

MAINTENANCE TOOLS

Bulletin 540

AUTOMATIC ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS





Factory, development laboratories, and general office at Northlake, Illinois, U.S.A.

AUTOMATIC ELECTRIC COMPANY is an organization of designing, engineering, and manufacturing specialists in the fields of communication, electrical control, and allied arts. For more than sixty years the company has been known throughout the world as the originator and parent manufacturer of the Strowger Automatic Telephone System. Today Strowger-type equipment serves over 75% of the world's automatic telephones. The same experience and technique that have grown out of the work of Automatic Electric engineers in the field of telephone communication are also being successfully applied on an ever-increasing scale to the solution of electrical control problems in business and industry.

PRINCIPAL PRODUCTS

Strowger Automatic Telephone Systems—Complete automatic central-office equipment for exchange areas of any size, from small towns to the largest metropolitan networks.

Community Automatic Exchanges—Unattended automatic units for small rural or suburban areas, with facilities for switching into attended exchanges.

Automatic Toll Boards—An adaptation of Strowger principles to toll switching, resulting in simplification of operators' equipment and greater economy of operating and toll-circuit time.

Private Automatic Exchanges—Available in various capacities, with or without central-office

connections, and with facilities for special control services to meet the needs of the user.

P.B.X. Switchboards—A complete range of cordless and cord types for the modern business.

Telephone Instruments—Modern designs for automatic or manual exchanges, including the Monophone—the world's most attractive and efficient handset telephone.

Exchange Accessory Equipment—Auxiliary exchange and substation equipment, including manual desks, testing apparatus, transmission equipment, and all accessories needed for the operation and maintenance of the modern telephone exchange.

Makers also of electrical control apparatus for industrial, engineering, and public utility companies, telephone apparatus for railroads and pipe-line companies, private telephone systems of all types, electrical and communication devices for aircraft and airways control, and special communication apparatus for military and naval departments.

FOREWORD

This bulletin is an up-to-date listing, with descriptions and functions, of the principal tools most useful in the maintenance of central-office equipment and telephones manufactured by Automatic Electric Company.

In addition to tools such as screwdrivers, pliers, and soldering irons, the listing includes a wide variety of special tools and gauges which serve particular purposes in the maintenance of specific items of apparatus, as well as such devices as resistance boxes, test sets, and the like. So far as practicable, the various tool illustrations are grouped in classifications according to use.

The tool descriptions show, in addition to the illustrations, the name of the tool, its code number, and the use to which it is put. Included also is supplementary information such as precautions to be taken and dimensions which affect tool use.

All tools listed are indexed alphabetically in the front of the bulletin and numerically in the back. Distributing-frame test plugs and cord assemblies have not been listed numerically but have been collected and put in tabular form.

In some cases, two or more tools may be listed under the same name. An example is the "Adjuster, Vertical Armature" having code numbers H-7056, H-13398, and H-13700. Unless otherwise identified, it is suggested that the tool with the highest code number be ordered. This tool is ordinarily associated with the latest type of equipment. The lower-numbered tools may be better suited for older types of equipment or may be preferred by service personnel.

Customers in the United States or possessions may obtain any of the tools listed through the Automatic Electric Sales Corporation, Northlake, Illinois, U.S.A. Orders from customers abroad should be placed with Automatic Electric International, Inc., at the same address.

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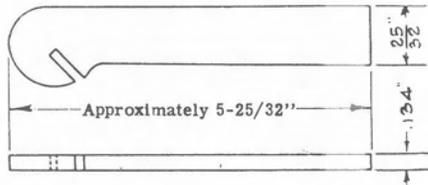
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MAINTENANCE TOOLS

ADJUSTER, ARMATURE

H-7056

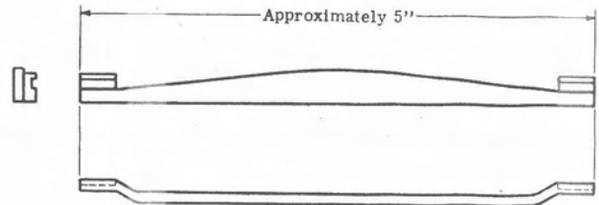


1/8" slot

For use on Strowger switch rotary armature

ADJUSTER, ARMATURE

H-56518



.114" saw slot in each end

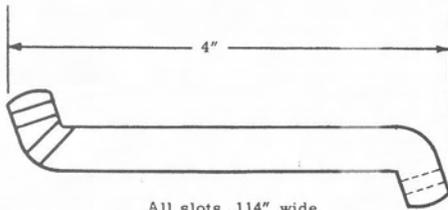
For use on Type 10 alternating current relay

ADJUSTER, ARMATURE

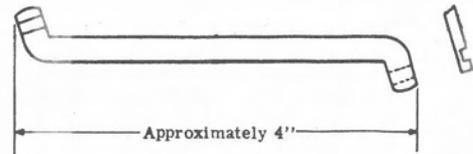
H-88502-1

ADJUSTER, ARMATURE

H-14768

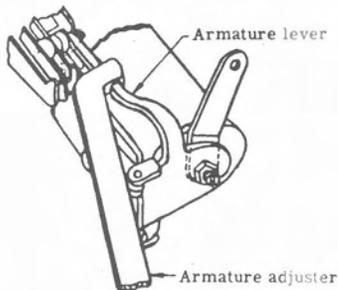


All slots .114" wide



.115" width of slot in each end

For use on Type 57AL relay

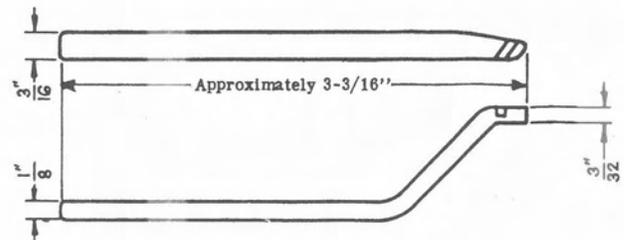


ADJUSTING THE ARMATURE LEVER

For use on horizontal (Class A) relays

ADJUSTER, ARMATURE STOP

H-46410



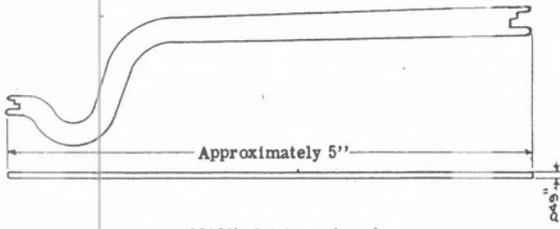
.055" slot

For use on 8 and 2 position mechanical indicators on Power Supervisor's Board

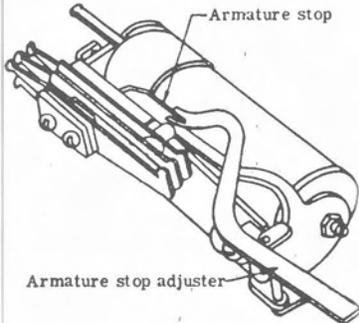
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ADJUSTER, ARMATURE STOP

H-14769



.0319" slot in each end

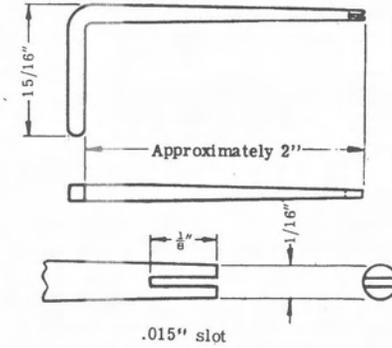


ADJUSTMENT OF ARMATURE BACKSTOP

For use on horizontal (Class A) relays

ADJUSTER, DETENT

H-46413

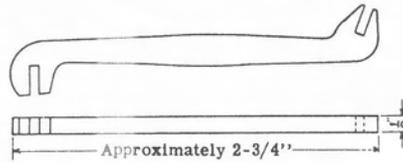


ENLARGED VIEW

For use on 8 position mechanical indicators in Power Supervisor's Board, paystation springs and dial governor wings

ADJUSTER, DOUBLE DOG

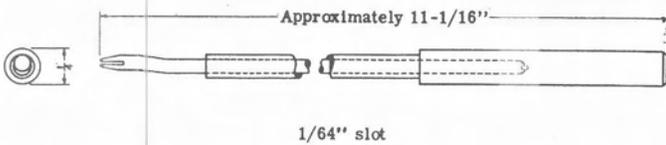
H-7067



3/32" slot in each end

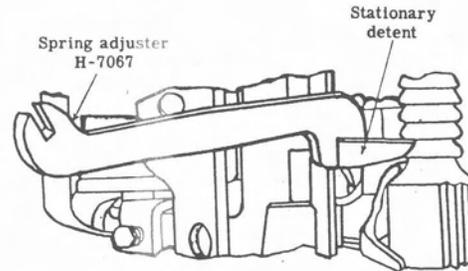
ADJUSTER, BANK CONTACT

H-7068-3



1/64" slot

For use on plunger lineswitch bank contacts

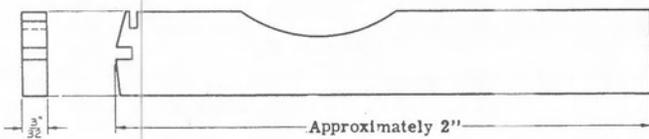


ADJUSTING STATIONARY DETENT

For use on Strowger switch double dog

ADJUSTER, CAM

H-47202

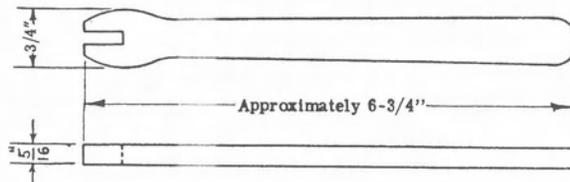


Both slots .028" min. and .030" max.

For use on Strowger switch multi-level normal post cam

ADJUSTER, FRAME

H-13701



1/8" slot

For use on plunger lineswitch bank frame

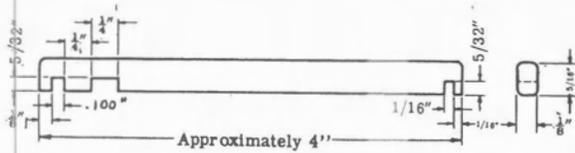
MAINTENANCE TOOLS

ADJUSTER, PAYSTATION

P-60481-1

ADJUSTER, SPRING

H-7066

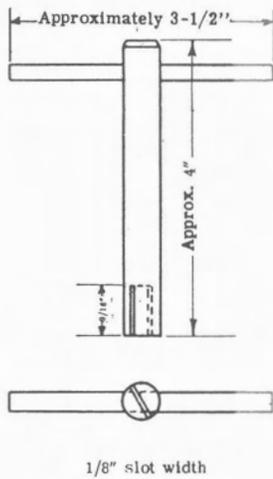


DETAIL NO. 1

For use in adjusting polar relay of pre-pay and post-pay paystations (adjusting upper housing lock bracket)

ADJUSTER, PLUNGER ARM

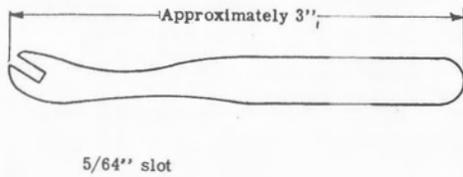
H-10001-3



For use on plunger lineswitch

ADJUSTER, ROTARY PAWL

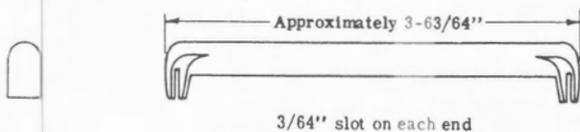
H-23413-1



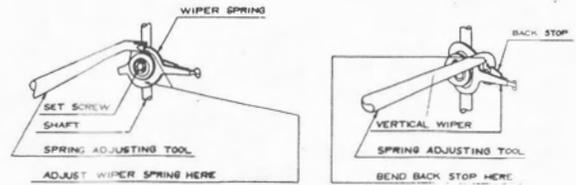
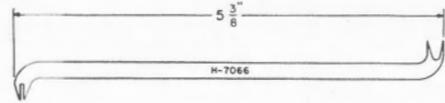
For use on Strowger switch rotary pawl

ADJUSTER, SPRING

H-7059



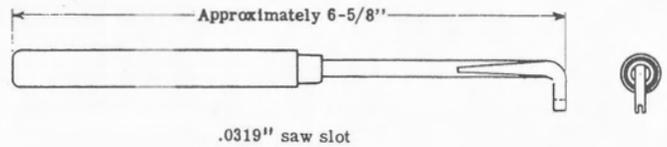
For use on Monophone hook switch springs



For use on plunger lineswitch, horizontal (Class A) relay, cam and off-normal springs, vertical wiper spring and backstop.

ADJUSTER, SPRING

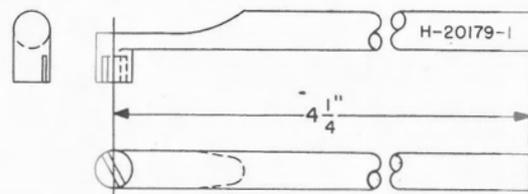
H-16978-1



For use on rotary lineswitch relay

ADJUSTER, SPRING

H-20179-1



For use on rotary lineswitch.

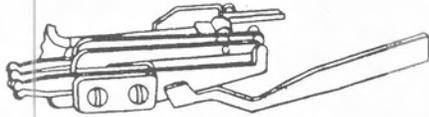
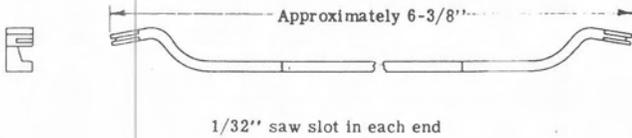
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ADJUSTER, SPRING

H-20777

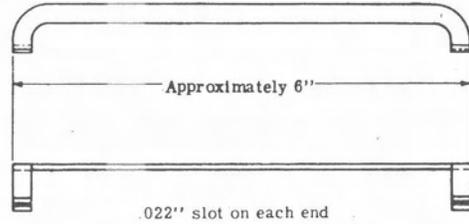
ADJUSTER, SPRING

H-44359



ADJUSTING SPRINGS TO MEET GAUGING REQUIREMENTS

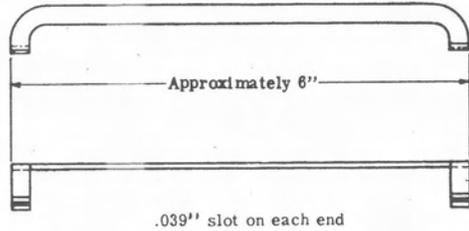
For use on horizontal (Class A) type relays



For use on Type 27 manual relay

ADJUSTER, SPRING

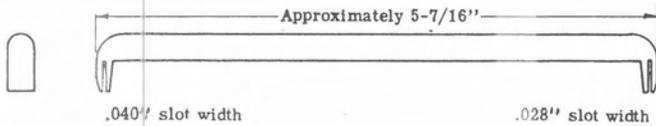
H-45590



For use on Type 27 manual relay

ADJUSTER, SPRING

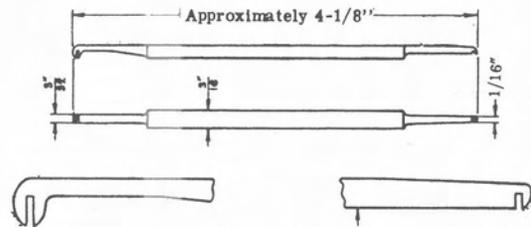
H-24600



For use on horizontal (Class A) relay springs

ADJUSTER, SPRING

H-46411

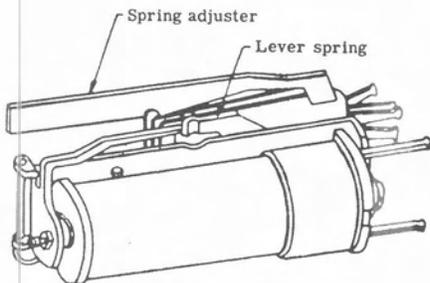
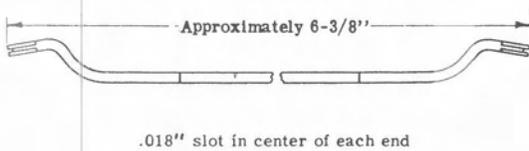


