



# BELL TELEPHONE LABORATORIES

INCORPORATED

SYSTEMS DEVELOPMENT DEPARTMENT

463 WEST STREET

NEW YORK

BELL TELEPHONE LABORATORIES, INC.  
SYSTEMS DEVELOPMENT DEPARTMENT, NEW YORK.  
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APRIL 1, 1932  
REPLACING ISSUE 13  
AUGUST 1, 1931

TOOLS AND GAUGES  
FOR  
MAINTENANCE PURPOSES  
IN  
LOCAL MANUAL CENTRAL OFFICES  
AND  
MANUAL P.B.X.'S

8

8

REASONS FOR REISSUE AND CHANGES FROM ISSUE 13

1. To replace the No. 362-A tool by the No. 431-A tool.
2. To replace the No. 373 tool by the No. 373-B tool, and to add the No. 374-C tool for use with the No. 373-B tool.
3. To add the No. 418-A tool for use on the No. 35-C test set.
4. To add the No. 436-A tool for use on 221, 222, 223 and 224 type relays.
5. To add the No. 443-A tool for use in making connections to cord circuits.
6. To add the No. 445-A tool for use in removing dial card holder frames.
7. To add the KS-6367 wrench for use in mounting voltmeter relays.
8. To add 1 Spring Depressor to list of tools contained in the KS-6527 tool kit.
9. To add the KS-6780 tool for use on test cords.
10. To add the "V" notch diagonal pliers per specification 6433 for use in skinning distributing frame wire.
11. To replace the Nos. 37 and 38 gauges by the Nos. 37-B and 38-B gauges, respectively.
12. To add the Nos. 113-A, 114-A and 115-A gauges for use on 92 type jacks.
13. To make other minor changes as required to bring the specification up-to-date.

SECTION 1 - GENERAL

1.1 This specification replaces X-65518-01, issue 13 and the appendix to X-65518-01. It covers the tools and gauges required for the maintenance of apparatus in local manual telephone offices, including the apparatus used in relay call indicator, call indicator from step by step and key indicator equipment and also manual P.B.X.'s. It will be reissued every four months under dates of April 1, August 1 and December 1 to keep it up to date with tool and gauge changes.

1.2 Section 2 of this specification contains numerical lists of tools and gauges arranged by code number to facilitate ordering. The lists cover tools and gauges which are required for

manual P.B.X.'s and manual offices. Those tools and gauges which are required in common battery offices are designated "C.B.", those which are required in magneto offices are designated "MAG.", and those which are required in manual P.B.X.'s are designated "P.B.X.".

1.3 In addition to listing the tools and gauges in numerical order these lists also give a description, illustration and the uses of each tool and gauge.

1.4 Tools and gauges listed in this specification shall not be furnished on jobs except when ordered by the Telephone Company.

SECTION 2 - TOOLS AND GAUGES2.1 GENERAL

2.11 The dimensions given in the description of the wrenches indicate in each case the size

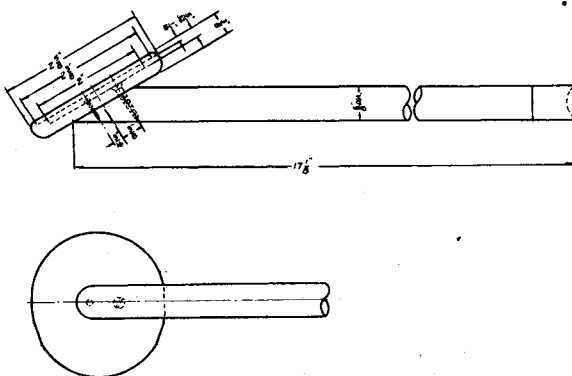
of the nuts that the wrench will fit.

2.12 Coded tools in parenthesis ( ) are replaced tools.

NUMERICAL LIST OF TOOLS

\*1-A LISTENING STICK  
(C.B.)

For use in tuning the reed of 218-B relays

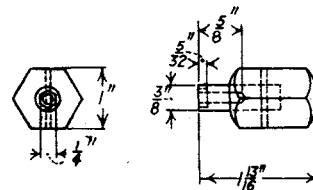


\*Order as the 1-A Listening Stick

28

WRENCH - 1/4" HEX. SOCKET  
(C.B. AND P.B.X.)

For use on protector nuts. Where 3/8" protectors are specified two of these tools are required

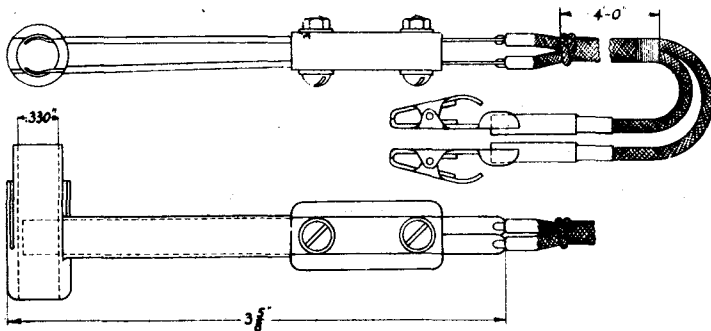


(34) Replaced by tool 216-B

(35) Replaced by tool KS-6854

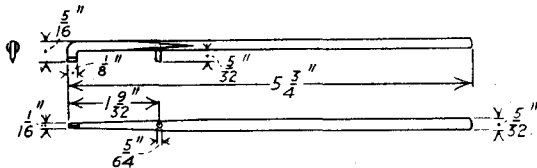
§ 38-B LAMP SOCKET WITH 802 CORD  
(C.B. AND P.B.X.)

For general use



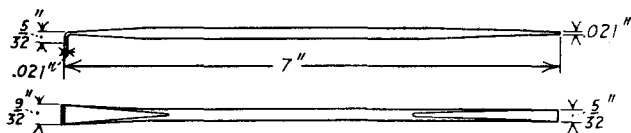
39 ADJUSTER  
(P.B.X.)

**For use on drops**



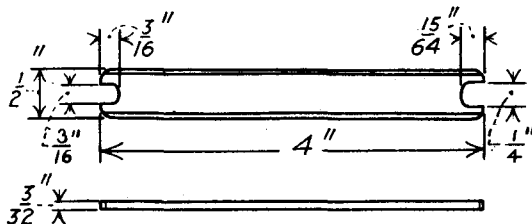
40                      SCREW-DRIVER  
                             (P.B.X.)

For use on drops



43            WRENCH - 3/16" AND 1/4"  
              HEX. OPEN DOUBLE-END FLAT  
              (C.B.)

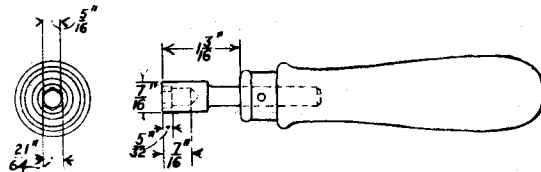
For use on L, N and S type relays



§ Order as the 38-B Lamp Socket with 802 Cord

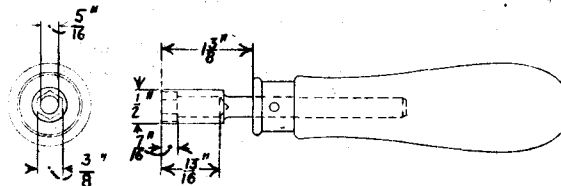
45 WRENCH - 5/16" HEX. SOCKET  
(C.B. AND P.B.X.)

For use on 89, 101, 105, 108, 114, 124, 126, 172,  
174, 198, 208 and 214 type relays and 155-A, 163,  
and 169 type interrupters



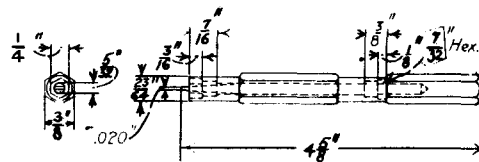
46 WRENCH - 3/8" HEX. SOCKET  
(C.B. AND P.B.X.)

For use on 5 type message registers, 10 type buzzers and 89, 101, 172, 196 and 208 type relays



48 WRENCH - 7/32" AND 1/4"  
HEX. SOCKET DOUBLE-END  
AND SCREW-DRIVER  
(C.B., MAG. AND P.B.X.)

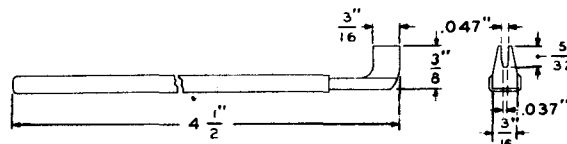
For use on 1, 2 and 4 type buzzers, AC ringers and pivot type relays, 237, 243 type keys, 207, 213 type relays and precision type interrupter



(50) Replaced by tool 50-B

50-B SPRING ADJUSTER  
(Replaces (C.B. AND P.B.X.)  
Tool 50)

For general use on relays.



(58) Replaced by tool KS-2827

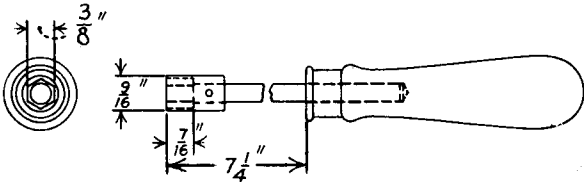


(92) Replaced by tool 276

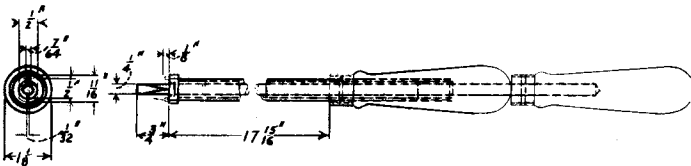
(93) Replaced by tools 410-A and 410-B

102 WRENCH - 3/8" HEX. SOCKET  
(C.B. AND P.B.X.)

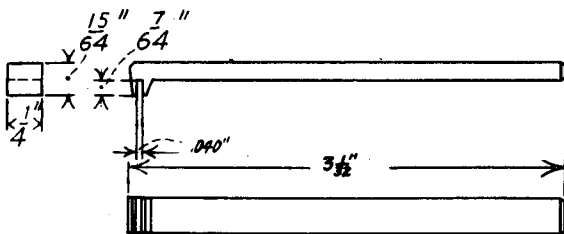
For use on 105, 108 and 186 type relays, 5 type message registers, 471 type keys

103 COMBINATION PIN WRENCH, AND  
SCREW-DRIVER  
(C.B. AND P.B.X.)

For use on 16 type jack fasteners

105 SPRING ADJUSTER  
(MAG., C.B. AND P.B.X.)

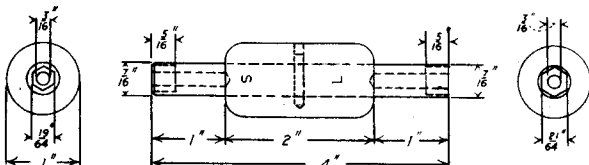
For use on vertical type keys



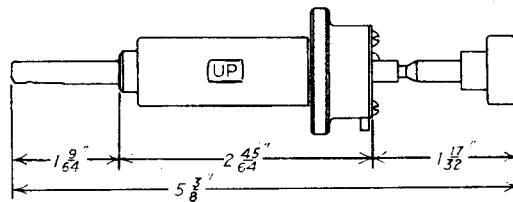
(109) Replaced by tool KS-2348

110 WRENCH - 5/16" AND 9/32"  
HEX. SOCKET DOUBLE-END  
(P.B.X.)

For use on 20 and 40 type transmitter arms and protector nuts.

111 JACK SPRING CLEANER  
(C.B.)

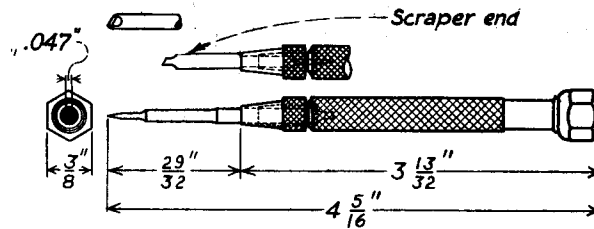
For use on 122 type jacks.



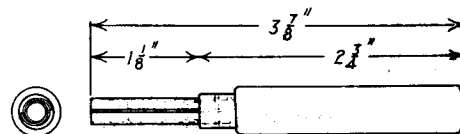
(113) Replaced by tool 113-B

113-B UNDERLINING AND MULTIPLE  
MARKING REMOVER  
(C.B.)

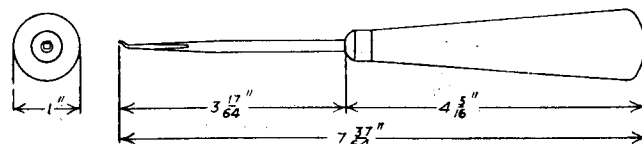
Used to remove underlining and multiple markings

116 LAMP EXTRACTOR  
(C.B. AND P.B.X.)

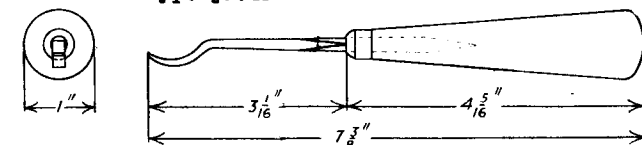
For removing 2 type lamps

117 JACK TIP AND RING SPRING  
ADJUSTER  
(MAG., C.B. AND P.B.X.)

For use on 49 and 92 type jacks

118 JACK RING SPRING ADJUSTER  
(C.B. AND P.B.X.)

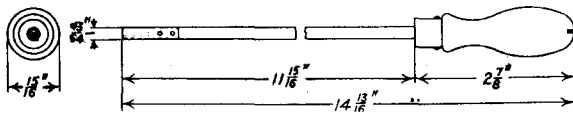
For use in conjunction with the 117 tool on 92 type jacks



(123) Replaced by tool 407-A

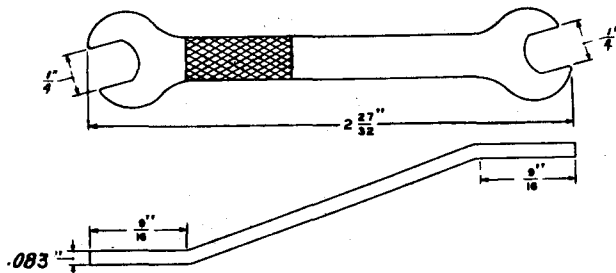
124 SLEEVE TERMINAL LOCKING TOOL  
(C.B. and P.B.X.)

For use in twisting the sleeve terminal of 49 type jacks to lock the sleeve in position.



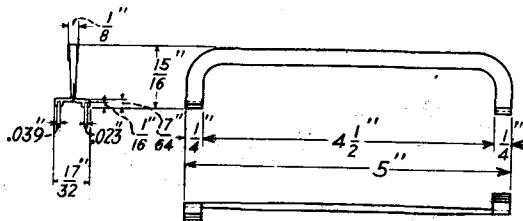
(125) Replaced by tool 319

129-B WRENCH - 1/4"  
HEX. OPEN DOUBLE-END  
OFFSET  
(MAG. C.B. AND P.B.X.)  
For use on ringers in subscriber sets



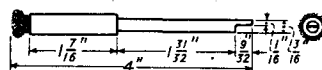
130 SPRING ADJUSTER  
(C.B. AND P.B.X.)

For adjusting the middle bank of springs on 125 and 179 type relays



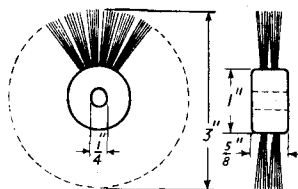
133 SPRING CLEANING TOOL  
(MAG. AND C.B.)

For cleaning protector springs



134 WASHER CLEANING TOOL  
(MAG. AND C.B.)

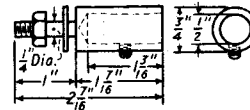
For cleaning heat coil washers



135

COUPLING  
(MAG. AND C.B.)

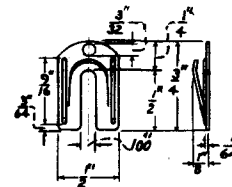
For mounting the 134 tool on motor shaft



(136) Replaced by tool 136-B

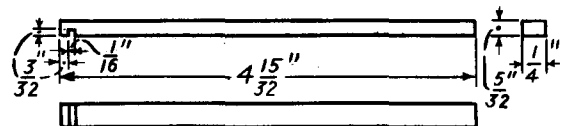
136-B RELAY ARMATURE BLOCKING  
TOOL  
(Replaces Tool 136)  
(MAG., C.B. AND P.B.X.)

