## INSIDE WIRE TESTERS

Tempo®

### TEMPO SIDEKICK V.O.C.

The Sidekick V.O.C. is the test set to troubleshoot twisted pair applications. This lightweight, hand-held meter quickly and accurately uncovers intermittent troubles that other test sets can't detect.

- Identifies defective inside wiring and jacks
- Identifies shorts, opens, crosses and grounds
- Measures resistance, AC/DC volts and pair balance

**1143-5000**

| P/N | Description |
|---|---|
| 1143-5000 | Sidekick V.O.C. |

### TEMPO SIDEKICK® PLUS

The Sidekick® Plus Advanced Cable Maintenance Test Set is a multifunction test tool that will improve any technician's testing and troubleshooting capabilities on twisted pair.

- Determines the stressed noise susceptibility of dry and working pairs
- Complete metering of voltage, current and resistance on copper cables
- Patented stress balance test
- Measurement of distance to opens

**1155-5000**

| P/N | Description |
|---|---|
| 1155-5000 | Sidekick® Plus Test Set |

### TEMPO SIDEKICK T&N DELUXE TEL/COM FIELD TESTER

The Sidekick T&N combines the functions of the Sidekick 7B plus the features of transmission and noise testing. The result is an even more versatile test set that identifies frequently missed faults as well as tests and qualifies the transmission quality of POTS lines. The additional features include:

- Loop Current testing
- Circuit Loss testing
- Metallic Noise testing
- Power influence testing
- Load Coil detection

**1137-5002**

| P/N | Description |
|---|---|
| 1137-5002 | Sidekick T&N |

## how to

**Quick Overview on How to Use the Tempo Sidekick VOC on a New Install to Verify that there are no Inside Wiring Problems**

1. Interview the customer on how his /her phones have been working.
2. Connect the red and black (ring and tip) connectors of the Sidekick to the pair of the inside wires to be tested. Connect the green connector to a ground source.
3. Do the AC test to confirm that there is no AC present tip to ring (T-R), ring to ground (R-G) and ring to ground (R-G).
4. Remove the ILEC/eMTA from the loop, perform a DC test to verify that there is no DC.
5. Move the green connector to another wire or another pair in the inside wire.
6. Rotate dial to Stress Test. Verify stress test reference ground. Final reading should be less than 20dBrnC.
7. Switch dial to Leakage Test and wait 15 seconds, reverse polarity, wait 15 more seconds, reverse polarity again and wait 15 more seconds. The needle should be near infinity. Do this for each of T-R, R-G and T-G.

From the time you begin with the AC test to completion should take less than 10 minutes.

*Source: Compliments of Tempo*

## JDSU TESTIFIERPRO™ CABLE TESTER

**JDSU**

The TestifierPRO™ Cable Tester provides telecom, datacom, and cable installers and technicians with cable test, length measurement, and hub blink functions in one unit. The easy-to-use TestifierPRO Cable Tester requires one-button operation to initiate telco, network, and coax modes for diagnostic tests and results. The main unit includes built-in RJ11 and RJ45 jacks for testing six-wire and eight-wire twisted pair and F-connector for testing coax.

- Identifies cable termination on active ports by blinking port LED
- Measures cable length using patented cable capacitance method
- Displays single-ended test results in wiremap format for opens, shorts, and split pairs

**TP650**

| P/N | Description |
|---|---|
| TP650 | TestifierPRO Cable Tester with cable test remote. Includes 30.48cm (1 ft) RJ45 to alligator clips cable (TP40), two 30.48 cm (1 ft) patch cables with RJ45 connectors (TP55), #1 coax cable test remote (TP65), and pouch. Requires 9-volt battery (not included) |
| TP655 | TestifierPRO Cable Tester with 8 cable test remotes. Includes 30.48 cm (1 ft) RJ45 to alligator clips cable (TP40), two 30.48 cm (1 ft) patch cables with RJ45 connectors (TP55), 30.48 cm (1 ft) coax cable (TG30), #1 coax cable test remote (TP65), and pouch. Requires 9-volt battery (not included) |

VoIP/TELECOM

## INSIDE WIRE TESTERS



### JDSU TRI-PORTER™ PREMISES WIRING TESTER FOR VOICE, DATA & VIDEO

The Tri-Porter™ Premises Wiring Tester enables a full range of premises cabling tests with a single tool. It provides full diagnostic capability for network, telephone, and video systems with wiring qualification and fault diagnosis, cable tracing, location identification, and presence of service detection. Tri-Porter consists of a main unit and cable test remote/probe that enables technicians to test, troubleshoot, and qualify telco, network, and coax cable systems.

- Voice Telephony Testing including advanced function butt set
- Data Testing Ethernet Networks including port discovery and ping
- Video RF Detection and Testing including signal level measurement and TDR
- All service wire mapping

| P/N | Description |
|-----|-------------|
| IVT600 | Network Qualification and Testing Tool |


IVT600



### TRIPLETT MODEL 8455 TELCO TESTER

- Compact, Reliable, Industry Standard
- Checks Line Shorts, Opens and Multiple Ringers
- Measures DC Voltages and Resistance
- Ranges: Points 0-100; DC Volts 0-100
- Polarity-Reversing Switch
- R ÷ 10 Switch
- Reverse Switch for Line Checks

| P/N | Description |
|-----|-------------|
| 3072 | Model 8455-L1 (w/ 79-619 leads & case) |
| 3073 | Model 8455-L2 (tester only) |
| 3121 | Model 8455-L1 (w/ 79-662, 79-668 leads & case) |


3072

### TRIPLETT LINE-BUG 4

- Tests standard telephone jacks and LAN jacks for connection to telephone system
- Has both RJ-11 and RJ-45 style plugs
- 4 Tri-color (Red/Green/Amber) LEDs indicate Current, Polarity, & Ringing / AC Voltage on each line
- Tests Single Line, 2 Line, 3 Line, or 4 Line jacks to USOC (telephone) standard
- Tests LAN lines and jacks (RJ-45) wired to 568A/B standard for telephone line current
- RJ-45 test plug is selectable via front panel switch for USOC (telephone) or 568 (LAN) connection

| P/N | Description |
|-----|-------------|
| 9615 | Phone / LAN Line Tester |


9615

### TRIPLETT WIREMASTER XR-5 - LAN CABLE TEST SETS

- Tests 5 Types of Cables RJ-45, RJ-11, BNC, 1394, USB
- Simple One Button Test
- Ergonomic, Portable Handheld Design
- Tests Installed Wiring or Patch Cables
- Remote Attaches to Main Unit
- 600 ft test distance (RJ-45 / RJ-11 / BNC)

| P/N | Description |
|-----|-------------|
| 3260 | 5 Cable Tester |


3260

## BUTT SETS

*FLUKE networks*

### FLUKE NETWORKS TS®25D TEST SET

The TS25D Test Set features data lockout and lockout override, making you completely safe in talk or monitor mode. Includes DSL/POTS filtering technology and a built-in analog tone generator. The Talk Battery function provides voltage to carry voice conversation on non-powered pairs. Also includes caller ID and call-waiting caller ID function. Large LCD makes the intuitive menus easy-to-read and use.

