STUD-TYPE ROTARY SWITCHES, ATTENUATORS, POTENTIOMETERS, AND RHEOSTATS PROCEDURES FOR CLEANING AND TREATMENT

1. GENERAL

1.01 This section covers the procedures for cleaning and treatment of stud-type rotary switches, attenuators, potentiometers, and rheostats.

1.02 This section is reissued to cover the use of KS-16736, List 1, compound for cleaning copper and copper alloy contacts and to add information covering the use of petroleum spirits. ←

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 stud-type contacts and parts be kept clean. While appearance is not necessarily an indication of the electrical condition of the contact, experience has indicated that if the contact presents a bright appearance immediately after cleaning and treatment, it is satisfactory.

1.04 Where individual and group-type covers or cases are removed to effect the cleaning and treatment, it is important that these covers or cases should not be left off longer than absolutely necessary.

1.05 Since the transmission characteristics of some circuits may be seriously impaired while the switch is being cleaned and treated, proper precautions should be taken to prevent service reactions. Wherever possible, the circuit should be removed from service while cleaning and treating the parts. For example, care must be taken in cleaning the studs of the 212-type input transformer associated with the 44A1 telephone repeater and the studs on pilot wire regulator equipment.

1.06 *Caution: Some of the power rheostats are connected to potentials capable of producing electrical shocks. Such potentials must be removed from the apparatus before it is cleaned and treated.*

1.07 It will be necessary, in order to avoid excessive tarnish of the contacting surfaces, that the cleaning and treatment be performed periodically depending on local conditions, such as humidity and sulphur content in the air.

1.08 Care should be exercised when using petroleum spirits in the power room where there are dc machines, since commutation may be adversely affected by softening of the commutator film by the fumes. To avoid the need for burnishing the commutators of the dc machines after any cleaning operations called for in this section, provide adequate ventilation, use the absolute minimum amount of petroleum spirits required for the cleaning operation, and keep the container closed when not in use. ↵

2. PROCEDURES

2.01 *List of Tools and Materials*

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
KS-6320	Orange Stick
MATERIALS	
KS-2423	Cloth
KS-6232	Oil
KS-7860	Petroleum Spirits
KS-13148, List 1	Abrasive Paper
KS-16736, List 1	Compound ←
—	Container With Tight Cover

2.02 In order to expose the studs or ring contacts, it may be necessary to remove protective coverings, to partially dismantle the apparatus, or to dismount it. Detailed instructions for providing accessibility to the parts to be cleaned and treated are in general covered in other practices covering the particular piece of apparatus or circuit involved.

3. PREPARATION OF MATERIALS

3.01 Prepare a mixture of one part KS-7860 petroleum spirits and two parts KS-6232 oil by volume. The amount to be prepared should be determined by expected usage over a period of time. The mixture will not deterioriate if it is stored in a sealed container, such as a quart can with a tight cover.

4. CLEANING AND TREATMENT

Noncopper Contacts

4.01 Cut a piece of 4-1/2- by 11-inch untreated KS-13148, List 1, abrasive paper in half to make two pieces 4-1/2 by 5-1/2 inches. With the paper cut to this size, fold it with the abrasive side out to obtain a 4-1/2- by 2-3/4-inch rectangle and fold it again to obtain a piece approximately 2-1/4 by 2-3/4 inches.

4.02 Insert a KS-6320 orange stick between the rotary arm and the base of the apparatus and lift the arm off the studs or contact rings. Insert the folded, untreated KS-13148, List 1, abrasive paper between the rotary arm and the studs or contact rings.

4.03 Remove the orange stick and allow the rotary arm to rest against the paper. Then without applying additional pressure withdraw the paper.

4.04 Repeat 4.02 and 4.03 as required to clean the contacting surfaces of the rotary arm springs.

4.05 Raise the rotary arm with the KS-6320 orange stick and, while so raised, attempt to snap the springs to remove any deposit that might be on the tips of the arm spring. Wipe the tips of the springs with a piece of dry clean KS-2423 cloth.

4.06 Cut a piece of KS-13148, List 1, abrasive paper in half as covered in 4.01. Immerse one of the halves in the petroleum spirits-oil mixture until the paper is saturated. Fold the paper as covered in 4.01.

4.07 Rub the surfaces of the studs or contact rings to be treated until a bright clean surface is obtained. Move the rotary arm from the stud or contact ring on which it is resting and treat that stud or ring in the same manner. Exercise care to prevent the fingers from coming in contact with the studs or contact rings when treating the parts.

Note: If the contact surface is scored to such an extent that abrasive cleaning is not effective and resurfacing is required, refer the matter to the supervisor.

4.08 Wipe the cleaned surfaces with a KS-2423 cloth to remove loosened dirt or excess oil. A light film of oil on the surface is desirable.

4.09 Dispose of the used KS-13148, List 1, abrasive paper and soiled KS-2423 cloths in a metal container approved for oily material.

Copper and Copper Alloy Contacts

4.10 Insert a KS-6320 orange stick between the rotary arm and the base of the apparatus and lift the arm off the studs or contact rings. Apply KS-16736, List 1, compound liberally to the tips of the springs and surfaces of the studs or contact rings to be cleaned with a KS-2423 cloth. Exercise care to prevent the fingers from coming into contact with the studs or contact rings when applying the compound. Remove the orange stick.

4.11 After a 1/2-hour interval, remove all compound using a KS-2423 cloth moistened with petroleum spirits. Then, apply a light film of the petroleum spirits-oil mixture to the cleaned surfaces using a KS-2423 cloth. Remove excess oil with a clean dry KS-2423 cloth. A light film of oil on the surfaces is desirable.

4.12 Dispose of the soiled KS-2423 cloths in a metal container approved for oily material.