

# PROGRESSIVE ELECTRONICS INC.

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## Tracer 2 Series Tone test Set Instructions

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### Description

The Tracer 2 Models 77HP, 77HP/6A, and 77HP/6AC Tone Test Sets are housed in a high impact plastic case measuring 1 1/4 x 2 x 2 1/4", weighing 5 ounces, and are powered by one 9 volt battery. Standard test leads include red and black rubber insulated test clips and a snag-proof 4-conductor modular cord and plug. (Model 77HP/6A offers angled bed-of-nails clips. The Model 77HP/6AC provides angled bed-of-nails clips and braided nylon cords.) In addition to the test lead strain relief, all models provide a durable lanyard for carrying or hanging the tester. A three-position toggle switch controls the modes of operation and two (2) bi-colored Light Emitting Diodes (LEDs) display line polarity for Lines 1 and 2. The tone and continuity test functions are only applied to Line 1 using the modular plug. A tone selector switch (see figure 2) located inside each unit, may be used to select a fast or slow warble tone output. The Tracer 2 models are compatible with all common Central Office Switching Systems and the output tone is isolated from DC voltages.

### Operation

All of the following tests can be performed by using the red and black test leads (as described) or the modular plug.

NOTE: When using the modular test plug, the polarity test function applies to Lines 1 and 2 USOC. The continuity and tone functions ONLY apply to Line 1.

### Identifying Tip and Ring (Polarity Test)

CENTRAL OFFICE BATTERY MUST BE PRESENT TO PERFORM THIS TEST.

In the OFF position, connect the black test lead to ground and the red test lead to each side of the line to be tested.

- A green LED indicates correct polarity. (the red test lead is connected to the ring side of the circuit)
- A red LED indicates reversed polarity.

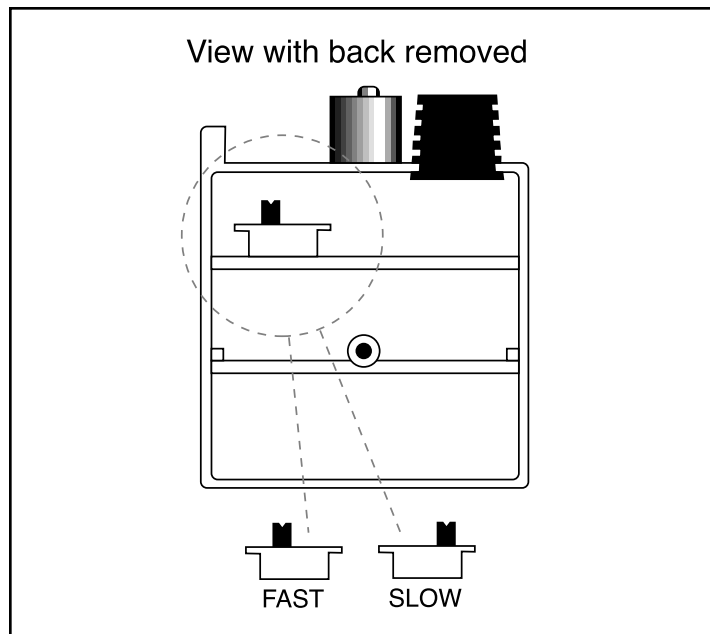
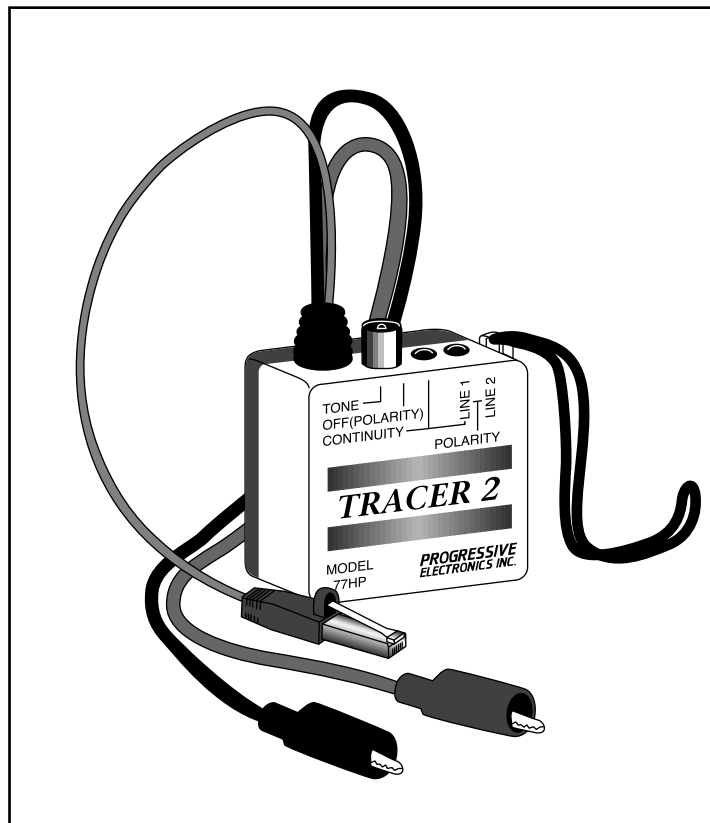


Figure 2, Tone Selector Switch

- A red and green flickering LED (appears yellow) indicates the presence of AC, or a ringing line.

NOTE: If independent ground is not available, connect the test leads across the pair. The LED will be green when the red test lead is connected to the ring side of the circuit and the black lead is connected to the tip.