- Caller ID and Call Waiting Caller ID
- Amplified speakers for hands-free monitoring
- Data lockout and data lockout override
- Tone generator for wire identification

| P/N | Description |
|---|---|
| 25501109 | TS25D test set with ABN kit (includes pouch and earpiece) |
| 25501009 | TS25D test set with ABN |
| 25501004 | TS25D test set with 346A plug |
| 25500400 | TS25D Pouch only |
| 25500300 | TS25D battery door with belt clip |

**TS25D**

### FLUKE NETWORKS TS®22 TEST SET SERIES

The TS22 Test Set Series offers an unbeatable combination of reliability, durability and expanded utility. The unique built-in amplified speaker provides three audio levels for hands free listening and use with automated voice-response systems. The TS22A offers a two-way speakerphone. Store up to nine, 18 digit telephone numbers in speed dial.

- TS®22 Test Set has an amplified speaker for hands-free monitoring
- TS®22A Test Set has a two-way speakerphone for true hands-free conversation
- DropSafe™ reliability passes 20 foot drop test
- RainSafe protection in severe weather conditions

| P/N | Description |
|---|---|
| 22800009 | TS22 test set with ABN |
| 22800007 | TS22 test set with ground start cord |
| 22800004 | TS22 test set with 346A plug |
| 22800001 | TS22 test set with piercing pin clips |
| 22800HI9 | TS22 test set, hearing impaired with ABN |
| 22801001 | TS22A test set with piercing pin clips |
| 22801004 | TS22A test set with 346A plug |
| 22801007 | TS22A test set with ground start cord |
| 22801009 | TS22A test set with ABN |

**TS22**

### FLUKE NETWORKS TS®30 TEST SET

The TS30 Test Set features the latest in case design. The ergonomic non-slip grip handle provides improved handling of the set in all weather conditions. Includes DataSafe® operation so technicians can clip onto a line in Monitor mode, without disrupting existing data traffic.

- High impedance DataSafe™ operation in Monitor mode
- DropSafe™ reliability passes 20 foot drop test
- RainSafe™ protection in severe weather conditions
- Mute switch

| P/N | Description |
|---|---|
| 30800009 | TS30 test set with ABN |
| 30800001 | TS30 test set with piercing pin clips |

**TS30**

### FLUKE NETWORKS TS®19 TEST SET

The TS19 test set combines all essential test set features in one set. This test set was specifically designed for in-house telecom technicians. Its high impedance monitor prevents accidental disruption of service from clipping onto a data line while in Monitor mode, thus ensuring the integrity of critical data lines. Features such as tone (DTMF) or pulse operation, talk/monitor capabilities, polarity test button and last number redial make this test set the perfect combination of features and price.

- High impedance DataSafe™ operation in monitor mode
- Tone (DTMF) and pulse operation
- Last number redial

| P/N | Description |
|---|---|
| 19800009 | TS19 test set with ABN |
| 19800003 | TS19 test set with banana jacks to alligator clips |

**TS19**

## Butt Sets

### Tempo Telephone Test Set

The PE961 Test Set features our DigAlert over-voltage alarm and lock-out function to eliminate the danger of damaging or knocking out digital service lines. It also provides full ADSL compatibility.

- Features DigAlert over-voltage alarm and lock-out function to eliminate the danger of damaging or knocking out digital service lines
- The PE961 provides full ADSL compatibility
- Ten-number speed dial memory (32 digits each)
- Last number redial

| P/N | Description |
|---|---|
| PE961 | Test Set with Two-way Hands Free and DigAlert |

**PE961**

**PE830**

### Tempo Tele-Mate™ Pro Telephone Test Set

The Tele-Mate Pro Telephone Test Set will help you deal with the increasing complexity of telecom installation and maintenance.

- Complete telephone set with ringer
- Phone to phone intercom
- Caller ID with name display

| P/N | Description |
|---|---|
| PE830 | Tele-Mate™ Pro Telephone Test Set |

### Tempo Tele-Mate Communications Test Set

Designed for communications wiring installation and repair to quickly verify the quality of a new installation.

- Headset for hands-free operation
- Rugged design for demanding use
- Compact design and durable belt clip make it easy to carry

| P/N | Description |
|---|---|
| PE810 | Tele-Mate Communication Test Set |

**PE810**

### JDSU Lil' Buttie Butt-In Telephone Test Set

The Lil' Buttie™ Telephone Test Set is designed for use by datacom, telecom, and cable installers and technicians. The compact test set is small enough to wear on a belt or fit in a pocket and features a shape that is comfortable to hold.

Additional standard features of the Lil' Buttie include electronic ringer, microphone mute, continuous polarity indication for talk or monitor, PBX pause button, redial memory, and others. This telephone test set is the choice for technicians worldwide.

- Amplified line monitor for volume levels comparable to off-hook
- Tone and pulse dialing
- Battery-powered Monitor mode

| P/N | Description |
|---|---|
| LB110 | Lil' Buttie Telephone Test Set with angled bed-of-nails cord set. Includes 1.22 m (4 ft) RJ11 to angled bed-of-nails cord set, headset with boom microphone, metal belt clip, and 9-volt battery |
| LB110-BT | Lil' Buttie Telephone Test Set with rubber boot and angled bed-of-nails cord set. Includes protective rubber boot, 1.22m (4 ft) RJ11 to angled bed-of-nails cord set, headset with boom microphone, metal belt clip, and 9-volt battery |

**LB110**

## Butt Sets

**JDSU**

### JDSU Lil' Buttie Pro Butt-In Telephone Test Set

The Lil' Buttie PRO™ Telephone Test Set is designed for use by datacom, telecom, and cable installers and technicians. The compact test set is small enough to wear on a belt or fit in a pocket and features a shape that is comfortable to hold. The LCD shows on-hook voltage, off-hook current, and polarity as well as caller ID, call waiting caller ID, number dialed, setup, stored numbers, battery condition, and other information.

