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BELL SYSTEM PRACTICES  
Private Branch Exchange  
Inst. and Mtoe.

SECTION B503.605  
Issue 2-D, 1-15-40  
AT&TCo Standard

CLEANING PROCEDURES  
FOR  
RELAY CONTACTS AND PARTS  
AND FOR  
CONTACTS IN GENERAL EXCEPT KEY  
AND JACK CONTACTS

1. GENERAL

1.01 This section covers cleaning procedures to be followed in cleaning relay contacts and parts and contacts in general except key and jack contacts, and replaces Section B503.605, Issue 1-D. It also covers the procedures to be followed in reconditioning of contacts having pits and buildups. These procedures supplement the procedures for cleaning which are included in the sections of Division B400 covering the various types of apparatus.

1.02 This section is reissued to add procedures for removing buildups and cleaning pitted contacts, to cover general information relative to contacts having pits and buildups, to add information relative to care of tools used in contact maintenance, to cover relays and switches equipped with bar type contacts, to add procedures for cleaning contacts and parts of 114, 186, 190, 207, 213, 218B, 247, 248, 251, 252, U, Y and UA type relays, and to

1.02 (Continued)

revise the procedures for flushing contacts with carbon tetrachloride. Detailed reasons for issue will be found at the end of the section.

1.03 Due to the fact that the failure of a circuit to function properly is often traced to dirty contacts or dirty or gummy parts, it is essential that contacts and parts be kept clean. Therefore, it is important that the inside of relay covers, both of the individual and group type, switch covers and other apparatus covers should be kept clean and should not be left off longer than absolutely necessary. Also, cabinet doors covering line switches, relays etc. should not be kept open unnecessarily.

1.04 The bottle containing the C.P. carbon tetrachloride should be kept closed when not in use to prevent evaporation and to prevent dust getting into the liquid. The liquid and the inside of the bottle must not be permitted to become dirty. Occasional cleaning of the bottle and replacement of the liquid will prevent this. It is also important that a clean new toothpick be used for each application to prevent the deposit removed from one point being left in the liquid and later deposited on other parts of the apparatus.

2. LIST OF TOOLS AND MATERIALS

<u>Code No.</u>	<u>Description</u>
<u>Tools</u>	
265C (or the replaced 265B)	Contact Burnisher (Includes Nos. 266B and 266C tools)
266B	Contact Burnisher Blade

<u>Code No.</u>	<u>Description</u>
266C	Wire Burnisher
340	Adjusting Key
373B	Contact Burnisher
510A	Test Lamp
527A	Buildup Remover
-	R-1446 File Cleaner
-	R-2217 - 4-3/4" Tweezers
-	KS-2993 Brush
-	KS-6320 Orange Stick
-	3" Cabinet Screwdriver
-	Piece of thin stiff metal for cleaning Polepieces (Preferably nonmagnetic)
-	W2BL Cord

Materials

D-98063 or KS-2423	Cloth
KS-6528	Relay Cleaning Tape
KS-6815	C.P. Carbon Tetrachloride
KS-7187	Bell Seal Bond Paper, Sub- stance No. 20 - 1/2" x 2-1/2"
KS-7188	Bell Seal Bond Paper, Sub- stance No.20 - 1/4" x 2-1/2"

<u>Code No.</u>	<u>Description</u>
-	Friction Tape
-	Toothpicks, Hardwood, Flat at One End and Pointed at the Other

### 3. GENERAL CLEANING

3.01 If an excessive amount of dust has collected on or adjacent to the contact portions of the apparatus, remove it with the KS-2993 cleaning brush or with a piece of D-98063 cloth. The use of a vacuum cleaner is desirable in order to collect dust and to prevent it from spreading to other apparatus.

3.02 To accomplish the desired result, hold the open end of the vacuum cleaner hose in close proximity to the parts from which the dust is being removed. Protect adjacent apparatus while performing this operation.

### 4. CARE OF TOOLS USED IN CONTACT MAINTENANCE

4.01 It is very important to keep clean the blades of contact burnishers, burnishing files and any thickness gauges which may be used on the contacts. Avoid touching or rubbing the blades with the fingers. Wipe off the burnisher blades, files and gauges with a clean dry D-98063 cloth before placing them against the contacts and wipe them frequently with a clean D-98063 cloth dampened with carbon tetrachloride.

4.02 The file portion of the No. 527A build-up remover should be cleaned when necessary. To do this, remove the file from the mask by placing the blade face down on the edge of a bench or vise with the handle extending

over the edge. Then place the blade of the screwdriver in back of the file as indicated in Fig. 1 and tap the handle of the screwdriver lightly using the handle of another screwdriver or similar object thus forcing the file from the mask. Do not push the file from the mask as damage to the mask may result.

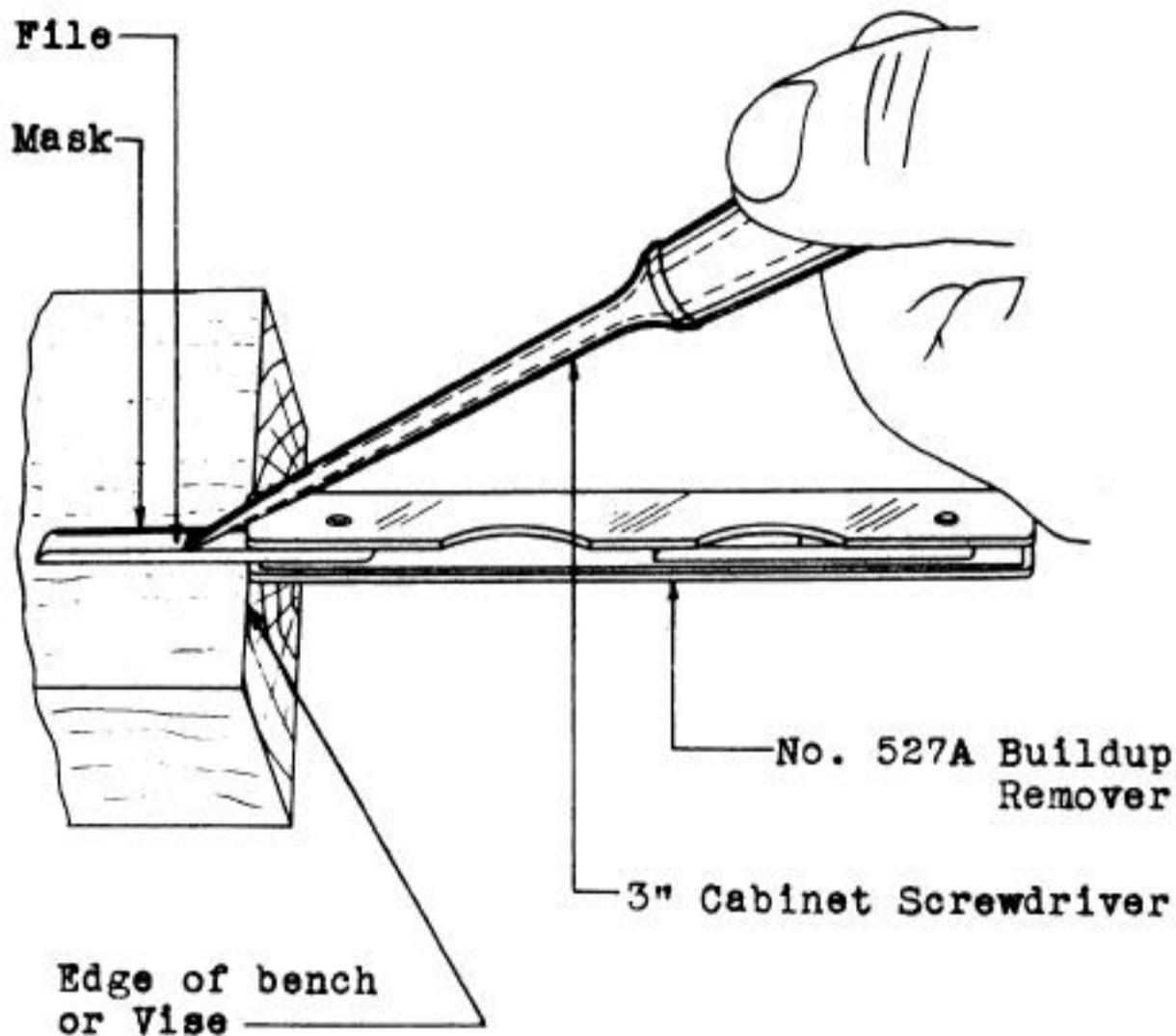


Fig. 1 - Method of Removing File from Mask

4.03 Using the R1446 file cleaner, brush the surface of the file at right angles to its length until all imbedded material has been removed. As an alternative method the file may

4.03 (Continued)

be cleaned by using a piece of soft brass or zinc and rubbing this across the file at right angles to its length. After removing the imbedded material, wipe off all surfaces of the file with D-98063 cloth slightly moistened with C.P. carbon tetrachloride. After wiping the grease and dirt from the file with the cloth do not touch the cutting surfaces of the file with the fingers.

4.04 Remount the file in the mask by inserting the end of the file which is not bevelled into the mask and gently tap the file into position using the screwdriver or similar object. When a file has become worn to a point where it is no longer effective for removal of buildups replace it, removing the old file and inserting the new one in the same manner as outlined above.

5. CONTACT MAINTENANCE

General

5.01 Pitted or built up contacts on relays and other apparatus are not necessarily an indication that the end of the useful life of the contact has been reached. Do not replace relays or other apparatus as a result of contact erosion unless this erosion has reached a point on one of the contacts of the mating pair so that the contact is made on the base metal to which the contact is welded. In the case of twin contacts one contact of each mating pair should be worn through to the base metal before the apparatus requires replacement. When necessary, recondition contacts which are not worn through to the base metal by removing buildups and cleaning pits as outlined in 5.10 to 5.15 inclusive.

5.02 Fig. 2 represents a new bar type contact. Figs. 3 and 4 illustrate progressive stages of contact pitting. Fig. 3 illustrates a pitted contact which can be reconditioned by cleaning the depression and Fig. 4 a pitted contact where replacement is necessary. Figs. 5, 6, and 7 illustrate corresponding conditions for a disc type contact.



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7

5.03 Buildups and Pits - Buildups and pits on relay contacts result from the action of electric current as the relay makes and breaks contact. Buildups assume various forms and Figs. 8 to 11, inclusive illustrate some of the types encountered on relays. Where necessary remove buildups as outlined in 5.11 and 5.12. Buildups of the character shown in Fig. 11 can not however be removed by this method and should be cleaned as covered for cleaning of pits in 5.13 to 5.15. Sharp pointed buildups similar to those illustrated in Fig. 9 may result in the mechanical locking of the contacts in the operated or closed positions.

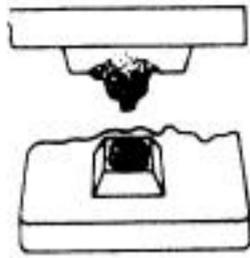


Fig. 8

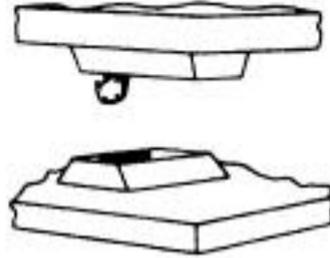


Fig. 9

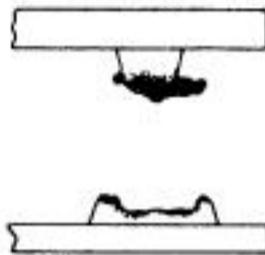


Fig. 10

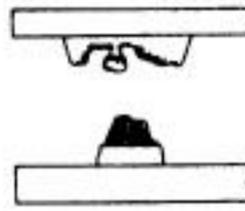


Fig. 11

5.04 When necessary to recondition contacts first inspect the contact surfaces using a 510A test lamp to determine whether or not pits and buildups are present. If the inspection indicates that the contact erosion is of such a nature that buildup removal or pit cleaning is required proceed as outlined in 5.10 to 5.15 inclusive.

#### Cleaning Nonpitted Contacts

5.05 Burnishing Contacts When necessary to clean contacts burnish them using the clean No. 266B blade of the No. 265C contact burnisher. It is very important to keep clean the blades of contact burnishers and any thick-ness gauges which are used on the contacts. These

should be wiped off frequently with a clean dry D-98063 cloth before being placed against each contact and frequently wiped with a clean D-98063 cloth dampened with carbon tetrachloride.