For blocking flat type relays



138 ADJUSTER  
(C.B. AND P.B.X.)

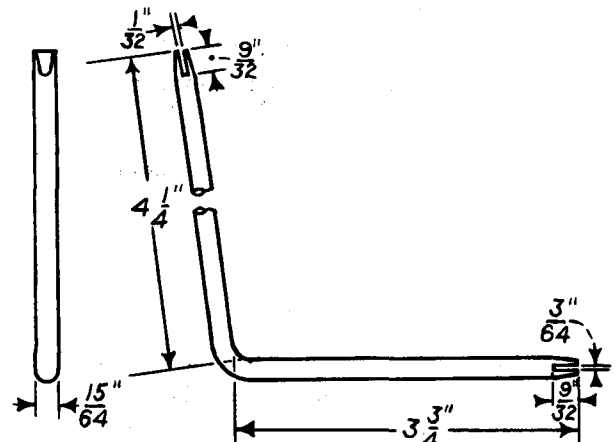
For use on the retractile spring lug of 5 type message registers



(142) Replaced by tool 259

143 SPRING ADJUSTER  
(C.B. AND P.B.X.)

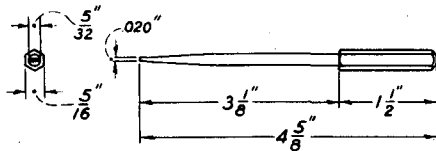
For use on horizontal type keys



(146) Replaced by tool 319

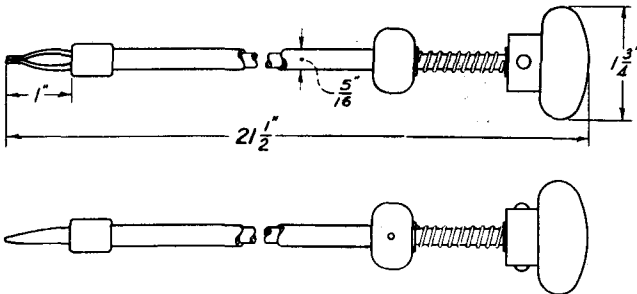
147 SCREW-DRIVER - 3 1/8"  
(Part of (MAG., C.B. AND P.B.X.)  
Tool 72)

For replacement purposes



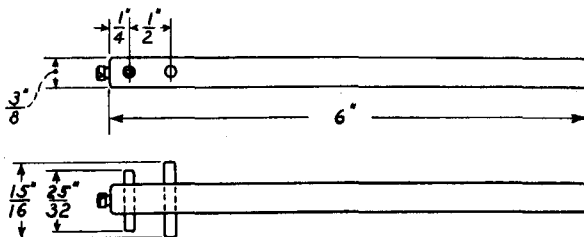
149 SPRING TWEEZERS  
(Replaces (C.B. AND P.B.X.)  
Tool 77)

For holding wires to jack terminals while soldering



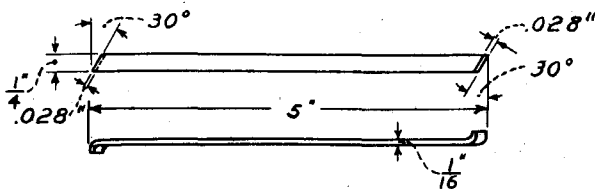
203 INDEX WHEEL HOLDER  
(C.B.)

For use on 155 type interrupters



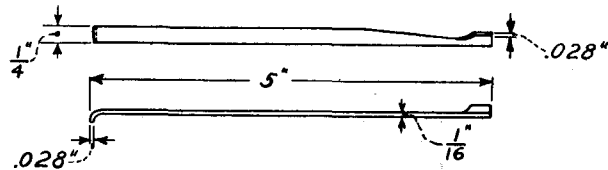
206 SCREW-DRIVER - 30° OFFSET  
(MAG., C.B. AND P.B.X.)

For use on 186, 206, A, C, E, H, L, N, R and S type relays, 519 and C5 type keys



207 SCREW-DRIVER 90° OFFSET  
(MAG., C.B. AND P.B.X.)

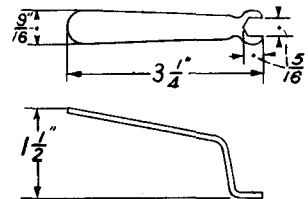
For use with the 206 tool



(208) Replaced by tool 349

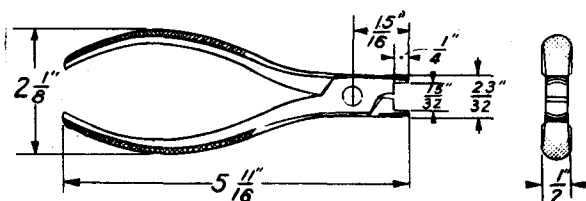
209 WRENCH - 5/16" HEX. OPEN  
END OFFSET  
(C.B. AND P.B.X.)

For use on A6, A7, A10, A11, A15, A18, B3, B18, E1, E2, C5, 237, 243, 499, 519 and 523 type keys



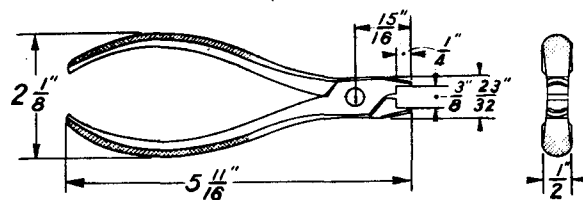
210 PLIERS  
(C.B.)

For removing the buttons of E1 type keys



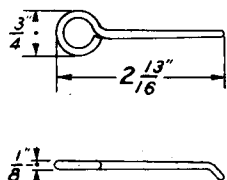
211 PLIERS  
(C.B.)

For removing the buttons of 499 and 523 type keys



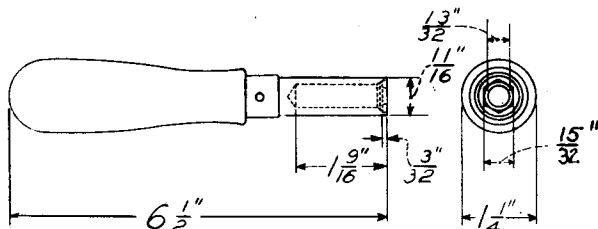
212 ADJUSTING KEY  
(C.B.)

For turning the capstan head contact and pole-piece screws of 209 type relays



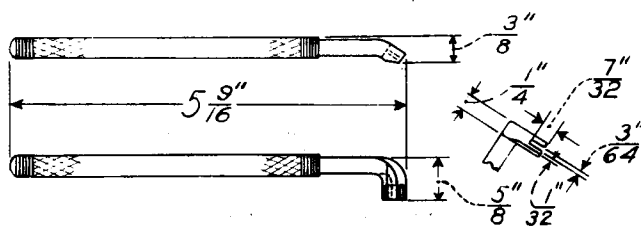
213 WRENCH - 15/32" HEX. SOCKET  
(MAG., C.B. AND P.B.X.)

For use on 103 and 137 type plugs



215 SPRING ADJUSTER  
(C.B.)

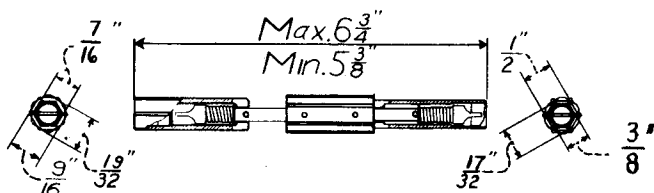
For use on 188 and 189 type switches



(216) Replaced by tool 216-B

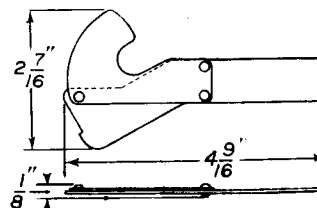
216-B WRENCH - 3/8" AND 7/16"  
(Replaces Tools 34 and 216) HEX. SOCKET DOUBLE-END AND DOUBLE-END SCREW-DRIVER  
(MAG., C.B. AND P.B.X.)

For placing fuses in cable terminals and for connecting wires to fuses and binding posts



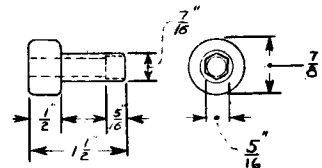
218-B "A" CAM SHORT CIRCUITING TOOL  
(C.B.)

For use on 155 type interrupters



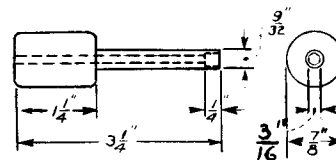
219 WRENCH - 5/16" HEX. SOCKET  
(Part of Tool 221) (C.B.)

For use on 25 and similar type relays



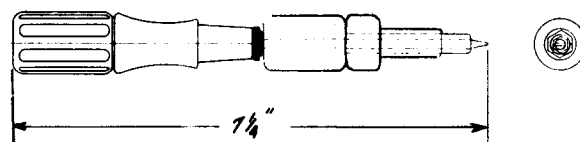
220 WRENCH - 3/16" HEX. SOCKET  
(Part of Tool 221) (C.B.)

For use on 118 Type Relays



221 COMBINATION TOOL -  
WRENCH - 5/16" HEX. SOCKET  
WRENCH - 3/16" HEX. SOCKET  
SCREW-DRIVER - 3 1/2"  
(C.B. AND P.B.X.)

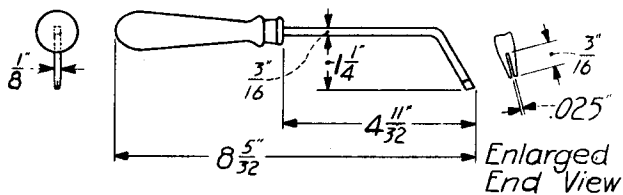
For use on 25 and 118 Type Relays



|       |                          |
|-------|--------------------------|
| (231) | Replaced by tool 349     |
| (233) | Replaced by tool R-63773 |
| (234) | Replaced by tool 303     |

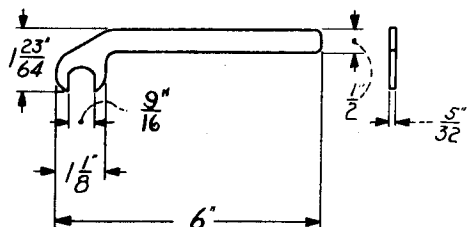
235 SPRING ADJUSTER  
(C.B.)

For use on spring driven sequence switches,  
155 type interrupters



236 WRENCH - 9/16" HEX.  
OPEN-END OFFSET  
(C.B.)

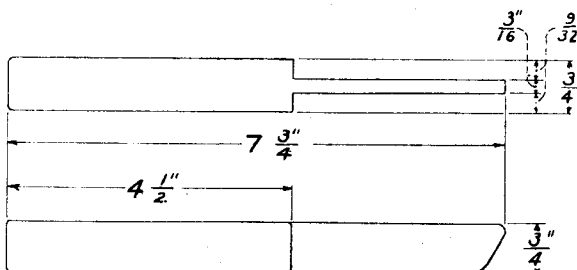
For use on spring driven sequence switches,  
155 type interrupters



239

CAM CLEANER  
(C.B.)

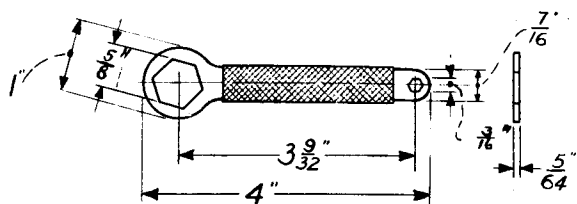
For cleaning the cams on spring driven  
sequence switches, and 155 type interrupters



243

WRENCH - 3/16" AND 5/8" HEX.  
CLOSED DOUBLE-END FLAT  
(C.B.)

For use on 200 and 206 type selectors.



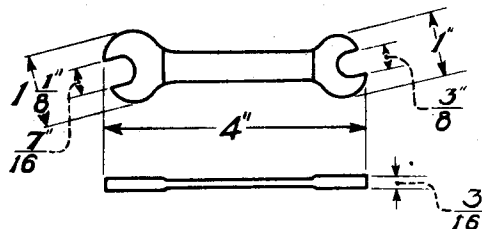
(244)

Replaced by tools 305 and 306

245

WRENCH 3/8" AND 7/16" HEX.  
OPEN DOUBLE-END FLAT  
(C.B.)

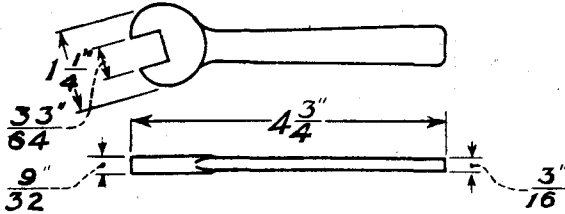
For use on 163 type interrupter



246

WRENCH 1/2" SQ.  
OPEN-END FLAT  
(C.B.)

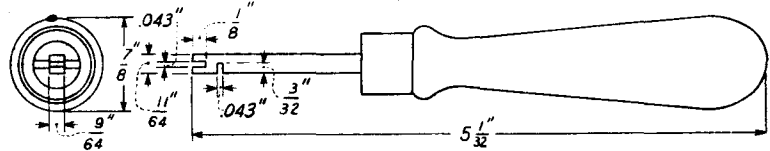
For use on 246-A plugs.



264

RETRACTILE SPRING LUG ADJUSTER  
(C.B.)

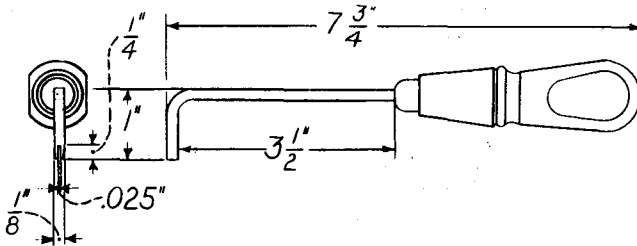
For adjusting the retractile spring lug  
on 208 and 214 type relays.



256

SPRING ADJUSTER  
(C.B.)

For use on spring driven sequence switches,  
155 type interrupters and 200 and 206 type  
selectors.



265

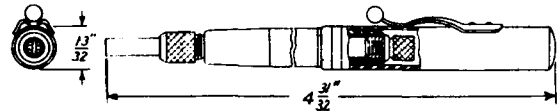
Replaced by tool 265-B

265-B

(Replaces  
Tool 265)

CONTACT BURNISHER  
(MAG. C.B. AND P.B.X.)

For use on message registers for traffic  
purposes and similar apparatus and all  
types of relays except telegraph relays.

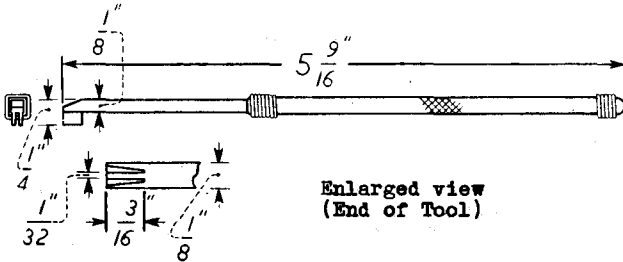


259

(Replaces  
Tool 142)

SPRING ADJUSTER  
(MAG. C.B. AND P.B.X.)

For use on 121, 122, 125, 149, 150, 162, 178,  
179, 212, 218-A, A, B, C, E, G, H and R type  
relays, A-9 and A-14 type keys and 169 type  
interrupters.



266

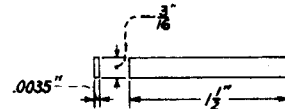
Replaced by tool 266-B

266-B

(Part of  
Tool 265)  
(Replaces  
Tool 266)

CONTACT BURNISHER BLADE  
(MAG. C.B. AND P.B.X.)

For use with tool 265-B



267

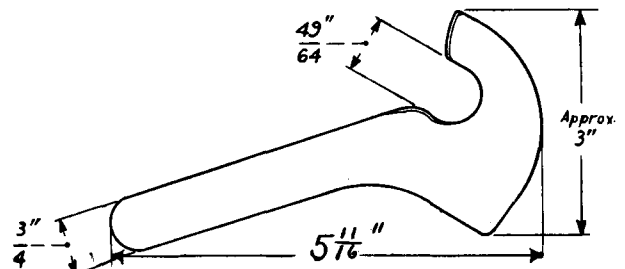
Replaced by tool 267-B

267-B

(Replaces  
Tool 267)

CONTACT SPRING INSULATOR  
(C.B.)

For use on 155 type interrupters.



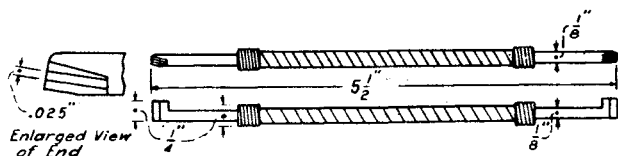
(263)

Replaced by 11-A tuning fork.

