

TECHNICAL MANUAL

PRINTER TG-7-A AND TELETYPEWRITERS TG-7-B AND TG-37-B

CHANGES
No. 1

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 13 April 1949

TM 11-352, 15 February 1946, is changed as follows:

2. Table of Components

The principal parts * * * for export shipment.

a. PRINTER TG-7-A (SIGNAL CORPS STOCK No. 4T2.13A-1) (fig. 1). Older teletypewriters are stock numbered 4T2.13-1 (par. 6).

Quantity	Pkg. No.	Signal Corps stock No.	Item	Remarks
1	1/3	4TBP108/210	Typing unit	See par. 6 for older machines.
*	*	*	*	*

Note.—This list is * * * identification purposes only.

b. TELETYPEWRITER TG-7-B (SIGNAL CORPS STOCK No. 4T2.28A-4) (frontispiece). Older teletypewriters are stock numbered 4T2.28A-1, A-2, or A-3. (See par. 6.)

Quantity	Pkg. No.	Signal Corps stock No.	Item	Remarks
1	1/3	4TBP114/210	Typing unit.	See par. 6 for older machines.
*	*	*	*	*
1	-----	4TBK201AA/JX	Key-board.	See par. 6 for older machines.
*	*	*	*	*

Quantity	Pkg. No.	Signal Corps stock No.	Item	Remarks
1	-----	4T115700AA	Copy holder.	
*	*	*	*	*

Note.—This list is * * * identification purposes only.

c. TELETYPEWRITER TG-37-B (SIGNAL CORPS STOCK No. 4T2.23A-1). Older teletypewriters are stock numbered 4T2.23-1 (par. 6).

Quantity	Pkg. No.	Signal Corps stock No.	Item	Remarks
*	*	*	*	*
1	-----	4TBK201AA/KS	Key-board	
*	*	*	*	*
1	-----	4T115700AA	Copy holder	
*	*	*	*	*

Note.—This list is * * * and CH-62-B.

6. Differences in Models

* * * * *

b. DIFFERENCES IN EARLIER AND LATER MODELS.

(1) The differences in * * * the following chart:

Item	Printer TG-7-A	Teletypewriter RG-7-B	Teletypewriter TG-37-B	Teletypewriter TG-7-B (Russian)
Keyboard:				
Early models-----	BK24FX	BK23JX	*	BK29KO
Late models-----	BK24JX	BK201AA/JX	BK201AA/KS	BK29KO
*	*	*	*	*

Figure 33. Typing unit crate with top and front frame removed. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2, carriage fastening brackets (fig. 34.1) replace the carriage fastening clips.)

Figure 34. Contents of parts bag. (For changes in equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2, refer to figure 34.1.)

*These changes include information contained in Teletype Bulletin No. 138, Issue 5, copyrighted 1944 by the Teletype Corporation.

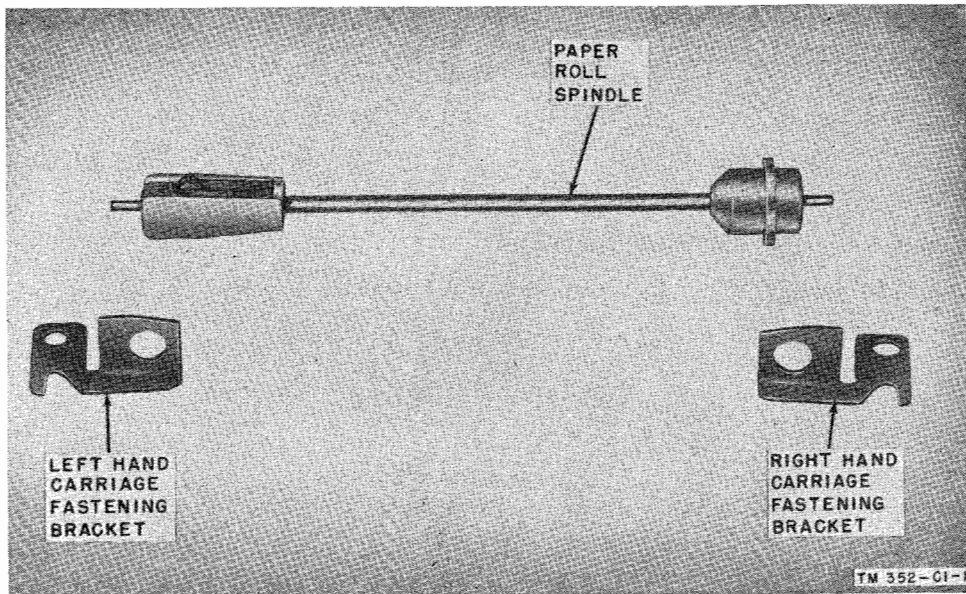


Figure 34.1 (Added.) Paper roll spindle and carriage fastening brackets for Order Nos. 13465-Phila-48 and 1768-Phila-49-2.

