

REPLACING PAGE ADDENDUM

Filing Instructions:

1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.
2. INSERT THE ATTACHED PAGES INTO THE SECTION IN THEIR PLACE.
3. PLACE THIS PINK SHEET AHEAD OF PAGE 1 OF THE SECTION.

SWITCHES

PLUNGER TYPE

PRIMARY AND SECONDARY LINE SWITCHES AND

OUT-TRUNK SWITCHES

REQUIREMENTS AND ADJUSTING PROCEDURES

1. GENERAL

1.001 This addendum supplements Section 030-761-701, Issue 2-D. The added pages must be inserted in the section in accordance with the filing instructions above.

1.002 This addendum is issued to revise the procedure for replacing plunger-type line switch banks.

2. REQUIREMENTS

The following change applies to Part 2 of the section:

- (a) 2.08 — revised

3. ADJUSTING PROCEDURES

The following change applies to Part 3 of the section:

- (a) 3.001 — revised

Attachments:

- Page 3** dated October, 1966, revised
Page 4 dated October, 1966, reissued
Page 7 dated October, 1966, revised
Page 8 dated October, 1966, reissued

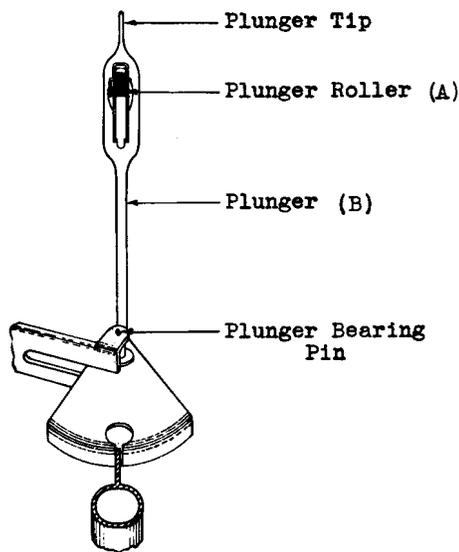


Fig. 3 — Switch Plunger

2.05 Straightness of Plunger: Fig. 3(B) — The plunger shall be approximately straight from the plunger bearing pin to the tip.

Gauge by eye.

2.06 Plunger Oscillation: Fig. 4(B) — There shall be no observable change in the depth of engagement of the plunger guide shaft and the plunger fantail slot as the plunger oscillates under control of the guide shaft.

Gauge by eye.

2.07 Fantail Slot and Plunger Guide Shaft Engagement: Fig. 4 (C)

(a) The sides of the slot in the plunger fantail shall not bind on the edge of the plunger guide shaft.

Gauge by feel.

(b) **Clockspring Steel Plungers (earlier type):**

The slot in the plunger fantail shall engage the plunger guide shaft to a depth of approximately 0.050 inch measured at the top of the fantail. This is about one-half the depth of the slot.

Gauge by eye.

(c) **Phosphor Bronze Plungers (present type):**

The slot in the plunger fantail shall engage the plunger guide shaft to a depth of approximately 0.070 inch measured at the bottom of the fantail skirt.

Gauge by eye.

2.08 Plunger Tip and Bank Comb Tip Clearance: Fig. 4(A)

(a) With the plunger armature against the backstop screw and the plunger oscillating, the tip of the plunger shall clear the bank comb teeth.

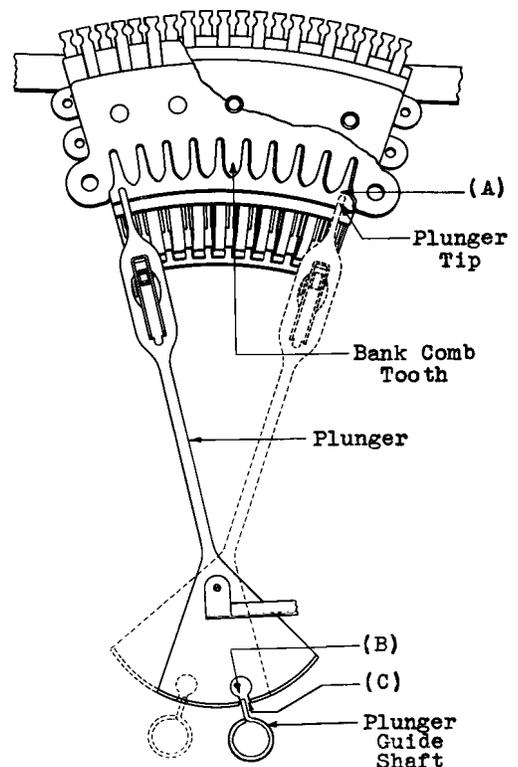


Fig. 4 — Relation of Plunger to Guide Shaft and Bank Comb

Gauge by eye and feel.

