155-425-801

MOTOR-DRIVEN GENERATORS
RINGING AND COIN CONTROL
KS-15816
REPLACEMENT PARTS AND PROCEDURES

1. GENERAL

1.01 This section covers the information necessary for ordering parts to be used in the maintenance of the KS-15816 Motor-Driven Ringing and Coin Control Generators (see Fig. 1). It also covers the approved procedures for replacing these parts.

1.02 Part 2 of this section covers the various parts which it is practicable to replace in the field in the maintenance of this equipment. No attempt should be made to replace parts not designated. Part 2 also contains explanatory figures showing the different parts. This information is called Replacement Parts.

1.03 Part 3 of this section covers the approved procedures for the replacement of the parts covered in Part 2. This information is called Replacement Procedures.

2. REPLACEMENT PARTS

2.01 The figures included in this part show the various replacement parts in their proper relation to other parts of the apparatus together with their corresponding names (see Fig. 1 to 4, inclusive).

2.02 When ordering parts for replacement purposes, give the name of the parts as shown in the figures of this section, the end of the machine (motor, generator, or flexible coupling) for which the part is required, and the complete nameplate data of the ringing machine for which the part is ordered, including the manufacturer's name, type, and frame designation, serial number, and the KS specification and list number. Do not refer to this section number.

2.03 Brush replacement shall be ordered in accordance with Section A501.906.

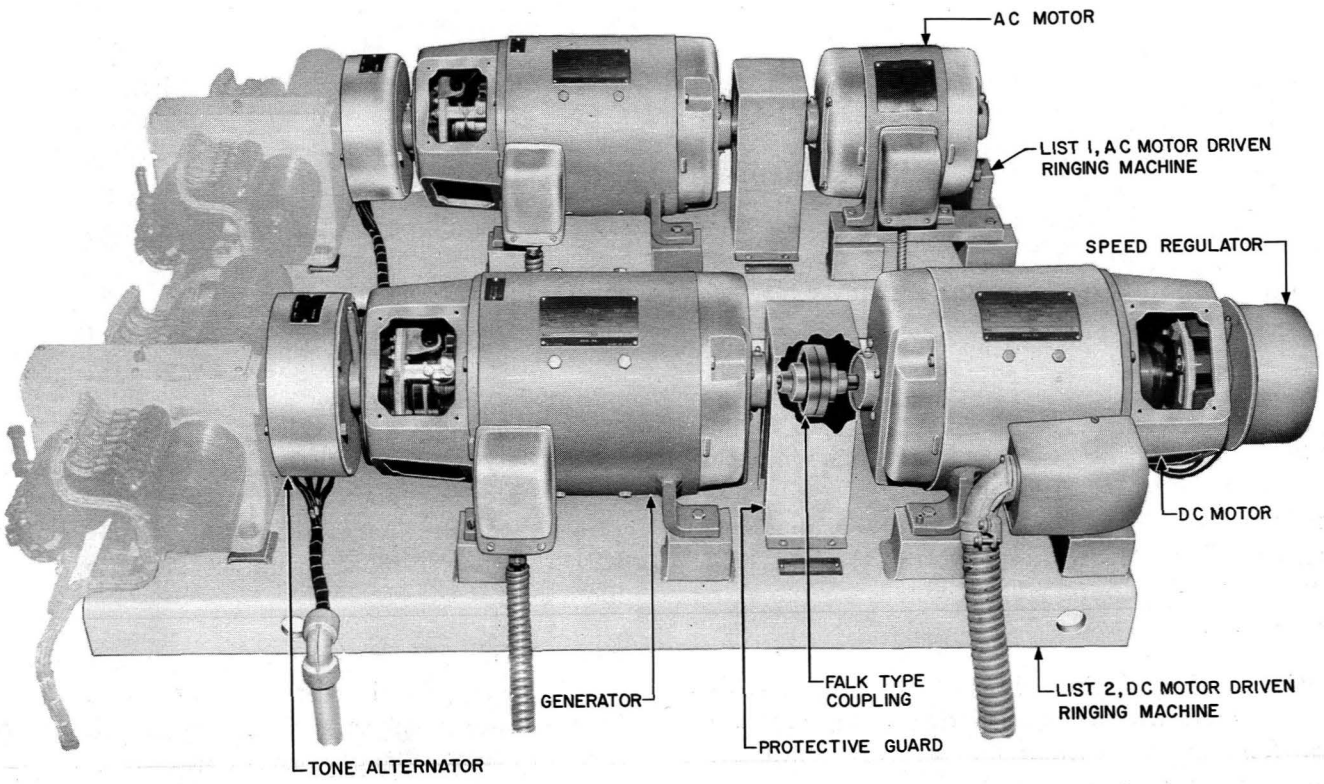
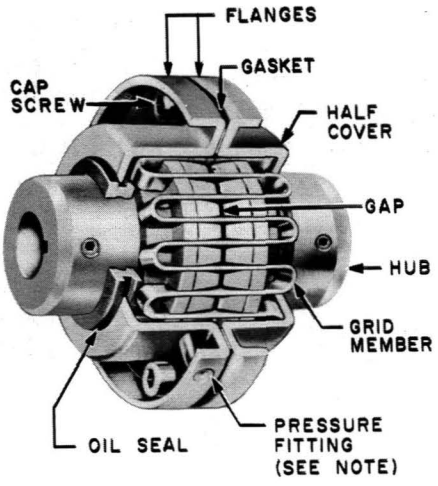