Figure 63. Lubrication points for selector mechanism. (For changes in equipment on Order Nos. 13465-Phila-48 and 1768-49-2, refer to figure 63.1.)

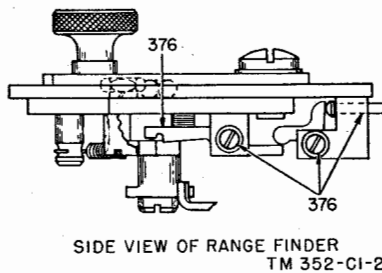


Figure 63.1 (Added.) Side view of range finder for Order Nos. 13465-Phila-84 and 1768-Phila-49-2.

Figure 75. Cross-section of selector unit. (For changes in equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2, refer to figure 75.1.)

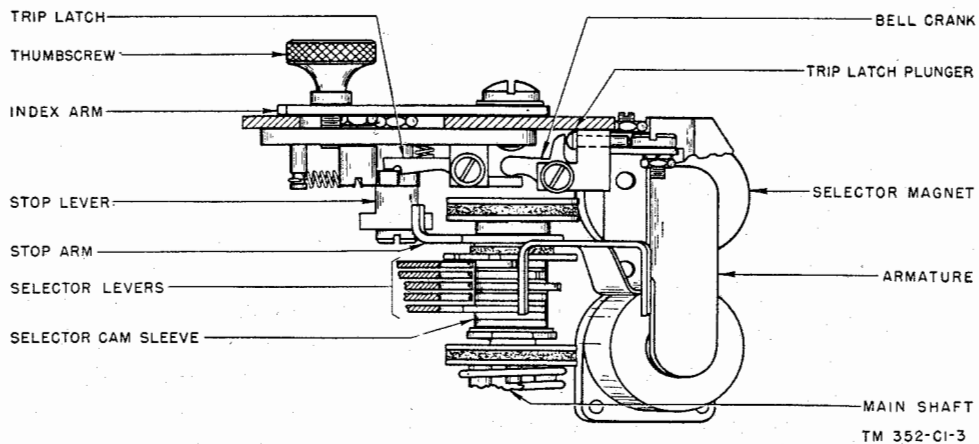


Figure 75.1 (Added.) Cross-section of selector unit for Order Nos. 13465-Phila-48 and 1768-Phila-49-2.

184. Introduction to Test Requirements and Adjustment Procedures

*	*	*	*	*
c. REQUIREMENT AND ADJUSTMENT INDEX.				
<i>Assembly</i>	*	<i>Adjustment</i>	*	<i>Paragraph</i>
Typing Unit:	*	*	*	*
Main shaft adjustment-----	*	*	*	173
Main-shaft clutch spring adjustment-----	*	*	*	220
Main-shaft clutch throw-out lever adjustment----	*	*	*	218
*	*	*	*	*

192. Ribbon-feed Shaft Bearing Plates (figs. 139 and 140)

* * * * *

b. REQUIREMENTS.

(1) The left end of the ribbon-feed shaft should be flush with or extend not more than 0.015 inch over the inner end of the left vertical feed shaft bevel gear teeth. When the ribbon-feed * * * ribbon-feed shaft gear.

* * * * *

c. ADJUSTMENT. Loosen the mounting * * * the second requirement. Check the lateral movement of the ribbon-feed shaft (movement from one detented position to the other); it should measure at least three-sixteenth inch. If necessary, refine the adjustment of the ribbon-feed shaft bearing plates.

In figure 140, change the designation—Some End Play, Not More Than 0.015"—on the left of the illustration to read: Some End Play, Not More Than 0.015".

Figure 143. Ribbon-reverse shaft (old style). (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 the requirement 1/4" to 5/16" should read 1/4" to 3/8".)

201. Ribbon-reverse Shaft Collar (fig. 143)

* * * * *

b. REQUIREMENTS. The ribbon-reverse shafts * * * than 0.008 inch. The ribbon-reverse shaft collars should be positioned so that there is 1/4 to 5/16 inch (1/4 to 3/8 inch for equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2) between the centers of the setscrews and the edges of their ribbon-spool brackets.

* * * * *

220. Main-shaft Clutch Spring (fig. 154)

* * * * *

b. REQUIREMENTS. With the teeth * * * pull straight down. A pull of 22 to 26 ounces (22 to 30 ounces for equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2) should be required to separate the clutch teeth. After checking the * * * to 10 ounces.

