TELETYPEWRITER SETS AN/FGC-25, AN/FGC-25X AN/FGC-26, AN/FGC-52, AN/FGC-52X, AND AN/FGC-57

TM 11-5815-244-35
TO 31W4-2FGC-232
CHANGES No. 1

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
WASHINGTON 25, D.C., *28 September 1962*

TM 11-5815-244-35/TO 31W4-2FGC-232, 5 October 1960, is changed as indicated, so that the manual also applies to the following equipments on Order No. 42770-PC-59:

Nomenclature	Components		
	Teletypewriter	Reperforator-Transmitter	Table
Teletypewriter Set AN/FGC-52.	TT-269/FG	TT-270/FG	FN-65/FG
Teletypewriter Set AN/FGC-52X.	TT-271/FG	TT-272/FG	FN-65/FG

Note. Teletypewriter Sets AN/FGC-52 and AN/FGC-52X are identical to Teletypewriter Sets AN/FGC-25 and AN/FGC-25X, respectively, except that 8.00 unit code is transmitted by the keyboard-transmitters and 7.00 unit code is transmitted by the transmitter-distributors. Except for this difference, which is specifically noted in this changes, information in the manual applicable to Teletypewriters TT-117A/FG and TT-119A/FG is equally applicable to Teletypewriters TT-269/FG and TT-271/FG respectively; information applicable to Reperforator-Transmitters TT-178A/FG and TT-179A/FG is equally applicable to TT-272/FG and TT-270/FG, respectively.

Change the title of the manual to: TELETYPEWRITER SETS AN/FGC-25, AN/FGC-25X, AN/FGC-26, AN/FGC-52, AN/FGC-52X, and AN/FGC-57.

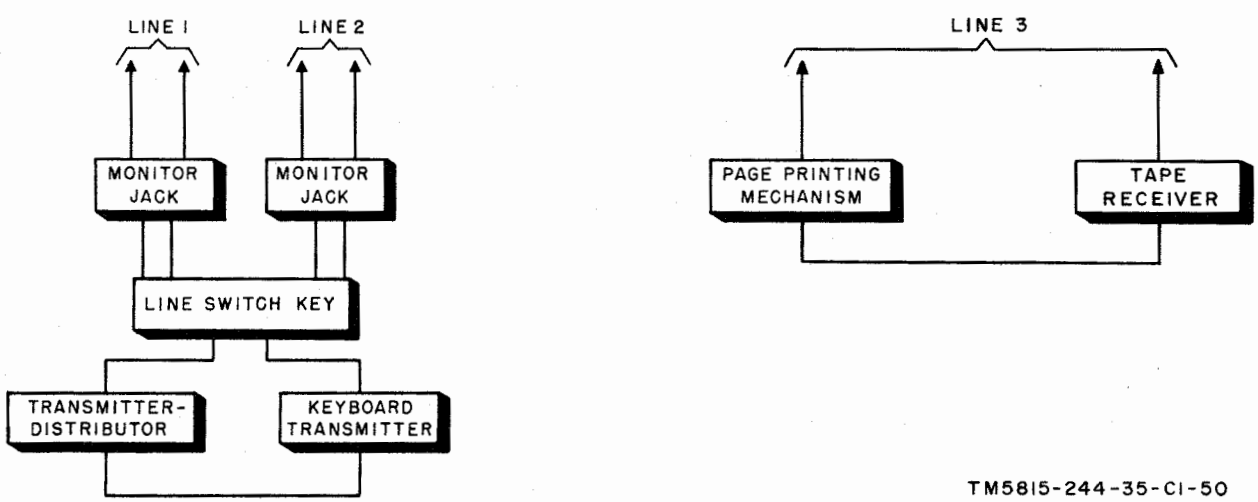


Figure 32.1. Block diagram, condition P. (Added)

Page 27, paragraph 17. Add the following after subparagraph *o*:

p: Patch Panel Condition P. Patch panel condition P (fig. 32.1) connects the transmitter-distributor and the keyboard-transmitter in a *send only* circuit with line 1 or line 2 as determined by the line switch key. The page printing mechanism and the tape receiver are connected to line 3. Connect the patch panel as indicated in the chart in *a* above to set up condition P.

(1) *TT–178/FG and TT–179/FG* (fig. 17).

Patch panel plugs		Patch panel condition A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
PRINTER RECEIVE	P35																J38
PRINTER SEND	P36																J37
TAPE DIST	P37																J41
REPERF	P38																J46
MONITOR 1	P39																J44
MONITOR 2	P40																J45
LINE TEST	P41																J36
AUTO LINE RET IN	P42																J42
AUTO LINE RET OUT	P43																J43
LINE 1	P44																J39
LINE 2	P45																J40
LINE 3	P46																J35
LINE 4	P47																J47
D. C. TEST	P48																J48

(2) *All models except TT–178/FG and TT–179/FG* (fig. 18).

Patch panel plugs		Patch panel condition A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
PRINTER RECEIVE	P203																J214
PRINTER SEND	P204																J213
TAPE DIST	P213																J209
REPERF	P214																J202
MONITOR 1	P206																J207
MONITOR 2	P205																J208
LINE TEST SW	P209																J204
AUTO LINE RET IN	P212																J212
AUTO LINE RET OUT	P210																J210
LINE 1	P207																J206
LINE 2	P208																J205
LINE 3	P202																J203
LINE 4	P201																J201
D. C. TEST	P211																J211

Page 138, paragraph 105, chart. Delete the last two items and substitute:

Item	Federal Stock No.
Grease	9150–K60–4294 (temp)
Oil, lubricating	9150–K60–4297 (temp)
Lubricant, plastic parts	9150–K60–4293 (temp)

Page 140, paragraph 107*d*, line 1. Delete "(KS7470)."

Page 144. Delete paragraph 113 and substitute:

113. Recommended Lubricants

The recommended lubricants are—

a. Oil, lubricating 1-pint can, Federal stock No. 9150–K60–4297 (temp).

b. Grease, 1-pound container, Federal stock No. 9150–K60–4294 (temp).

c. Lubricant, plastic parts, Federal stock No. 9150–K60–4293 (temp).

Paragraph 114, chart. Add the following note below the chart:

Note. The above intervals between lubrication checks apply to teletypewriter equipment in which felt washers are used *only as part of friction clutch assemblies.* Equipments that include *lubricating felts* at additional lubrication points require less frequent lubrication *at those particular lubrication points.* Lubricate the felts only when necessary; avoid oversaturation. Refer to paragraph 527.1 for felt lubricating washer data.

Page 145, paragraph 118*b*, chart. Delete the chart and substitute:

Fig. No.	Item No.	Name of part	Method and quantity
157	16	Carriage-return driving and driven gears	Apply sparingly around teeth.
158	11	Main shaft driving gears (inside cover)	Work grease around gear and cover gear teeth liberally.
159	2	Carriage rack driving gears	Apply sparingly around gear teeth.
159	6	Function shaft driven gear	
159	8	Square shaft driving gear	
159	21	Function shaft driving gear	
159	23	Carriage-feed worm gear	
159	26	Carriage-return shaft drive gears	
159	27	Transmitter shaft drive gears	
162	3	Clutch yoke cam	Thin film on cam surfaces.
164	4	Ribbon drive gears	Apply sparingly around gear teeth.
164	12	Guide rail	
166	4	Carriage-feed and return driving rack	Apply sparingly to rack teeth.

Page 146, paragraph 118. Delete subparagraphs *d*, *e*, and *f* and substitute:

d. Oilholes. Apply oil at the following oilholes:

Fig. No.	Item No.	Name of part	Method and quantity
159	14	Code-ring cage	At least 5 drops in hole on top of central bearing sleeve (underneath stop bars).
159	22	Carriage-feed driven gear	At least 5 drops in hole in hub.
166	7	Type selecting arm bearing cap	At least 5 drops in hole in bearing cap.

e. Sleeve Bearings. Apply oil at the following bearings:

Fig. No.	Item No.	Name of part	Method and quantity
157	10	Square shaft bearings	Several drops at either end of both bearings.
157	11	Platen frame pivot bearings	Several drops between pivot and bearings.
157	17	Carriage rack drive shaft bearing	Several drops at both ends of bearing.
158	6	Printing bail blade shaft bearings	Several drops at either end of both bearings.
159	20	Transfer lever shaft	
160	6	Cam stop lever post	Several drops at either end.
164	1	Platen shaft bearings	Several drops at either end of both bearings.

f. Moving Parts. Apply oil at the following places:

Fig. No.	Item No.	Name of part	Method and quantity
157	1	Stop bar shift blade	Apply sparingly to latching surface.
157	3	Felt washer (function shaft)	Saturate.
157	4	Square shaft	Thin film all sides, entire length.
157	5	Carriage-feed pawl, ratchet wheel and felt washer.	Apply sparingly to teeth; 2 drops at each pawl pivot.[a]
157	6	Felt washer (horizontal carriage-return link).	Saturate.
157	7	Carriage-return operating mechanism	2 drops at each pivot point.[a]
157	8	Manual carriage-return mechanism	Apply sparingly to all pivots and rubbing surfaces.
157	9	Felt washers (on square shaft and on print bail blade shaft.	Saturate.

See footnote at end of table.

Fig. No.	Item No.	Name of part	Method and quantity
157	12	Carriage-return sliding clutch drum	Apply sparingly to teeth and annular grooves, 2 or 3 in each group of spline balls inside clutch.
157	13	Carriage-return safety clutch plates	Several drops around periphery of each washer.
157	15	Decelerating cam	Thin film on working surface.
157	18	Carriage-return clutch latch lever	2 drops on pivots; thin film on working surfaces.[a]
157	19	Carriage-feed clutch lever	2 drops at pivot; thin film at each end.[a]
157	20	Felt washer (by the carriage driving gear).	Saturate.
157	21	Margin bell clapper and pawl	1 or 2 drops at each pivot point and at tip of pawl.
157	22	Carriage-feed clutch	Add sparingly to clutch teeth.
157	23	Carriage-feed sliding clutch drum	Add sparingly to rubbing surfaces.
157	24	Platen lower-case latch	1 drop at pivot, apply sparingly to latching surface.[a]
157	25	Code-ring locking bail shaft	1 drop at blade and cam follower lever.
157	26	Function bellcrank pivots	Several drops between levers and washers.[a]
157	27	Function sensing levers	Add sparingly to rubbing surfaces.
158	1, 2	Paper guide link	1 drop at each end.
158	3	Function selecting arm	Apply sparingly to all working surfaces.
158	4	Stop bar shift lever	1 drop at pivot.
158	5	Felt washer (on function selecting arm bearing).	Saturate.
158	7	Felt washer (stop bar shift lever pivot)	Saturate.
158	8	Stop bar shift link	Thin film.
158	9	Paper roller latch	1 drop at pivot.
158	10	Motor stop actuating lever and signal bell clapper pivots.	2 drops at each pivot point.
158	12	Function cam follower	Apply sparingly to cam groove and bearing of roller.[a]
158	13	Felt washer (on carriage-feed link)	Saturate.
158	14	Unshift and carriage-feed levers and felt washer.	2 drops at each pivot. Saturate felt washer.
158	15	Support lever	2 drops at each pivot.[a]
158	16	Function punch bars	Several drops between bars and guide block.
158	17	Platen latch	2 drops at pivot; thin film on working surface, each end.[a]
158	18	Aperture gate	2 drops in notch; several drops between gate and guide block.
159	1	Printing bail blade and felt washers	Thin film both sides, along entire edge. Saturate felt washers.
159	3	Clutch spring	Apply sparingly to clutch spring.
159	4	Function shaft sliding clutch drum	At least 5 drops in hole on either side.[a]
159	5	Function driven gear	Several drops at bearing and clutch teeth.
159	7	Felt washer (on function driven gear)	Saturate.
159	9	Delaying lever	1 drop at pivot.[a]
159	10	Line feed and figures connecting links	2 drops at each end of both links.
159	11	Line feed and figures bellcrank pivots	Several drops at each pivot.[a]
159	12	Line feed and figures cam follower pivots	2 drops each.
159	13	Delaying latch	1 drop at pivot; apply sparingly to latching surface.[a]
159	15	Code rings	Thin film all along inner and outer working surfaces of each code bar.
159	16	Line feed and figures cam followers	Apply sparingly to rollers, pivots, and all rubbing surfaces.

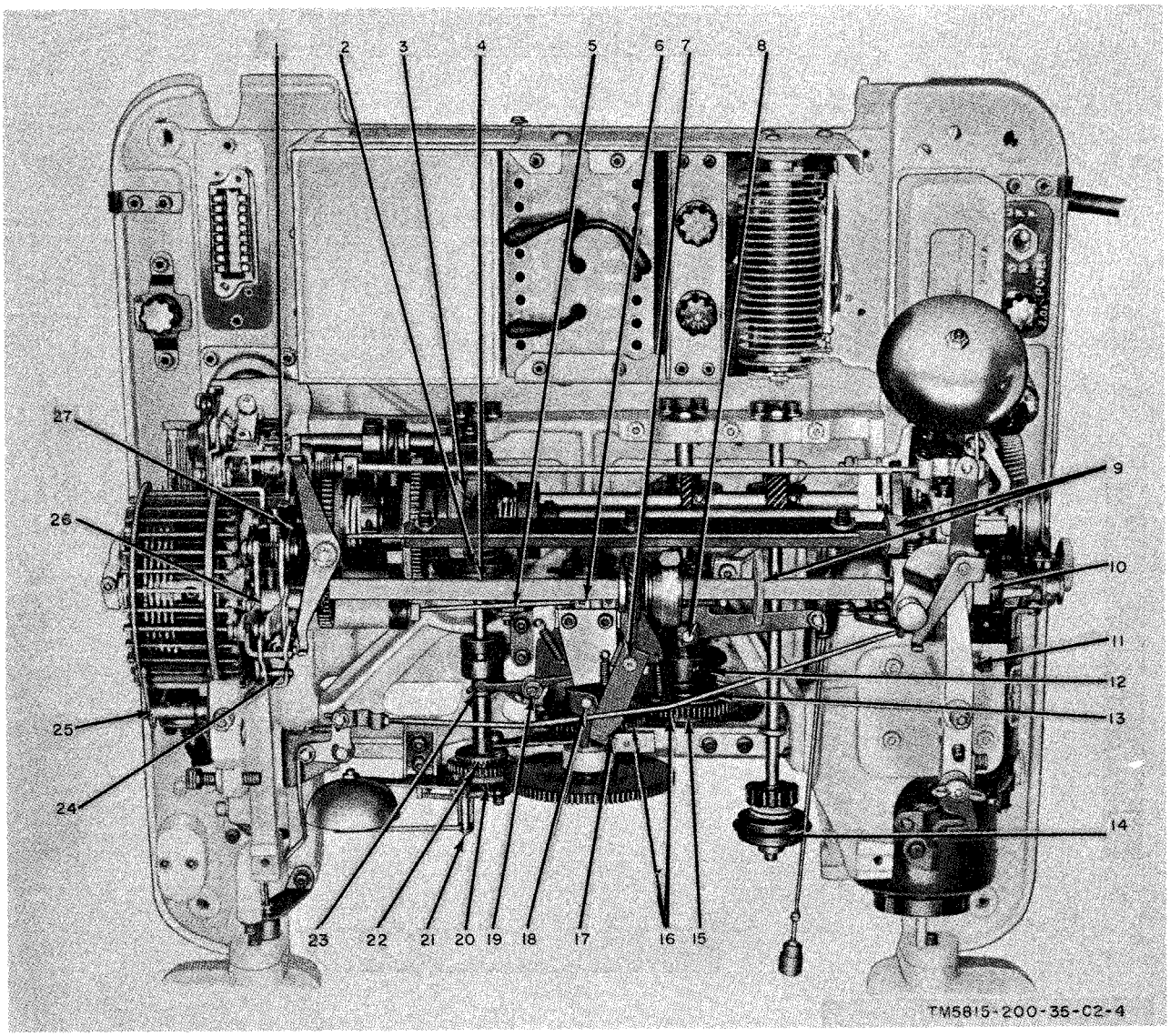
See footnote at end of table.

Fig. No.	Item No.	Name of part	Method and quantity
159	17	Line feed, figures, and sensing lever restoring cams.	Thin film on all exposed surfaces.
159	22	Felt washer (next to carriage-feed driven gear).	Saturate.
159	24	Clutch latch	Apply sparingly to roller and latching surfaces.
159	25	Carriage-return blocking mechanism	1 or 2 drops at pivot; apply sparingly to latch surfaces.
159	28	Print cam follower	Apply sparingly to cam groove and bearing of roller and to spring hook.
159	29	Felt washers on function shaft (on each side of bearing block).	Saturate.
160	1	Selector levers, bearing, and separating washers.	Apply sparingly to all rubbing and bearing surfaces.[a]
160	2	Transmitter contact E4 pivot	2 or 3 drops between arm and pivot studs.
160	3	Sensing lever locking bail	1 or 2 drops on bail surface and between lever and comb.
160	4	Transmitter camshaft	Thin film on all cam lobes and stop teeth.
160	5	Cam stop lever	1 or 2 drops at pivot; apply sparingly to latching surfaces.[a]
160	7	Locking lever latch stud	2 or 3 drops at pivot points; thin film on latching surface.[a]
160	8	Actuating link	2 drops at pivot point.
160	9	Function blocking bar spring	1 drop at each end; light film on spring surface.
160	10	Shunt switch arm springs	1 drop at each end; light film on spring surface.
160	11	Switch arm	1 or 2 drops at pivot point.
161	1	Stop bars in code-ring cage	2 drops at each end of all 35 stopbars.
161	2	Plate eccentric pivot	1 or 2 drops at pivot points.
161	3	Code-ring locking shaft	1 drop at each pivot.
161	4	Detent wheel	Several drops at lever point; thin film on detent wheel teeth.
161	5	Single-double line feed lever	1 drop at pivot and detent surface.[a]
161	6	T-lever	2 drops on bearing surface.
161	7	Code-ring locking bail latching surface	Thin film on latching surface.
161	8	T-levers and separating washers	Apply sparingly to all rubbing and bearing surfaces.[a]
161	9	Y-levers and Y-lever detent separating washers.	Apply sparingly to all rubbing and bearing surfaces.[a]
161	10	Selector lever guide	Apply sparingly to all rubbing surfaces.
161	11	Selector magnet armature knife edge	Apply sparingly.
161	12	Selector levers, pivot bearings and separating washers.	Apply sparingly to all rubbing surfaces.[a]
161	13	Orientation lever pivot and rangefinding cam.	1 or 2 drops. Thin film on cam surface.[a]
161	14	Grooved pin in end of selector camshaft	Several drops between pin and camshaft.
161	15	Selector cams and stop plate	Thin film on working surfaces.
161	16	Transfer lever latch	2 drops on pivot; thin film on latching surface.[a]
161	17	Felt washer (on pivot post)	Saturate.
161	18	Transfer lever restoring cams	1 drop on cam surface.
161	19	Transfer lever roller	Apply sparingly to working surfaces.
161	20	Antibounce clutch	Several drops in clutch.
161	21	Felt washer (on stop arm shaft)	Saturate.
162	1	Link arm assembly	2 drops at pivot. Thin film all along notched edge of each bar.
162	2	Keyboard counter cam followers	2 drops at pivot.
162	4	Sensing levers	Apply sparingly at working surfaces at each end of pivot.[a]

See footnote at end of table.