5.06 In burnishing normally open contacts place the blade of the burnisher between the contacts, press them together with the KS-6320 orange stick as indicated in Fig. 12 or operate the relay manually giving a slight pressure against the blade of the burnisher at the same time moving the blade back and forth. Figs. 12 to 17 inclusive illustrate methods for

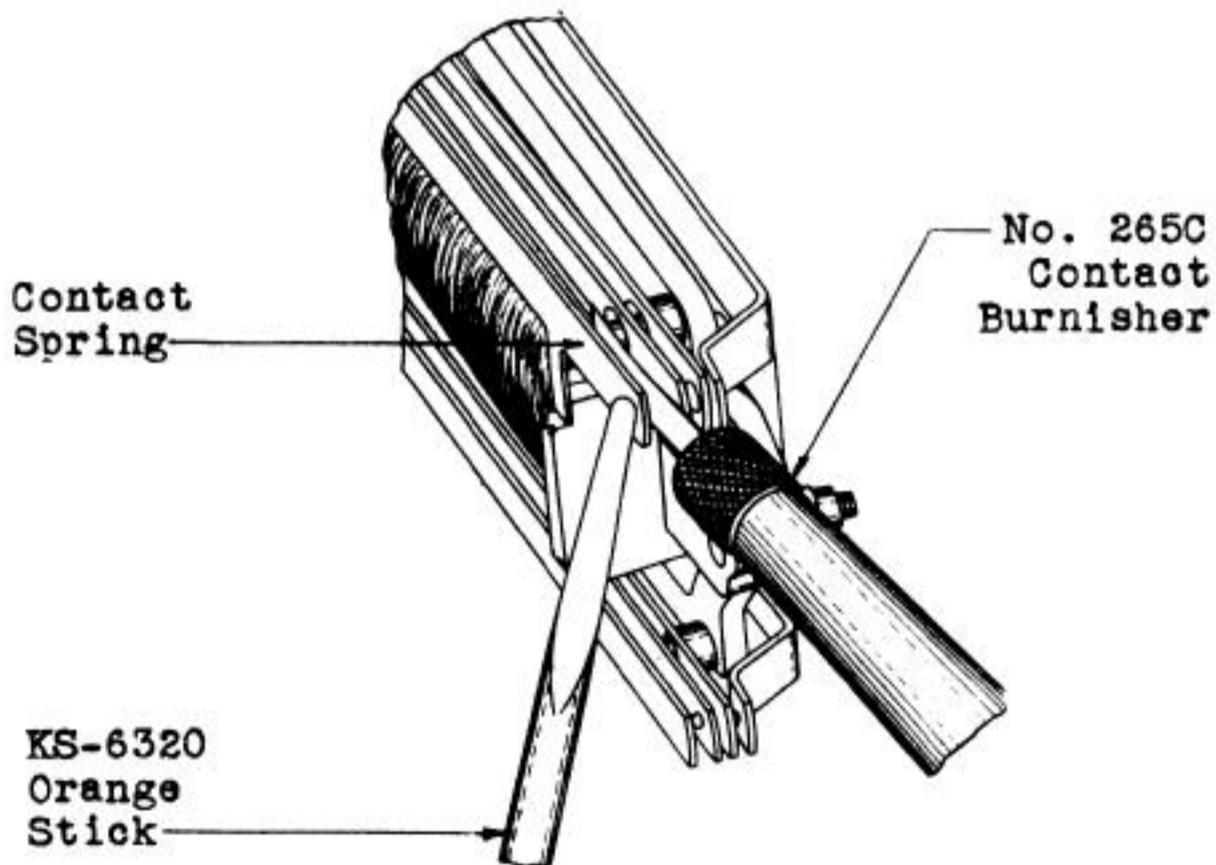


Fig. 12 - Method of Burnishing Contacts on A, E, F, H, R, T and AB Type Relays

5.06 (Continued)

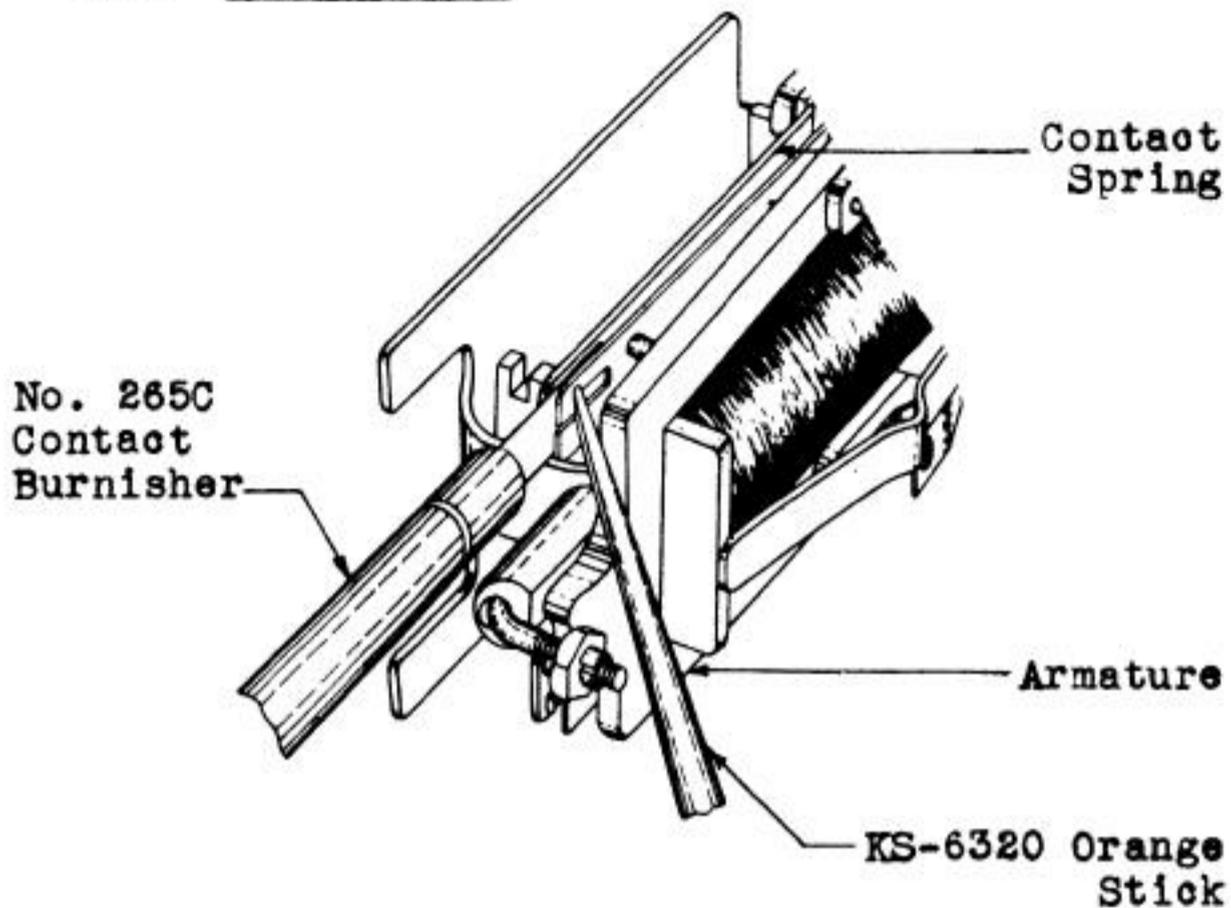


Fig. 13 - Method of Burnishing Contacts  
on U and Y Type Relays

some typical relays. Burnish similar types of contacts on other relays in the same general manner. The desired result is usually obtained by rubbing the burnisher between the contacts 2 or 3 times. In the case of the normally closed contacts the tension of the springs themselves will usually furnish sufficient pressure against the burnisher. On springs having heavy tension lift one of the springs away sufficiently to insert the burnisher. To obtain sufficient tension on voltmeter and milliammeter relays operate the relays electrically to close the contacts as they are being burnished.

No. 265C  
Contact  
Burnisher

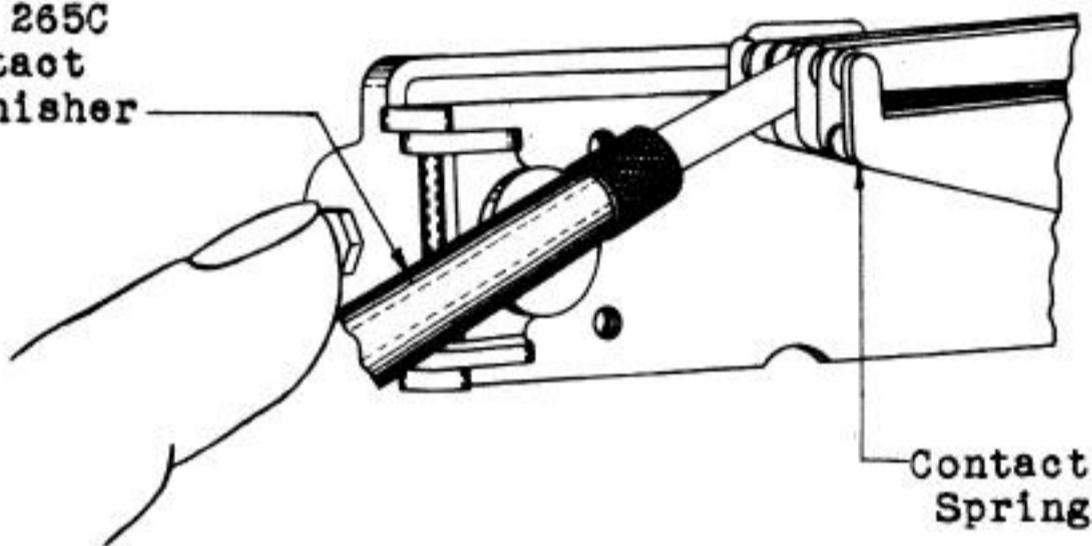


Fig. 14 - Method of Burnishing Contacts  
on 221, 222, 223, 224, 225, 247,  
248, 251 and 252 Type Relays

5.07 Flushing Contacts - When unable to clear contact trouble by burnishing only clean and flush the contacts in the following manner. Dip the flat end of a clean toothpick into the carbon tetrachloride to a depth of about 1/2" and deposit the liquid on the contacts (held slightly separated) without rubbing. Then dip the flat end of another toothpick in the carbon tetrachloride and again deposit the liquid on the contact without rubbing to flush away the dirt which has been loosened by the first application. Take care to keep the carbon tetrachloride from coming in contact with the spoolheads or insulators. When the contacts are thoroughly dry burnish them as outlined in 5.05 and 5.06 to insure that no deposit or residue from the solution or any foreign material remains on the contact.

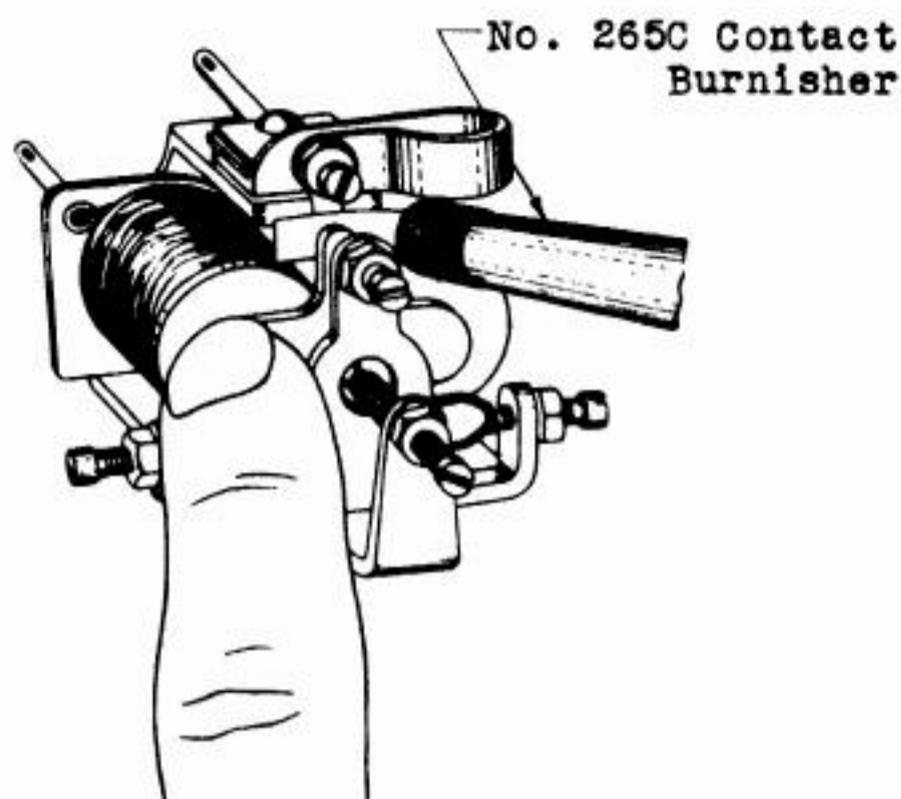


Fig. 15 - Method of Burnishing Contacts  
on 207 and 213 Type Relays

5.08 After burnishing note whether or not the contact follow and contact separation requirements are still met since repeated burnishing tends to increase the contact separation and to reduce the follow. If necessary correct in accordance with the procedures given in the section of Division B400 applying to the apparatus.

