

C.O. and Strowger Switch/Other Telecom Tools

Part 2



Western Electric

Northern Electric



Etelco

BT

The following are some of the tools in the collection of the Telephone Museum of P.E.I. - they are not for sale. I am posting this on the site, as it provides a good listing of the tools available from each manufacturer, plus descriptions of the designed usage from the manufacturer's catalogs. This is by no means a complete listing of all tools manufactured and used in the telecom industry. There was a specialty tool designed for just about every job.

I am continually looking for tools to add to this collection - Dave Hunter, dhunter@islandregister.com:

This is Part 2. The original file was getting extremely large, then I came across a large number of tools mostly designed for Crossbar servicing. Therefore this latest batch is going in Part B. Where multiple copies of a tool are in the collection, it will be prefaced by the number we have..

The latest versions of these files may be downloaded from:

Part 1:

http://www.islandregister.com/phones/tools_switching.pdf

Part 2:

http://www.islandregister.com/phones/tools_switching2.pdf

WE/NE/Bell C.O. Tools:

Bell System AT-8411 Dial type torque wrench. Scale is from 0-600 inch-pounds. The B Torque Wrench is used to tighten nuts and bolts on apparatus cases, splice cases, and closures to the proper torque to assure a gastight and watertight seal.



Bushing Tool for D type and B type mountings - removes and inserts bushings on the handset mount - reproduction of original tool..



KS-14796 Oiler - Pump type oil can designed to produce either a minute measured quantity, or a steady stream of light oil.

46 - Wrench, 3/8 Hex type socket for use on 5 type message registers, 10 type buzzers, and 89, 101, 172, 196 and 208 type relays.

48 Tool (WE) - Wrench (Mag, CB and PBX), 7/32 and 1/4 Hex socket, double end. For use on 1, 2, and 4 type buzzers, AC ringers and pivot type keys, 237, 243 type keys, 207, 213 type relays, and Precision type interrupter.

NE- 48 - Combination 7/32 and 1/4 inch hex, double end socket wrench and screwdriver. For general use.

62B - Gram gauge 0-700 grams. For general use.

63 Tool - Triple wrench for use on nuts of binding posts of receivers and transmitters also for screwing on the nut of sleeve replacement parts for combined jacks and signals.

68B - Gram gauge 70-0-70 grams. For general use.

70D - Gram Gauge 50-0-50 grams. For general use.

70E - Gram gauge 0-150 grams. For general use.

70F - Gram Gauge 0-10 grams. For general use.

(2) 70H - Gram gauge 0-30 grams. For general use..

79B - Push-pull gram gauge 1000 grams. For measuring in grams the tension of springs on 200 type selectors, 520 type keys, 206 type selectors.

79C - Push-pull gram gauge 200 grams. For measuring, in grams the tension of springs of 200 and 206 type selectors, D-34393, 320 and E type keys and precision type interruptors.

NE-179 - Spring Adjuster. For use on 197-, and type 198- type switches, 50 type dial testers, and power driven rotary selectors.

NE-265C - Designed for cleaning contact points of relays. Consists of a chuck which is designed for holding any NE-266E tool. Furnished with an NE-266 tool in the chuck, and 6 NE-266C and six NE-266E in the magazine.

268 - Spring Adjuster (PBX) for use on Stromberg Carlson Relays

NE-270 - Spring Adjuster - for adjusting precision type interruptors and Stromberg Carlson relays.

300 - Spring Adjuster - for general use.

NE-303- Spring Adjuster. Replaces the 105 and 234 tools. For general use.

330B - Adjuster. Replaces the 330 tool. For use on panel line finder, trunk finder, and call distributing "B" link elevator apparatus.

(2) NE-349 - Double Closed end wrench used for adjusting nuts on NE-E and NE-207 type relays. Engages hexagon head nuts 3/16 and 7/32 across flats.

360A - socket type cord tip - red. For use with 457, 361B, 364, 365, 419A, 547A, 548A, and other tools provided with pin terminals.

NE-415B - Spring Adjuster. Replaces the N-415 tool. For use on 197-, 198- type switches and step by step type relays.

453A - Swivel spanner wrench - for use in replacing oil sight rings.

474A - 3/16 x 1/4" Hex closed double end offset wrench. For use on No. 50A drives, 218 type relays and in adjusting armature travel on flat-spring relays.

505A - Spring Adjuster with insulated handle. For use on U-, Y-, and similar type relays, and on 1-, and 2- type timers.

(2) 506A - Spring adjuster for use on U-, Y-, and similar type relays and 1 and 2 type timers.

(2) 506B Spring adjuster or use on 444-type jacks.

(2) 507A - Spring Adjuster with insulated handle. For use on U-, Y-, and similar type relays, and on 1-, and 2- type timers.