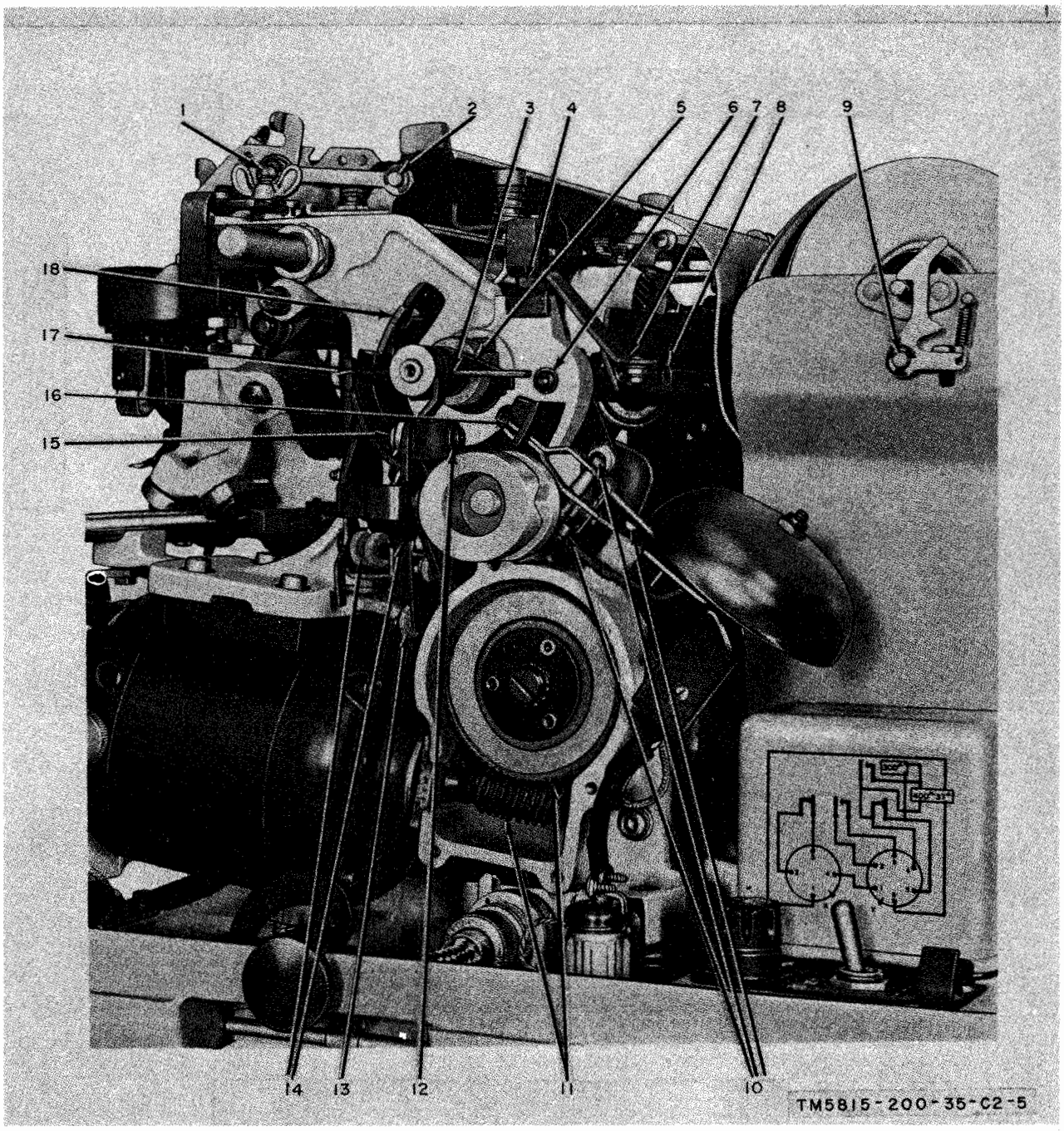
Fig. No.	Item No.	Name of part	Method and quantity
162	5	Ratchet pawl	2 drops at pivot.
162	6	Line indicator drive shaft pivots	
162	7	Tabulator lever[a]	
163	1	Line indicator drive shaft antibounce plate	
163	2	Tabulator lever	
164	2	Line feed pawl[a]	
164	3	Sprocket feed pins	1 drop on each pin.
164	5	Beam detent	1 drop at pivot; apply sparingly to latching surfaces.
164	6	Ribbon feed clutch	Apply sparingly to clutch teeth.
164	7	Ribbon drive shaft	Apply sparingly to bearings, cam surfaces, and gear teeth at both ends.
164	8	Ribbon sensing levers	1 or 2 drops at each bearing and pin.
164	9	Ribbon spool driving gears	Apply sparingly to annular groove, teeth, and driving jaws.
164	10	Ribbon spool drive shafts	1 or 2 drops at bearings, top and bottom.
164	11	Ball bearing and guide rail	Apply sparingly to rolling surfaces.
164	13	Manual letters mechanism	Apply sparingly to all pivots and rubbing surfaces.
164	14	Carriage-return bellcrank and vertical link	2 drops at each pivot.[a]
164	15	Armature shaft	1 drop at pivot.[a]
165	1	Key levers	1 drop at each pivot.
165	2	Code bars and studs	Thin film all along notched edge of each bar. 2 or 3 drops in each groove.
165	3	Spacebar pivots	1 drop each.
165	4	Front key lever guide	1 drop in each key lever guide slot.
166	1	Ribbon shaft lock	1 drop at handle pivots.
166	2	Ribbon guide	Thin film on sliding surfaces.
166	3	Hinge pin	2 or 3 drops at each pivot; apply sparingly to gear teeth.
166	5	Ribbon lifter bellcrank	1 or 2 drops at pivots.
166	6	Connecting bars guide plate	1 or 2 drops at each guide plate.
166	8	Type selecting arm	Apply sparingly between arm and claw.[a]
166	9	Ribbon lifter bracket	1 or 2 drops at each pivot.[a]
166	10	Ribbon lifter pivot bearing	Thin film on sliding surfaces.
167	1	Cam follower	1 or 2 drops at pivot point and working surface.
167	2	Tabulator shaft pivot	2 drops at pivot.
167	3	Ratchet wheel	Light coat on entire working surface.
167	4	Indicator carriage drive shaft	1 or 2 drops at pivots; light coat on the entire length of shaft.
167	5	Indicator return latch	1 or 2 drops at pivot and working surface.[a]
168	1	Indicator carriage	1 or 2 drops on roller and pivot points.
168	2	Tabulator locking lever	1 or 2 drops at pivot point and working surface.
169	1	Governor adjustment lever	1 or 2 drops at each end.
169	2	Governor adjustment screw	Apply sparingly to entire thread.
169	3	Motor governor adjustment gear	Apply sparingly to gear teeth.
169	4	Governor worm	2 or 3 drops in governor hub opening.
170	1	Transmitter lever post pivot	1 or 2 drops at pivot point and working surface.
170	2	Lockup lever roller	1 or 2 drops on pin.
170	3	Cam arm	Slight film on working surface.
171	1	Keyboard control lever hub	2 drops at pivot.
171	2	Detent lockup lever	Thin film on detent surfaces.
171	3	Lockup lever eccentric stud	2 drops at pivots.

[a] On teletypewriters with lubricating felt washers installed, lubricate the associated felt washer to the point of saturation only.



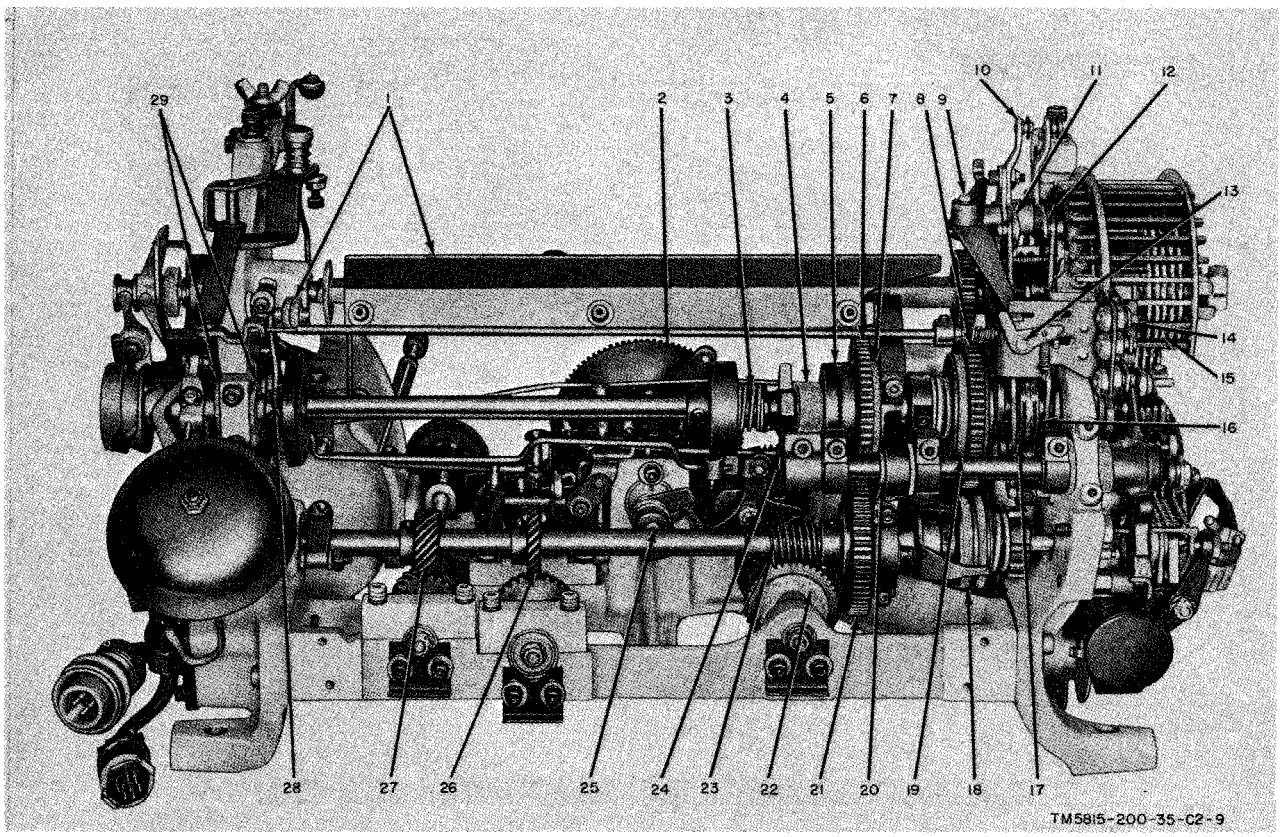
1 Stop bar shift blade
2 Carriage-feed friction clutch
3 Felt washer (on function shaft)
4 Square shaft
5 Carriage-feed pawl and ratchet wheel
6 Felt washer (on horizontal carriage-return link)
7 Carriage-return operating mechanism
8 Manual carriage-return mechanism
9 Felt washers (on square shaft and print bail blade shaft)
10 Square shaft bearings
11 Platen frame pivot bearings
12 Carriage-return sliding clutch drum
13 Carriage-return safety clutch plates
14 Keyboard transmitter friction clutch
15 Decelerating cam
16 Carriage-return driving and driven gears
17 Carriage rack drive shaft bearing
18 Carriage-return clutch latch lever
19 Carriage-feed clutch lever
20 Felt washer (next to carriage-feed driving gear)
21 Margin bell clapper and pawl
22 Carriage-feed clutch
23 Carriage-feed sliding clutch drum
24 Platen lowercase latch
25 Code-ring locking bail shaft
26 Function bellcrank pivots
27 Function sensing levers

Figure 157. Carriage and platen of page printing mechanism removed to show lubrication points. (Superseded)



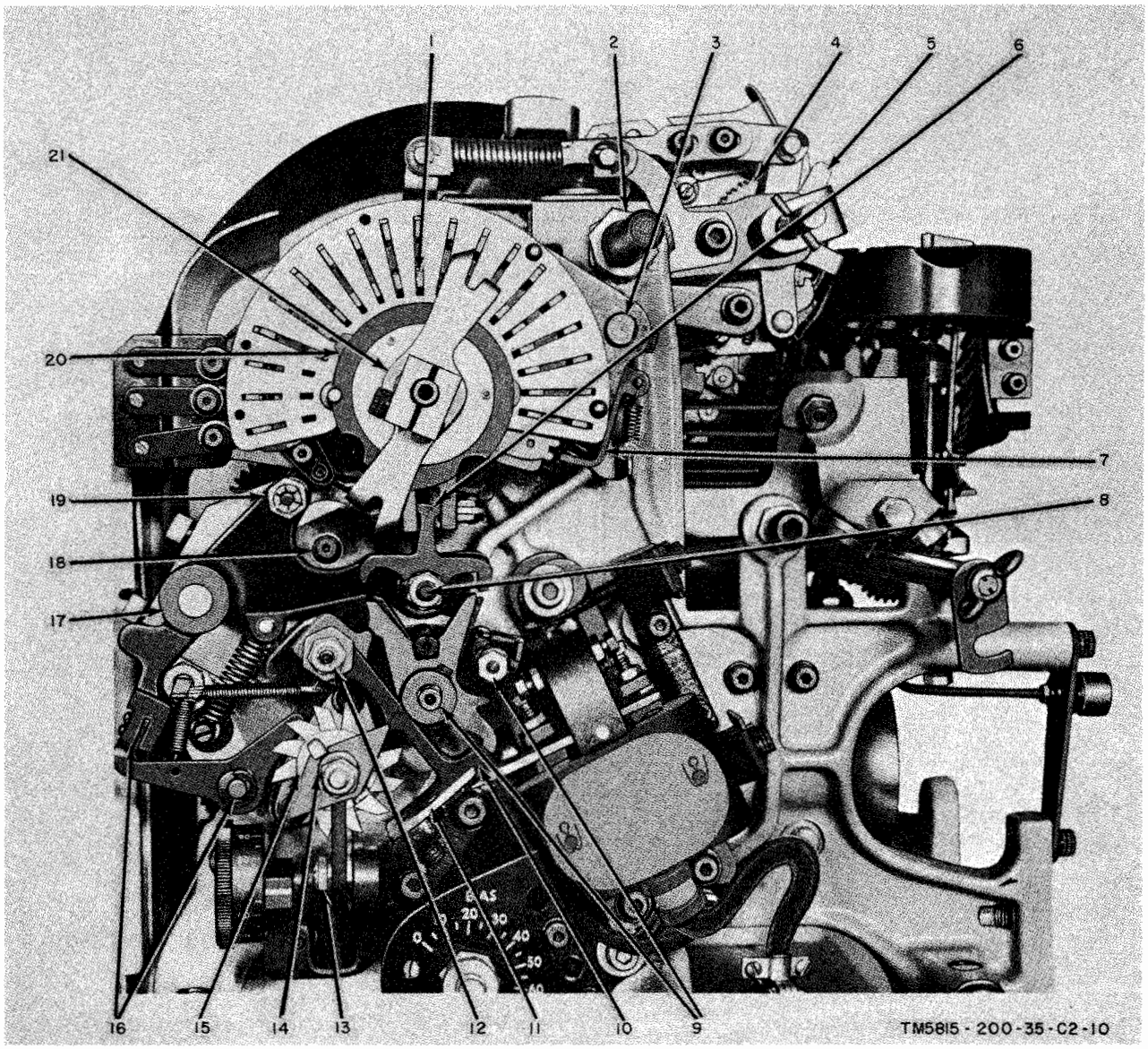
1 Paper guide link
2 Paper guide link
3 Function selecting arm
4 Stop bar shift lever
5 Felt washer (on function selecting arm bearing)
6 Printing bail blade shaft bearings
7 Felt washer (stop bar shift lever pivot)
8 Stop bar shift link
9 Paper roller latch
10 Motor stop actuating lever and signal bell clapper pivots
11 Main shaft driving worm (inside cover)
12 Function cam follower
13 Felt washer (on carriage-feed link)
14 Unshift and carriage-feed levers
15 Support lever
16 Function punch bars
17 Platen latch
18 Aperture gate

Figure 158. Page printing mechanism, side view, showing lubrication points. (Superseded)



1 Printing bail blade and felt washers
2 Carriage rack driving gear
3 Clutch spring
4 Felt washer (on the function shaft sliding clutch drum)
5 Function shaft driven gear ratchet teeth
6 Function shaft driven gear teeth
7 Felt washer (on function shaft driven gear)
8 Square shaft driving gear
9 Delaying lever
10 Line feed and figures shift connecting links
11 Line feed and figures bellcrank pivots
12 Line feed and figures cam follower pivots
13 Delaying latch
14 Code-ring cage
15 Code rings
16 Line feed and figures cam followers
17 Line feed, figures, and carriage-return sensing lever restoring cams
18 Selector friction clutch
19 Square shaft driving friction clutch
20 Transfer lever shaft bearings
21 Function shaft driving gear
22 Felt washer (next to carriage-feed driven gear)
23 Carriage-feed worm gear
24 Clutch latch
25 Carriage-return blocking mechanism
26 Carriage-return shaft drive gears
27 Transmitter shaft drive gears
28 Print cam follower
29 Felt washers (function shaft, on each side of bearing blocks)

Figure 159. Page printing mechanism, rear view, showing lubrication points. (Superseded)



1 Stop bars in code ring
2 Platen eccentric pivot
3 Code-ring locking shaft
4 Detent wheel
5 Single-double line feed lever
6 T-levers
7 Code-ring locking bail latching surface
8 T-levers and separating washers
9 Y-lever and Y-lever detent separating washers
10 Selector lever guide comb
11 Selector magnet armature knife edge
12 Selector levers, pivot bearings and separating washers
13 Orientation lever pivot and rangefinding cam
14 Grooved pin in end of selector camshaft
15 Selector cams and stop plate
16 Transfer lever latch
17 Felt washer (on pivot post)
18 Transfer lever restoring cam
19 Transfer lever roller
20 Antibounce clutch
21 Felt washer (on stop arm shaft)

Figure 161. Page printing mechanism, selector side, showing lubrication points. (Superseded)

Page 161, paragraph 119, subparagraph *b*, chart, "Item No." column, line 6. Change "7" to: **9.**

Subparagraph *d*, chart, "Name of part" column, line 15. Add: and separating washers[a].

In the "Method and quantity" column, add superscript "a" at the end of lines 4, 5, and 12.

Page 162, paragraph 119*d*, chart, "Method and quantity" column. Add a reference footnote "a" at the end of lines 1, 6, 7, 11, 14, 21, 22, 29, 35, 36, 37, 44, 45, 54, and 55.

Page 163, paragraph 119*d*. Delete that portion of the chart which relates to figures 176 and 181 and substitute the following:

Fig. No.	Item No.	Name of part	Method and quantity
176	1	Sliding drum clutch (on receiving multi-solenoid function shaft).	2 drops in hole on drum[a].
176	2	Reciprocating and restoring cam follower	Apply sparingly to roller pivots, and all rubbing surfaces.
176	3	Stop arm shaft support plate	1 drop each side of collar[a].
176	4	Latch lever pivot	2 drops of oil on pivot[a].
176	5	Clutch release lever	Slight film of oil on all bearing surfaces.
176	6	Transfer lever shaft bearings	1 drop between collars and bearings on transfer lever shaft[a].
176	7	Clutch latch	2 drops on pivot; thin film on latching surface.
176	8	Transfer lever shaft bearings	1 drop between collars and bearings on transfer lever shaft[a].
181	1	Clutch magnet armature	1 or 2 drops at pivot and working ends.
181	2	Sensing lever comb	1 or 2 drops in each comb slot.
181	3	Felt washer (on sensing lever springs)	Saturate.
181	4	Tape feed retracting lever	1 or 2 drops at pivot and working ends.
181	5	Code sensing levers	Apply sparingly at working surfaces and at pivot.
181	6	Start-stop lever	1 or 2 drops at pivot and working points[a].
181	7	Tape feed lever	1 or 2 drops at pivot and working points[a].
181	8	Transmitter-distributor camshaft	Thin film on all cam lobes and stop lever cam teeth.
181	9	Selector levers, bearing shoes, and flat washers.	Apply sparingly to all rubbing and bearing surfaces[a].
181	10	Transmitter contact bail pivot	2 or 3 drops between arm and pivot studs[a].
181.1	1	Felt washer (on detent lever-stud)	Saturate.

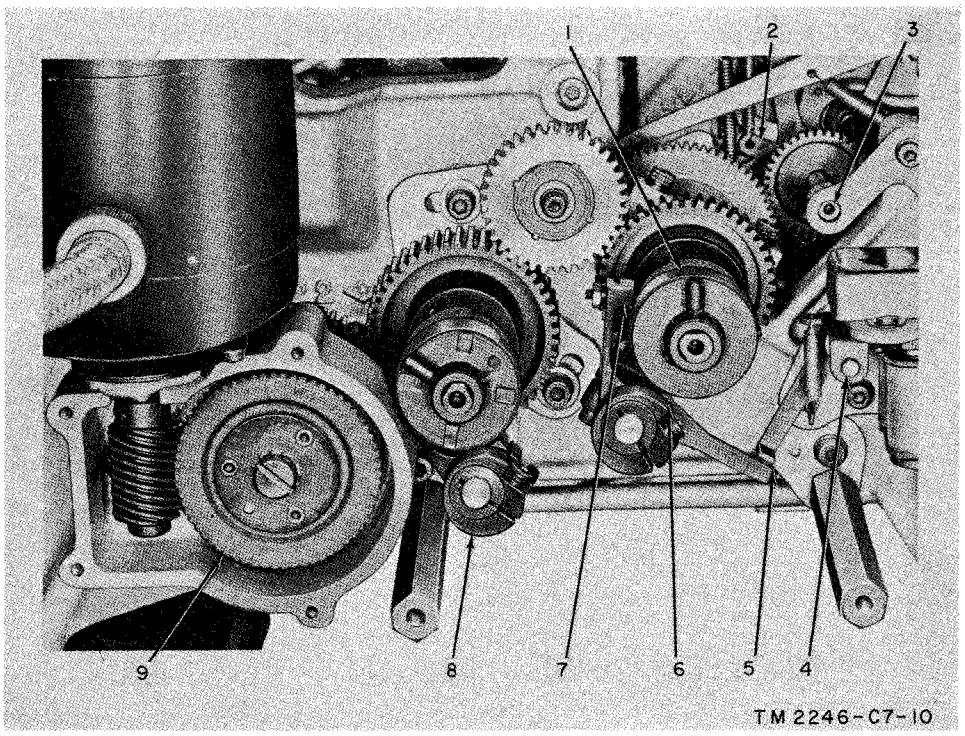
After the last entry to figure 183. Add:

Fig. No.	Item No.	Name of part	Method and quantity
183.1	1	Arm pivot stud	1 drop at each working point of stud[a].
	2	Arm roller	1 or 2 drops on roller.
183.2	1	Register arm	2 drops of oil at pivot point and working end[a].

In the "Method and quantity" column, line 16 and "Name of part" column, lines 28, 31, and 33, add a reference to footnote "a" at the end of the line.

Add the following footnote below the chart:

[a] On teletypewriter with lubricating felt washers installed, lubricate the associated felt washer to the point of saturation only.



1 Sliding drum clutch (on receiving multisolenoid function shaft)
2 Reciprocating and restoring cam follower
3 Stop arm shaft support plate
4 Latch lever pivot
5 Clutch release lever
6 Transfer lever shaft bearings
7 Clutch latch
8 Transfer lever shaft bearings
9 Motor driven gear set

Figure 176. Perforator main chassis, rear view, showing lubrication points.
(Superseded)

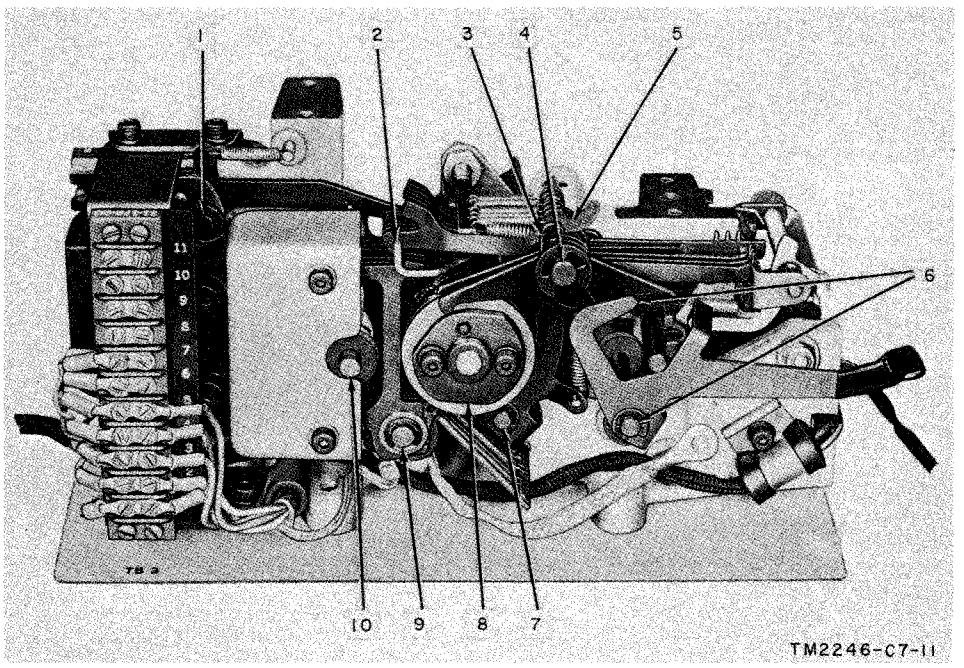


Figure 181. Transmitter-distributor, right side view, showing lubrication points.
(Superseded)

1 Clutch magnet armature
2 Sensing lever comb
3 Felt washer (sensing levers springs)
4 Tape feed retracting lever
5 Code sensing lever
6 Start-stop lever
7 Tape feed lever
8 Transmitter-distributor camshaft
9 Selector levers, bearing shoes and flat washers
10 Transmitter contact bail pivot

Figure 181—Continued.

