

## 51 TYPE DIAL TESTERS AND ASSOCIATED NO. 16A BRACKET 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 51-type dial testers and the No. 16A bracket. It also covers approved procedures for replacing these parts.

1.02 This section is reissued to change to standard or general use fastening parts, add replacement information, and replace discontinued tools. Detailed reasons for reissue will be found at the end of the section.

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 the above apparatus. 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 listed under Part 2. This information is called Replacement Procedures.

1.05 Before making any replacement of parts on the above apparatus make the dial tester and the associated circuit busy in the approved manner.

### 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.

2.02 From time to time changes are made in the design of apparatus and this sometimes results in noninterchangeability of some of the parts. In order to furnish

information for ordering parts for the earlier design in such cases, supplementary figures referred to as Fig. 3-A, Fig. 3-B, etc. are employed. Fig. 3-A shows the earlier design, Fig. 3-B the next, and so on.

2.03 When ordering piece parts for replacement purposes, both the number and name of the piece part should be given. For example: P-218564 Nut. Do not refer to the BSP number or to any information shown in parentheses following the piece-part numbers.

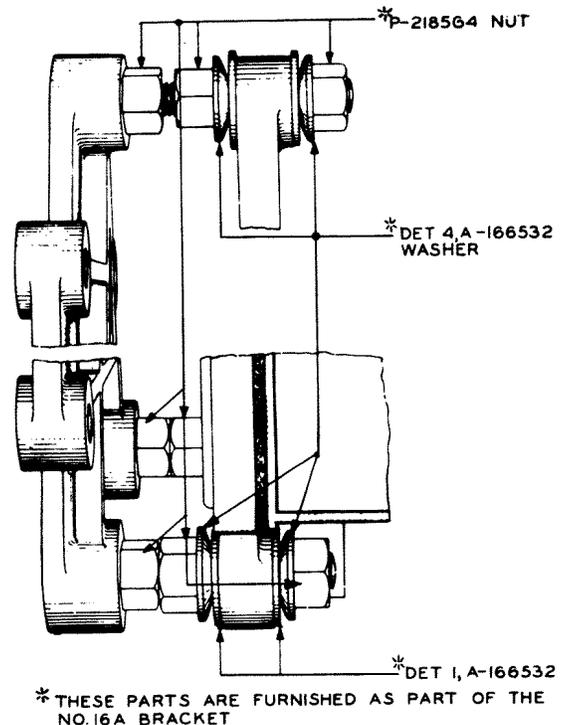
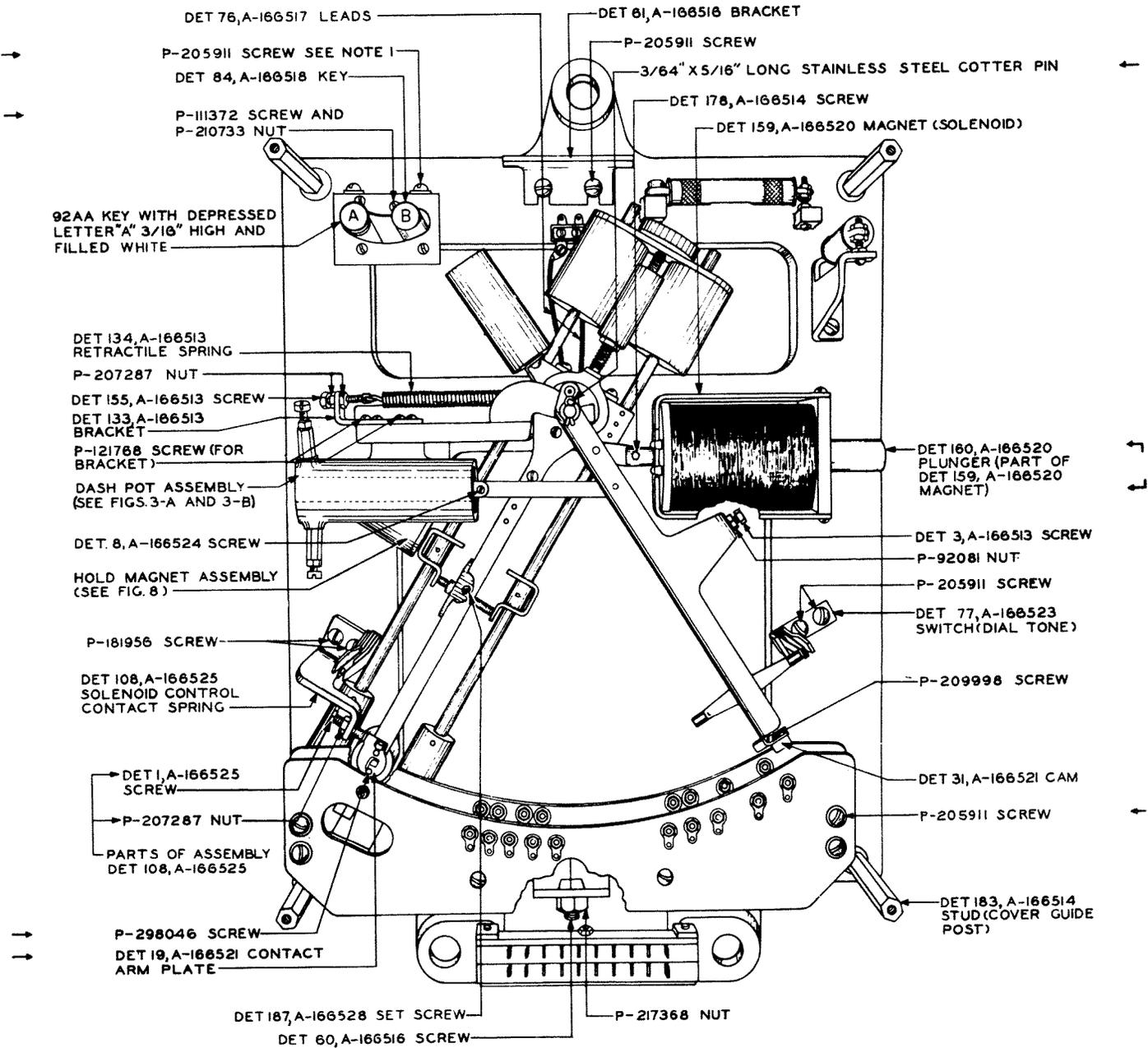


