

204-TYPE SELECTORS

PIECE-PART DATA AND REPLACEMENT PROCEDURES

1. GENERAL

1.01 This section covers the information necessary for ordering parts to be used in the maintenance of 204-type selectors. It also covers approved procedures for replacing these parts.

1.02 This section is reissued to revise the List of Tools and to revise the procedures indicated by change arrows.

1.03 Part 2 of this section covers the piece-part numbers and the corresponding names of the parts which it is practicable to replace in the field in the maintenance of 204-type selectors. No attempt should be made to replace parts not designated.

1.04 Part 3 of this section covers the approved procedures for the replacement of parts.

CODE OR
SPEC NO.

DESCRIPTION

TOOLS

45B

5/16-inch hex. socket wrench

418A

5/16- and 7/32-inch hex. open double-end flat wrench

◆544A

1/4-inch hex. single-end socket wrench◆

555A

3/16-inch hex. socket wrench

KS-6854

3 1/2-inch screwdriver

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3-inch ◆C◆ screwdriver

—

4-inch ◆E◆ screwdriver

2. PIECE-PART DATA

2.01 The figures included in this part show the various piece parts in their proper relation to other parts of the selector. The piece-part number of the various parts are given together with the names of the parts as listed by the Western Electric Company Merchandise Department. When these names differ from those in general use in the field, the latter names, in some cases, are shown in parentheses.

2.02 When ordering piece parts for replacement purposes, give both the number and name of the piece part. The D numbers given are Automatic Electric Company part numbers, and the P numbers are Western Electric Company part numbers; for example, P-125952 Nut. Do not refer to the BSP number or any information shown in parentheses following the piece-part numbers.

3.02 If a selector is mounted so that parts to be replaced are not readily accessible, remove the selector from its mounting as follows. Tag and disconnect the release magnet leads. Remove the selector mounting screws, and carefully withdraw the selector from its mounting, taking care not to damage the bank leads. In the case of a selector associated with a 197-type switch, first remove the switch from the shelf as covered in Section 030-705-701. Then remove the shaft spring and normal post assembly of the switch as covered in Section 030-705-802 and the vertical off-normal spring assembly as covered in Section 030-705-803 in order to remove the selector. It may be desirable in some cases to support the selector by a wire attached to the frame in order to prevent damage to the bank leads while making replacements.

3.03 After making any replacement of parts of a 204-type selector, the part or parts replaced shall meet the readjust requirements involved as specified in Section 026-708-701. Other parts whose adjustments have been directly disturbed by the replacing operations shall be checked to the readjust requirements, and an overall operation check shall

3. REPLACEMENT PROCEDURES

3.01 *List of Tools*

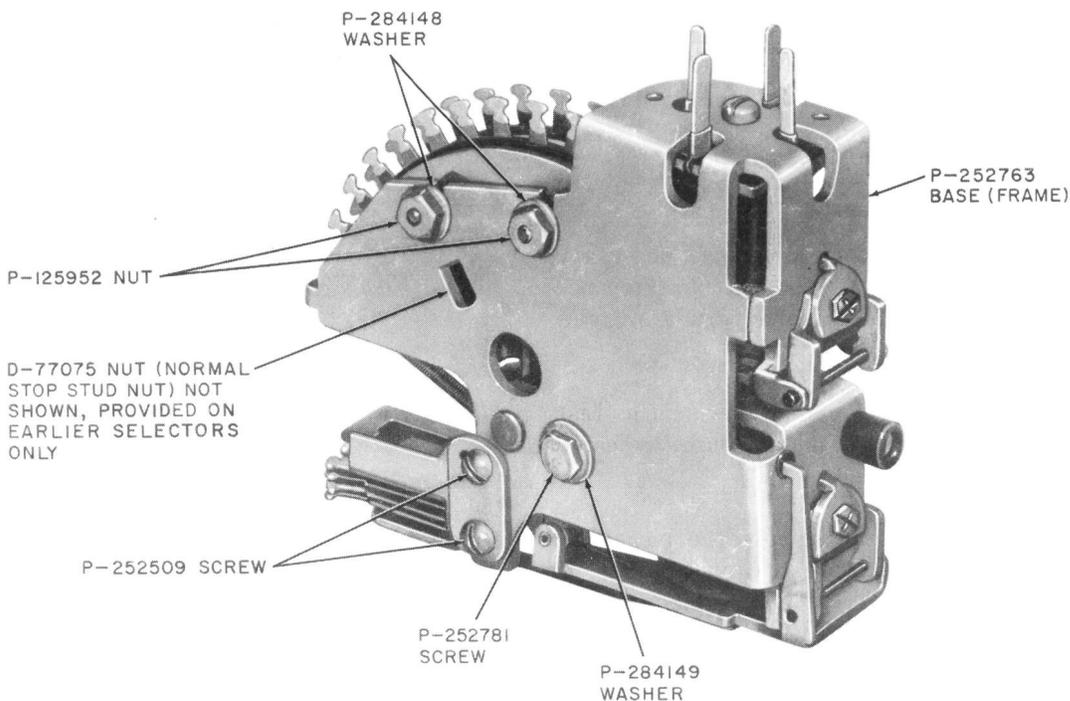


Fig. 1—Bottom View of 204-Type Selector

be made of the 204-type selector before restoring the circuit to service.