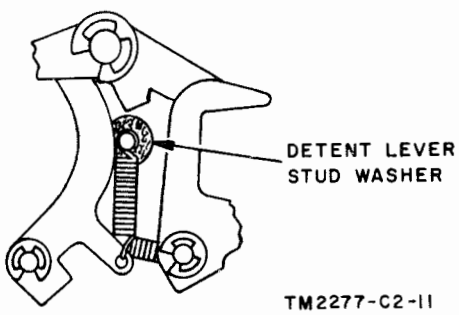
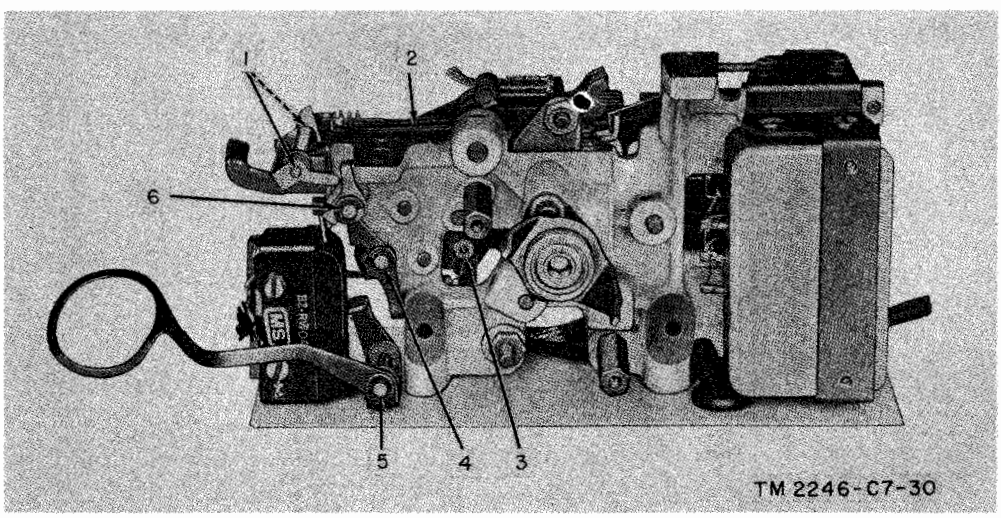


Figure 181.1. Transmitter-distributor, partial right side view, showing lubrication point (TT–270/FG and TT–272/FG). (Added)



1 Tape-out lever
2 Tape feed claw
3 Start-stop lever detent
4 Lower switch bail lever
5 Tight-tape lever
6 Upper switch bail lever

Figure 182. Transmitter-distributor, left side view, showing lubrication points. (Superseded)

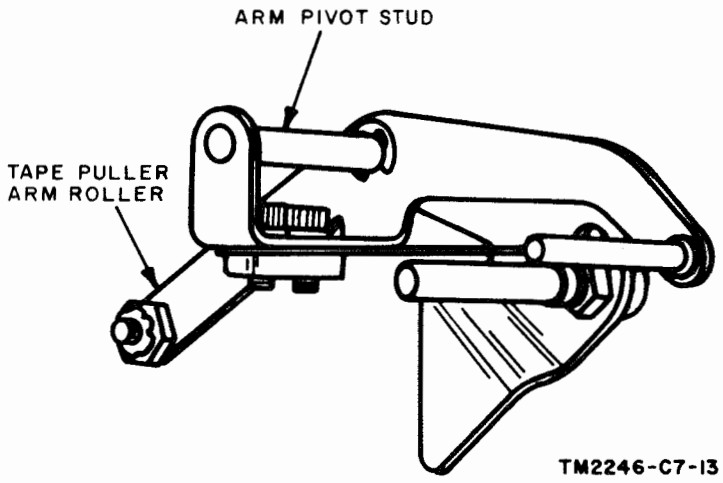


Figure 183.1. Tape puller, lubrication points. (Added)

Page 184. Add the following note to figure 185:

Note. Later models of the equipment include two felt washers 61477. One appears between items 23 and 24 and the other between items 22 and 26.

Page 194, paragraph 137, subparagraph *a*(3). After the last sentence add: Catch the felt washer (51), when supplied, as it is released by the stud.

Subparagraph *a*(6). After the last sentence add: Remove the felt washer (52), when supplied, from the selector lever pivot post.

Page 196, figure 191, legend, item 2. Add: (56561A on TT–117A/FG, TT–118/FG, TT–119A/FG, TT–269/FG and TT–271/FG).

Item 3. Add: (61318A on TT–269/FG and TT–271/FG).

Page 200, paragraph 140a, subparagraph (8). After the second sentence add: Catch the three felt washers (36), when supplied, as they fall free of the locking lever latch stud.

Subparagraph (12). After "(19)" add: and felt washer (18), when supplied.

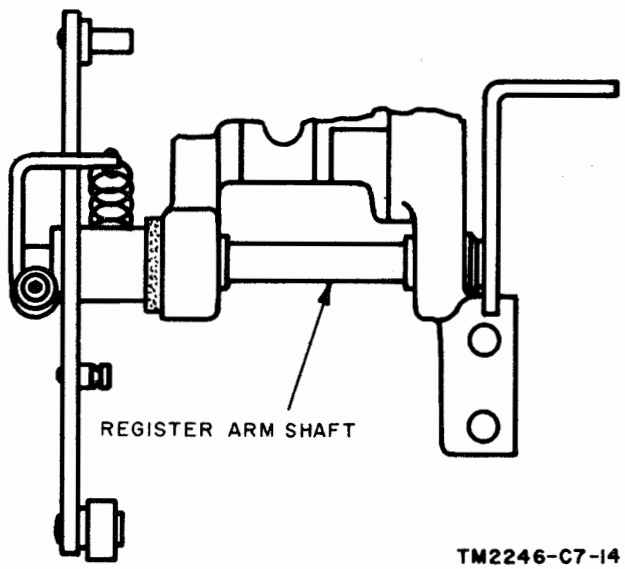
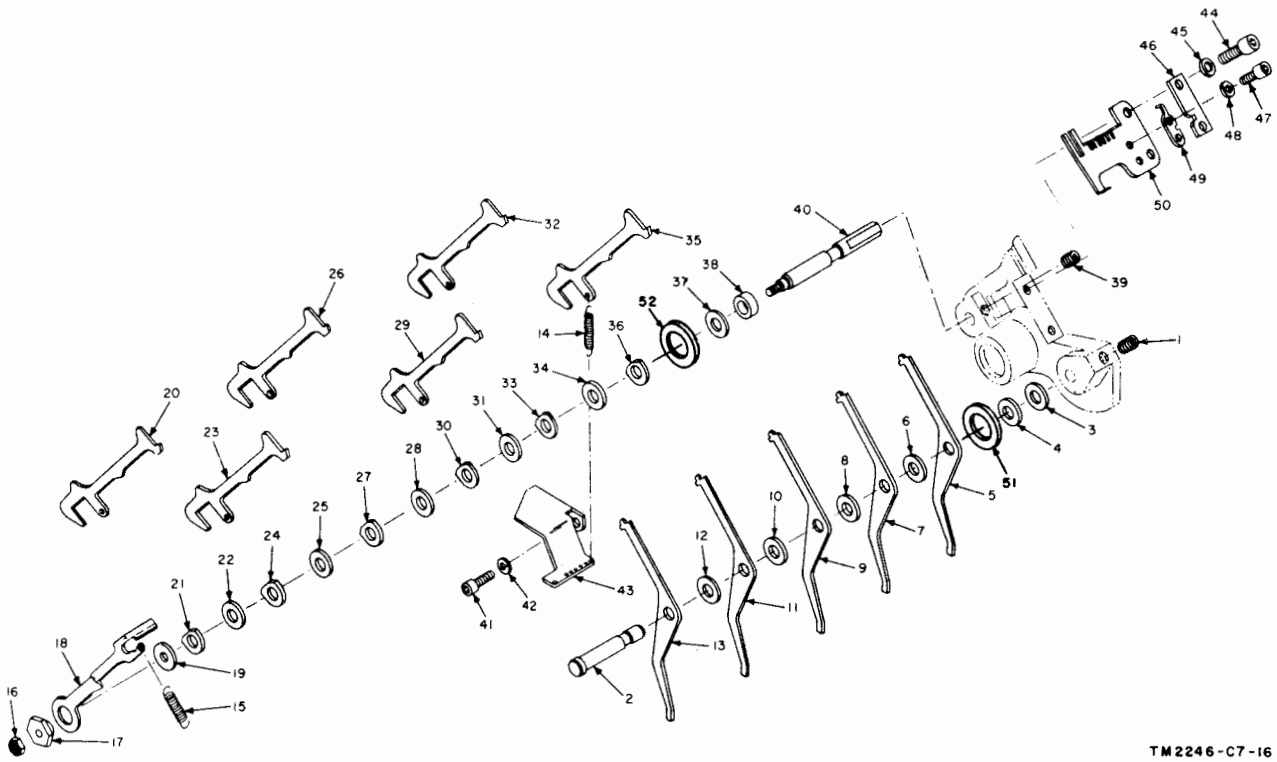
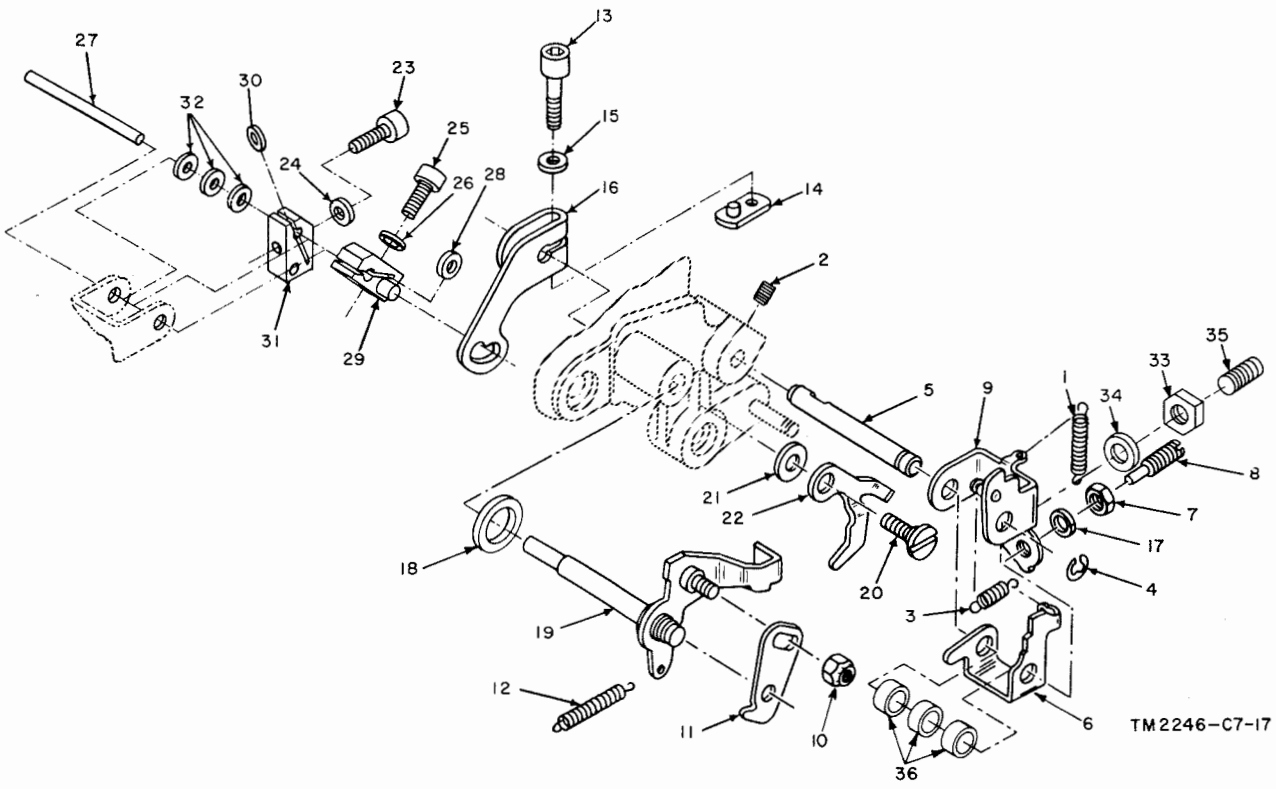


Figure 183.2. Code actuated switch frame, lubrication point. (Added)



1 Setscrew, 10210
2 Sensing lever pivot stud, 51562
3 Flat washer, 53526
4 Flat washer, 51047
5 Sensing lever, 51573A (includes items 7, 9, 11, and 13)
6 Flat washer, 50147
7 Sensing lever
8 Flat washer, 50147
9 Sensing lever
10 Flat washer, 50147
11 Sensing lever
12 Flat washer, 50147
13 Sensing lever
14 Selector lever spring, 50902
15 Sensing lever locking bail spring, 51575
16 Self-locking hexagonal nut, 10500
17 Sensing lever locking bail bearing, 51557
18 Sensing lever locking bail, 51567
19 Spacing collar, 51555
20 Selector lever, 51598A (includes items 23, 26, 29, 32, and 35)
21 Bearing shoe, 50019A (includes items 24, 27, 30, 33, and 36)
22 Flat washer, 50147
23 Selector lever
24 Bearing shoe
25 Flat washer, 50147
26 Selector lever
27 Bearing shoe
28 Flat washer, 50147
29 Selector lever
30 Bearing shoe
31 Flat washer, 50147
32 Selector lever
33 Bearing shoe
34 Flat washer, 50147
35 Selector lever
36 Bearing shoe
37 Flat washer, 50147
38 Flat washer, 56252
39 Setscrew, 10210
40 Selector lever pivot post, 54673
41 Machine screw, 10003
42 Lockwasher, 10429
43 Selector lever spring bracket, 54672
44 Screw, 10008
45 Lockwasher, 10430
46 Adjusting plate, 55869
47 Screw, 10002
48 Lockwasher, 10429
49 Stop selector lever latch, 55870
50 Selector levers comb, 51558
51 Felt washer, 61466
52 Felt washer, 61467

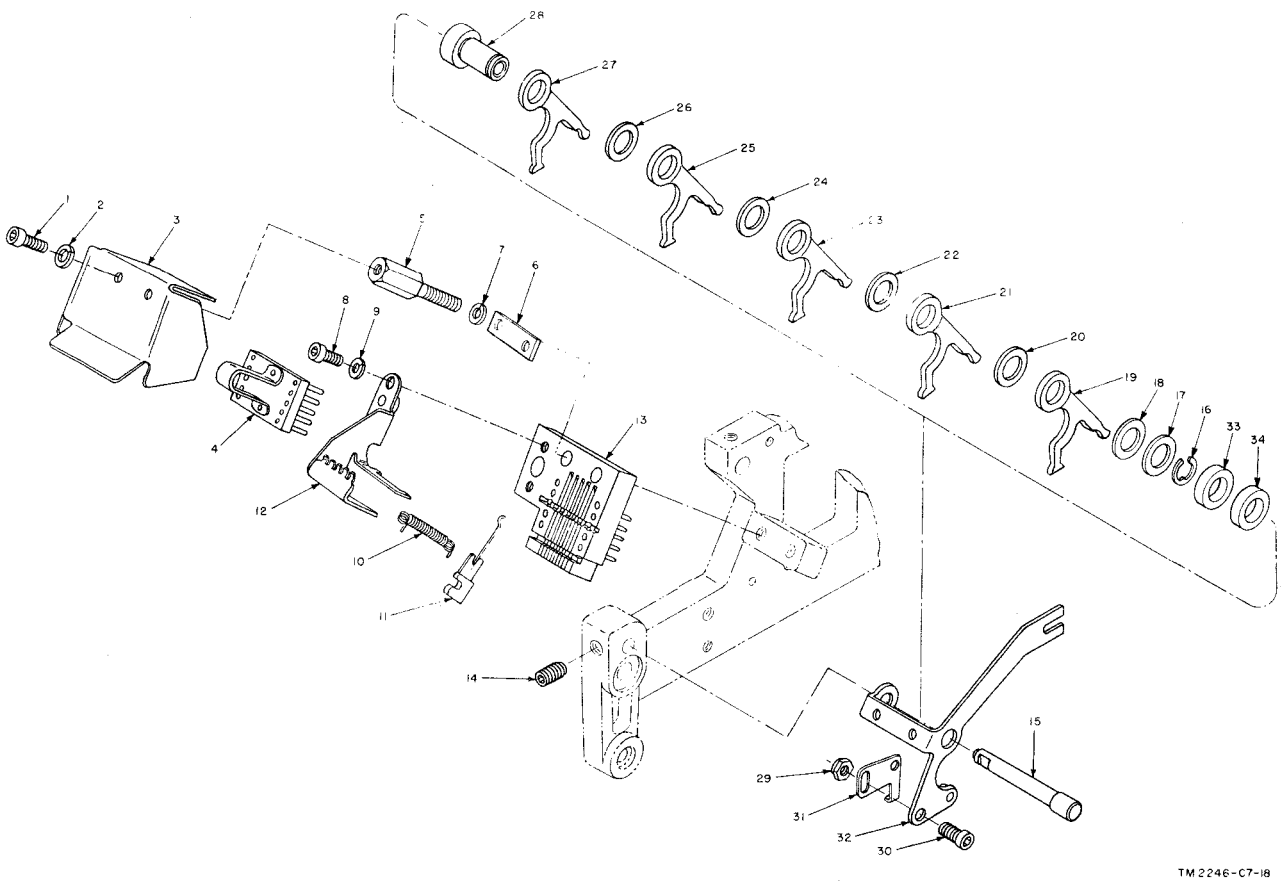
Figure 190. Keyboard transmitter sensing and selector levers, exploded view. (Superseded)



1 Locking lever latch spring, 51544
2 Setscrew, 10210
3 Repeat blocking lever spring, 50944
4 Retainer ring, 10949
5 Locking lever latch stud, 51564
6 Repeat blocking lever, 51569 (59477)[a]
7 Plain hexagonal nut, 10507
8 Universal bar adjusting screw, 50658
9 Locking lever latch, 51570A (59475A)[a]
10 Self-locking hexagonal nut, 10500
11 Stop latch cam follower, 55562
12 Cam stop lever spring, 51575
13 Clamping screw, 10006
14 Clamp nut, 50174
15 Flat washer, 10459
16 Switch cam lever, 56564
17 Lockwasher, 10409
18 Felt washer, 61482
19 Cam stop lever, 54686A
20 Repeat lever pivot stud, 51568
21 Flat washer, 50414
22 Repeat lever, 52914
23 Clamping screw, 10003
24 Lockwasher, 10421
25 Clamping screw, 10003
26 Lockwasher, 10421
27 Switch arm shaft, 10919
28 Washer, 56598
29 Switch cam follower, 56566A
30 Washer, 56598
31 Switch arm, 56568A
32 Spacer, 52988
33 Plain hexagonal nut (10507)[a]
34 Flat washer (10409)[a]
35 Repeat blocking lever adjusting screw (10233)[a]
36 Felt washer, 61468

[a] Reference designations in parentheses are applicable to models equipped with an adjustable repeat blocking latch.

Figure 193. Transmitter camshaft locking mechanism, exploded view. (Superseded)



1 Machine screw, 10032
2 Lockwasher, 10430
3 Keyboard switch cover, 55889
4 Shunt switch arm connector, 55885A
5 Socket mounting stud, 55898
6 Flat washer, 10467
7 Lockwasher, 10430
8 Machine screw, 10004
9 Lockwasher, 10429
10 Shunt switch arm spring
11 Shunt switch arm
12 Shunt switch arm spring mounting bracket, 55903A (includes items 10 and 11)
13 Shunt switch arm comb, 55855
14 Setscrew, 10210
15 Switch arm mounting post pivot, 55828
16 Retainer ring, 10959
17 Flat washer, 50552
18 Switch arm spacer, 55878
19 Switch arm, 55894
20 Switch arm spacer, 55878
21 Switch arm, 55894
22 Switch arm spacer, 55878
23 Switch arm, 55894
24 Switch arm spacer, 55878
25 Switch arm, 55894
26 Switch arm spacer, 55878
27 Switch arm, 55894
28 Switch arm centering sleeve, 55895
29 Self-locking hexagonal nut, 10500
30 Machine screw, 10001
31 Tabulator lever adjusting arm, 55901
32 Tabulator lever, 55900A
33 Felt washer, 61478
34 Felt washer, 61478

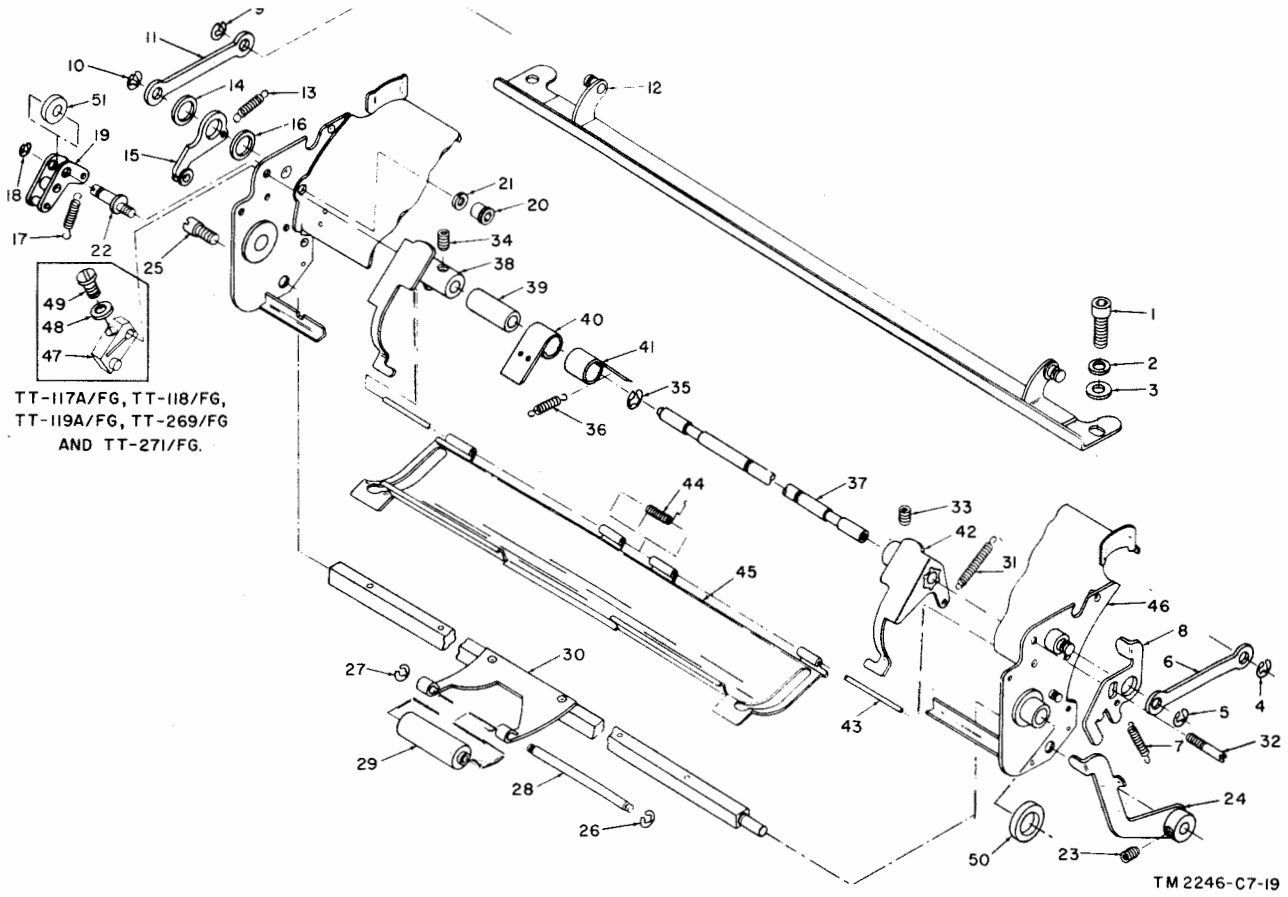
Figure 194. Simultaneous transmitter mechanism, exploded view. (Superseded)

Page 203, paragraph 141*a*(9), line 3. After "remove" add: the felt washers (33 and 34), when supplied, and

Page 205, figure 195 legend, item 25. After "55910A" add: (61698A, TT–269/FG and TT–271/FG).

