

PRECISION TYPE INTERRUPTERS CONDITIONING OF CAMS

1. GENERAL

1.01 This section covers procedures for conditioning the cams of precision type interrupters.

1.02 During the normal operation of the interrupters, the cams become worn as the shoes move upward and downward as the cams rotate. This wear of the cams results in the formation of transverse grooves in the cams and may cause false pulses to be transmitted as the cams rotate. Since the shoes do not span the width of the cams continual wear of the cams may result in the formation of fins on the unworn portion of the cam.

1.03 The conditioning procedures outlined in this section should be followed only where a few cams require treatment. Where more than 3 or 4 of the cams on an interrupter shaft require attention it will probably be more economical to replace the individual cams or the entire cam shaft assembly as covered in Section 163-607-801.

2. TOOLS AND MATERIALS

Code or
Spec. No.

<u>Tools</u>	<u>Description</u>
R-1446	File Cleaner
-	Electricians' Scissors
-	3" Cabinet Screwdriver
-	4" Regular Screwdriver
-	6" Nicholson Tungsten Point File
(3 Req'd)	
<u>Materials</u>	
1A	Cushion
KS-2423	Cloth
KS-6320	Orange Stick
KS-7404	No. 320 Aloxite Cloth
KS-7860	Petroleum Spirits
KS-8496	Lubricating Compound No. 3
-	No. 501 Crocus Cloth
-	Small size - Rubber Band

3. PREPARATION OF TOOLS

3.01 Preparation of File for Smoothing Cams: Cut several pieces of KS-7404 cloth 5" long from the roll of cloth using the electricians' scissors. Cut each piece lengthwise so that two strips, 5" long and 1/4" wide, are obtained. Then cover the filing surfaces of a 6" Nicholson file with one of these strips of cloth so that the smooth surfaces of the cloth are against the file and the handle is uncovered. Slip a No. 1A cushion over the cloth covered end of the file and down the length of the cloth so that the cushion holds the cloth in place against the filing surfaces of the file as shown in Fig. 1. The cloth strip will have to be renewed as it becomes clogged with particles from the cam.

6" Nicholson
Tungsten
Point File



Fig. 1 - Preparation of Nicholson File
for Smoothing and Polishing Cams

3.02 Preparation of File for Polishing Cams: Cut several pieces of cloth 1/4" wide and 5" long from a sheet of No. 501 Crocus cloth using the electricians' scissors and cover a 6" Nicholson file in the same manner as outlined in 3.01.

4. PROCEDURES FOR CONDITIONING CAMS

4.01 Before conditioning the cams of an interrupter, transfer its functions to an emergency interrupter (where provided) in the approved manner and then stop the motor of the interrupter under repair.

4.02 Loosen the four screws that secure the cover over the interrupter spring assemblies.

4.03 Where only one cam is to be conditioned: Using a 3" cabinet screw-driver loosen the spade terminal mounting screws that secure the wire to the contact screw bracket associated with the cam to be conditioned. Remove the spade terminals from under these screws. Remove the two contact screw bracket mounting screws until the screws are free of the mounting base. Then remove the insulators and brackets as a unit, and hold these parts together by means of a small size rubber band.

4.04 Where more than one cam is to be conditioned: Proceed as outlined in 4.03 except remove the wires and contact screw brackets associated with those cams to be conditioned and mark the assemblies so that they may be remounted later in their proper position.

4.05 Fold a piece of KS-2423 cloth so that the folded cloth is approximately 9" x 3". Insert the cloth under the entire set of cams associated with the cam or cams to be reconditioned and rest it on the frame casting to catch any debris that may fall as a result of the conditioning operation.

4.06 Clean the cam or cams to be conditioned as follows. Insert the broad end of a KS-6320 orange stick into a piece of KS-2423 cloth moistened with KS-7860 petroleum spirits and hold the cloth taut over the orange stick. Rotate the motor coupling or flywheel manually in the normal direction of rotation and clean the cams with the cloth using a to and fro wiping action.