(b) With a 0.002-inch thickness gauge inserted between the plunger armature and backstop screw, the tip of the plunger shall touch the adjacent bank comb teeth, when the plunger is manually moved sideways in front of the second and ninth bank comb slots. Use the KS-6909 gauge.

2.09 Angle of Switch With Shelf: The lower surface of the switch frame shall form approximate right angles with both the front and side surfaces of the shelf on which it is mounted. Gauge by eye.

2.10 Fantail Spacing: The spaces between adjacent plunger fantails of switches mounted on the same shelf shall be approximately equal and the plunger bearing pins of adjacent switches shall not touch each other. Gauge by eye.

2.11 Clearance Between Plunger Tip and Bank Comb Stop: Fig. 5(A)—There shall be some clearance between the plunger tip and the bank comb stop (end of bank) when the plunger fantail slot is engaged with the plunger guide shaft op-

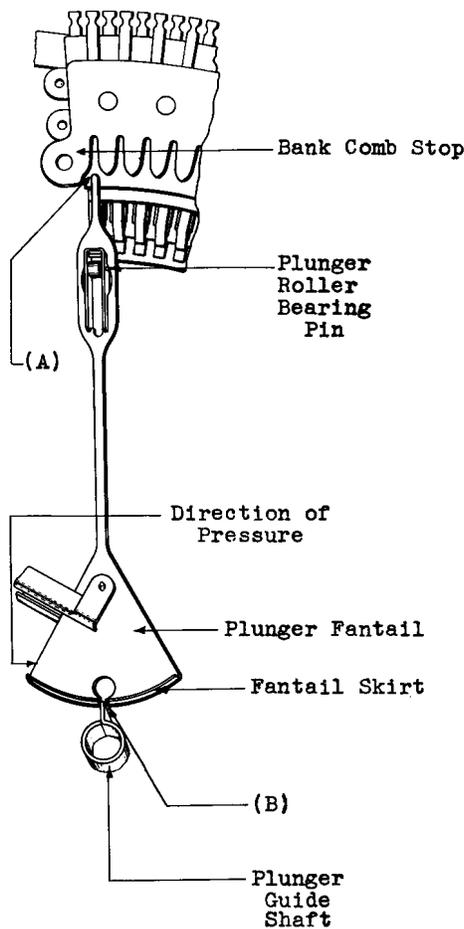


Fig. 5 — Clearance Between Plunger Tip and Bank Comb Stop

posite No. 1 trunk. This requirement shall also be met with the plunger guide shaft opposite No. 10 trunk.

Gauge by feel.

2.12 Re-engagement of Plunger With Plunger Guide Shaft: Fig. 5(B) and 6(A) — With the plunger guide shaft opposite the No. 1 trunk, the slot in the plunger fantail shall re-engage the plunger guide shaft from the No. 1 trunk when the tip of the plunger is held lightly against the bank comb stop (end of bank) by a small amount of pressure applied to the side of the fantail. This requirement shall also be met with the guide shaft opposite the No. 10 trunk and the slot in the plunger fantail shall also re-engage the plunger guide shaft from the No. 10 trunk. Gauge by eye and feel.