Page 211, figure 199 legend, item 5. Add: (61745A on TT–269/FG and TT–271/FG).

Item 8. Add: (61744 on TT–269/FG and TT–271/FG).



1 Machine screw, 10024
2 Flat washer, 10464
3 Lockwasher, 10431
4 Retainer ring, 10949
5 Retainer ring, 10949
6 Connecting link, 50215
7 Platen lever latch spring, 53149
8 Platen lever latch, 54951
9 Retainer ring, 10949
10 Retainer ring, 10949
11 Connecting link, 50215
12 Bracket link, 53138A
13 Platen spacing detent spring, 51851
14 Flat washer, 51768
15 Platen spacing detent, 53202A
16 Flat washer, 51768
17 Platen detent spring, 51851
18 Retainer ring, 10960
19 Line spacing detent, 50108A
20 Plain round nut, 10537
21 Lockwasher, 10429
22 Platen detent eccentric stud, 52931
23 Setscrew, 10201
24 Pressure roller lever, 54954A
25 Pressure roller operating shaft screw, 50238
26 Retainer ring, 51099
27 Retainer ring, 51099
28 Platen pressure roller shaft, 54968
29 Platen pressure roller, 50161A
30 Platen pressure roller operating shaft, 55530A
31 Paper guide spring, 52169
32 Pivot screw, 55139
33 Setscrew, 10201
34 Setscrew, 10201
35 Retainer ring, 10949
36 Stripper spring, 55143
37 Paper guide shaft, 55152 (59820 [a])
38 Paper guide, 55144A (57016A, TT–118/FG only)
39 Sleeve, 55041
40 Paper stripper, 55151
41 Paper stripper, 55151
42 Paper guide, 55141A (57077A, TT–118/FG only)
43 Hinge pin, 55146
44 Platen trough spring, 54967
45 Paper trough guide, 54962
46 Platen trough, 55136A
47 Paper guide adjusting lever, 60084A[a]
48 Lockwasher, 10421[a]
49 Screw, 10106[a]
50 Felt washer, 61472
51 Felt washer, 61474

[a] Additional reference designations used with all equipment except TT–117/FG and TT–119/FG.

Figure 202. Platen trough assembly, exploded view. (Superseded)

Page 218, paragraph 152*a*. After subparagraph (6) add:

(6.1) Remove the retainer ring (33) that holds the platen shift link (29, fig. 219) to the stud on the platen shift arm (19, fig. 203).

Subparagraph (10), line 4. After "(23)" add: felt washer (31), when supplied. Line 5. After "(25)" add: flat washer (34).

Subparagraph (12), line 3. After "(28)" insert: and felt washer (32), when supplied.

Paragraph 153*a*. After subparagraph (1) add:

(1.1) Remove the felt washer (50), when supplied, from the hub of the platen shaft-bearing on the platen trough (46).

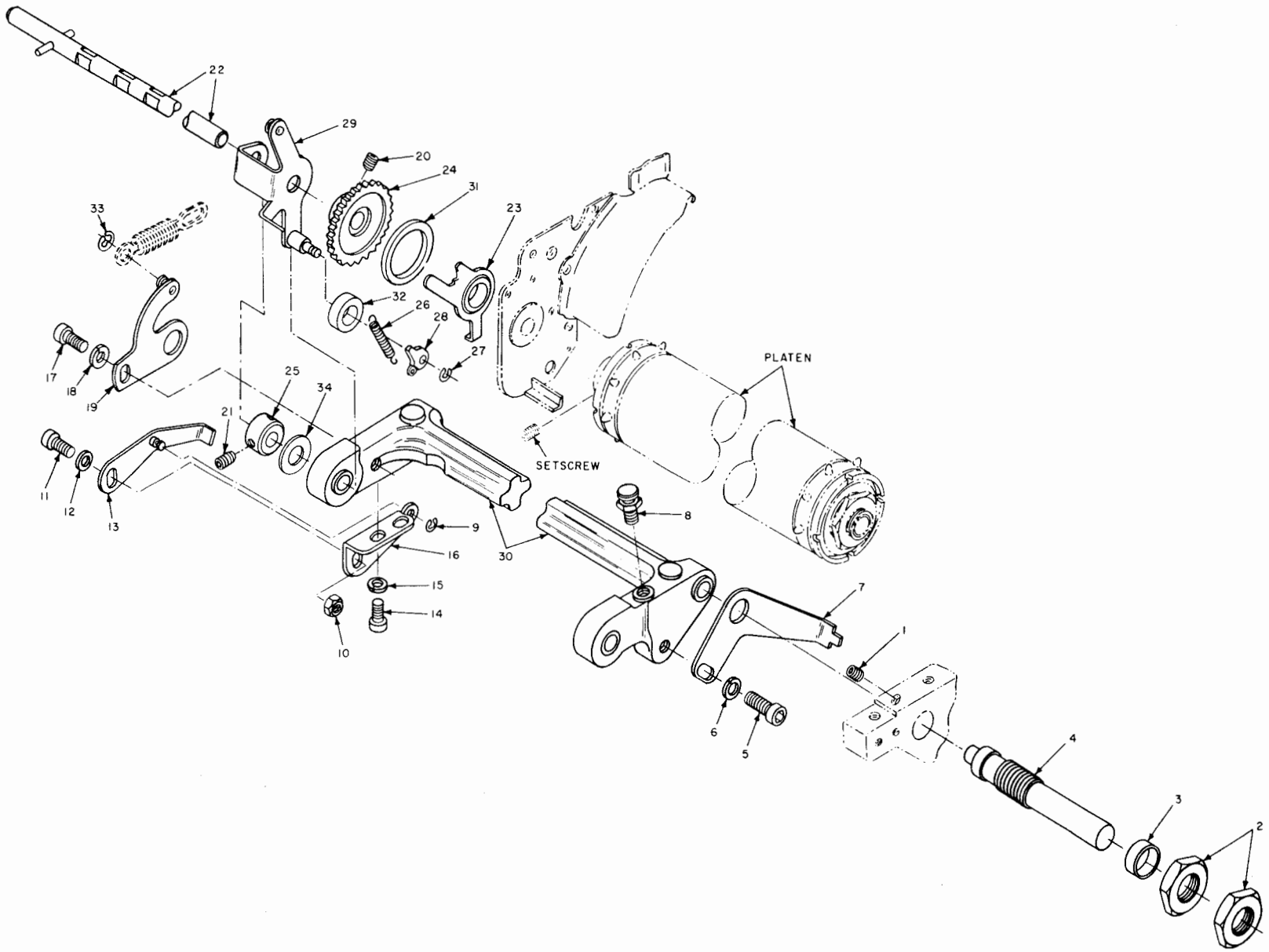


Figure 203. Platen frame assembly, exploded view. (Superseded)

Page 220, paragraph 153*a*(8). After the sentence add: Remove the felt washer (51), when supplied.

Page 225. Add the following note to figure 207:

Note. Later models of the equipment include a felt lubrication washer, 61476, between items 3 and 12.

Page 229, paragraph 161*b*(1), chart. Delete the chart and substitute the following:

Type bar and connecting bar sequence chart

No. stamped in bar	Connecting bar ref. No.	Type bar ref No. (standard)	Type bar ref No. (weather)	Type bar symbol (LTRS)
1	50022	62211	62237	Z
2	50023	62212	62238	J
3	50024	62213	62213	X
4	50025	62214	62239	V
5	50026	62215	62240	B
6	50027	62216	62241	C
7	50028	62217	62217	P
8	50029	62218	62218	M
9	50030	62219	62242	F
10	50031	62220	62220	R
11	50032	62221	62221	O
12	50033	62222	62222	I

Type bar and connecting bar sequence chart

No. stamped in bar	Connecting bar ref. No.	Type bar ref No. (standard)	Type bar ref No. (weather)	Type bar symbol (LTRS)
13	50034	62223	62223	T
14	50035	62224	62224	E
15	50036	62225	62243	A
16	50037	62261	62261	S
17	50038	62260	62244	H
18	50039	62228	62245	N
19	50040	62229	62246	L
20	50041	62230	62247	D
21	50042	62231	62231	U
22	50043	62232	62248	G
23	50044	62233	62233	Y
24	50045	62234	62234	W
25	50046	62235	62249	K
26	50047	62236	62236	Q
27	50048	None	62250	None

Page 233, figure 212 legend, item 18. Change "20513" to **20514.**

Page 235, figure 213, legend, item 7. Change "10307" to: **10090.**

Add the following note:

Note. Later models of the equipment include a felt lubrication washer, 61480, between items 10 and 11.

1 Setscrew, 10211
2 Plain hexagonal nut, 10524
3 Spacing collar, 55174
4 Eccentric pivot, 55173
5 Machine screw, 10015
6 Lockwasher, 10431
7 Platen latching arm, 50214
8 Platen locking stud, 50762
9 Retainer ring, 10969
10 Self-locking hexagonal nut, 10501
11 Machine screw, 10008
12 Flat washer, 10467
13 Platen blocking arm, 53095A
14 Machine screw, 10008
15 Lockwasher, 10430
16 Platen blocking arm bracket, 52307
17 Machine screw, 10005
18 Lockwasher, 10431
19 Platen shift arm, 53134A
20 Setscrew, 10209
21 Setscrew, 10209
22 Platen shaft, 54955
23 Single-double line feed lever, 51762A
24 Detent wheel, 52807
25 Shaft collar, 50209
26 Line feed pawl spring, 50333
27 Retainer ring, 10969
28 Line feed pawl, 50165
29 Line feed lever, 53137A
30 Platen support frame, 53305A
31 Felt washer, 61471
32 Felt washer, 61473
33 Retainer ring, 10949
34 Felt washer, 61473

Figure 203—Continued.

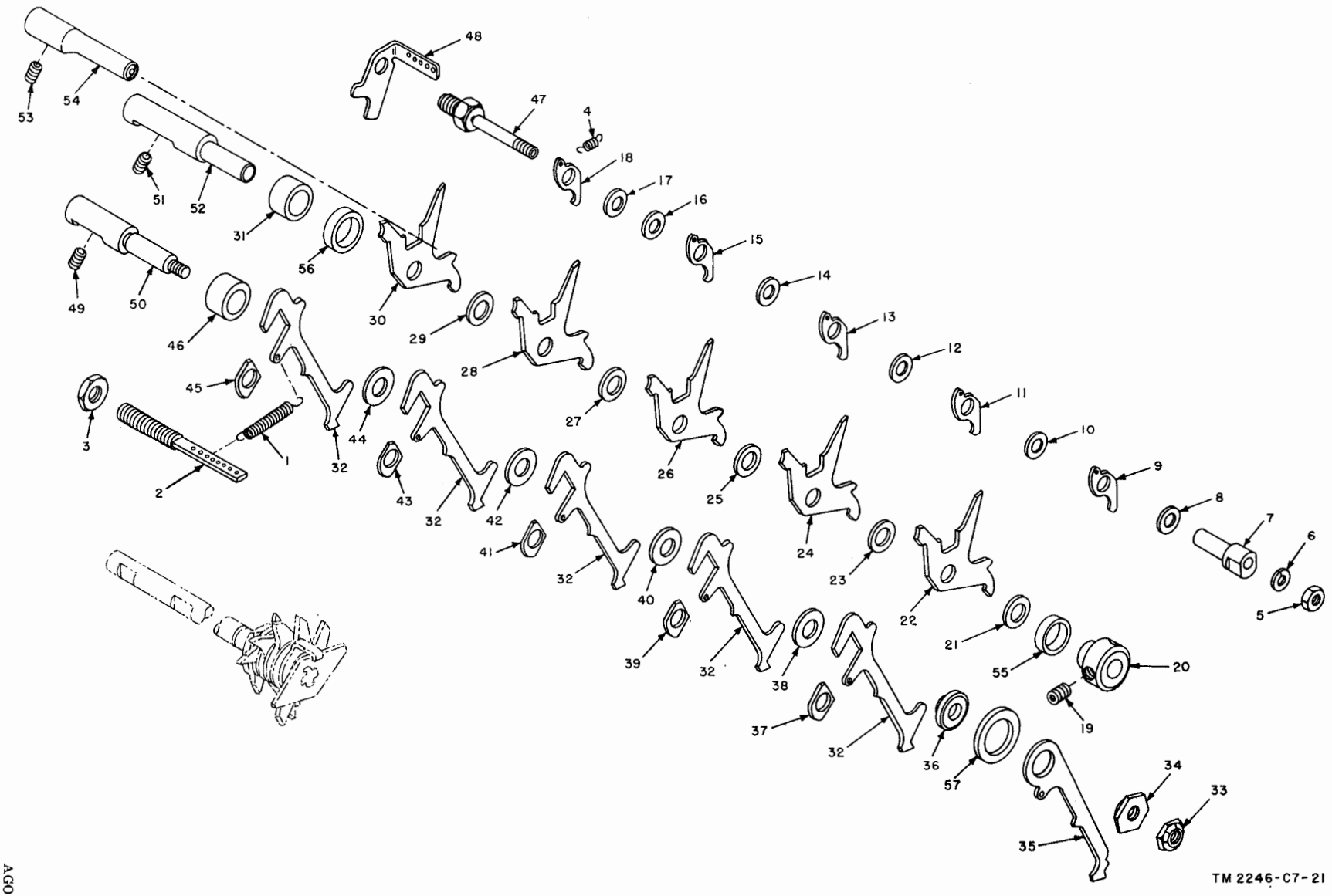


Figure 214. Selector and Y-levers, exploded view. (Superseded)

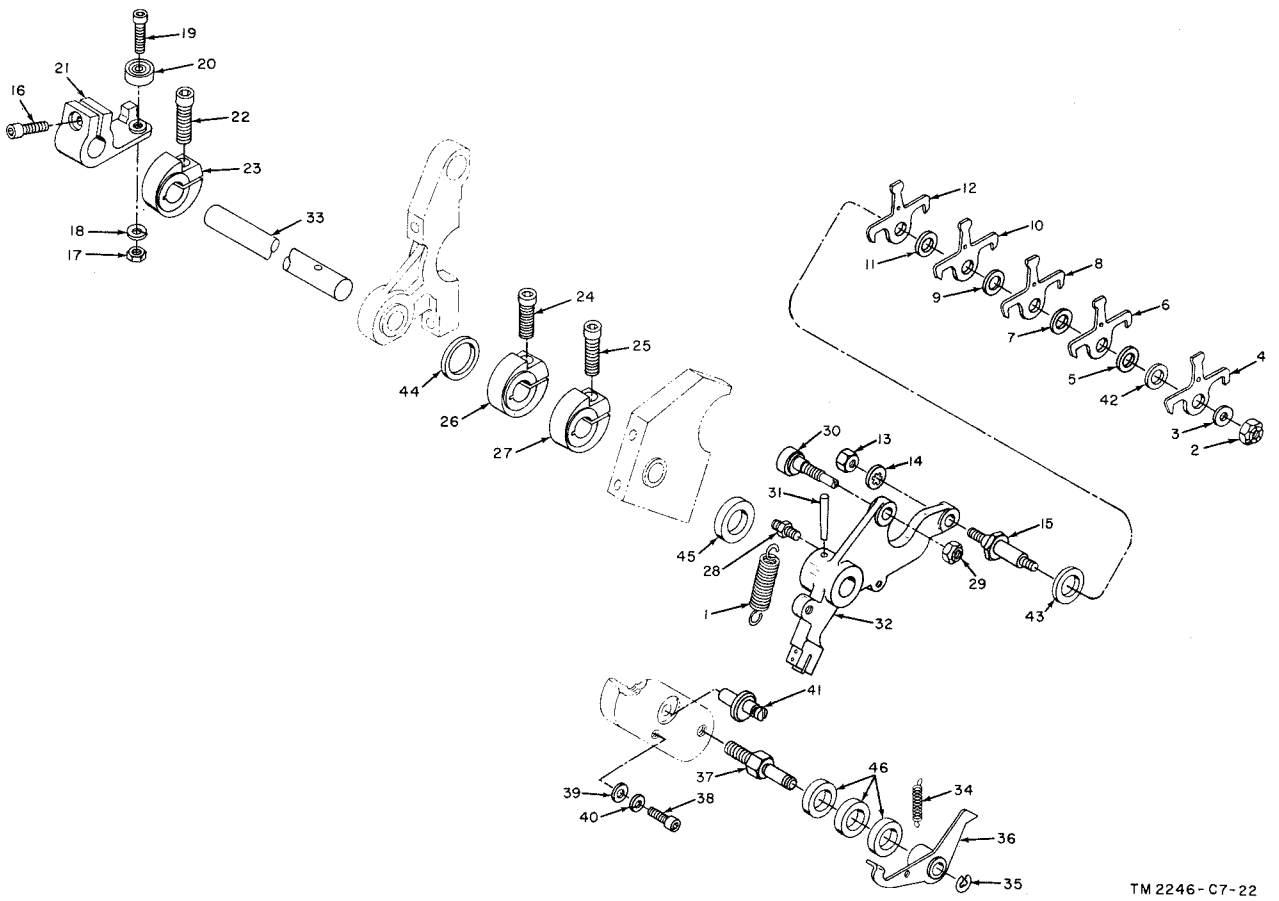
Page 237, paragraph 165*a*, subparagraph (5), line 3. After "(52)" add: Remove the felt washer (55), when supplied. Line 6. After "alternately" add: felt washer (56), when supplied.

Subparagraph (7), line 4. After "(35)" add: felt washer (57), when supplied.

Page 238, paragraph 166*a*(3). After the last sentence add: Remove the felt washer (43), when supplied, from the T-lever pivot stud.

1 Selector lever spring, 50902 (5 reqd)
2 Anchor post, 50325
3 Plain hexagonal nut, 10509
4 Y-lever detent spring, 55009 (5 reqd)
5 Plain hexagonal nut, 10504
6 Lockwasher, 10434
7 Centering sleeve, 55007
8 Thrust washer, 55001 (consists of set of 5, items 8, 10, 12, 14, and 16)
9 Y-lever detent, 55004 (consists of set of 5, items 9, 11, 13, 15, and 18)
10 Thrust washer
11 Y-lever detent
12 Thrust washer
13 Y-lever detent
14 Thrust washer
15 Y-lever detent
16 Thrust washer
17 Flat washer, 55076
18 Y-lever detent
19 Setscrew, 10209
20 Spacing collar, 55006
21 Flat washer, 50148
22 Y-lever, 53540A (consists of set of 5, items 22, 24, 26, 28, and 30)
23 Flat washer, 50148
24 Y-lever
25 Flat washer, 50148
26 Y-lever
27 Flat washer, 50148
28 Y-lever
29 Flat washer, 50148
30 Y-lever
31 Collar, 51416
32 Selector lever, 51068A (consists of set of 5)
33 Self-locking hexagonal nut, 10513
34 Eccentric bearing, 51046
35 Stop lever 53613 (62020A on TT–269/FG and TT–271/FG)
36 Flat washer, 50053
37 Bearing, 50019A (consists of set of 5, items 37, 39, 41, 43, and 45)
38 Flat washer, 50147
39 Bearing
40 Flat washer, 50147
41 Bearing
42 Flat washer, 50147
43 Bearing
44 Flat washer, 50147
45 Bearing
46 Collar, 51416
47 Y-lever detent pivot, 55008
48 Y-lever detent spring bracket, 55002
49 Setscrew, 10211
50 Selector lever pivot stud, 53268
51 Setscrew, 10247
52 Y-lever pivot stud, 53269
53 Setscrew, 10211
54 Y-lever eccentric stop, 50152
55 Felt washer, 61478
56 Felt washer, 61469
57 Felt washer, 61479

Figure 214—Continued.



1 Transfer lever spring, 50903
2 Self-locking hexagonal nut, 10500
3 Flat washer, 50414
4 T-lever, 56766A (includes items 4, 6, 8, 10, and 12)
5 Flat washer, 50148
6 T-lever
7 Flat washer, 50148
8 T-lever
9 Flat washer, 50148
10 T-lever
11 Flat washer, 50148
12 T-lever
13 Plain hexagonal nut, 50651
14 Lockwasher, 10404
15 T-lever pivot stud, 50650
16 Machine screw, 10008
17 Plain hexagonal nut, 10504
18 Lockwasher, 10434
19 Machine screw, 10000
20 Ball bearing, 10754
21 Clutch latch, 50535
22 Machine screw, 10010
23 Shaft collar, 53973
24 Machine screw, 10010
25 Machine screw, 10010
26 Shaft collar, 53973
27 Shaft collar, 53973
28 Spring stud, 50649
29 Self-locking hexagonal nut, 10501
30 Transfer lever roller stud, 56185A
31 Taper pin
32 Transfer lever assembly 52394A (includes items 31 and 33)
33 Transfer lever shaft
34 Spring, 50904
35 Retainer ring, 10949
36 Transfer lever latch, 50020A
37 Transfer lever latch stud, 52319
38 Machine screw, 10003
39 Flat washer, 50839
40 Lockwasher, 10429
41 Spring post eccentric, 56076
42 Shim: 0.002-in., 57072; 0.003-in., 57073
43 Felt washer, 61480
44 Felt washer, 61488
45 Felt washer, 61489
46 Felt washer, 61467

Figure 215. Transfer lever shaft, exploded view. (Superseded)

Page 239, paragraph 166*a*, subparagraph (9). After the last sentence add: Catch the felt washers (44 and 45), when supplied, as they fall free of the shaft.