4.07 Using a 6" Nicholson file for coarse filing and the KS-7404 abrasive cloth wrapped around another 6" Nicholson file as outlined in 3.01 for smoothing the cam, remove the transverse grooves and fins as follows. Rotate the motor coupling or flywheel manually in the normal direction of rotation to such a position that the portion of the cam to be conditioned is most accessible. Place the file flat on the

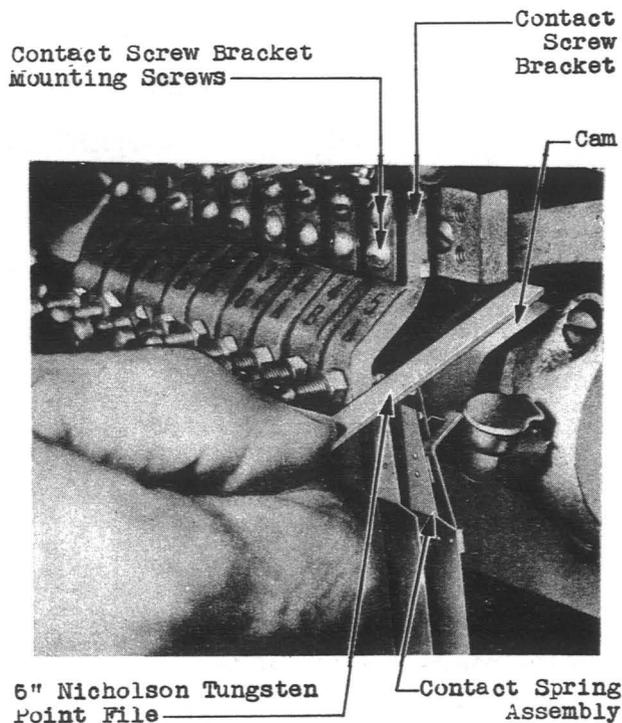


Fig. 2 - Conditioning Cams

surface to be conditioned as shown in Fig. 2. Then while moving the coupling or flywheel back and forth slightly and while moving the file in and out along the surface to be conditioned, remove the grooves and fins from the cam. Experience has indicated that a more satisfactory conditioning operation will be obtained if after each 8 to 10 double strokes (one in and one out) of the file, the cam is wiped with a KS-6320 orange stick inserted into a dry piece of KS-2423 cloth as covered in 4.06 to remove the debris resulting from the filing operation and then several strokes of the KS-7404 cloth are taken in the same manner as the file to partially remove the file marks. Alternate the file and the cloths until the grooves and fins are removed. During the filing operation occasionally clean the file with the R-1446 file cleaner and replace the KS-7404 cloth when it becomes clogged with particles from the cam.

Caution: In eliminating the grooves and fins, hold the file so that the filing surface is square with the sides of the cam. This is especially important where the grooves do not extend across the entire cam and no fins are present. In this case, file the remaining ungrooved surface to

maintain a true surface across the cam. Take care during the filing operation not to distort or damage the contact spring assembly associated with the cam being conditioned or adjacent spring assemblies.

4.08 With the grooves and fins satisfactorily removed, polish only the conditioned surfaces with the No. 501 Crocus cloth. Then wipe the surface with a clean KS-2423 cloth and apply KS-8496 lubricating compound No. 3 as outlined in Section 163-607-701.

4.09 Remove the KS-2423 cloth from beneath the cams taking care not to spill the debris. Dispose of the debris and cloth in a suitable container.

4.10 After all cams have been conditioned, remount the contact screw brackets

that were removed. Insert the mounting screws through the holes in the bracket and screw them loosely into position. Then cut the rubber bands which held the parts of the assembly together and remove the severed parts. Further tighten the mounting screws, insert the spade clips under the proper mounting screws and tighten them securely.

4.11 Connect the source of power.

4.12 Check that the spring assemblies meet any requirements of Section 163-607-701 which may have been affected by the conditioning operations, and readjust as necessary.

4.13 Remount the cover in place and restore the interrupter to service.