Fig. 1 – KS-15816 Ringing Machines



NOTE: PRESSURE FITTINGS WERE FURNISHED ON SOME EARLY VINTAGE TYPE "F" COUPLINGS. THESE FITTINGS SHOULD NOT BE USED FOR LUBRICATION.

Fig. 2 – Type F Falk Coupling Assembly

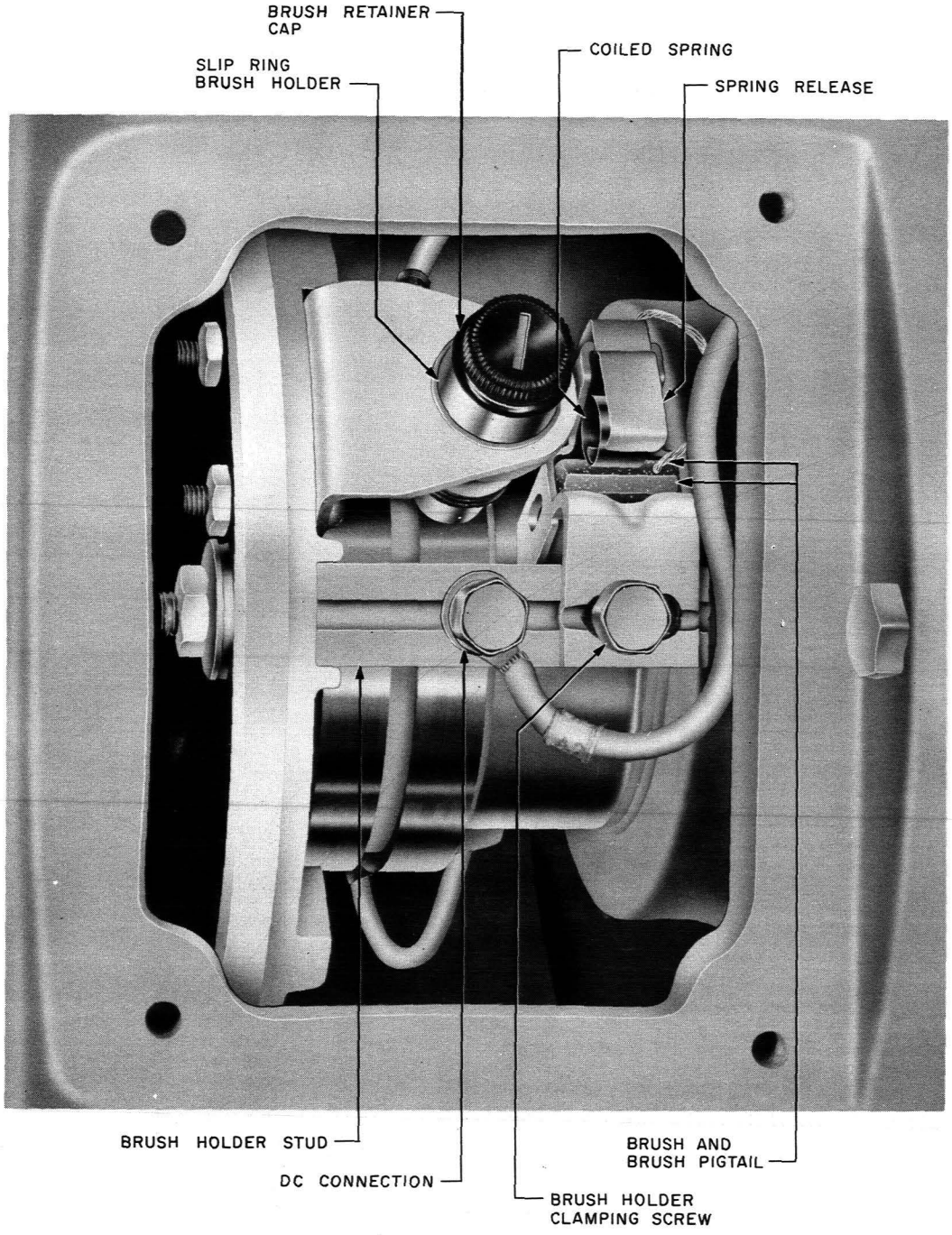


Fig. 3 – Yoke and Brush Rigging

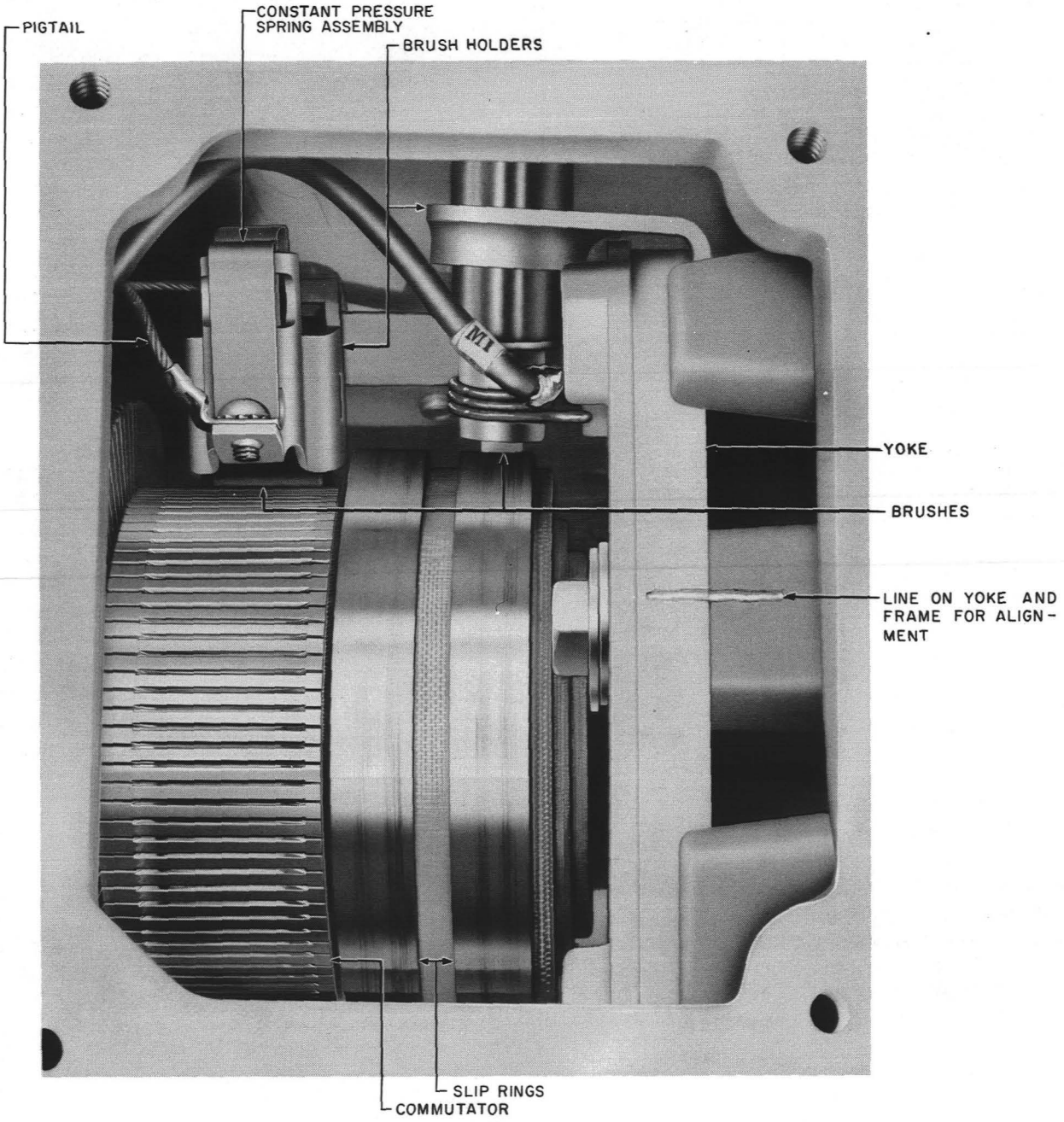


Fig. 4 – Yoke, Slip Rings, and Commutator

3. REPLACEMENT PROCEDURES

3.01 *List of Tools and Materials*

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
KS-6320	Orange Stick
R-2512	8-inch Adjustable Wrench
—	4-inch E Screwdriver
—	5-inch E Screwdriver
—	Allen Set Screw Wrench (furnished with Type F Falk Coupling)
MATERIALS (See Sections A710.011 and A710.012)	
KS-7860	Petroleum Spirits
KS-14666	Cleaning Cloth

3.02 Before making any replacements, remove the machine from service.

3.03 After making any replacement of parts, the part or parts replaced shall meet the adjust requirements specified in Section A401.177. Other parts, whose adjustments may have been disturbed by the replacing operations, shall be checked to the readjust requirements and an over-all operation check shall be made of the machine before restoring it to service.