5.09 206, 209, 215, 231, 239 and 255 Type Relays Back off the contact screws equally far enough to permit the flat blade of the No. 265C contact burnisher to enter easily between the armature and the contact. This will facilitate burnishing the contacts on the arma-

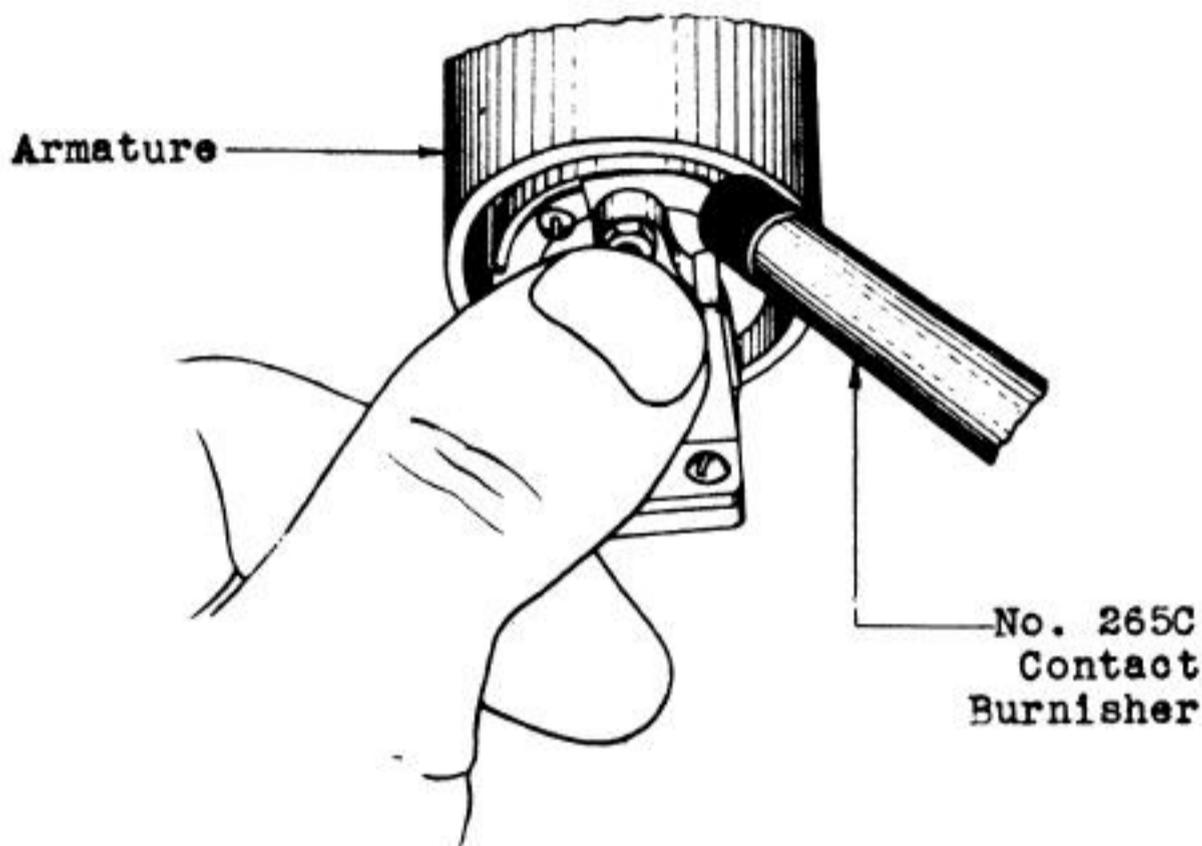


Fig. 16 - Method of Burnishing Contacts  
on 89, 101, 105, 108, 118  
and 172 Type Relays

ture and contact screws at the proper angle. Insert a clean blade (see paragraph 4.01) of the contact burnisher horizontally between the armature and the stationary contact, as indicated by Fig. 17. Hold the armature or flexible contact against the contact burnisher with the KS-6320 orange stick (in the case of flexible contact springs flatten the end of the orange stick and insert it between the springs) and proceed to burnish the contacts. While rubbing the contact burnisher back and forth take care to hold it parallel to the armature. Continue the operation until the contacts on both

5.09 (Continued)

sides of the armature are clean as determined by visual inspection. The use of the No. 510A test lamp will facilitate inspection of the condition of the contacts. Do not attempt to produce a convex surface on the stationary contact.

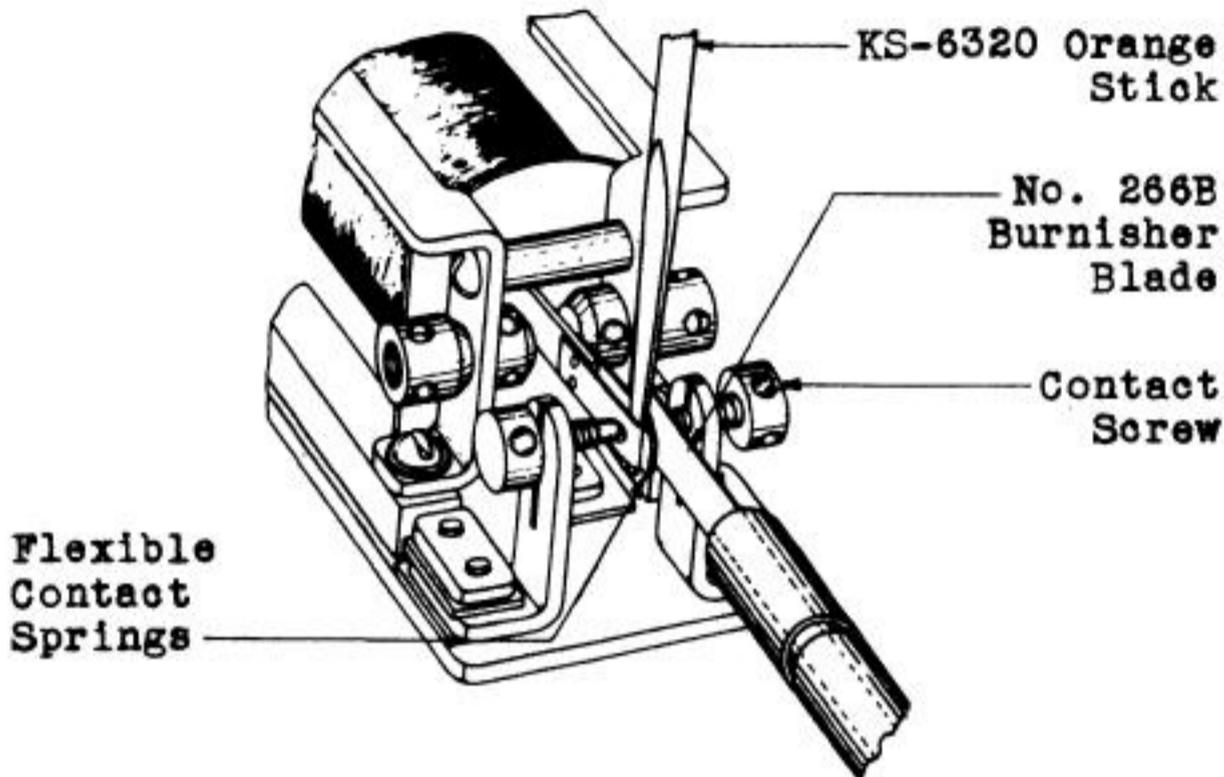


Fig. 17 - Method of Burnishing Contacts on 206, 209, 215, 231, 239 and 255 Type Relays

Reconditioning Contacts Having Pits or Buildups

5.10 Tool for Removing Buildups - The No. 527A buildup remover is provided with two blades, each consisting of a small masked file, for removing buildups from particular types of contacts. The mask on each blade is designed so that the normal height of the con-

tact is not reduced when using the tool. The label in the handle indicates the contacts on which the associated blade may be used. Do not attempt to use the tool for removing buildups from contacts other than those indicated.

5.11 Removing Buildups - Place the proper blade of the No. 527A buildup remover over the contact from which the buildup is to be removed. Exercise care in inserting the blade of the tool between the contacts to avoid applying pressure on the contacts which may force the contact off the spring. Hold the buildup remover so that the blade is approximately parallel to the center line of the spring as shown in Fig. 18 except in the case of the bifurcated springs on 245, 254 type relays. In

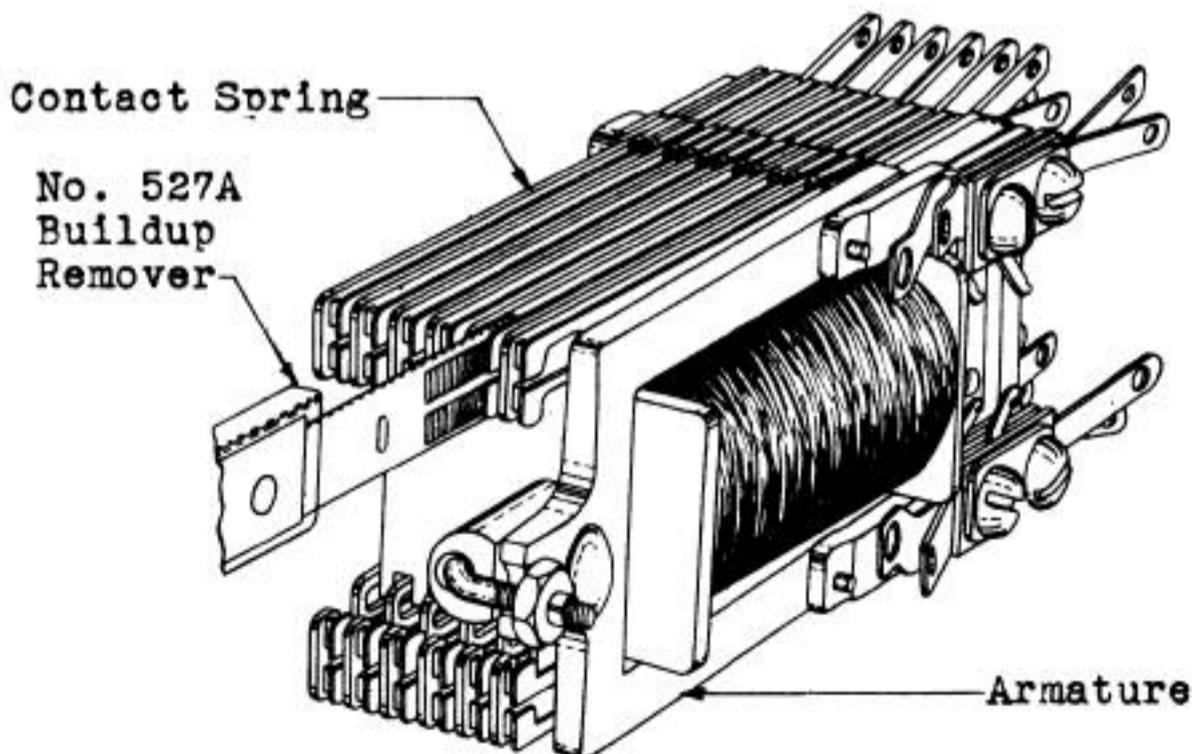


Fig. 18 - Method of Removing Buildups from U & Y Type Relay Contacts

5.11 (Continued)

these cases hold the blade at an angle of about 30° with the horizontal center line of the spring as shown in Fig. 19 to avoid excessive

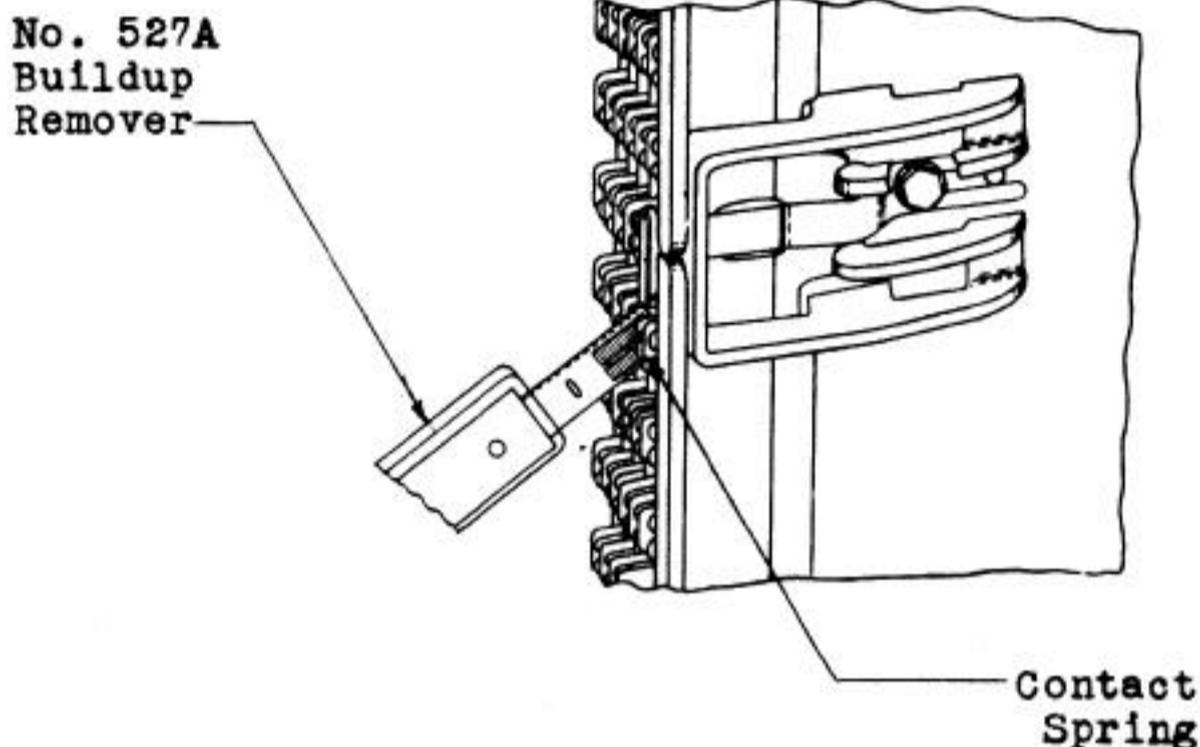


Fig. 19 - Method of Removing Buildups on 245 or 254 Type Relay Contacts

removal of contact metal with the file. Exert a slight pressure with the buildup remover toward the contact holding the buildup remover so that it is parallel to that portion of the spring to which the contact is welded and with the contact to be filed extending through one of the slots in the mask. In the case of bifurcated springs see that both contacts are seated in the two slots in the mask. Move the remover back and forth so as to file off the buildup portion of the contact. After two or three

strokes remove the tool from the contact and inspect the contact surfaces using the No. 510A test lamp (with the tip removed) as shown in Fig. 20. If the buildup has not been completely removed repeat the operation. Use only sufficient strokes with the buildup remover to remove the buildup as determined by visual inspection with the aid of the No. 510A test lamp. After the buildup has been removed burnish the contacts using the flat blade of the No. 265C burnisher and if necessary recondition the pit in the mating contact as outlined in 5.13 to 5.15 inc.

