PROGRESSIVE® ELECTRONICS

INSTRUCTION MANUAL

AT8L
LAN TONER
TEST SET

SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

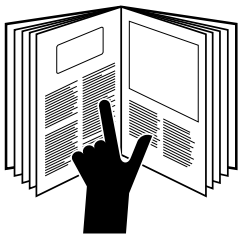
Immediate hazards which, if not avoided, WILL result in severe injury or death.

WARNING

Hazards which, if not avoided, COULD result in severe injury or death.

CAUTION

Hazards which, if not avoided, MAY result in injury.



⚠ WARNING

Read and **understand** this material before operating or servicing this equipment. Failure to understand how to safely operate this tool can result in an accident causing serious injury or death.

⚠ WARNING

ELECTRIC SHOCK HAZARD:

- Do not expose this unit to rain or moisture. Contact with live circuits can result in severe injury or death.
- Use this unit for the manufacturer's intended purpose only, as described in this manual. Any other use can impair the protection provided by the unit.
- Use test leads or accessories that are appropriate for the application. See the category and voltage rating of the test lead or accessory.
- Inspect the test leads or accessory before use. The item(s) must be clean and dry, and the insulation must be in good condition.
- Before opening the case, remove the test leads from the circuit and shut off the unit.

Failure to observe these precautions may result in severe injury or death.

⚠ CAUTION

- Do not attempt to repair this unit. It contains no user-serviceable parts.
- Do not expose the unit to extreme temperatures or high humidity. See Specifications.

Failure to observe these precautions can result in injury and can damage the instrument.

Introduction

This manual is intended to familiarize personnel with the safe operation and maintenance procedures for the Progressive Electronics AT8L LAN Toner Test Set. Please read this entire manual before operating the tool, and keep this manual available to all personnel. Replacement manuals are available upon request at no extra charge.

Safety

Safety is essential in the use and maintenance of Progressive tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Description

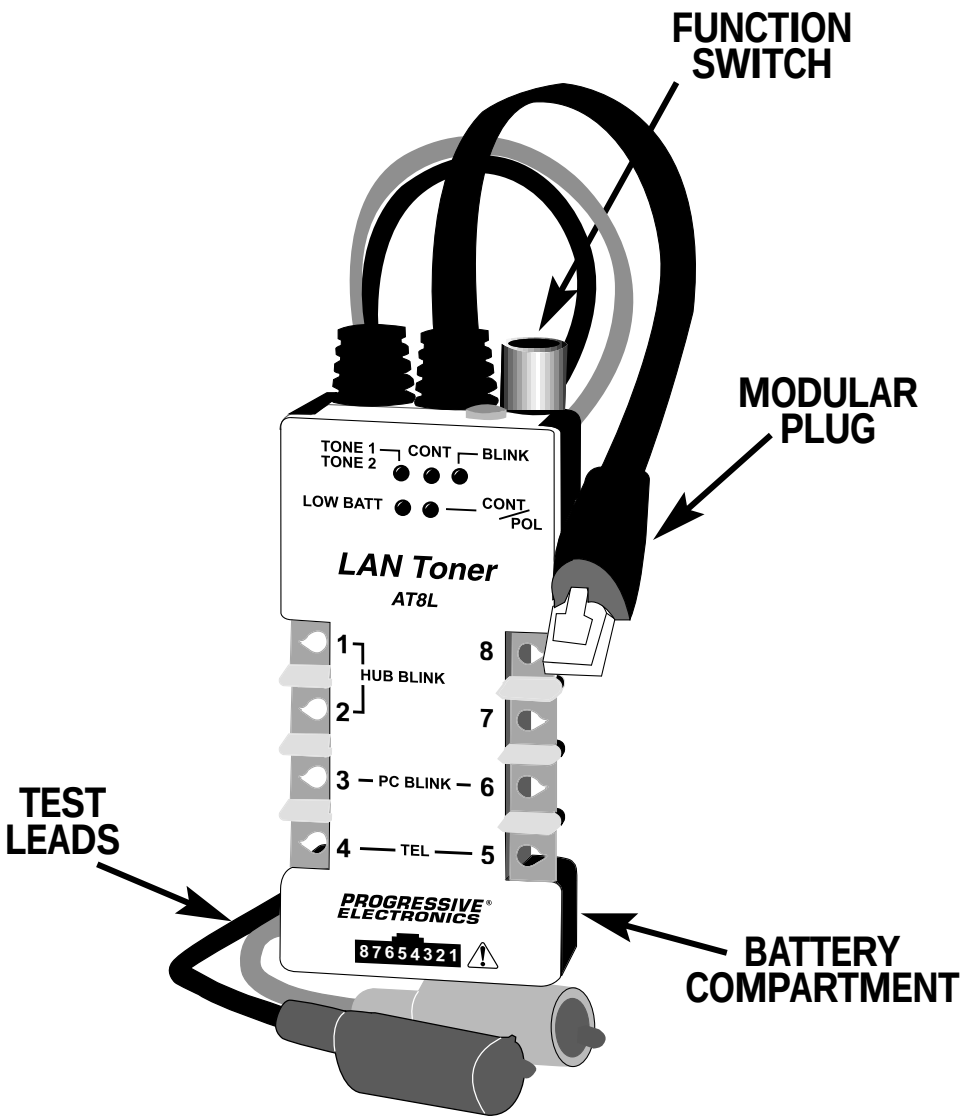
The Progressive AT8L LAN Toner is intended to provide tone for tracing and troubleshooting both Voice and Data circuits. Useful for polarity and continuity testing, the LAN Toner includes a selectable warble tone and talk battery supply. More than just an ordinary tone generator, it combines the troubleshooting capability of a tone generator with the connection versatility of a modular breakout adapter.