3.04 No replacement procedures are specified for screws or other parts where the replacement consists of a simple operation.

3.05 When using petroleum spirits for cleaning purposes in the power room, provide as much ventilation as practicable. After using the petroleum spirits, the commutators of all dc machines in the power room should be burnished in accordance with approved procedures for the machines involved, since the fumes from the petroleum spirits may soften commutator film and thus adversely affect commutation.

3.06 Whenever it is necessary to disconnect leads, care should be taken to mark or record the position of the leads to facilitate their correct replacement.

3.07 Whenever it is necessary to remove the protective guard that covers the flexible coupling, care should be taken to mark the guard's position to facilitate correct replacement.

Note: Machine should not be restored to operation without the protective guard.

3.08 *Bearings*
3.09 *Flexible Couplings*

(1) Whenever it becomes necessary to replace either the ball bearings or the flexible couplings, the manufacturer or his authorized representative should be consulted since the replacement of either involves a major job of disconnecting and dismantling the motor and the generator and requires critical reassembly and realignment.

3.10 *Brushes*

(1) Whenever it is necessary to remove brushes from their holders in the dc motor or the dc generator for reasons other than replacement of brushes, care should be taken to mark or record the position of the brushes and associated brush holders to facilitate replacements.

(2) To replace a brush in the dc motor or the dc generator, loosen the screw which fastens the pigtail to the brush holder. Remove the brush and attached pigtail. Clean the brush holder with a cloth moistened with petroleum spirits (see 3.05) and insert the new brush. Return the pigtail of the new brush to its proper position, tighten the screw which fastens the pigtail to the brush holder and seat the new brush as outlined in Section A401.905.

(3) To replace a brush in the generator (ac slip rings), unscrew brush retainer cap and remove the brush and attached spring. Insert new brush and screw brush retainer cap back in position. Seat the new brush as outlined in Section A401.905.

3.11 *Brush Holders*

(1) To remove a brush holder in the dc motor or the dc generator, remove the brush as outlined in 3.10, loosen and remove the brush holder clamping screw that fastens the brush holder to the brush holder stud, and remove the holder. Reassemble the new brush holder in reverse order.

(2) To remove a brush holder bracket in the generator (ac slip rings), remove the brush as outlined in 3.10, loosen and remove the screws and nuts that hold the brush holder bracket to the yoke and remove the bracket. Reassemble the bracket in reverse order.

(3) In all cases of brush holder and/or bracket replacements, requirements, and adjusting procedures outlined in Section A401.177 shall be followed.

3.12 ***Brush Holder Yoke***
3.13 ***Rotor Assemblies in Motors***
3.14 ***Commutator Assembly in Generator***

(1) The replacement of a brush holder yoke, rotor assembly, or commutator assembly is a major job which should be handled by the manufacturer of the motor-generator, or the manufacturer's authorized representative.

3.15 ***Type F Falk Coupling***

(1) To replace either gasket or gridmember, remove the cap screws using the Allen socket screw wrench. Slip the half covers back clear of the hubs. Remove excess grease from the gridmember. Remove the gridmember by using a screwdriver which will fit into the loop ends of the gridmember. Begin at the open end of the gridmember section. Use the hub teeth adjacent to each loop as a fulcrum and pry the gridmember out radially in even gradual stages. Proceed alternately from side to side lifting the gridmember about half way out until the end is reached. By following the same procedure once again, the gridmember will clear the teeth. If the gasket is defective, remove it by slipping it through the gap between the hub faces. Substitute the new part. Replace the new gridmember by spreading it slightly so that it will pass over the coupling teeth at its outside diameter. Start the gridmember at either end and tap the rungs only part way into the grooves. After all of the rungs are partially in their grooves, tap the gridmember all the way into place. Grease in accordance with Section A401.177 and reassemble in the reverse order. Tighten all cap screws securely.

3.16 ***General Field Rheostat***
3.17 ***Tone Alternator***
3.18 ***Motor Field Rheostat*** (KS-15816, L2 only)
3.19 ***Motor Starter*** (KS-15816, L2 only)
3.20 ***Transformer***

(1) The rheostats, alternator, starters, and transformers shall be replaced by new or reconditioned ones when required.

(2) All leads shall be marked when disconnected.