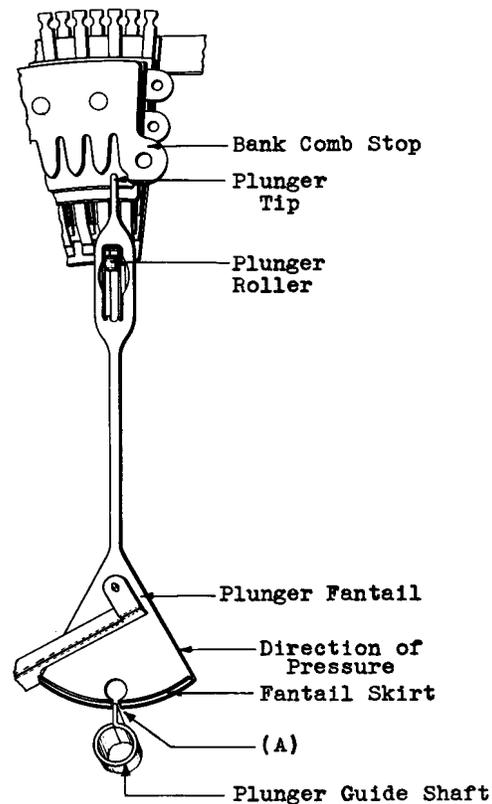


Fig. 6 — Re-engagement of Plunger with Plunger Guide Shaft

2.13 Angle of Bank With Rods: The lower surface of the bank shall be approximately at right angles with the rods on which it is mounted.

Gauge by eye.

2.14 Bank Spacing: The clearances between adjacent banks mounted on the same rods shall be approximately equal.

Gauge by eye.

2.15 Relation of Plunger Tip to Bank Comb Slot: Fig. 7(A)

- (a) The plunger tip shall enter and leave the bank without binding, and the plunger rollers shall engage the upper and lower outside bank contact springs at approximately the same time.

Gauge by eye.

- (b) The plunger tip shall normally have no appreciable tension against either the upper

2.23 Electrical Requirements: The B relay (pull-down magnet) shall meet the electrical requirements specified on the circuit requirement table.

3. ADJUSTING PROCEDURES

3.001 List of Tools, Gauges, and Materials

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
338	Spring Insulator
373D	Contact Burnisher Holder
374A	Contact Burnisher Blade
405A	Bumper
416B	Spring Adjuster
417A	1/4- and 3/8-Inch Hex Open Double-End Flat Wrench
418A	5/16- and 7/32-Inch Hex Open Double-End Flat Wrench
KS-2631	Screwdriver
KS-6015	Duck-Bill Pliers
R-2969	Typewriter Brush
AECo H-7068-3	Bank Contact Adjuster
AECo H-10001-3	Plunger Arm Adjuster
AECo H-13701	Frame Adjuster
—	4-Ounce Riveting Hammer
—	5-Inch Diagonal Pliers
—	Long-Nose Pliers
—	3-Inch C Screwdriver
—	6-Inch C Screwdriver
GAUGES	
KS-6909	Thickness Gauge Nest
AECo H-7541-3	Line Switch Plunger Gauge Block
MATERIALS	
—	Hardwood Toothpicks, Flat at one End and Pointed at the Other (obtain locally)

3.002 Removing Switch: If it is necessary to remove a switch, proceed as follows:

- (1) Disengage the plunger fantail slot from the plunger guide shaft. Set the plunger guide shaft to the extreme right or left away from the switch to be removed. Loosen the two switch mounting screws with the KS-2631 screwdriver.
- (2) With the switch in this position, move it either to the right or left, depending whether it is a right- or left-hand switch, until the slots in the switch frame are in a position to allow the switch to be removed.
- (3) With the switch removed, observe that the jack springs make contact with each other as specified on the circuit drawing. Also insulate with No. 338 insulators those springs that should not touch. If necessary, adjust the springs with the KS-6015 duck-bill pliers.

3.003 Remounting Switch: To remount the switch, remove the No. 338 insulators and place a toothpick between each set of contact springs. Move the guide shaft as far as possible from the side on which the switch is to be mounted. Engage the tips of the switch jacks with those of the jacks on the shelf. Insert the plunger tip in the slot of the trunk farthest from the switch. Move the switch into its proper position on the shelf and tighten the mounting screws with the KS-2631 screwdriver. Check requirements 2.06, 2.08, 2.09, 2.10, 2.11, 2.12, 2.15, and 2.18.

3.01 Cleaning (Reqt 2.01)

- (1) Clean and treat the relay contacts in accordance with the section covering cleaning and reconditioning relay contacts.
- (2) Clean the tip and ring bank contacts in accordance with Section A503.657.
- (3) Remove dust or loose particles from the switch using the R-2969 brush.