Subparagraph (13). After the last sentence add: Remove the three felt washers (46), when supplied.

Delete paragraph 167 and substitute:

167. Disassembly and Reassembly of Printer Bail Blade Shaft (fig. 216)

a. Disassembly.

(1) Remove the page printer from the printer base (par. 128*a*).

(2) Remove the transfer lever shaft (par. 166*a*).

(3) Remove the two setscrews (41, fig. 221) that hold the print cam (42) to the function shaft (46); slide the print cam to the selector side of the page printer. Be careful not to lose the bushing (7, fig. 216) on the cam follower stud.

(4) Unhook the print cam follower spring (1) from the print cam follower (4) and from the spring post on the printer frame.

(5) Remove the two screws and lockwashers that hold the middle bearing cap to the frame assembly; remove the middle bearing cap by sliding it toward the selector side of the page printer.

(6) Remove the print bail blade shaft (2), print bail blade (3), and print cam follower (4) by moving the shaft toward the selector side of the page printer, free of the bearing. Remove the felt washers (5 and 6), when supplied, from the print bail blade shaft.

(7) Remove the bushing (7), locknut (8), and stud (9) from the print cam follower.

(8) Remove the machine screw (10), plain washer (11), and nut (12) that hold the print cam follower (4) to the print bail blade shaft and remove the print cam follower.

(9) Remove the two felt washers (13), when supplied, from the print bail blade shaft.

(10) Remove the three machine screws (14), lockwashers (15), and washers (16) that hold the print bail blade to the print bail blade shaft and remove the blade.

b. Reassembly.

(1) Position the print bail blade (3) on the print bail blade shaft (2). Fasten it with the three machine screws (14), lockwashers (15), and washers (16).

(2) Install the two felt washers (13), when supplied, and print cam follower (4) on the print bail blade shaft (2); secure with a machine screw (10), plain washers (11), and nut (12).

(3) Position the stud (9) on the print cam follower (4) and secure it with a locknut (8). Install the bushing (7) on the stud.

(4) Install the felt washers (5 and 6), when supplied, on the print bail blade shaft.

(5) Install the end of the shaft with the cam follower on it in the bushing in the function side of the page printer frame.

(6) Position the bearing cap on the opposite end of the print bail blade shaft; secure the bearing cap to the frame with two screws and lockwashers.

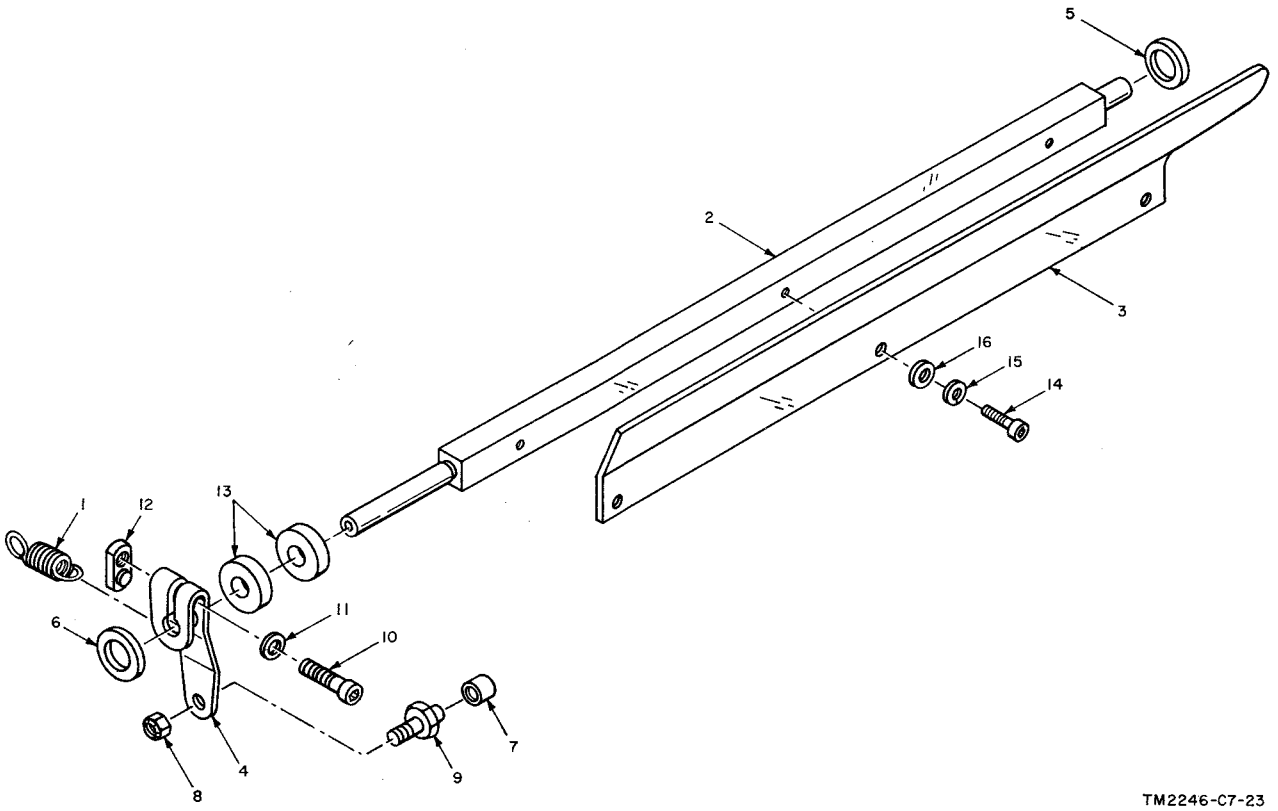
(7) Attach the print cam follower spring (1) to the print cam follower (4) and the spring post on the page printer frame.

(8) Slide the print cam to engage the print cam follower; secure the cam to the function shaft with two setscrews.

(9) Install the transfer lever shaft (par. 166*b*).

(10) Adjust the print bail blade shaft (pars. 344 and 345).

(11) Replace the page printer on the printer base (par. 128*b*).



1 Print cam follower spring, 50921
2 Print bail blade shaft, 50534
3 Print bail blade, 50533
4 Print cam follower, 50948
5 Felt washer, 61482
6 Felt washer, 61480
7 Bushing, 50843
8 Locknut, 10501
9 Stud, 50886
10 Machine screw, 10006
11 Plain washer, 10459
12 Nut, 50174
13 Felt washer, 61481
14 Machine screw, 10004
15 Lockwasher, 10429
16 Washer, 10450

Figure 216. Print bail blade shaft assembly, exploded view. (Superseded)

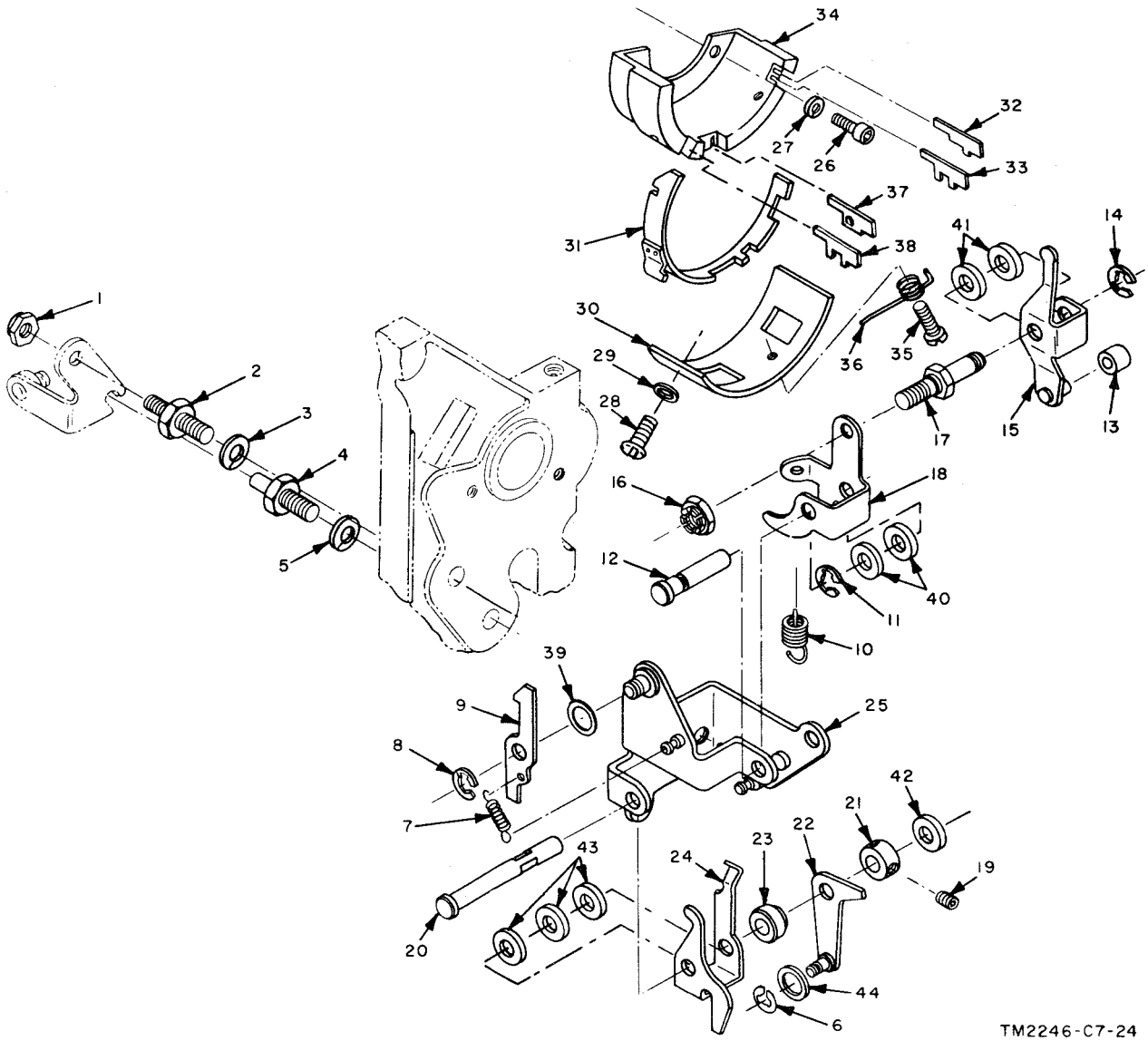
Page 241, paragraph 169*a*, subparagraph (5). After the sentence add: Remove the felt washer (39), when supplied, from the platen latch pivot post.

Subparagraph (7). After the sentence add: Catch the two felt washers (40), when supplied, as they fall from the support lever.

Subparagraph (9). After the sentence add: Catch the two felt washers (41), when supplied, as they fall from the function cam follower pivot stud.

Delete subparagraph (11) and substitute:

(11) Remove the two setscrews (19) that hold the shaft collar (21) to the pivot (20); remove the pivot. Catch the felt washer (42), when supplied, shaft collar, carriage-feed lever (22), spacer (23), unshift lever (24), and three felt washers (43), when supplied, as they fall from the pivot. Remove the felt washer (44), when supplied, from the pivot post on the carriage-feed lever.



1 Self-locking hexagonal nut, 10501
2 Mounting bracket stud, 55501
3 Lockwasher, 10431
4 Mounting bracket stud, 55502
5 Lockwasher, 10431
6 Retainer ring, 10960
7 Platen latch spring, 52501
8 Retainer ring, 10949
9 Platen latch, 50821
10 Supporting lever spring, 50915
11 Retainer ring, 10949
12 Pin, 53131
13 Cam follower roller, 50843
14 Retainer ring, 10949
15 Function cam follower, 50822A
16 Self-locking hexagonal nut, 10501
17 Function cam follower pivot stud, 52553
18 Support lever, 50760
19 Setscrew, 10203
20 Pivot, 50829
21 Shaft collar, 50391
22 Carriage-feed lever, 53129A
23 Spacer, 51424
24 Unshift lever, 52445
25 Function bracket, 52543A
26 Machine screw, 10004
27 Lockwasher, 10403
28 Machine screw, 10304
29 Lockwasher, 10429
30 Side plate, 50735
31 Aperture gate, 50743A
32 Signal bell punch bar, 50881
33 Motor stop punch bar, 50755[a]
34 Punch bar guide block, 51428
35 Machine screw, 51568
36 Blank punch bar torsion spring, 53649 (TT–118/FG only)
37 Blank punch bar, 53648 (TT–118/FG only)
38 Letters punch bar, 50755 (.625 inch in overall length)
39 Felt washer, 61492
40 Felt washer, 61475
41 Felt washer, 61475
42 Felt washer, 61475
43 Felt washer, 61475
44 Felt washer, 61486

[a] On TT–118/FG, motor stop punch bar 53606 is used. This part is .687 inch in overall length.

Figure 218. Function mechanism, exploded view. (Superseded)

Page 243, paragraph 169*b*. Delete subparagraph (3) and substitute:

(3) Install the felt washer (44), when supplied, on the pivot post on the carriage-feed lever. Insert the pivot (20) in the drilled hole in the function bracket (25); install the unshift lever (24), three felt washers (43), when supplied, spacer (23), carriage-feed lever (22), shaft collar (21), and felt washer (42), when supplied, on the pivot. Insert the pivot all the way into the bracket and secure the shaft collar to the pivot by installing the two setscrews (19).

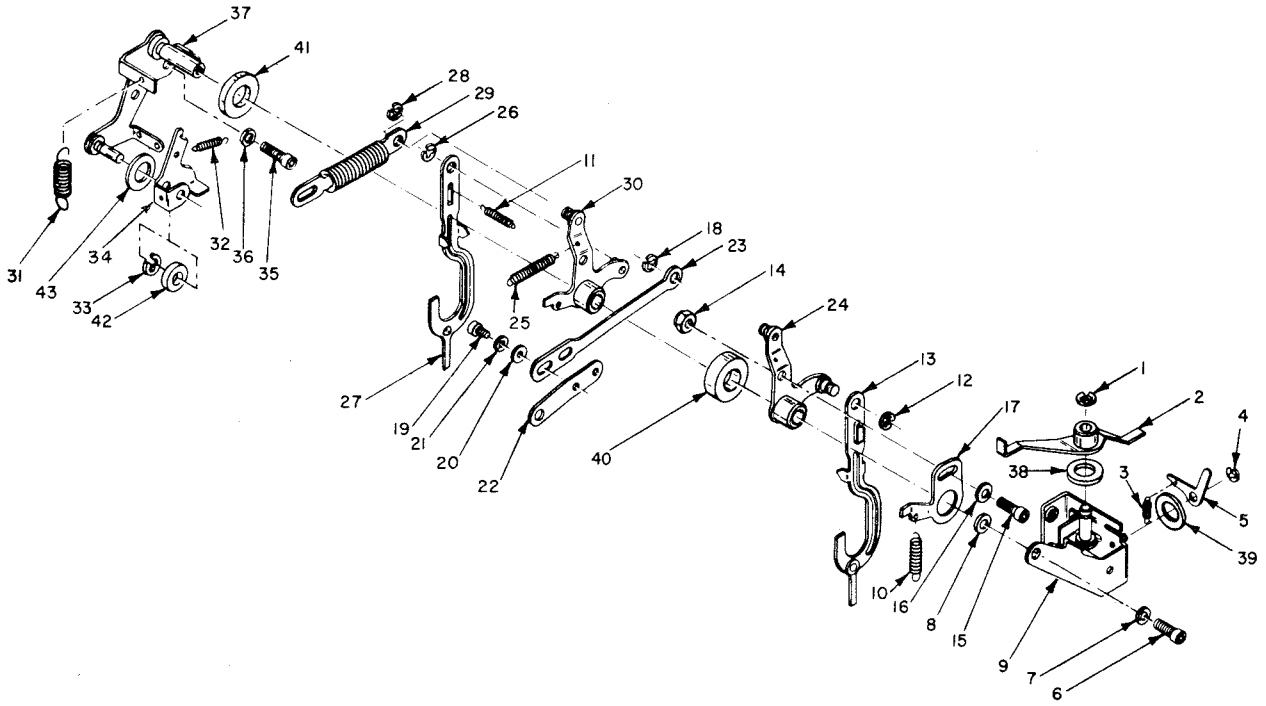
Subparagraph (5), line 2. After "(15)" add: and two felt washers (41), when supplied.

Subparagraph (7), line 2. After "(18)" add: and two felt washers (40), when supplied.

Subparagraph (9), line 1. After "Position" add: the felt washer (39), when supplied, and

Page 244, paragraph 170*a*, subparagraph (2). After the sentence add: Remove the felt washer (38), when supplied.

Subparagraph (4), line 2. After "(5)" add: and felt washer (39), when supplied.



1 Retainer ring, 10949
2 Delaying lever, 52960A
3 Delaying latch spring, 50916
4 Retainer ring, 10960
5 Delaying latch, 52963
6 Machine screw, 10003
7 Lockwasher, 10429
8 Flat washer, 10450
9 Stop bar shift link bracket, 55730A
10 Adjustable bellcrank spring, 51755
11 Line feed and figures shift cam follower spring, 50901
12 Retainer ring, 10949
13 Line feed cam follower, 51714A
14 Self-locking hexagonal nut, 10500
15 Machine screw, 10003
16 Flat washer, 10450
17 Adjustable bellcrank, 53462
18 Retainer ring, 10949
19 Machine screw, 10002
20 Flat washer, 10458
21 Lockwasher, 10429
22 Connecting link, 51771
23 Connecting link, 50474
24 Line feed bellcrank, 53136A
25 Platen shift bellcrank spring, 51645
26 Retainer ring, 10949
27 Platen shift cam follower, 51712A
28 Retainer ring, 10949
29 Platen shift link, 56676A
30 Platen shift bellcrank, 53135A
31 Carriage-return bellcrank spring, 50906
32 Platen lower case latch spring, 50920
33 Retainer ring, 10960
34 Platen lower case latch, 52748
35 Machine screw, 10025
36 Lockwasher, 10430
37 Bellcrank pivot bracket, 52303A
38 Felt washer, 61483
39 Felt washer, 61483
40 Felt washer, 61669
41 Felt washer, 61668
42 Felt washer, 61474
43 Felt washer, 61483

Figure 219. Line feed and platen shift mechanism, exploded view. (Superseded)

Page 245, paragraph 170*a*, subparagraph (12). After the sentence add: Remove the felt washer (40), when supplied, from the platen shift bellcrank.

After subparagraph (15) add:

(15.1) Remove the retainer ring (33, fig. 203) that holds the platen shift link (29, fig. 219) to the stud on the platen shift arm (19, fig. 203).

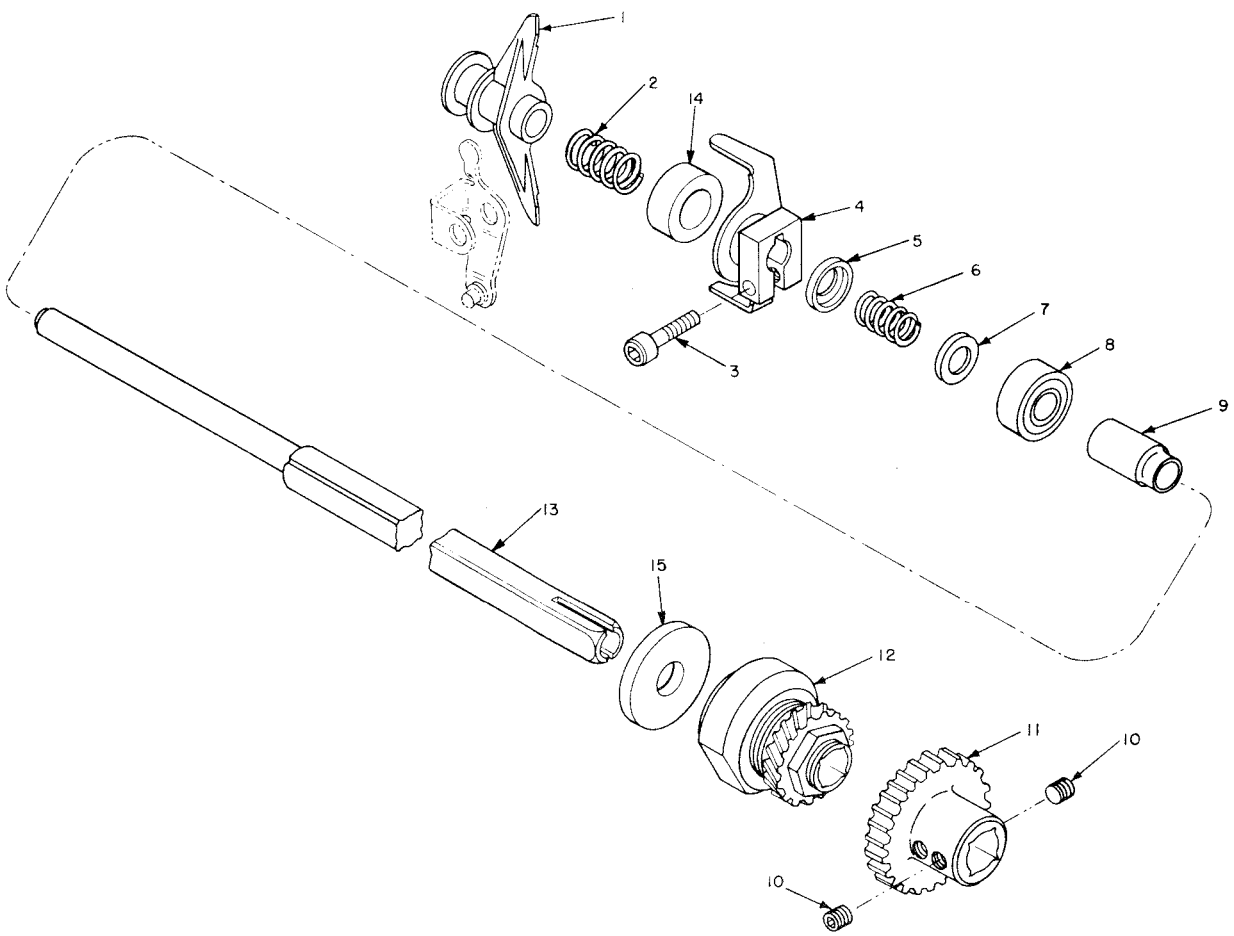
Subparagraph (16), line 1. Change "(28)" to: (28, **fig. 219**).

Subparagraph (17). After the sentence add: Remove the felt washer (41), when supplied, from the bellcrank pivot bracket.

Subparagraph (20). After the sentence add: Catch the felt washer (42), when supplied, as it falls from the pivot post on the bellcrank pivot bracket. Remove the felt washer (43), when supplied, from the pivot post on the bellcrank pivot bracket.