268

**SPRING ADJUSTER**  
(P.B.X.)

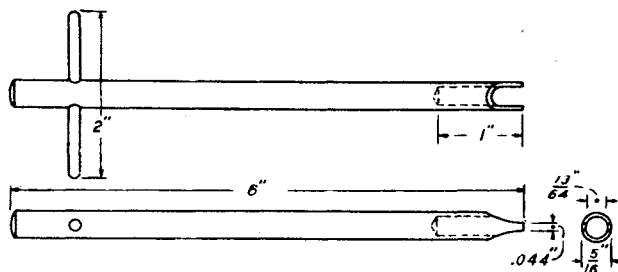
For use on Stromberg Carlson relays



269

**SCREW-DRIVER**  
(P.B.X.)

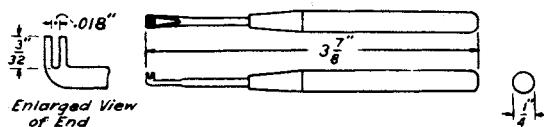
For use in mounting Stromberg Carlson relays



270

**SPRING ADJUSTER**  
(P.B.X.)

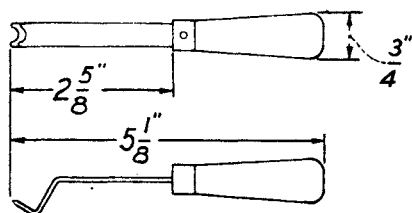
For use in Stromberg Carlson relays and 171 type interrupters



274

**SIGNAL PLUG EXTRACTOR**  
(C.B. AND P.B.X.)

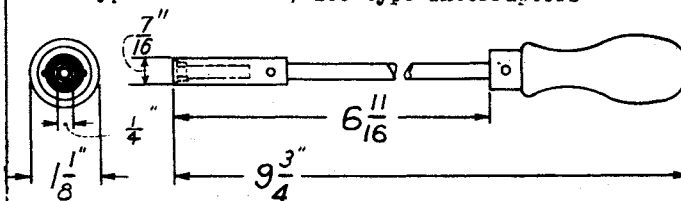
For extracting signal plugs from multiple jacks



276  
(Replaces  
Tool 92)

**WRENCH - 1/4" HEX. SOCKET**  
(MAG., C.B. AND P.B.X.)

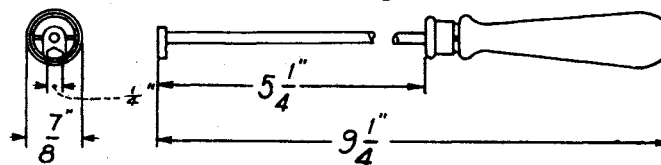
For adjusting mounting nuts of 18 and 19 type resistances, 100 type interrupters



277

**WRENCH - 1/4" HEX. OPEN -  
END OFFSET**  
(MAG., C.B. AND P.B.X.)

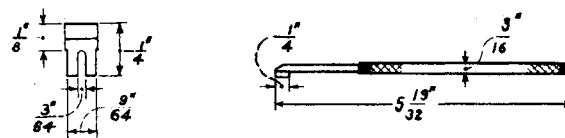
For mounting nuts on 18 and 19 type resistances which have been wired in position



300

**SPRING ADJUSTER**  
(C.B. AND P.B.X.)

For use on 121, 122, 125, 149, 162, 179, B, E, F, G, H, R and T type relays, 169-A interrupters



Enlarged view of end

(301)

Replaced by tool R-63773

(302)

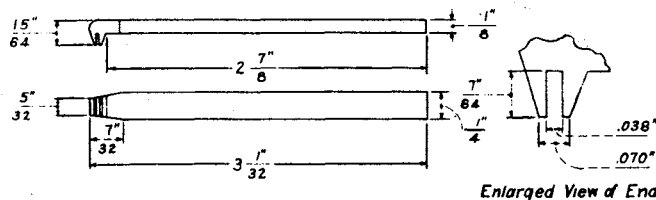
Replaced by tool 365

303

**SPRING ADJUSTER**  
(C.B. AND P.B.X.)

(Replaces  
Tool 234)

For use on 200 type selectors, 177 and 203 type relays, 491 type keys, 206 type selectors and precision type interrupters.



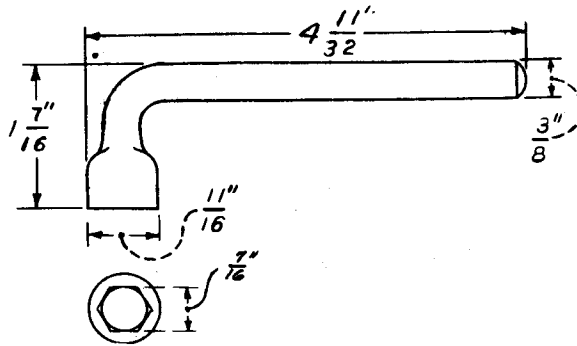
Enlarged View of End

(304)

Replaced by tool 344

305 WRENCH - 7/16" HEX. SOCKET -  
(Replaces one end of Tool 244) OFFSET  
(C.B.)

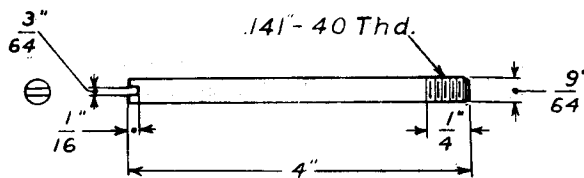
For use on D-34393 key, 200 and 206 type selectors



(306) Replaced by tool 417-A

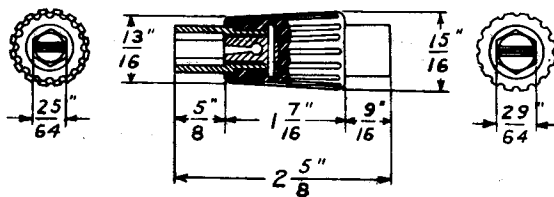
(307) Replaced by tool 359

309 THREADED STUD  
(C.B.)  
For use on test frame motors



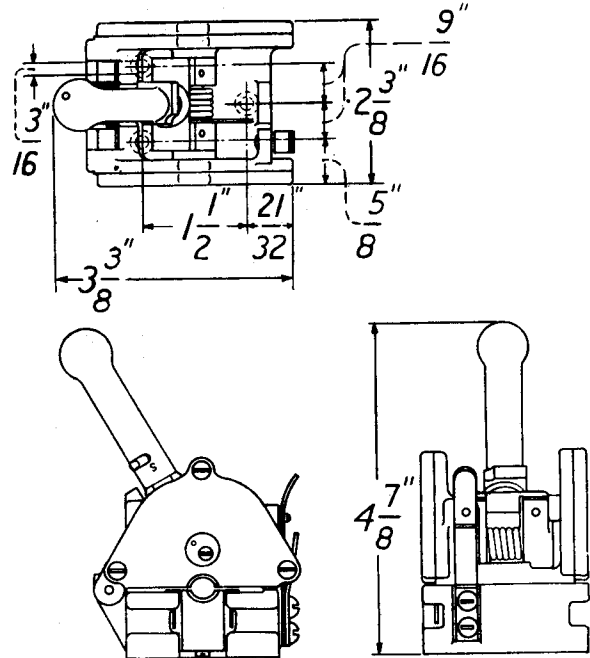
311 WRENCH - 3/8" AND 7/16" HEX. SOCKET  
(C.B. AND P.B.X.)

For use on 2 type dials and subset ringers.



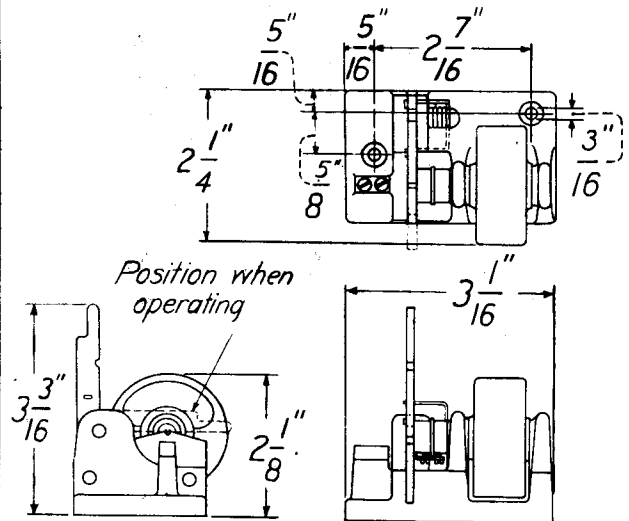
312 CORD CUTTER  
(MAG., C.B. AND P.B.X.)

For use in repairing switchboard cords



313 CONDUCTOR BRAID CUTTER  
(MAG., C.B. AND P.B.X.)

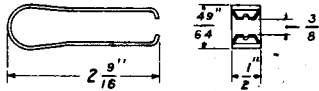
For use in repairing switchboard cords



314

"U" SHAPED TWEEZERS  
(MAG., C.B. AND P.B.X.)

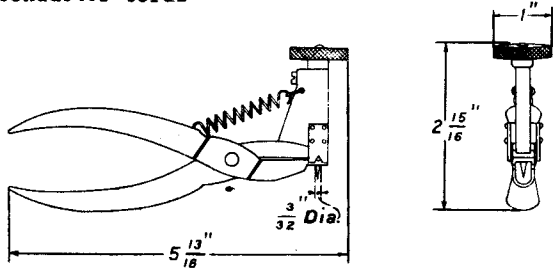
For removing the end pieces of braiding and reinforcements from cords and conductors after being severed by the 312 and 313 tools



315

CONDUCTOR PIERCER  
(MAG., C.B. AND P.B.X.)

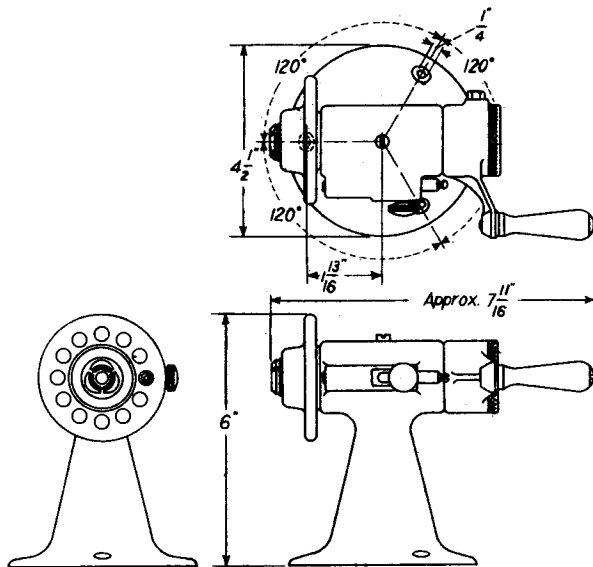
For piercing the conductors of tinsel conductor cords



316

PLUG REMOVER AND ATTACHER  
(MAG., C.B. AND P.B.X.)

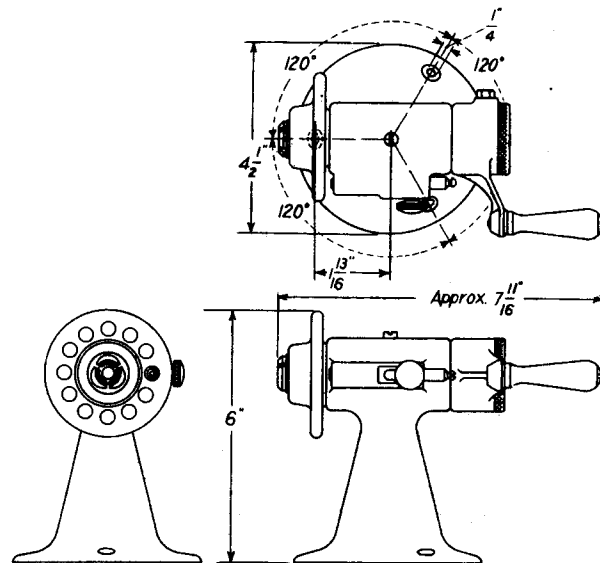
For removing 109 and 110 type plugs



317

PLUG REMOVER AND ATTACHER  
(MAG.)

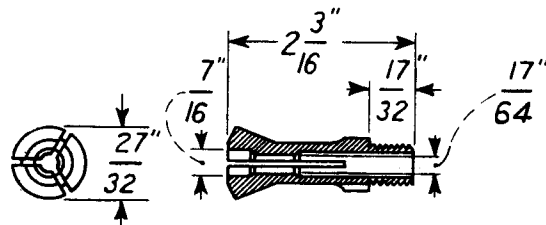
For removing 47 type plugs



318

PLUG REMOVER AND ATTACHER  
(MAG.)

For use in removing 47 type plugs. This tool in conjunction with the 200 tool is equivalent to tool 317. This tool should not be ordered unless the office is already equipped with tool 200

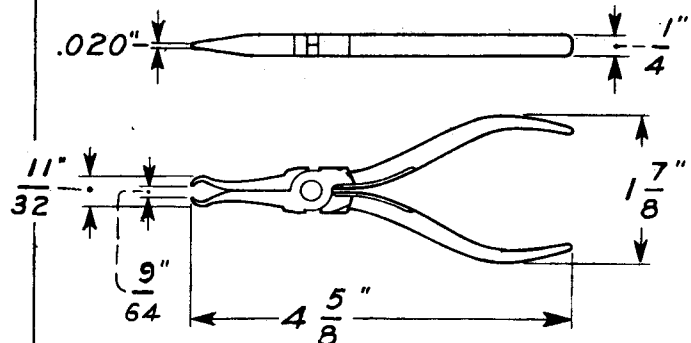


(319)

Replaced by tool 319-B

319-B LAMP CAP AND NUMBERPLATE  
EXTRACTOR  
(Replaces Tools 87, 125, (C.B. AND P.B.X.)  
146 and 319)

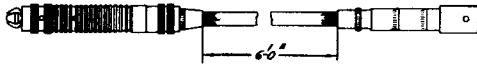
For use in removing 2 and 4 type lamps caps,  
59, 60 and similar type number plates



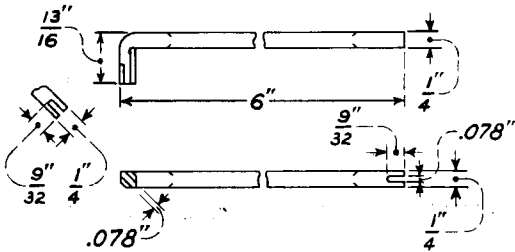
(321) Replaced by tool 353

323 FLEXIBLE SHAFT  
(MAG. AND C.B.)

Used with tool 133 for cleaning protector springs

325-B ADJUSTER  
(C.B.)

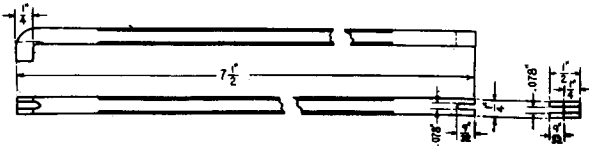
For use on the release ratchet dog of 204 type selectors



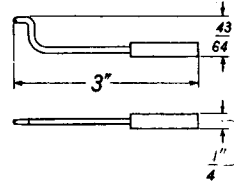
(326) Replaced by tool 326-B

326-B ADJUSTER  
(Replaces Tool 326) (C.B.)

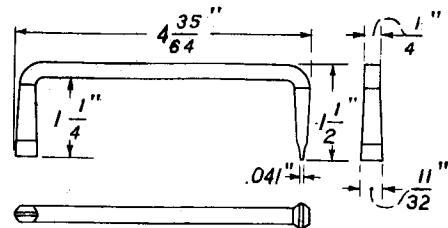
For use on L, N and S type relays

340 ADJUSTING KEY  
(C.B. AND P.B.X.)

For use in turning the relay contact and pole-piece screws on 206 and 218 type relays

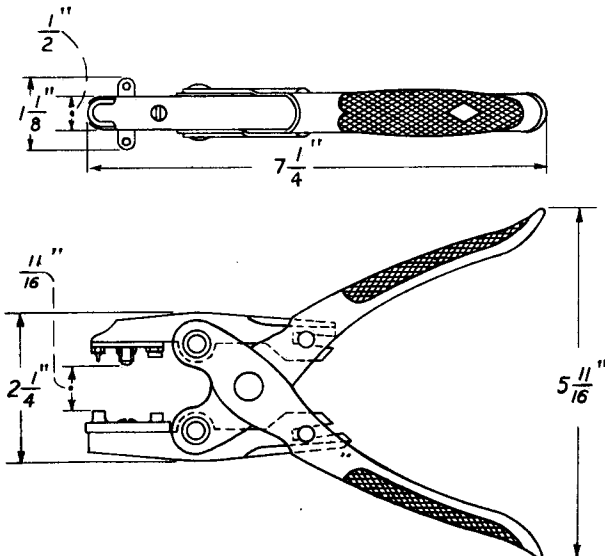
344 SCREW-DRIVER OFFSET  
(Replaces Tool 304) (C.B.)

For use on the magnet clamp screw of 200 and 208 type selectors.



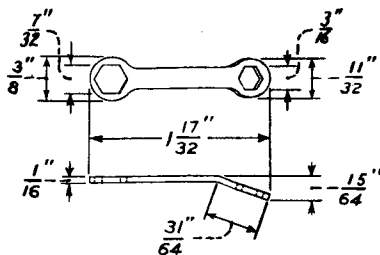
**345 JACK SLEEVE REMOVER AND REPLACER**  
(C.B. AND P.B.X.)