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

Rotary Magnet and Associated Parts

3.05 Rotary Armature Spring: To replace the rotary armature spring, remove the two rotary armature spring mounting screws with the 3-inch \blacktriangleright C \blacktriangleleft screwdriver. Substitute the new spring, and fasten it in place by inserting and tightening the mounting screws securely.

3.06 Rotary Armature Assembly: It is necessary to replace the rotary armature assembly if the rotary armature pawl or pawl spring is defective. To replace the rotary assembly, proceed as follows.

- (1) Loosen the rotary armature yoke mounting screw with the 4-inch \blacktriangleright E \blacktriangleleft screwdriver or the \blacktriangleright 544A wrench. \blacktriangleleft Remove the armature assembly. Transfer the armature spring to the

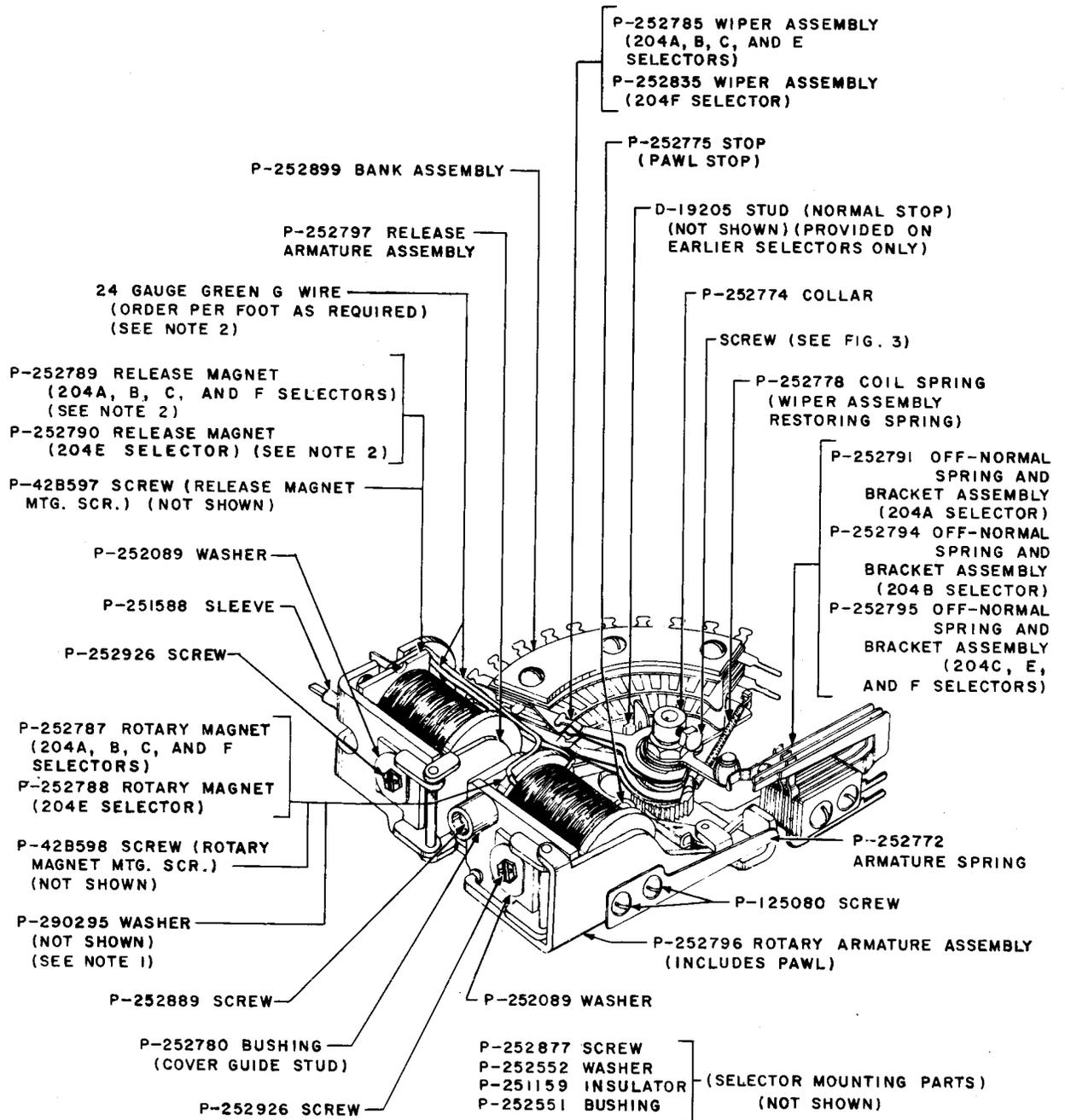
new armature assembly or substitute a new spring as covered in 3.05 if necessary.