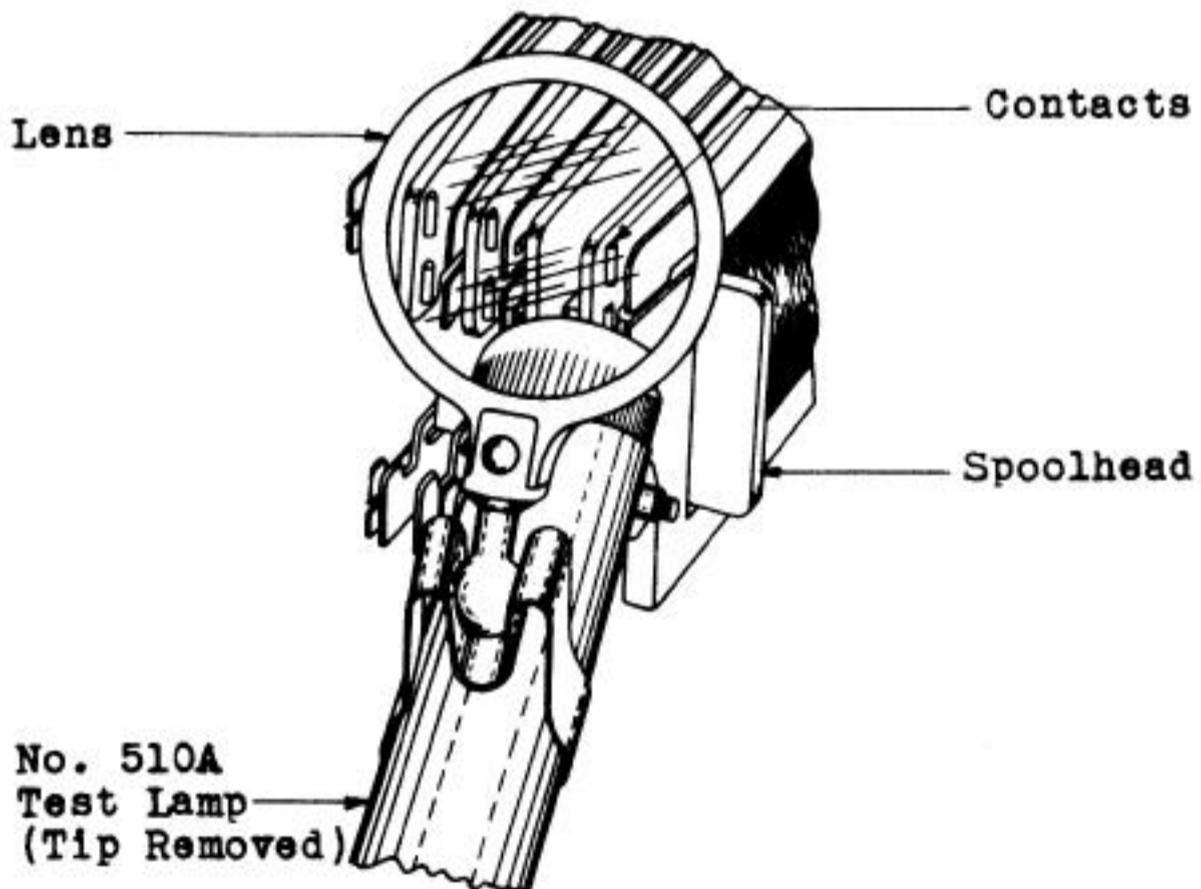


Fig. 20 - Method of Inspecting Contacts for Pits and Buildups

5.12 To remove buildups on extra heavy point and disc contacts on E and R type relays use the No. 373B contact burnisher. Exercise care in using this tool not to remove an excessive amount of the contact metal. Use only enough strokes to remove the buildup as determined by visual inspection using the No. 510A test lamp. The No. 373B contact burnisher may also be used to remove buildups from contacts on other relays for which a masked file is not provided if GREAT CAUTION is used to insure that the normal height of the contact metal is not reduced by the action of the tool.

5.13 Cleaning Pitted Contacts - Burnish the contacts to be cleaned using the flat blade of the No. 265C contact burnisher. Do not attempt in burnishing to remove the pit from the contact but burnish only sufficiently to insure that the flat contacting surface surrounding the pit is cleaned.

5.14 Burnish the pit using the No. 266C wire burnisher provided with the No. 265C contact burnisher. To do this place the ball point of the burnisher in the pit as illustrated in Fig. 21. If the pit is small rotate the

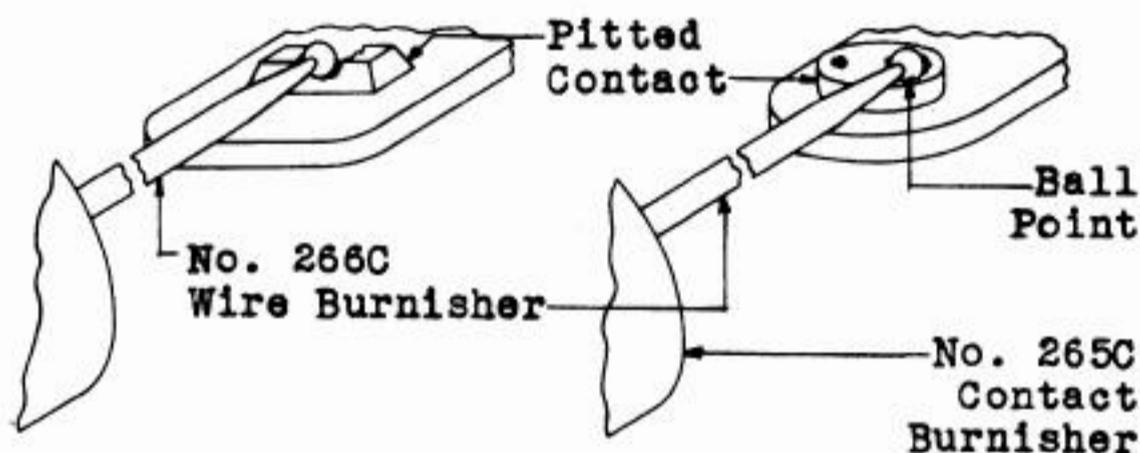


Fig. 21 - Method of Cleaning Pitted Contacts

barrel of the tool between the thumb and finger at the same time apply a slight pressure toward the contact. Apply this pressure by means of the tool itself since the wire is sufficiently rigid to transmit the necessary pressure. Inspect the contacts using the No. 510A test lamp (with the tip removed) and repeat this operation if necessary with the burnisher held at various angles until the entire surface of the pit has been cleaned. If the pit is large the cleaning operation may be accomplished by moving the ball point of the wire burnisher over the surface of the pit with a circular motion. After cleaning the pit again burnish using the flat blade of the No. 265C contact burnisher.

5.15 After burnishing note whether or not the contact follow and contact separation requirements are still met since repeated burnishing tends to increase the contact separation and reduce the follow. If necessary correct in accordance with the procedures given in the sections of Division B400 covering the apparatus.

## 6. CLEANING RELAY PARTS

### Cleaning of Relay Parts Equipped with Paper Armature Stops, Separators or Paper Back Stops

6.01 Do not attempt to clean relay parts equipped with paper armature stops, separators or paper back stops.

### Cleaning of Armatures and Cores or Pole-Pieces

6.02 General Take care that the surfaces of the core face (or pole-piece) and armature are cleaned at all points where they may touch each other. On relays having stop pins

6.02 (Continued)

(known as residual screws on 221, 222, 223, 224 and 225 type relays), it is only necessary to clean the stop pins and the core where the stop pins strike it. On B and G type relays having only one stop pin on the armature, it will be necessary to clean those portions of the armature and the core which may touch.

6.03 Cleaning Armatures and Cores of A, E, F, H, R, T, U, UA, Y and AB Type Relays. Insert KS-7188 paper between the armature and the core (or between the armature and the tip of the adjustable stop pin on F type relays). Press the armature manually toward the core so that a slight pressure exists between the strip of paper and the part being cleaned and then withdraw the paper. Repeat the operation until the paper shows no evidence of dirt when it is removed. Use a clean piece of paper for each operation. See Figs. 22, 23 and 24.

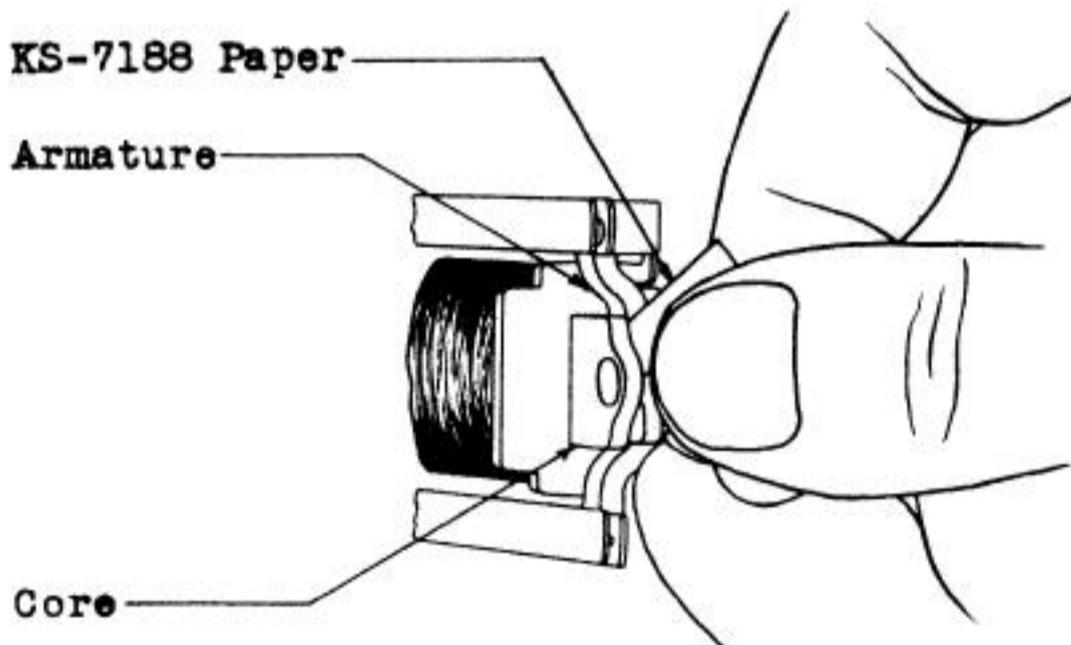


Fig. 22 - Method of Cleaning Armature and Core on A, E, F, H, R, T and AB Type Relays