For use on 92 type jacks.



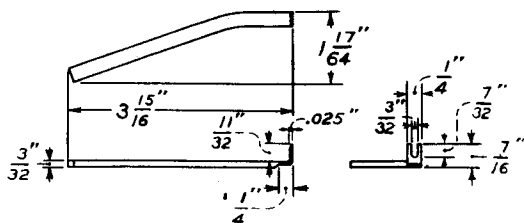
**349 WRENCH - 3/16" AND 7/32" HEX. CLOSED DOUBLE-END OFFSET**  
(Replaces Tools 208 and 231) (MAG., C.B. AND P.B.X.)

For use on 114, 124, 126, 174, 198, A, E, H, and R type relays.



**350 SPRING ADJUSTER**  
(C.B. AND P.B.X.)

For adjusting the front contact spring on 89, 101, 105, 108, 118 and 172 type relays



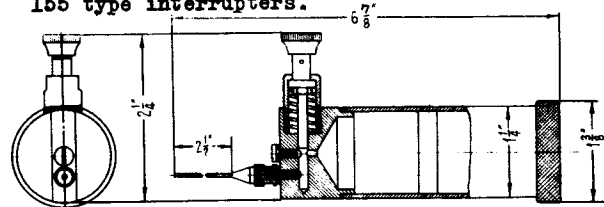
(353)

Replaced by tool 353-B

**353-B**  
(Replaces Tools 353 and 321)

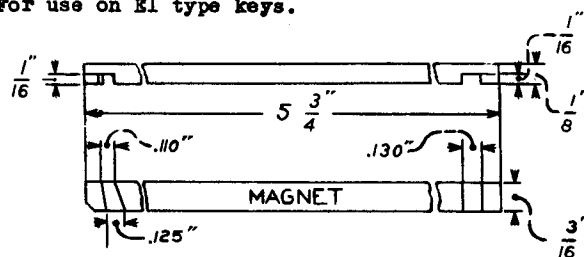
**LUBRICATOR**  
(C.B.)

For use on spring driven sequence switches, 155 type interrupters.



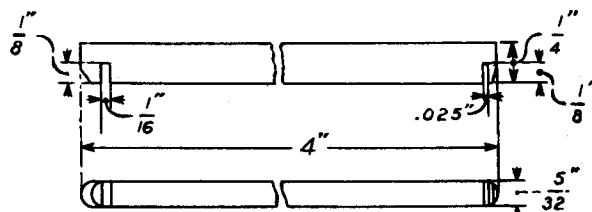
**355 BACK STOP ADJUSTER**  
(C.B.)

For use on E1 type keys.



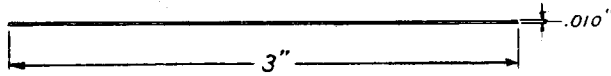
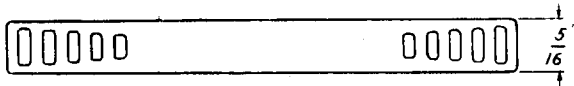
**356 RETRACTILE SPRING AND MAGNET LEAD GUARD ADJUSTER**  
(C.B.)

For use on E1 type keys.



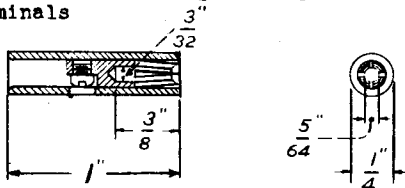
359 MAGNET CORE AND ARMATURE  
(Replaces CLEANING TOOL  
Tool 307) (C.B.)

For use on 200 and 206 type selectors



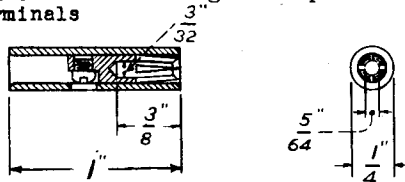
360-A SOCKET TYPE CORD TIP - RED  
(MAG., C.B. AND P.B.X.)

For use in conjunction with 361-B, 364, 365  
and other connecting tools provided with pin  
terminals



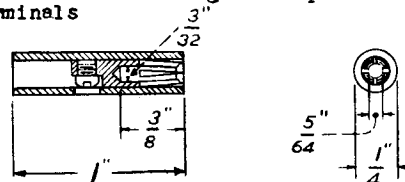
360-B SOCKET TYPE CORD TIP - BLACK  
(MAG., C.B. AND P.B.X.)

For use in conjunction with 361-B, 364, 365  
and other connecting tools provided with pin  
terminals



360-C SOCKET TYPE CORD TIP - WHITE  
(MAG., C.B. AND P.B.X.)

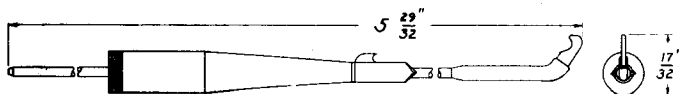
For use in conjunction with 361-B, 364, 365  
and other connecting tools provided with pin  
terminals



(361) Replaced by tool 361-B

361-B RELAY WINDING CONNECTOR  
(Replaces (MAG., C.B. AND P.B.X.)  
Tool 361)

For use in conjunction with 360 tool for  
test purposes on E, R and similar type  
relays

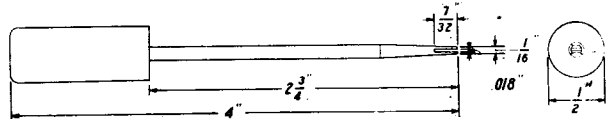


(362-A)

Replaced by tool 431-A

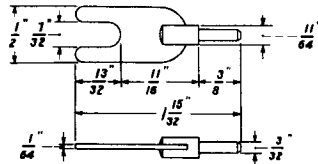
363 SPRING ADJUSTER  
(Replaces (MAG., C.B. AND P.B.X.)  
Tool 302)

For use on B and G type relays, message  
registers, 200 type selectors and 10 type  
buzzers, 206 type selectors



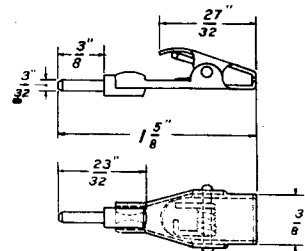
364 SPADE TERMINAL  
(MAG., C.B. AND P.B.X.)

For use in conjunction with 360 tool for  
test purposes



365 SUSPENDER CLIP  
(MAG., C.B. AND P.B.X.)

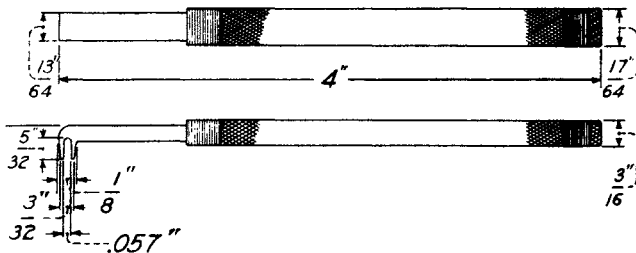
For use in conjunction with 360 tool for  
test purposes



371  
(Replaces  
Tool R-69710)

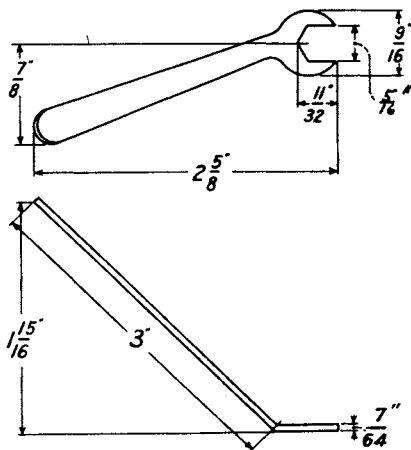
SPRING ADJUSTER  
(MAG. AND C.B.)

For use on 177 and 203 type relays, D-34393  
key, secondary clocks, 491 type keys



372 WRENCH - 5/16" HEX. OPEN-  
END OFFSET  
(C.B.)

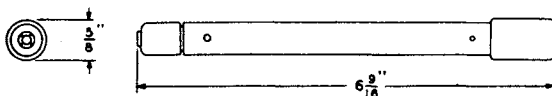
For adjusting the air-gap on 177 and 203 type  
relays



(373) Replaced by tool 373-B

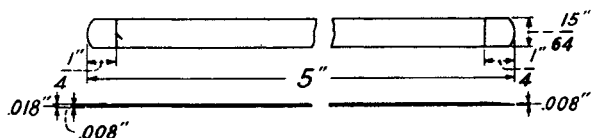
373-B CONTACT BURNISHER HOLDER  
(Replaces (MAG., C.B. AND P.B.X.)  
Tool 373)

For use on universal type keys and jacks.



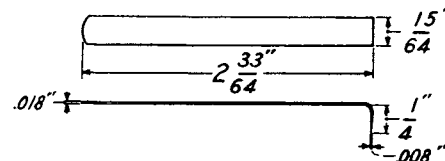
374-A CONTACT BURNISHER BLADE  
(MAG., C.B. AND P.B.X.)

For use with 373-B tool



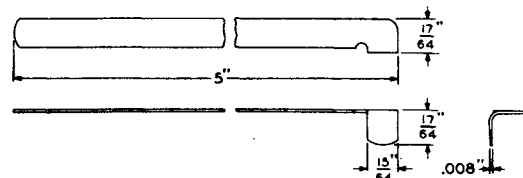
374-B CONTACT BURNISHER BLADE  
(MAG., C.B. AND P.B.X.)

For use with 373-B tool



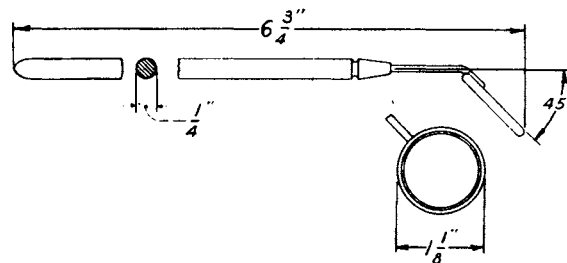
374-C CONTACT BURNISHER BLADE  
(MAG., C.B. AND P.B.X.)

For use with 373-B tool



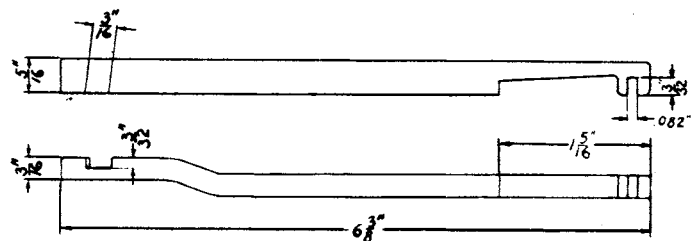
376-A DENTAL MIRROR  
(Replaces (MAG., C.B. AND P.B.X.)  
Tool R-1623)

For general use on relays and 200 and 206 type  
selectors.



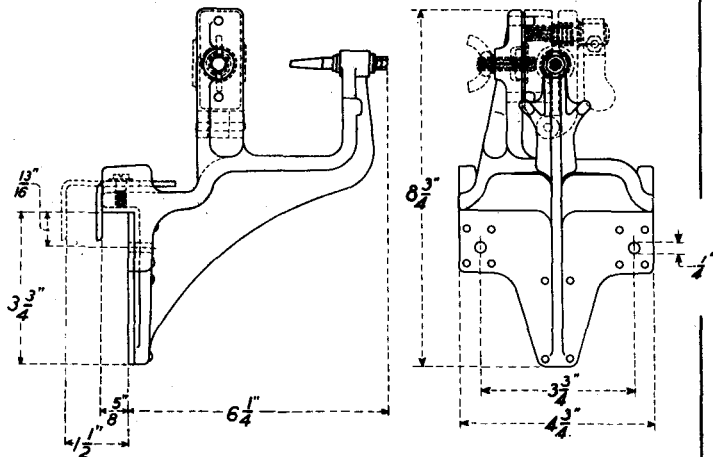
379-A DRIVING SPRING LUG  
(Replaces AND INTERRUPTER BACK  
Tool R-63773) STOP ADJUSTER  
(C.B.)

For adjusting the driving spring lug of 200 and 206  
type selectors



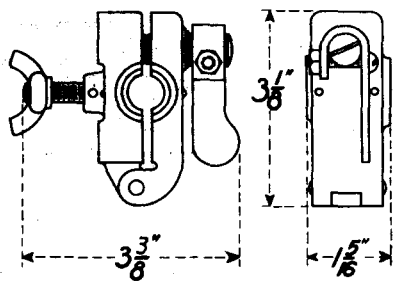
384-A PORTABLE PLUG POLISHER  
(MAG., C.B. AND P.B.X.)

For use in conjunction with the 385-A, B and C tools for holding plugs while polishing



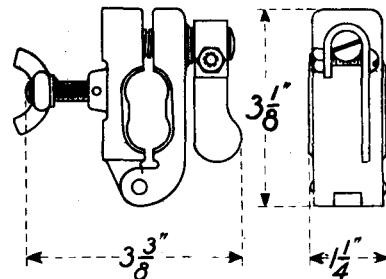
385-A PLUG CHUCK  
(MAG. AND C.B.)

For use in conjunction with the 384-A tool for holding 47 type plugs



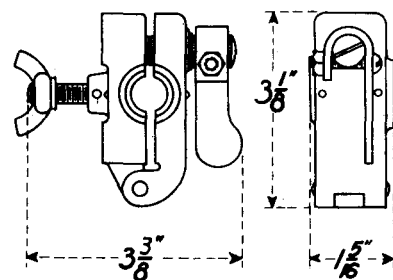
385-B PLUG CHUCK  
(MAG., C.B. AND P.B.X.)

For use in conjunction with the 384-A tool for holding 137 and 152 type plugs.



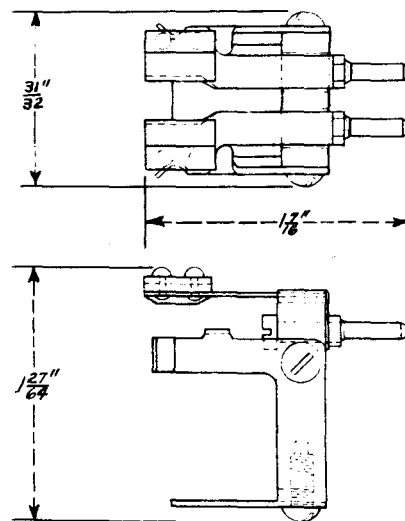
385-C PLUG CHUCK  
(MAG., C.B. AND P.B.X.)

For use in conjunction with the 384-A tool for holding 109 and 110 type plugs



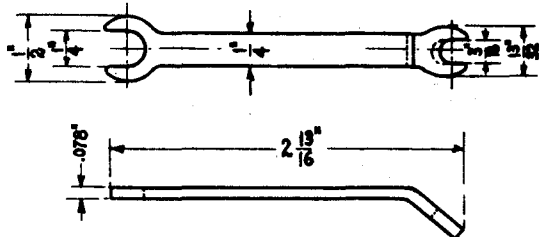
387-A RELAY WINDING CONNECTOR  
(MAG. AND C.B.)

For use on 111 type relays



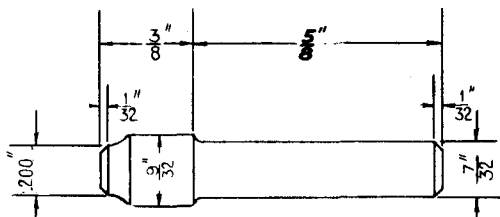
388-A WRENCH - 3/16" AND 1/4"  
HEX. OPEN DOUBLE END OFFSET  
(C.B. AND P.B.X.)

For use on 196 type relays



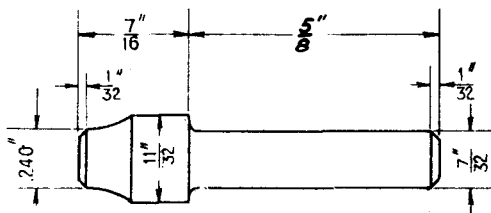
390-A PIN  
(C.B. AND P.B.X.)

For use in conjunction with tool 323 for  
cleaning flared portion of 92 type jack  
sleeves



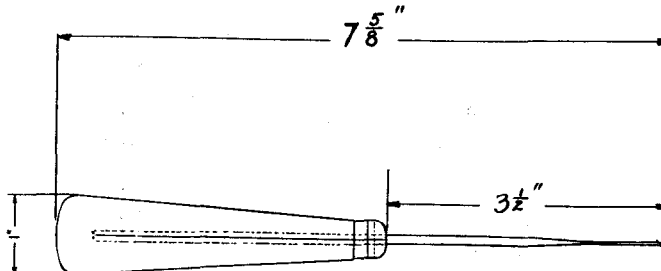
390-B PIN  
(C.B. AND P.B.X.)