- Detects and displays caller ID and call waiting caller ID
- Scrolling list of stored numbers
- Alphanumeric LCD with icon flags

| P/N | Description |
|---|---|
| LB220 | Lil' Buttie PRO Telephone Test Set. Includes 1.22m (4 ft) RJ11 to angled bed-of-nails cord set (LB35), headset with boom microphone, and 9-volt battery |
| LB220-BT | Lil' Buttie PRO Telephone Test Set with protective boot. Includes protective boot, 1.22m (4 ft) RJ11 to angled bed-of-nails cord set, headset with boom microphone, and 9-volt battery |

**LB220**

### JDSU Lil' Buttie™ Ranger Butt-In Telephone Test Set

The Lil' Buttie Ranger™ Telephone Test Set is an advanced, DSL-safe telephone test set for use by datacom, telecom, and cable installers and repair technicians. The compact test set is small enough to wear on a belt or fit in a pocket and features a shape that is comfortable to hold. The LCD display shows on-hook voltage, off-hook current, and polarity as well as caller ID, call waiting caller ID, number dialed, setup, scrolling list of stored numbers, battery condition, and other information.

- Provides DSL-safe operation
- Views and stores digits as dial-out is in progress
- Identifies inbound and outbound lines

| P/N | Description |
|---|---|
| LB255 | Lil' Buttie Ranger Telephone Test Set. Includes 1.22m (4 ft) RJ11 to angled bed-of-nails cord set (LB35), headset with boom microphone, nylon pouch, and 9-volt battery |
| LB255-BT | Lil' Buttie Ranger Telephone Test Set with protective boot. Includes protective boot, 1.22 m (4 ft) RJ11 to angled bed-of-nails cord set, headset with boom microphone, nylon pouch, and 9-volt battery |
| LB260-BT | Lil' Buttie Ranger Telephone Test Set with hook-type belt clip and protective boot. Includes rugged hook-type belt clip (LB75), protective boot (LB81), 1.22m (4 ft) RJ11 to angled bed-of-nails cord set (LB35), headset with boom microphone (LB40B) and 9-volt battery |

**LB255**

### JDSU Resi-Talker™ Butt-In Telephone Test Set

Identify POTS dial tone with an economical butt set.

- Tone and pulse dialing
- Microphone mute
- Last number redial --- 32 Digits
- Continuous line polarity indication (TALK or MONITOR)

| P/N | Description |
|---|---|
| LB300 | Resi-Talker Test Set with alligator clips cord set |
| LB64 | 4-Position Modular Adapter |
| LB66 | 6-Position Modular Adapter |
| LB68 | 8-Position Modular Adapter |

**LB66**

**LB300**

## Trace & Talk Sets

**JDSU**

### JDSU Talk-N-Trace™ Communication and Tracing Device

Talk-N-Trace™ is a hands-free communications test set that ensures clear, clean voice communication without interference or dropouts over coax cable, audio cable, speaker wire, telephone lines, and common electrical wiring. Used in any wiring environment to secure point-to-point full duplex communication, Talk-N-Trace works together to trace wires simultaneously while talking and is suitable for cable length ranges of up to 1.52km (5,000 ft).

- Full duplex, hands-free, self-powered communications
- Link up to four units together for party-line use
- Full ring alert function

| P/N | Description |
|---|---|
| TM110 | Talk-N-Trace Communication and Tracing Set. Includes two Talk-N-Trace test units, two mini over-the-ear headsets with boom microphone, two 1.22 m (4 ft) RJ11 to alligator clips cord sets, and two 60.96 cm (2 ft) banana plug to test probe cable assemblies. Requires two 9-volt batteries (not included) |

**TM110**

## WIRE MAPPERS

FLUKE *networks*®

### FLUKE NETWORKS MICROMAPPER™ PRO VDV CABLE TESTER

MicroMapper™ Pro is a simple VDV Cable Tester, designed to reliably and quickly test terminations and length, thus speeding installation time and reducing callbacks. MicroMapper™ simplifies every aspect of the testing and verification process.

- Simple interface - displays full wiremap for twisted pair and coax connectors on large LCD screen
- Multimedia support - built-in support for twisted pair and coax (F) cables with no need for adapters
- Built-in Analog toning - locates and isolates wire pairs during installation


**MMP-50**

| P/N | Description |
|---|---|
| MMP-50 | MicroMapper™ Pro VDV Cable Tester, #1 Cable ID, F-type adapter, multi-language Getting Started Guide, batteries |
| MMP-KIT | Includes: MicroMapper™Pro VDV Cable Tester, Pro3000™ Tone Probe, # 1-8 Cable IDs, F-type adapter, multi-language Getting Started Guide, batteries |

### GREENLEE NETCAT® 100 MICRO DIGITAL VDV WIRING TESTER

GREENLEE®
A Textron Company

- Tests shielded twisted pair (STP), unshielded twisted pair (UTP) and coaxial cables
- TIA/EIA standard wiring pair verification
- Detects shorts, opens, reversed polarity, crossed and split pairs
- Generates three distinct, selectable digital tone patterns for cable tracing and troubleshooting
- Tracing modes can be adjusted for high performance LAN cables
- Complete set of connector types standard (telephone, LAN and coax)
- Nested remote allows end-to-end testing of all wiring types
- Simple testing of LAN wiring and phone lines


**NC-100**

| P/N | Description |
|---|---|
| NC-100 | NETcat® Micro Digital Voice, Data and Video Wiring Tester |

### GREENLEE NETCAT® 500 PRO VDV DIGITAL WIRING TROUBLESHOOTER

- Tests shielded twisted pair (STP) unshielded twisted pair (UTP) and coaxial cables
- Generate four distinct, precision tones for tracing low-loss cables like Cat 5
- Identifies active network devices (PC or Hub) on 10/100 Base-T networks.
- Displays network device capabilities
- Detects shorts, opens, reversed, crossed and split pairs
- Office identification using remote ID units
- Troubleshoots and verifies a wide range of networks
- Remote jack ID and verification



| P/N | Description |
|---|---|
| NC-500 | NETcat® Pro Structured Wiring Troubleshooter |
| NC-510 | NETPro Accessory Kit with 7 Digital Testers and soft case for NC-500 |

**NC-500 w/NC-510**

### JDSU TESTIFIER™ CABLE TESTER

JDSU

The Testifier™ Cable Tester provides full cable test and tone generation in one unit for telecom, datacom, and cable installers and technicians. The easy-to-use Testifier features one-button operation to initiate telco, network, and coax modes for diagnostic tests and results.