NE-509B - Relay Winding Connector - for use with the 360 type tool - connect to -U, Y- and similar type relays and 263 and 264 type relays.

524J - Spring Adjuster, .025".

NE532B - Adjuster - replaces the 532A tool. for adjusting 300-, 304-, 314-, 324-, and similar type switches, and 245-, 254-, 263-, and 264- type relays.

NE-533A - Bearing Lug adjuster. For use on 300-, 304-, 324- and similar type switches.

534 - Tools as listed below. Spring Adjusters - 534A, 534B, 534C, 534D and 534E tools are for use on 300-, 304-, 314-, 324-, and similar type switches

- 534A - .025"
- 534B - .031
- (5) 534E - .018"

NE535 - Spring Adjusters - 535B tool replaces the D-178348 tool. 535A tool is for use on 300- and similar type switches, 216 type switches, and 245-, 254-, 263-, and 264- type switches.

(2) NE-536B - Selecting Bar Holder - Replaces the 536A tool. For use on 300-, 304-, 314-, 324- and similar type switches.

(2) NE-537 - Strap Wire tool. For use on 300-, 304-, 314-, 324-, and similar type switches and 245-, 254-, 263-, 264- type relays.

NE-541A - 1/4" 12 point double end box wrench. For general use.

NE-547A - Magnet Winding Connector - for use with the 360 type tool - for use on 245 and 254 type relays, 300 and similar type switches, and 1 and 2 type timers.

(2) NE-549A - Spring Adjuster. For adjusting 300- and similar type switches.

NE-561A - Straight tip. Used in conjunction with the 510C tool - for use on all relays.

(2) NE-563A - 90 degree offset screwdriver. For general use on No. 6 screws.

NE-574A - Tab Depressor. For checking spring pressure on 304-, 324-, and similar type switches.

578C - Stripping Pliers - Red handles and used for removing contacts from flat type contact springs of relays such as multi-contact and relays with offset springs. It has a shorter tip than the 578B tool and has an adjustable cutting stroke.

578E - Stripping Pliers - Black handles used for removing contacts from the twin moveable springs of wire spring relays.

578H - Stripping Pliers. The 578H has green handles and is used when removing precious metal contacts from cross-point contact springs of 324, 325, 328, and 338 type crossbar switches in connection with the 1004A and 1004B tool kits.

(2) NE-587A - Contact closure indicator. This tool forms part of the J94724 contact closure test set. For use on 280- and similar type relays.

NE-582A - Spring Adjuster. For adjusting the .030" spring tangs next to the core on UA type relays.

NE-623A - Bracket Adjuster - for adjusting holding off-normal spring brackets on 324- and similar type switches.

NE632B - Adjuster. Replaces the 532A tool. For use on 300-, 304-, 314-, 324-, and similar type switches, and 245-, 254-, 263-, 264- type relays.

(2) NE638A - Contact Aligning Tool - This tool forms part of the 1013 tool kit. For use in replacing the fixed contacts and twin contacts on AF-, AG-, AJ-, and AK-type relays.

(3) NE-651B - Relay contact connector holder.

654C - Reed Relay Removal Tool - for removing 294- type relays in AMA and No. 5 cross-bar systems. Pin to pin .850 inch, separation, 4 5/8 inch.

711A - Adjuster. For use in adjusting the upper armature support on all crossbar switches.

KS-14640 - Contact Stripping Pliers - This tool forms a part of the 1013A tool kit. For removing contacts on stationary springs of wire spring relays.

NS-7187 - 100 Strips Bell Seal Bond Paper.

(4) NS-6278 - Suspender clip, metal post. (similar to 365)

73D - Metal brackets (pr.) with knurled thumb screws. Those are used in pairs to position a central office 100pr protector (type 302) on the main frame vertical for the purpose of wire-wrapping the 100 pair stub cable (up from the vault) to the rear of the protector. Most protectors have factory stubs but if ordered stub less these are very handy for terminating a new cable when in place

(7) Springs - From SK: "The springs are used for service observing in #5XB. The frame of a cross-bar switch has holes of perhaps 3/4" in the sides. Service observing cords plug into the vertical unit since lines terminate on verticals. These springs slip into the holes in the sides of the switch into which the SO cord is plugged. The cord is then pressed into the widely spaced turns of the spring to

keep the cords dressed to the side so they stay along the rack work, out of the way of the switches. There are pairs of jacks on the rack uprights into which the other end of the SO cord plugs with a headset style twin plug. These all go back to a SO patch bay serving the whole office where the SO is routed to a pen recorder or other SO instrument."

(2) AT-8629 Tone Probe - used in conjunction with the WE-145A or other tone source to conduct pair identification using the tones generated by the set. A butt set was clipped to the probe, and proximity to the wire fed with the tone would give an audible indication, allowing it to be easily identified.