.020" slot on each end

For use on 8 and 2 position mechanical indicator on Power Supervisor's Board

ADJUSTER, SPRING

H-42873

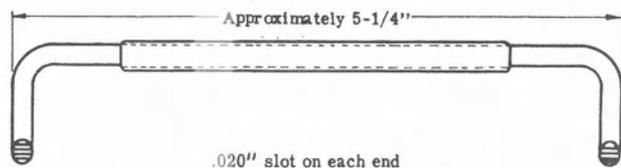


ADJUSTING LEVER SPRINGS FOR TENSION

For use on horizontal (Class A) relays

ADJUSTER, SPRING

H-46716-1

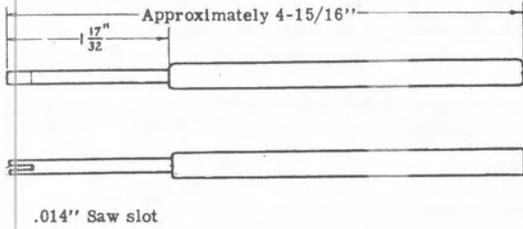


For use on plunger lineswitch line relay springs

MAINTENANCE TOOLS

ADJUSTER, SPRING

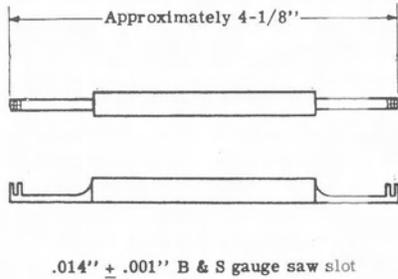
H-46974-1



For use on class "S" relay

ADJUSTER, SPRING

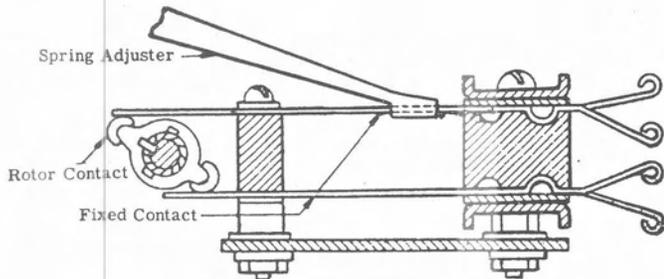
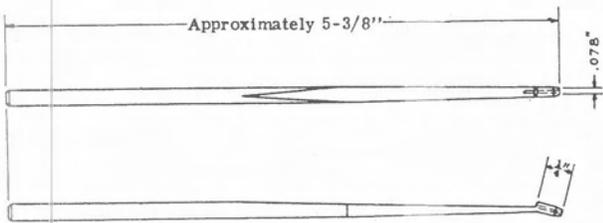
H-46975-1



For use on class "S" relay

ADJUSTER, SPRING

H-64670

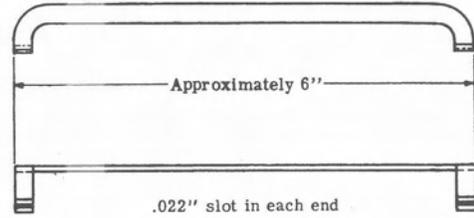


METHOD OF USING ROTOR RELAY CONTACT
SPRING ADJUSTER

For use on rotor relay contact springs

ADJUSTER, SPRING

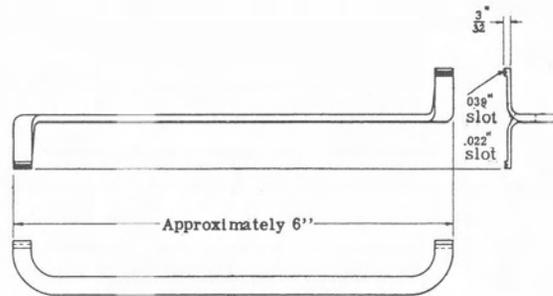
H-64980



For use on minor type relays

ADJUSTER, SPRING

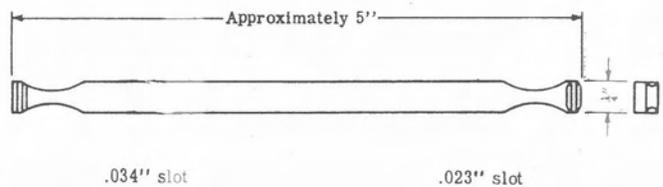
H-88385



For use on Type 27 manual relay

ADJUSTER, SPRING

H-88390

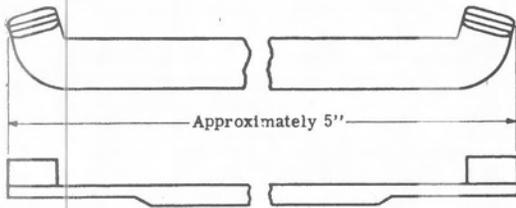


For use on Type 26 lever keys

BULLETIN 540

ADJUSTER, SPRING

H-88504-1
and 2

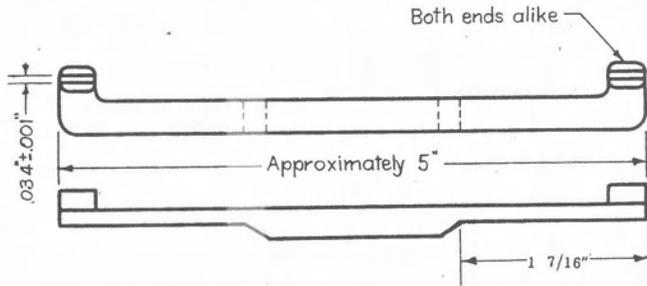


H-88504-1 (.034" slot in each end)
H-88504-2 (.018" slot in each end)

For use on Type 57 relays

ADJUSTER, SPRING

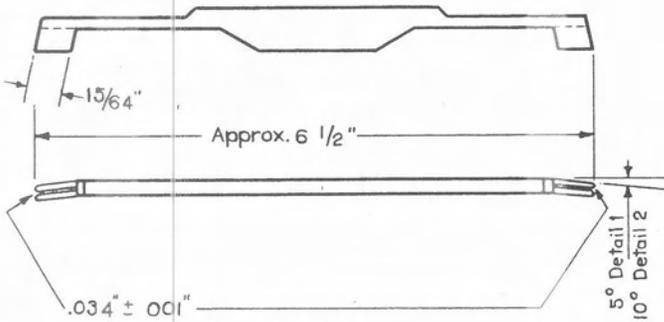
H-881859-1



For use on Type 57A relay

ADJUSTER, SPRING

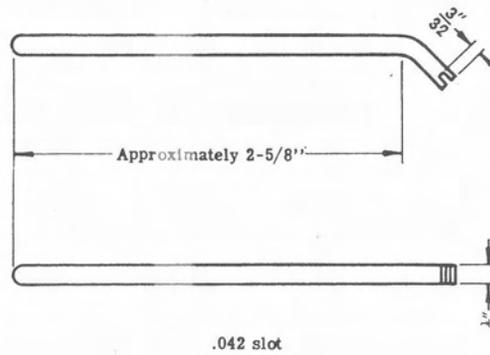
H-881602-1&2



For use with Type 57-A relays. Special back to back mounted relays.

ADJUSTER, SPRING HOLDER

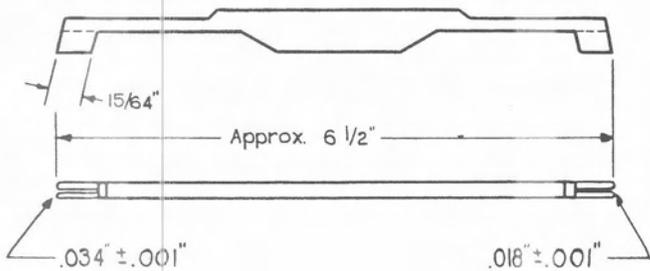
H-46412



For use on 8 and 2 position mechanical indicators on Power Supervisor's Board

ADJUSTER, SPRING

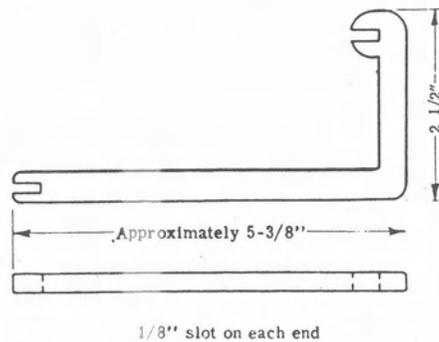
H-881603-1



For use with Type 57-A relays

ADJUSTER, VERTICAL ARMATURE

H-13398-1

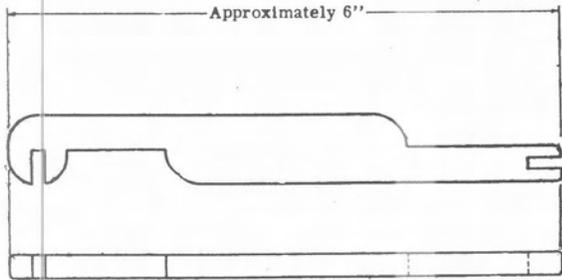


For use on Strowger switch vertical armature

MAINTENANCE TOOLS

ADJUSTER, VERTICAL ARMATURE

H-13700

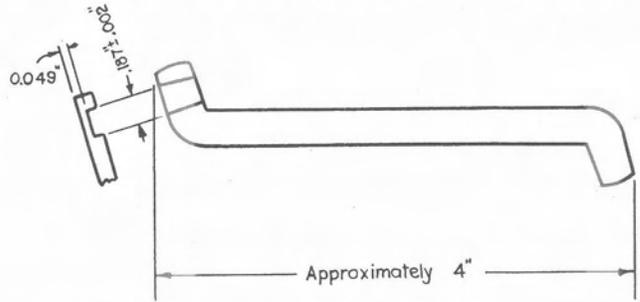


1/8" slot on each end

For use on Strowger switch vertical and rotary armature

ADJUSTER, STEPPING TOOL

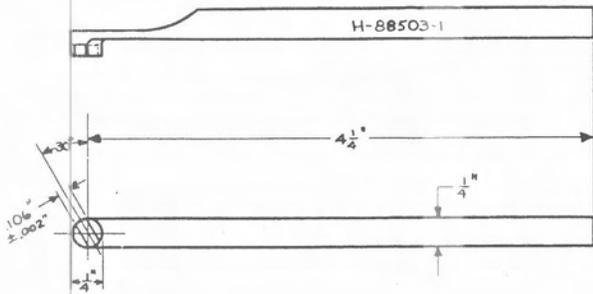
H-881384-1



For use with type 44 rotary switch

ADJUSTER, ARMATURE

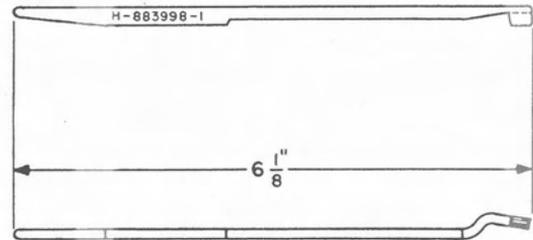
H-88503-1



For use on Type 57-A relay

ADJUSTER, SPRING

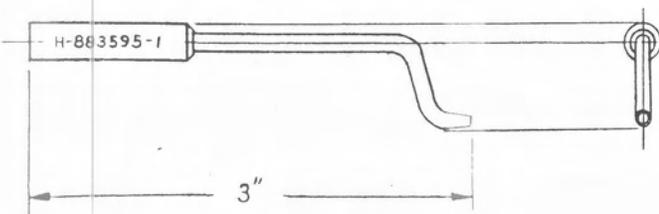
H-883998-1



For use on BarRelay (Type 59 Detector).

ADJUSTER, POLE PIECES

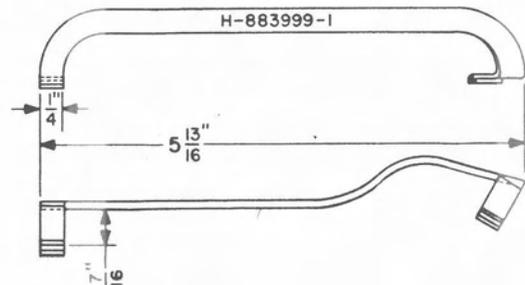
H-883595-1



For use on polarized relay

ADJUSTER, SPRING

H-883999-1



For use on BarRelay (Type 59 Detector).

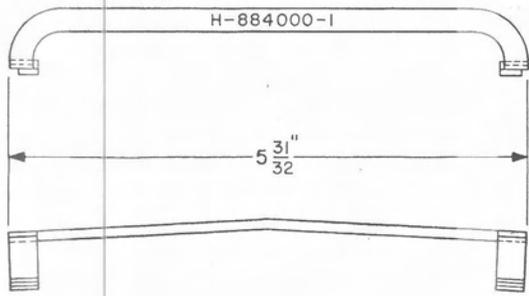
BULLETIN 540

ADJUSTER, SPRING

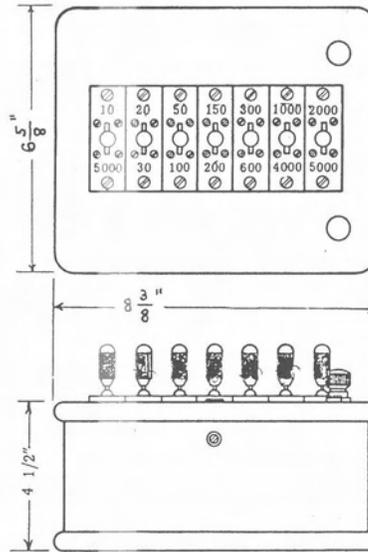
H-884000-1

BOX, RESISTANCE

H-25314-1



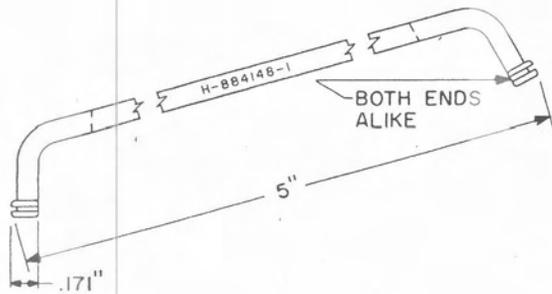
For use on BarRelay (Type 59 Detector).



For use in mechanical adjustments of switches and relays

ADJUSTER, SPRING

H-884148-1

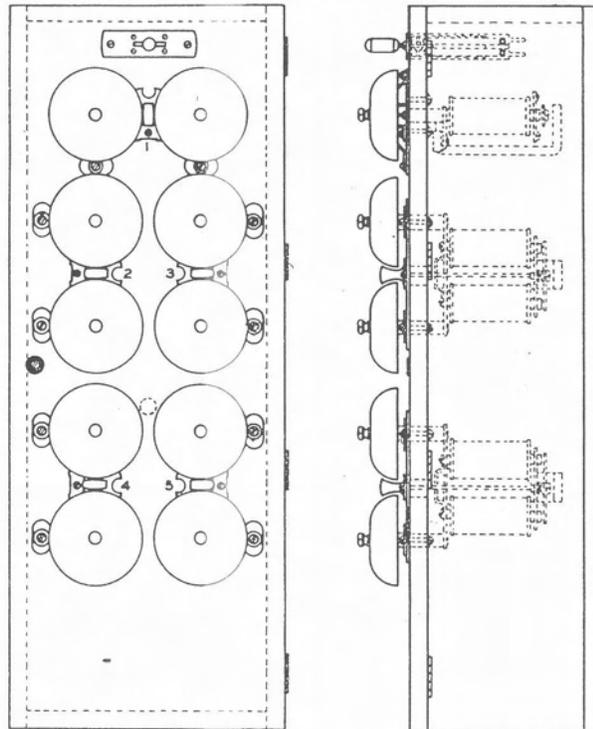


For Class E relay.

BOX, HARMONIC RINGER

D-40059-A
B, C, D, E, F, G

Approximately 1'-7 3/4" high x 7 1/2" wide x 5 1/4" deep



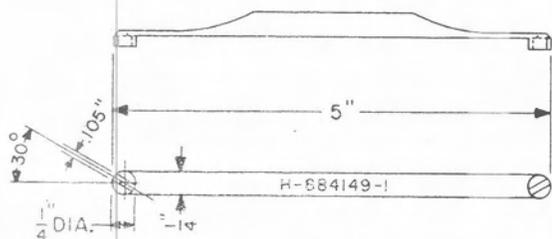
- A (Multiple Ring)
- B (Non-Multiple Ring)
- C (Non-Multiple Ring-No induction Coil)
- D (Multiple Ring-No Induction Coil)

- E (Multiple Ring-No Key)
- F (Non-Multiple ring-No Key)
- G (Decimonic Ring)

For use with connector routine test sets

ADJUSTER, BACKSTOP and
ARMATURE ARM

H-884149-1

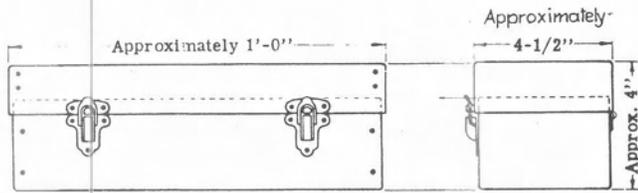


For Class E relay.

