. The tone can be applied at the CO or locally.

**3.03** Performance of the probe is better with a modulated tone such as supplied by the 76-type or 139A test set than with a steady tone such as 1000-Hz.

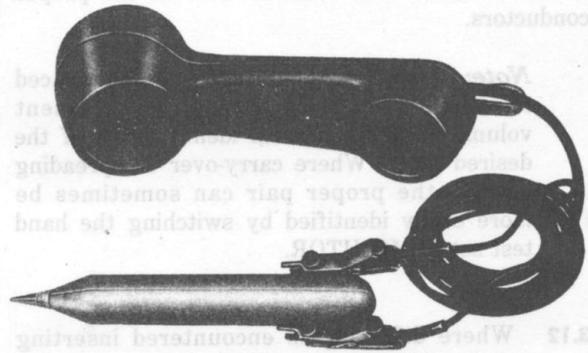
**Caution:** *Wherever possible, the conductors under test should be disconnected from CO or station equipment to prevent circuit equipment and subscriber interference from locally applied tone source. Where long line equipment is involved, apply tone directly to cable pair or vertical side of main distributing frame with heat coils pulled where possible. Failure to do so will substantially reduce volume of tone.*

**3.04** Tone source must be connected to a metallic circuit, either across a pair or split pairs. Connecting tone to ground will spread the tone, making conductor identification difficult.

**3.05** To use probe, place switch of 1011- or 1013-type hand test set in TALK position. Connect a clip from the hand test set to each of the contact tabs on the test probe (Fig. 2). The needle points of the clips should be seated in the holes in the tabs. A battery click should be heard in the hand test set receiver. The condition of the probe can be further checked by holding it near a source of induced noise such as fluorescent lamps, motors, dial tone, etc. While the probe will normally be used with the test set switch in the TALK position, it will function in MONITOR but at a reduced volume. At times, this reduced volume may make it easier to identify the proper cable pair.

**Caution:** *The probe need only be held near a noise source to check operation.*

**NEVER touch the metal tip to exposed power sources such as outlets.**



**Fig. 2—Hand Test Set Connected to Test Probe**

**3.06** When using the tool, the hand should not touch the metal tip, as this will cause a reduction in the volume of tone heard in the test set.

**3.07** Any time the probe is not in actual use, the clips should be removed from one of the contact tabs of the probe to prevent unnecessary battery drain.

**3.08** If required, the hand test set can be used for calling and talking while connected to the probe. An H2B cord can be used, modified by the addition of alligator clips to the ends of the cord not so equipped. In use, the hand test set is connected to the probe in the normal manner (3.05). The end of the H2B cord having short leads is connected to the clips of the test set cord, and the other end is connected to a working or talk pair.

#### Identifying Wiring or Cabling

**3.09** To identify a specific pair from among a large number, the tip is inserted into groups of wires until the tone is heard. In multibinder cables it may be necessary to identify the binder carrying the desired pair by inserting the probe tip into the wires comprising the group.

**3.10** Once generally located, the tip should be touched to the insulation of individual

conductors until tone is distinctly heard, indicating the conductors under test (Fig. 3).

**3.11** As a final test, hold the probe tip parallel to and against the conductors being identified. Tone should be heard the loudest on the proper conductors.

**Note:** Some carry-over may be experienced on other conductors but not of sufficient volume to interfere with identification of the desired pair. Where carry-over or spreading occurs, the proper pair can sometimes be more easily identified by switching the hand test set to MONITOR.

**3.12** Where difficulty is encountered inserting the probe in large cables or those under tension, the regular conical tip can be replaced by the longer, flatter (List 3) duckbill tip. Refer to 4.02 for method of removing tip.

**3.13** This method can also be used to trace drop wires at terminals, buried service wires at pedestals, spare pairs in house or key equipment cables, etc. Tone is applied at the station, protector, connecting block, or other available access point.

#### Locating Hidden Wiring

**3.14** The probe can be used to locate hidden wiring such as prewire or advance wiring. Once tone is applied, the probe is moved across the area concealing the wire until the tone is heard. The path of the wire is determined by maximum volume. Best pickup is obtained by using the cone-shaped portion of the probe flat against the surface.

**Note:** Difficulty may be encountered in locating wiring behind dry wall construction involving aluminum foil backing or plaster wire lath which act as a shield preventing tone pickup.