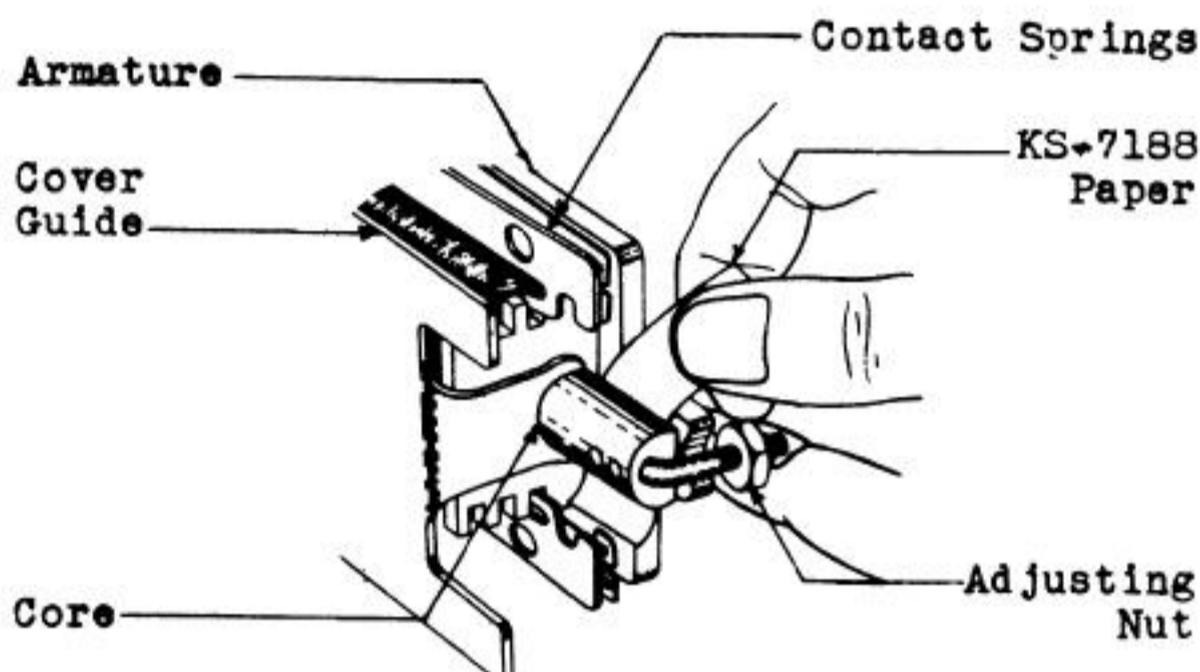


Fig. 23 - Method of Cleaning Armature and Core on U and Y Type Relays

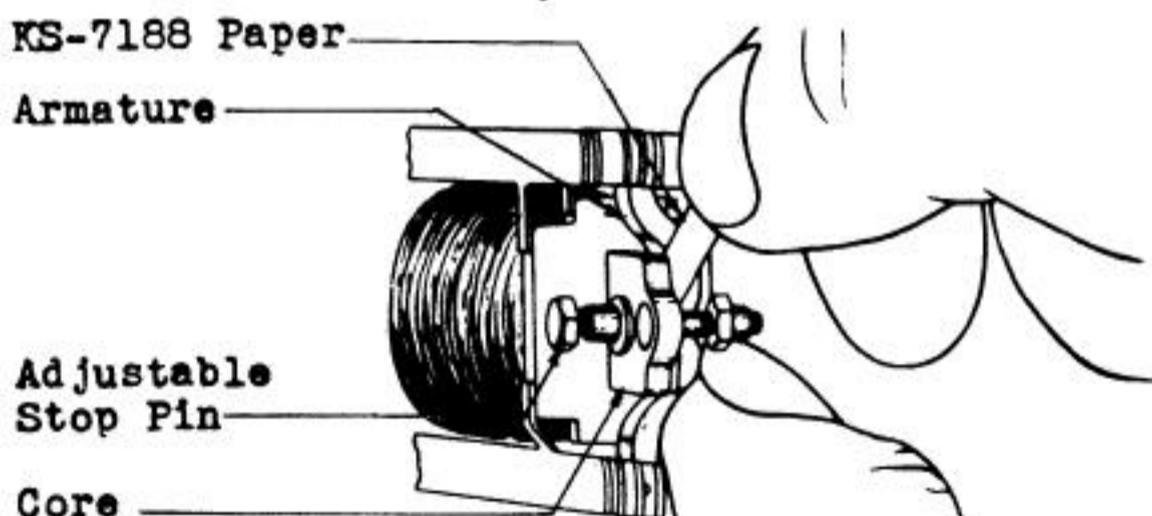


Fig. 24 - Method of Cleaning Armature and Adjustable Stop Pin on F Type Relays

6.04 Cleaning Armatures and Cores or Pole-pieces of B, G, J, L, N, S, 177, 203, 221, 222, 223, 224, 225, 247, 248, 251 and 252 type relays. Proceed as outlined in 6.03 using KS-7187 paper instead of KS-7188 paper. See Figs. 25, 26 and 27.

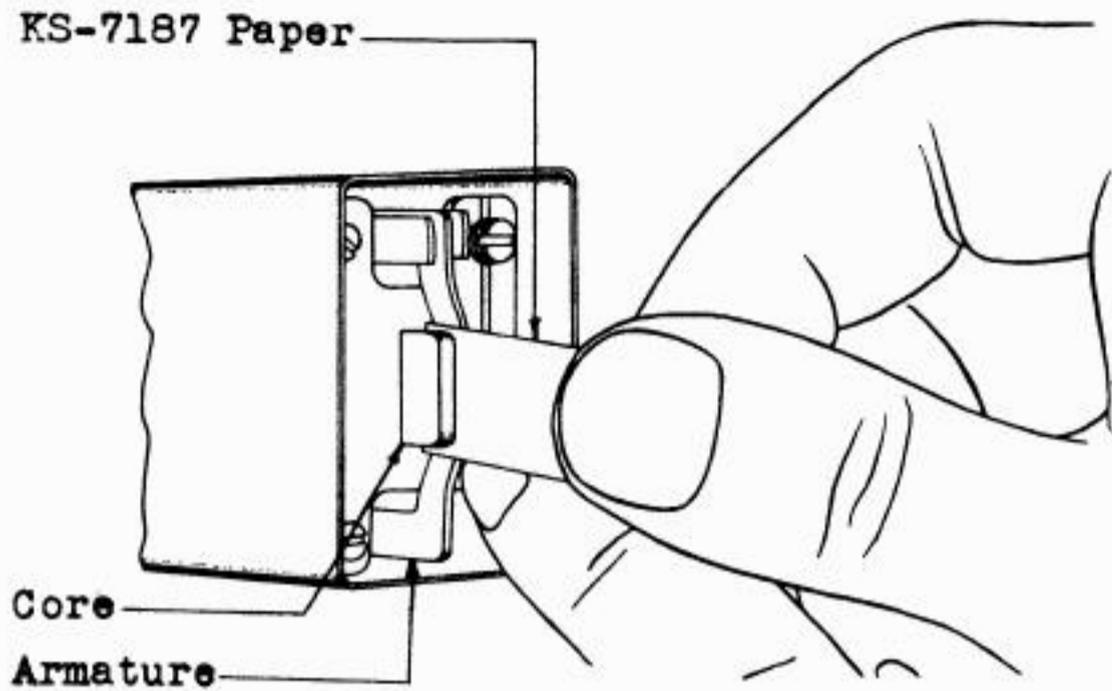


Fig. 25 - Method of Cleaning Armature and Core of B and G Type Relays

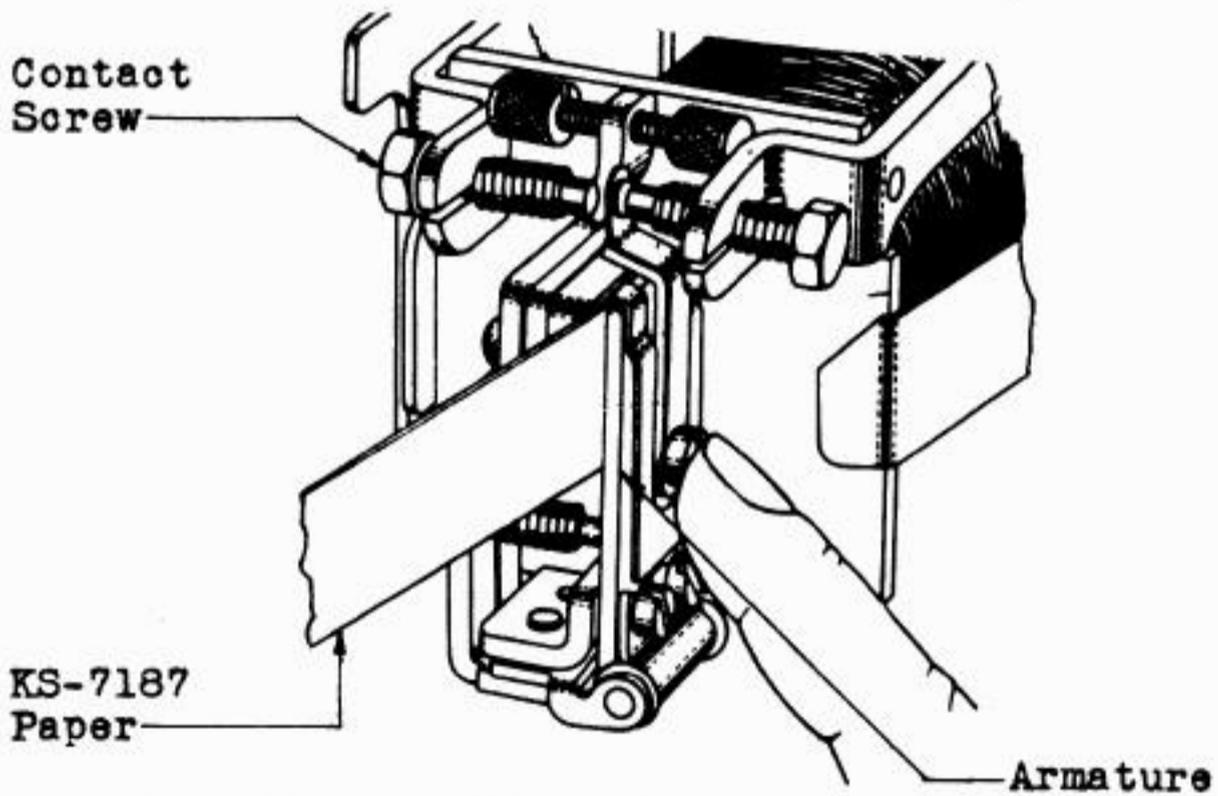


Fig. 26 - Method of Cleaning Armature and Core on L, N, and S Type Relays

KS-7187  
Paper

Armature

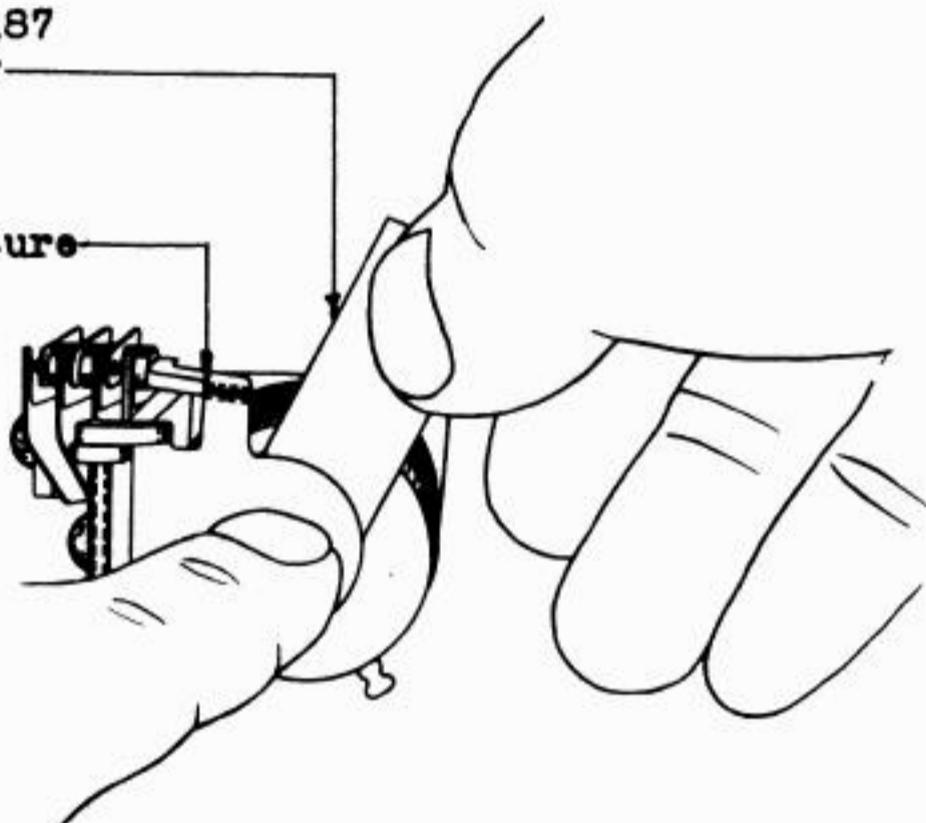


Fig. 27 - Method of Cleaning Armature and Core of Step-by-Step Relays

6.05 Cleaning Armature and Pole-Pieces of 111, 121, 122, 125, 149, 162, 163, 178, and 179 type relays. Thread KS-7187 paper between the armature and pole-piece. If the relay mounting does not permit this to be done with the fingers use the R2217 tweezers or the long nose pliers. Press the armature toward the pole-piece with a KS-6320 orange stick so that a slight pressure exists between the strip of paper and the parts being cleaned and then withdraw the paper. See Fig. 28. Take care not to tear the paper as it is being removed. Repeat the operation until the paper shows no evidence of dirt when it is removed. Use a clean piece of paper for each operation.

