

1-TYPE TIMERS AND ASSOCIATED 51- AND 52-TYPE DRIVES PIECE-PART DATA AND REPLACEMENT PROCEDURES

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1. GENERAL

1.01 This section covers the information necessary for ordering parts to be used in the maintenance of 1-type timers and 51- and 52-type drives. It also covers approved procedures for replacing these parts.

1.02 The reasons for reissuing this section are listed below:

- (1) To show that the KS-16066, L1, motor in Fig. 3 is rated Mfr Disc., with no replacement
- (2) To show that the KS-7780 motor is rated Mfr Disc., replaced by the KS-20678, L3, motor

- (3) To change the P-468723 armature adjusting screw to 841061724 armature adjusting screw
- (4) To revise the List of Tools
- (5) To update to standard format.

Since this is a general revision, revision arrows have been omitted. The Equipment Test List is not affected.

1.03 Piece parts which may be replaced in the field are listed in Part 3.

1.04 Part 4 covers the approved procedures for the replacement of the piece parts designated in Part 3. No attempt should be made in the field to replace parts not so designated.

1.05 Before replacing any parts of the 1-type timers or the 51- or 52-type drives, make the associated circuit busy in accordance with the approved methods.

2. APPARATUS

2.01 List of Tools:

TOOLS	DESCRIPTION
46	3/8-inch Hex Single-end Socket Wrench
417A	1/4- and 3/8-inch Open Double-end Flat Wrench
551A	Combination Wrench (1/8- and 3/16-inch)
563A	90-degree Offset Screwdriver
564A	45-degree Offset Screwdriver
KS-6854	3-1/2 inch Screwdriver

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

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- AT-7825 4-inch E Screwdriver
- AT-7825 6-inch C Screwdriver
- Soldering Copper
- Soldering Iron

3. PIECE-PART DATA

3.01 Figures 1 through 3 show the relationship of the various parts of the apparatus. The piece part number of these parts are given with the names as listed by the Western Electric Merchandise Department.

3.02 When ordering replacement parts, give both the piece-part number and name, for example: P-468723 screw. Do not refer to the BSP section number.

3.03 Information enclosed by parentheses () is not ordering information. This information may be references to notes, parts referred to in other por-

tions of this section and not considered replaceable, or part names for general use in the field if these names differ from those assigned by the manufacturer.

4. REPLACEMENT PROCEDURES

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

4.02 After replacing parts of 1-type timers or 51- and 52-type drives, the part or parts replaced shall meet the readjust requirements involved as specified in the section covering this apparatus. Other parts for which adjustments may have been directly disturbed by the replacing operations shall be checked to the readjust requirements, and an overall operation check shall be made of the timer or drive before restoring the circuit to service.