- (2) Mount the armature assembly on the selector, making sure that the pawl guide arm and the rotary armature spring are properly positioned as shown in Fig. 4. Remount the selector and securely tighten the mounting screws.

Caution: *Excessive tightening may result in screw breakage or stripping.* \blacktriangleleft

- (3) If an armature assembly is being replaced on a selector of AECo manufacture and the selector is associated with a 197-type switch, make sure the new armature does not touch the switch cover. If additional clearance is required between the armature and cover, replace the cover guide stud on the selector.

3.07 Rotary Magnet: To replace the rotary magnet, remove the rotary armature assembly as covered in 3.06. Unsolder the leads to the rotary magnet, and remove the rotary magnet mounting screw with the 418A wrench. Place the washer between the magnet and frame where a



NOTE 1: USE THE P-290295 WASHER BETWEEN THE ROTARY MAGNET AND ITS MOUNTING WHERE REQUIRED TO REDUCE ARMATURE AIR GAP.

NOTE 2: IF A RELEASE MAGNET HAVING TERMINALS ON BOTH SPOOLHEADS IS TO BE REPLACED BY A RELEASE MAGNET HAVING TERMINALS ON THE MOUNTING END SPOOLHEAD ONLY, TWO 24 GAUGE SINGLE STRAND GREEN G WIRE LEADS 4-1/2 INCHES LONG ARE REQUIRED.

Fig. 2—Top View of 204-Type Selector

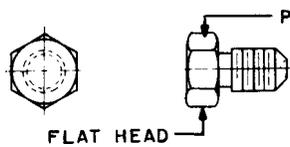


FIG. 3A—EARLIER TYPE SCREW

WHEN REPLACING A MISSING OR DAMAGED SCREW OR A FLAT HEAD SCREW USE THE P-251838 SCREW IF IT CAN BE TURNED IN THE ASSOCIATED PART WITHOUT UNDUE PRESSURE. IF NOT, USE THE P-253169 SCREW.

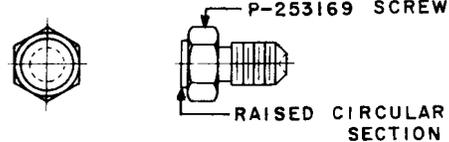


FIG. 3B—LATER TYPE SCREW

Fig. 3—Mounting Screws for Wiper Assembly Collar

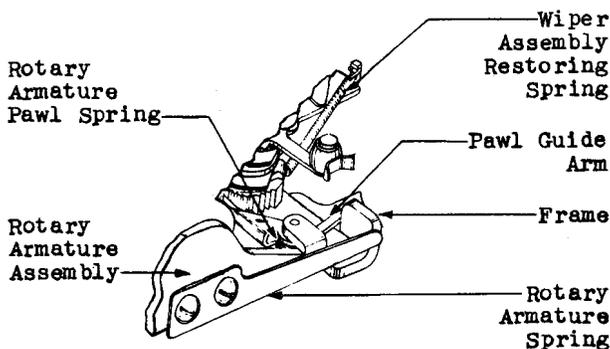


Fig. 4—Location of Rotary Armature Spring and Pawl Guide Arm

washer was previously used. Position the magnet, and insert and tighten the mounting screws securely. Remount the rotary armature assembly as covered in 3.06. Connect the leads to the rotary magnet.

Release Magnet and Associated Parts

3.08 Release Armature: To replace the release armature, remove the release armature yoke mounting screw with the 4-inch $\blacklozenge E \blacklozenge$ screwdriver or the $\blacklozenge 544A \text{ wrench} \blacklozenge$ and remove the release armature. Place the new armature in position, taking care that the release armature spring rests properly against the normal stop. Insert the release armature yoke mounting screw, and tighten it securely.

Caution: *Excessive tightening may result in screw breakage or stripping.*

3.09 Release Magnet: To replace the release magnet, proceed as follows.

- (1) Remove the release armature as covered in 3.08.

- (2) If the strapping leads from the rotary magnet are connected to terminals on the armature end of the release magnet, unsolder these leads at the release magnet terminals and proceed as covered in (4) and (5).

