

## STARTERS

### KS-5755, KS-15868, AND KS-15983

### 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-5755 L1 and L2, KS-15868 L1, and KS-15983 L1, L2, L3, L11, L21, and L31 starters manufactured by Ward-Leonard Electric Company. It also covers approved procedures for replacing these parts.

**1.02** This section is reissued to include the KS-15983 L11, L21, and L31 starters and L101 and L102 modification kits.

**1.03** Part 2 of this section covers the parts which it is practicable to replace in the field in the maintenance of the above apparatus. No attempt should be made to replace parts not designated. Part 2 also contains explanatory figures showing the different parts.

**1.04** Part 3 of this section covers the approved procedures for the replacement of the parts covered in Part 2.

#### 2. REPLACEMENT PARTS

**2.01** Figures 1 through 10 included in this part show the various parts in their proper relation to other parts of the apparatus, together with the name of the parts which it is practicable to replace in the field.

**2.02** When ordering parts for replacement purposes, give the name of the part and also the complete nameplate data of the apparatus for which the part is ordered. Include the manufacturer's name, the KS number and list number, volts (dc), amperes, and rating in horsepower. For example, one main movable contact for line contactor for the Ward-Leonard Electric Company KS-15868 L1 starter, 125/155 volts, 22 amperes, 3 hp. When

ordering an auxiliary contact, also state whether the contact is normally open or normally closed. Do not refer to the BSP number of to any information shown in parentheses following the name of the part.

**2.03** Information enclosed by parentheses ( ) is not ordering information. This information may be references to notes, parts referred to in other portions of the section and not considered replaceable, or part names in general use in the field if these names differ from those assigned by the manufacturer.

**2.04** External reset button modification kits are available for the KS-15983 starters. L101 is the kit for KS-15983 L1, L3, L11, and L31 starters. L102 is the kit for KS-15983 L2 and L21 starters.

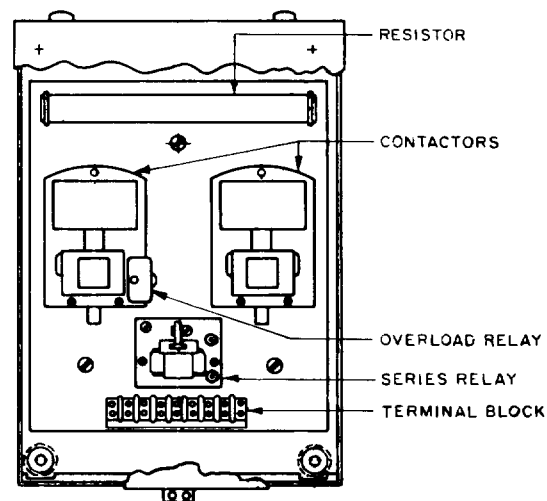
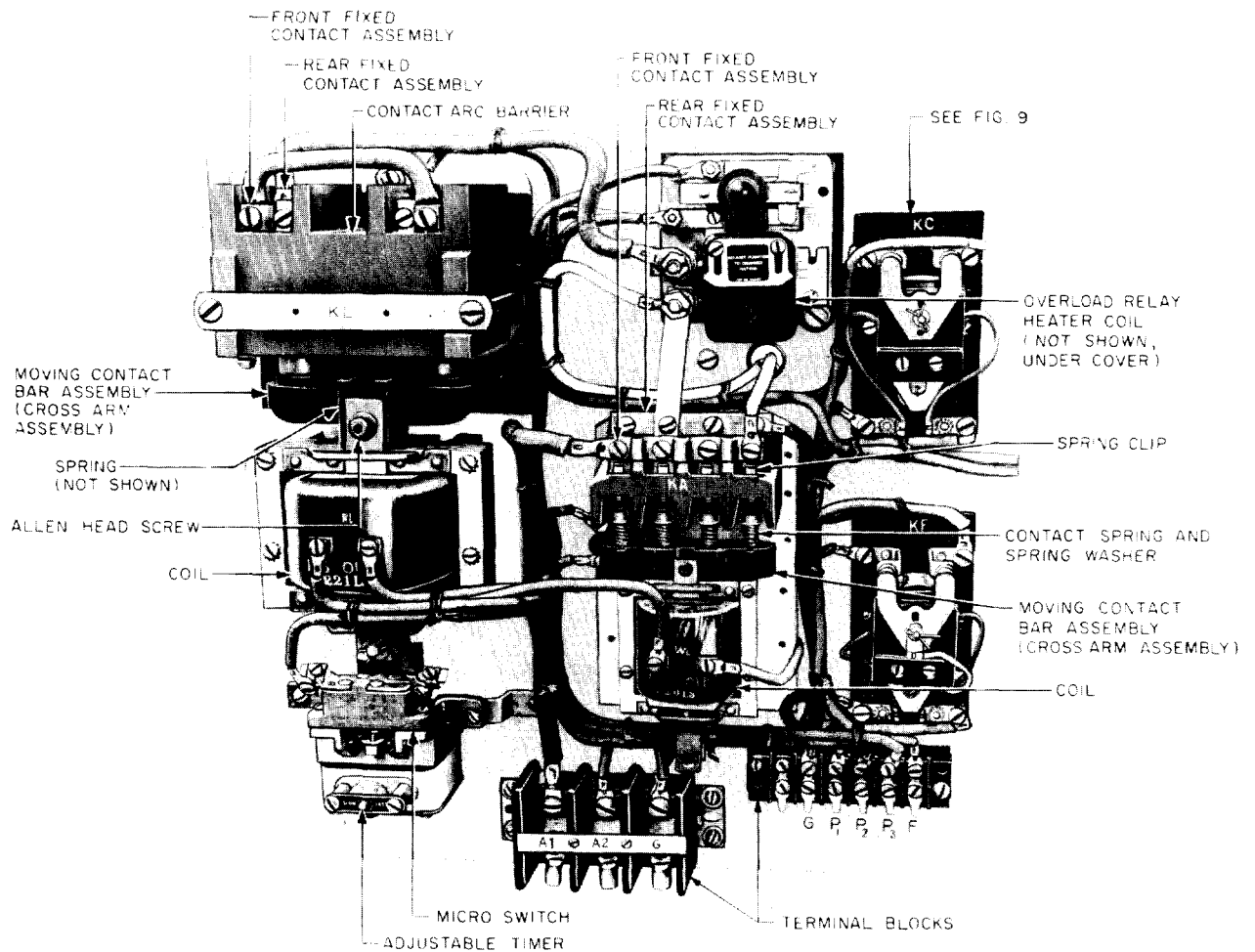