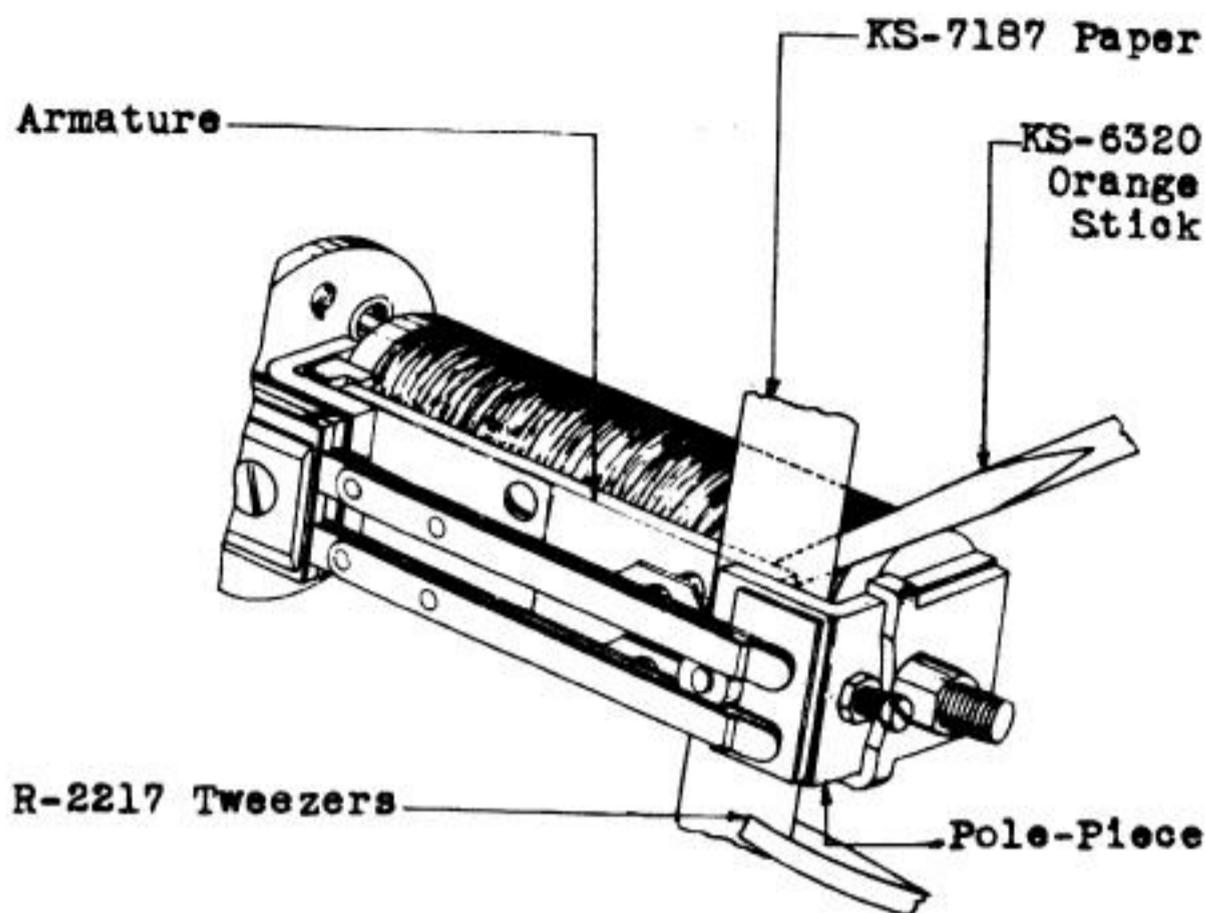


Fig. 28 - Method of Cleaning Armature and Pole-piece on 111 and Similar Type Relays

6.06 Cleaning Armature and Shell on 114, 124, 126, 174 and 198 Type Relays. Insert KS-7187 paper between the armature and shell as indicated in Fig. 29. Operate the relay manually and withdraw the paper. Repeat the operation until all surfaces between the armature and shell have been cleaned and the paper shows no evidence of dirt when it is removed. Use a clean piece of paper for each operation.

6.07 Cleaning Pole-Piece Screws on 204, 209, 215, 227, 228, 231, 239 and 255 Type Relays. Clean the pole-piece screws when necessary in accordance with the following procedures. Back off the pole-piece screws as far

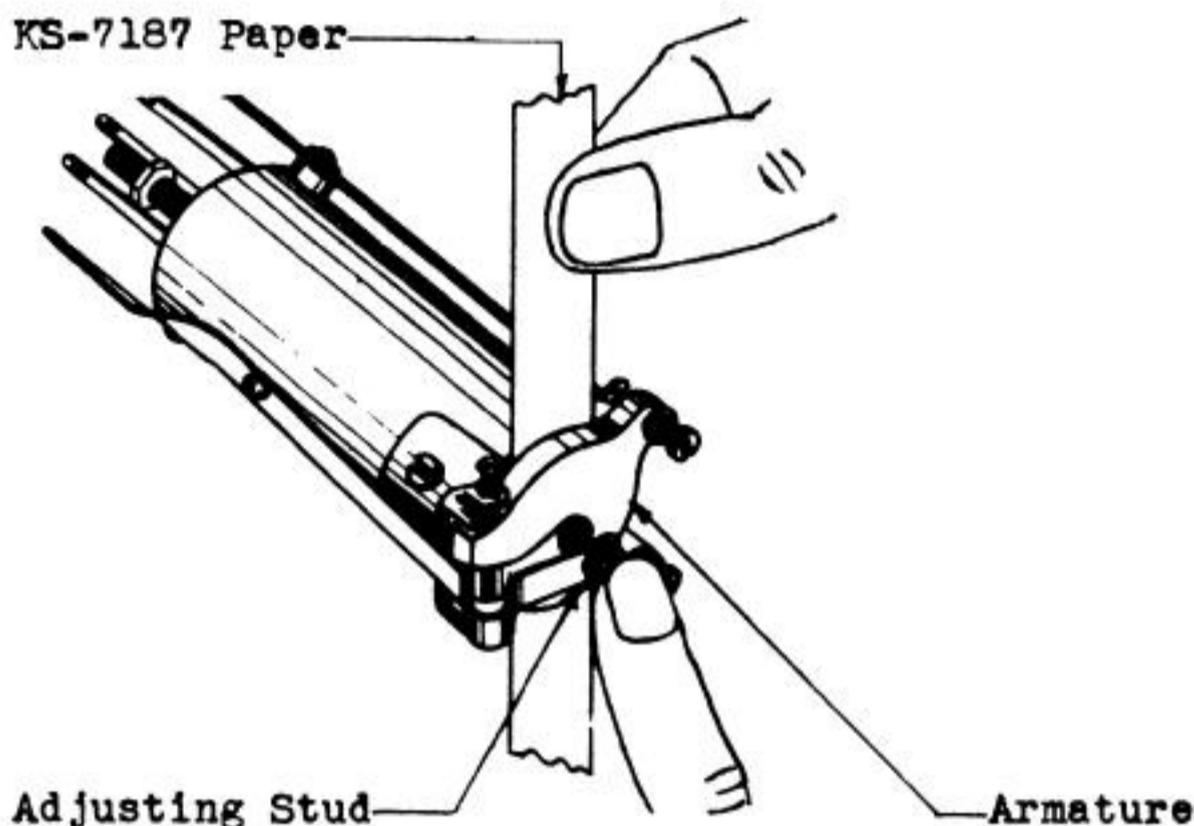


Fig. 29 - Method of Cleaning Armature Shell on 114 and Similar Type Relays

as possible from the armature using the No. 340 adjusting key as covered in the individual sections, to permit the insertion of the cleaning tool. Also, back off the contact screws in accordance with the individual sections until the armature will not touch either contact when the cleaning tool is inserted between the armature and either pole-piece

6.08 If it is necessary to remove metallic particles from the pole-pieces, clean them with a tool made out of a piece of thin stiff metal (Preferably nonmagnetic) over which is wrapped a layer of friction tape with the stickier side toward the blade. Press, do not rub, the taped portion of the tool against the pole-pieces and the armature so as to cause any

6.08 (Continued)

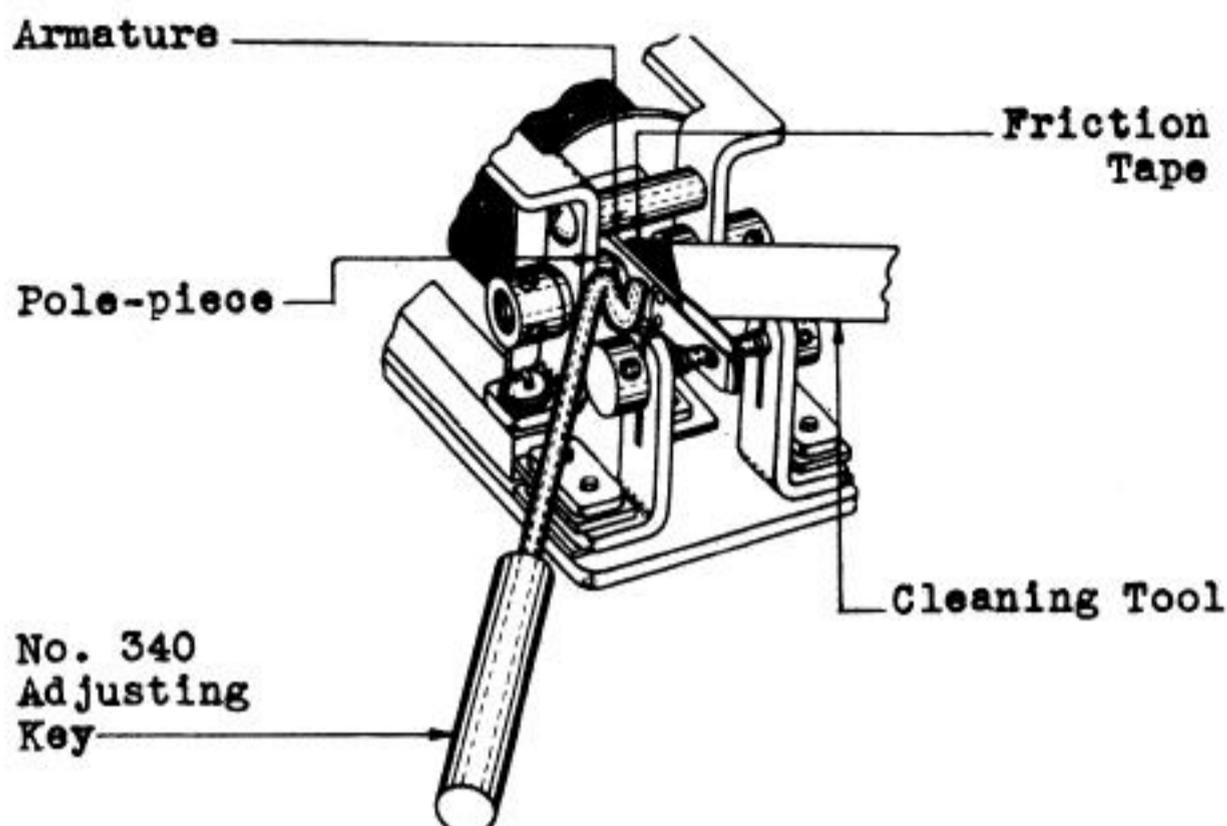


Fig. 30 - Method of Cleaning Pole-Pieces  
on 206, 209, 215, 227, 228,  
231 and 239 Type Relays

particles that may be present to adhere to the tape. See Fig. 30. Do not rub the tape over the pole-pieces as this tends to leave a residue from the tape on the pole-pieces. Do not use the tape for more than one cleaning operation.

6.09 If the pole-pieces are dirty clean them with C.P. carbon tetrachloride in the following manner. Dip the flat end of a clean toothpick in the carbon tetrachloride to a depth of about 1/2" and deposit the liquid on the pole-pieces, then rub the flat end of the toothpick back and forth two or three times, exerting a slight pressure against the pole-pieces with the toothpick. The liquid will soften any

deposit which may have collected on the pole-pieces and the rubbing will remove it. Then, flush the pole-pieces with the liquid taken on the clean point of another toothpick. Be sure to flush the sides as well as the faces of the pole-pieces since the dirt on the side is loosened when the liquid is applied to the pole-pieces and if this dirt is not removed it may later be deposited on the pole-faces. Take care to keep the carbon tetrachloride from coming in contact with the insulators and windings.

#### Cleaning Back Stop Screws on 218B Relays

6.10 To clean the back stop screw on 218B relays insert a piece of KS-7188 paper between the armature and the backstop screw. Hold the armature against the paper and withdraw the paper from between the armature and the back stop screw. Repeat this operation as required until the paper shows no evidence of dirt when it is withdrawn.

#### Cleaning Backstops on 207 and 213 Type Relays

6.11 To clean the backstop insert a piece of KS-7187 paper between the armature and backstop screw and while holding the armature against the backstop screw withdraw the paper. See Fig. 31. Repeat this operation until the paper shows no evidence of dirt when it is withdrawn.