Fig. 1 - No. 16A Bracket



NOTE 1: THE MOUNTING SCREW FOR THE EARLIER KEY MOUNTING IS P-126071 SCREW. FOUR MOUNTING SCREWS ARE LOCATED ON THE FACE OF THE KEY MOUNTING PLATE.

Fig. 2 - Dial Tester (With Cover Removed)

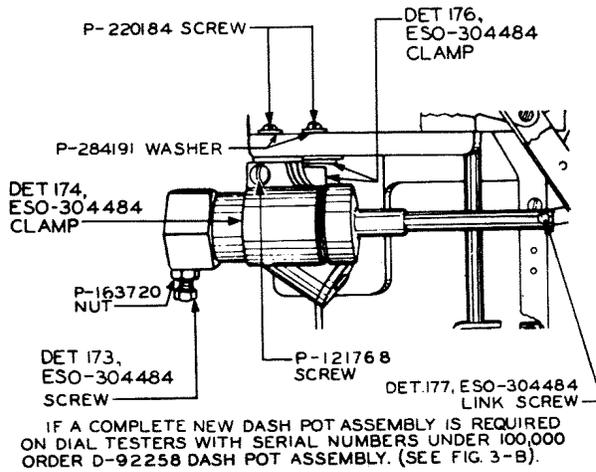


Fig. 3-A - Dashpot (Earlier Design)

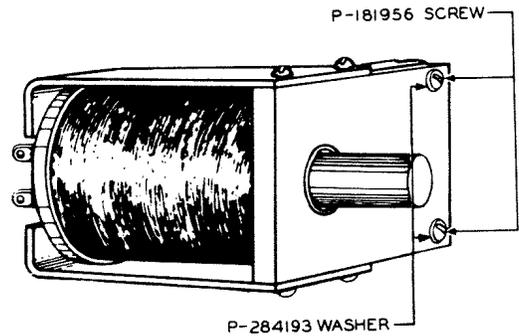
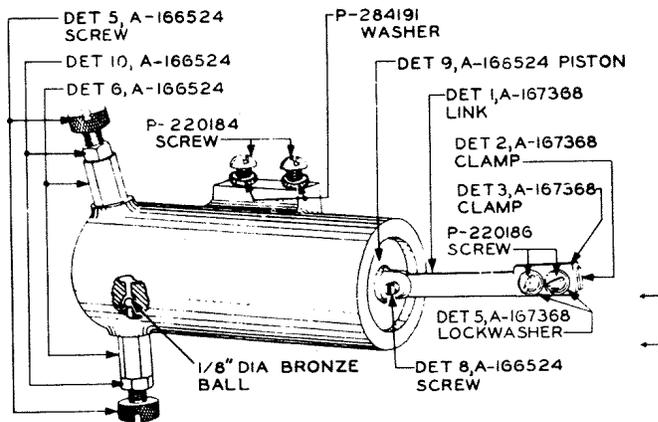


Fig. 4 - Mounting Parts for Det 159, A-166520 Magnet (Solenoid)



IF A COMPLETE NEW DASH POT ASSEMBLY IS REQUIRED ON DIAL TESTERS WITH SERIAL NUMBERS ABOVE 100,000, ORDER DET 1A, A-166524 PISTON AND VALVE.