- Displays tests for shorts, opens, miswires, reversals, and split pairs in wiremap format
- Integrated jacks for telco and network connections, F-connector for coax


**TP350**

| P/N | Description |
|---|---|
| TP350 | Testifier Cable Tester with onboard cable test remote. Includes 30.48 cm (1 ft) RJ45 to alligator clips cable, 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks, nylon case, and 9-volt battery |
| KP321 | Testifier Cable Tester with onboard cable test remote, 30.48 cm (1 ft) RJ45 to alligator clips cable, 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks, set of 20 RJ45 ID-only remotes, and case |

# VoIP/TELECOM TEST

## Wire Mappers

### JDSU Speaker Seeker™ Wiremapping Tester

The Speaker Seeker™ enables one installer to quickly identify both ends of up to 20 unterminated twisted pair or coax cables at a time. The LED shows the unique number of the ID-only remote attached to the other end of each cable run. When Speaker Seeker detects a condition other than an open circuit, it powers up automatically and displays results until disconnected. The handheld unit also detects and displays short and high voltage conditions.

- Identifies up to 20 audio, coax, or security/alarm cable runs at a time
- Alligator clip and F-connector contacts

| P/N | Description |
|-----|-------------|
| TP400 | Speaker Seeker with two-lead ID-only remotes. Includes set of 20 (1–20) two-lead ID-only remotes, 60.96 cm (2 ft) F push-on connector to alligator clips cable assembly, and 9-volt battery |
| TP410 | Speaker Seeker with coax ID-only remotes. Includes set of 20 (1–20) coax ID-only remotes, 60.96 cm (2 ft) F push-on connector to alligator clips cable assembly, and 9-volt battery |

### JDSU LanRoamer™ Cable Tester

The LanRoamer™ is a Cable Tester and Tone Generator in one unit. It displays cable test results using indicator lights on the main and remote unit. LanRoamer is an easy-to-use tool for residential, datacom, telecom, and cable contractors and installers. When the unit senses a connection between the main and remote unit, the battery-saving auto-on feature initiates test results within 2 seconds. The tester automatically powers off within 5 seconds of the cable being disconnected.

- Displays cable test results on main and remote units in less than 2 seconds
- Identifies shorts, opens, miswires, reversals, and split pairs
- Auto-on initiates test when a connection is sensed between main and remote unit

| P/N | Description |
|-----|-------------|
| TP500 | LanRoamer Cable Tester. Includes onboard cable test remote, 30.48 cm (1 ft) patch cable with RJ45 connectors, nylon pouch, and 9-volt battery |

### JDSU LanRoamerPRO™ Cable Tester

The LanRoamerPRO™ is a Length Measurement Tool, Cable Tester, and Tone Generator in one unit. The LCD, four momentary buttons, single end testing capability, and other features make the LanRoamerPRO an easy-to-use tool for residential, datacom, telecom, and cable contractors and installers.

- Measures cable length in feet or meters
- Two-line, 16-character alphanumeric LCD with icon flags displays test results in wiremap format
- Conducts single-ended tests on shorts, splits, and opens

| P/N | Description |
|-----|-------------|
| TP600 | LanRoamerPRO Cable Tester with onboard cable test remote. Includes 30.48 cm (1 ft) RJ45 to alligator clips cable, two 30.48 cm (1 ft) patch cables with RJ45 connectors, wire configuration sticker, and nylon pouch. Requires 9-volt battery (not included) |
| TP607 | LanRoamerPRO Cable Tester Kit with 8 cable test remotes. Includes 30.48 cm (1 ft) RJ45 to alligator clips cable, RJ45 to coax F-connector adapter, two 30.48 cm (1 ft) patch cables with RJ45 connectors, wire configuration sticker, and nylon pouch. Requires 9-volt battery (not included) |

### JDSU TestifierPRO™ Cable Tester

The TestifierPRO™ Cable Tester provides telecom, datacom, and cable installers and technicians with cable test, length measurement, and hub blink functions in one unit. The easy-to-use TestifierPRO cable tester requires one-button operation to initiate telco, network, and coax modes for diagnostic tests and results. The main unit includes built-in RJ11 and RJ45 jacks for testing six-wire and eight-wire twisted pair and F-connector for testing coax.

- Identifies cable termination on active ports by blinking port LED
- Measures cable length using patented cable capacitance method
- Displays single-ended test results in wiremap format for opens, shorts, and split pairs

| P/N | Description |
|-----|-------------|
| TP650 | TestifierPRO Cable Tester with cable test remote. Includes 30.48 cm (1 ft) RJ45 to alligator clips cable, two 30.48 cm (1 ft) patch cables with RJ45 connectors, #1 coax cable test remote, and pouch. Requires 9-volt battery (not included) |
| TP655 | TestifierPRO Cable Tester with 8 cable test remotes. Includes 30.48 cm (1 ft) RJ45 to alligator clips cable, two 30.48 cm (1 ft) patch cables with RJ45 connectors, 30.48 cm (1 ft) coax cable, #1 coax cable test remote (TP65), and pouch. Requires 9-volt battery (not included) |

TP400

TP500

TP600

TP650

## WIRE MAPPERS

**Paladin Tools**

### PALADIN LAN PRONAVIGATOR™ TESTER

Test data & telephone cable for proper pairing for EIA/TIA-568A & B, Token Ring, 10Base-T & common Cat5, Cat5e, Cat6 configurations. Also tests continuity of 50 & 75ohm coaxial cables with BNC terminations.