For use in conjunction with tool 323 for  
cleaning flared portion of 49 type jack  
sleeves



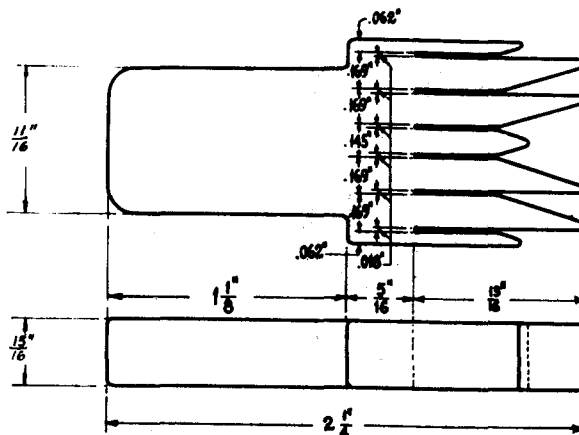
394-A CONTACT BURNISHER  
(C.B. AND P.B.X.)

For use on 141 and similar type jacks.



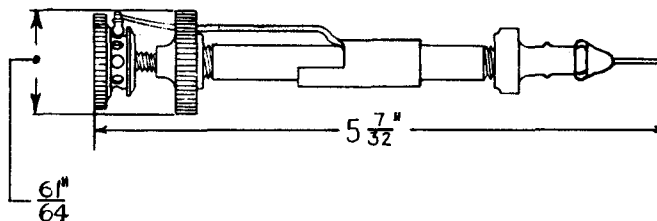
395-A FEEDER BRUSH SPACER  
(C.B.)

For use on 200 and 206 type selectors



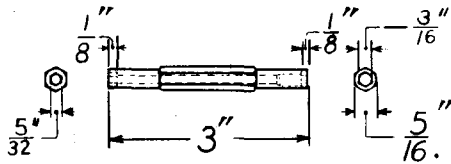
401-A OIL GUN  
(C.B. and P.B.X.)

For lubricating No. 2 type dials



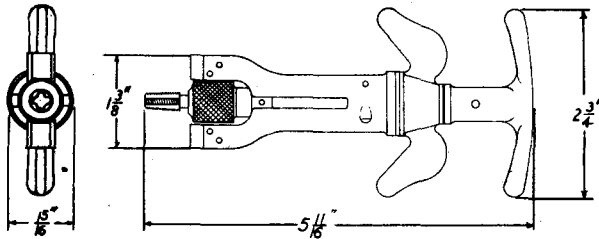
403-A WRENCH 5/32" AND 3/16" HEX.  
(Part of SOCKET DOUBLE END  
Tool 72) (Mag. C.B. and P.B.X.)

For replacement purposes



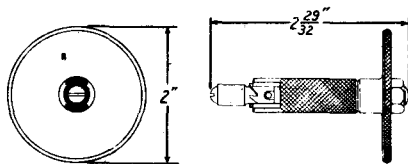
407-A JACK SLEEVE REMOVER  
(Replaces (C.B. and P.B.X.)  
Tool 123)

For use in removing worn sleeves of 49 and 141 type jacks



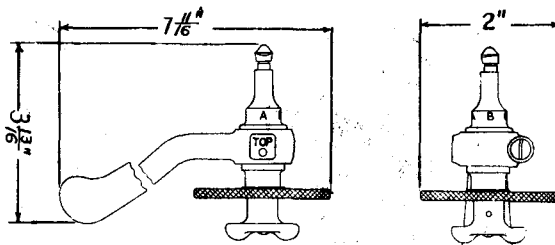
408-A JACK MOUNTING COUNTER BORE  
(C.B. and P.B.X.)

For counter boring jack mountings to accommodate the shoulder of a replacement sleeve for worn 141 type jacks



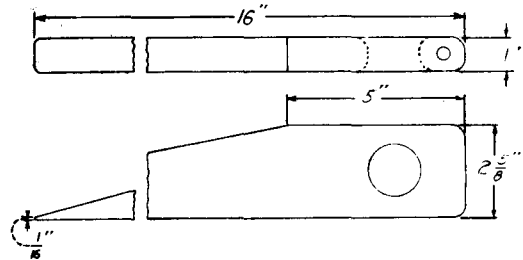
409-A JACK SLEEVE CRIMPER  
(C.B. and P.B.X.)

For use in crimping replacement sleeves of 49 and 141 type jacks



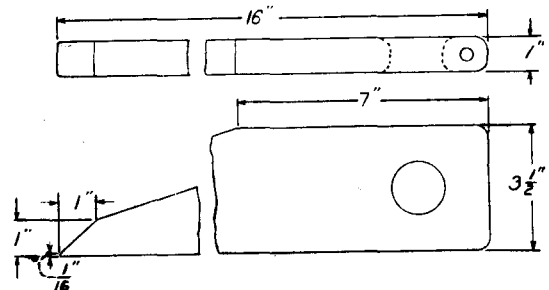
410-A HARDWOOD WEDGE  
(Replaces (C.B. AND P.B.X.)  
Tool 93)

For lifting multiple cable.



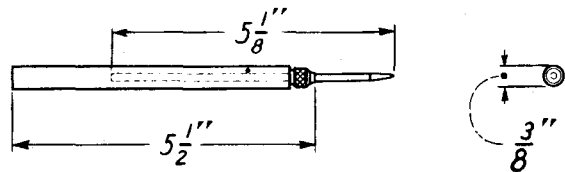
410-B HARDWOOD WEDGE  
(Replaces (C.B. AND P.B.X.)  
Tool 93)

For lifting multiple cable.



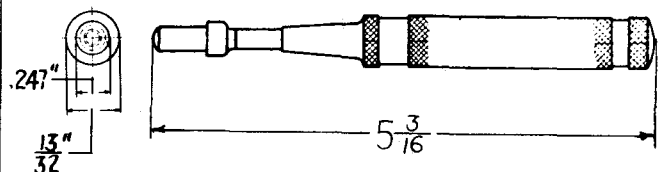
411-A TEST PICK  
(MAG. C.B. AND P.B.X.)

For use in circuit testing



414-B AUTOMATIC HAMMER  
(C.B. AND P.B.X.)

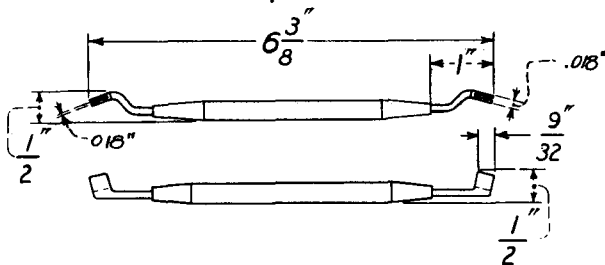
For use in driving new jack sleeves into the jack mounting when replacing worn jack sleeves of 49 and 141 type jacks



415-A

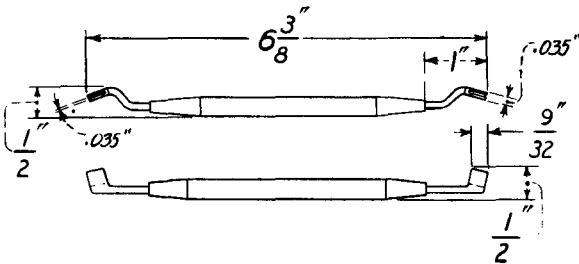
**SPRING ADJUSTER  
(C.B.)**

For use on horizontal (221) type relays

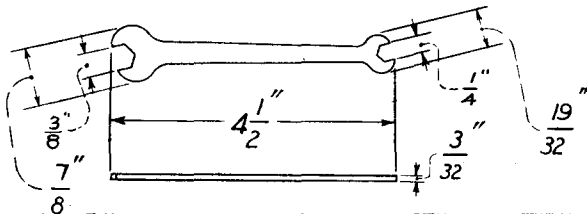

 416-A  
(Replaces  
A.E. Inc.  
Tool 20777)

**SPRING ADJUSTER  
(C.B.)**

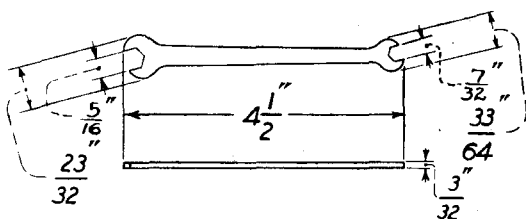
For use on horizontal (221) type relays


 417-A WRENCH 1/4" AND 3/8"  
(Replaces HEX. OPEN DOUBLE-END FLAT  
Tool 306) (C.B.)

For use on 200 and 206 type selectors


 418-A WRENCH 5/16" AND 7/32" HEX.  
OPEN DOUBLE-END FLAT  
(MAG., C.B. AND P.B.X.)

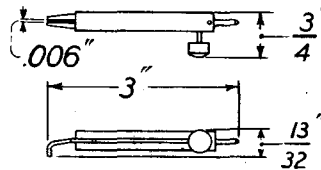
For use on No. 35-C test sets



419-A

**TEST CONNECTOR  
(MAG., C.B. AND P.B.X.)**

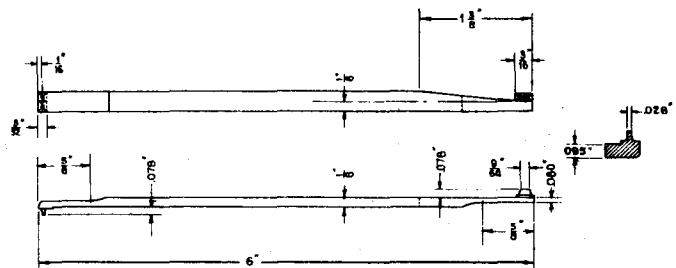
For use in making test connections to relay springs



422-A

**SCREW-DRIVER  
DOUBLE-END OFFSET  
(MAG., C.B. AND P.B.X.)**

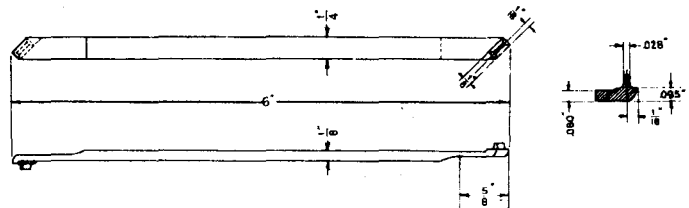
For use on 122, 125 and similar type relays



423-A

**SCREW-DRIVER  
DOUBLE-END OFFSET  
(MAG., C.B. AND P.B.X.)**

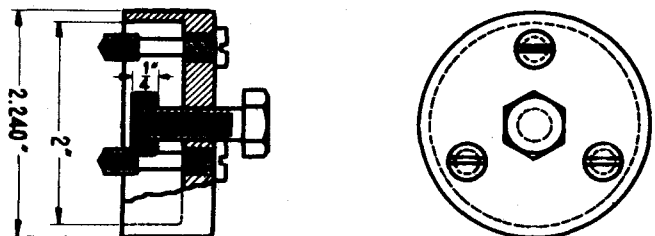
For use on 122, 125 and similar type relays



424-A

**FLYWHEEL PULLER  
(C.B.)**

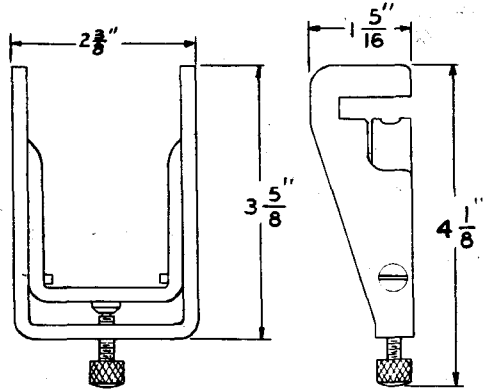
For use in removing the flywheels of precision type interrupters



425-A

SELECTOR HOLDER  
(C.B.)

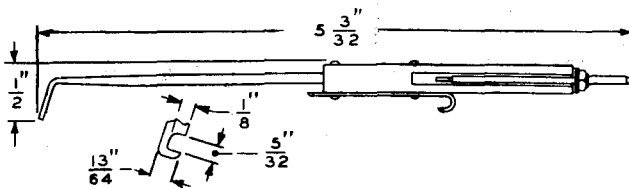
For use in holding non-rigidly mounted  
200 and 206 type selectors



428-A

RELAY WINDING CONNECTOR  
(MAG., C.B. AND P.B.X.)

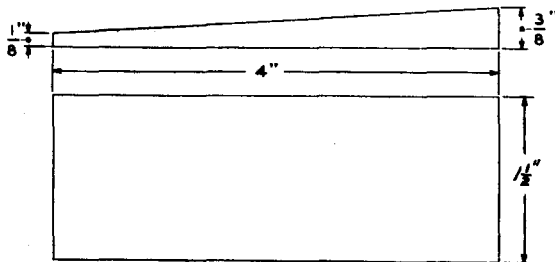
For use in conjunction with 360 tool on 89,  
105 and similar type relays



429-A

KEY SUPPORT  
(Replaces (MAG., C.B. AND P.B.X.)  
Tool R9190)

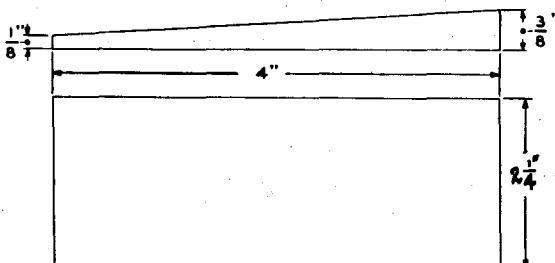
For use in supporting universal type keys  
while adjusting



429-B

KEY SUPPORT  
(Replaces (MAG., C.B. AND P.B.X.)  
Tool R9190)

For use in supporting universal type keys  
while adjusting

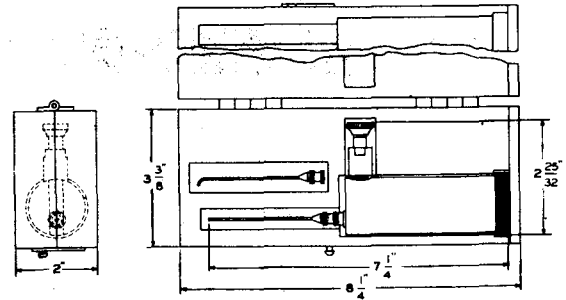


431-A

(Replaces  
Tool 362-A)

OIL GUN  
(C.B.)

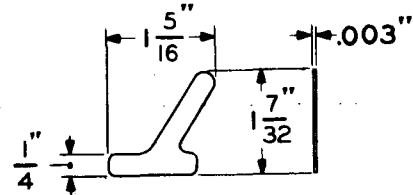
For use on 171 type interrupters



436-A

HEELPIECE ADJUSTING TOOL  
(C.B. AND P.B.X.)

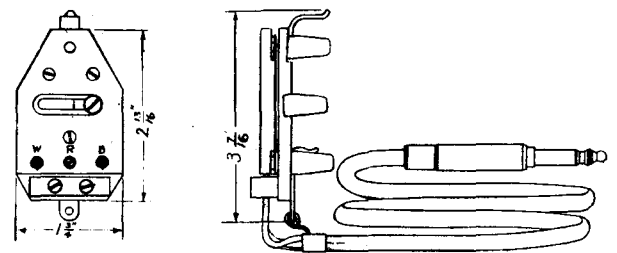
For use on 221, 222, 223 and 224 type relays



443-A

CORD SHELF CONNECTING TOOL  
(MAG., C.B. AND P.B.X.)

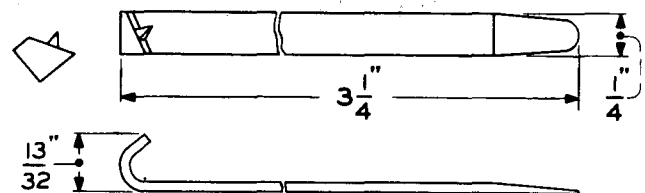
For use in making connections to cord circuits



445-A

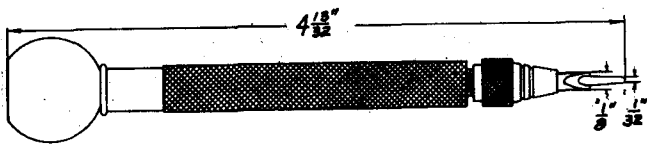
DIAL CARD HOLDER TOOL  
(C.B. AND P.B.X.)

For use in removing dial card holder frames



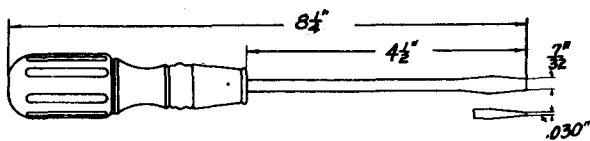
KS-2348 CORD REPAIR SCREW-DRIVER  
(Replaces (MAG. C.B. AND P.B.X.)  
Tool 109)

For use on switchboard cords, 89, 92, 188, 272, 406, 424, 464, 498, 527 and B-2 type keys



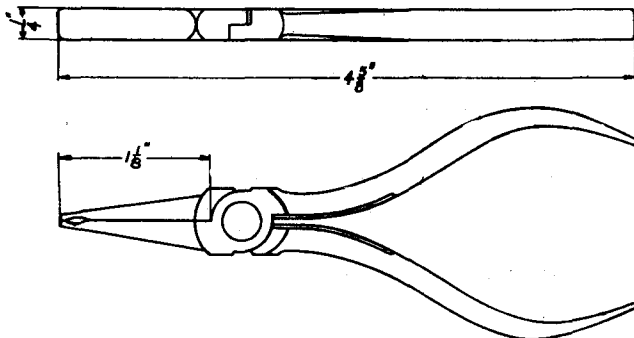
KS-2631 SCREW-DRIVER - 4-1/2"  
(MAG. C.B. AND P.B.X.)

