

## 1-TYPE TIMERS AND ASSOCIATED 51- AND 52-TYPE DRIVES 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 1-type timers and 51- and 52-type drives. It also covers approved procedures for replacing these parts.

1.02 This section is reissued to include piece-part data for the Nos. 51C, 51D, D-179538, and D-179539 drives.

1.03 Part 2 of this section covers the piece-part numbers and the corresponding names of the parts which it is practical to replace in the field in the maintenance of these timers. No attempt should be made to replace parts not designated. Part 2 also contains explanatory figures showing the different parts. This information is called Piece-part Data.

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

1.05 Before making any replacement of the parts of a 1-type timer and a 51- or 52-type drive, make the associated circuit busy in accordance with the approved methods before the work is started.

### 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 apparatus. The piece-part numbers of the various parts are given together with the names of the parts as listed by the Western Electric Company Merchandise Department. Where 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 the name of the piece part; for example, "P-468723 Screw." Do not refer to the ESP number or to any information shown in parenthesis following the piece-part number.

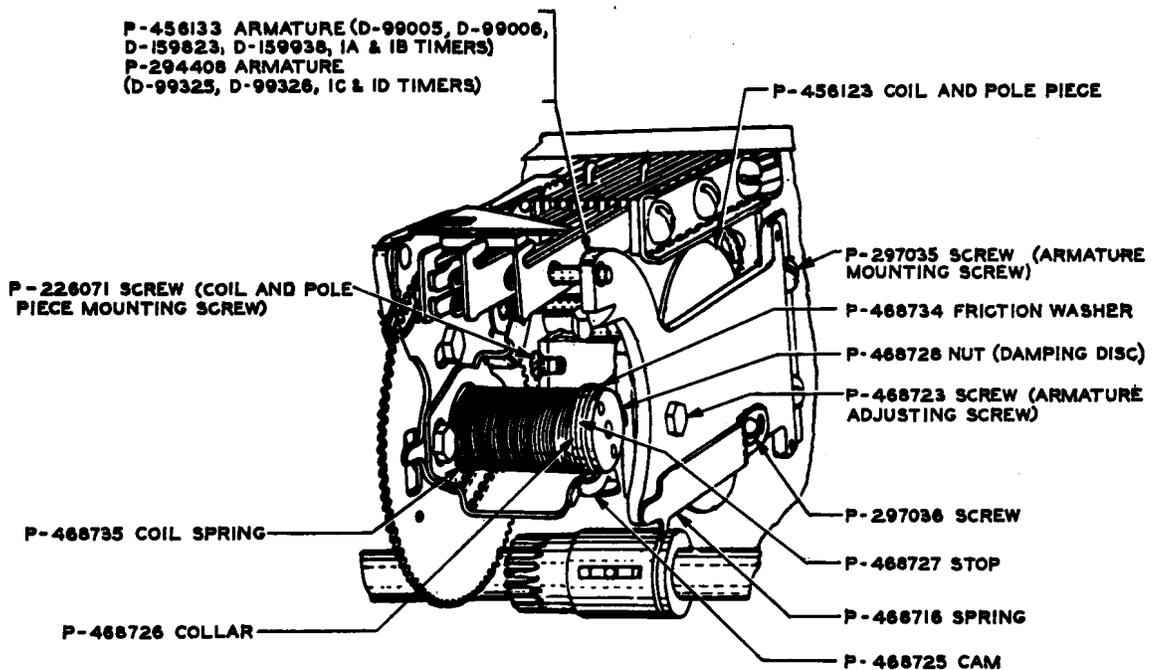


Fig. 1 - Timer and Pinion

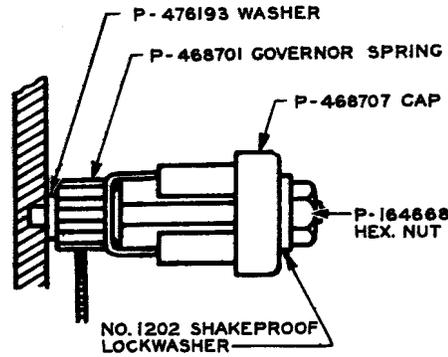


Fig. 2 - Governor

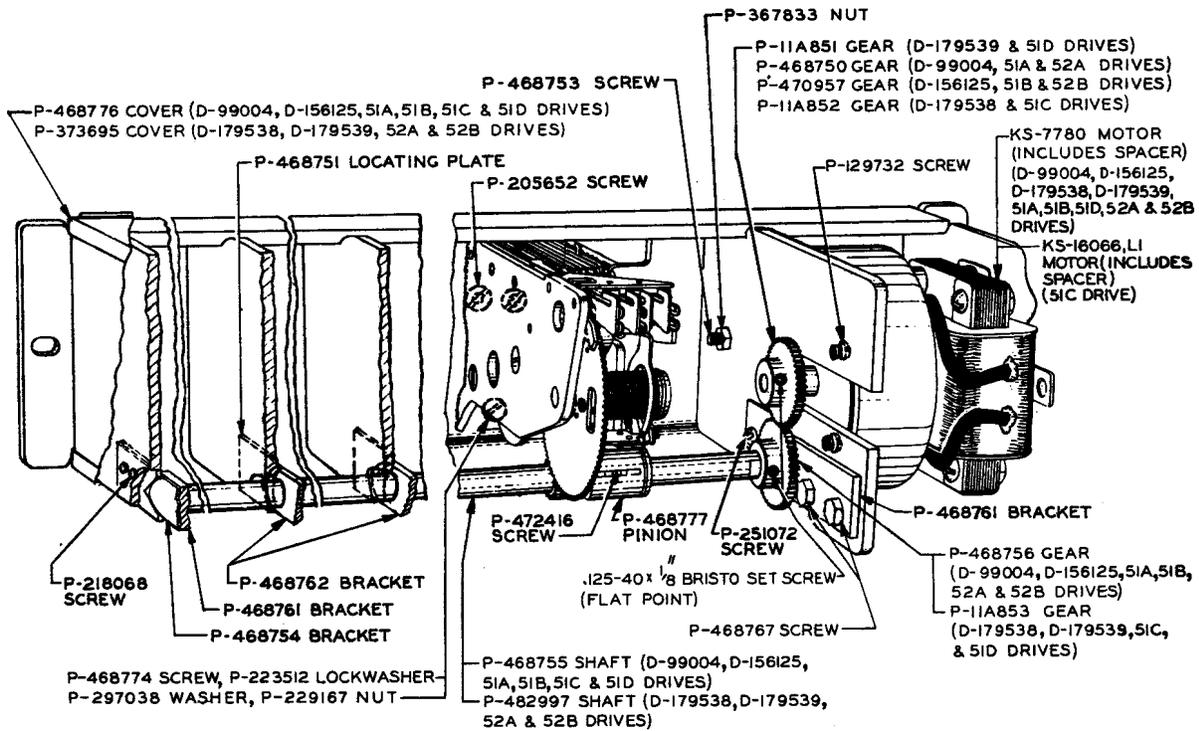


Fig. 3 - Timer and Drive

**3. REPLACEMENT PROCEDURES**

**3.01 List of Tools**

Code or Spec. No.	Description	Code or Spec. No.	Description
		563A	90-degree Offset Screwdriver
		564A	45-degree Offset Screwdriver
		KS-6854	Screwdriver
46	3/8-inch Hex. Single-end Socket Wrench	R-2653	No. 5 Bristo Setscrew Wrench
417A	1/4- and 3/8-inch Hex. Open Double-end Flat Wrench	-	4-inch Regular Screwdriver
551A	Combination Wrench	-	6-inch Cabinet Screwdriver
		-	Soldering Copper

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

3.03 After making any replacement of 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 whose adjustments may have been directly disturbed by the replacing operations shall be checked to the readjust requirements, and an over-all operation check shall be made of the timer or drive before restoring the circuit to service.

#### Timer and Associated Parts

3.04 General: Remove the timer from the mounting plate to make any replacements. Unsolder the leads from the terminals and tag them for later identification. Remove the positioning screw locknut using the No. 46 wrench and the positioning screw using the 6-inch cabinet screwdriver. Remove the two mounting screws with the 4-inch regular screwdriver which will free the timer. After replacing any part remount the timer. Resolder the leads to their proper terminals.

3.05 Timer: To replace the timer, remove it as covered in 3.04. Substitute the new timer and mount it as covered in 3.04.