- One-button, simple testing (PASS/FAIL or fault find) to detect: good connections, opens, crossed wires & split pairs
- Traces wires with tone & remote lights
- Quick fault analysis

| P/N | Description |
|-----|-------------|
| 1543 | LAN ProNavigator™ Tester |

**1543**

### TRIPLETT WIREMASTER XR-2 - LAN CABLE TEST SETS

**TRIPLETT**

- Verifies point-to-point wiring of twisted pair LAN cables, telephone cables, and other types of cables that use RJ-45 & RJ-11 connectors
- New "Local Mode" allows for testing of patch cables
- Tests LAN Crossover & Telephone patch cables
- Checks continuity in cable conductors
- Generates 2 distinct warble tones usable for cable tracing
- Checks "straight-through", "reverse wired", & "crossover" patch cables
- 8 LED's identify the source and destination of each conductor

| P/N | Description |
|-----|-------------|
| 3254 | WireMaster XR-2 |

**3254**

## TDR & FAULT FINDERS

**FLUKE networks.**

### FLUKE NETWORKS TS®90 CABLE FAULT FINDER

The TS®90 is an easy-to-use three tools in one tester -- a Fault Locator, a Cable Inventory Manager and a Toner with SmartTone™ technology. (Up to 2,500 feet). Easily find the distance to opens or shorts on electrical wire, telephone wire, security wire and coax. Displays distance reading rather than waveform.

- Works on any two or more conductor cable up to 2,500 feet (metric unit also available)
- Instantly measures distance to open or any fault from one end of any cable pair
- Patented SmartTone™ tone generator positively identifies pair

| P/N | Description |
|-----|-------------|
| 26500090 | TS90 Cable Fault Finder with BNC to alligator clips |
| 26501100 | TS100/TS90 linecord, BNC to alligator clip |
| 26501200 | TS100/TS90 linecord, BNC to F(MALE) |
| 26501300 | TS100/TS90 linecord, BNC to F(FEMALE) |
| 26501600 | TS100/TS90 linecord, banana |
| 26501700 | TS100/TS90 linecord, BNC to banana to Angled Bed-of-Nails clips |
| 26501160 | TS100/TS90 pouch with belt clip |

**TS90**

**JDSU**

### JDSU TRUELENGTH™ CABLE LENGTH METER

The TrueLength™ Cable Length Meter measures cable length and generates tone for electrical contractors, datacom contractors and installers, and service provider technicians. It works on virtually any single or two conductor cable and helps users find and repair existing cable problems or verify new installations quickly. TrueLength includes 12 pre-set and 12 user-programmable wire gauge settings and offers four selectable tones when in tone generation mode. It measures resistance at 0 to 635 ohms and opens/capacitance 45pf to 0.082uf.

- Measures distance to opens or shorts
- Operation modes: AWG/mm/mm$^2$, Telco, Network, Coax, Tone Generator, and Ohms
- Measures conductor length in feet or meters

| P/N | Description |
|-----|-------------|
| CLM400 | TrueLength Cable Length Meter. Requires one 9-volt battery (not included) |

**CLM400**

## Tone & Probes


Tempo®

### Tempo 402K CATV Tone/Probe Kit

Designed specifically for the CATV industry, the 402K Cable Tone Test Kit sends tone through any passive device along the cable path, such as splitters, traps and directional couplers. No more figuring out non-tagged or mistagged cable drops. The 402K is simple to use and provides fast, accurate results.

• Designed for the CATV market
• Kit allows you to tone through splitters directional couplers and traps

| P/N | Description |
|-----|-------------|
| 402K | CATV Tone/Probe Kit |


**402K**

### Tempo 701K Classic Tone and Probe Kit

When it comes to wire identification, there's no better tool to have than the 701K Classic Tone & Probe Kit. This popular tone & probe kit is used by technicians everywhere to identify single conductors or cables within a bundle at a cross-connect point, or at remote ends.

• Wire Identification and tracing
• 77HP - Tone Generator
• 200EP - Inductive Amplifier

| P/N | Description |
|-----|-------------|
| 701K | Classic Tone and Probe Kit |


**701K**

### Tempo 801K Premium Tone/Probe Kit

Designed for more accurate wire identification, the 801K virtually eliminates power-related noise from their tone and probe operation. The 801K Premium Tone & Probe Kit offers all the features professionals are looking for. Includes the 77HP/6A High Power Tone Generator with bent nose piercing clips, increased talk battery supply and higher voltage protection and the 200FP Filter Probe for filtering out AC hum. Tone, probe and generator come housed in the rugged woven polyester 700C Dual Carry Case designed for years of dependable use. All components are also available separately.

| P/N | Description |
|-----|-------------|
| 801K | Premium Tone and Probe Kit |


**801K**

### Tempo 711K Professional Tone/Probe Kit

Designed for the telecom professional, this kit is for use on single conductors, twisted pairs, coax cables and de-energized electrical wiring. The only thing missing is complexity.

The 77GX Tone Generator incorporates a host of features including microprocessor controlled circuitry for increased reliability, three selectable tone outputs for multiple line identification, two-line polarity indication for fast outlet checks and selectable power outputs for use on open or shorted pairs.

• 77GX - Tone Generator
• 200GX - Inductive Amplifier
• Wire Identification with selectable tracing power and tone signatures

| P/N | Description |
|-----|-------------|
| 711K | Professional Tone/Probe Kit |


**711K**

### Tempo AT8LK LAN Toner Kit

Designed for the network installation and maintenance professional, the LAN Toner sends tone and blinks HUB, Switch Port, and PC activity lights for fast identification. This kit can be used on any wiring system including datacom, telecom, security/alarm, audio and CATV.

• Maintain and test HUB, switch Ports and PC activity
• Includes AT8L, 200GX and 700C case
• AT8L-LAN Toner 2
• 200GX - Multi-filter probe

| P/N | Description |
|-----|-------------|
| AT8LK | LAN Toner Kit |


**AT8LK**

## Tone & Probes


JDSU

**VoIP/TELECOM**

### JDSU Tone Generator™

The compact, ergonomic Tone Generator offers several easy-to-use capabilities to conduct line tracings and ensure proper signal path quality for data and voice installations. In addition to auto-off, multiple tone function, full talk battery, and low battery indicator, the Tone Generator performs wire and cable identification without having to make direct contact with a metallic conductor. Constant tone amplitude over the life of the battery means accurate and traceable tones even at end of battery life. Two tone amplitude levels—normal and half—extend tone reach. Quick-change tips enable easier use in the field.