* * * * *

Figure 154. Main-shaft clutch spring. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 the requirement 22 to 26 ozs. should read 22 to 30 ozs.)

221.1 (Added.) Printing Bail Shaft Right Bearing Adjustment (for equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2) (fig. 161.1)

a. PREPARATION. Remove the type-bar carriage.

b. REQUIREMENTS. With the printing bail held toward the right there should be some clearance, not more than 0.015", between the end of the printing bail casting and the left bearing of the printing bail shaft.

c. ADJUSTMENT. Remove the printing bail spring and position the right bearing; the elongated mounting holes make it possible to move the bearing. Replace the printing bail spring after the right bearing has been positioned.

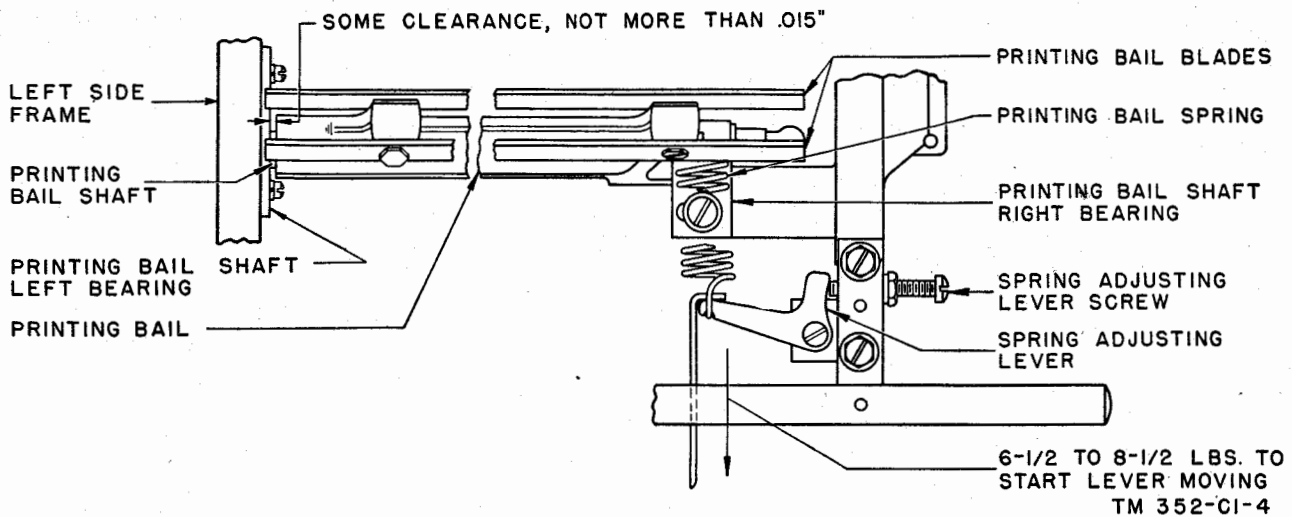


Figure 161.1 (Added.) Printing-bail spring for Order Nos. 13465-Phila-48 and 1768-Phila-49-2.

232. Selector Separator Plates (fig. 163)

* * * * *

b. REQUIREMENTS. The leaf spring * * * * * on the swords. The ends of the leaf springs should project 0.045 to 0.055 inch (0.050 to 0.060 inch for equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2) below the undersurfaces of their straight portions.

* * * * *

Figure 163. Selector separator plates. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 the requirement 0.045" to 0.055" should read 0.050" to 0.060".)

b. REQUIREMENTS. The No. 1 sword arms (right and left) should clear the associated arms of the selector armature extension 0.040 to 0.042 inch (0.035 to 0.037 inch for equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2; the upper limit may be increased to 0.042 inch only when necessary to permit meeting the requirement for clearances given in paragraph 252b) when the front edge of the opposite sword arm is against its armature extension arm and the No. 1 selector lever is on the high part of its cam. Rehook the locking-lever spring.

* * * * *

Figure 167. Sword arm clearance. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 the requirement .040" to .042" should read 0.035" to 0.037".)