MAINTENANCE TOOLS

BOX, STEEL TOOL

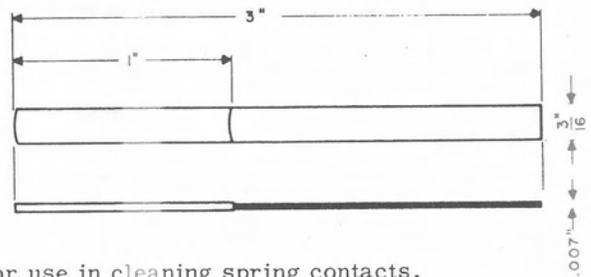
H-46556



For general use

BURNISHER, CONTACT

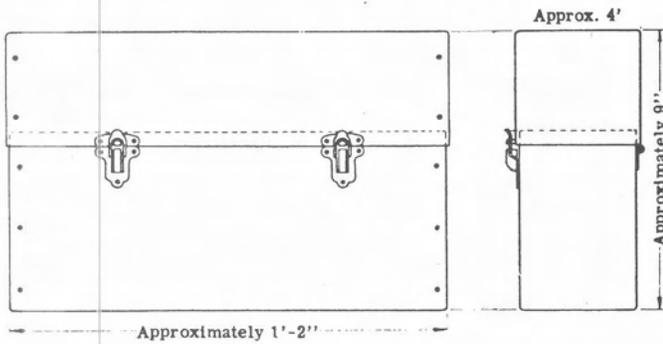
H-883699-1



For use in cleaning spring contacts.

BOX, STEEL, BLUEPRINT

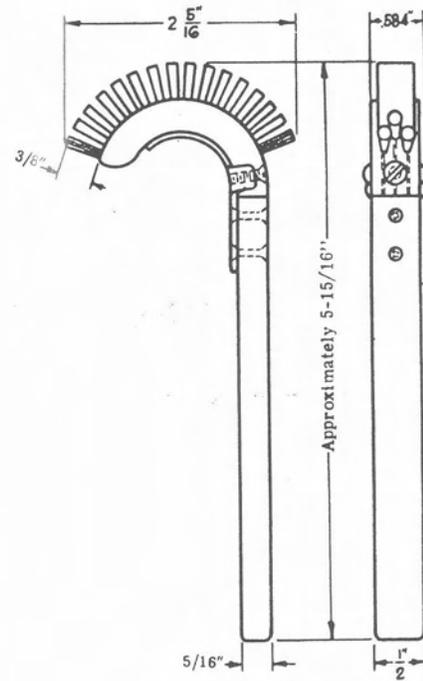
H-46557



For use in holding maintenance prints

BRUSH, BANK CLEANING

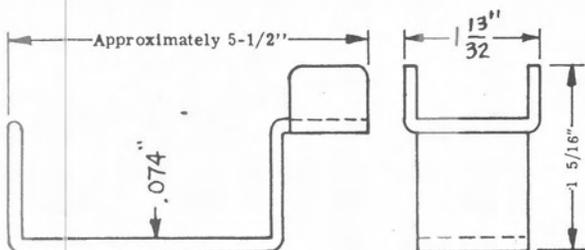
H-88844-1
and 2



ASSEM. 1

BRACKET, TEST TELEPHONE

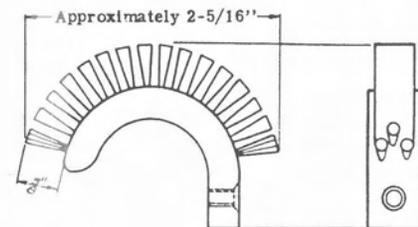
D-731450-A&B



A-Gray baking enamel

B-Light gray equipment enamel

For use with hand test telephone



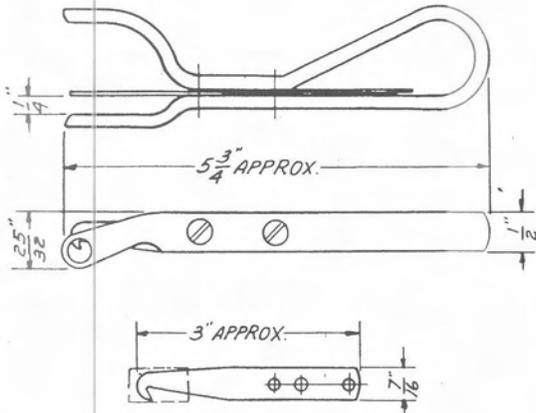
ASSEM. 2

For use in cleaning Strowger switch banks

BULLETIN 540

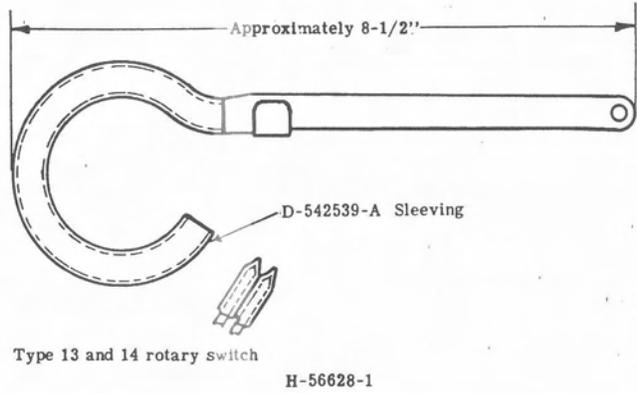
CABLE STRIPPER

H-884210-1



CLEANING TOOLS

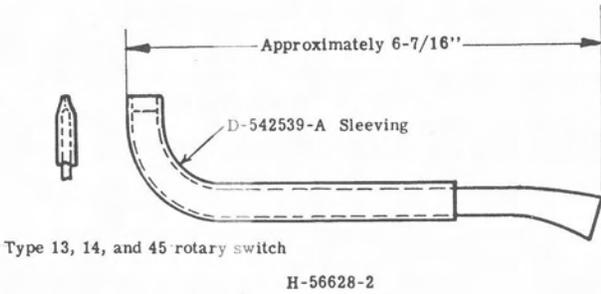
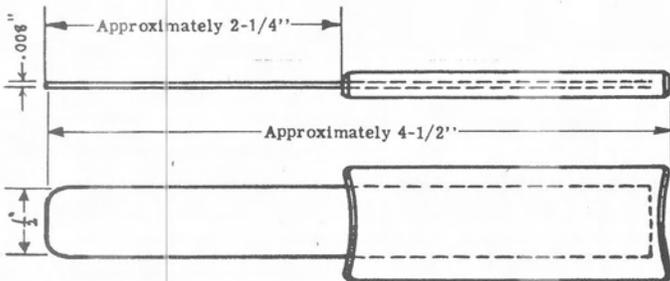
H-56628-1
and 2



H-56628-1

CLEANING TOOL

H-47386-1



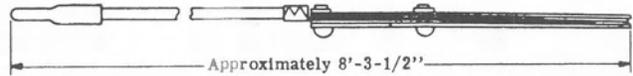
H-56628-2

For use on rotary lineswitch banks

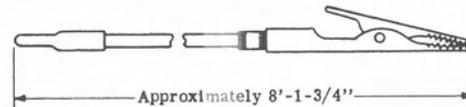
For use on rotary switch wiper spring hubs and banks

CORD, TEST

H-74573-1
and 2



ASSEM. 1

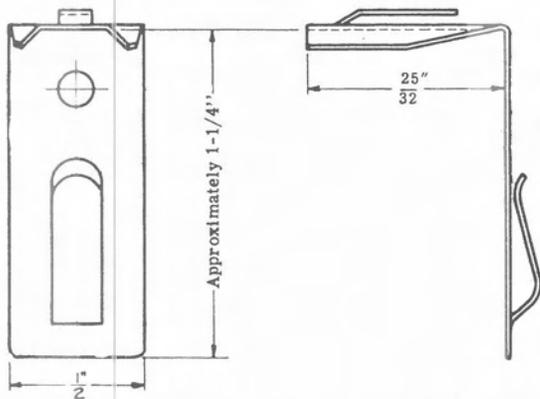


ASSEM. 2

For use with current flow test set H-88733-1

CLIP, BUSY

D-15455-A



For use in busying equipment not equipped with busy key

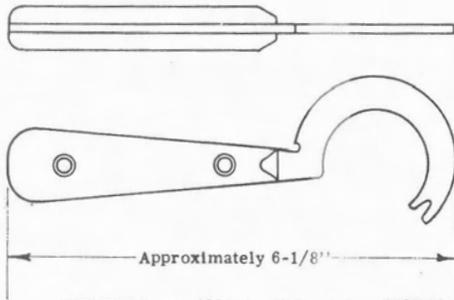
MAINTENANCE TOOLS

CLEANING TOOL, BANK

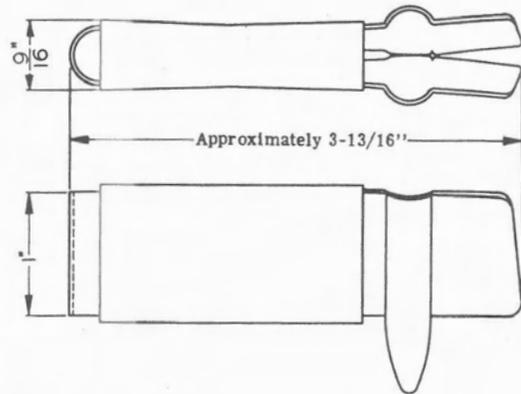
H-16590-1
and 2

CLIP, PLUG CUSHION PLACING

H-883348-1



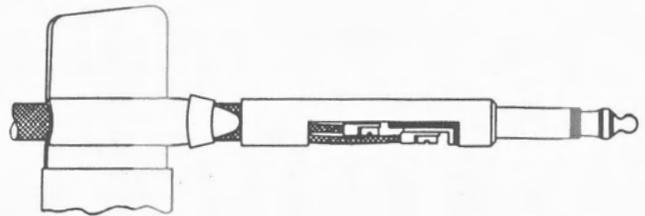
DRAWING H-16590-1 200 point .042" thick
DRAWING H-16590-2 100 point .072" thick



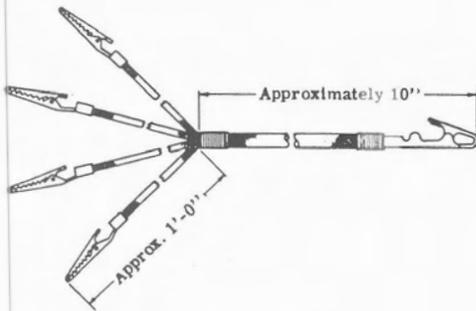
For use on Strowger switch banks

CORD ASSEMBLY, GROUND

D-542407-A



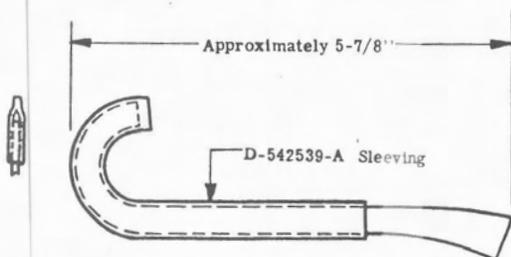
For use in putting plug cushion over plug and on cord



For use in busying out of order lines

CLEANING TOOL

H-56628-4

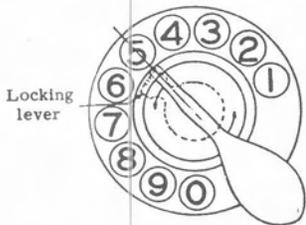
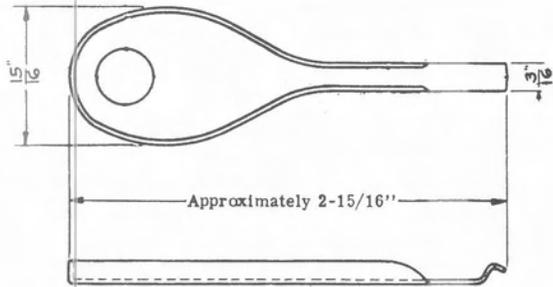


For use on Type 44 rotary switch banks

BULLETIN 540

DIAL ESCUTCHEON TOOL

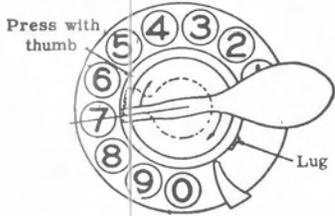
H-26917



TO UNLOCK ESCUTCHEON RING



ESCUTCHEON RING UNLOCKED



TO LOCK ESCUTCHEON RING



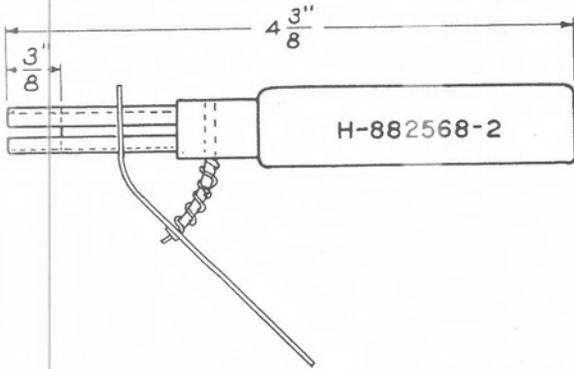
ESCUTCHEON RING LOCKED

For use in removing dial escutcheon

MAINTENANCE TOOLS

EXTRACTOR, LAMP

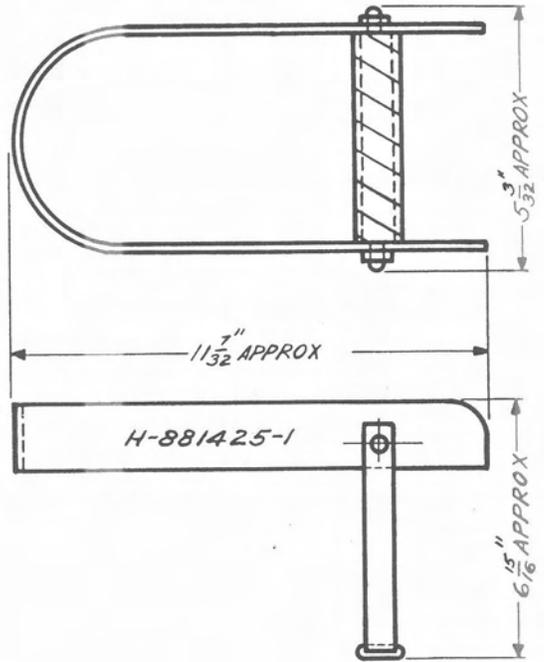
H-882568-2



For use in removing switchboard lamps

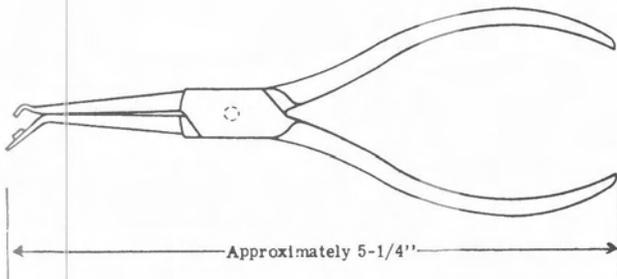
EXTRACTOR, MULTI-JACK

H-881425-1



EXTRACTOR, HEAT COIL

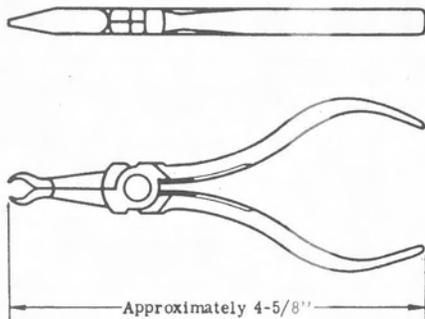
H-44514-1



For use in removing Automatic Electric Company Type 676 heat coils

EXTRACTOR, LAMP CAP

H-883114-1

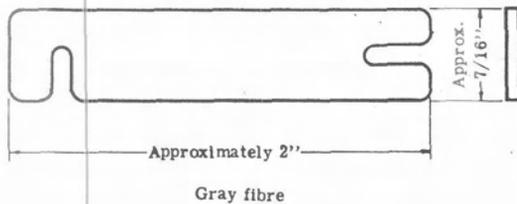


For use in extracting lamp caps, number plates and W. E. Co. heat coils

BULLETIN 540

FUSE, DUMMY

D-57043-A



For use in vacant alarm type fuse locations

FUSE REPAIR KIT

H-14315-1

Flux Automatic Electric Company Specification 2003

Fuse wire Automatic Electric Company Specification 5129
(1-1/3, 3 and 5 amperes)