LINK AND LINK PARTS FORM PART OF D-92258 DASH POT ASSEMBLY ONLY.

DASH POTS WITH ALL METAL PLUNGERS PER D-92258 AND DET 1A, A-166524.

Fig. 3-B - Dashpot (Later Design)

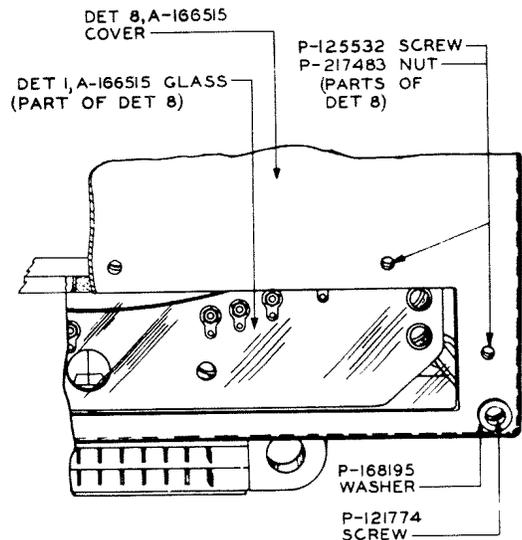


Fig. 5 - Cover and Parts

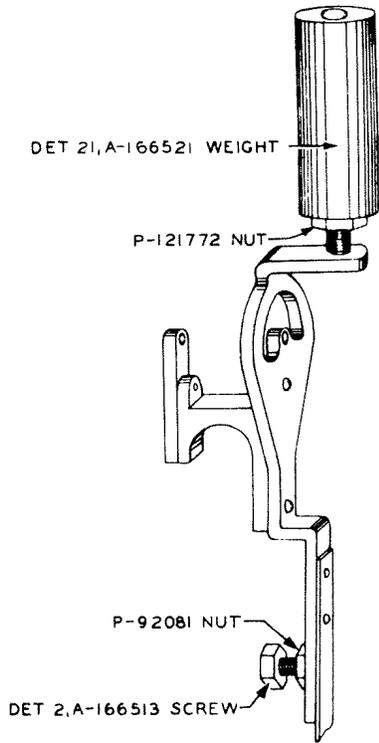


Fig. 6 - Contact Arm Parts

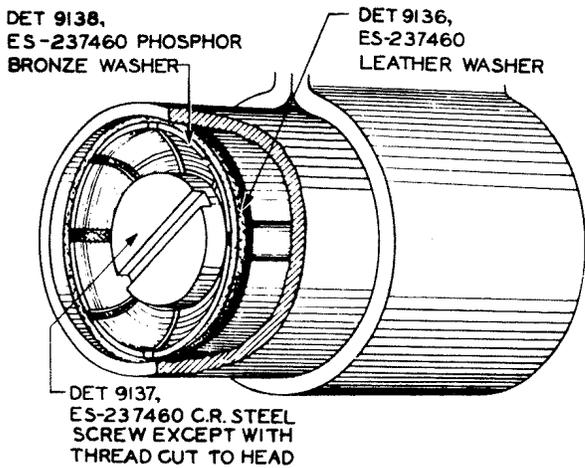


Fig. 7 - Dashpot (Earlier Design)  
(See Fig. 3-A)