Additional features include:

- Flash the Hub, Switch Port or PC activity lights using the Transmit or Receive pair
- Tone and Flash in the same mode
- Tone on individual wire(s)

The tone is traced with any Progressive Electronics receiver, including:

200B Inductive Amplifier
200EP Inductive Amplifier
200GX Inductive Amplifier
200FP Filter Probe



Operation

To activate the LAN Toner, press and hold the pushbutton until the **TONE 1** LED illuminates (Note: The unit will always default to **TONE 1** mode). Subsequent presses will cycle the unit through each mode: **TONE 2, CONT, BLINK, TONE 1**, etc. To turn off the unit, press and hold the pushbutton until the active LED is extinguished.

Battery Test

Before connecting to a line, check the LAN Toner for good battery.

1. Activate the LAN Toner in **CONT** mode, then connect the leads together.
2. If the **LOW BATT** indicator does not light the battery is suitable for use.

Identifying Tip and Ring of a Voice Circuit (Polarity Test)

1. Switch the LAN Toner to **OFF** mode.
2. Use one of the following methods to connect the LAN Toner to the circuit under test:
    - Circuit with an independent ground available: Connect the black lead to ground and connect the red lead to each side of the circuit under test.
    - Twisted Pair: Connect the black lead to one side of the circuit under test and the red lead to the other side.
    - Six or 8-position jack: Insert the modular plug of the LAN Toner into the jack. Connect the red lead to Tab 4 of the LAN Toner and the black lead to either Tab 5 or ground.
3. The **CONT/POL** LED of the LAN Toner will light as follows:
    - A bright green LED indicates correct polarity – the red lead is connected to the Ring side of a properly wired voice circuit.

Operation (cont.)

Note: A dim LED indicates a busy (off-hook) or faulted line.

- A bright red LED indicates reverse polarity – the red lead is connected to the Tip side of a properly wired voice circuit.

Note: A dim LED indicates a busy (off-hook) or faulted line.

- An intermittent red and green flickering LED (may appear yellow) indicates AC ring voltage on a voice circuit.
- If the **CONT/POL** LED does not light, the leads are connected to either a faulted voice circuit or a data circuit.

Identifying the Voice Circuit

Note: Central Office Battery must be present to perform this test.

1. Switch the LAN Toner to **OFF** mode.
2. Use one of the following methods to connect the LAN Toner to the circuit under test:
   - Six or 8-position jack: Insert the modular plug of the LAN Toner into the jack. Connect the red lead to Tab 4 of the LAN Toner and the black lead to either Tab 5 or ground.
   - Twisted Pair: Connect the black lead to the Tip side of the circuit under test and the red lead to the Ring side.
3. Dial the line to be verified. If the unit is connected to the correct line, the **CONT/POL** LED will flicker red and green (may appear yellow).