For general use on relays and keys



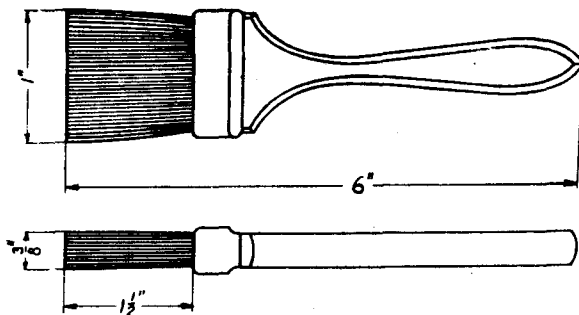
KS-2827 HEAT COIL PLIERS  
(Replaces (MAG. C.B. AND P.B.X.)  
Tool 58)

For extracting heat coils



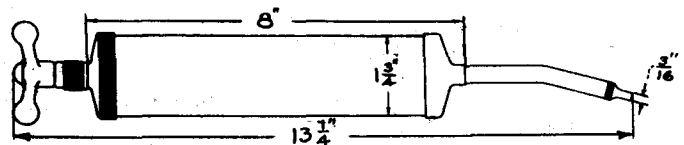
KS-2993 CLEANING BRUSH  
(MAG. C.B. AND P.B.X.)

For use on keys and associated parts



KS-5000 OIL AND GREASE GUN  
(C.B.)

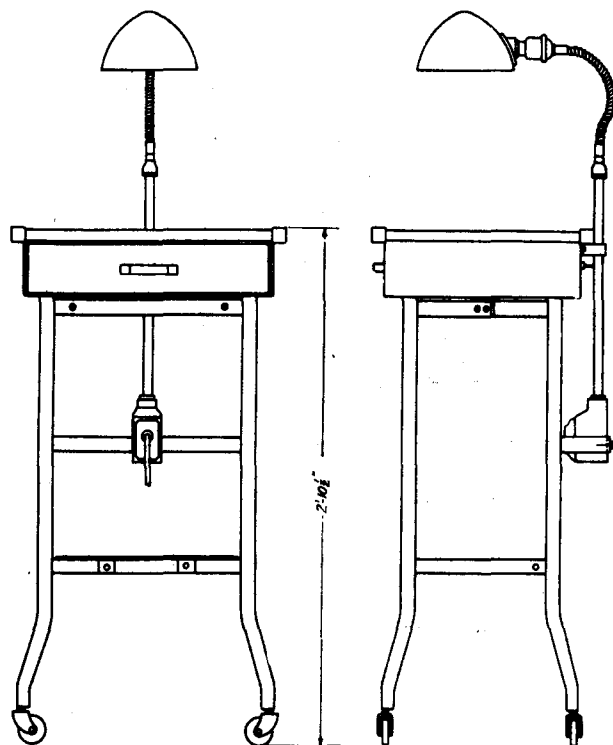
For use on test frame motors



KS-5263 CORD REPAIR TABLE  
(MAG. C.B. AND P.B.X.)

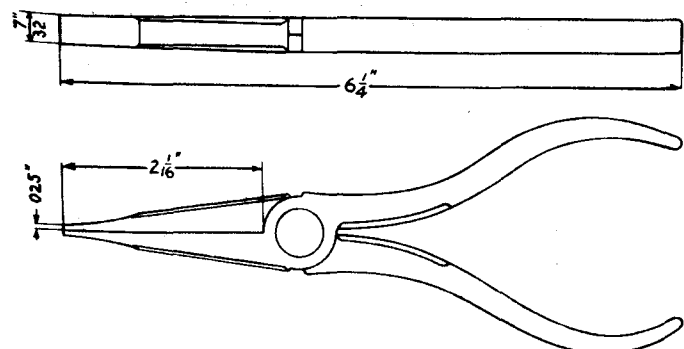
For use in repairing cords

Supplied with 12' cord and an extension cord. When ordering, specify length of extension cord desired.



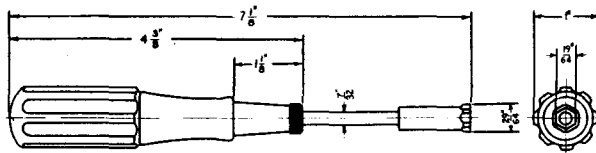
KS-6015 DUCK-BILL PLIERS  
(MAG. C.B. AND P.B.X.)

For general use



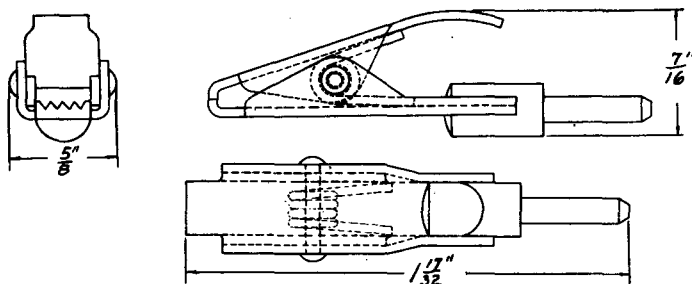
KS-6263 WRENCH - 9/32" HEX. SOCKET  
(C.B.)

For use on spring driven sequence switches



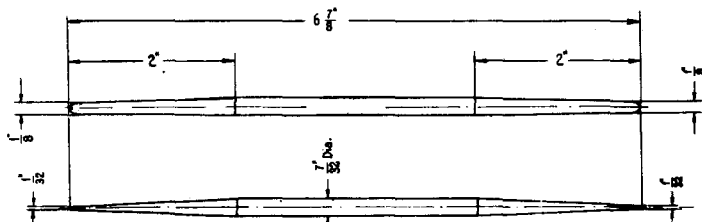
KS-6278 SUSPENDER CLIP  
(MAG., C.B. AND P.B.X.)

For use in connection with the 360-A, B, and C tools.



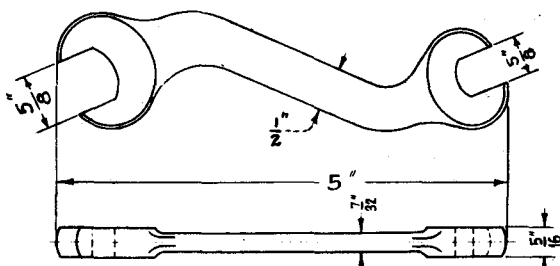
KS-6320 ORANGE STICK  
(MAG., C.B. AND P.B.X.)

For general use



KS-6367 WRENCH - 7/16" AND 5/8" HEX.  
OPEN DOUBLE-END FLAT  
(C.B. AND P.B.X.)

For use in mounting voltmeter relays



KS-6527 JACK TOOL KIT  
(MAG., C.B. AND P.B.X.)

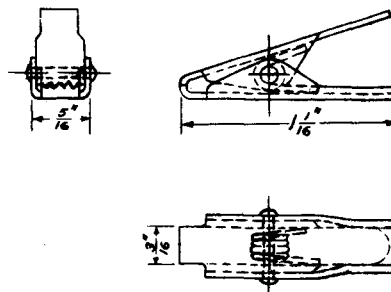
For use in removing pencil points and other foreign materials from switchboard jacks

This tool kit consists of the following devices:-

- 1 - Automatic Hammer
- 1 - Auriscope
- 1 - Special Elbow Light Holder
- 2 - Shelf Devices
- 4 - Spring Depressors
- 2 - Probing Tools
- 1 - Six-foot Two Conductor Cord equipped with Special Socket Type Connector on One End and Pin Terminals on the Other
- 1 - Extra Surgical Lamp for the Auriscope
- 1 - Extra Surgical Lamp for the Elbow Light Holder
- 1 - Wooden Carrying Case

KS-6780 SUSPENDER CLIP  
(MAG., C.B. AND P.B.X.)

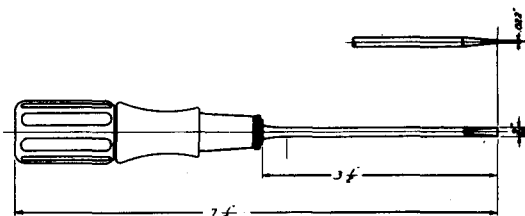
For use on test cords



KS-6854 SCREW-DRIVER - 3-1/2"  
(Part of Tool 221)  
(MAG., C.B. AND P.B.X.)

(Replaces Tool 35)

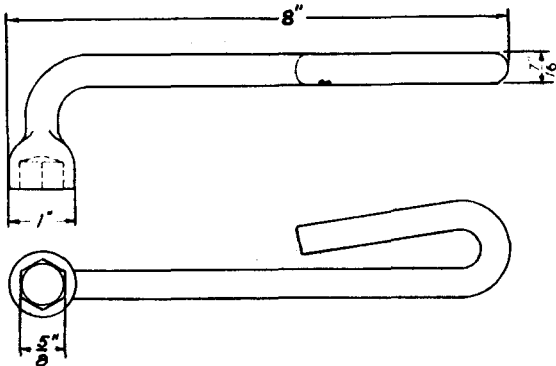
For general use



R-1317

WRENCH 5/8" HEX.  
OFFSET SOCKET  
(C.B.)

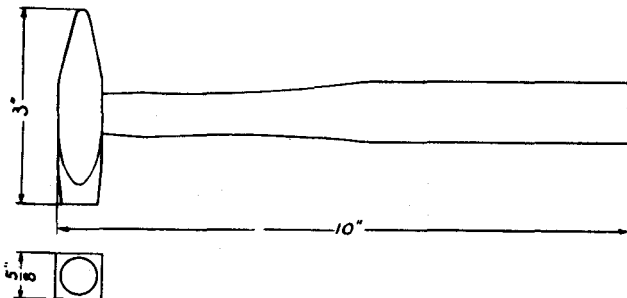
For use on precision type interrupters.



R-1572

HAMMER - 4 OZ.  
(MAG., C.B. AND P.B.X.)

For general use



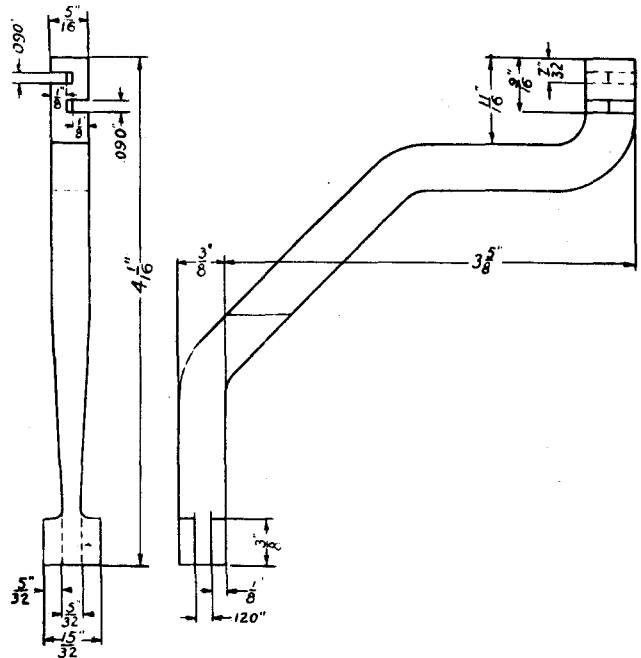
(R-1623)

Replaced by tool 376-A

R-1760

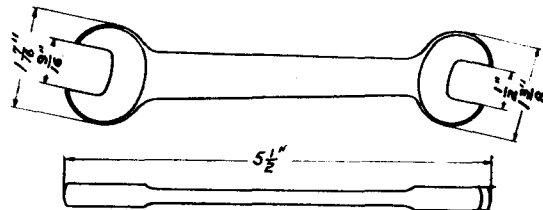
FRAME AND ARMATURE ADJUSTER  
(C.B.)

For use on 200 and 206 type selectors



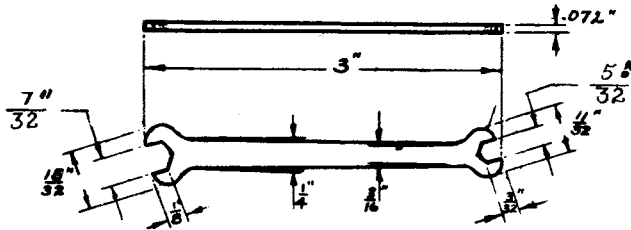
R1770 WRENCH - 1/2" AND 9/16"  
(Replaces HEX. OPEN DOUBLE-END  
one end of FLAT  
Tool R7940) (MAG., C.B. AND P.B.X.)

For use on 35-C test sets



R2262 WRENCH 5/32" AND 7/32"  
HEX. OPEN DOUBLE-END FLAT  
(C.B.)

For use on 85-F relays



(R7940) Replaced by tool R1770 (9/16" end only)

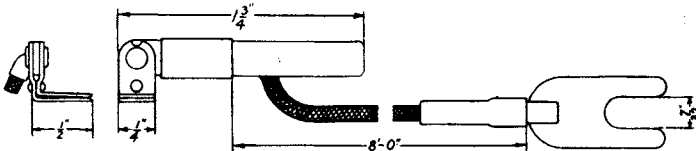
(R9190) Replaced by tools 429-A and 429-B

(R-63773) Replaced by tool 379-A

(R-69710) Replaced by tool 371

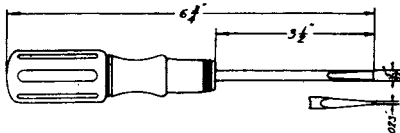
R-80236 SPRING CONTACT CLIP AND CORD  
(C.B.)

For use on horizontal type relays



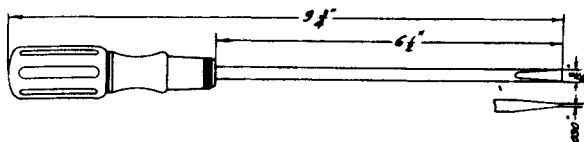
BELL SYSTEM CABINET SCREW-  
DRIVER - 3 1/2"  
PER A.T. & T. CO. DRAWING 46-X-40  
(MAG., C.B. AND P.B.X.)

For general use



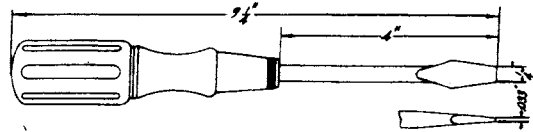
BELL SYSTEM CABINET SCREW-  
DRIVER - 6 1/2"  
PER A.T. & T. CO. DRAWING 46-X-40  
(MAG., C.B. AND P.B.X.)

For general use



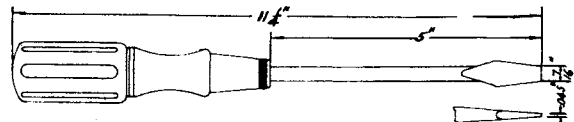
BELL SYSTEM REGULAR SCREW-  
DRIVER - 4"  
PER A.T. & T. CO. DRAWING 46-X-34  
(MAG., C.B. AND P.B.X.)

For general use



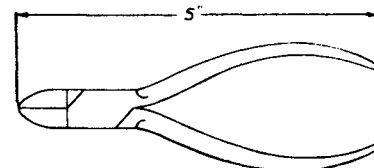
BELL SYSTEM REGULAR SCREW-  
DRIVER - 5"  
PER A.T. & T. CO. DRAWING 46-X-34  
(MAG., C.B. AND P.B.X.)

For general use



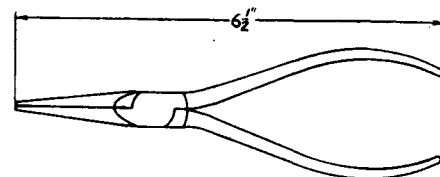
BELL SYSTEM DIAGONAL PLIERS  
5"  
PER SPECIFICATION NO.6136-N  
(MAG. C.B. AND P.B.X.)

For general use



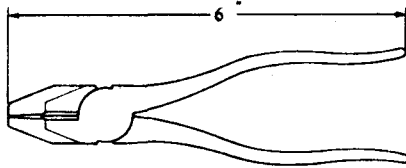
BELL SYSTEM P-LONG NOSE  
PLIERS - 6 1/2"  
PER A.T. & T. CO. DRAWING 46-X-56  
(MAG., C.B. AND P.B.X.)