- Three distinctly different tones—one steady and two warbles—for multiple line testing selected from front panel
- Auto-off and no power draw in continuity mode for extended battery life
- Tone may be added in any mode—phone sets without a monitor feature can pick up tone


TG101

| P/N | Description |
|---|---|
| TG101 | Tone Generator with angled bed-of-nails cord set. Includes 60.96 cm (2 ft) RJ11 to angled bed-of-nails cord set, 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks, lanyard, and 9-volt battery |
| KP101 | Tone Generator with angled bed-of-nails cord set and Tone Tracer Probe. Includes Tone Generator, 60.96 cm (2 ft) RJ11 to angled bed-of-nails cord set, 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks, Tone Tracer Probe, round and paddle-style tips, lanyard, and pouch |

### JDSU Turbo-Tone™ High-Powered Tone Generator

The high-power Turbo-Tone™ Tone Generator enables signal detection 20 miles away and makes hearing tone through walls and enclosures easier with multiple tones and power levels suited for network, signal wire, coax, and telephone cable applications. Four tone amplitude levels include normal and half plus, turbo normal and half, with the half amplitude unbalanced for stronger signal effect on twisted pairs. In addition, depending on test requirements, three distinctly different tones can be selected from the front panel.


TG201

- 700% more power than standard tone generators
- Unbalanced tone mode supports longer distances on UTP cables
- Constant amplitude output ensures no signal decrease as battery discharges
- Auto-off for battery conservation
- Full talk battery to power a dry line

| P/N | Description |
|---|---|
| TG201 | Turbo-Tone High-Power Tone Generator with angled bed-of-nails cord set. Includes 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks, lanyard, and pouch requires 9-volt battery (not included) |
| KP105 | Turbo-Tone High-Power Tone Generator Kit with alligator clips set and Tone Tracer Probe. Includes Turbo-Tone High-Power Tone Generator with alligator clips set, 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks, Tone Tracer Probe, round and paddle-style tips, lanyard, and pouch |

### JDSU Latch-Test™ Security Alarm Tone Generator

The Latch-Test™ is a Tone Generator specifically designed for testing switched loops, thereby meeting tone generator and continuity test needs for the security and alarm industry. Its combined tone generator and continuity test functions create a constant output tone generator that is seamlessly integrated with a six mode continuity tester. It delivers an accurate, easy-to-read status of a circuit's continuity in real time and can perform a latch of the occurrence of a selected event. The continuity indication can be both visual and audible (or visual only). Battery life is maximized by low-power circuitry, regulated outputs, auto-off, and battery low indicator.


TG300

- Tone generator with two tone amplitude levels (normal and half)
- Half amplitude that is unbalanced for stronger signal on twisted pairs
- Three distinctly different tones easily selected from front panel

| P/N | Description |
|---|---|
| TG300 | Latch-Test Security/AlarmTone Generator. Includes molded alligator clips cord set, 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks, lanyard, and pouch, requires 9-volt battery (not included) |
| KP106 | Latch-Test Security/AlarmTone Generator with Tone Tracer Probe. Includes Latch-Test Security/AlarmTone Generator with molded alligator clips cord set, 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks, Tone Tracer Probe, lanyard, round and paddle-style tips, and pouch |

## TONE & PROBES



### JDSU Resi-Toner™ Tone Generator

The Resi-Toner™ is a full-function Toner Generator that performs test functions to help determine the quality of connections on telephone systems and the performance of speakers. This easy-to-use tester is able to "power-up" installed telephone lines under actual load conditions with simulated dial tone to check connectivity and proper wiring configurations without requiring an actual service connection. Resi-Toner can test continuity and generate three different tones, including a unique tone sequence for testing speaker installations by "popping" speakers (either AC or DC coupled speaker types).

- POTS simulator for two-line phone system that checks for line voltage, line current, and dial tone
- Talk Battery mode of POTS simulator provides more current than a typical tone generator
- Multiple dial tones for each line, plus status indicators for off-hook and shorted
- Unbalanced tone for stronger signal on twisted pairs
- Speaker pop function identifies speaker connections

| P/N | Description |
| --- | --- |
| TG400 | Resi-Toner Tone Generator. Includes molded alligator clips cord set, 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks (TP20), and 1.22m (4 ft) RJ11 to alligator clips set (LB31B). Requires 9-volt battery (not included) |
| KP309 | Includes Resi-Toner Tone Generator with molded alligator clips cord set (TG400), 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks (TP20), 1.22m (4 ft) RJ11 to alligator clips set (LB31B), Resi-Tracer Probe (TT300), and round and paddle-style tips |

**TG400**

### JDSU Tone Tracer

The Tone Tracer is an ergonomic, high-sensitivity probe for field service professionals. Used in conjunction with any Analog Tone Generator, the Tone Tracer identifies wire and cable without having to make direct metallic contact with the conductor. The Tone Tracer can be used with a wearable headset or a standard cell phone headset.

- Ergonomic shape, balanced weight
- Volume control
- Recessed "on" switch
- Tip replacement without opening case
- Battery-low indicator
- Lanyard attachment point

| P/N | Description |
| --- | --- |
| TT100 | Tone Tracer Probe. Includes round probe tip (TT30), paddle-style probe tip (TT35), and 9-volt battery |
| KP101 | Tone Generator with angled bed-of-nails cord set and Tone Tracer Probe. Includes Tone Tracer Probe, round and paddle-style tips, lanyard, Tone Generator, 60.96 cm (2 ft) RJ11 to angled bed-of-nails clip set, 19 cm (7.5 in) RJ12 to RJ12 cable for no-fault connection to RJ11 or RJ45 jacks, and pouch |



**TT100**

### JDSU Trace-Rite™

The Trace-Rite™ is an ergonomic, powerful, and accurate Tracer with highly sensitive signal reading capabilities for locating telco, network, and coax cable. With a built-in Tone Generator, two different tones, and auto-off feature, the Trace-Rite is a reliable, easy-to-use tool that allows installers to easily find wires behind walls, floors, and ceilings.