Paragraph 171*a*, subparagraph (3), line 3. After "(2)" add: and felt washer **(14)**, when supplied.

Subparagraph (6), line 4. After **"(12)"** add: and felt washer (15), when supplied,



TM 2246-C7-25

1 Function selecting arm, 50936
2 Function selecting arm spring, 50917
3 Machine screw, 10009
4 Function selecting arm claw, 50841A
5 Spring retainer, 56277
6 Square shaft bearing spring, 56279
7 Spring retainer, 56277
8 Ball bearing, 10753
9 Spacing collar, 56278
10 Setscrew, 10209
11 Square shaft driven gear, 50383
12 Sliding helical gear, 50565A
13 Square shaft, 50456
14 Felt washer, 61487
15 Felt washer, 61484

Figure 220. Square shaft assembly, exploded view. (Superseded)

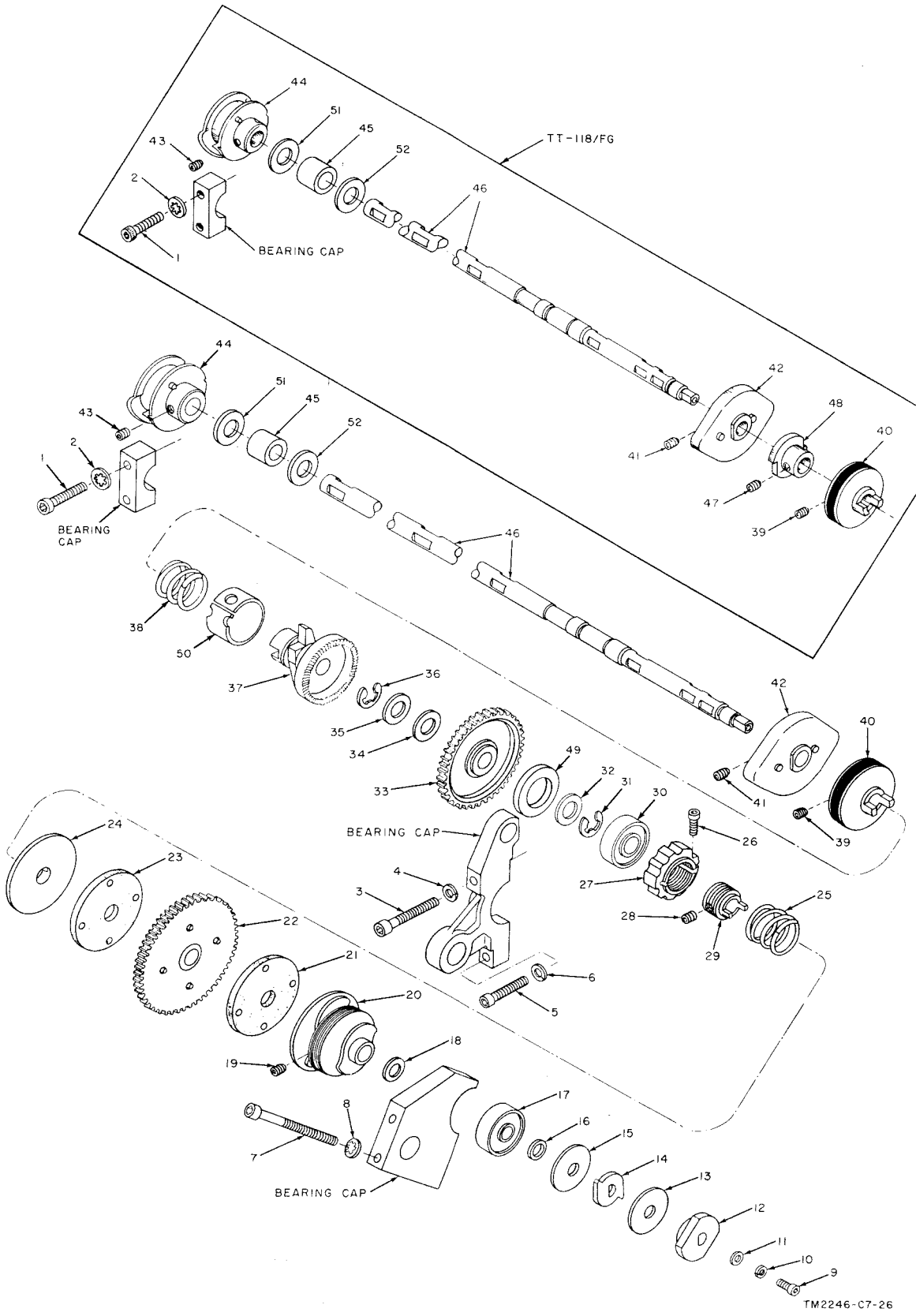


Figure 221. Function shaft, exploded view. (Superseded)

Page 247, paragraph 173*a*, subparagraph (7), line 4. After "(32)" add: felt washer (49), when supplied,

Subparagraph (8), line 3. After "(37)" add: and felt washer (50), when supplied.

1 Machine screw, 10011
2 Lockwasher, 10404
3 Machine screw, 10012
4 Lockwasher, 10430
5 Machine screw, 10011
6 Lockwasher, 10430
7 Machine screw, 10014
8 Lockwasher, 10404
9 Machine screw, 10003
10 Lockwasher, 10429
11 Flat washer, 10458
12 Transfer lever restoring cam, 53878
13 Flat washer, 53885
14 Locking bail cam, 53881
15 Flat washer, 53885
16 Flat washer, 51552
17 Ball bearing, 10756
18 Flat washer, 50552
19 Setscrew, 10208
20 Line feed and platen shift sensing cam, 51612
21 Friction plate, 56764
22 Square shaft driving gear, 56274A
23 Friction plate, 56764
24 Friction clutch plate, 54929
25 Clutch pressure spring, 54933
26 Clamping screw, 10043
27 Friction adjusting collar, 56832A[a]
28 Setscrew, 10209
29 Driving collar, 54927
30 Ball bearing, 10757
31 Retainer ring, 10959
32 Flat washer, 50515
33 Function driven gear, 50512
34 Flat washer, 51847
35 Flat washer, 50515
36 Retainer ring, 10959
37 Function shaft sliding clutch drum, 50516
38 Clutch spring, 50848
39 Setscrew, 10209
40 Flexible coupling disk, 51167A
41 Setscrew, 10209
42 Print cam, 50753A
43 Setscrew, 10209
44 Function cam, 50752
45 Sleeve bearing, 50852
46 Function shaft, 55522
47 Setscrew, 10209
48 Pulsing cam, 53772
49 Felt washer, 61491
50 Felt washer, 61496
51 Felt washer, 61490
52 Felt washer, 61490

[a] Teletypewriters TT-117A/FG, TT-118/FG, and TT-119A/FG.

Figure 221—Continued.

Page 249, paragraph 173*a,* subparagraph (11). After the sentence add: and the felt washer (51), when supplied.

Subparagraph (13), line 1. After "(45)" add: and the felt washer (52) when supplied,

Page 251, figure 223, legend, item 28. Add: **(61316 on TT–269/FG and TT–271/FG).**

Page 253, figure 224. Add the following note:

Note. Later models of the equipment include a felt lubrication washer, 61485, between items 4 and 5.

Legend, item 34. Change "52959" to: **53530A (includes item 35).** Item 35. Delete "52961A." Item 36. Change "50503 (56179[a])" to: **56179.**

Page 254, paragraph 177*a.* After subparagraph (16). Add:

(17) On page printers equipped with a stop bracket (63), remove the two screws (60, fig. 232) and lockwashers (59) that hold the stop bracket (63) to the

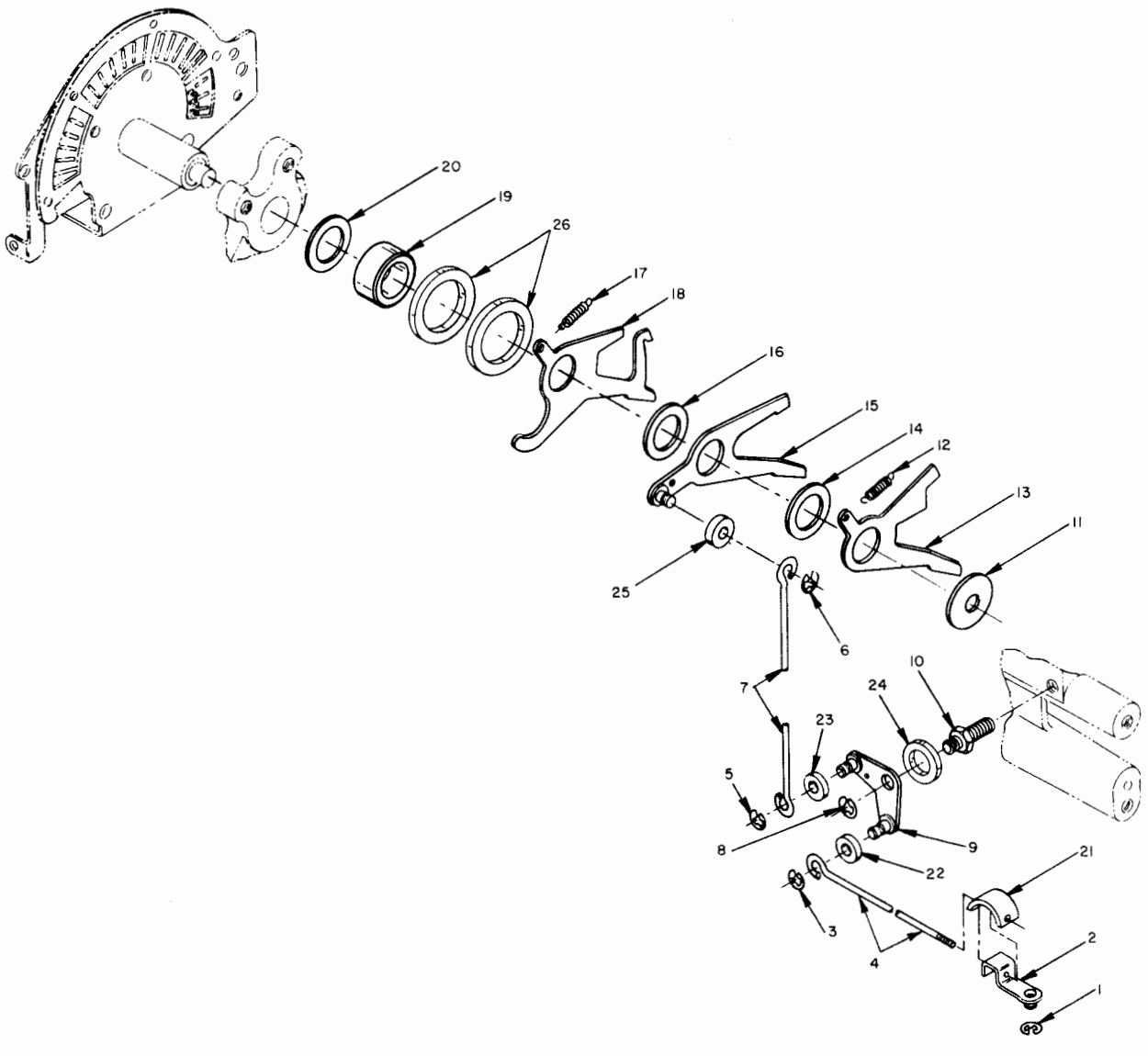


Figure 225. Function sensing lever group, exploded view. (Superseded)

1 Retainer ring, 10960
2 Connector link, 53161A
3 Retainer ring, 10960
4 Horizontal carriage-return link, 50864
5 Retainer ring, 10960
6 Retainer ring, 10960
7 Vertical carriage-return link, 50483
8 Retainer ring, 10948
9 Carriage-return bellcrank, 52121A
10 Carriage-return bellcrank pivot, 52552
11 Flat washer, 50374
12 Line feed sensing lever spring, 51754
13 Line feed sensing lever, 53106
14 Flat washer, 50384
15 Carriage-return sensing lever, 52659A
16 Flat washer, 50384
17 Figure shift sensing lever spring, 51754
18 Figure shift sensing lever, 52749
19 Spacing collar, 50505
20 Tolerance takeup flat washer, 51100
21 Felt strip, 61677
22 Felt washer, 61483
23 Felt washer, 61483
24 Felt washer, 61673
25 Felt washer, 61672
26 Felt washer, 61497

Figure 225—Continued.

code-ring cage guide (39). Remove the stop bracket.

Page 255, paragraph 178*a*. Delete subparagraph (3) and substitute:

(3) Remove the retainer ring (1) from the pivot stud on the connector link (2). Disengage one end of the felt washer (21), when supplied, from the horizontal carriage-return link (4). Remove the connector link from engagement with the double-blocking lever (12, fig. 231) and from the horizontal carriage-return link (4, fig. 225). Remove the felt washer (21), when supplied, from the horizontal carriage-return link.

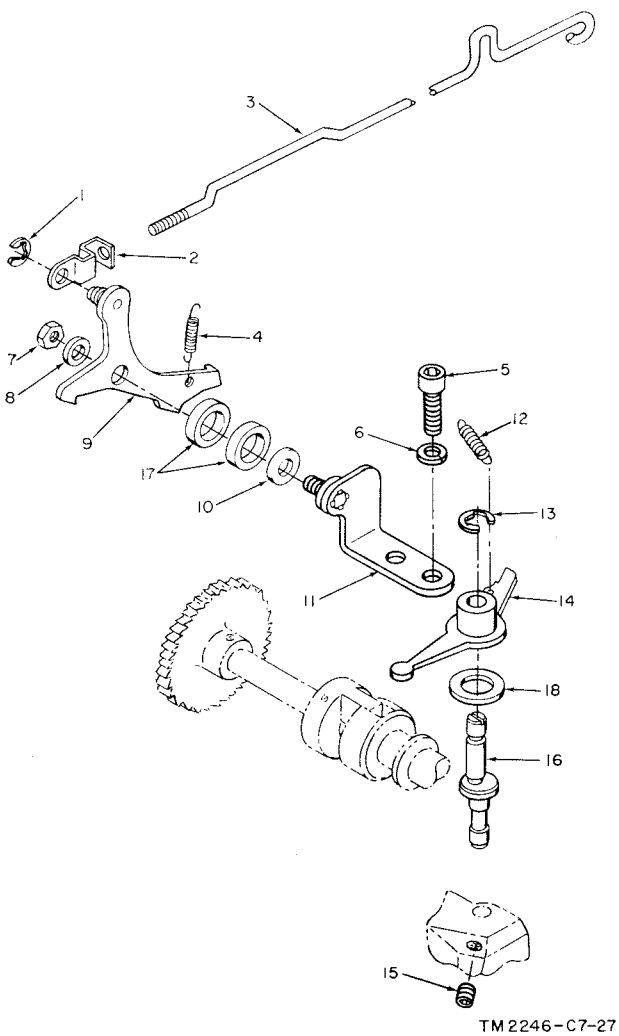
Subparagraph (6). After the sentence add: Remove the four felt washers (22, 23, 24, and 25), when supplied.

Subparagraph (13), line 2. After "(19)" add: the two felt washers (26), when supplied,

Page 259, figure 228, legend, item 12. Change "59620A" to: 52953.

Page 260, paragraph 183*a*, subparagraph (5). After the sentence add: Remove the two felt washers (17), when supplied, from the space pawl mounting bracket pivot stud.

Subparagraph (7). After the sentence add: Remove the felt washer (18), when supplied, from the carriage-feed clutch lever pivot stud.



1 Retainer ring, 10960
2 Connector link, 51783
3 Carriage-feed link, 55504
4 Carriage-feed pawl spring, 50912
5 Machine screw, 10025
6 Lockwasher, 10430
7 Self-locking hexagonal nut, 10500
8 Flat washer, 10450
9 Carriage-feed pawl, 54490A
10 Flat washer, 50827
11 Space pawl mounting bracket, 55788A
12 Carriage-feed clutch lever spring, 50911
13 Retainer ring, 10949
14 Carriage-feed clutch lever, 50005A
15 Setscrew, 10204
16 Stud, 52318
17 Felt washer, 61673
18 Felt washer, 61480

Figure 230. Carriage-feed mechanism, exploded view. (Superseded)

Page 261, paragraph 184, subparagraph *a*(1). After the sentence add: Remove the felt washer (23), when supplied.

Subparagraph *a*(2). After the last sentence add: Remove the felt washer (24), when supplied, from the hub of the double-blocking lever (12).

Subparagraph *a*(3). After the sentence add: Catch the two felt washers (25), when supplied, as they fall from the carriage-return clutch latch lever.

Subparagraph *b*, after subparagraph (3) add:

(3.1) Position the two felt washers (25), when supplied, inside the carriage-return clutch latch lever (15).

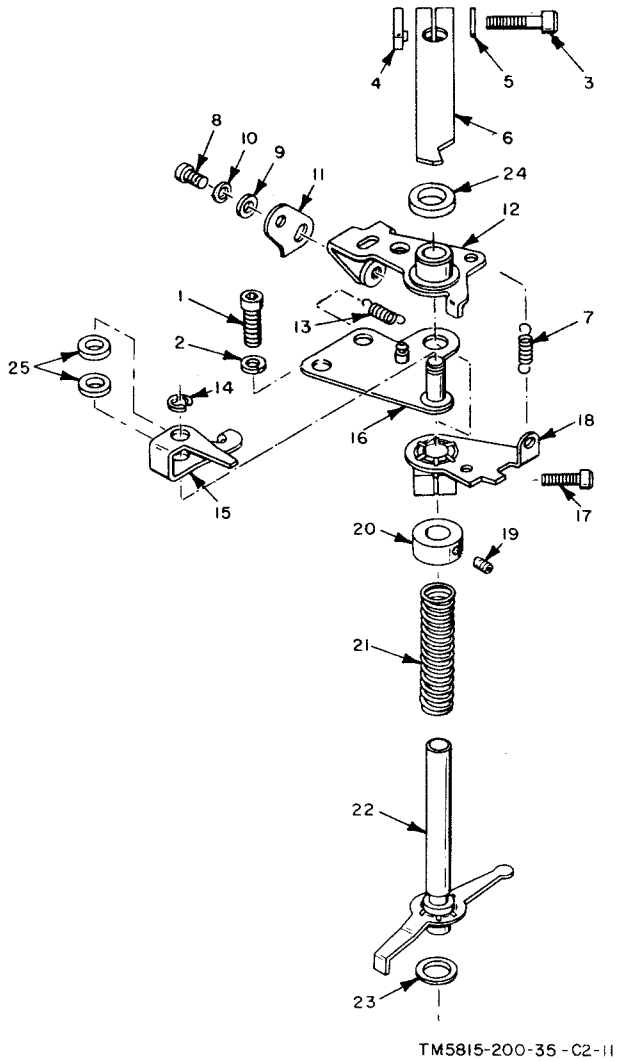


Figure 231. Carriage-return operating mechanism, exploded view. (Superseded)

Page 262, paragraph 184*b*(8). After the first sentence add: Install the felt washer (24), when supplied, on the hub of the double-blocking lever (12). After the last sentence add: Install the felt washer (23), when supplied, on the end of the carriage-return clutch lever (22).

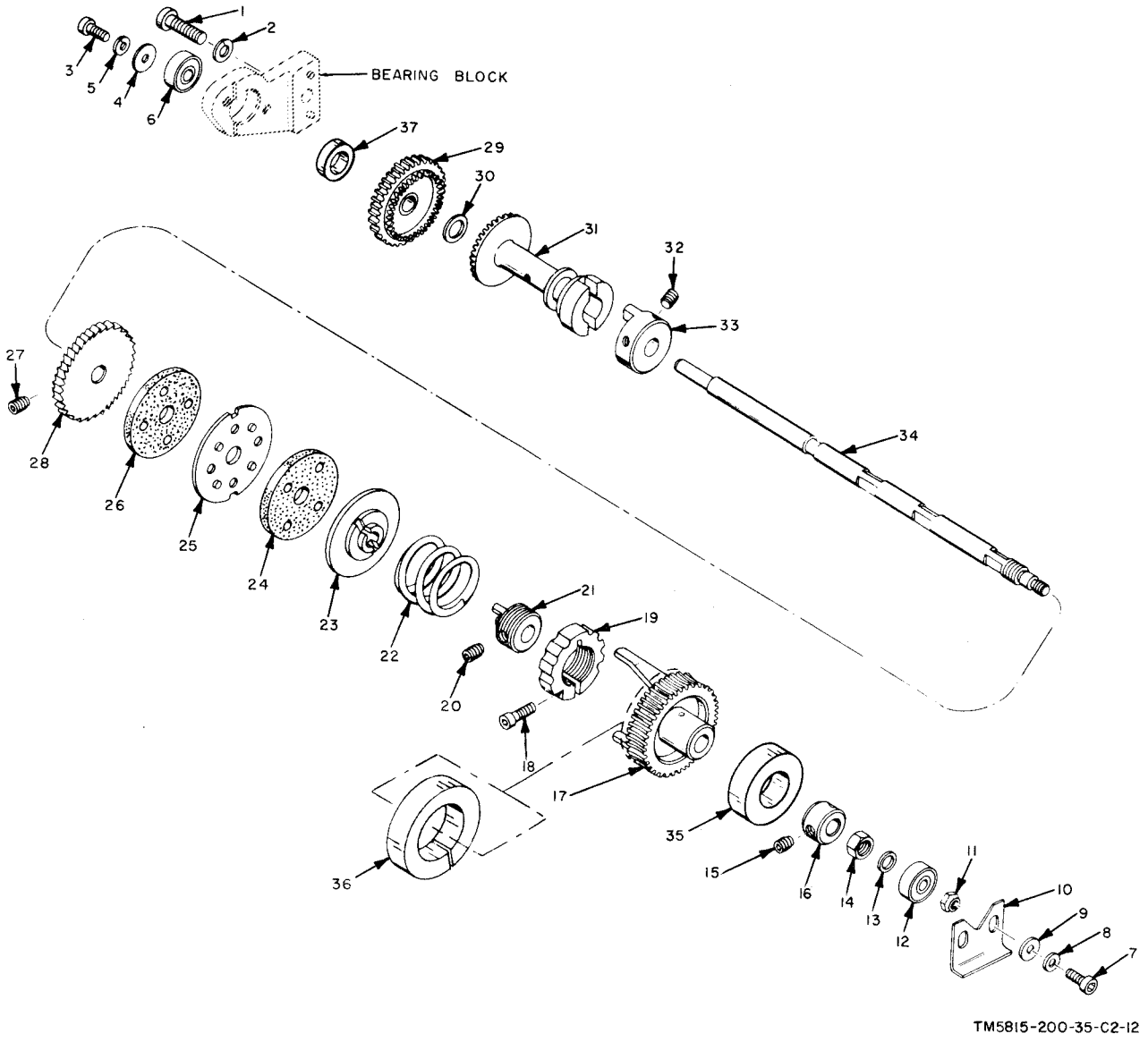
Page 265, paragraph 187, subparagraph *a*(5). After the sentence add: Remove the felt washer (37), when supplied.