236. Armature Stop (fig. 167)

* * * * *

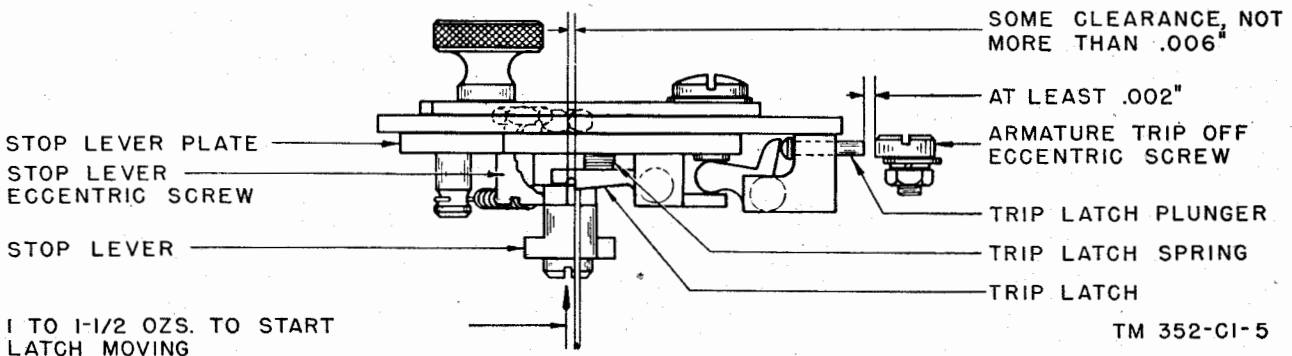


Figure 172.1 (Added.) Range finder and stop lever for Order Nos. 13465-Phila-48 and 1768-Phila-49-2.

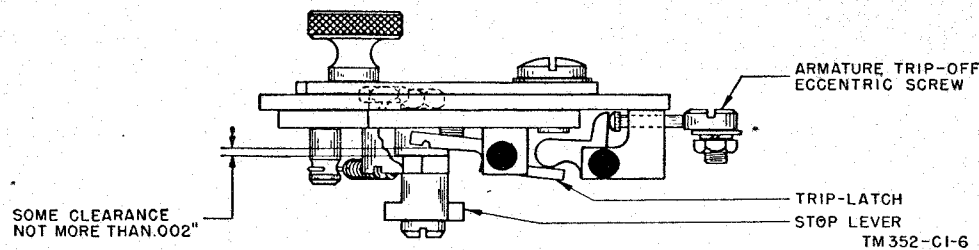


Figure 174.1 (Added.) Armature trip-off eccentric screw for Order Nos. 13465-Phila-48 and 1768-Phila-49-2.

312. Dash-Pot Lever Spring (fig. 186)

* * * * *

b. REQUIREMENTS. Unhook the dash-pot * * * the spring eye. With the front end of the dash-pot lever in its extreme right-hand position, a pull of 16 to 22 ounces should be required to stretch the spring to its position length. Rehook the spring.

* * * * *

323. Send-Receive T-Lever Friction Washer (fig. 192A)

* * * * *

c. ADJUSTMENT. Replace with a new friction washer. On equipment that has a 119925 elastic stop nut and a 71047 shim, position the stop nut.

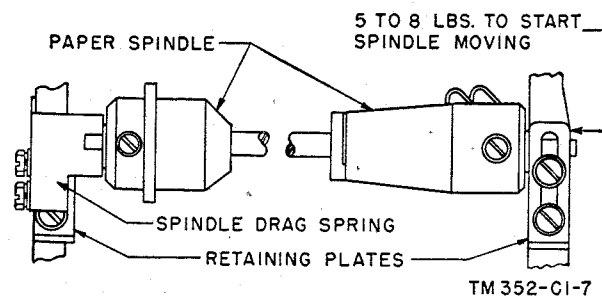


Figure 190.1 (Added.) Paper spindle for Order Nos. 13465-Phila-48 and 1768-Phila-49-2.

354. Trip-Off Pawl Stop Plate (fig. 202)

* * * * *

b. REQUIREMENTS. The clearance between all key levers and the universal bar should be 0.040 to 0.070 inch between the spacer key lever and the universal bar when the trip-off pawl is resting against the end of the stop plate.

* * * * *

373. Send-Receive-Break Contact Springs

* * * * *

b. REQUIREMENTS.

* * * * *

(3) (Superseded.) All the clearance requirements pertaining to contact springs

Nos. 3 to 6 inclusive ((5), (7), (8), and (9) below), generally will be met if the following three preliminary requirements (a), (b), and (c) are complied with:

- (a) The stiffeners for contact springs Nos. 4 and 5 should be straight.
- (b) Contact springs Nos. 4 and 5 should rest, with perceptible tension, against their respective stiffeners. When the contacts are open there should be no gaps between the ends of the stiffeners and the contact springs. However, a gap of not more than 0.004 inch is permissible at any other point.

(c) With the SEND-RECEIVE lever in the RECEIVE position (down), the extension on the upper contact lever should be approximately midway between imaginary lines extending upward from contact springs Nos. 4 and 5. If necessary, bend the extension on which the double contact springs are mounted to meet this requirement. This requirement may be varied whenever the clearance requirements given in (4) through (11) below cannot be met.