A. Timer and Associated Parts

4.03 General: Remove the timer from the mounting plate to make any replacements.

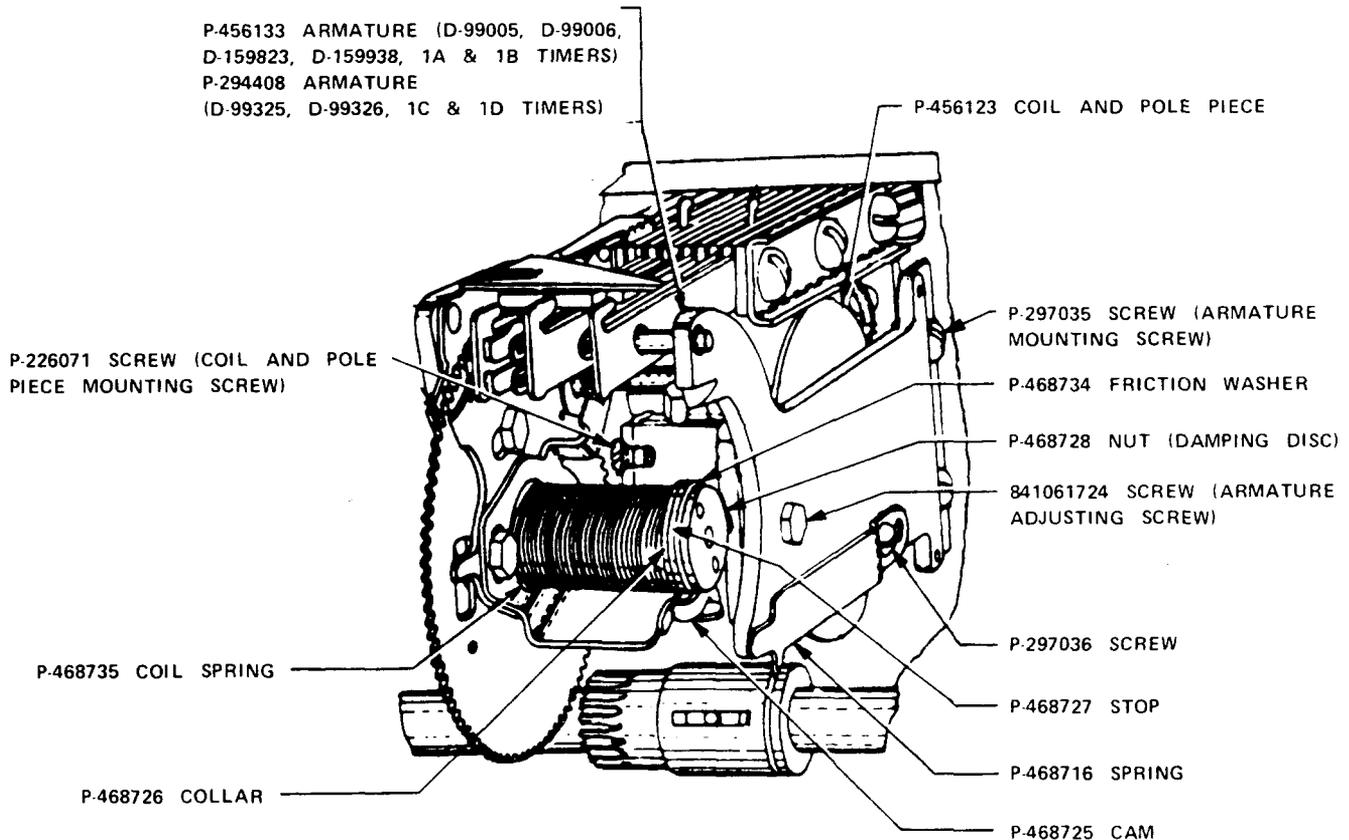


Fig. 1 — Timer and Pinion

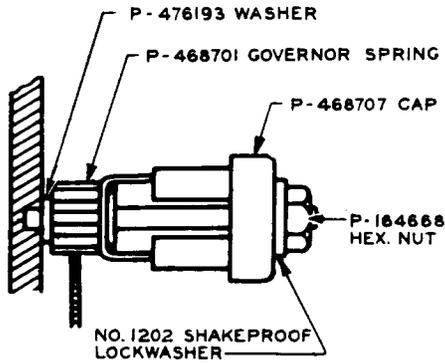


Fig. 2—Governor

4.04 Timer: To replace the timer, proceed as follows:

- (1) Unsolder the leads from the terminals and tag them for later identification.
- (2) Using the 46 wrench and the 6-inch C screwdriver, remove the positioning screw locknut and the positioning screw.
- (3) Using the 4-inch E screwdriver, remove the two mounting screws to free the timer.
- (4) Remove the old timer and replace with the new timer.
- (5) After replacing any parts, remount the timer.
- (6) Resolder the leads to their proper terminals.

4.05 Armature: To replace the armature, proceed as follows:

- (1) Remove timer as covered in paragraph 4.04.