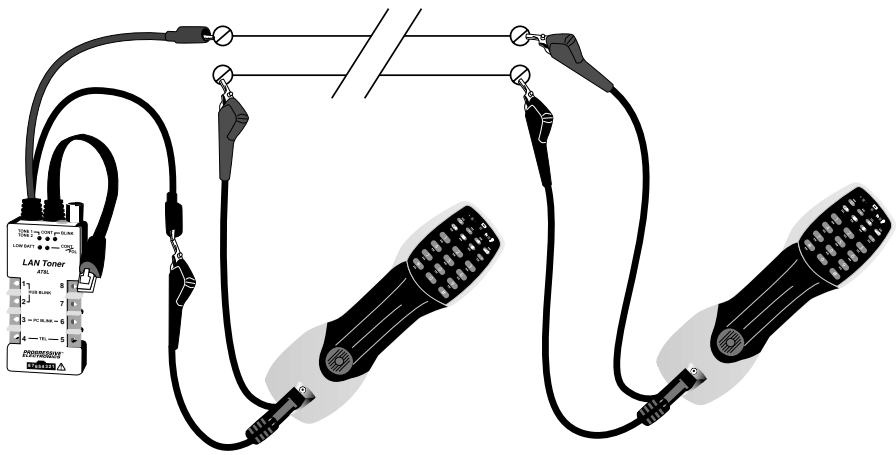
Operation (cont.)

Supplying Talk Battery Power to a Voice Circuit

Use this procedure to provide battery power whenever the central office battery is not providing power to the line.

Note: Additional units (placed in series) may be required to provide sufficient talk battery power.

1. Switch the LAN Toner to **OFF** mode
2. Connect the test leads in series with a telephone test set on the inactive circuit, as illustrated.



3. Activate the LAN Toner in **CONT** mode.
4. Use the telephone test set(s) to talk or troubleshoot.

Continuity Testing

Note: Before testing for continuity, perform a polarity test to ensure that the line is not powered.

1. Switch the LAN Toner to **OFF** mode.
2 Connect the red lead to one side of the circuit under test and the black lead to the other side.

Note: In **OFF** mode, if the **CONT/POL** LED lights the leads are connected to a voice circuit.

3. Activate the LAN Toner in **CONT** mode. A bright green LED indicates continuity.

Continuity Testing (cont.)

Note: The LED will not light if the circuit resistance exceeds 5 kΩ.

Sending Tone and Tracing

Before putting tone onto a circuit, first check for short circuits – a short will decrease the signal and produce false indications. (See Continuity Testing)

1. Switch the LAN Toner to **OFF** mode.
2. Use one of the following methods to connect the LAN Toner to the circuit under test:
    - Six or 8-position jack: Connect the modular plug to a 6 or 8-position jack. Connect the test leads to the appropriate breakout contacts.
    - Twisted pair: Connect the red lead to one side of the circuit and the black lead to the other side.

      Note: For high-twist wires (such as Cat 5) connect the leads to conductors of two different pairs.
    - Circuit with an independent ground available: Connect the black lead to ground and connect the red lead to one side of the circuit under test.
    - Coaxial cable: Connect the red lead to the shield and the black lead to the ground.
    - Coaxial cable: Connect the red lead to the shield and the black lead to the center conductor.
3. Activate the LAN Toner in either **TONE 1** or **TONE 2** mode (experiment to determine which tone is best for your particular situation).
4. Probe the suspect wire(s) with any Progressive Electronics 200 Series receiver. The strongest reception indicates the wire under test.

Identifying the Hub

1. Switch the LAN Toner to **OFF** mode.
2. Use one of the following methods to connect the LAN Toner to the circuit under test:
    - 8-position jack: Insert the modular plug of the LAN Toner into the jack.
        568B or 10Base-T: Connect the black lead to Tab 1 and the red lead to Tab 2.
        Token Ring: Connect the black lead to Tab 3 and the red lead to Tab 6.
    - Twisted Pair: Connect the black lead to T+ and the red lead to T- as follows:
        568B: Connect the black lead to White/Orange and the red lead to Orange/White.
        10Base-T: Connect the black lead to White/Blue and the red lead to Blue/White.
        Token Ring: Connect the black lead to White/Orange and the red lead to Orange /White.