Subparagraph *b*. After subparagraph (3) add:

(3.1) Install the felt washer (37) on the carriage-feed shaft.

1 Machine screw, 10008
2 Lockwasher, 10430
3 Machine screw, 10006
4 Clamp nut, 50174
5 Flat washer, 10459
6 Throwout lever, 56283
7 Carriage-return clutch actuating lever spring, 56258
8 Machine screw, 10003
9 Flat washer, 10458
10 Lockwasher, 10429
11 Adjusting plate, 56237
12 Double-blocking lever 56265A
13 Double-blocking lever spring, 50946
14 Retainer ring, 10949
15 Carriage-return clutch latch lever, 50011
16 Clutch latch mounting plate, 53163A
17 Machine screw, 10009
18 Carriage-return clutch actuating lever, 56241A
19 Setscrew, 10209
20 Shaft collar, 50209
21 Spring, 52259
22 Carriage-return clutch lever, 56243A
23 Felt washer, 61485
24 Felt washer, 61667
25 Felt washer, 61474

Figure 231—Continued.



1 Machine screw, 10017
2 Lockwasher, 10405
3 Machine screw, 10003
4 Flat washer, 10450
5 Lockwasher, 10429
6 Ball bearing, 10755
7 Machine screw, 10003
8 Flat washer, 10459
9 Lockwasher, 10429
10 Bearing retainer, 55020
11 Self-locking hexagonal nut, 10500
12 Ball bearing, 10755
13 Flat washer, 51408
14 Adjusting nut, 51079
15 Setscrew, 10209
16 Shaft collar, 50209
17 Carriage-feed driven gear, 54930A
18 Clamping screw, 10052 (10043 on TT–117A/FG, TT–118/FG, and TT–119A/FG)
19 Adjusting collar, 54926 (56832A on TT–117A/FG, TT–118/FG, and TT–119A/FG)
20 Setscrew, 10208
21 Drive shaft collar, 54928
22 Friction clutch spring, 54934
23 Friction clutch plate, 54931
24 Friction plate, 56765
25 Clutch driving disk, 51117
26 Friction plate, 56765
27 Setscrew, 10209
28 Ratchet wheel, 50201 (60479A, TT–118/FG)
29 Carriage-feed driving gear, 50884A (60478A TT–118/FG)
30 Flat washer, 50887
31 Carriage-feed sliding clutch drum, 50331
32 Setscrew, 10209
33 Shaft collar, 50336 (59447 on TT–117A/FG, TT–118/FG, and TT–119A/FG)
34 Carriage-feed shaft, 50525
35 Felt washer, 61494
36 Felt washer, 61495
37 Felt washer, 61678

Figure 234. Carriage feed shaft, exploded view. (Superseded)

Page 271, figure 237, legend, item 24. Add: (61317 on TT–269/FG and TT–271/FG).

Page 277. Add paragraphs 196.1 and 196.2 after paragraph 196.

196.1. Removal and Replacement of Transmitter-Distributor Pulsing Control Box (AN/FGC–52 and AN/FGC–52X)
(fig. 240.1)

a. Removal.

(1) Remove the transmitter-distributor pulsing control box plug (18) from the jack in the perforator base.

(2) Remove the transmitter-distributor plug from the jack J301 (44) in the transmitter-distributor pulsing control box.

(3) Remove the five machine screws (1) and lockwashers (2) that hold the cover assembly (79) to the base (6); remove the cover assembly.

(4) Remove the two machine screws (3), lockwashers (4), and flat washers (5) that hold the base (6) on the table.

b. Replacement.

(1) Install the base (6) on the table with the mounting holes towards the front and secure with the two machine screws, lockwashers, and flat washers (*a*(4) above).

(2) Replace the cover assembly (79) by reversing the procedures in *a*(1) through (3) above.

196.2. Disassembly and Reassembly of Transmitter-Distributor Pulsing Control Box (AN/FGC–52 and AN/FGC–52X)
(fig. 240.1)

a. Disassembly.

(1) Remove the transmitter-distributor pulsing control box (par. 196.1).

(2) Remove the hexagonal nut (7), leads (8 and 9), machine screw (10), and lockwasher (11).

(3) Remove the hexagonal nut (12), lead (13), and lockwasher (14) from the binding post (53).

(4) Remove the hexagonal nut (15), lead (16), and lockwasher (17) from the binding post (58).

(5) Remove the strain relief (19) from the front of the transmitter-distributor pulsing control box. Disconnect the wire leads of the cable assembly (20) and tag the leads to facilitate reassembly. Remove the cable assembly.

(6) Disconnect the wire leads of the harness (21) and remove the harness.

(7) Disconnect the leads of filter FL301 (26). Remove the hexagonal nut (22), lockwasher (23), and machine screw (24). Remove the cable clamp (25) and filter (26).

(8) Release the tube clamp (31) and remove the mercury relay (27).

(9) Remove the hexagonal nut (28), lockwasher (29), and machine screw (30). Remove the tube clamp (31).

(10) Remove two machine screws (32) and two lockwashers (33). Remove the socket (34).

(11) Remove the hexagonal nut (35), lockwasher (36), flat washers (37 and 38), resistor R301 (39), flat washer (40), fiber washer (41), and machine screw (42).

(12) Remove the hexagonal nut (43) and jack J301 (44).

(13) Remove the hexagonal nuts (45 and 46). Remove resistor R302 (48) and the lockwasher (47).

(14) Remove the hexagonal nut (49), flat washers (50 and 51), insulator (52), and binding post (53).

(15) Remove the hexagonal nut (54), flat washers (55 and 56), insulator (57), and binding post (58).

(16) Remove the hexagonal nut (59), lockwasher (60), flat washers (61 and 62), resistor R303 (63), flat washer (64), insulator (65) and machine screw (66).

(17) Remove the hexagonal nut (67), lockwasher (68) and the CHARACTER PULSE toggle switch S302 (69). Remove the hexagonal nut (70).

(18) Remove the plain hexagonal nut (71), lockwasher (72), and switch S301 (73). Remove the hexagonal nut (77).

b. Reassembly. Reassemble the transmitter-distributor pulsing control box as indicated in figure 240.1; the sequence for assembling the parts is the reverse of the disassembly sequence.

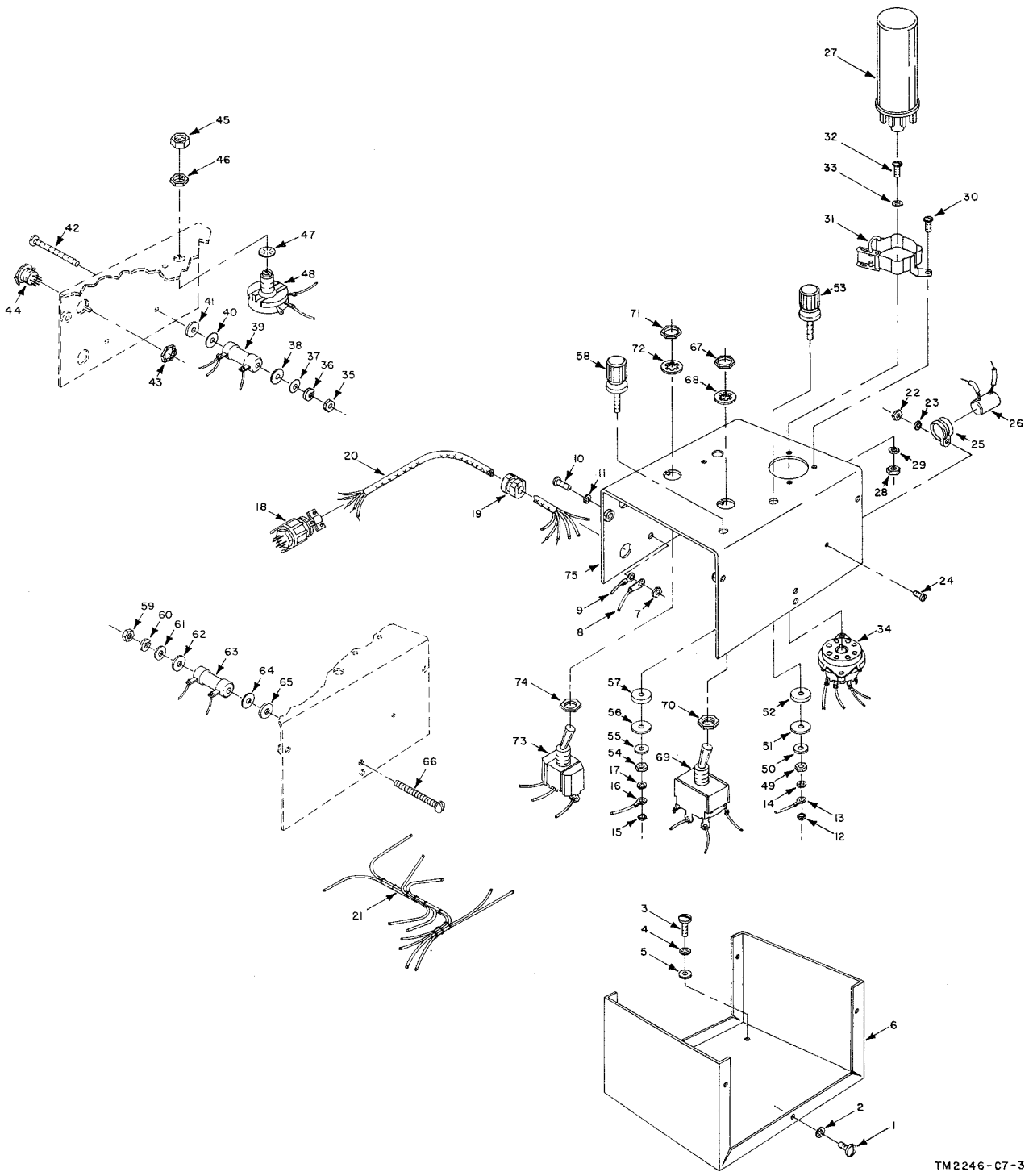


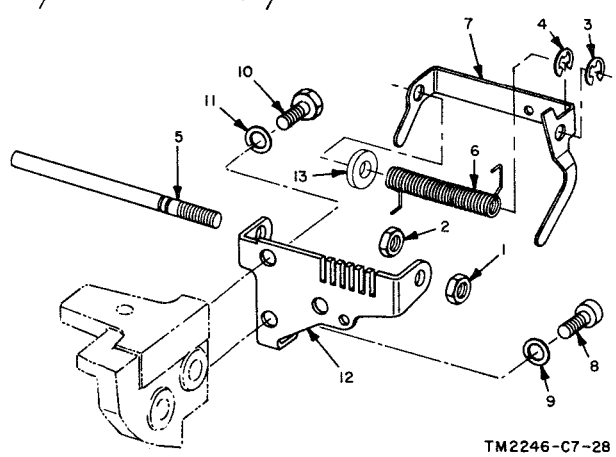
Figure 240.1. Transmitter-distributor pulsing control box, exploded view. (Added)

1 Machine screw, 10252
2 Lockwasher, 10404
3 Machine screw, 10011
4 Lockwasher, 10404
5 Flat washer, 10454
6 Base, 61875A
7 Hexagonal nut, 10515
8 Terminal lug, 20807
9 Lead, 20838
10 Machine screw, 10252
11 Lockwasher, 10404
12 Hexagonal nut, 10507
13 Lead, 20838
14 Lockwasher, 10404
15 Hexagonal nut, 10507
16 Lead, 20355
17 Lockwasher, 10404
18 Plug (P301), 20419
19 Strain relief, 20913
20 Cable assembly (includes items 8 and 18), 62036A
21 Harness, 62035A
22 Hexagonal nut, 10517
23 Lockwasher, 10432
24 Machine screw, 10375
25 Cable clamp, 20526
26 Filter (FL301)
27 Mercury relay, 20317
28 Hexagonal nut, 10512
29 Lockwasher, 10415
30 Machine screw, 10357
31 Tube clamp, 20543
32 Machine screw, 10111
33 Lockwasher, 10429
34 Socket, 20275
35 Hexagonal nut, 10515
36 Lockwasher, 10430
37 Flat washer, 10463
38 Flat washer, 57311
39 Resistor (R301), 20071
40 Flat washer, 57311
41 Fiber washer, 51481
42 Machine screw, 10130
43 Hexagonal nut
44 Jack (J301), 20262 (includes item 43)
45 Hexagonal nut
46 Hexagonal nut, 10529
47 Lockwasher, 10419
48 Resistor (R302), 20023 (includes item 45)
49 Hexagonal nut, 10515
50 Flatwasher, 10463
51 Flat washer, 50515
52 Insulator, 50909
53 Binding post, 20877
54 Hexagonal nut, 10515
55 Flat washer, 10463
56 Flat washer, 50515
57 Insulator, 50909
58 Binding post, 20877
59 Hexagonal nut, 10515
60 Lockwasher, 10430
61 Flat washer, 10463
62 Flat washer, 57311
63 Resistor R303, 20072
64 Flat washer, 57311
65 Insulator, 51481
66 Machine screw, 10130
67 Hegaxonal nut
68 Lockwasher, 10414
69 Toggle switch, 20121 (includes items 67, 68, and 70)
70 Hexagonal nut
71 Hexagonal nut
72 Lockwasher, 10414
73 Toggle switch, 20117 (includes items 71, 72, and 74)
74 Hexagonal nut
75 Cover Assembly, 62039A

Figure 240.1—Continued.

Paragraph 197*a*(1) and *b*(3). After "base" add: (or transmitter-distributor pulsing control box on the TT–270/FG and TT–272/FG).

Page 280, figure 242 legend, item 6. Add: (59711 on TT–270/FG and TT–272/FG).



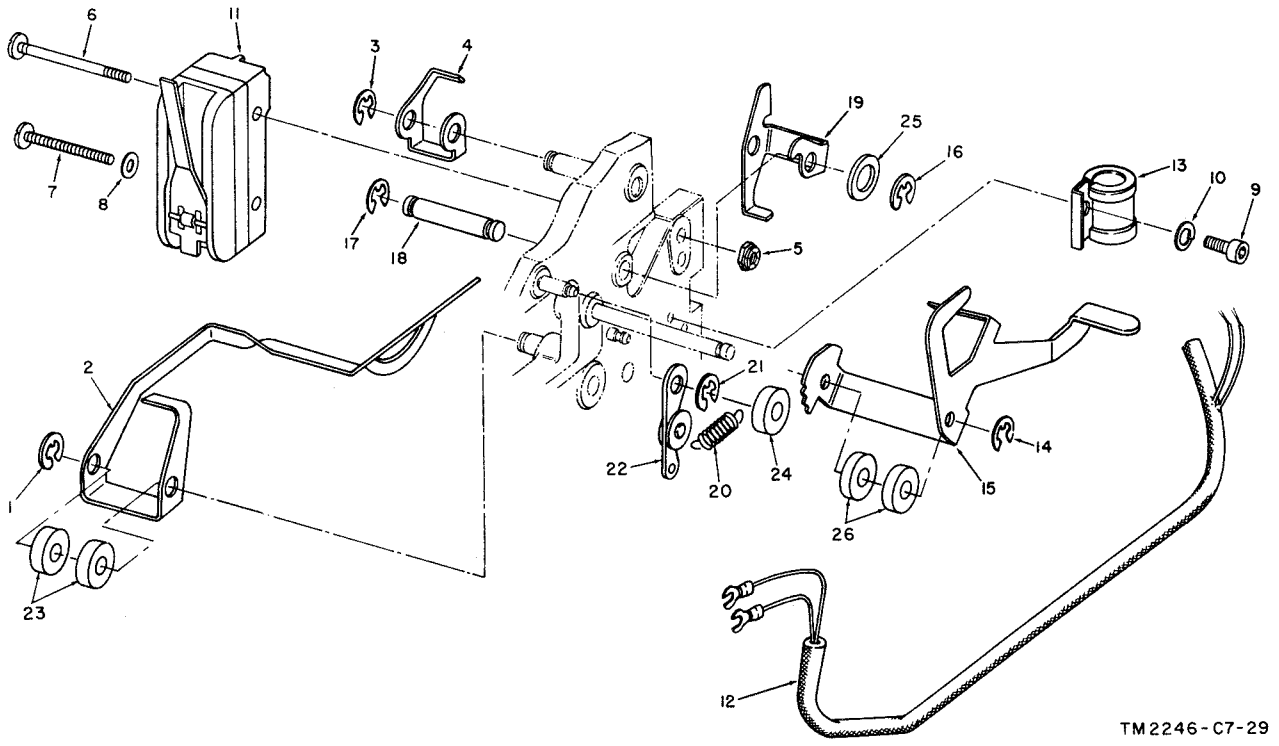
1 Plain hexagonal nut, 10504
2 Plain hexagonal nut, 10504
3 Retainer ring, 10969
4 Retainer ring, 10969
5 Tape-out lever pivot shaft, 52718
6 Tape-out lever spring, 53156
7 Tape-out lever, 52824
8 Machine screw, 10003
9 Lockwasher, 10429
10 Machine screw, 10398
11 Lockwasher, 10429
12 Code sensing lever guide, 52861
13 Felt washer, 61474

Figure 243. Tape-out sensing mechanism, exploded view. (Superseded)

Page 281, paragraph 200, subparagraph *a*(4), line 7. After "(6)" add: felt washer (13), when supplied.

Subparagraph *b*(2), line 1. After "(7)" add: felt washer (13), when supplied.

Page 283, paragraph 201*a*, subparagraph (9). After the sentence add: Catch the two felt washers (24), when supplied, as they fall from the start-stop lever.



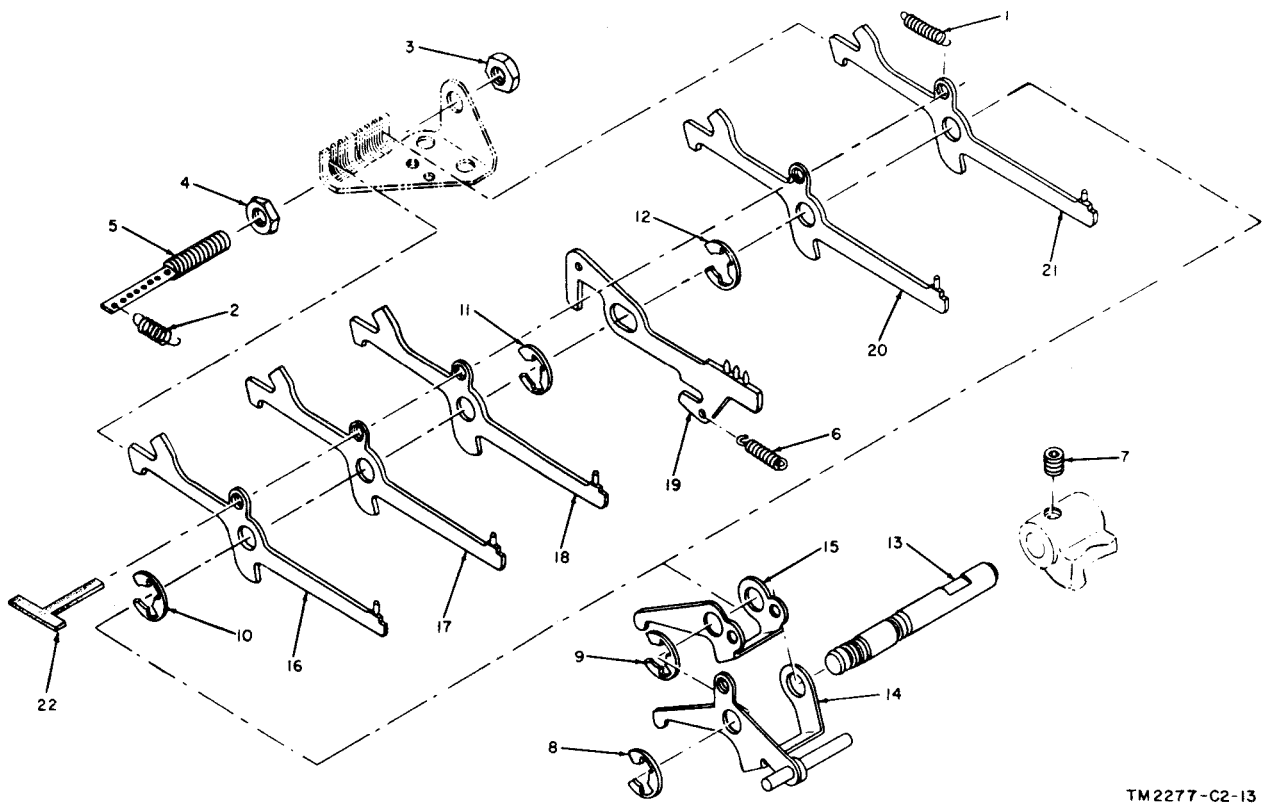
1 Retainer ring, 10949
2 Tight-tape lever, 52810
3 Retainer ring, 10949
4 Upper switch bail lever, 52811
5 Self-locking hexagonal nut, 10500
6 Machine screw, 10385
7 Machine screw, 10359
8 Flat washer, 10459
9 Machine screw, 10003
10 Lockwasher, 10429
11 Start-stop switch (S17), 20108
12 Wiring harness, 53339
13 Electrical clamp, 20507
14 Retainer ring, 10949
15 Start-stop lever, 52863
16 Retainer ring, 10949
17 Retainer ring, 10949
18 Pin, 52872
19 Lower switch bail lever, 52812
20 Start-stop lever detent spring, 53149
21 Retainer ring, 10499
22 Start-stop lever detent, 50404 (57206A on TT–270/FG and TT–272/FG).
23 Felt washer, 61474
24 Felt washer, 61474
25 Felt washer, 61477
26 Felt washer, 61474

Figure 244. Transmitter-distributor operating levers, exploded view. (Superseded)

Page 282, paragraph 201*a*(3). After the sentence add: Catch the two felt washers (23), when supplied, as they fall from the tight-tape lever.

Subparagraph (10), line 2. After "(17)" add: and felt washer (25), when supplied.

Subparagraph (12), line 1. After "(21)" add: the felt washer (26), when supplied.