Fig. 1—General View of Starter (KS-15868 L1 starter shown)



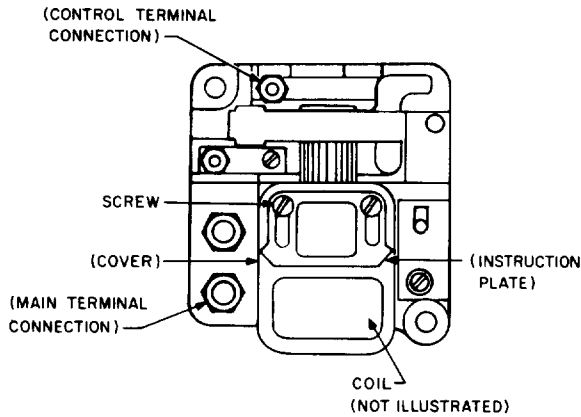
**Fig. 3—Front View of KS-15983 L1, L3, L11, and L31 Starters (cabinet removed—resistor on rear of panel)**

and insulating washers holding the assembly. Remove the contact and substitute a new contact and reassemble, taking care to assemble the insulating washers in correct location.

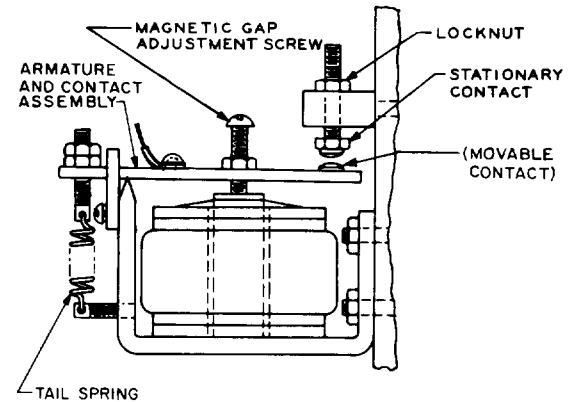
- (4) To replace a stationary movable auxiliary contact, remove the nuts, lockwashers, and washers holding the contact post. Remove the contact post from the panel. Remove the cotter pin holding the contact and spring holder to post. Remove the contact holder from the post. Remove the contact and spring, substitute a new contact and spring, and reassemble in reverse order.