Solder Automatic Electric Company Specification 2001

Consisting of fuse wire, solder, soldering flux and sandpaper

For use with indicating and alarm fuses

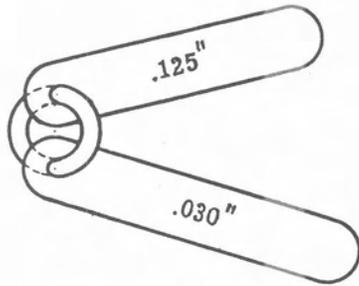
MAINTENANCE TOOLS

GAUGES, PAYSTATION

P-60481-4

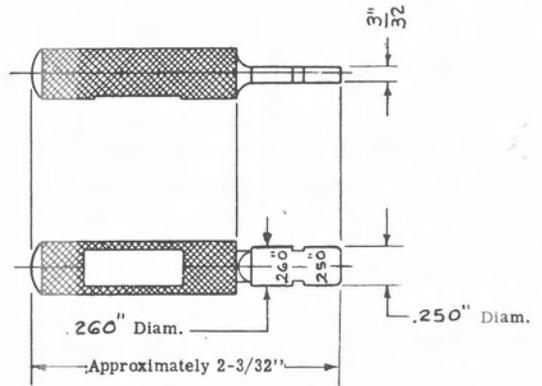
GAUGE, JACK SLEEVE

H-88409



DETAIL NO. 4

For use in adjusting polar relay of pre-pay and post-pay paystations (thickness, feeler gauges)



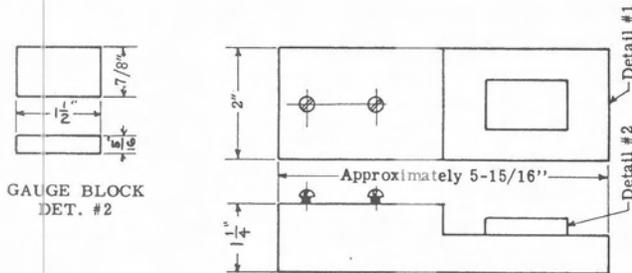
For use on manual switchboard jacks

GAUGE BLOCK, LINE SWITCH
PLUNGER

H-7541-3

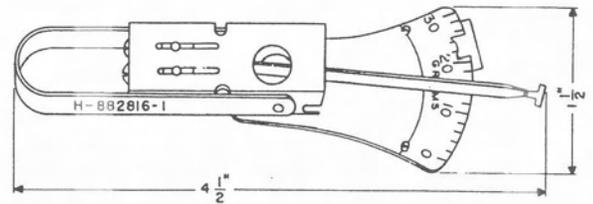
GAUGE

H-882816-1
and 2



GAUGE BLOCK
DET. #2

For use in adjusting plunger of plunger lineswitch



0-30 Grams (H-882816-1)
0-150 Grams (H-882816-2)

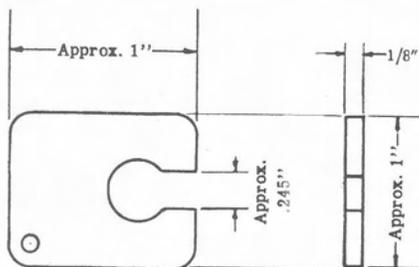
For general use

GAUGE, MANUAL BOARD PLUG

MP-5127-A

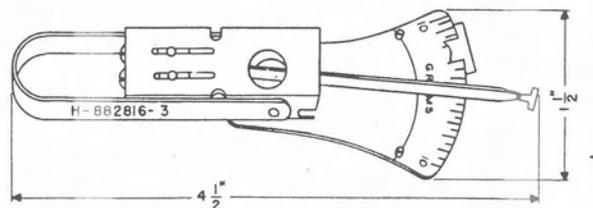
GAUGE

H-882816-3
and 4



Opening .2455" max., .2445" min.

For use in checking worn plugs



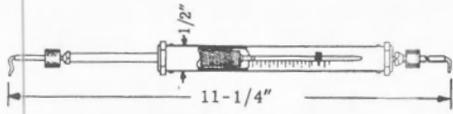
10-0-10 Grams (H-882816-3)
50-0-50 Grams (H-882816-4)

For use in adjusting SATT (Strowger Automatic Toll Ticketing) dial springs

BULLETIN 540

GAUGE, PUSH-PULL TENSION

H-884369-2

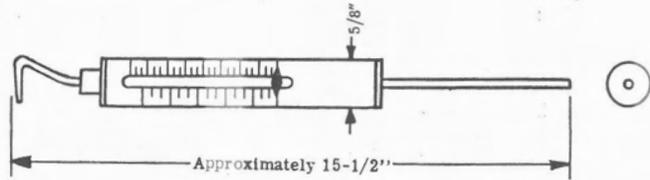


0-1000 Grams

For general use

GAUGE, PUSH-PULL TENSION

H-881513-1



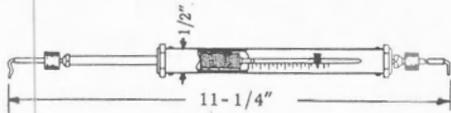
0-500 Grams (Accurate 75 to 500)
0-16 Ounces

For general maintenance use and measuring tension on retractile, "double dog" and interrupter springs on Strowger and other types of switches.
(An inexpensive gauge for use in the horizontal position only)

*G.P.P. 5 Smart Sub
E.H.F.*

GAUGE, PUSH-PULL TENSION

H-884369-1



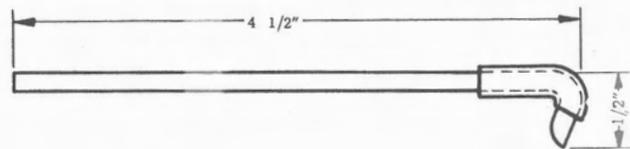
0-200 Grams

For general use

\$100.00

HANDLE REMOVER

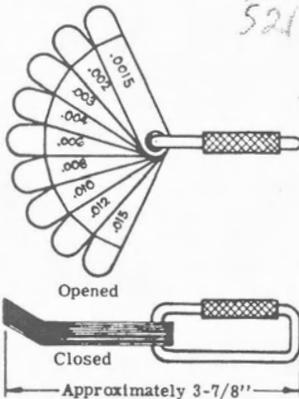
H-881419-1



For use in removing unthreaded handles of lever keys

GAUGES, THICKNESS

H-46795-1 and 50



Assem. 1

ASSEM. 1

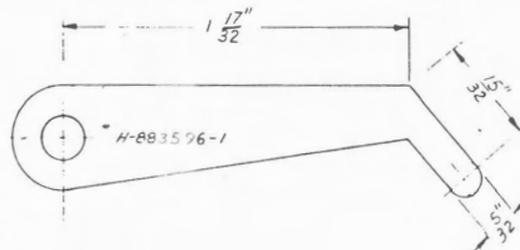
- .0015 "
- .002 "
- .003 "
- .004 "
- .006 "
- .008 "
- .010 "
- .012 "
- .015 "

- ASSEM. 50
(* Gauge width tapered)
- .002 " .011 "
 - .003 " .012 "
 - .004 " *.012 "
 - .005 " .013 "
 - .006 " .014 "
 - .007 " .015 "
 - .008 " .016 "
 - .009 " *.016 "
 - .010 " .017 "
 - *.010 " .018 "

For general use

GAUGE, THICKNESS

H-883596-1

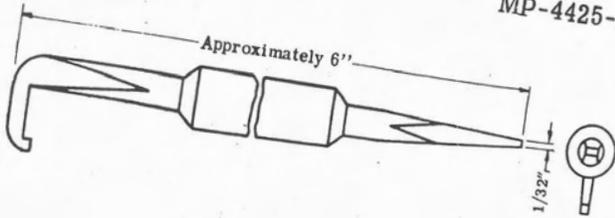


For checking residual gap on polar relay

LAMP VISUAL FACE TOOL

MAINTENANCE TOOLS

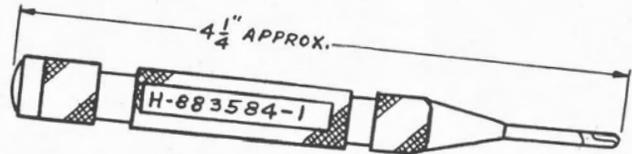
MP-4425-A



For use in removing designation strip and lamp caps from manual switch boards

CERTI-LOK INSERTION TOOL

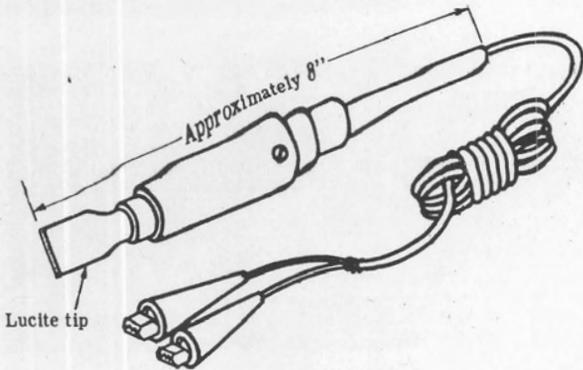
H-6



For use with the detector access unit and the "D.U." field

LAMP, INSPECTION

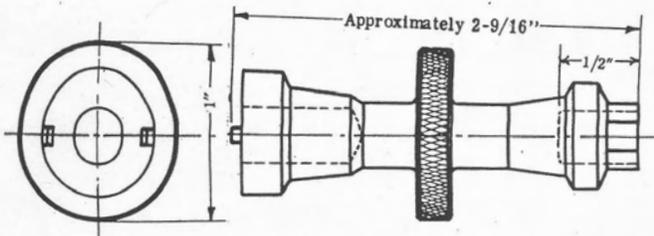
H-880922-1



For use in visual inspection and gauging of relay contacts

MONOPHONE TOOL

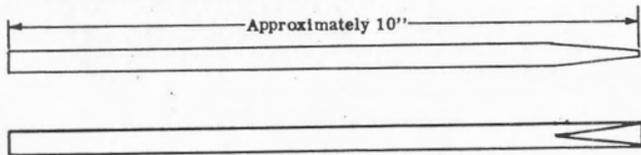
H-50754



For use on Types 1A, 31, 35A5 and 50 Monophones and Type 38 handset as a receiver earpiece wrench, a spanner wrench and with hookswitches having a collapsible (telescoping) plunger. For solid plunger use H-43172-1.

LINESWITCH MOUNTING TOOL

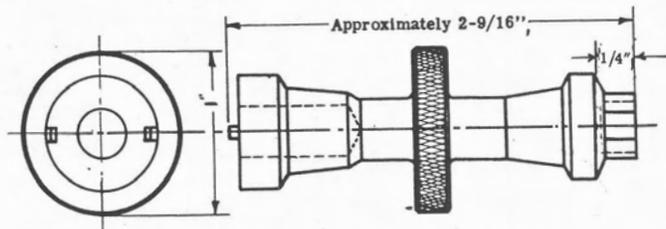
H-24528



For use in aligning plunger lineswitches

MONOPHONE TOOL

H-43172



For use on Types 1A, 31, 35A5 and 50 Monophones and Type 38 handset as a receiver earpiece wrench, a spanner wrench and with hookswitches having a solid plunger. For collapsible (telescoping) plunger use H-50754-1.

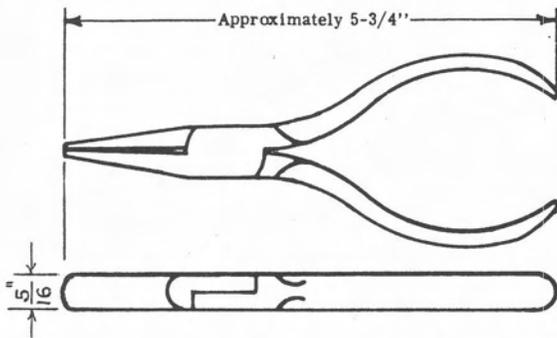
BULLETIN 540

PLIERS, DUCK BILL

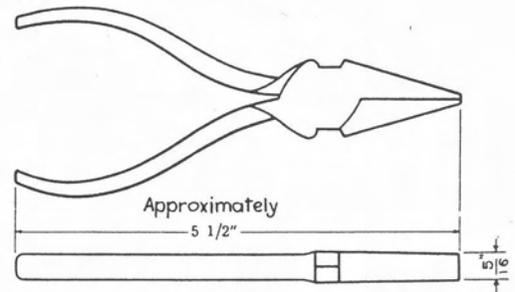
H-50620

PLIERS, JACK SPRING

H-880621-1



For general use

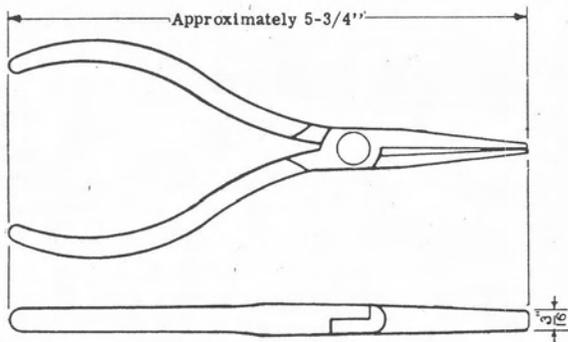


ASSEM. 1

For use in adjusting jack springs

PLIERS, DUCK BILL

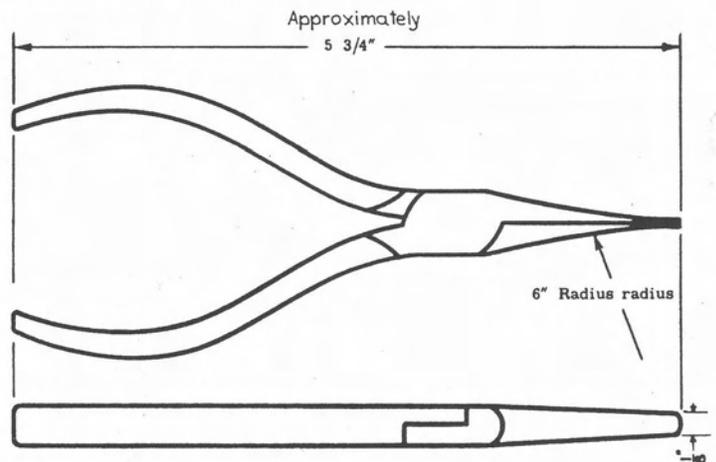
H-74611



For general use in adjusting springs on relays, switches, etc.

PLIERS, SPRING ADJUSTING
(DIAL PLIERS)

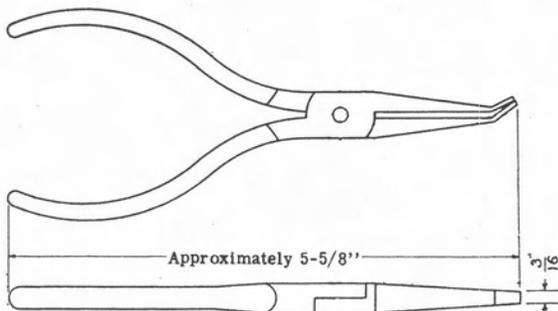
H-16290-7



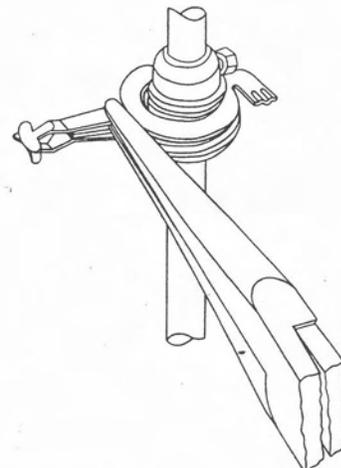
PLIERS, 30° DUCK BILL

H-88436

P-60481-3



For use with rotary cam springs and general spring adjustment. Also for use in adjusting polar relay of pre-pay and post-pay paystations (spring adjusting)



For use in adjusting tension on dial governor, pulse and shunt springs, Strowger switch wipers, and tensioning master-switch governor springs.