3.02 Form of Bank Contact Springs (Reqt 2.02)

3.03 Contact Spring and Bank Contact Clearance (Reqt 2.03)

- (1) To adjust the springs, insert the H-7068-3 spring adjuster between the switches and place the slot in the end of the adjuster over the contact spring which is to be adjusted, as shown in Fig. 14. Twist the handle of the spring adjuster as required. As these springs are very susceptible to the action of the spring adjuster, exercise care not to twist them excessively.

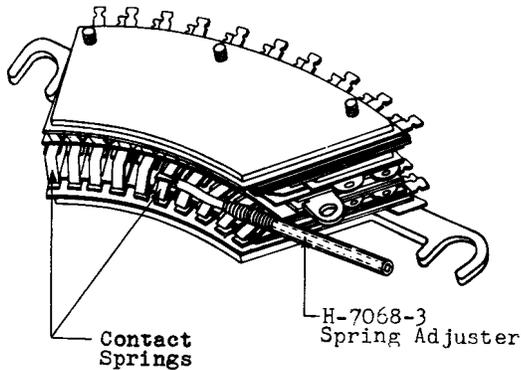


Fig. 14 — Adjusting for Contact Spring and Bank Contact Clearance

3.04 *Plunger Roller Movement* (Reqt 2.04)

- (1) If the plunger rollers do not turn freely on their bearings, replace the rollers as covered in Section A508.402.

3.05 *Straightness of Plunger* (Reqt 2.05)

- (1) If the plunger is not straight or is twisted, adjust it with the KS-6015 duck-bill pliers. Exercise care not to introduce any sharp bends in the plunger. It may be necessary to remove the switch as covered in 3.002 to make this adjustment.

3.06 *Plunger Oscillation* (Reqt 2.06)

- (1) If there is a perceptible change in the depth of engagement of the plunger guide shaft and plunger fantail slot as the master switch oscillates, it is an indication that the plunger bearing pin and the plunger guide shaft are not concentrically aligned. This may be due to the switch being too far to the left or right with respect to the guide shaft.
- (2) To correct this condition, loosen the switch mounting screws slightly with the KS-2631 screwdriver, place the No. 405A bumper against the switch frame and tap it lightly away from the position of greatest engagement with the 4-ounce riveting hammer. (See Fig. 17.) After making this adjustment, check requirements 2.08, 2.09, 2.10, 2.11, 2.12, and 2.16.

3.07 *Fantail Slot and Plunger Guide Shaft Engagement* (Reqt 2.07)

- (1) If the plunger fantail binds on the plunger guide shaft, it may be due to burrs on the side of the slot. Remove the burrs with the No. 374A contact burnisher and No. 373 contact burnisher holder. In no case should a file be used.
- (2) If the plunger fantail does not engage the guide shaft to the proper depth, readjust the plunger stroke as covered in 3.21.

3.08 *Plunger Tip and Bank Comb Tip Clearance* (Reqt 2.08)

- (1) If the plunger tip does not clear the bank comb teeth when the plunger fantail is engaged with the guide shaft and the guide shaft is moved manually from the first to the tenth trunk, it may be due to an individual bank being out of alignment, to the stroke adjustment of the switch being incorrect, or to either or both of the bank rods which support the banks being located too near to the switch. If rubbing of the plunger tip on the bank comb teeth is peculiar only to one switch, it is an indication that the stroke of that switch is incorrect or the bank is located too close to the switch. If rubbing occurs on several switches, the fault may be due to the location of the bank rods.
- (2) When rubbing occurs on one switch only, it may be due to the plunger tip rubbing either on one or on both ends of the bank comb. To adjust for either condition, place the pin of the No. 405A bumper in the ear of the bank comb and tap it lightly with the 4-ounce riveting hammer as shown in Fig. 15, so as to move the comb further away from the plunger tip. If the plunger rubs on both ends, make this adjustment on both ends of the comb.
- (3) If clearance cannot be obtained by adjusting the bank comb, place the No. 405A bumper against the bank frame as shown in Fig. 16 and tap it lightly away from the switch with the 4-ounce riveting hammer.
- (4) If neither of these adjustments corrects the trouble, readjust the plunger stroke as covered in 3.21-3.22.
- (5) Where several plungers on one half of a shelf rub on the bank comb teeth, either at one end of the comb or at both ends, it is an indi-