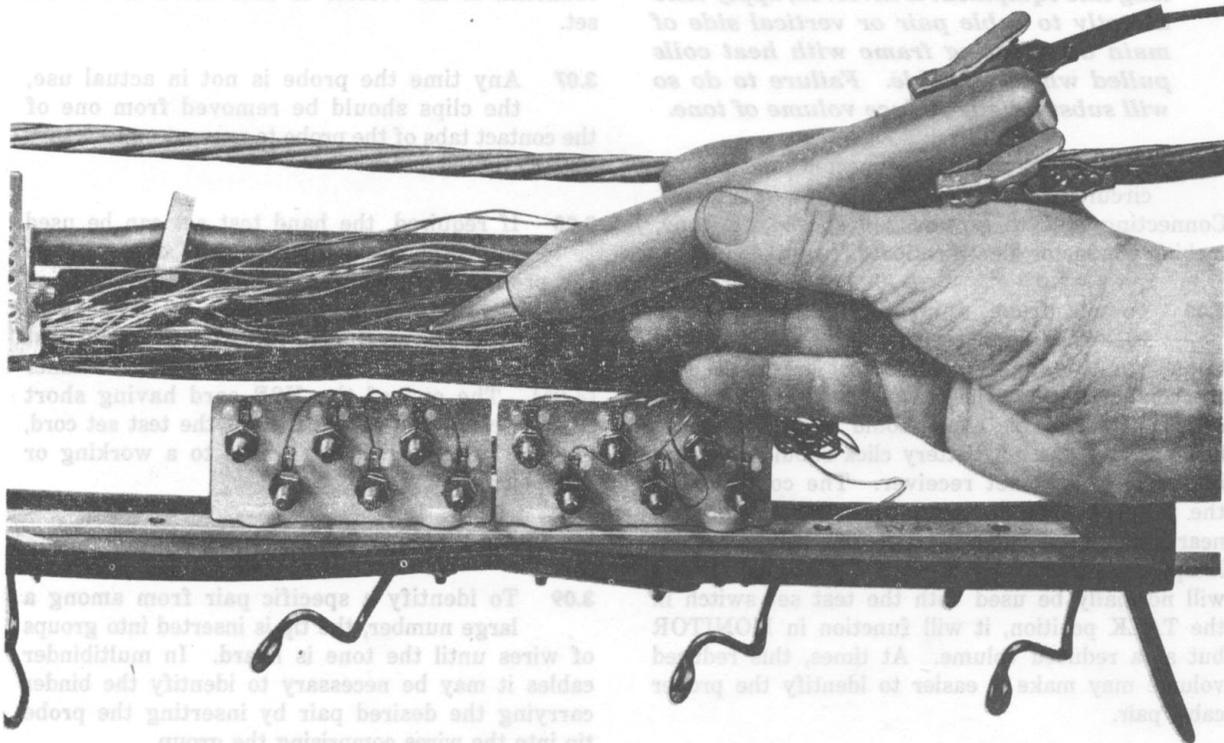


Fig. 3—Pair Identification at Ready Access Terminal Using Test Probe

## Locating Opens

**3.15** The probe is used to locate opens in a similar manner as that for identifying conductors. Once the conductor is identified, the probe is moved along the conductor until a definite drop-off in tone is heard, indicating the open has been passed.

**3.16** If only one side of a pair is believed open, care should be taken to listen for any drop-off in tone since the tone may carry past the open on the good conductor.

## 4. MAINTENANCE

**4.01** Field maintenance of the AT-8629 probe is limited to replacement of the metal tip and the battery.

**4.02** Normally the tip can be removed with the fingers by unscrewing counterclockwise. Where difficulty is encountered, use long-nose pliers on the knurled portion of the tip to loosen.

**4.03** The probe uses an Eveready 206 (9-volt) battery or equivalent.

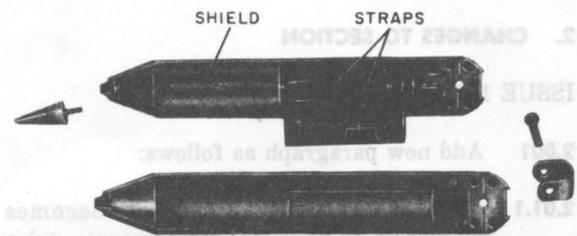
**4.04** When battery replacement is indicated (conditions in 3.05 cannot be met), proceed as follows:

- (1) Remove tip (4.02).
- (2) Remove 6-32 pan head screw and pull clip off end of tool.
- (3) Separate halves by inserting fingernail in seam and prying apart.

**Caution:** Exercise care when disassembling probe not to break wire straps between contact tabs and printed wiring board (Fig. 4).

- (4) Remove battery. Where available, battery can be tested with an approved voltmeter. At least 4 volts is required for proper operation.

**4.05** When installing battery, the flat (-) end must face toward the contact tabs. Ensure that good contact is made at both ends of the battery.



**Fig. 4**—Test Probe Disassembled for Battery Replacement

**4.06** Reassemble probe in reverse order making sure straps lie in grooves of body halves and halves are properly mated to preserve water-resistant seal. Tighten metal tip finger-tight only.

**4.07** Use only a KS-2423 cloth moistened with water to clean plastic parts of probe. **Do not use solvent.**