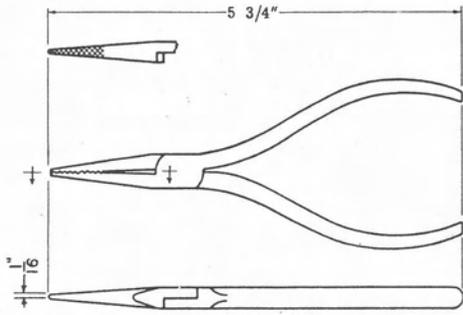
MAINTENANCE TOOLS

PLIERS, LONG NOSE

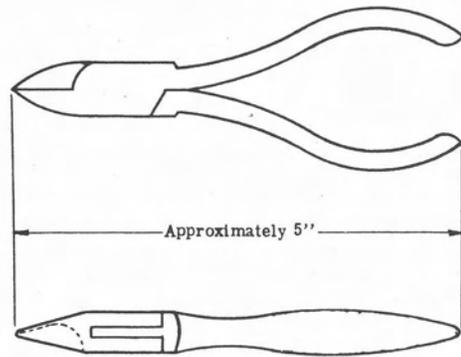
H-50619

PLIERS, OBLIQUE CUTTING

H-22945



For general use



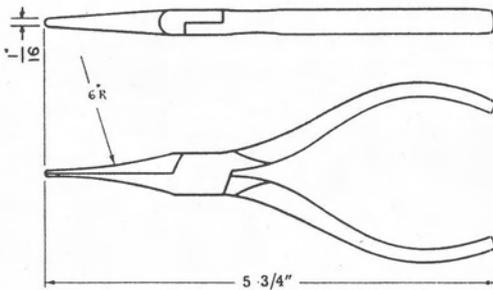
For general use

PLIERS, WIPER SPRING AND STROWGER SWITCH

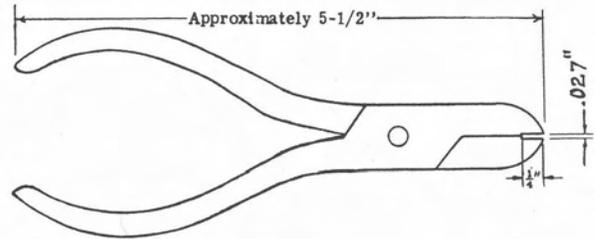
H-881637-1

PLIERS, PAYSTATION

H-883377-1

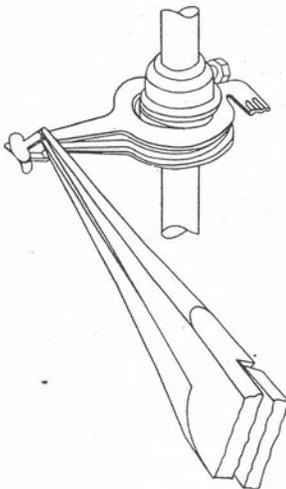


For general use



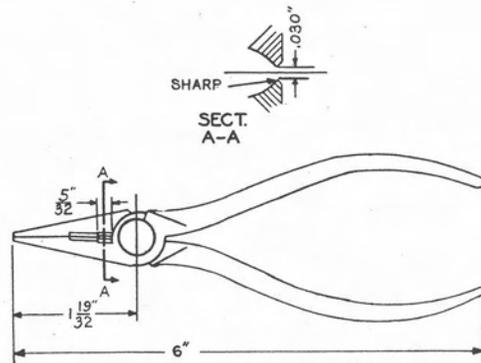
DETAIL NO. 5

For use in adjusting polar relay of pre-pay and post-pay paystations (crimping)



PLIERS, INSULATION SKINNING

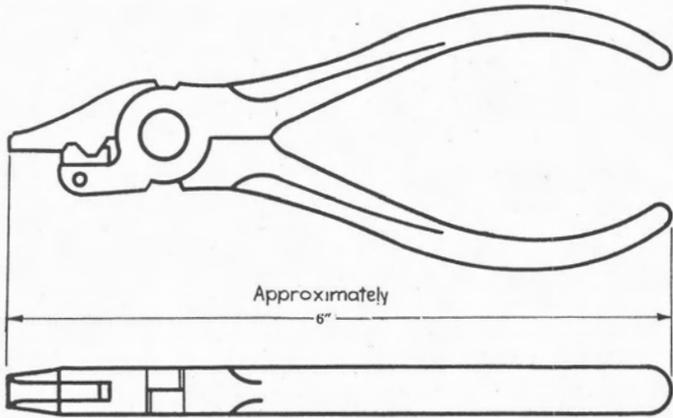
H-883312-1



For use on P.V.C. (22 A.W.G.) wire

PLIERS, WIPER

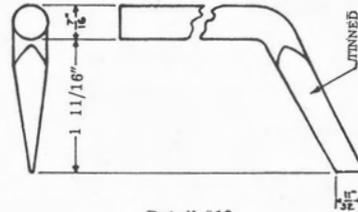
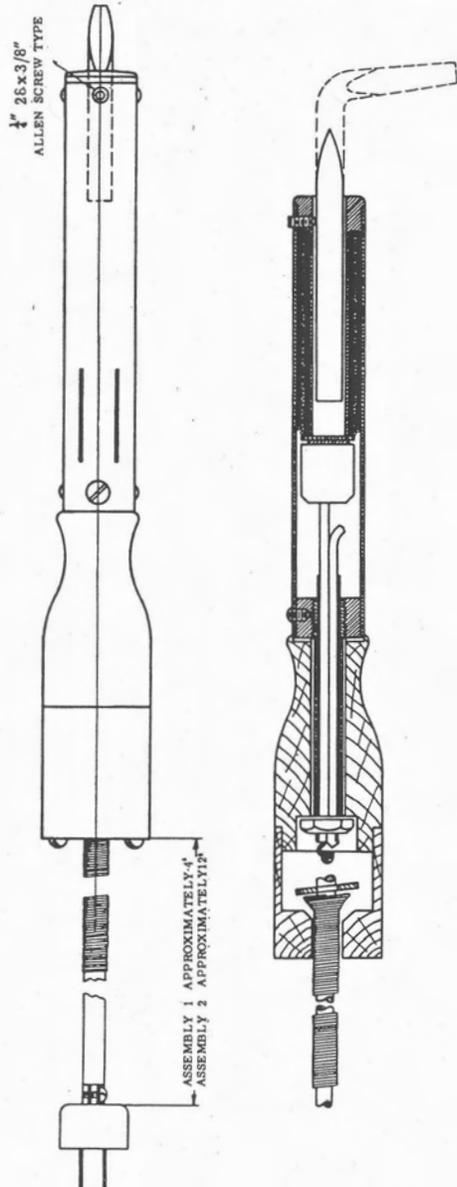
H-881674-1



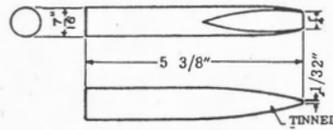
For use in readjustment of Strowger switch wipers and reforming wiper tips that may be accidentally damaged

SOLDERING IRON, ELECTRIC

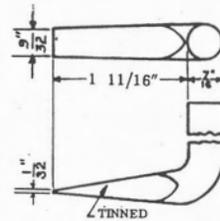
H-883614-1
and 2



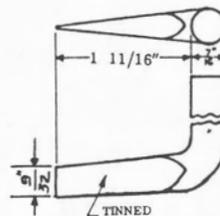
Detail #13



Detail #14



Detail #15



Detail #16

For general use

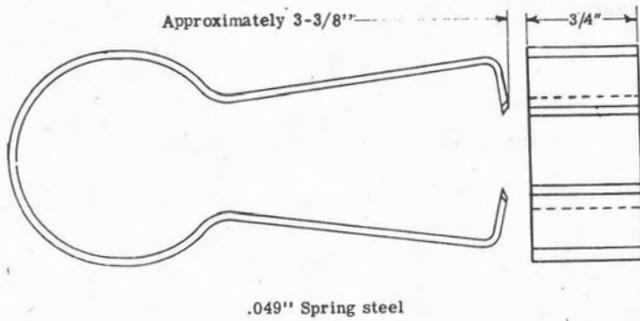
MAINTENANCE TOOLS

SCRAPER, WIRE

H-25906-1

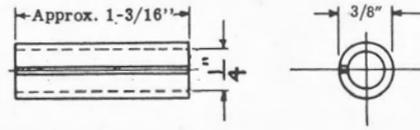
SLEEVE, PLUG

D-18175-A



.049" Spring steel

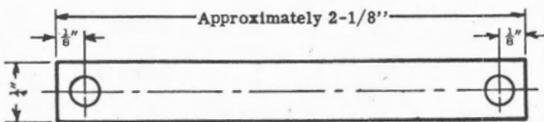
For general use



For use on plug sleeve (out of order plugs)

SPACER, INSULATING

D-440197-A
and B



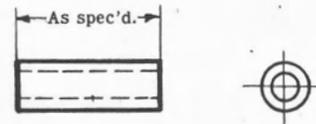
D-440197-A 1/16" thick
D-440197-B 3/32" thick

Red fibre

For use in blocking out lines on line and cut-off relays

SLEEVING, CLEANING TOOL

D-542539-A



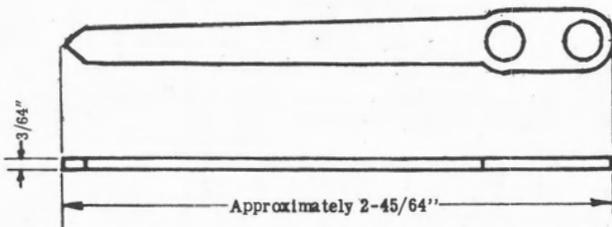
D-542539-A Packed Dry (Order per foot)
H-880842-1 (90 ft. can with bottle of oil)
H-881496-1 (90 ft.) abrasive webbing

See Bulletin No. 506 "Care of
Strowger Switch Bank Contacts"
for other materials and instructions

For use with 100 and 200 point bank cleaning tools
H-16590-2 and 1 respectively.

SPACER, INSULATING

D-44757-A

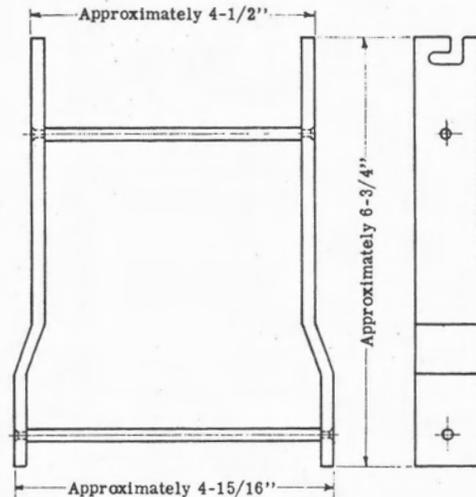


Gray fibre

For use in separating springs on B.C.O. (bridge
cut-off) relay, to insulate protector springs and to hold
relay springs operated.

SUPPORT, SWITCH

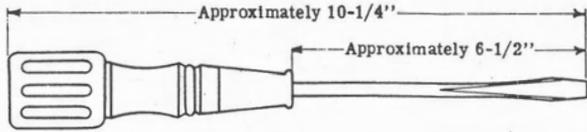
H-26221-1



For use in checking rear of Strowger switch while on
shelf

SCREWDRIVER

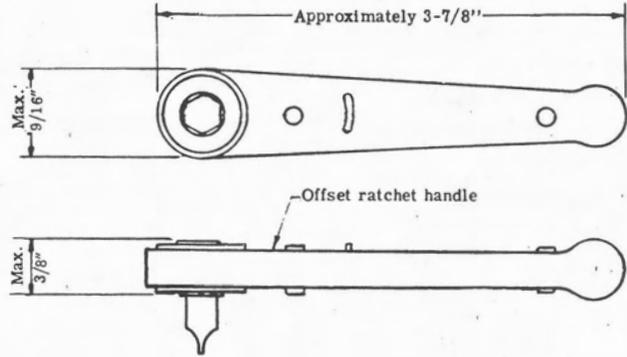
H-24664



For general use

SCREWDRIVER,
RIGHT ANGLE RATCHET

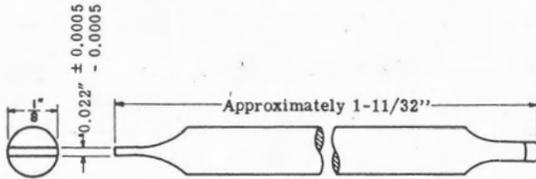
H-47754-1



For use on short lever relay armature and general use

SCREWDRIVER

H-45963-1
and 2

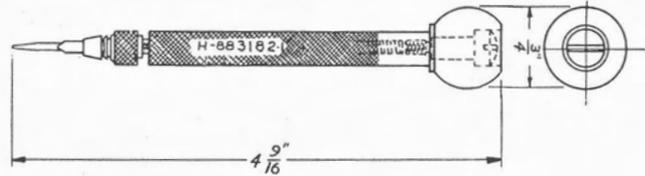


SCREW DRIVER BLADE
FOR ABOVE
H-45963-2

For use on power supervisor's board

SCREWDRIVER, GUIDE PIN

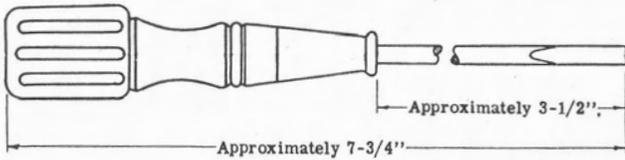
H-883182



For use on switchboard cord and plug assembly

SCREWDRIVER

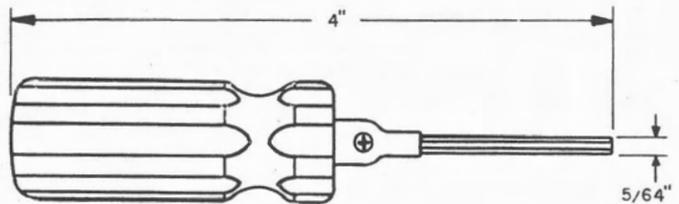
H-880622-1



For general use

SCREWDRIVER, KEY TYPE

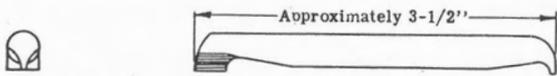
H-883794-1



For use on Model 21 I.B.M. writer assembly (ticket printer)

SCREWDRIVER, OFF-SET

H-21766

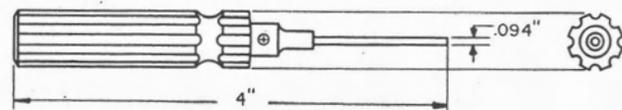


Blade on each end .037" maximum thickness

For general use

SCREWDRIVER, KEY TYPE

H-883822

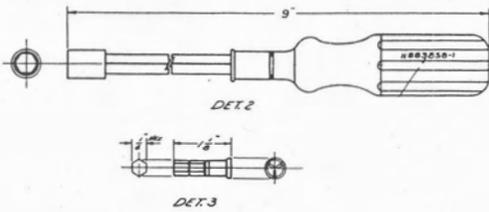


For adjusting setscrews on series PTW polar relays

MAINTENANCE TOOLS

SCREWDRIVER

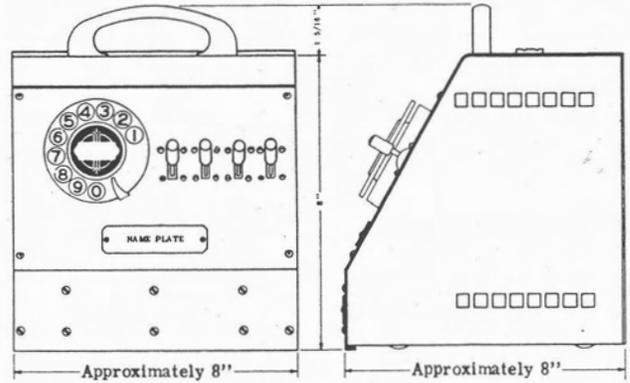
H-883858-1



For use on 8 Holt pan head screw (emergency reporting telephone).