- Built-in Tone Generator with two different tones, LED indicator, and auto-off feature
- Audible tone location indication
- Adjustable volume control
- Self-powered amplified probe with on/off button prevents battery drain
- Battery-low indicator with battery cap
- Changeable round-tip probe

| P/N | Description |
| --- | --- |
| TT250 | Trace-Rite Tone Generator and Probe. Includes RJ11 to alligator clips cord set and four 6-volt button cell batteries |
| KP260 | Trace-Rite Tone Generator and Probe with Net-Rite™ Cable Tester Kit. Includes Trace-Rite Tone Generator and Probe, RJ11 to alligator clips cord set, and Net-Rite Cable Tester with onboard cable test remote |



**TT250**

## TONE & PROBES

*FLUKE networks®*

### FLUKE NETWORKS PRO3000 ANALOG TONE AND PROBE

The Pro3000 Tone and Probe Kit is the innovative analog tone and probe. Easily identify individual pairs with its patented SmartTone™ technology (five different tones for exact pair identification). The large powerful speaker on the probe allows you to hear through drywall, wood or other enclosures to find wires quickly and easily. Kit includes pouch.

- Select solid or alternating tone options, indicated with solid or flashing LEDs
- Exclusive SmartTone™ technology can generate five separate analog tones when the pair is shorted at the far end
- Works on de-energized AC wire, telephone/twisted pair wire, all voice and data category rated cable, all coax cable, speaker wire and security wire

| P/N | Description |
| --- | --- |
| 26000900 | Pro3000 Analog Tone & Probe Kit |
| 26100900 | Pro3000 Analog Probe |
| 26200900 | Pro3000 Tone Generator |
| 26100103 | Pro3000 Analog Probe Replacement Tip (two per bag) |
| 26300000 | Earpiece for Pro3000/Pro2000 Probe |



**Pro3000**

### FLUKE NETWORKS INTELLITONE™ PRO TONER AND PROBE

The IntelliTone Probe Digital and Analog Toner finds cables other toners/probes can't. Speeds cable location with advanced sensing modes. New SmartTone™ feature precisely locates individual wire pairs. Digital signal rejects noise and safely tones active networks. Powerful troubleshooting capabilities include datacom link, two line telecom service ID and twisted-pair cable wiremap.

- IntelliTone digital processing eliminates noise and false signals
- New SmartTone™ analog toning precisely isolates individual wire pairs
- Locates cables safely and effectively on active networks

**MT-8200-60A**

| P/N | Description |
| --- | --- |
| MT-8200-60A | IntelliTone Pro 200 Kit. Includes IntelliTone Pro 200 Toner and 200 Probe, coax F connector adapter, two RJ11 and two RJ45 patch cables, test leads with alligator clips, lanyards, owners CD and quick start guide, two 9 volt batteries |



### TRIPLETT FOX 2 & HOUND 3 PROBE KIT

- Fox 2 Deluxe Tone Generator
- Hound 3 Probe Inductive Tracer
- Cordura Carrying Case

| P/N | Description |
| --- | --- |
| 3399 | Fox 2 & Hound 3 Probe Kit |

▲ **TRIPLETT**



**3375**

**3399**



### TRIPLETT THE FOX JR. & HOUND JR. KIT

- Pocket-Sized with Pocket Clip
- Overload Warning Beeper - alerts user to potential hazards
- Connects easily with alligator clips or RJ-11 / RJ-45 combo plug
- Distinctive warble tone is adjustable over wide range
- 120VAC Line Cross Resistant
- Powered by one A23 Battery (included)

| P/N | Description |
| --- | --- |
| 3375 | Fox Jr. & Hound Jr. Kit |

**FLUKE networks.**

## VERIFICATION TEST

### FLUKE NETWORKS MICROSCANNER² CABLE VERIFIER

The MicroScanner² streamlines voice/data/video cable and service testing. Revolutionary user interface displays available services (10/100/1000 Ethernet, POTS, PoE), cable length (with true TDR technology for finding distance to shorts and opens), wiremap, cable ID, and distance to fault all on one screen. Test RJ11, RJ45, and Coax with no adapters. Built-in IntelliTone digital and analog toning precisely locates virtually any cable or pair.

- Detects today's media services, including 10/100/1000 Ethernet, POTS, and PoE

**MS2-100**

| P/N | Description |
|---|---|
| MS2-100 | MicroScanner² Cable Verifier. Includes MicroScanner² Cable Verifier with main wiremap adapter, multi-language Getting Started Guide, user CD, batteries, and Fluke Networks carry pouch |
| MS2-KIT | MicroScanner² Professional Kit. Includes MicroScanner² Cable Verifier with main wiremap adapter, remote identifiers #2-7, IntelliTone Pro 200 probe, shielded twisted-pair RJ45 patch cord, RJ11 patch cord, clip-set RJ45 to 8 alligator clip bare wire adapter, F Coax push on patch cord, accessory soft pouch, (2) AA alkaline batteries, (1) 9V alkaline battery, MicroScanner² Getting Started Guide, MicroScanner² Owners CD, IntelliTone Pro Getting Started Guide, MicroScanner² owners CD, IntelliTone Pro Getting Started Guide, IntelliTone Pro owners CD, packaged in a deluxe Fluke Networks carry case |

**MS2-KIT**

## QUALIFICATION TEST

### FLUKE NETWORKS CABLEIQ™ QUALIFICATION TESTER

CableIQ is the first qualification tool designed for network technicians who need to troubleshoot connectivity problems and qualify cabling bandwidth. It determines if your cabling is qualified to support 10/100, VoIP or Gigabit Ethernet.

**CIQ-100**

- Troubleshoots why existing cabling plant can't support the desired network bandwidth
- Discovers what's at the end of any cable and displays device configuration (speed/duplex/pairing)

| P/N | Description |
|---|---|
| CIQ-100 | CableIQ Qualification Tester. Includes CableIQ with remote adapter, CableIQ Reporter software CD, (2) RJ45-RJ45 patch cord, USB cable, coax "F" push-on adapter, owners CD and quick start guide, (4) AA batteries, soft carry case |
| CIQ-KIT | CableIQ Advanced IT Kit. Includes CableIQ main unit with remote adapter, CableIQ Reporter software CD, IntelliTone 200 Digital Probe, Remote IDs #2-7, (2) RJ45-RJ45 patch cord, USB cable, coax "F" push-on adapter, 75-ohm coax patch cord, RJ45/11 universal coupler, RJ11-RJ11 patch cord, owners CD and quick start guide, (4) AA batteries, test accessory soft pouch, hard carry case |

## CABLE ANALYZERS

**DTX-1800**

### FLUKE NETWORKS DTX CABLEANALYZER™

DTX significantly reduces total time to certify by improving every aspect of testing. The DTX has 9-second Cat 6 Autotest, Level IV Accuracy, 900 MHz, intuitive diagnostics, on-board fiber modules, 12-hour battery life and fast setup and reporting. AC Wiremap verifies cabling through Midspan PoE controllers.