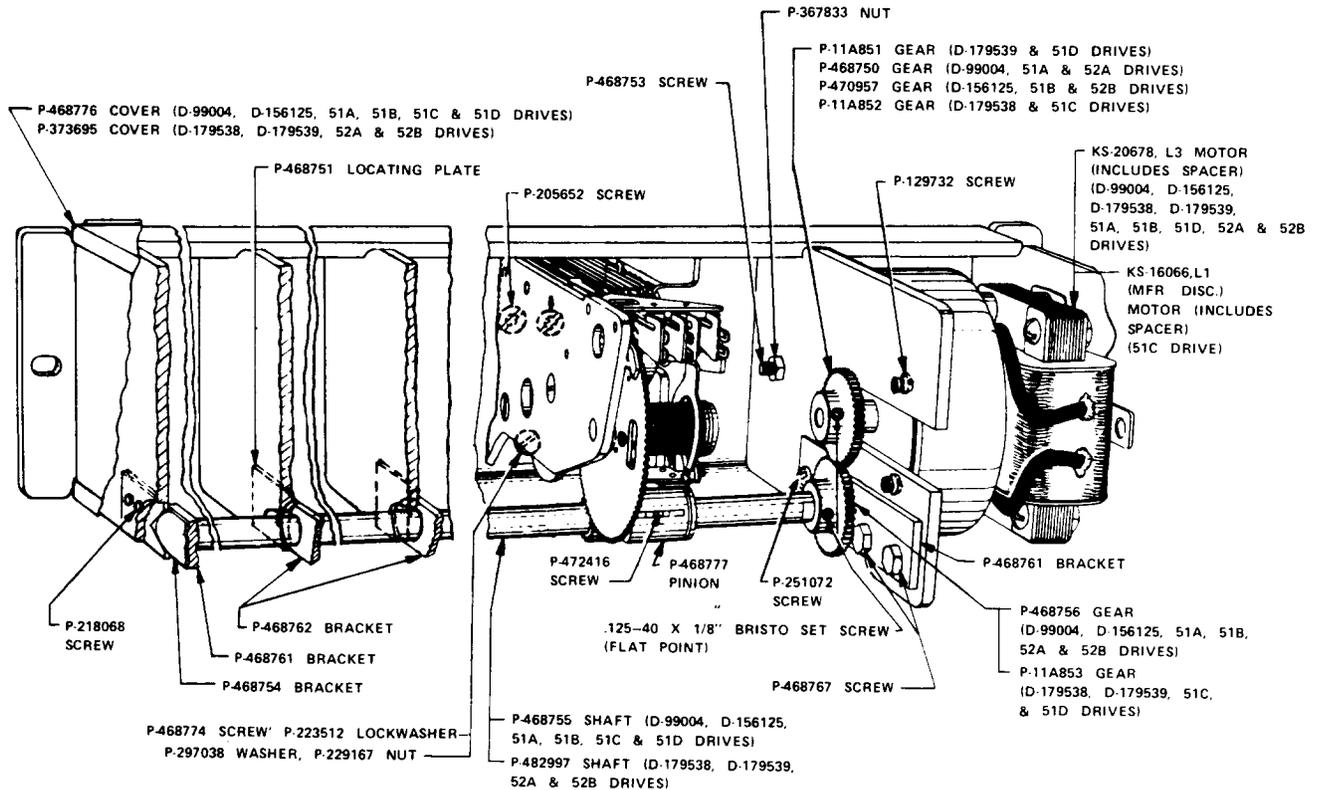


Fig. 3—Timer and Drive

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- (2) Using the 551A wrench, remove the armature adjusting screw shown in Fig. 1.
- (3) Using the KS-6854 screwdriver, remove the armature mounting screws.
- (4) Remove the armature and mount the new armature in reverse order.

4.06 Coil and Pole-Piece: To replace the coil and pole-piece, proceed as follows:

- (1) Remove the timer as covered in paragraph 4.04.
- (2) Remove the armature as covered in paragraph 4.05.
- (3) Using the 4-inch E screwdriver, remove the two coil and pole-piece mounting screws.
- (4) Unsolder the leads of the coil from the terminals and tag them for later identification.
- (5) Remove the old part and replace with the new part.
- (6) Resolder the leads to their proper terminals and securely tighten the mounting screws.
- (7) Replace the armature.

4.07 Governor Spring and Pinion: To replace the governor spring and pinion, proceed as follows:

- (1) Remove the timer as covered in paragraph 4.04.
- (2) Remove the coil and pole-piece as covered in subparagraphs 4.06(2) and (3).
- (3) Using the 551A wrench, remove the governor mounting nut.
- (4) Substitute the new part, and replace the nut.
- (5) Remount the coil and pole-piece.

4.08 Coil Springs, Collar, Cam, Stop, Friction Washer, and Nut (Damping Disc): To replace, proceed as follows:

- (1) Remove the timer as covered in paragraph 4.04.

- (2) Using the 551A wrench, remove the nut (damping disc).

- (3) Substitute with the new part, and securely tighten the nut (damping disc).

B. Drive Shaft and Associated Parts

4.09 Drive Shaft, Pinion, and Gear: To replace, proceed as follows:

- (1) Remove the timer as covered in paragraph 4.04.
- (2) Using the 417A wrench, remove the drive shaft bracket adjacent to the motor and all intermediate brackets.
- (3) Remove the drive shaft and associated pinions and gear.
- (4) Using the R-2653 wrench, loosen the drive shaft gear setscrew
- (5) Using the KS-6854 screwdriver, remove the pinion mounting screw.
- (6) Substitute the new pinion, securely tightening the mounting screw.
- (7) After adjusting the gear, securely tighten the setscrew.

C. Motor and Associated Parts

4.10 Motor and Gear: To replace the motor and gear, proceed as follows:

- (1) Remove the timer as covered in paragraph 4.04.
- (2) Using the R-2653 wrench, loosen the setscrews to remove the motor gear from the motor shaft.

Note: To replace the motor gear only, it will not be necessary to remove the motor.

- (3) Mount the new motor gear and tighten the setscrews securely.
- (4) Unsolder the leads to the motor field coil terminals at the front of the motor and tag them for later identification.

Note: The KS-20678 motor is not equipped with motor field coil terminals; six inch stranded leads are provided as part of the motor.

- (5) Using the 417A wrench, loosen the nut of the rear motor mounting screw.
- (6) Using the 563A and 564A offset screwdrivers, remove the two front motor mounting screws.
- (7) Remove the motor and spacer by sliding them forward.
- (8) Remove the gear as covered in Step 2.
- (9) Mount the new motor and spacer by placing the slot in the motor plate and spacer under the head of the rear motor mounting screw.
- (10) Slide the motor and spacer toward the rear.

Warning: *When sliding spacer, care should be exercised that the spacer is properly located between the motor and the mounting plate.*

- (11) Remount the two front motor mounting screws, making them finger-tight.
- (12) Remount the motor gear on the motor shaft, and adjust in accordance with the section covering this apparatus.
- (13) Using the R-2653 wrench, securely tighten the setscrew.
- (14) Securely tighten the front motor mounting screws and the nut of the rear motor mounting screw.
- (15) Resolder the leads to the proper terminals of the motor field coil. [See note in subparagraph 4.10 (4)].