3.06 Armature: Remove the armature adjusting screw shown on Fig. 1 with the No. 551A wrench. Remove the armature mounting screws with the KS-6854 screwdriver and remove the armature. Mount the new armature.

3.07 Coil and Pole Piece: Remove the armature as covered in 3.06. Remove the two coil and pole-piece mounting screws, using the 4-inch regular screwdriver. Unsolder the leads of the coil from the terminals and tag them for later identification. Substitute the new part. Resolder the leads to their proper terminals and securely tighten the mounting screws. Replace the armature.

3.08 Governor Spring and Pinion: Remove the coil and pole piece by removing the two coil and pole-piece mounting screws, using the 4-inch regular screwdriver. Remove the governor mounting nut, using the No. 551A wrench. Substitute the new part and replace the nut. Remount the coil and pole piece.

3.09 Coil Spring, Collar, Cam, Stop, Friction Washer, and Nut (Damping Disc): Remove the nut (damping disc), using the No. 551A wrench. Substitute the new part and securely tighten the nut (damping disc).

#### Drive Shaft and Associated Parts

3.10 Drive Shaft, Pinion, and Gear: Remove the drive shaft bracket adjacent to the motor and all intermediate brackets, using the No. 417A wrench. Remove the drive shaft and associated pinions and gear. Loosen the drive shaft gear setscrew, using the R-2653 wrench. Remove the gear. Remove the pinion mounting screw, using the KS-6854 screwdriver. Remove the pinion. Mount the new pinion, securely tightening the mounting screw. Mount the new gear loosely on the shaft and remount the shaft. After adjusting the gear, securely tighten the setscrew.

#### Motor and Associated Parts

3.11 Motor and Gear: To replace the motor, unsolder the leads to the motor field coil terminals at the front of the motor and tag them for later identification. Loosen the nut of the rear motor mounting screw, using the No. 417A wrench. Remove the two front motor mounting screws, using the Nos. 563A and 564A offset screwdrivers. Remove the motor and spacer by sliding them forward. Remove the motor gear from the motor shaft after loosening the setscrews, using the R-2653 wrench. 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, and sliding the motor and spacer toward the rear. Take care that the spacer is properly located between the motor and the mounting plate. Remount the two front motor mounting screws, making them finger-tight. Remount the motor gear on the motor shaft, and after adjusting in accordance with the section covering this apparatus, securely tighten the setscrew with the R-2653 wrench. Securely tighten the front motor mounting screws and the nut of the rear motor mounting screw. Resolder the leads to the proper terminals of the motor field coil. To replace the motor gear only, it will not be necessary to remove the motor. Loosen the motor gear setscrews, using the R-2653 wrench. Remove the motor gear. Mount the new motor gear and tighten the setscrews securely.