## Indicating Line Condition

CENTRAL OFFICE BATTERY MUST BE PRESENT TO PERFORM THIS TEST.

In the OFF position, connect the red test lead to the ring side of the circuit and the black lead to the tip.

- A bright green LED indicates a clear working line with correct polarity.
- A bright red LED indicates a clear working line with reversed polarity.
- A dim green LED indicates a busy (off hook) line or faulted line condition (with correct polarity).
- A dim red LED indicates a busy (off hook) line or faulted line condition (with reversed polarity).
- A brightly flickering green and red LED indicates a ringing line.

## Verifying Lines

To perform this test, the Tracer 2 must be in the OFF position. Dial the line to be verified. Connect the red lead to the ring side of the circuit and the black lead to tip. The LED will flicker red and green. To confirm identification, monitor the line and switch the tester to the CONT position. This will terminate the call.

## Supplying Talk Power

Connect the test leads in series with a telephone test set (buttset) and the inactive wire pair. (see figure 3) Move the toggle switch to the CONT position to supply the “dead” line with talk power. Additional Tracer 2’s may be added, in series, to increase talk power supply when needed.

## Sending Tone

With the Tracer 2 in the TONE position, connect the modular plug or the red/black leads to the subject wire(s). An internal slide switch allows the selection of either a fast or slow warble tone output. (see figure 2) With multiple signal connection methods, experiment to find the methods that work best with your applications. Optional connections include:

- Connect the modular plug to a 6-position jack to apply signal to the center two pins. (USOC pair 1 only)
- Connect the red and black leads to the tip and ring conductors of a twisted pair circuit. For high twist wires (i.e. category 5) connect the leads to conductors of two different pairs. Example: red to tip of pair 1, black to tip of pair 2.
- Connect the red lead to the subject wire and the black lead to an independent earth ground.
- Connect the red lead to the shield and the black lead to ground of a shielded or coaxial cable.
- Connect the red lead to the shield and black lead to center conductor of a coaxial cable.

Probe the wire(s) with any Progressive Electronics 200 series inductive amplifier (see figure 4).

Reception of tone will be strongest on the subject wire(s). Shorting the leads of a tone carrying wire pair will cancel the tone signal and confirm that the pair has been identified. If you have ready access to bare conductors, a handset or headset may be used to locate the tone.

**CAUTION: DO NOT CONNECT TO AN ACTIVE DC CIRCUIT EXCEEDING 52 VOLTS WHEN THE TRACER 2 IS IN THE TONE OR OFF POSITION. RINGING AC VOLTAGE WILL NOT AFFECT OPERATION.**

## Testing Continuity Using the CONT Position

Connect the test leads to the subject wire pair. Move the toggle switch to the CONT position and note the condition of the (Line 1) LED. A bright green LED indicates circuit continuity. The LED will not illuminate if the circuit resistance exceeds 10KΩ.

**CAUTION: DO NOT CONNECT TO ANY ACTIVE AC OR DC CIRCUIT WHEN THE TRACER 2 IS IN THE CONT POSITION.**

## Maintenance

The only maintenance required is the periodic replacement of the internal 9 volt battery. To replace battery, remove screw, remove and replace 1 (one) standard 9 volt battery, and reassemble. **DO NOT OVERTIGHTEN SCREW.**

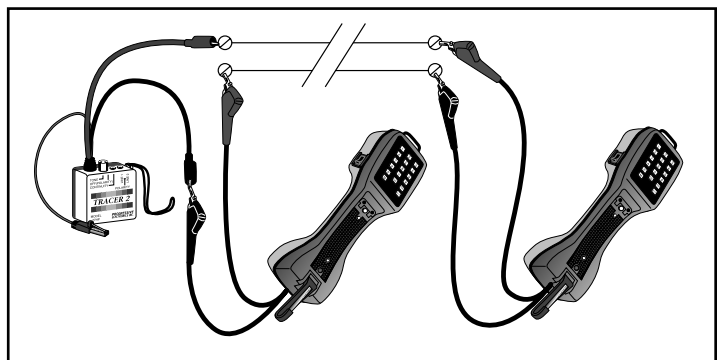


Figure 3, Supplying Talk Power

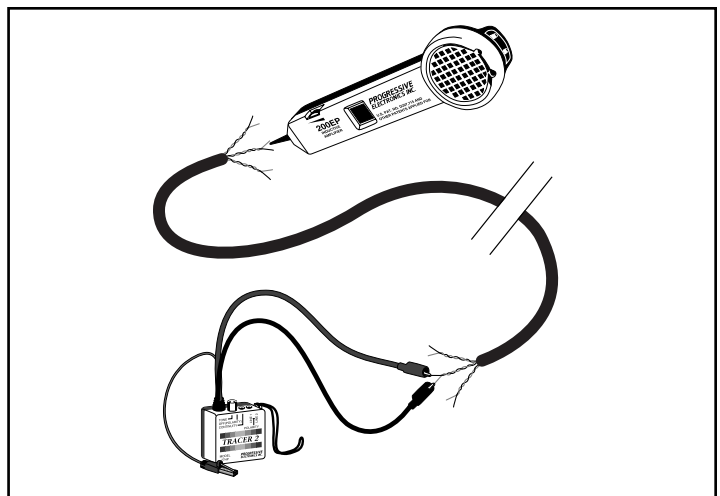


Figure 4, Sending Tone