TEST SET, ROTARY

H-881174-1

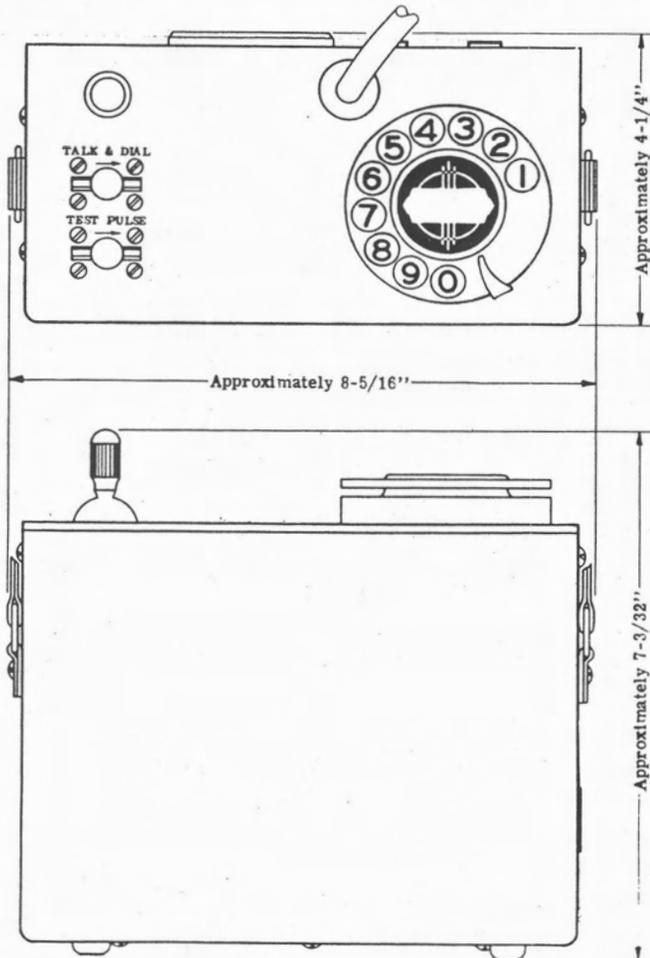


For use in routine maintenance of relay-interrupted 10- and 20-trunk battery-searching selectors.

PRECAUTION: Circuits of test sets must match those of equipment to be tested.

TEST SET, DIALING AND TALKING

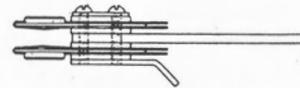
H-880859-1



For use in testing simplex-dialing intertoll selectors and trunks.

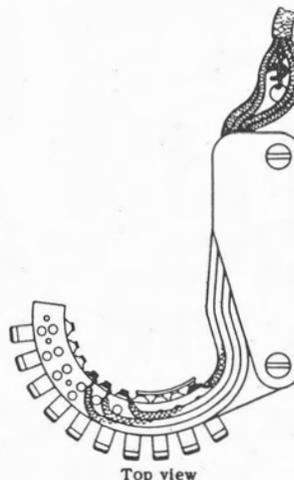


TEST CLIP (D-542626-A) USED WITH A ONE CONDUCTOR CORD



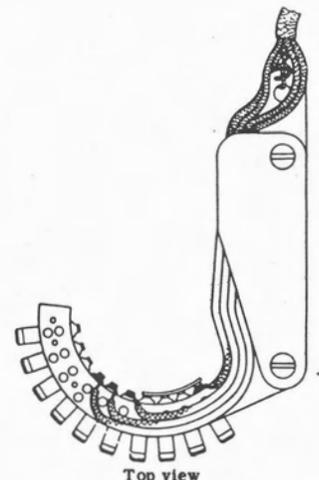
Used with 4 conductor cord and spade terminations

TEST PLUG (D-541784-A) USED WITH A FOUR CONDUCTOR CORD



Top view

BANK BUSYING TOOL
(H-78977-12) (10 PT)



Top view

BANK BUSYING TOOL
(H-78977-1) (20 PT)

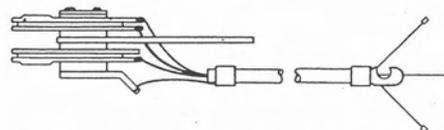
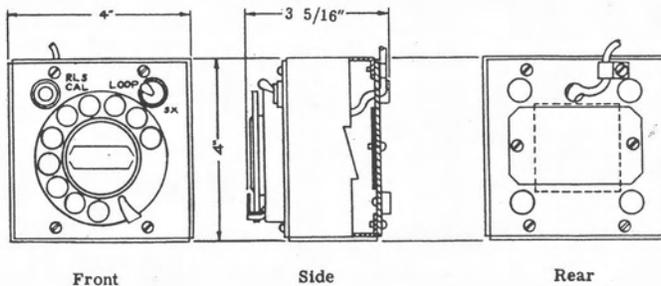
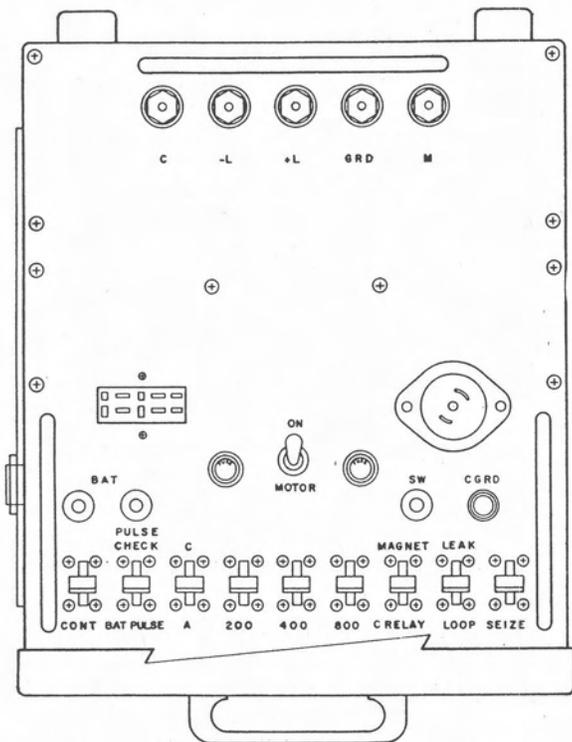
MAINTENANCE TOOLS

**TEST SET, PULSING
(VARYING MACHINE)**

H-882240-1

**TEST SET, TOLL SELECTOR
"C" RELAY**

H-880623-3



CORD & TEST PLUG ASSEMBLY D-543081-A
(THIS CORD AND TEST PLUG ASSEMBLY IS PART OF THE TEST SET)

For use with toll selectors (Loop and simplex pulsing)

NOTE: Test sets are arranged for bench or remote (shelf mounted) testing.

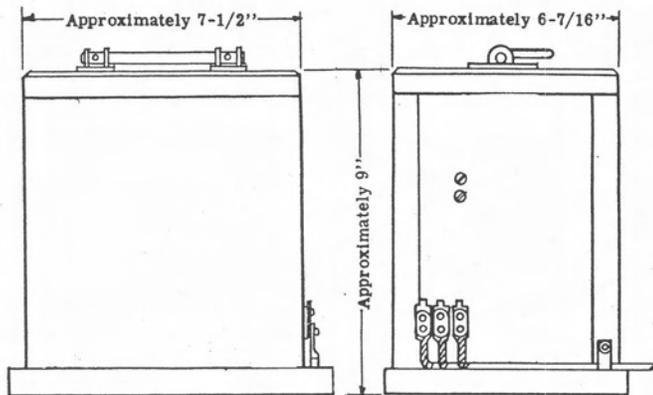
For use in testing, pulsing, stepping and "B" relay action of the Strowger switch

TEST SET, LINEFINDER

H-881444-1&2

TEST SET, BUZZER

H-23355-1,
2, 3 and 4



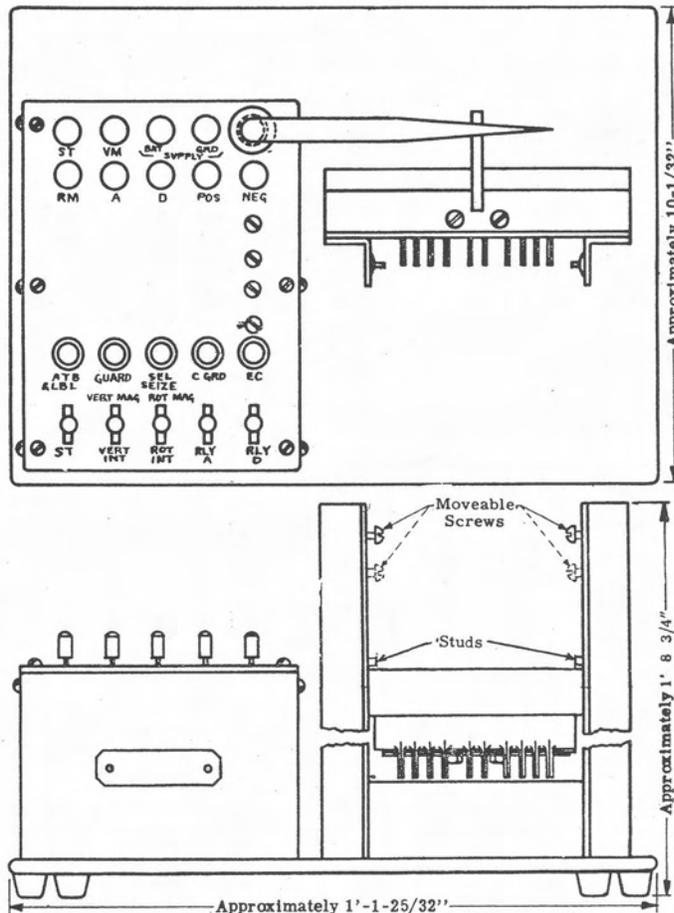
Assem. 1 for long distance
Consists of dry cells, buzzer, jack, cord, operators telephone set, condenser and resistor

Assem. 2 for buzzer set
Consists of dry cells, buzzer, jack, cord, condenser and resistor

Assem. 3 battery set for long distance
Consists of dry cells, jack, operator's telephone set

Assem. 4 for trunk testing
Consists of dry cells, buzzer, jack, relays, cord, condenser and resistor

For use in trunk testing



For use with linefinder switch

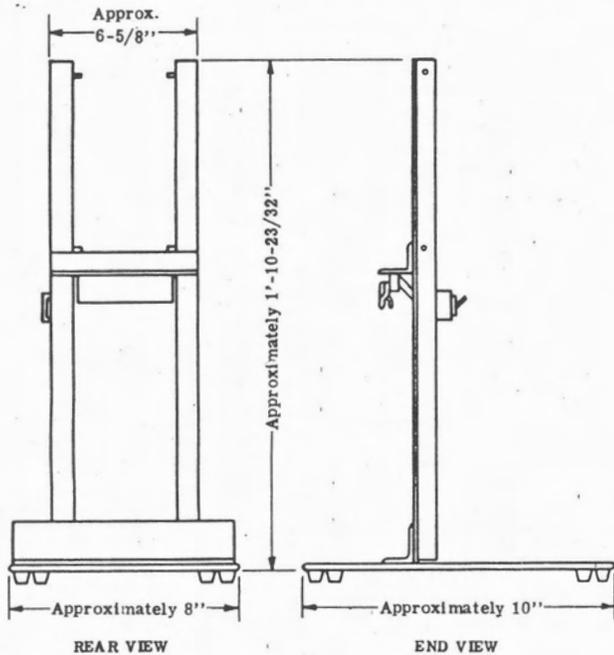
BULLETIN 540

TEST STAND (STROWGER SWITCH)

H-881346-3

TEST STAND, DOUBLE WIDTH
SWITCH BASE

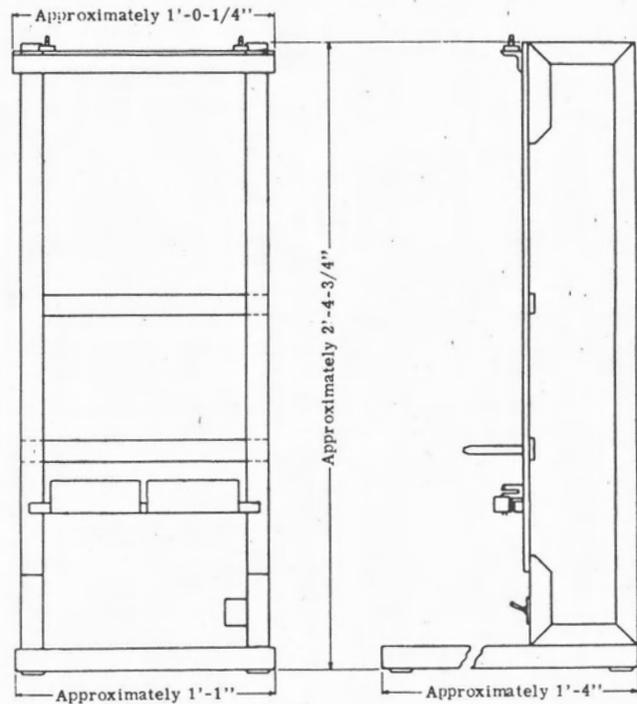
H-880263-1



ASSEMBLY 3

All steel construction using a 32 point shelf jack

For use with linefinders, connectors and selectors having Navy jacks



ASSEM. 1

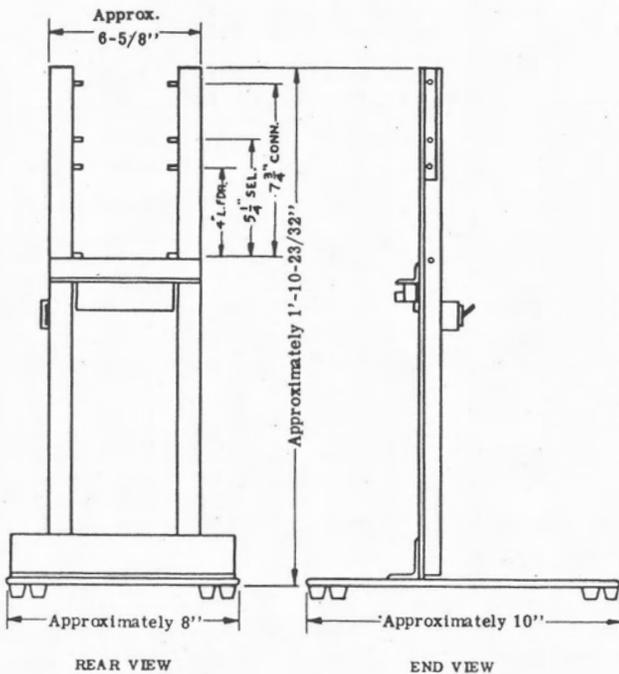
For use in adjusting and testing ticketer

TEST STAND (STROWGER SWITCH)

H-881346-1

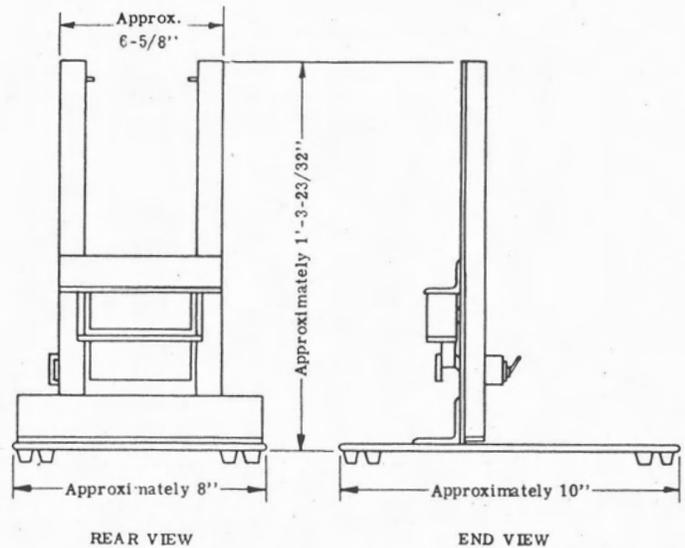
TEST STAND (STROWGER SWITCH)

H-881346-2



ASSEMBLY 1

For use with selectors, connectors, linefinders and miscellaneous relay groups having standard jacks.