For general use



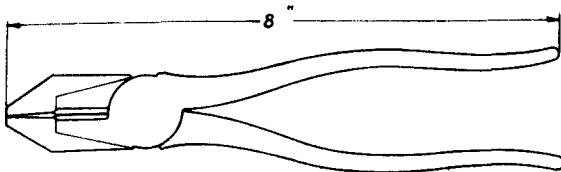
BELL SYSTEM P-SIDE CUTTING  
PLIERS - 6"  
PER SPECIFICATION 6335-N  
(MAG., C.B. AND P.B.X.)

For general use



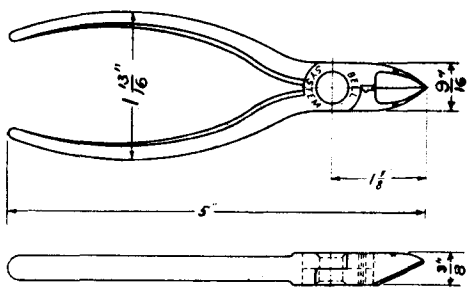
BELL SYSTEM P-SIDE CUTTING  
PLIERS - 8"  
PER SPECIFICATION 6335-N  
(MAG., C.B. AND P.B.X.)

For general use



BELL SYSTEM "V" NOTCH DIAGONAL  
PLIERS - 5"  
PER SPECIFICATION 6433

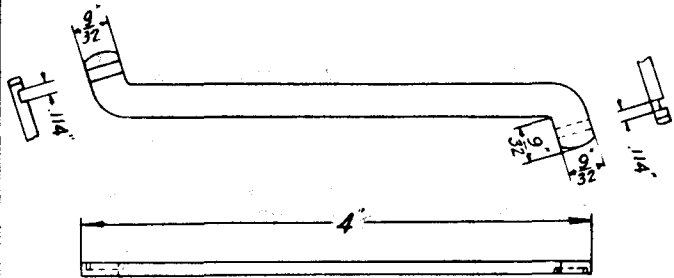
For use in skinning distributing frame wire



\*14768

ARMATURE ADJUSTER  
(C.B.)

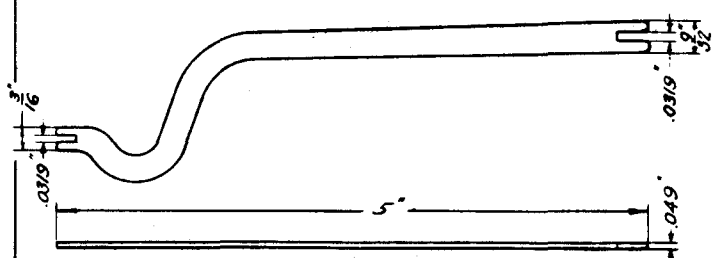
For use on horizontal (221) type relays



\*14769

ARMATURE BACK  
STOP ADJUSTER  
(C.B.)

For use on horizontal (221) type relays



(20777)

Replaced by tool 416-A

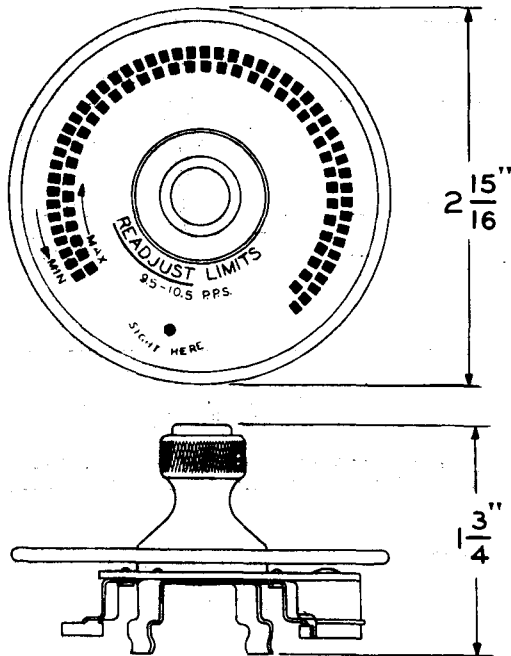
\*These code numbers are A.E. Co. code numbers.

## NUMERICAL LIST OF GAUGES

#2-A

TARGET  
(MAG., C.B. AND P.B.X.)

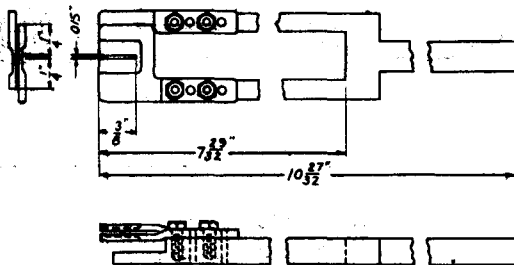
For use in conjunction with the 11-A tuning fork in checking the speed of dials.



\*\*10-A

TUNING FORK  
(C.B.)

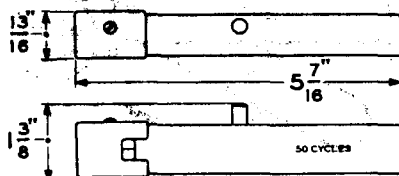
For use on precision type interrupters.



\*\*\*11-A

TUNING FORK  
(Replaces (MAG., C.B. AND P.B.X.)  
Tool 263)

For use in conjunction with the 2-A target in checking the speed of dials and spring driven sequence switches.



\*Order as the 2-A Target

\*\*Order as the 10-A Tuning Fork

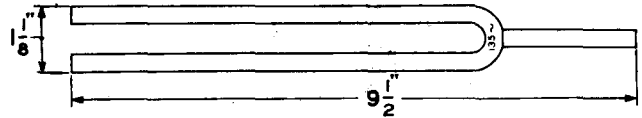
\*\*\*Order as the 11-A Tuning Fork

#Order as the 12-A Tuning Fork

#12-A

TUNING FORK  
(MAG., C.B. AND P.B.X.)

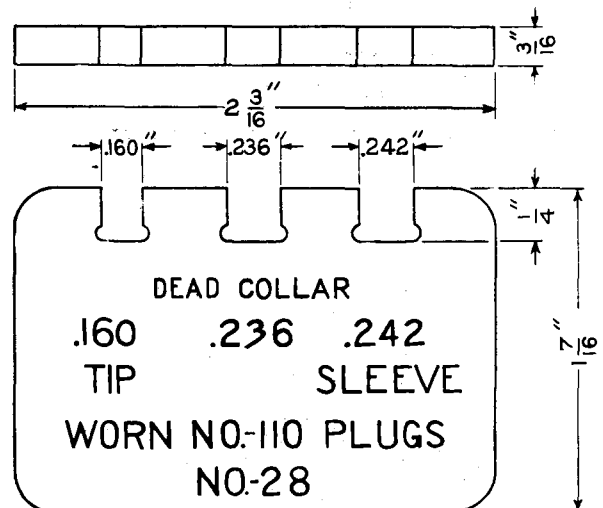
For use in checking the frequency of 156 type interrupters



28

LIMITING GAUGE  
(P.B.X.)

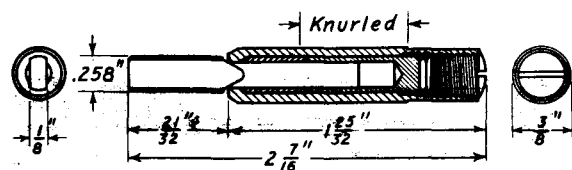
for measuring the limit of wear on 110 type plugs



33

LIMITING GAUGE  
(C.B. AND P.B.X.)

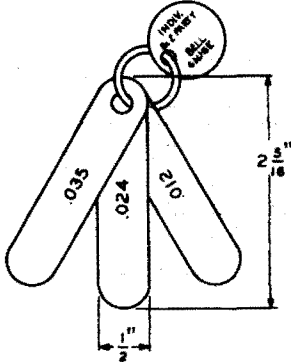
For measuring the limit of wear of 49 and 141 type jack sleeves



(37) Replaced by gauge 37-B

37-B THICKNESS GAUGE NEST  
(Replaces .012", .024" AND .035"  
Gauge 37) (C.B. AND P.B.X.)

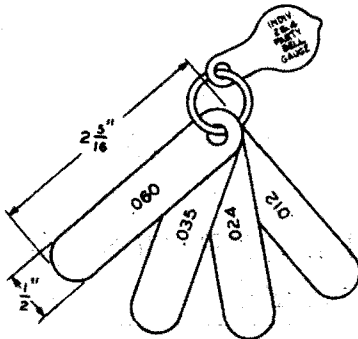
For gauging the armature gap on ringers



38 Replaced by gauge 38-B

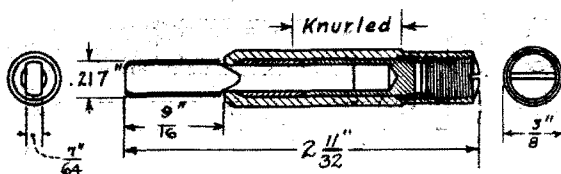
38-B THICKNESS GAUGE NEST  
.012", .024", .035" AND .060"  
(C.B. AND P.B.X.)

For gauging the armature gap on ringers



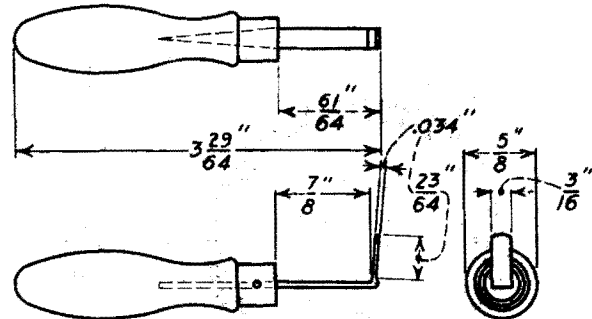
39 LIMITING GAUGE  
(C.B. AND P.B.X.)

For measuring the limit of wear of 92 type jack sleeves



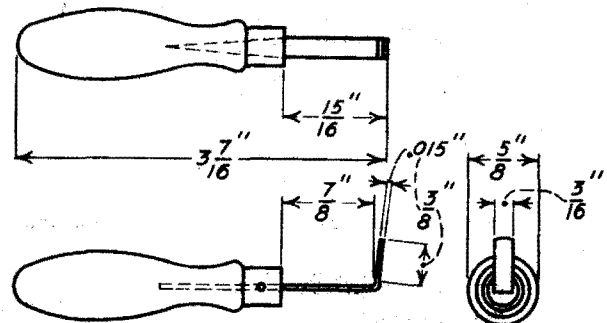
41 .034" THICKNESS GAUGE  
(C.B. AND P.B.X.)

For gauging the gap between the back contact and armature feather spring of 114 and 198 type relays



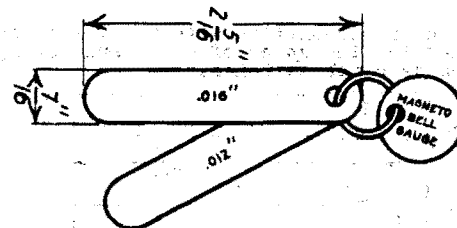
42 .015" THICKNESS GAUGE  
(C.B. AND P.B.X.)

For gauging the gap between the back contact and armature feather spring of 114 type relays



43 .012" AND .016"  
THICKNESS GAUGE  
(C.B. AND P.B.X.)

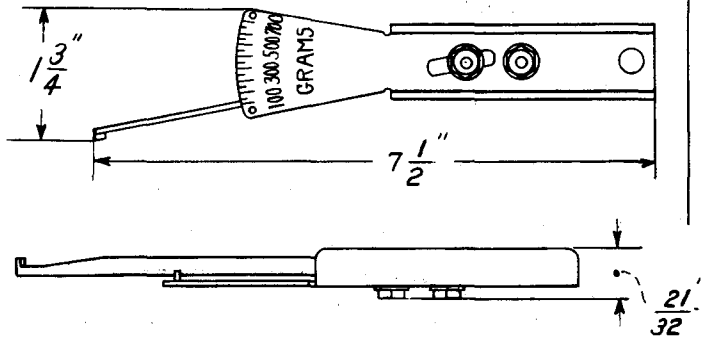
For gauging the armature gap on ringers



(62) Replaced by gauge 62-B

62-B 0-700 GRAM GAUGE  
(Replaces (MAG., C.B. AND P.B.X.)  
Gauge 62)

For measuring in grams the tension on the springs of A-4, B-5, B-6, B-7, B-8, B-9, B-15, 237, 242, 251, 370, 471, 479, 494, 495, 506 and 510 type keys, 4 type foot switches, E, H, L, N, R and S type relays



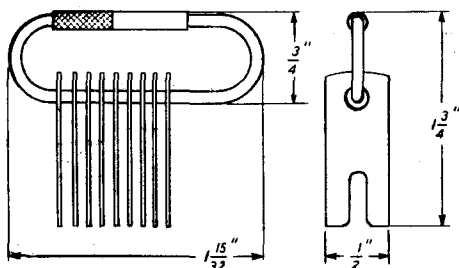
(64-A) Replaced by gauge 99-A

(66-A, 66-B and 66-C) Replaced by gauge 66-D

66-D THICKNESS GAUGE NEST  
(Replaces (MAG., C.B. AND P.B.X.)  
Gauge 66-C)

|      |       |
|------|-------|
| 67-A | .015" |
| 67-B | .020" |
| 67-C | .025" |
| 67-D | .030" |
| 67-E | .035" |
| 67-F | .040" |
| 67-G | .003" |
| 67-H | .004" |
| 67-J | .008" |
| 67-K | .005" |
| 67-L | .006" |
| 67-M | .010" |
| 67-N | .025" |
| 67-P | .045" |

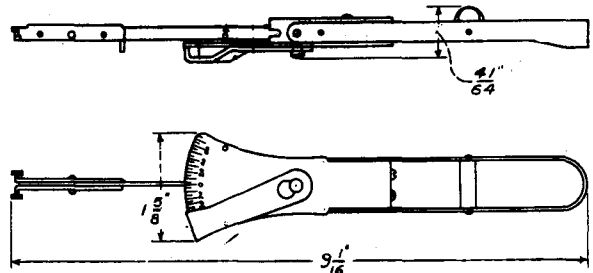
For measuring gaps on A, C, E, H, R and 105 type relays and 1 type buzzers.



(68) Replaced by gauge 68-B

68-B 70-0-70 Gram Gauge  
(Replaces (Mag. C.B. and P.B.X.)  
Gauge 68)

For general use



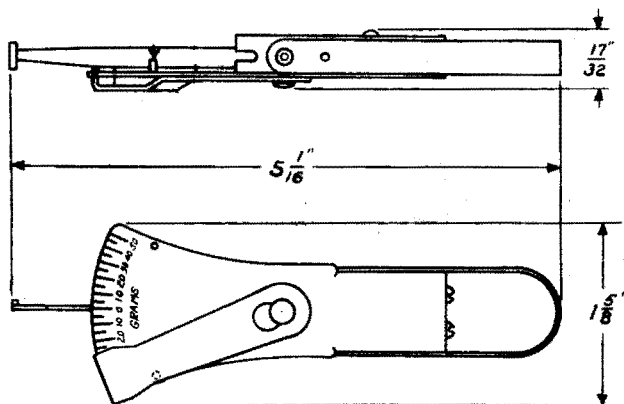
(70) Replaced by gauge 70-D

(70-B) Replaced by gauge 70-E

(70-C) Replaced by gauge 70-F

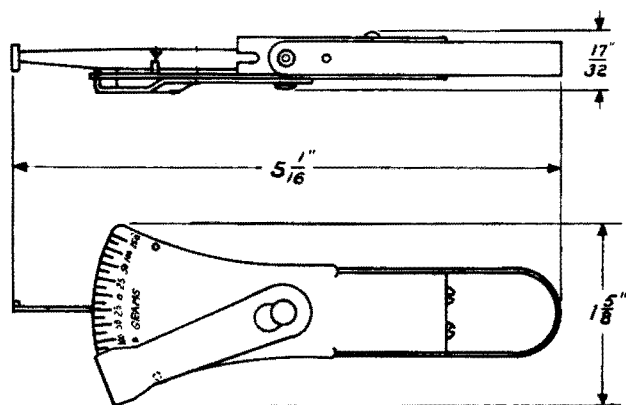
70-D 50-0-50 GRAM GAUGE  
(Replaces (C.B. and P.B.X.)  
Gauge 70)

For general use



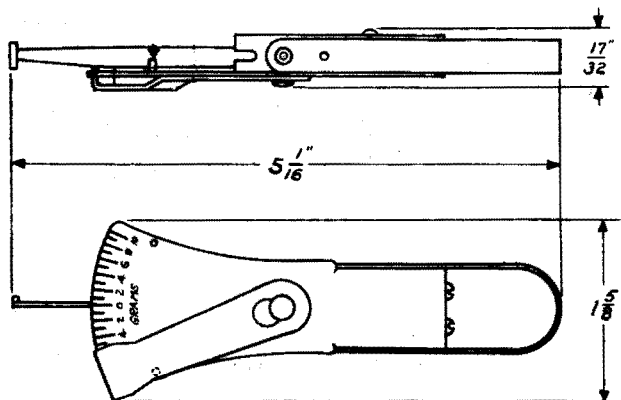
70-E 150-0-150 GRAM GAUGE  
(Replaces (C.B. and P.B.X.)  
Gauge 70-B)

For general use



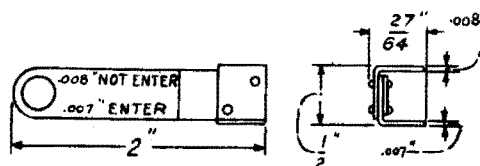
70-F 10-0-10 GRAM GAUGE  
(Replaces (C.B. and P.B.X.)  
Gauge 70-C)

For general use



73-B .007" AND .008" THICKNESS GAUGE  
(C.B.)