373.1 (Added.) Alinement and Squareness of Governor Contacts

a. PREPARATION. Remove the governor adjusting bracket, the brush spring plate, the target, and the governor cover.

Note. All governor contacts can be adjusted for alinement of edges; only those governor shells which provide elongated mounting holes for the fixed contact bracket permit adjustment of the contact for height; this is done by positioning the contact bracket.

b. REQUIREMENTS. The governor contacts should be in line and should meet squarely so that the maximum contact surface is provided. Check these requirements with the retractile spring ten-

sion adjusted so the contacts just make, or to the limit of the adjusting screw.

c. ADJUSTMENT.

- (1) Line up the edges of the contacts by means of the floating contact hinge mounting screw.
- (2) Adjust the contacts for squareness from right to left by positioning the height of the fixed contact bracket; the elongated mounting holes in the governor shell make possible such positioning.
- (3) Adjust the contacts for squareness from front to back by twisting the floating contact hinge (apply force to the arm nearest the contact).

Note. Use a 0.002-inch gage (or a smaller gage if one is available). Insert the gage between the edges of the contacts to see whether the gage enters (or does not enter) equally on all sides.

374. Governor-Speed-Adjusting Wheel Friction Washer (fig. 212)

* * * * *

b. REQUIREMENTS. Hook a 32-ounce * * * to the radius. A pull of 16 to 20 ounces (16 to 24 ounces for equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2) should be required to start the wheel moving.

* * * * *

378. Governor Brush Spring Plate Bracket (fig. 213A)

* * * * *

b. REQUIREMENTS.

- (1) (Superseded.) A line established by the center of the outer disk and the center of one of the brushes should pass through some portion of the other brush (fig. 213).

* * * * *

In figure 213-A, change designation—Line to pass through center of outer disk and center of contact brushes—to read: See paragraphs 378 through 381 for alinement of brushes.

APPENDIX III

MAINTENANCE PARTS

1. (Superseded.) Department of the Army Supply Catalog Reference

The appropriate pamphlet or the Department of the Army Supply Catalog for the equipment

described in this manual is SIG 7 & 8 TG-7. For an index of available catalogs, see the latest issue of Department of the Army Supply Catalog SIG 1.

3. Group 1. Maintenance Parts for Typing Unit and All Common Maintenance Parts

Major component	Ref. symbol	Signal Corps stock No.	Name of part and description	Fig.
*	*	*	* * * * *	*
*	1026	4T1026-----	SCREW, machine: Fil * * * $\frac{7}{64}$ " thk; special--	221, 222, 224
*	*	*	* * * * *	*
*	1160	4T1160-----	SCREW, machine: Fil * * * diam \times 0.119" thk.	217, 220, 222, 225, 228
*	*	*	* * * * *	*
*	6746	4T6746-----	SCREW, machine: slotted * * * flats, $\frac{3}{32}$ " thk.	218, 220, 221, 222, 225
*	*	*	* * * * *	*
*	74703	4T74703-----	SPRING, compression; 0.011" * * * w/closed ends.	225
*	*	*	* * * * *	*
*	2322	4T2322-----	WASHER—Delete this entire item.	*
*	*	*	* * * * *	*

Figure 217. Frame parts, left side. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

Left side of illustration—

74055 Roller to 111027 Block;

Right side of illustration—

76295 Spring to 104824; 6746 Screw to 1160; 2322

Lock Washer to 2449;

Delete 74554 Spring Post.)

Figure 220. Rear cross-bar assembly parts and printing bail assembly parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following change:

Lower illustration, left side—

74144 Spacing Pawl Arm to 89097.)

Figure 221. Carriage-return assembly parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following change:

Bottom illustration right side—
2322 Lock Washer to 2449.)

Figure 222. Function lever assembly parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following change:

Upper illustration, right side—

74626 Shim to 3438 Washer.)

Figure 223. Motor-stop assembly parts and platen roll parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