More Test Equipment:

Northern Electric NT6F21AC Stable Laser Light Source



Northern Telecom NT 7L30AA fusion splicer for fibre cables



FC-6S Fiber Cleaver



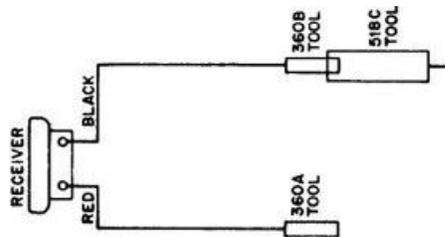
Wavetec Optical Power Meter



Western Electric 35F Test Set 194714B, a current flow test set designed for adjusting relays.



67C Test Set - From Sec. 074-256-129 67C test set. Later ones had a 360 socket type cord tip on each lead, and could be used with 518C probe with the limiting resistor as shown above. The 360 tool can be used with standard attachments, 357, 361B, 366, 537A, 548A, and other tools equipped with socket type pin terminals. The standard probe is a 518 tool, which is an adjustable length probe with a 51K limiting resistor, and a red "push to test" button. If doing a continuity test on these, either detach the probe from the 360 tool and measure (360 tool is held to the probe with a plastic collet. Unscrew the collet and the 360 tool pulls out), or press the button at the time of the test to complete the circuit.



Others:



Assorted Dental tools used for a number of purposes. Picks are used to remove solder from PCB boards, spatulas for repairing plastic and bakelite cases, mirror for viewing under boards, titanium/diamond burrs and drills to grind and repair cases, hemostat for holding wires while soldering. All are contained in a cheap pencil box from the dollar store.

Below is a flexible shaft rotary tool similar to a dremel. By using the flexible shaft, it eliminates the gyroscopic effect one feels when using just the rotary portion. When doing close up work, that effect can make it difficult to control the fine bits, therefore the flexible shaft is far better.

To repair case cracks, the crack can be V'ed out using burrs to help glue bonding, the dust removed can be



mixed with the epoxy glue to give it the correct colour, and it can then be applied and smoothed out using the dental spatulas. Final polishing is done first with the dremel, and then using Novus plastic polish to make an invisible and strong repair.

CMC-4516 - DC extender, just a way to "patch" battery supply from cord to cord or to provide a place to attach clip leads.

Eldema TE-1007-1 - ROTS Test Plug see BSP: 226-610-910 PT_IB-1

(2) NTE-4546 - "Reed Reader" , it attaches to the front of Type 293 reed relays as used in crossbar COs. Also they were used though rarely in a version of ANI systems (automatic number identification) in step by step offices . It would light up as a two out of five indicator to show the digit that was stored in the relay,. the lamps would be numbered 0,1,2,4,7 so a $0+1=1$, $0+2=2$, $2+1=3$, $0+4=4$ $4+1=5$ etc...the only odd one was $4+7=0$..

(2) Anti-static wrist strap - for wearing while handling semi-conductor circuits. Shunts static charges to ground.

4x6 foot Anti-static mat. Shunts static charges to ground.

(2) Test leads Clip one end, relay reed other.

Test lead tip jack each end.

134A (not WE or NE) - ,020 thickness gauge.

134A (manufacturer unknown) - U-shaped thickness gauge, one side .100 and the other .118.

8 Miscellaneous thickness gauges on key ring,

CB6 - PK Neuses Relay burnisher holder. Blades fit into chuck at end of barrel. Practically any degree of blade rigidity is possible by varying depth of blade in chuck. Reservoir for extra blades at other end. Black plastic barrel and cap permits working on live contacts. 4 1/4" (10.8 cm) long x 3/8" (9.5 mm) diameter overall. Blades are 11/64" (4.36 mm) wide x 1 1/2" (3.8 cm) long.

Switchboard Lamp Remover.

Unknown Shorting Plug.

Eagle No. 66 brass oiler - Used for general oiling.



Additional Lot Received April 4, 2014:

1-548A - Magnet Winding Connector for use with 360 tool.

1-N419A - Test Connector for use with 350 tool.

3-Spudger

1-Dial Tool

1-GMP Wire Wrap tool - Hand Wire Wrap tool by GMP.

1-Neuses .010 feeler

N-80223 - Gap Gauge, .030, .045, .060, .120

1-476A - 3/16 Hex Offset socket wrench

1-N524A - Spring Adjuster for use on type 234, 254, 264, and 264 type relays.

1-N524B - Spring Adjuster for use on type 234, 254, 264, and 264 type relays.

1-N303 - Spring Adjuster, replaces the 105 and 234 tools. For general use.