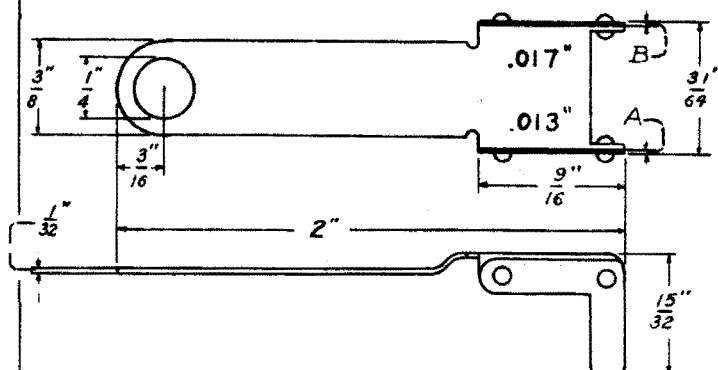
For gauging the air-gap between the armature and pole-piece of 208 and 214 type relays



(73-C) Replaced by gauge 73-D

73-D .013" AND .017" THICKNESS GAUGE  
(Replaces (C.B.)  
Gauge 73-C)

For gauging the air-gap between the armature and pole-piece of 208 type relays

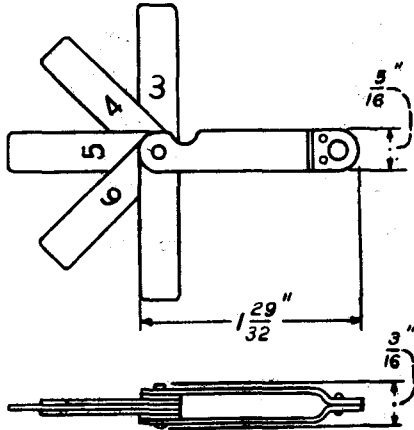


(74-A, 74-B and 74-C) Replaced by gauge 74-D

74-D THICKNESS GAUGE NEST  
(Replaces (MAG., C.B. AND P.B.X.)  
Gauge 74-C)

|      |       |
|------|-------|
| 75-B | .003" |
| 75-C | .004" |
| 75-D | .005" |
| 75-E | .006" |
| 75-F | .002" |
| 75-G | .012" |
| 75-H | .018" |
| 75-J | .007" |
| 75-K | .009" |
| 75-L | .011" |
| 75-M | .010" |
| 75-N | .008" |

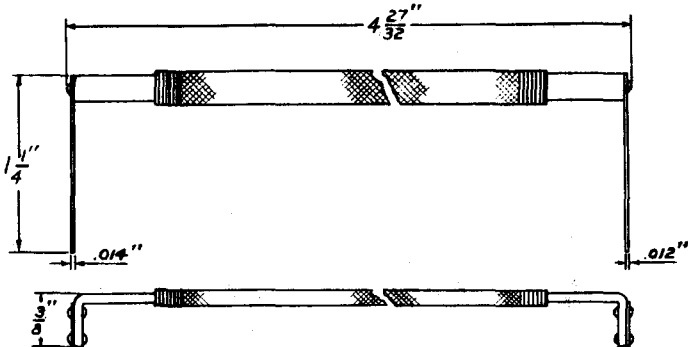
For use on 200 type selectors, relays, keys, etc.



(77) Replaced by gauge 77-B

77-B .012" AND .014" THICKNESS GAUGE  
(Replaces (C.B.)  
Gauge 77)

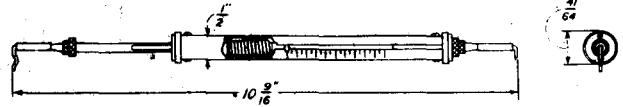
For gauging the air-gaps on 207 relays



(79-A) Replaced by gauge 79-C

79-B 0-1000 GRAM PUSH-PULL TENSION GAUGE  
(C.B.)

For measuring in grams the tension of springs on 200 type selectors, 520 type keys, 206 type selectors



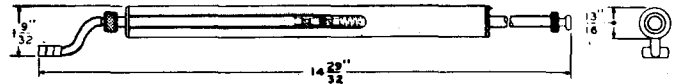
79-C 0-200 GRAM PUSH-PULL TENSION GAUGE  
(Replaces Gauge 79-A) (C.B.)

For measuring in grams the tension of springs of 200 and 206 type selectors, D-34393, 520 and E1 type keys and precision type inter-rupters.



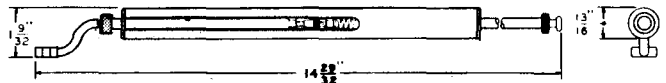
79-D 0-6000 GRAM PUSH-PULL TENSION GAUGE  
(MAG., C.B., AND P.B.X.)

For gauging lever and plunger operate pressures on various keys.



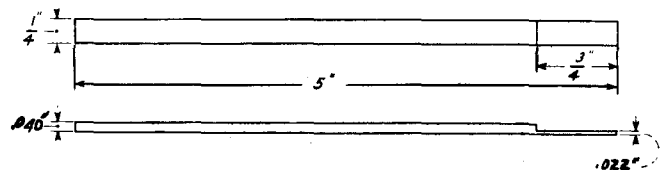
79-E 0-3000 GRAM PUSH-PULL TENSION GAUGE  
(MAG., C.B. AND P.B.X.)

For gauging lever and plunger operate pressures on various keys.



87-A .022" AND .040" DOUBLE-END THICKNESS GAUGE  
(C.B.)

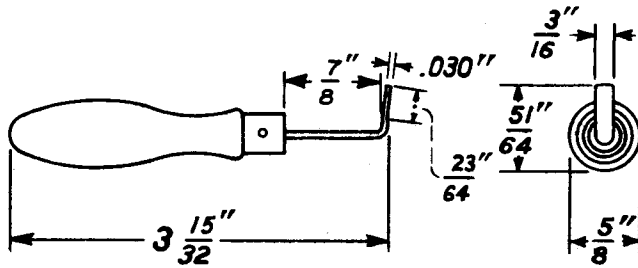
For gauging gaps on Signal Engineering Co. relays



90

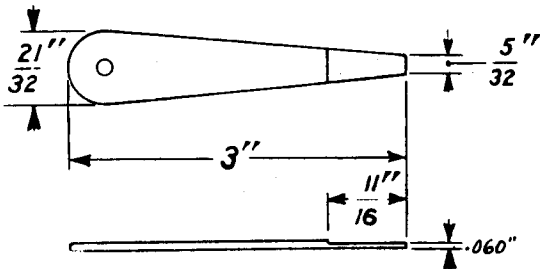
**.030" THICKNESS GAUGE**  
(C.B. AND P.B.X.)

For gauging the gap between the back contact and armature feather spring on 114 and 198 type relays



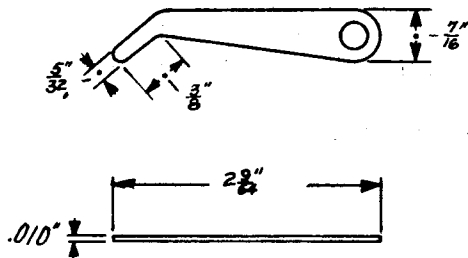
91-C .060" THICKNESS GAUGE  
(C.B.)

For use in gauging gaps on 156 type interrupters



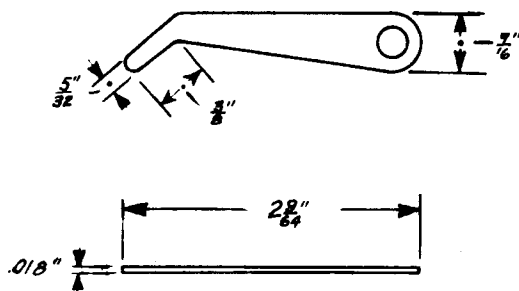
92-A .010" NON-MAGNETIC OFFSET THICKNESS GAUGE  
(C.B.)

For gauging the max. air-gap between the armature and either pole-piece on 206 type relays



92-D .018" NON-MAGNETIC OFFSET THICKNESS GAUGE  
(C.B.)

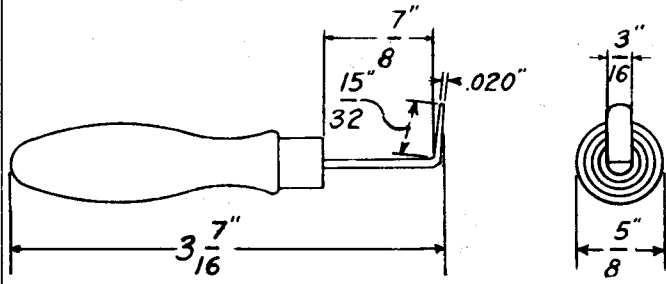
For use on 201 type relays



95-A

**.020" THICKNESS GAUGE**  
(C.B. and P.B.X.)

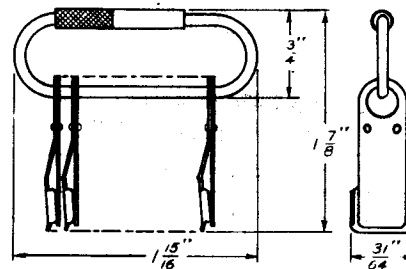
For gauging the gap between the back contact and armature feather spring on 114 and 198 type relays



99-A THICKNESS GAUGE NEST  
(Replaces Gauge 64-A)  
(C.B. AND P.B.X.)

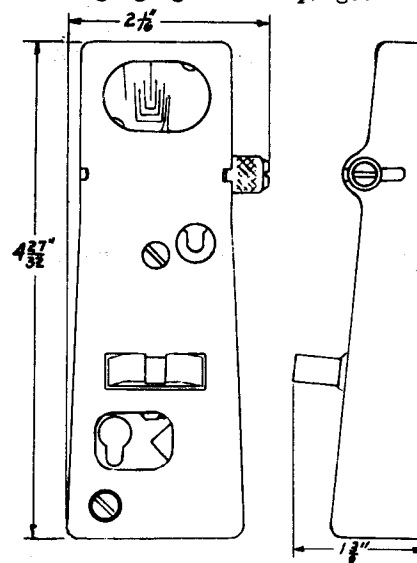
|       |      |
|-------|------|
| 100-A | .005 |
| 100-B | .010 |
| 100-C | .015 |
| 100-D | .020 |
| 100-E | .025 |
| 100-F | .030 |
| 100-G | .035 |
| 100-H | .040 |
| 101-A | .030 |
| 101-B | .035 |
| 101-C | .040 |
| 101-D | .050 |
| 101-E | .060 |

For gauging the armature travel and front contact make gaps on B and G type relays



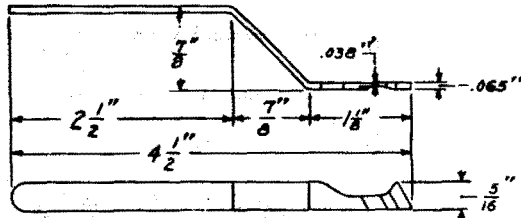
106-A PLUG GAUGE  
(Replaces Gauge 27)  
(C.B.)

For gauging No. 109 plugs.



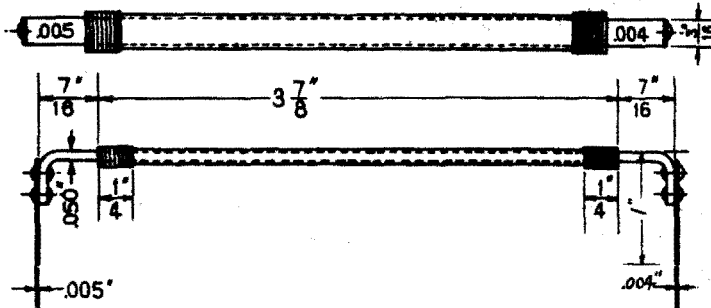
107-A .065" THICKNESS GAUGE  
(C.B.)

For checking armature air-gap of 89 type relays



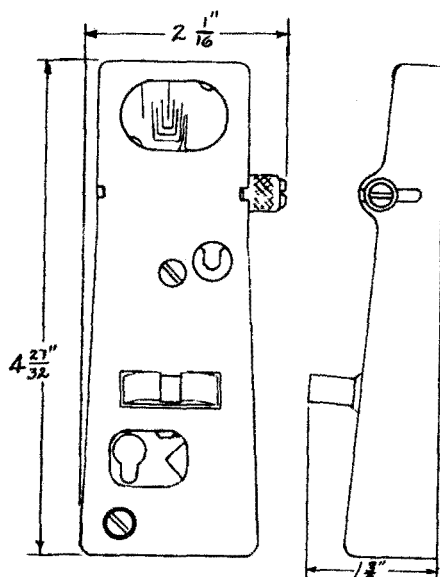
110-A .004" AND .005" DOUBLE-END THICKNESS GAUGE  
(C.B.)

For use in measuring contact separation of 207 type relays. A container, KS-6526, has been made available for carrying this gauge and is furnished separately.



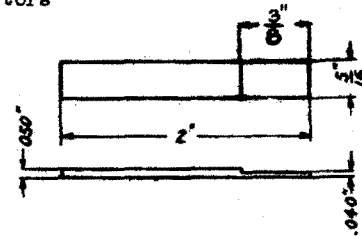
111-A PLUG GAUGE  
(MAG., C.B. AND P.B.X.)

For gauging No. 110 plugs



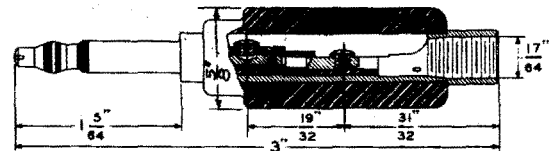
112-A .040" AND .050" THICKNESS GAUGE  
(Replaces (C.B. AND P.B.X.) Gauge R-2228)

For gauging air-gaps on 200 and 206 type selectors



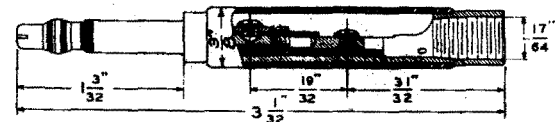
113-A CUT-OUT TEST PLUG  
(C.B. AND P.B.X.)

For use on 92 type jacks



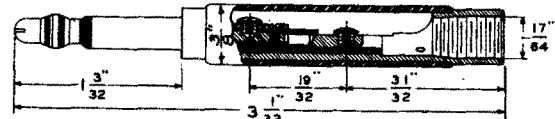
114-A BUTT TEST PLUG  
(C.B. AND P.B.X.)

For use on 92 type jacks



115-A CROSS TEST PLUG  
(C.B. AND P.B.X.)

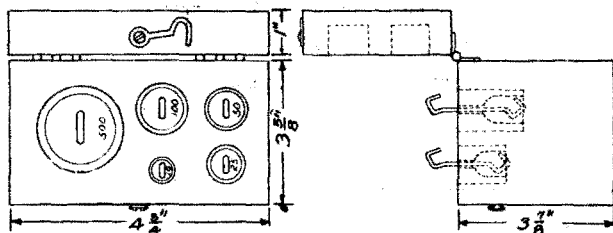
For use on 92 type jacks



(KS-2872) Replaced by gram weights KS-6338

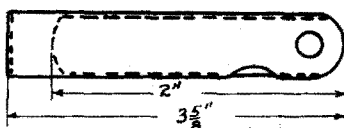
KS-6338 GRAM WEIGHTS  
(Replaces Gram (C.B.)  
Weights KS-2872)

For checking the accuracy of gram gauges



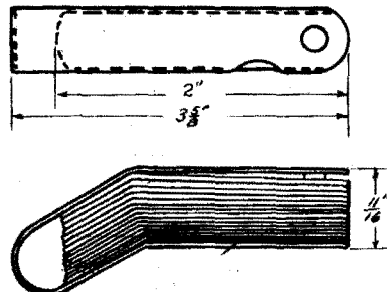
KS-6909 THICKNESS GAUGE NEST  
(Replaces .0015" AND .002" TO .025"  
Part of IN STEPS OF .001"  
Gauge (C.B.)  
R-1981)

For general use



KS-6938  
(Replaces  
Part of  
Gauge  
R-1981)

THICKNESS GAUGE NEST  
.026" TO .040" IN STEPS  
OF .001"  
(C.B.)



(R-1981) Replaced by gauges KS-6909 and  
KS-6938

(R-2228) Replaced by gauge 112-A

JOJ)DM  
FAC)  
DEPT. 332-B

BELL TELEPHONE LABORATORIES, INC.