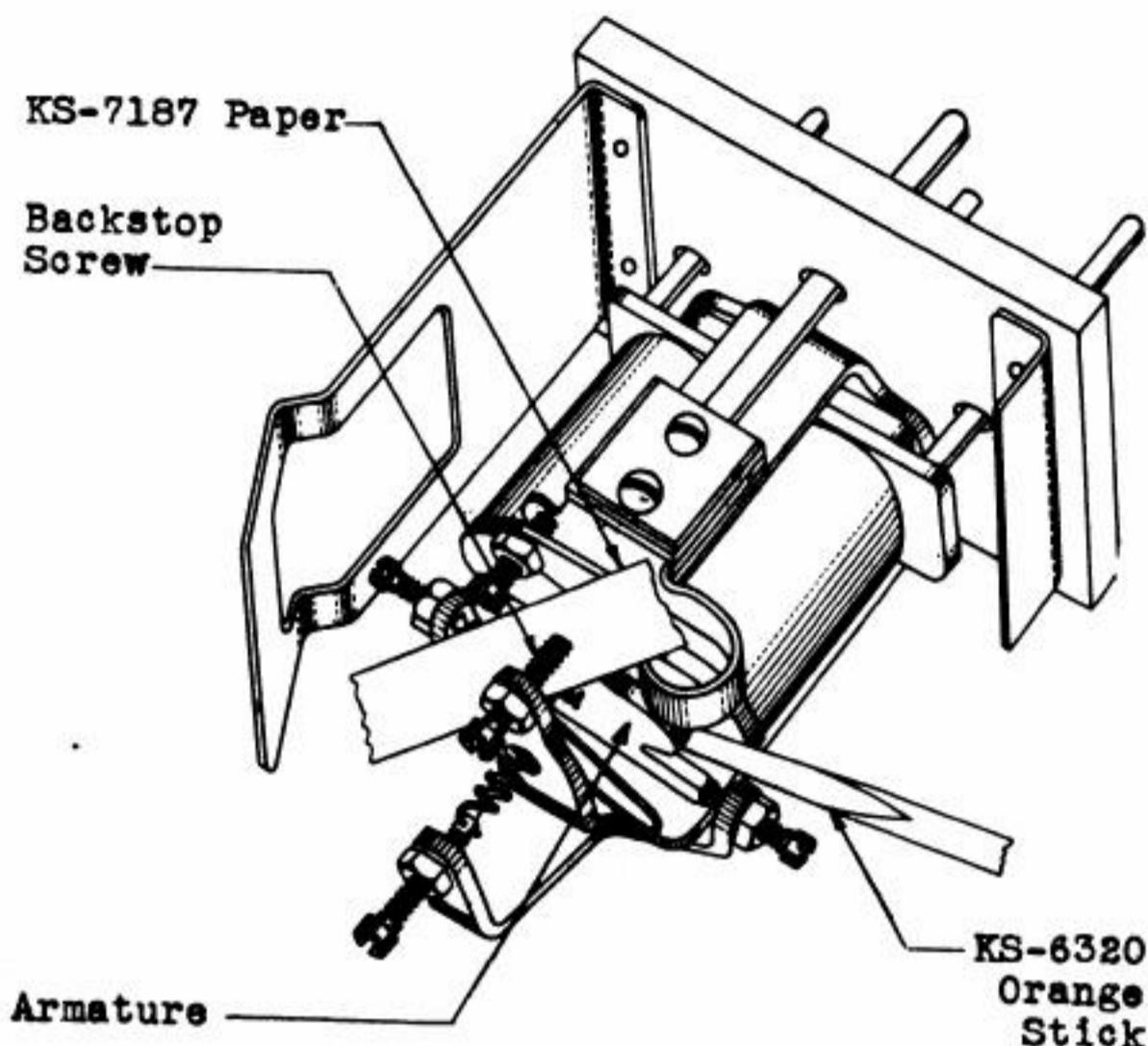


Fig. 31 - Method of Cleaning Backstops  
in 207 and 213 Type Relays

Cleaning of Armature and Adjusting Nut on A,  
E, F, H, R, T, U, Y and AB Type Relays

6.12 Clean the armature and adjusting nut by passing a piece of KS-6528 cleaning tape back and forth between the armature and the adjusting nut around the adjusting stud, thereby removing whatever dirt there may be on the back of the armature, the adjusting nut and the adjusting stud. See Fig. 32.

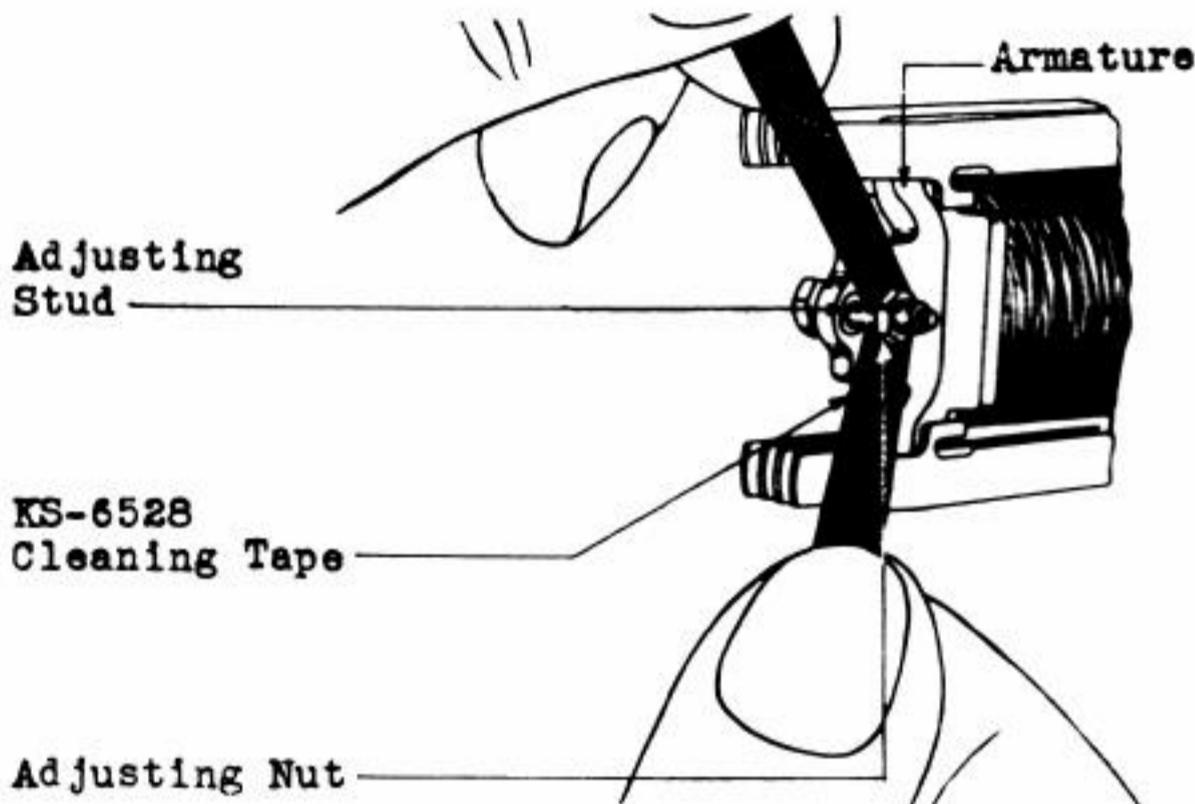


Fig. 32 - Method of Cleaning Adjusting Nut and Stud on A, E, F, H, R, T and AB Type Relays

Cleaning of Front and Back Stops on B, G and J Type Relays

6.13 Clean the front and back stops with a piece of KS-7188 paper as shown in Fig. 33 while holding the armature operated or unoperated as required.

Cleaning Back Stops on 221, 222, 223, 224, 225, 247, 248, 251 and 252 Type Relays

6.14 Fold a piece of KS-7187 paper in half lengthwise. Insert one side of the folded paper between the armature lever and the back stop as illustrated by Fig. 34 at the same time holding the armature operated to permit the paper to enter easily. Hold the armature

6.14 (Continued)

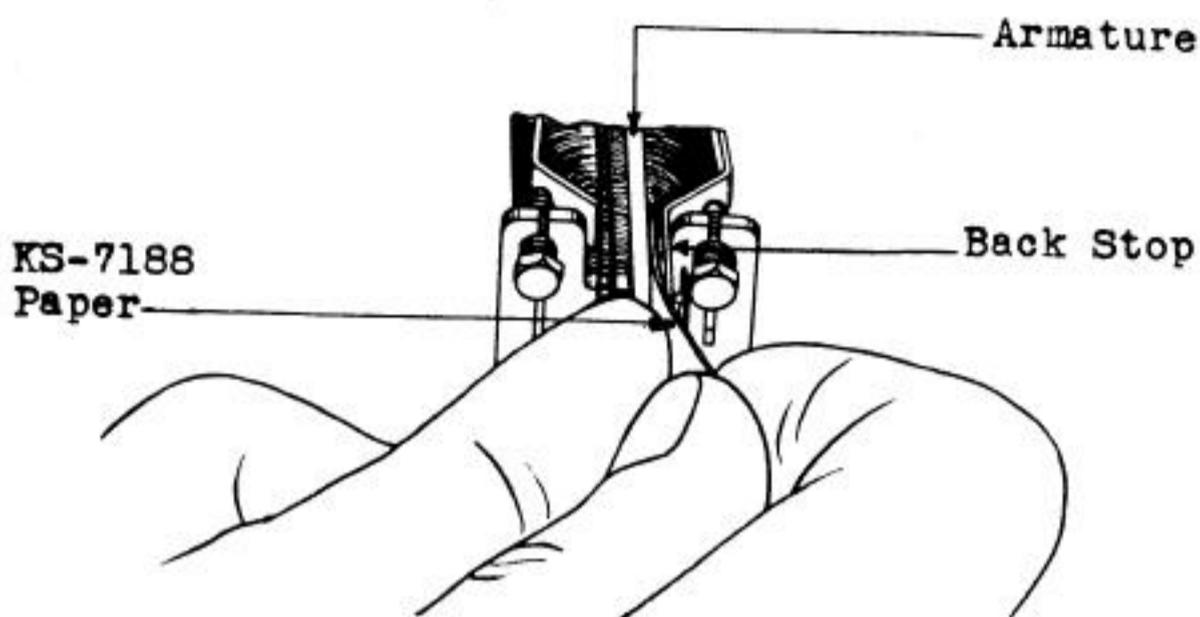


Fig. 33 - Method of Cleaning Front and Back Stops on B, G and J Type Relays

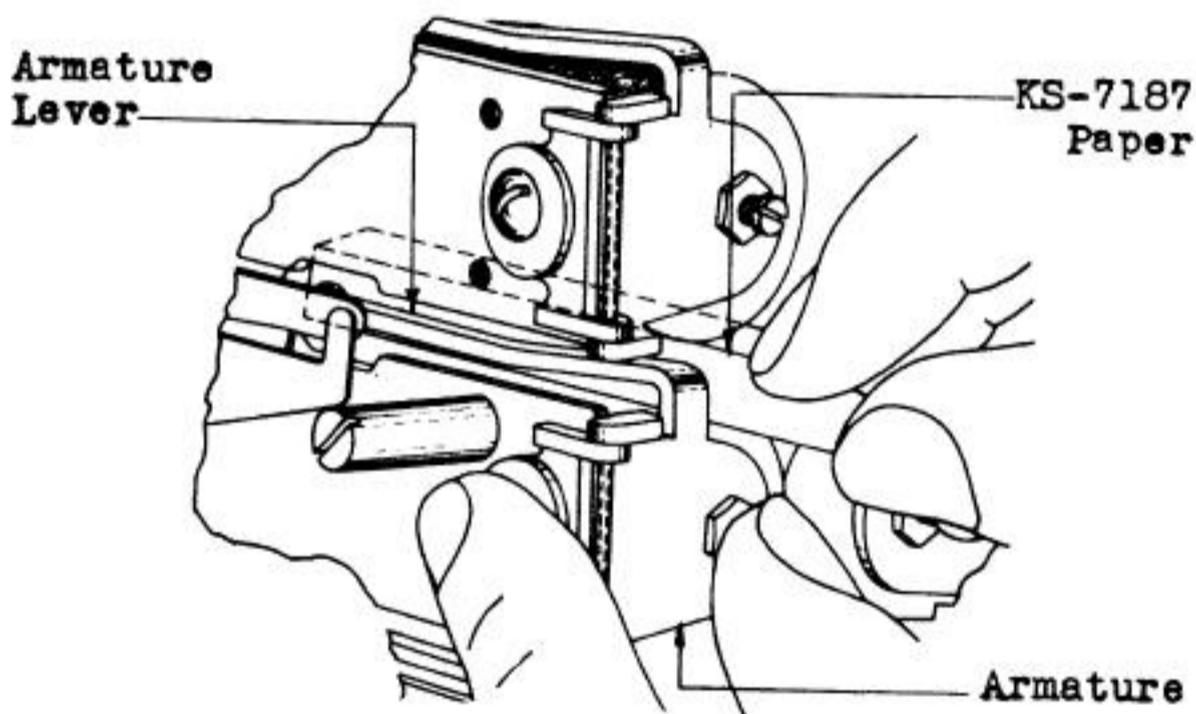


Fig. 34 - Method of Cleaning Backstop on 221, 222, 223, 224, 225, 247, 248, 251 and 252 Type Relays

against the back stop with a force sufficient to give a slight pressure between the armature lever and the back stop and then withdraw the paper. Repeat the operation until the paper shows no evidence of dirt when it is removed. Use a clean piece of paper for each operation.

Cleaning of Armature Slots, Back and Front Stop Screws, Adjusting Studs and Adjusting Nuts on 89, 101, 105, 108, 118, 172, 186, and 190 Type Relays

6.15 Clean the armature slot, the knife edge of the armature, the front or back stop screws or nuts and the adjusting stud and adjusting nut with a piece of KS-6528 cleaning tape as follows:

6.16 To clean the armature slot and the armature knife edge, fold the tape lengthwise and pass it back and forth in the slot with the folded edge (not the outer edge) of the tape in the slot. In some cases it may be desirable to loosen the dirt by applying C.P. carbon tetrachloride in the slot with the flat end of a toothpick. See Figs. 35 and 36. Use the tape in the slot both in back and in front of the armature. After cleaning see that the armature is properly seated in the slot.

6.17 To clean the front or back stop screw fold the tape lengthwise and pass it between the front stop screw and the front stop or between the back stop screw and the armature as shown in Fig. 37. When cleaning the front stop, hold the armature in the operated position while drawing the tape through.