Note: Strongest tone is emitted when connected to an independent ground. If ground is available, use an additional lead to attach the black lead to it.

3. Activate the LAN Toner in **BLINK** mode. This will flash the hub and send a pulsing tone approximately every 4.5 seconds.
4. At the hub, search for the port with the ‘pulsing’ activity LED. To confirm the identity of the cable remove the jack from the hub and probe for at least five seconds with any Progressive Electronics 200 Series receiver.

Identifying the PC

1. Switch the LAN Toner to **OFF** mode.
2. Use one of the following methods to connect the LAN Toner to the circuit under test:
    - 8-position jack: Insert the modular plug of the LAN Toner into the jack.
        568B or 10Base-T: Connect the black lead to Tab 3 and the red lead to Tab 6.
        Token Ring: Connect the black lead to Tab 5 and the red lead to Tab 4.
    - Twisted Pair: Connect the black lead to R+ and the red lead to R- as follows:
        568B: Connect the black lead to White/Green and the red lead to Green/White.
        10Base-T: Connect the black lead to White/Orange and the red lead to Orange/White.
        Token Ring: Connect the black lead to White/Blue and the red lead to Blue /White.

Note: Strongest tone is emitted when connected to an independent ground. If ground is available, use an additional lead to attach the black lead to it.

3. Activate the LAN Toner in **BLINK** mode. This will flash the PC and send a pulsing tone approximately every 4.5 seconds.
4. At the PC, search for the port with the ‘pulsing’ activity LED. To confirm the identity of the cable remove the jack from the PC and probe for at least five seconds with any Progressive Electronics 200 Series receiver.

Specifications

Electrical

Talk Battery (into 600Ω) . . . . . .4.5 Vdc
Output Power (into 600Ω) . . . . . .+8 dBm
Output Frequency (nominal):
Tone . . . . . .alternating 810/1110 Hz
Warbling
Tone 1 . . . . . .1.9 Hz
Tone 2 . . . . . .4 Hz
Voltage Protection (into 600Ω) . . . . . .60 Vdc
Battery . . . . . .9 Vdc, alkaline recommended
(NEDA 1604, JIS 006P or IEC 6LR61)
Auto Shut-off . . . . . .~5 hours
Battery Life . . . . . .50 hours

Physical

Length . . . . . .117.8 mm (4.64")
Width . . . . . .52.5 mm (2.07")
Height . . . . . .30.5 mm (1.20")
Weight (with battery) . . . . . .0.17kg (0.38 lbs)

Operating/Storage Conditions

Operating Temperature:
Celsius . . . . . .0°C to 70°C
Fahrenheit . . . . . .32°F to 158°F
Storage Temperature:
Celsius . . . . . .-25°C to 85°C
Fahrenheit . . . . . .-13°F to 185°F
Relative Humidity (max) 80%
Elevation (max) . . . . . .2000 m (6500’)

Maintenance

⚠ WARNING

Before opening the case, remove the test leads from the circuit and shut off the unit.
Failure to observe these warnings can result in severe injury or death.

Battery Replacement

1. Turn the unit off.
2. Disconnect the unit from the circuit.
3. Remove the two screw, then the back of the unit.
4. Replace the battery (observe polarity).
5. Replace the back and the screw.

Cleaning

Periodically wipe with a damp cloth and mild detergent; do not use abrasives or solvents.

One-Year Limited Warranty

Progressive Electronics warrants to the original purchaser of these goods for use that these products will be free from defects in workmanship and material for one year, excepting normal wear and abuse.

For all Test Instrument repairs, you must first request a Return Authorization Number by contacting our Customer Service department at 800-528-8224. This number must be clearly marked on the shipping label. Ship units Freight Prepaid to Progressive Electronics, 325 South El Dorado, Mesa, Arizona, 85202 USA. Mark all packages: Attention TEST INSTRUMENT REPAIR.

For items not covered under warranty (such as dropped, abused, etc.) repair cost quote available upon request.

Note: Prior to returning any test instrument, please check to make sure batteries are fully charged.

Progressive Electronics
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