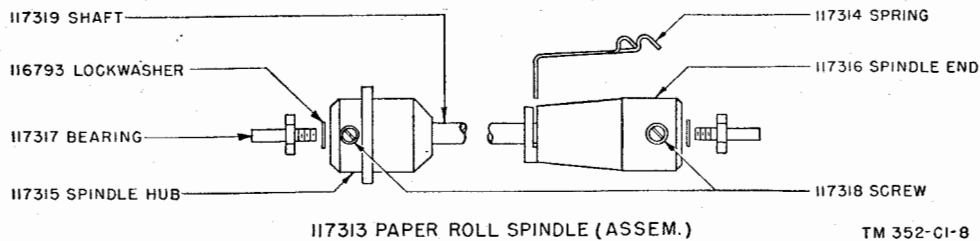
Top illustration, right side—

2191 Lock Washer to 71047 Shim, and 3598 Nut to 119925 Stop Nut;

Second illustration from top, right side—

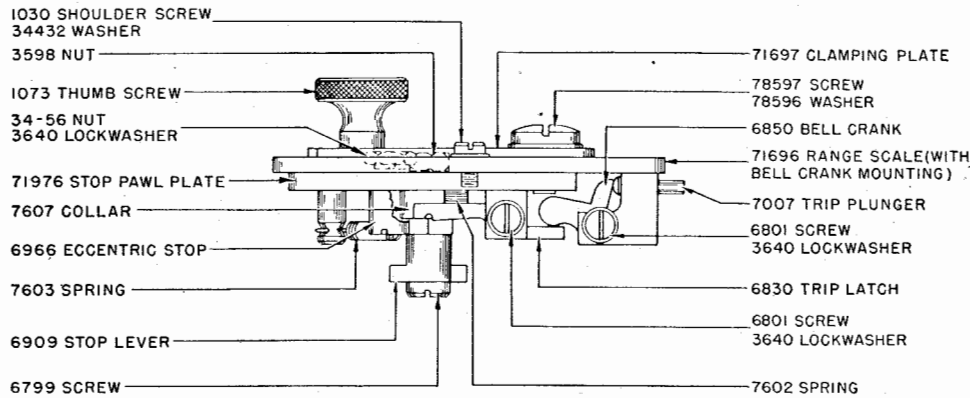
74517 Screw to 122699;

Substitute figure 223.1 for the third illustration from the top.)



TM 352-CI-8

Figure 223.1 (Added.) Paper spindle (new style) for Order Nos. 13465-Phila-48 and 1768-Phila-49-2



TM 352-CI-8

Figure 225.1 (Added.) Range scale assembly for Order Nos. 13465-Phila-48 and 1768-Phila-49-2.

Figure 225. Selector unit parts and motor-stop locking assembly parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

Top illustration, right side—
6998 Post to 78163;

Substitute figure 225.1 for the illustration second from the bottom.)

Figure 226. Type-bar basket parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following change:

Right side of illustration—
2322 Lock Washer to 2449.)

Figure 227. Type-bar carriage parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

Left side of illustration—
2322 Lock Washer to 2449;

Right side of illustration—
1026 Screw to 114125.)

Figure 228, change the following designations in the top illustration:

From—	To—
Code Bars (see page 26)	Code Bars (see page 246)
1160 Screw	1038 Screw
74199 Eccentric Bushing	113872 Eccentric Bushing
2191 Lock Washer	2191 Lock Washer

Add the following items for Bell Cranks #1, #2, #3, and #4:

- 1160 Screw
- 74199 Eccentric Bushing
- 2191 Lock Washer

Figure 228. Bell crank parts and ribbon-feed mechanism parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

- Top illustration, left side—
74025 Bell Crank #5 to 114139;
- Top illustration, right side—
6746 Screw to 1160;
- Middle illustration, left side—
70796 Spool Cup to 107487;
- Middle illustration, right side—
70796 Spool Cup to 107488;
- Bottom illustration—
11035 Backstop to 110351.)

Figure 229. Base parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

- Middle illustration, left side—
103378 Base to 113414, and 1193 Screw to 84975;
- Bottom illustration, left side—
103378 Base to 113414 (two places.)

Figure 231. Relay mounting bracket parts and target lamp parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2, in bottom illustration, right side, add a 98510 Lockwasher to the Toggle Switch assembly.)

In figure 233, at the right of the bottom illustration, inclose the top seven items in one bracket, and add the prefix A to all the items except the 2247 Washer. At the left of the bottom illustration, add a 36273 Washer to the 74059 Screw and 2191 Lock Washer assembly.

Figure 233. Filter assemblies parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

Bottom illustration, at the right—

Delete the prefix A from all items; delete 2247 Washer and add 73427 Shim; change 77911 Brush Holder Cap to 70873;

At the left—

Change 74059 Screw to 93141; change the caption "99250 Motor-Governor Filter (Assem)" to read "107094 Motor-Governor Filter (Assem)—excludes parts with A designation."