1-Jonard 138 - Adjuster

1-N325B - Replaces the 325 tool - For use on clutches, panel elevator apparatus, 200, 204, 206 type selectors, and panel multi[le guide bank combs.

1-N340 - Adjusting key - for use on polarized 267 relays.

1-N357 - Spring loaded contact clip and insulator. Replaces the 250 tool. For use on A and B type sequence switches and panel elevator apparaatus.

1-100B, .010 feeler

953A - WE Telephone Wire Stripper - for stripping Cat 5 cable.

1 Ripley Co. Miller(R) 305B WEB Figure 8 Aerial self-support duct slitting
- [http://www.ripley-tools.com/tools.php?
linker=Miller&tool=305&category=Electrical](http://www.ripley-tools.com/tools.php?linker=Miller&tool=305&category=Electrical)

1 Krone LSA-Plus insertion tool with sensor.
Incl box and instructions - [http://www.amazon.com/Krone-LSA-PLUS-
Universal-Insertion-Scissors/dp/B000LDNS7I](http://www.amazon.com/Krone-LSA-PLUS-Universal-Insertion-Scissors/dp/B000LDNS7I)

4 New Emerson P/N F019127 RLS pocket tester
for 25 pr BT, 50 pair CQF, or RLS blocks used in interface terminals
manufactured by Marconi - [http://shop.neobits.com/emerson-
communications_products_H4wzk.php?&pn=1](http://shop.neobits.com/emerson-communications_products_H4wzk.php?&pn=1)

1 Used Westek Tel Line Tester TroubleShooter II.
Plugs into 5 pin connector block - [http://www.westek.com/Tel-Line-Tester-c-
291.html](http://www.westek.com/Tel-Line-Tester-c-291.html)

1 J & D Enterprises 71196 ???
adapter for 5 pin connector block ???

1 Tempo 88 Load Coil Detector -
<http://www.stanleysupplyservices.com/tempo-load-coil-detector/g/8110>

1 Vintage Bell System Cable Puller Rope Pulleys Clamps Swivel Hook
Tools - known locally as a come-along - for stretching wire out between
poles.

1 Endoscope (Borescope) for viewing inside through 1/4 inch hole. Built in LED lighting.

1 Schraeder valve and chain to maintain and fill air and gas filled cable pressure.

1 Bell System Brace and Bits (hand drill)

1 * Set of eight bits up to 31" long to fit the above Brace.

1 * 1938 Bell Canada Bell LIU (Line Installation Utility) truck back. In storage in Ontario - to come down sometime this summer!

1 Vintage Lufkin wooden Ruler 72 inches folding ruler marked Bell System.

1 - Dietz Little Wizard kerosene lantern with red globe

1 - Borescope - a long, thin snake with a miniature TV Camera on the end for viewing inside items or in cramped spaces. Excellent for viewing lock numbers inside locked payphones.

1 - Hitachi XB Adjusting kit got Crossbar switches. Contains a number of specialty tools for Crossbar.

1- Northern Electric No. 2 Test Cabinet - The cabinet may be used as portable testing equipment or it may be mounted in a permanent location, as on an end panel of a manual switchboard or on a short main distributing frame or protector frame.

1 - Leeds/Northrup Test Set - 5430-A Wheatstone Bridge Galvanometer. This would have been used to locate shorts and opens using its impedance bridge.

1 - 54A Transmission Measuring Set

1 - Hartmann - Kempf's reed type frequency meter - used for checking ring frequency on harmonic, synchrononic, and decimonic psrty lines.

1 - Seiscor T-84 phone tester - This unit originally owned by ITT, then used by Chicago Old Telephones for years, then sent down last fall by Don Woodbury. It will test for: loop current, 500 volt breakdown, rotary dial speed, rotary dial percent and break, transmitter and receiver output, normal ringer response, ringer connection, long loop ringer response, bell tap, tone dialing, and provision for continuity and noise testing for modular, Trimline handset, and cords. This model was for 20 cycle ringers, but there was a type 84R for harmonic, synchronomic, and decimonic ringers.

Note: There are still a few tools to be added to this listing as I get a chance to list them.

Most items identified from listings in Bell Telephone Labs Catalog X-65518-01, issue 14, April 1, 1932, Western Electric Coded Tools listings, Northern Electric T-9 tool catalogue listings, and from Automatic Electric Technical Bulletin 150-540, issue 10, ATM, Etelco Cat. 60, and Teletype Maintenance Tools, Teletype Corporation Section 570-005-800TC, Issue 6, Aug. 1977 and from the help of members of the ATCA, TCI, and CRPF lists..

These Items do not represent all items made by these manufacturers, only those currently in the Museum's growing tool collection.

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The Telephone Museum of P.E.I
<http://www.islandregister.com/phones/museum.html>