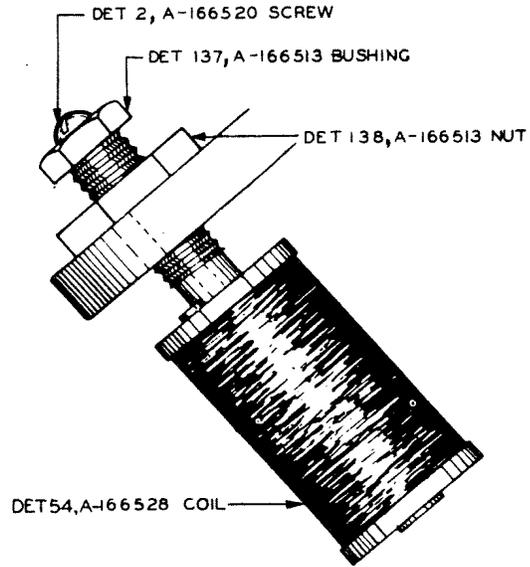


Fig. 8 - Hold Magnet

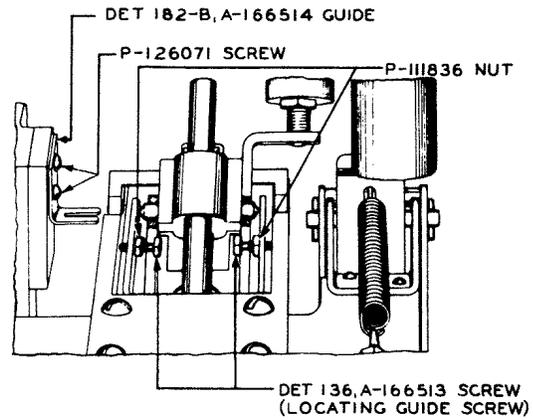


Fig. 9 - Guide Fastening and Adjusting Parts

3. REPLACEMENT PROCEDURES3.01 List of Tools

<u>Code or Spec No.</u>	<u>Description</u>
<u>Tools</u>	
243	3/16-in. and 5/8-in. Hex. Closed Double-end Flat Wrench
245	3/8-in. and 7/16-in. Hex. Open Double-end Flat Wrench
344	Offset Screwdriver
388A	3/16-in. and 1/4-in. Hex. Open Double-end Offset Wrench
422A	90-degree Offset Screwdriver
423A	45-degree Offset Screwdriver
KS-6854 (or replaced No. 35 tool)	3-1/2-in. Screwdriver
-	4-in. Regular Screwdriver

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

3.03 After making any replacement of parts on the above apparatus, the part or parts replaced shall meet the readjust requirements involved as specified in Section 100-141-701. 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 dial tester before restoring it to service.

3.04 Cover, Glass, and Guideposts: To replace the cover, glass, or guideposts remove the cover screws using the 4-inch regular screwdriver. Remove the screws which hold the glass in place using the KS-6854 screwdriver. Remove the strips and brackets and remove the glass. Remove the guideposts using the No. 245 wrench. Substitute the new parts and reassemble.

3.05 Dashpot: To replace the dashpot remove the link screw using the KS-6854 screwdriver. Then remove the dashpot mounting screws using the No. 344 offset screwdriver. Substitute the new part and reassemble. Make sure there is no bind both in the link and between the piston and dashpot cylinder after replacing the dashpot.

3.06 Dashpot Piston (Leather Washer Type) and Dashpot Piston Washer (Leather Washer Type): To replace the dashpot piston and washer remove the cap from the dashpot manually. Using the 4-inch regular

screwdriver remove the washer clamping screw. Substitute the new parts and reassemble.

3.07 Hold Magnet: To replace the hold magnet unsolder the leads from the hold magnet. Loosen the locknut with the No. 243 wrench. Hold the adjusting bushing with the No. 245 wrench and remove the adjusting screw with the KS-6854 screwdriver. Substitute the new part and reassemble. Resolder the leads.

3.08 Solenoid: To replace the solenoid unsolder the leads from the solenoid. Remove the link screw using the KS-6854 screwdriver. Remove the mounting screws using the 4-inch regular screwdriver. Substitute the new part and reassemble. Resolder the leads.

3.09 Solenoid Plunger: To replace the solenoid plunger remove the link screw using the KS-6854 screwdriver. Withdraw the plunger. Substitute the new part and reassemble.

3.10 Retractable Spring: To replace the retractile spring unhook the end of the spring from the adjusting screw. Then unhook the other end of the spring from the pin in the reset arm. Substitute the new spring.

3.11 Solenoid Control Contact Spring and Dial Tone Contact Spring: To replace the springs unsolder the leads from the contact springs. Remove the bracket mounting screws with the 4-inch regular screwdriver. Substitute the new parts and reassemble. Resolder the leads.

3.12 Trip Magnet Cords: To replace the cords remove the clamping screws with the Nos. 422A and 423A screwdrivers. Substitute the new parts.

3.13 Locating Guide Screw: To replace the guide screw loosen the locknut with the No. 388A or the No. 243 wrench and remove the locating screw using the same tool. Substitute the new screw and reassemble.

3.14 Contact Arm Plate: To replace the contact arm plate first remove the contact plate by removing the mounting screws using the 4-inch regular screwdriver. Remove the mounting screws of the contact arm plate using the KS-6854 screwdriver. Removal of the screws will dismount both the contact arm plate and the armature from the contact arm. To mount the new contact arm plate hold the armature in back of the contact arm with the mounting screw holes lined up, place the contact arm plate in position, and then insert and tighten the mounting screws. Remount the contact plate.

SECTION 100-141-801

REASONS FOR REISSUE

1. To revise the piece-part data for screws, nuts, and washers where standard parts are available.
2. To add key bracket mounting screws for a later-type key bracket, lengthen the key mounting screws in connection with the use of lockwashers, change from a plated to a stainless steel cotter pin,
3. To add lockwashers and delete locknuts (Fig. 3-B).
4. To add the solenoid plunger as a replacement part (Fig. 2 and 3.09).
4. To add the contact arm plate as a replacement part and the procedure for replacement (Fig. 2 and 3.14).
5. To revise the list of tools (3.01).