Figure 235. Keyboard parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

Upper illustration, left side—

74532 Keyboard Base to 144950AA;

Upper illustration, right side—

91739 Insulator to 91739G;

Lower illustration, left side—

74532 Keyboard Base to 114950AA;

Lower illustration, right side—

1248 Screw to 1268 (two places).)

Figure 236. Keyboard transmitter assembly parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

Top illustration, left side—

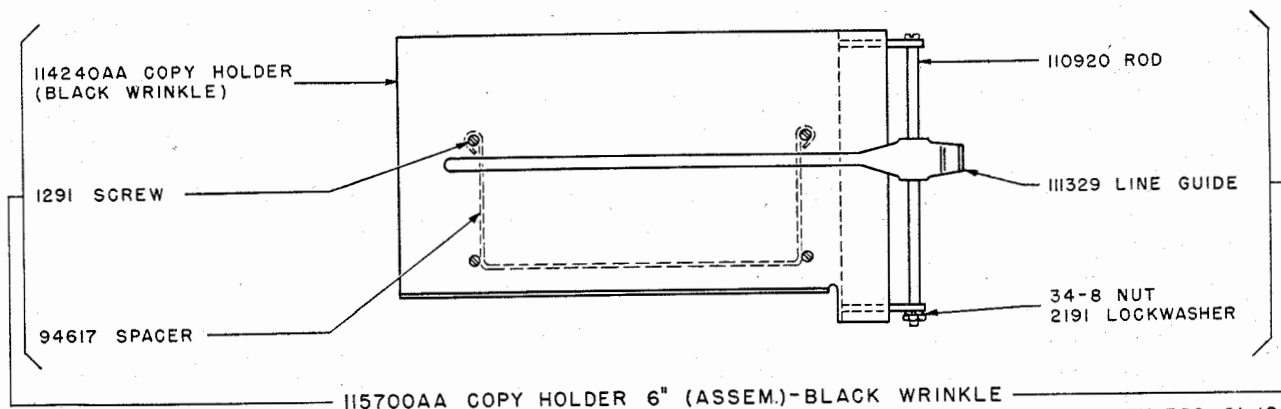
Delete 7081 Post;

Right side—

Delete 7081 Post (two places);

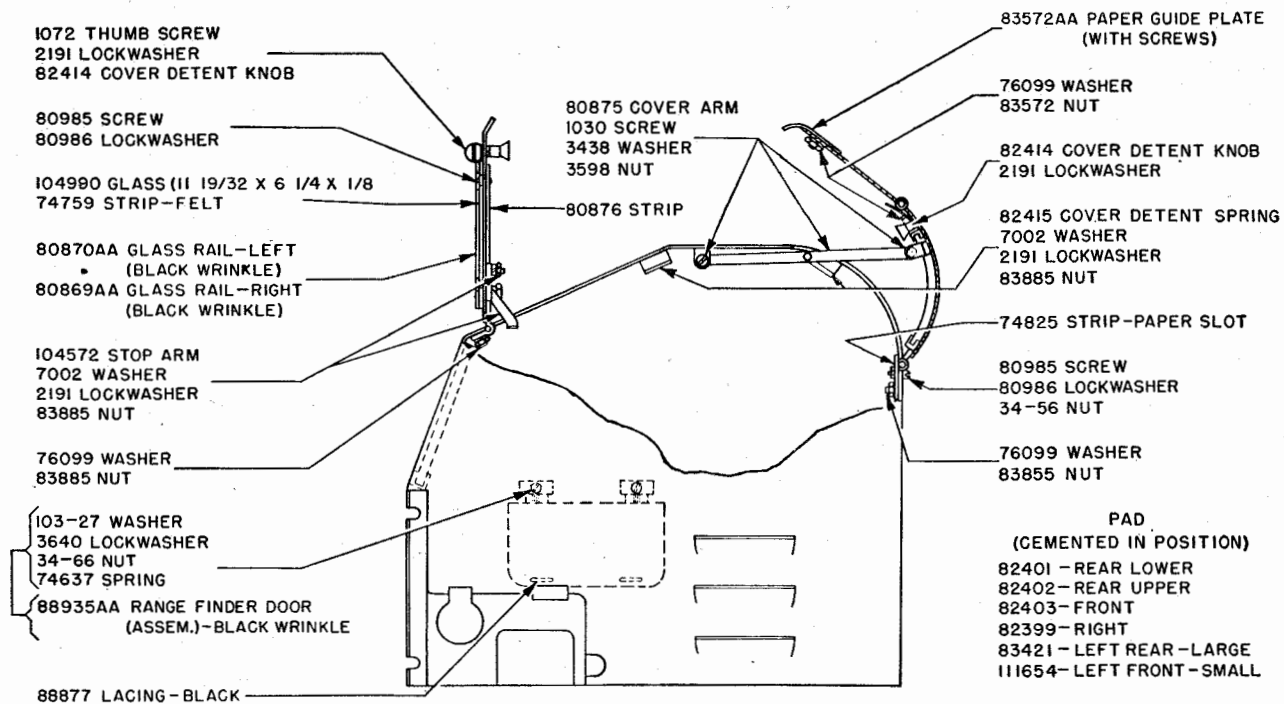
Change 7002 Washer to 36273 and 6800 Screw to 107485.)