6.18 To clean the adjusting stud and adjusting nut pass the tape back and forth between the armature and the nut above and below

6.18 (Continued)

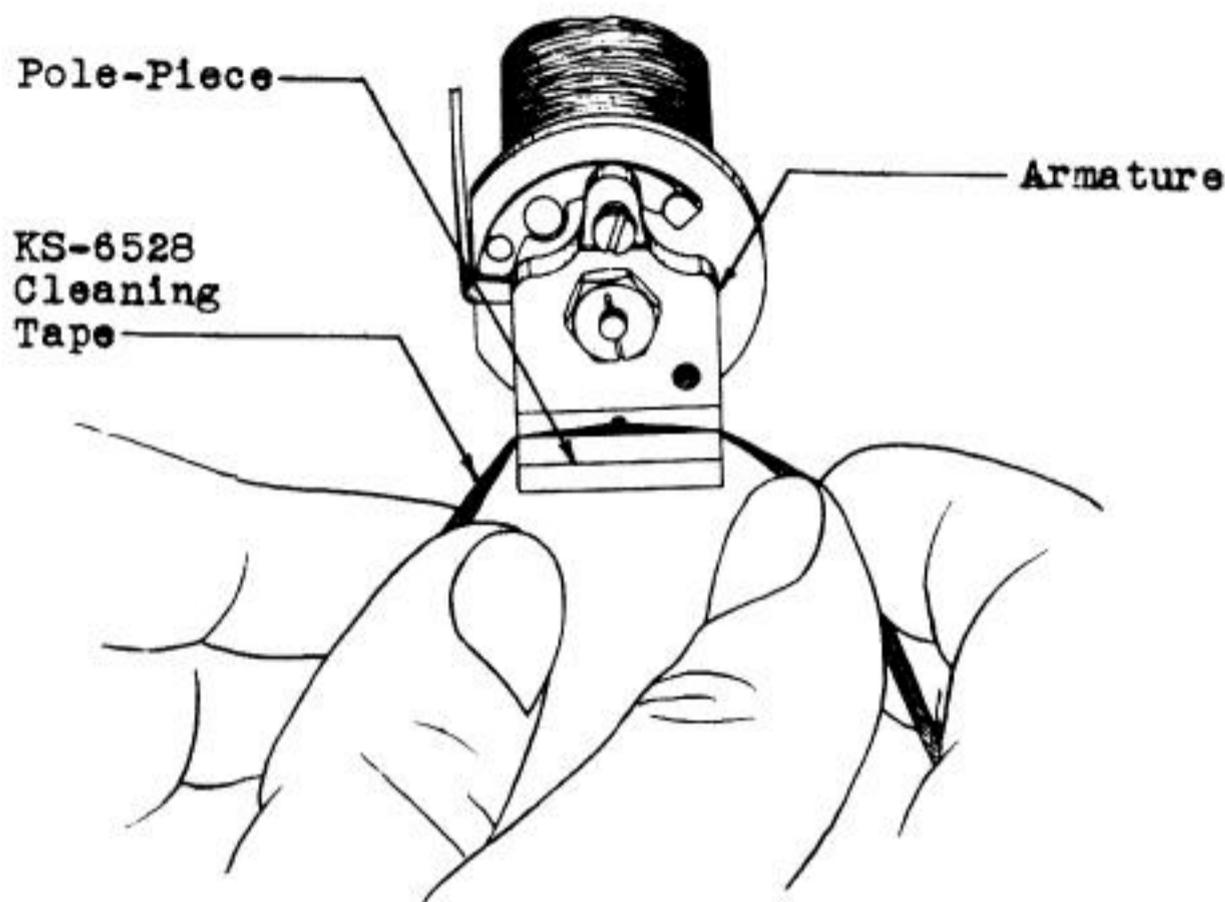


Fig. 35 - Method of Cleaning Armature Slot and Armature Knife Edge on 89, 101, 105, 108, 118 and 172 Type Relays

the adjusting stud as shown in Fig. 38 holding the armature in the unoperated position while drawing the tape through.

Cleaning of Armature Pivot Screws and Bearings on 114, 124, 126, 127, 198, 207, 213 and Earlier 225 Type Relays

6.19 Clean the armature pivot screws as follows: Remove the pivot screws as outlined in the individual sections.

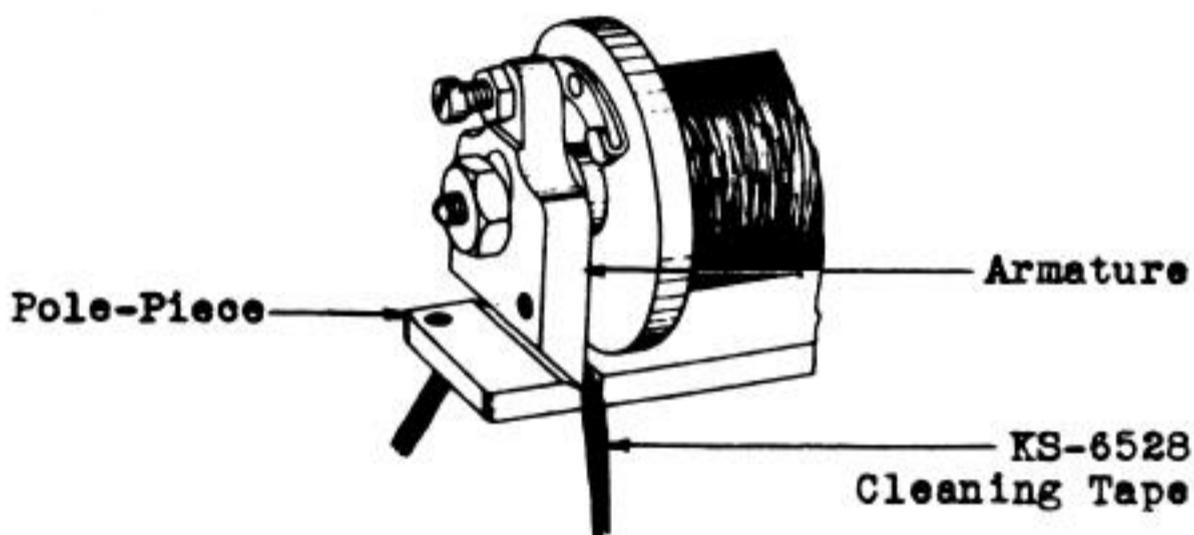


Fig. 36 - Method of Cleaning Armature Slot and Armature Knife Edge on 89, 101, 105, 108, 118 and 172 Type Relays

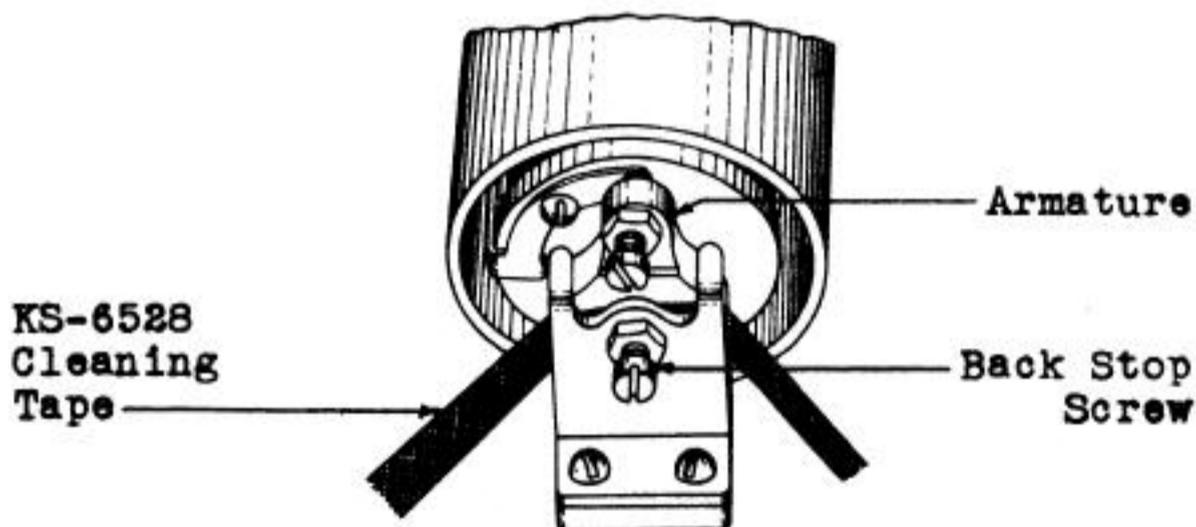


Fig. 37 - Method of Cleaning Front and Back Stop Screws on 89, 101, 105, 108, 118 and 172 Type Relays

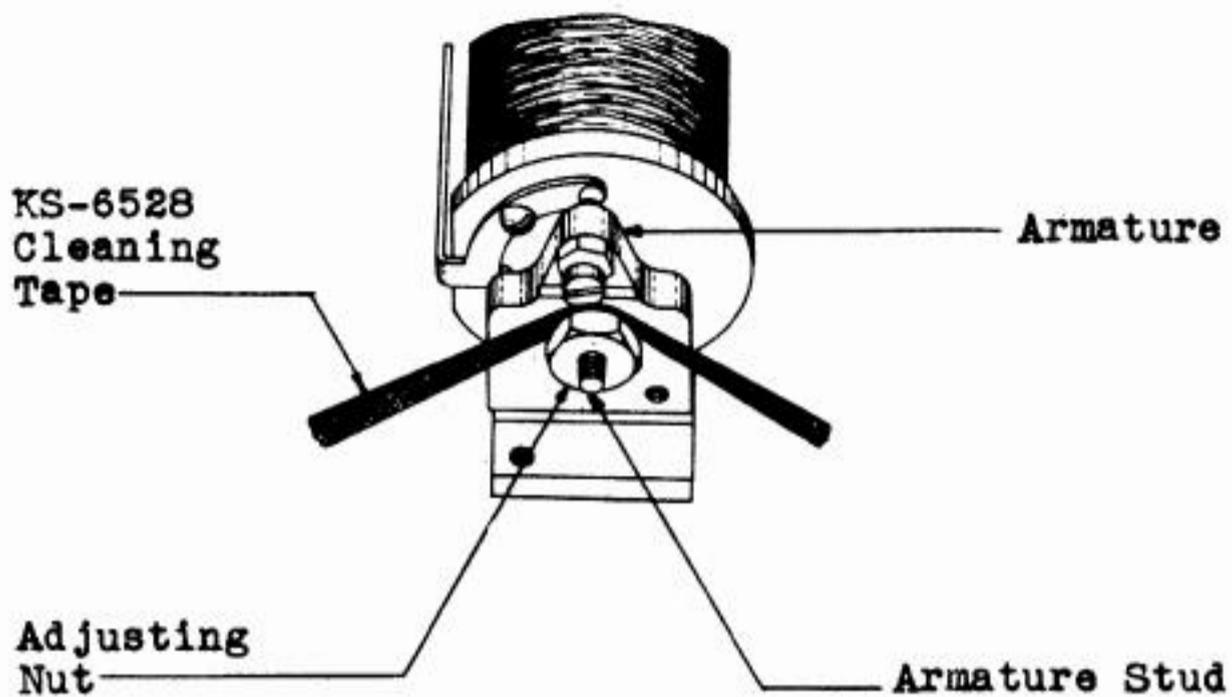


Fig. 38 - Method of Cleaning Adjusting Stud and Adjusting Nut on 89, 101, 105, 108 and 172 Type Relays

6.20 Clean the bearings of the armature with a KS-2423 cloth saturated with C.P. carbon tetrachloride. After the parts have become thoroughly dry, reassemble the relay.

REASONS FOR ISSUE

1. To revise the list of tools and materials (Part 2).
2. To transfer procedures for general cleaning from Part 7 to Part 3.
3. To add information relative to care of tools used in contact maintenance (Part 4).

4. To add general information relative to pits and buildups and to indicate when apparatus should be replaced due to contact erosion. (5.01 to 5.04 inc.)
5. To add illustrations of cleaning contacts on 206 and similar type relays (Fig. 17).
6. To add illustrations of cleaning contacts on U and Y type relays (Fig. 13).
7. To revise procedures for flushing contacts (5.07).
8. To cover detailed procedures for contact cleaning on 206 and similar type relays. (5.09)
9. To add procedures for removing buildups from contacts. (5.10 to 5.12 inc.)
10. To add procedures for cleaning pitted contacts. (5.13 to 5.15 inc.)
11. To cover procedures for cleaning armature and core on U, UA and Y relays (6.03).
12. To add a figure illustrating cleaning between armature and core on L, N and S type relays. (Fig. 26).
13. To cover procedures for cleaning between armature and core on 247, 248, 251 and 252 type relays. (6.04).
14. To illustrate the procedure for cleaning armatures and pole-pieces of 111 and similar type relays (Fig. 28).
15. To add procedure for cleaning armature and shell on 114 and similar type relays (6.06).

REASONS FOR ISSUE (Cont'd.)

16. To add procedures for cleaning back stops on 207 and 213 type relays (6.11).
17. To add procedures for cleaning back stop on 218B relays (6.10).
18. To add procedure for cleaning back stop on 247, 248, 251 and 252 type relays (6.14).
19. To cover cleaning adjusting nut on U, UA and Y type relays (6.12).
20. To cover procedures for cleaning parts of 186 and 190 type relays. (6.15 to 6.18 inc.)

Bell Telephone Laboratories, Inc.