ASSEMBLY 2

For use with switches having a connector mounting and Navy type jacks

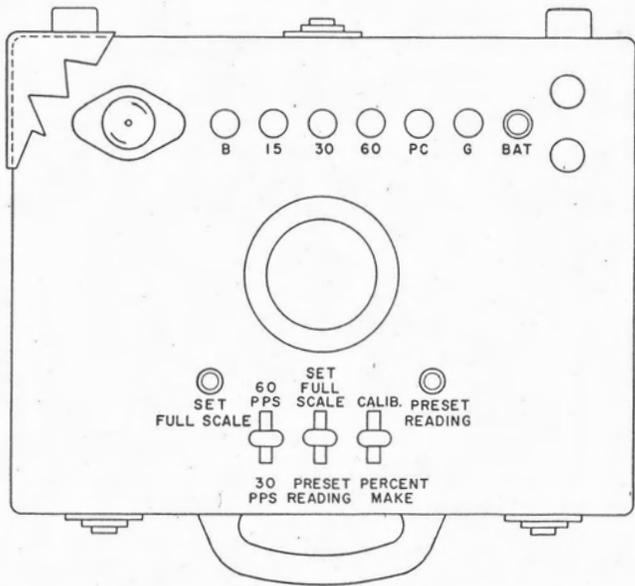
BULLETIN 540

TEST SET, PORTABLE

H-883227-1

TEST PLUGS

D-57048-A 2 PT
~~D-57030-A 4 PT~~
 D-57037-A 6 PT
 D-57038-A 8 PT

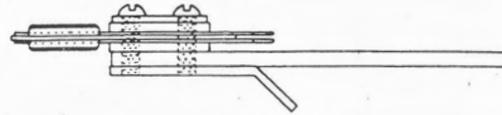


1' 0-1/2" x 11-5/16" x 7-9/16"

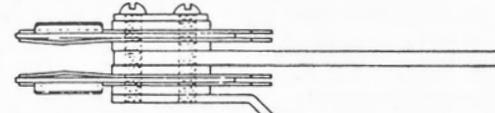
For use in making speed and percent make measurements on loop, ground, or battery pulses or pulses derived from another source of 44 to 52 volts.



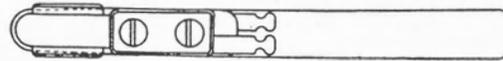
2 PT.



4 PT.



6 PT.



8 PT.

For use in general testing

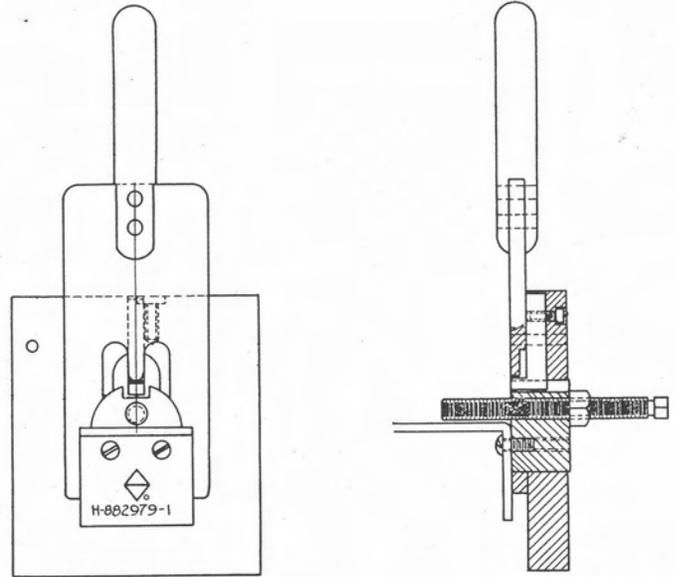
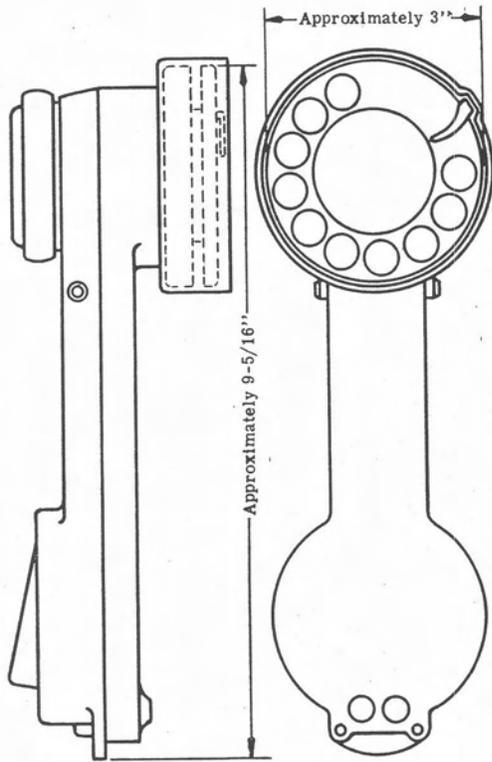
MAINTENANCE TOOLS

TEST, HAND TELEPHONE

L-965

TOOL, BENDING

H-882979-1



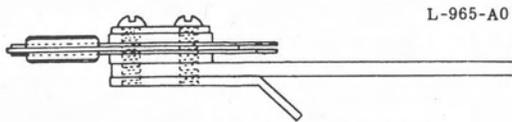
For snap-on type normal post cam.

\$40.00

For general switch room use and watchman's service.
Uses plugs and cords below:

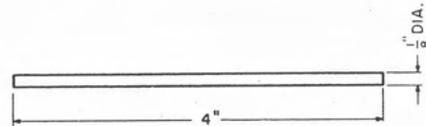
TOOL, TENSION ADJUSTING

H-883857-1

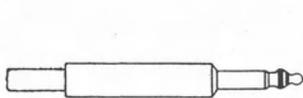


D-542313-A (Cord included)

2 POINT TEST PLUG ASSEMBLY

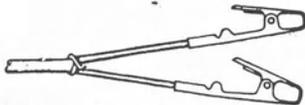


For emergency reporting telephone.



D-542349-A

CORD AND PLUG ASSEMBLY



D-542320-A

CORD AND TEST CLIP ASSEMBLY

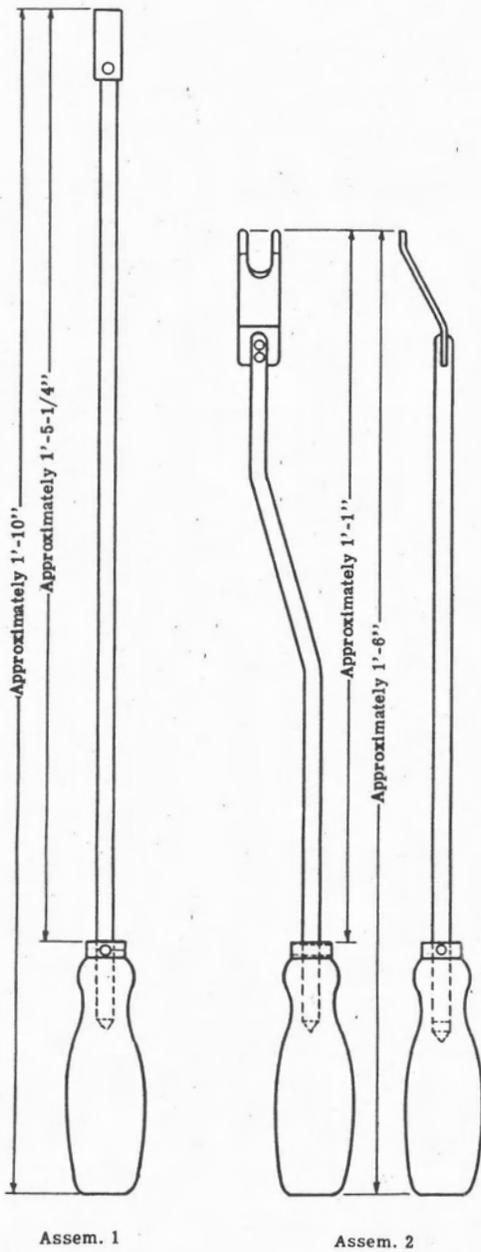
BULLETIN 540-B

WRENCH, JACK FASTENER

M-6656-1, 2

WRENCH, HEXAGON SOCKET

H-11841-1



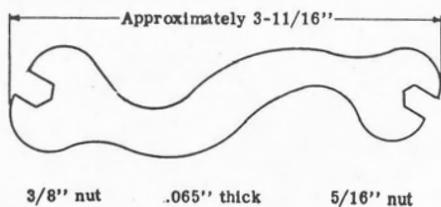
Assem. 1

Assem. 2

For use in mounting manual board jack strips

WRENCH, "S" HEXAGON

H-10774

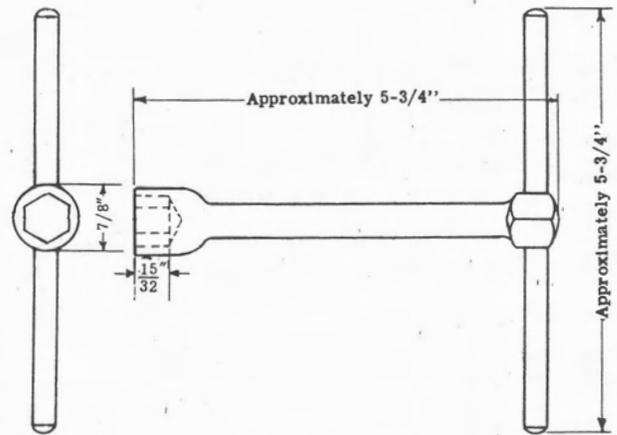


3/8" nut

.065" thick

5/16" nut

For general use

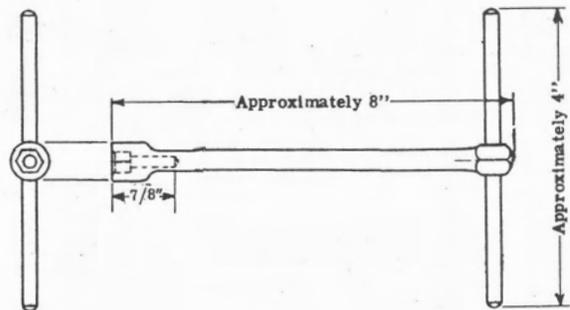


For 9/16" nut

For use on line switchboard sections

WRENCH, HEXAGON SOCKET

H-13748-1

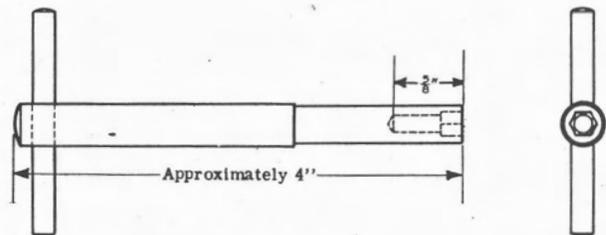


For 5/16" nut

For use on plunger lineswitch banks

WRENCH, HEXAGON SOCKET

H-46440-1



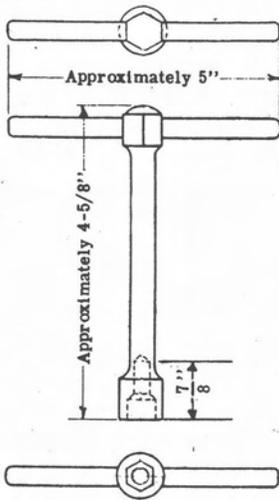
For 7/32" nut

For use on hexagon head screw that fastens the double dog clamp, rotary and vertical clamp and the shaft spring

MAINTENANCE TOOLS

WRENCH, HEXAGON SOCKET

H-7058-1

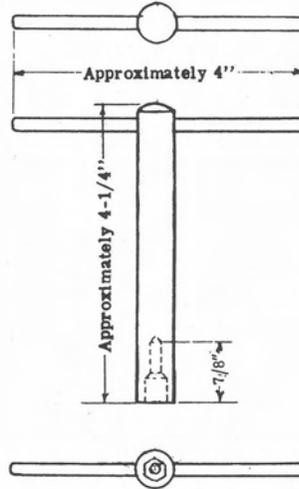


For 3/8" nut

For use on Strowger switch rotary magnets and general use

WRENCH, HEXAGON SOCKET

H-10053-1

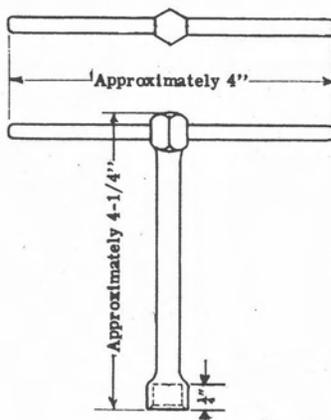


For 5/16" nut

For use on plunger lineswitches and general use

WRENCH, SQUARE SOCKET

H-7061-1

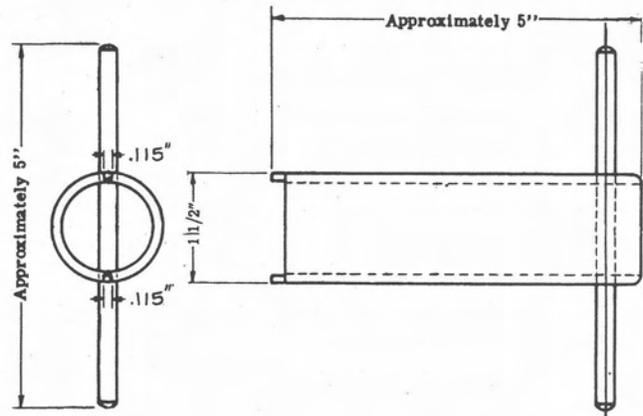


For 1/4" nut

For use on master switch shaft clamping screws

WRENCH, MONOPHONE SPANNER

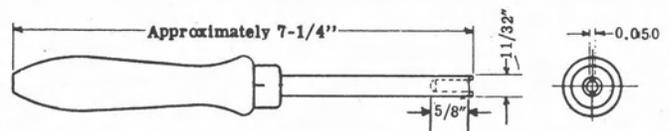
H-43173-1



For use in removing cradle from Types 1A and 31. Monophones

WRENCH, SLOTTED NUT

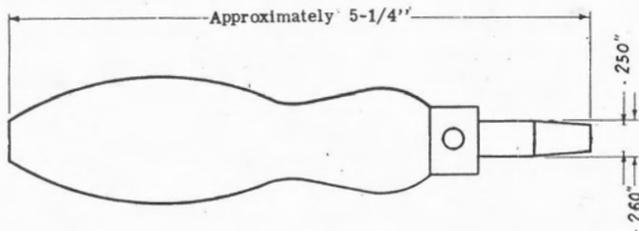
H-7065-1



For use on #8 circular slotted nuts

WRENCH, JACK THIMBLE

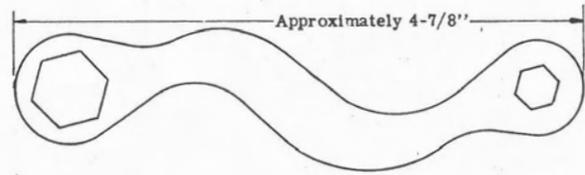
MP-1221-A



For use on jack thimble of magneto manual boards

WRENCH, "S" HEXAGON

H-20703

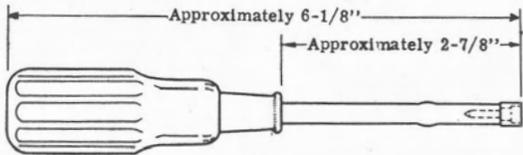


For 5/8" hexagon nut .095" thick For 5/16" hexagon nut

For use on rotary line switch Types 13 and 14

WRENCH, SPINTITE

H-46437-1

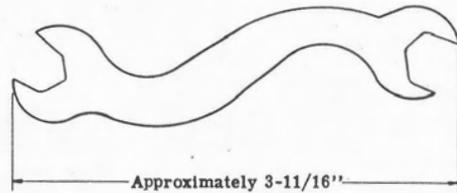


For 3/16" nut

For use in assembling wipers to Strowger switch shaft

WRENCH, OPEN END

H-880773-1

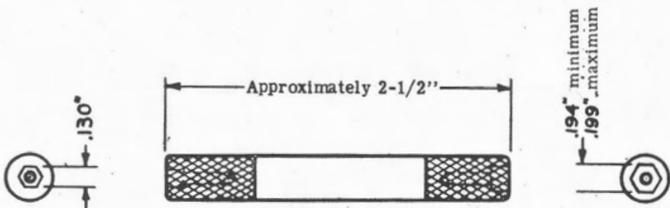


3/8" nut 1/8" thick 7/16" nut

For use with Type 44 and 45 switch

WRENCH, CAM NUT SOCKET

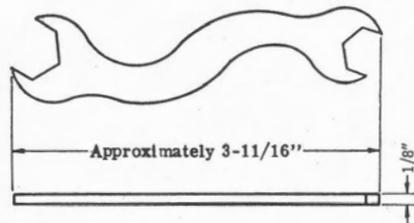
H-16480



For use on dial cam nut

WRENCH, "S"

H-50448

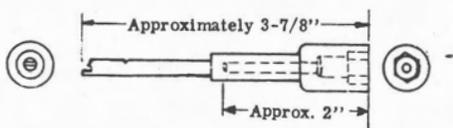


7/16" nut 9/16" nut

For use on Type 29 ringing converter and general use

WRENCH, HEXAGON SOCKET

H-10772

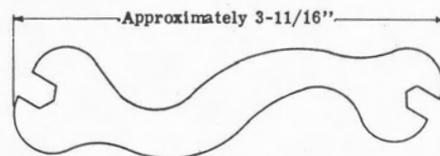


For 5/16" nut

For use on flat type terminal strip assemblies used in a hand drill or screw drivers having a chuck for holding interchangeable blades

WRENCH, "S"

H-7062



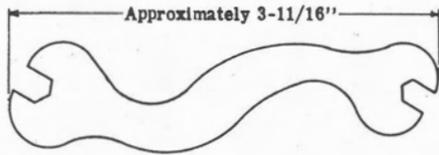
1/4" nut .065" thick 7/32" nut

For general use and adjusting residual screw on relays

MAINTENANCE TOOLS

WRENCH, "S"

H-7063

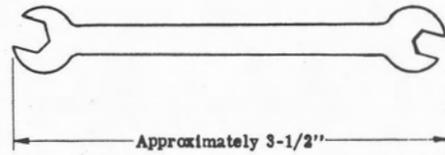


3/8" nut 1/8" thick 5/16" nut

For general use

WRENCH, OPEN END

H-880772-1

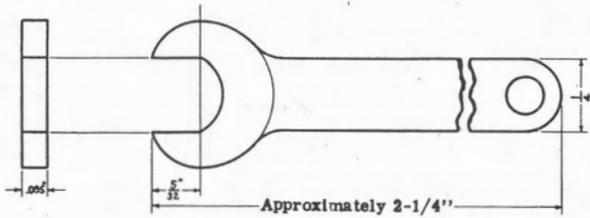


1/4" nut .083" thick 3/16" nut

For use with Type 44 and 45 rotary switch

WRENCH, DIAL

H-25937

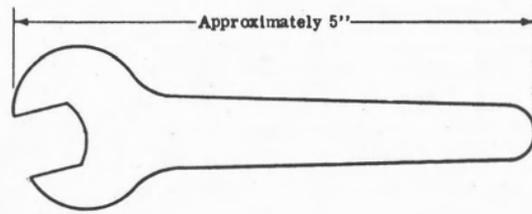


Opening .256" max., .253" min.