- (3) If the strapping leads from the rotary magnet are connected to terminals on the mounting end of the release magnet, first remove the selector magnet as covered in (4). Then unsolder the strapping leads at the release magnet terminals, and continue as covered in (5).

- (4) Tag and disconnect the external leads to the release magnet. Remove the release magnet mounting screw using the 4-inch $\blacklozenge E \blacklozenge$ screwdriver, and remove the release magnet from the selector.

- (5) Mount the new release magnet as covered in (6) if the magnet has terminals on the spoolhead at the armature end or as covered in (7) if the magnet has terminals on the spoolhead at the mounting end only.

- (6) If the new release magnet has terminals on the spoolhead at the armature end, position the magnet on the selector frame so the two blank holes in the other spoolhead are at the lower right corner as viewed from the mounting end with the selector held horizontally. Securely tighten the magnet mounting screw. Connect and solder the rotary magnet strapping leads to the terminals on the spoolhead at the armature end of the release magnet. Remount the release armature as covered in 3.08. Connect and solder the external leads to the release magnet terminals.

- (7) If the new release magnet has terminals on the spoolhead at the mounting end only, connect and solder the rotary magnet strapping

leads to the release magnet before mounting this magnet in the selector. If the replaced release magnet had strapping terminals at the armature end, remove the strapping leads from the rotary magnet and substitute 4 1/2-inch long leads of green, single-strand 24-gauge G wire. Then position the new release magnet so the two blank holes in the mounting end spoolhead are at the lower right corner as viewed from the mounting end. With the selector horizontal, solder the upper lead of the rotary magnet to the top terminal on the release magnet and solder the other lead to the bottom terminal. Then mount the release magnet on the selector so the two blank holes are at the lower right corner. Dress the strapping leads as shown in Fig. 2. Securely tighten the magnet mounting screw. Remount the release armature as covered in 3.08. Connect and solder the external leads to the rotary magnet terminals.

Wiper Assembly and Associated Parts

3.10 Wiper Assembly Collar: To replace the wiper assembly collar, loosen the wiper assembly collar setscrew with the 3-inch **◆C◆** screwdriver or the 555A wrench and lift the collar from the shaft. Place the new collar on the shaft so the setscrew will be toward the front of the switch. Tighten the setscrew securely.

3.11 Wiper Assembly Restoring Spring: To replace the wiper assembly restoring spring, proceed as follows. With the wipers in the normal position with respect to the bank contacts, remove the spring from the hook on the normal finger. Then remove the spring from the pin or hook on the frame. Place the new spring over the pin or the hook at the outer end of the frame, and mount it in place over the hook on the normal finger.

3.12 Wiper Assembly: To replace the wiper assembly, loosen the wiper assembly collar setscrew with the 3-inch **◆C◆** screwdriver or the 555A wrench and remove the collar from the shaft. With the wiper assembly in the normal position with respect to the bank contacts, remove the spring from the hook on the normal finger. Manually rotate the wiper assembly off the bank in a clockwise direction, and remove the wiper assembly

from the shaft. Before mounting a new wiper spring assembly, check and adjust to meet the requirements as covered in Section 026-708-701. Then substitute the new assembly in place on the shaft in about the same position occupied by the replaced assembly. Restore the wiper assembly to the normal position by operating the release magnet and moving the wiper assembly by hand. Mount the wiper assembly collar in position, and tighten the setscrew securely.

Miscellaneous Parts

3.13 Off-Normal Spring and Bracket Assembly:

Unsolder the leads to the spring terminals. Remove the off-normal spring assembly bracket mounting screws with the 3-inch **◆C◆** screwdriver. Place the new spring and bracket assembly in position, and tighten the mounting screws securely. Connect the leads to the spring terminals.

3.14 Bank: Unsolder the leads to the bank terminals. Remove the bank mounting nuts with the 45B wrench. Remove the bank, taking care not to damage the wipers. Turn the wiper assembly in a clockwise direction as far as it will go, and place the new bank in position. Tighten the bank assembly mounting nuts, and restore the wiper assembly to normal by operating the release armature manually. Connect the leads to the bank terminals.

Note: If the replacement is made on a selector which mounts on a 933E mounting plate, bend apart the soldering terminals associated with the tenth bank contacts so they will not interfere with the mounting plate cover.

3.15 Pawl Stop: Remove the pawl stop mounting screw with the 45B wrench. Place the new pawl stop in position, and tighten the mounting screws securely.

3.16 Normal Stop (Earlier Selectors Only):

To replace the normal stop, remove the normal stop locknut with the 555A wrench and remove the normal stop with the KS-6854 screwdriver. Place the new stop in position and mount and tighten the locknut securely.