Figure 237. Cover assembly parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2, substitute figure 237.1 for the top illustration and figure 237.2 for the middle illustration.)



TM 352-C1-10

Figure 237.1 (Added) 115700AA copy holder 6 inch (assembly)—black wrinkle for Order Nos. 13465-Phila-48 and 1768-Phila-49-2.



C-146 COVER (ASSEM.)-BLACK WRINKLE

TM 352-CI-II

Figure 237.2 (Added.) C-146 cover (assembly)-black wrinkle for Order Nos. 13465-Phila-48 and 1768-Phila-49-2.

In figure 238, at the left of the illustration, add the following information to the designation Target Lamp: "(See figure 231 for component parts.)"

Figure 238. Motor unit parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 make the following changes:

Left side-

- © 77911 Brush Holder Cap to 70873;
- 1100 Pilot Screw to 116922;
- © 99250 Motor-Governor Filter (Assem) to 107094 (see figure 233 for component parts);

Right side-

- 76555 Washer D to 2846;

Below the illustration delete the designation 104038 Motor Replaces 77953 Motor on Later Models, and notes © and Ⓧ.)

Figure 239. Motor parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2, delete figure 239.)

In figure 240, in the top illustration, add the following information for the screw and washer that hold the left-hand 6319 Block:

- { 6437 Screw
- { 7002 Washer

Figure 240. Governor parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2, delete 72835 Contact Point from the top illustration.)

Figure 243. Improved parts for base of Chest CH-62-B or CH-62-F. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2, Carriage Fastening Brackets are substituted for Spring Hooks to hold the type bar carriage securely during transportation. (See fig. 34.1).)

Figure 244. Pull bars, type bars, and key tops parts. (For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2, change the last item in the catalog column of the small code bar chart from 74184 to 114432.)

Figure 247. Schematic wiring diagram for Teletype-writers TG-7-B and TG-37-B.

10. Numerical Index to Parts Identification Illustrations

All parts * * * the same figure.

Part No.	Name of part	Fig. Nos.
* * *	* * *	*
1038	Screw: 6-40 x 3/32"	228, 235
* * *	* * *	*
1160	Screw: 6-40 x 5/16"	217, 220, 222, 225, 228, 229
* * *	* * *	*
2449	Lockwasher	217, 220, 221, 226, 227, 229, 232, 241
* * *	* * *	*
34432	Washer	217, 218, 220, 221, 223, 225, 226, 227, 228, 230, 246
36273	Washer	233, 236
* * *	* * *	*
70873	Brush-holder cap	233, 238
* * *	* * *	*
73427	Shim	226, 233
* * *	* * *	*
82415	Cover detent spring	237
82440	Screw	233
* * *	* * *	*
107112	Shims; 0.002" thick	236
113382	Eccentric bushing	228

Note. (Added.) For equipment on Order Nos. 13465-Phila-48 and 1768-Phila-49-2 the following part numbers are not used: 1100, 1193, 2247, 2322, 7081, 70796, 72835, 74025, 74055, 74144, 74184, 74517, 74532, 74626, 76295, [AG 300.7 (4 Apr 49)]

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AIR FORCE:

USAF (5); USAF Maj Comd (5); USAF Sub Comd (3); Services (MATS) (2); Class III Instls (2); SPECIAL DISTRIBUTION.
For explanation of distribution formula see SR-310-90-1.

76555, 76911, 91739, 99250, and 103378; and the following new parts have been added:

Part No.	Name of part	Figure Nos.
1268	Screw	235
71047	Shim	223
78163	Post	225
84975	Screw	229
89098	Spacing pawl arm	220
91739G	Insulator	235
93144	Screw	233
98510	Lockwasher	231
104824	Spring	217
107094	Motor-governor filter (assem)	233, 238
107485	Screw	236
107487	Spool cup, left	228
107488	Spool cup, right	228
110351	Backstop	228
111027	Block	217
113414	Base	229
114125	Screw	227
114139	Bell crank No. 5	228
114432	Code bar No. 5-D	244
114950AA	Keyboard base	235
116922	Pilot screw	238
119925	Stop nut	223
122699	Screw	223

Figure 248. Actual wiring diagram for Teletypewriters TG-7-B and TG-37-B.

Figure 249. Schematic wiring diagram for Printer TG-7-A.

Figure 250. Actual wiring diagram for Printer TG-7-A.