- Exceeds spec requirements for Cat 5e/6/7 with superior Level IV accuracy
- Advanced time-saving diagnostics pinpoints fault and suggests corrective actions

| P/N | Description |
|---|---|
| DTX-1800 | CableAnalyzer. Includes DTX-1800 Main and Smart Remote, LinkWare PC Software, 128MB MMC Card, Cat 6A/Class EA Permanent Link Adapters (2), Cat 6/Class E Channel Adapters (2), Headsets for Talk (2), AC Chargers (2), Carrying Case, USB Interface Cable (Mini-B), Serial RS-232 Cable (DB9 to IEEE1394), User Manual |

*Multiple configurations available. Please check with your TVC representative or www.tvcinc.com for details.*

## LOOP TESTERS

### FLUKE NETWORKS 990DSL COPPERPRO™ TEST SET

CopperPro offers a broad range of Plain Old Telephone Services (POTS) troubleshooting, fault location and line qualification capabilities. Its Wideband/TDR option adds high frequency transmission testing and qualification functions for services like ADSL, HDSL and HDSL2, ISDN, T1, E1 and DDS.

- Replaces up to twelve traditional test sets
- Troubleshoots and qualifies lines for POTS, ADSL and other special services
- Time Domain Reflectometer (TDR) feature allows precision fault location

**990DSLWT**

| P/N | Description |
|---|---|
| 990DSLWT | CopperPro Loop Tester with Wideband and TDR |

# VoIP/TELECOM TEST

## LOOP TESTERS

*FLUKE networks*

### FLUKE NETWORKS COPPERPRO™ SERIES II BROADBAND LOOP TESTER

CopperPro Series II is the latest generation of the leading copper loop test and analysis test sets. It provides a complete range of troubleshooting, fault locating, testing and qualification capabilities, all in a rugged, handheld easy-to-use DSL test set. New features include broadband noise identification for VDSL, advanced TDR capabilities for locating short bridge taps and other VDSL affecting impairments, and an optional VDSL modem for verifying service connectivity and performance.

- Quickly qualify the facilities for DSL services including ADSL, VDSL, HDSL, T1, and other special services
- Easily identify and locate possible problems to ensure reliable performance
- Install new services efficiently with fewer call-backs

**990DSL2+**

| P/N | Description |
|-----|-------------|
| 990DSL2+ | CopperPro Next Gen Copper Loop Analyzer w/TDR & wideband spectral analysis for ADSL2+ |

### EXFO AXS-200/610 - 30 MHz COPPER TEST SET

*EXFO EXPERTISE REACHING OUT*

Identify copper problems affecting triple-play quality using the AXS-200/610—part of the SharpTESTER Access Line.
- Visual reports, graphs and histograms, displaying signal and noise issues
- 30MHz spectrum analysis for VDSL2 and video prequalification and troubleshooting
- Single-ended automated, clear, pass/fail test results speeding up and simplifying test cycles
- POTS and VF measurements for complete ADSL2+ and VDSL2 loop qualification

**AXS-200/610**

| P/N | Description |
|-----|-------------|
| AXS-200/610 | 30 MHz Copper Test Set |

*Multiple configurations available. Please check with your TVC representative or www.tvcinc.com for details.*

### EXFO FTB-8105 TRANSPORT BLAZER - DSN/PDH AND SONET/SDH ELECTRICAL TEST MODULE

**FTB-8510**

Supports DSn, PDH, SONET and SDH electrical rates up to 155 Mbit/s. Ideally suited for TDM field service deployment and maintenance activities.
- Dual Rx DSn
- Intuitive, feature-rich user interface with automated test scripting with multi-user remote management capabilities

| P/N | Description |
|-----|-------------|
| FTB-8105 | DSn/PDH and Sonet/SDH Electrical Test Module |

*Multiple configurations available. Please check with your TVC representative or www.tvcinc.com for details.*

## VoIP INSTALLER'S TOOL KIT

**GLVOCKIT**

### GREENLEE GLVOCKIT

The GLVOCKIT is a Top Quality Professional Tool Kit with one part number for ordering ease.
- Kit contains tools and test equipment for installing CATV, VoIP, & Data Network

P/N
GLVOCKIT Kit Includes:

| P/N | Description | P/N | Description |
|-----|-------------|-----|-------------|
| 1143-5000 | Sidekick, VOC | 0652-11 | Knife, Utilty,HD |
| PE830 | Test Set, Pocket Telephone-Pro | 45575 | Crimper, mod plug-ratchet |
| 402K | CATV Tone Test Set (402K) | 60807 | Crimper, compression |
| 0151-09M | Pliers, side cutting 9" molded | 0351-08SM | Pliers, longnose 8" mold strip |
| 0251-08AM | Pliers, diagonal, angle 8" molded | 0156-12 | Hammer, straight claw 16oz |
| 0153-33C | Screwdriver, Phillips #2x4" | 46500 | Pocket-light |
| 0153-25C | Screwdriver, flat-cab 1/4x4" | 727M | Cutter, cable |
| 0154-10C | Wrench, adjustable 12" composite | 921 | Quick change extension sys kit |
| 0158-13 | Carrier, tool 11" | 333A | Hacksaw (12") |
| GT-16 | Detector, voltage -adjustable | 0155-16A | Rule, power return 16' |
| 46040 | Tur-tel 6 modular tester | 0354-15 | Wrench, combo ratcheting 1/2" |
| 0451-10M | Pliers, pump,10" molded | 438-2X | Fishtape,steel-1/4"x25' |
| 301A | Saw, keyhole (POP) | 0358-11XL | Gloves, high dexterity-xl |
| 1951 | Stripper | PT-K01 | Knife & scissors kit w/2 pocket pouch |
| NC-500 | Tester, Netcat Pro VDV wiring | 0158-14 | Bag, zipper small |
| NC-510 | Remote unit kit (Netcat Pro) | 9753-13C | Opener, bottle cushion grip |
| 0253-16C | Nut driver,7/16"x3" | DM-20 | DMM, 300V AC/DC |

**GREENLEE** *A Textron Company*