#### **KS-15868 L1 Starter**

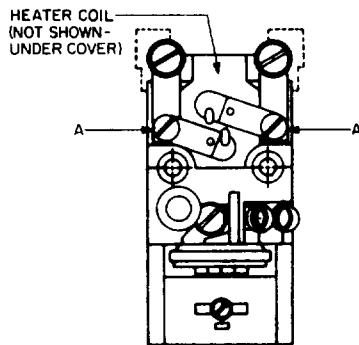
- (5) To replace the main movable contacts of the AC and LC relays of the KS-15868 L1 starter, unscrew the Allen head screw in the center of the crossarm assembly holding the movable contacts. Remove the crossarm assembly and depress the movable contact to below the notches in the contact support pin. Rotate the contact 90 degrees and lift it off. Remove the spring washer in the same manner and then lift off the contact spring. Mount the new contact, together with its spring and spring washer, in reverse order. To replace the main stationary contacts, remove the crossarm assembly as above.



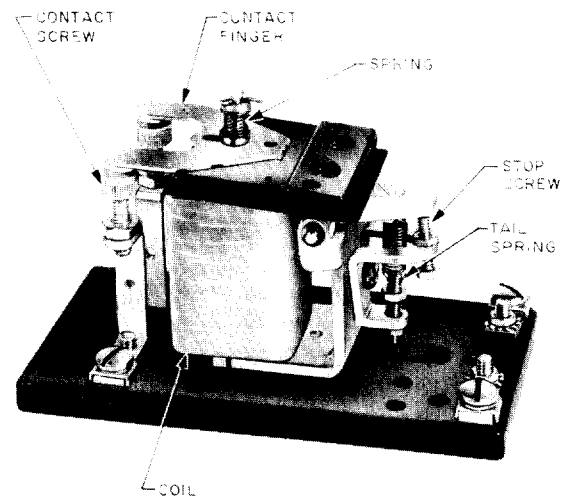
**Fig. 5—Overload Relay (part of KS-5755 starter shown)**



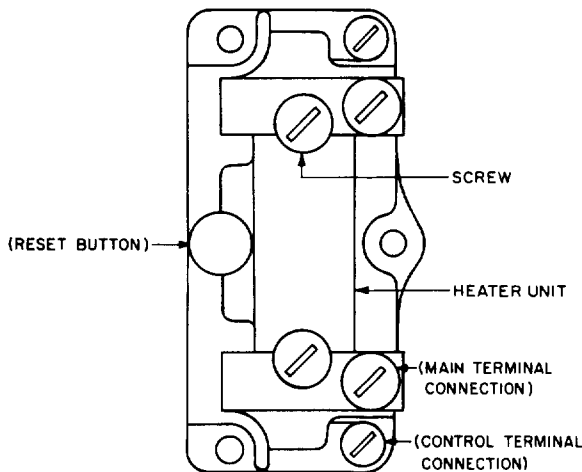
**Fig. 8—Series Relay (part of KS-5755 starter shown)**



**Fig. 6—Overload Relay (part of KS-15983 L2 starter shown)**



**Fig. 9—Control and Field Failure Relay (part of KS-15983 L1 and L3 starters shown)**



**Fig. 7—Overload Relay (part of KS-15868 L1 starter shown)**

Remove the terminal screw at the top of the stationary terminal and then withdraw the spring-steel holding clip from the head. The stationary contacts may then be removed. Mount the new contact in reverse order, using a new spring clip.

**KS-15983 L1, L2, L3, L11, L21, and L31 Starters**

(6) To replace the main movable contacts and the stationary contacts of the KL and KA relays, proceed as covered in (5) except that the contact arc barriers must also be removed. To do this, remove the two or four screws holding the respective barrier in place.

magnet. Withdraw the coil clip and bottom insulator. Remove the screw at the top of the magnet frame. Withdraw the coil and remove the magnetic stop from the core of the coil. Substitute a new coil and reassemble all parts in reverse order.

(3) To replace the coil of the KC or KF relay, remove the four screws from the base and remove the relay from its mounting. Remove the coil stud mounting screw at the base. Remove the C washer and the pivot from the bearing where required. Lift the contact finger assembly, making certain not to stretch excessively the tail spring. Withdraw the coil. Substitute a new coil and reassemble all parts in reverse order.

### 3.10 *Resistors*

- (1) To remove a resistor, remove the nuts and lockwashers holding the studs of the resistor tube assembly. Slide off the resistor, centering washers, and mica washers. Substitute a new resistor and reassemble in reverse order, taking care that the mica washers and centering washers are correctly located.

**Note:** Since the resistors for the KS-15983 L1, L2, L3, L11, L21, and L31 starters are located on the rear of the mounting plate, it will be necessary to remove the mounting bolts holding the panel to the cabinet.