For use on dial governor and cam nut

WRENCH, END

H-23865

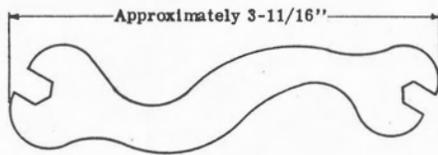


5/8" nut

For use on rotary lineswitch armature adjusting screw

WRENCH, "S"

H-20309

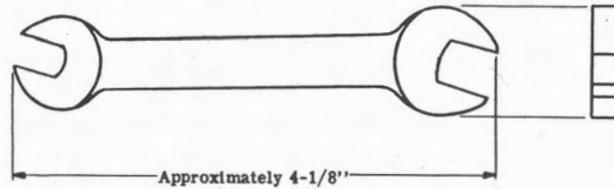


5/16" nut 1/8" thick 7/32" nut

For use on harmonic ringer

WRENCH, OPEN END

H-880672-1

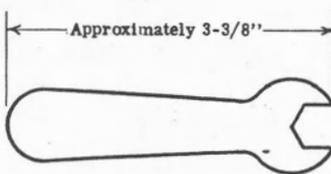


5/16" nut 25/64" nut

For use on Strowger switch vertical and rotary magnet locking cap and general use

WRENCH, PAYSTATION

P-60481-2

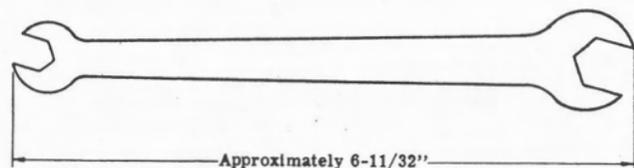


DETAIL NO. 2
3/16" THICK
5/16" nut

For use in adjusting polar relay of pre-pay and post-pay paystations (tightening pivot screw lock nut)

WRENCH, OPEN END

H-880771-1



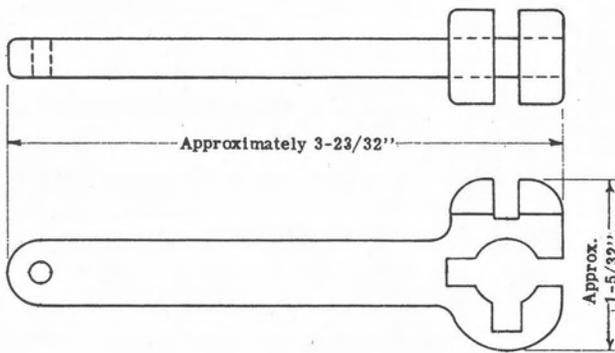
5/16" nut .083" thick 1/2" nut

For use on Type 45 rotary switch

BULLETIN 540

WRENCH, WIPER

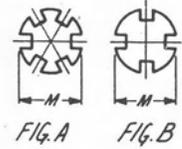
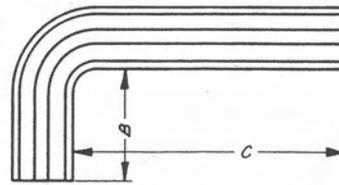
H-7057



For use on Strowger switch wiper with threaded hub and nut.

WRENCH, SOCKET KEY

H-883793-1,
2 and 3

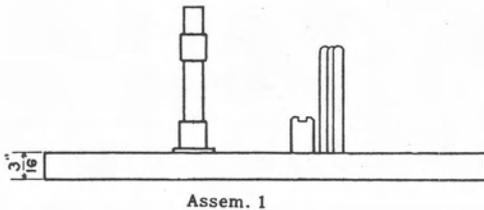
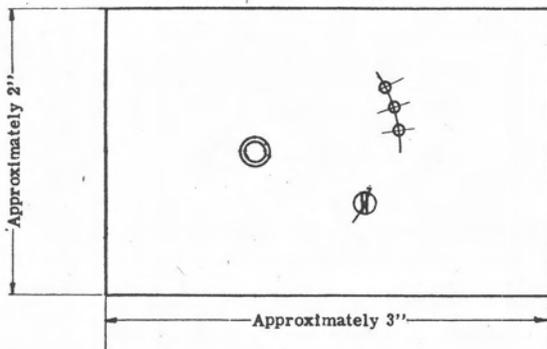


DRG. NO.	FIG. NO.	B	C	M
H-883793-1	B	21/32"	1-27/32"	.069"
H-883793-2	A	45/64"	1-31/32"	.094"
H-883793-3	A	3/4"	2-3/32"	.110"

For use on Model 21 I.B.M. writer assembly (ticket printer)

WIPER, ASSEMBLY TOOL

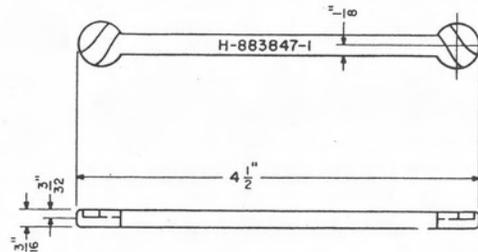
H-50829-1



For use in reassembling minor switch wiper

WRENCH, ARMATURE BENDING

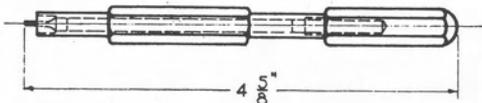
H-883847-1



For use on horizontal (Class A) relays.

WRENCH, HEXAGON SOCKET, DOUBLE-END WITH SCREW-DRIVER

H-883772-1

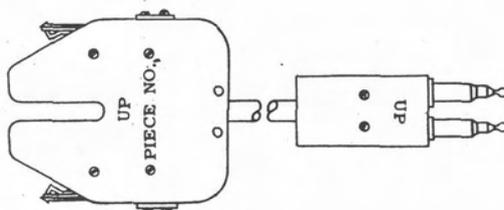


For use in adjusting relay armature residual screws and nuts (Engages 7/32" and 1/4" hexagon nuts) (Screw driver .02" thick)

MAINTENANCE TOOLS

TEST PLUG AND CORD ASSEMBLIES

See table for code numbers



TYPICAL PLUG AND CORD ASSEMBLY

For Protector	Length of Cord	USE ASSEMBLY			
		With twin plug for jack assembly		With twin plug for H-47082-1 jack box or H-11022-11 test box	With spade terminal (Replacing twin plug)
		H-50830-1 & 2	H-880982-1		
A.E.Co. Type 676	12'-0" 18'-0"	D-57068-A D-57068-B	D-57068-H D-57068-J		D-57068-C D-57068-D
A.E.Co. Type 675 10, 20, 21 and 22 pair banks	12'-0" 18'-0"	D-57140-A D-57140-B	D-57140-E D-57140-F	D-57011-A	D-57140-C D-57140-D
A.E.Co. Type 675 50-51 pair banks	18'-0"	D-57107-A	D-57107-B	D-57045-A	
Cook Electric Co. Type 3800	12'-0" 18'-0"	D-57099-A D-57099-B	D-57099-E D-57099-F		D-57099-C D-57099-D
Cook Electric Co. Type 100	12'-0" 18'-0"	D-57141-A D-57141-B	D-57141-E D-57141-F	D-57021-A	D-57141-C D-57141-D
Cook Electric Co. Type 60	18'-0"			D-57017-A	
Cook Electric Co. Type 10	12'-0" 18'-0"	D-57143-A D-57143-B	D-57143-E D-57143-F	D-57014-A	D-57143-C D-57143-D
W.E.Co. Type C-50 and C-52*	12'-0" 18'-0"	D-57142-A D-57142-B	D-57142-E D-57142-F		D-57142-C D-57142-D
W.E.Co. Type 1168, 1169, 1268, 1269 and 1177-A*	18'-0"			D-57020-A	
Reliable Electric Co.	12'-0"				D-57060-A

* TEST CORD ASSEMBLIES NOT SUPPLIED WITH W.E.CO. PROTECTOR TEST PLUG.

For use with exchange distributing frames (H-50830-1 and 2 are 1/2" centers) (H-880982-1 are 1" centers)

MAINTENANCE TOOLS

PRODUCT-TOOL-USAGE GUIDE

TOOLS		PRODUCTS																							
DESCRIPTION	PART NO.	STEPPING SWITCHES					RELAYS							MISCELLANEOUS											
		STROWGER (2 MOTION)	MINOR SWITCH (10 Point)	Type 13 (25 Point)	Type 14 (50 Point)	Type 26 (11 Point)	Type 44 (10 Point)	Type 45 (25 or 50 Point)	Horiz. Class "A" & Type 28 Class "Z"	Type 57-A Class "B"	Type 58-A Class "C"	Class "E"	Type 10 Class "F"	Type 27 Class "M"	Rotor Relay and BarRelay	Class S	Series YQA (Code)	DIAL	KEYS - LEVER, PUSH and TURN	LAMP JACK STRIPS	MONOPHONE	PLUG JACK STRIPS	SLEEVE MOUNTING JACK	TARGET INDICATOR	MASTER-SWITCH AND PLUNGER LINESWITCH
Lineswitch, Mounting	H-24528																								X
Adjuster, Spring	H-24600		X					X																	
Wrench, Dial	H-25937																X								
Dial, Escutcheon	H-26917																			X					
Adjuster, Spring	H-42873		X					X	X		X														
Burnisher, Contact	H-883699-1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X		X
Monophone Tool	H-43172																			X					
Wrench, Spanner	H-43173-1																		X						
Adjuster, Spring	H-44359												X												
Adjuster, Spring	H-45590												X												
Adjuster, Armature Stop	H-46410																							X	
Adjuster, Spring	H-46411																							X	
Adjuster, Spring Holder	H-46412																							X	
Adjuster, Detent	H-46413																							X	
Wrench, Socket	H-46437-1	X																							
Wrench, Socket	H-46440-1	X																							
Gauge, Thickness	H-46795-50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								X
Adjuster, Spring	H-46974-1															X									
Adjuster, Spring	H-46975-1															X									
Adjuster, Cam	H-47202	X																							
Cleaner, Rotary Switch	H-47386-1		X	X	X	X	X	X																	
Pliers, Duck Bill	H-50620						X	X																	
Monophone Tool	H-50754																			X					
Wiper, Assembly	H-50829-1	X																							
Adjuster, Armature	H-56518											X													
Cleaner, Rotary Switch	H-56628-1			X	X																				
Cleaner, Rotary Switch	H-56628-2			X	X	X		X																	
Adjuster, Spring	H-64670												X												
Adjuster, Spring	H-64980															X									
Pliers, Jack Spring	H-880621-1																					X			
Screwdriver, Cabinet	H-880622-1																					X			
Wrench, Strowger Magnet	H-880672-1	X																							

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PRODUCT-TOOL-USAGE GUIDE

TOOLS		PRODUCTS																								
DESCRIPTION	PART NO.	STEPPING SWITCHES					RELAYS					MISCELLANEOUS														
		STROWGER (2 MOTION)	MINOR SWITCH (10 Point)	Type 13 (25 Point)	Type 14 (50 Point)	Type 26 (11 Point)	Type 44 (10 Point)	Type 45 (25 or 50 Point)	Horiz. Class "A" & Type 28 Class "Z"	Type 57-A Class "B"	Type 58-A Class "C"	Class "E"	Type 10 Class "F"	Type 27 Class "M"	Rotor Relay and BarRelay	Class S	Series YQA (Codel)	DIAL	KEYS - LEVER, PUSH and TURN	LAMP JACK STRIPS	MONOPHONE	PLUG JACK STRIPS	SLEEVE MOUNTING JACK	TARGET INDICATOR	MASTER-SWITCH AND PLUNGER LINESWITCH	
Wrench, Rotary Switch	H-880771-1						X																			
Wrench, Rotary Switch	H-880772-1						X	X				X														
Wrench, Rotary Switch	H-880773-1						X	X																		
Stepping Tool	H-881384-1						X																			
Handle Remover	H-881419-1																		X							
Adjuster, Spring	H-881602-1 & 2								X																	
Adjuster, Spring	H-881603-1								X																	
Pliers, Wiper Spring	H-881637-1	X																								
Pliers, Wiper Forming	H-881674-1	X																								
Adjuster, Bk stop & Arm.	H-884149-1										X															
Adjuster, Spring	H-881859-1								X																	
Adjuster, Spring	H-88385											X														
Adjuster, Spring	H-88390																	X								
Gauge, Jack Sleeve	H-88409																					X				
Pliers, Duck Bill 30°	H-88436	X							X																	
Adjuster, Armature(57A)	H-88502-1								X																	
Adjuster, Spring	H-88504-1 & 2								X																	
Cleaning, Bank Brush	H-88844-1 & 2	X																								
Wrench, Jack Fastener	M-6656-1 & 2																		X		X					
Wrench, Jack Thimble	MP-1221-A																						X			
Lamp, Visual Face	MP-4425-A																		X							
Gauge, Manual	MP-5127-A																					X				
Wrench, Hexagon Socket	H-883772-1								X																	
Extractor, Lamp Cap	H-883114-1																		X							
Extractor, Lamp Cap	H-882568-2																		X							
Tool, Bending	H-882979-1	X																								
Switch Tester, Type 26	H-883635-1	X																								
Wrench, Arm. Bending	H-883847-1								X																	
Adjuster, Spring	H-883998-1												X													
Adjuster, Spring	H-883999-1												X													
Adjuster, Spring	H-884000-1												X													
Adjuster, Spring	H-884148-1										X															

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H-881602-1 and 2	6		
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H-881637-1	19		
H-881674-1	20		
H-881859-1	6		
H-882240-1	25		
H-882553-1	10		
H-882568-2	13		
H-882674-1	10		
H-882803-1	27		
H-882816-1 and 2	15		
H-882816-3 and 4	15		
H-882979-1	29		
H-883114-1	13		
H-883127-1	24		
H-883182	22		
H-883227-1	28		
H-883312-1	19		
H-883377-1	19		
H-883384-1	11		
H-883584-1	17		
H-883595-1	7		
		L	
		L-965	29
		M	
		M-6656-1 and 2	30
		MP	
		MP-1221-A	32
		MP-4425-A	17
		MP-5127-A	15
		P	
		P-60481-1	3
		P-60481-2	33
		P-60481-3 (H-88436)	18
		P-60481-4	15

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