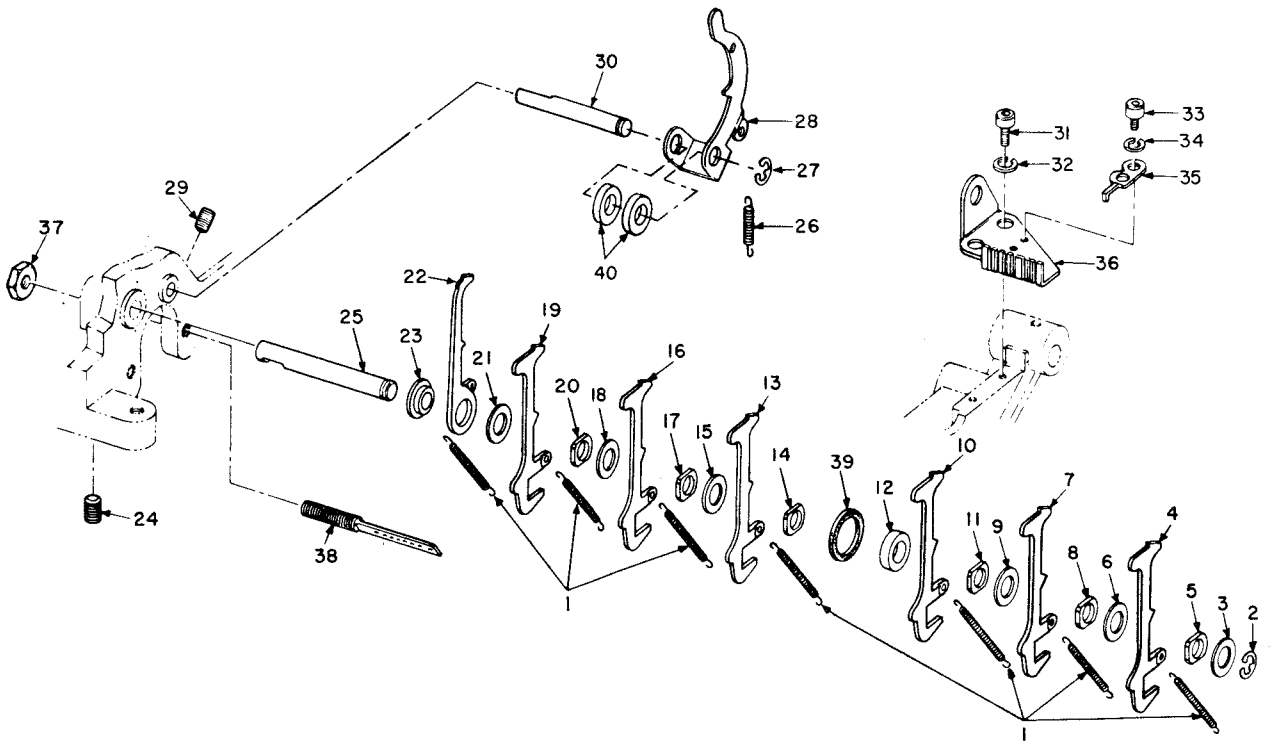


1 Code sensing lever spring, 53152
2 Tape feed retracting lever spring, 53154
3 Plain hexagonal nut, 10509
4 Plain hexagonal nut, 10509
5 Code sensing lever spring post, 50325
6 Tape feed claw spring, 53153
7 Setscrew, 10209
8 Retainer ring, 10957
9 Retainer ring, 10957
10 Retainer ring, 10957
11 Retainer ring, 10957
12 Retainer ring, 10957
13 Code sensing lever stud, 52835
14 Tape feed retracting lever, 52829A
15 Sensing lever restoring bail, 52858
16 Code sensing lever, 52843A (includes items 17, 18, 20, 21)
17 Code sensing lever
18 Code sensing lever
19 Tape feed claw, 52836
20 Code sensing lever
21 Code sensing lever
22 T-shaped felt washer, 61460

Figure 245. Transmitter-distributor code sensing levers, exploded view. (Superseded)

Page 284, paragraph 203*a*, subparagraph (4). After the last sentence add: Remove the felt washer (39), when supplied, from the spacer collar.

Subparagraph (7). After the sentence add: Catch the two felt washers (40), when supplied, as they fall from the tape feed lever.



1 Selector lever spring, 50902
2 Retainer ring, 10949
3 Flat washer, 50147
4 Selector lever, 51598A (includes items, 7, 10, 13, 16 and 19)
5 Bearing shoe, 51644A
6 Flat washer, 50147
7 Selector lever
8 Bearing shoe
9 Flat washer, 50147
10 Selector lever
11 Bearing shoe
12 Spacer collar, 52833
13 Selector lever
14 Bearing shoe
15 Flat washer, 50147
16 Selector lever
17 Bearing shoe
18 Flat washer, 50147
19 Selector lever
20 Bearing shoe
21 Flat washer, 50147
22 Camshaft stop lever, 53613 (62020 on TT–270/FG and TT–272/FG)
23 Sleeve bearing, 52834
24 Setscrew, 10210
25 Selector lever stud, 52840
26 Tape feed lever spring, 53149
27 Retainer ring, 10949
38 Tape feed lever, 52845
29 Setscrew, 10210
30 Tape feed lever stud, 52842
31 Machine screw, 10003
32 Lockwasher, 10429
33 Machine screw, 10002
34 Lockwasher, 10429
35 Stop selector lever latch, 55870
36 Selector lever comb, 52841 (62019 on TT–270/FG and TT–272/FG)
37 Plain hexagonal nut, 10509
38 Anchor post, 50325
39 Felt washer, 61479
40 Felt washer, 61474

Figure 246. Transmitter-distributor selector levers, exploded view. (Superseded)

Page 286, paragraph 205, subparagraph *a*(6), line 2. Change "washer" to: **washers.**

Delete subparagraph *a*(9) and substitute:

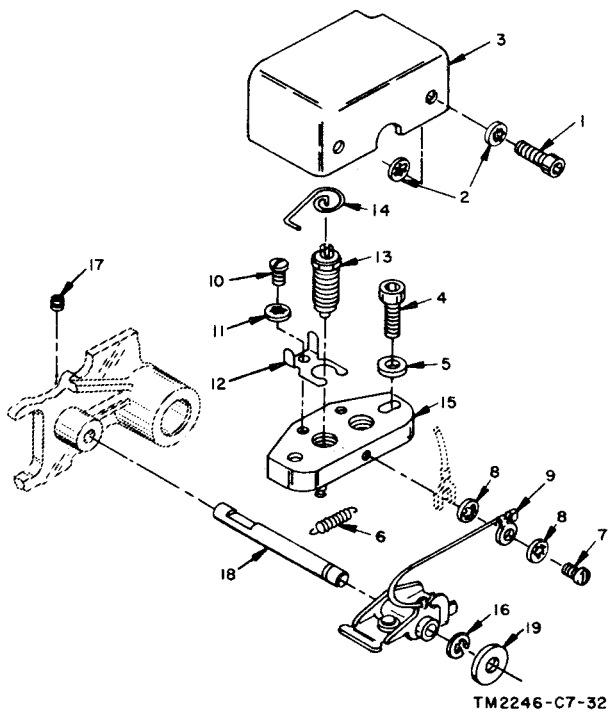
(9) Remove the felt washer (19), when supplied, from the post (18). Remove the retainer ring (16) and transmitter contact bail (9) from the post. Remove the setscrew (17) and the post (18).

Subparagraph *b*. Delete subparagraph (1) and substitute:

(1) Install the post (18) in the frame and secure it with the setscrew (17). Install the transmitter contact bail (9) on the post and secure it with the retainer ring (16). Install the felt washer (19), when supplied, on the post.

Page 287, figure 247, legend, Item 5. Add: (61403 on TT–270/FG and TT–272/FG).

Figure 252, legend, item 15. Change "10545" to: **10454.**



1 Machine screw, 10001
2 Lockwasher, 10403
3 Transmitter contact cover, 52808A
4 Machine screw, 10009
5 Lockwasher, 10403
6 Transmitter contact bail spring
7 Machine screw, 10301
8 Lockwasher, 10403
9 Transmitter contact bail E6, 51582A
10 Machine screw, 10301
11 Lockwasher, 10403
12 Transmitter contact terminal, 51597
13 Stationary contact (E6), 51588A
14 Electrical wire, 51610
15 Contact holder mounting, 51595A
16 Retainer ring, 10949
17 Setscrew, 10209
18 Post, 52839
19 Felt washer, 61476

Figure 248. Transmitter-distributor contacts, exploded view. (Superseded)

Item 9. Add: (61322 on TT–270/FG and TT–272/FG).

Page 291, figure 249 legend, item 29. Add: (62018A on TT–270/FG and TT–272/FG).

Page 295, figure 252. Add the following note to figure 252.

Note. Later models of the equipment include a felt lubrication washer, 61478, between items 12 and 18.

Page 299, figure 255. Add the following note to figure 255.

Note. Later models of the equipment include a felt lubrication washer, 61482, between items 11 and 18.

Page 313, paragraph 225*a*(4). After the sentence add: Remove the two felt washers (54), when supplied.

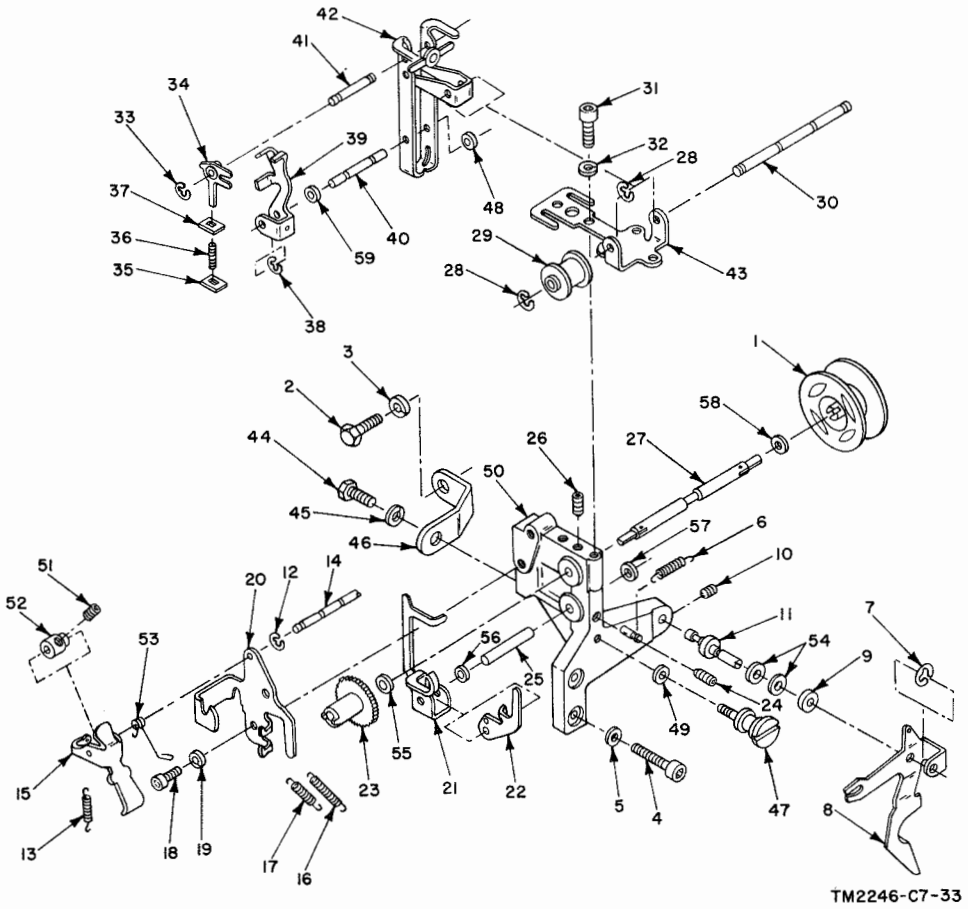


Figure 264. Ribbon supply group, exploded view. (Superseded)

Page 315, paragraph 225*a*, subparagraph (11). After the last sentence add: Remove the felt washer (55), when supplied.

Delete subparagraph (12) and substitute:

(12) Remove the setscrew (24) that holds the sensing lever shaft (25) in the ribbon feed mounting bracket (50). Remove the felt washers (56 and 57), when supplied. Remove the sensing lever shaft.

Subparagraph (13). After the sentence add: Remove the felt washer (58), when supplied, from the ribbon spool shaft.

Subparagraph (17), line 4. After "levers" add: and felt washers (48 and 59), when supplied.

---

1 Ribbon spool
2 Machine screw, 10397
3 Lockwasher, 10431
4 Machine screw, 10028
5 Lockwasher, 10430
6 Ribbon feed cam follower spring, 52602
7 Retainer ring, 10949
8 Ribbon feed cam follower, 56234
9 Flat washer, 50827
10 Setscrew, 10210
11 Eccentric stud, 52585
12 Retainer ring, 10969
13 Ribbon retainer lever spring, 52603
14 Ribbon retainer shaft, 53178
15 Ribbon retainer lever, 57062
16 Ribbon feed detent lever spring, 52604
17 Sensing lever spring, 52603
18 Machine screw, 10001
19 Lockwasher, 10429
20 Left-hand holding clip bracket, 56226A
Right-hand holding clip bracket, 56228A
21 Left-hand sensing lever, 52597
Right-hand sensing lever, 52596
22 Left-hand ratchet feed detent lever, 52610A
Right-hand ratchet feed detent lever, 52611A
23 Left-hand ribbon feeding detent wheel, 52591A
Right-hand ribbon feeding detent wheel, 52590A
24 Setscrew, 10210
25 Sensing lever shaft, 52595
26 Setscrew, 10210
27 Ribbon spool shaft, 56231A
28 Retainer ring, 10949
29 Ribbon roller, 52608
30 Ribbon roller shaft, 52601
31 Machine screw, 10008
32 Lockwasher, 10430
33 Retainer ring, 10969
34 Left-hand ribbon reversing arm, 52705
Right-hand ribbon reversing arm, 52704
35 Spring washer, 53427
36 Contact plunger spring, 51593
37 Spring washer, 53427
38 Retainer ring, 10969
39 Left-hand ribbon feed lever, 52605
Right-hand ribbon feed lever, 52607
40 Ribbon feed pawl shaft, 52609
41 Reversing arm shaft, 52703
42 Driving link lever, 52622
43 Roller bracket, 52598
44 Machine screw, 10397
45 Lockwasher, 10431
46 Ribbon feed brace, 52581
47 Stud, 57063
48 Felt washer, 61478
49 Lockwasher, 10430
50 Ribbon feed mounting bracket, 52512A
51 Setscrew, 10201
52 Ribbon retainer lever collar, 57061
53 Left-hand sensing lever retracting lever, 57059
54 Felt washer, 61474
55 Felt washer, 61476
56 Felt washer, 61478
57 Felt washer, 61478
58 Felt washer, 61476
59 Felt washer, 61478

Figure 264—Continued.

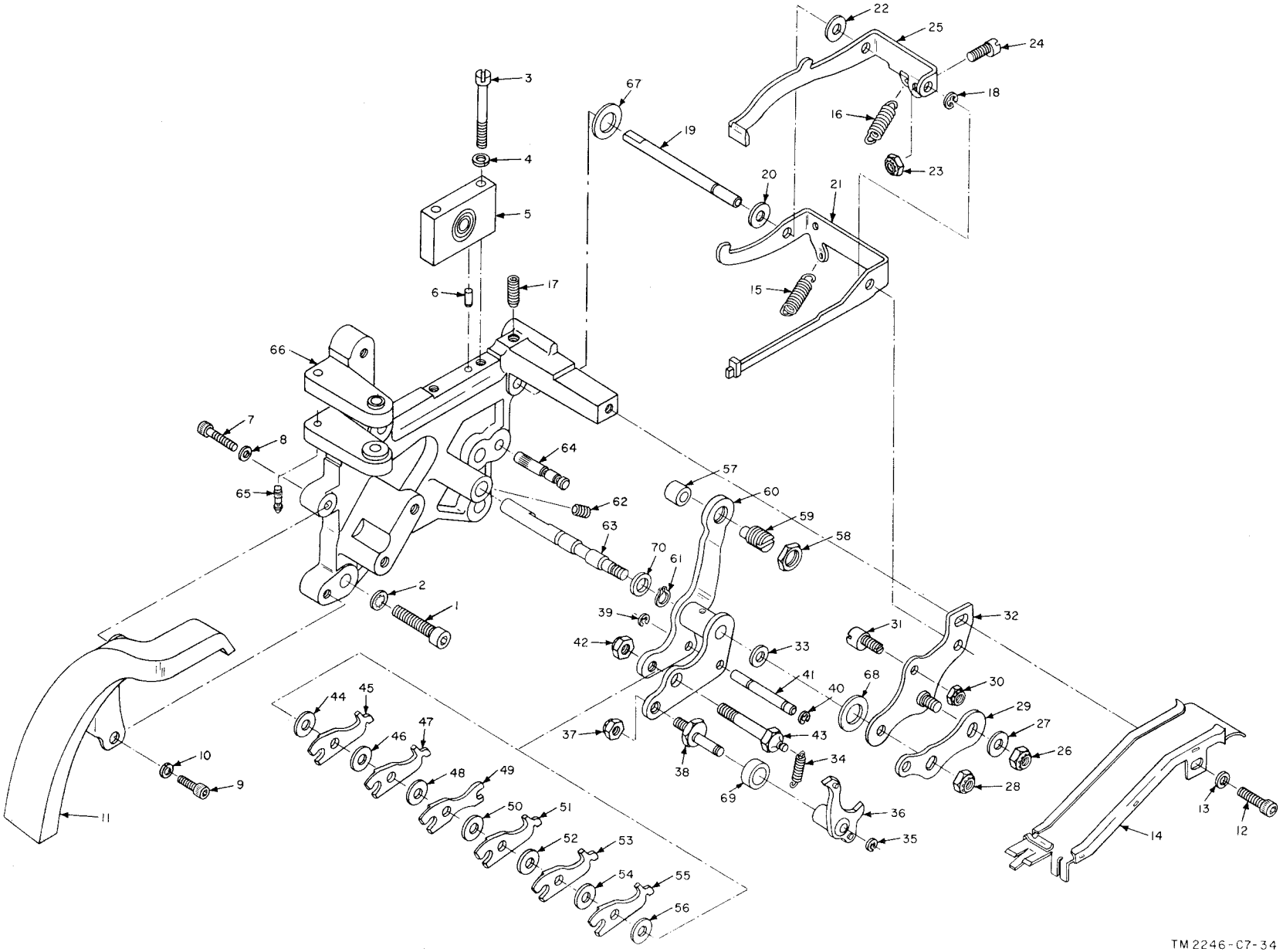


Figure 265. Front support assembly, exploded view. (Superseded)

Page 317, paragraph 227*a*(7). After the sentence add: Catch the two felt washers (27), when supplied, as they fall from the detent lever.

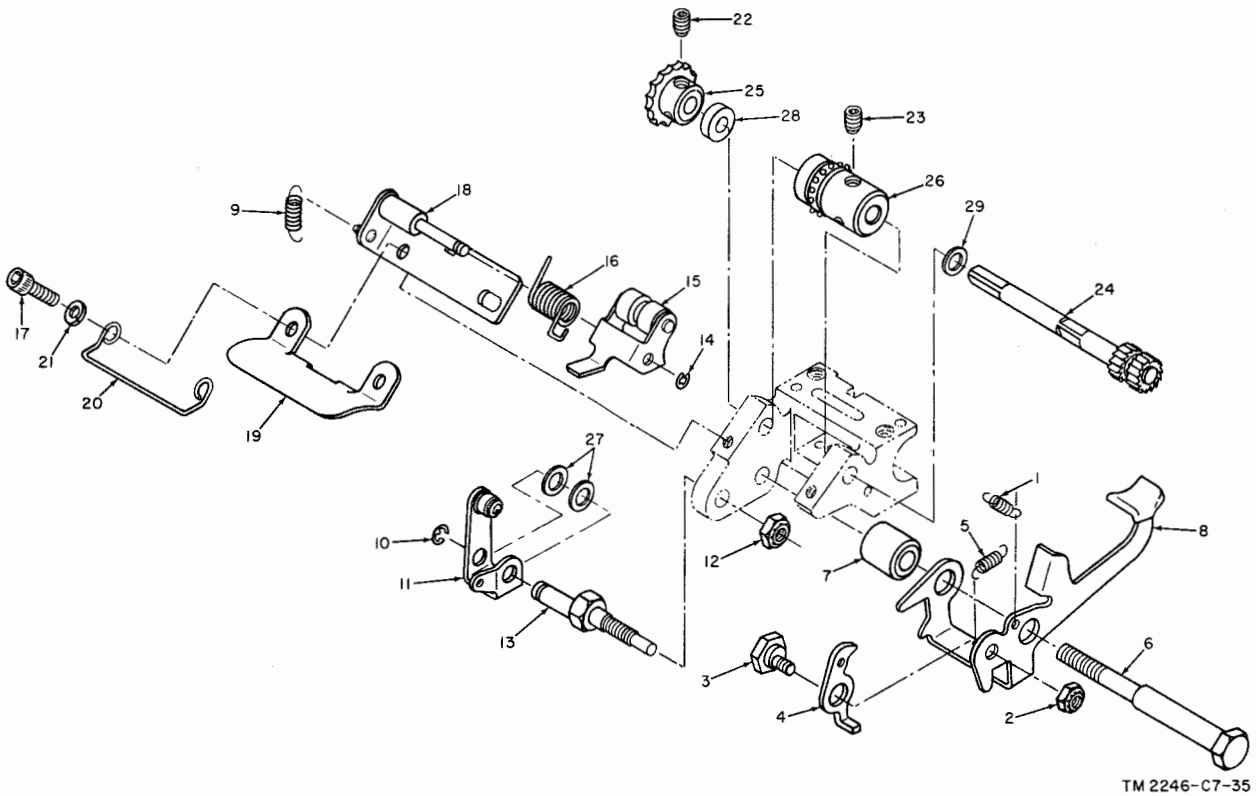
Page 318, paragraph 227, subparagraph *a*(11), line 7. After "wheel" add: felt washers (28 and 29), when supplied.

Subparagraph *b*(1), line 1. After "(26)" add: the two felt washers (28 and 29), when supplied,

Subparagraph *b*(5), line 1. After "(11)" add: and the two felt washers (27), when supplied.

1 Machine screw, 10035–01
2 Lockwasher, 10405
3 Machine screw, 10063
4 Lockwasher, 10430
5 Bearing block
6 Dowel
7 Machine screw, 10010
8 Lockwasher, 10430
9 Machine screw, 10025
10 Lockwasher, 10430
11 Chad tube, 55760A
12 Machine screw, 10009
13 Lockwasher, 10430
14 Tape chute, 52489A
15 Print hammer lever spring, 52163
16 Register lever spring, 56158
17 Setscrew, 10211
18 Retainer ring, 10949
19 Print and register levers shaft, 52486
20 Flat washer, 52651
21 Print hammer lever, 52436A
22 Flat washer, 52651
23 Self-locking hexagonal nut, 10501
24 Print hammer eccentric stop, 52485
25 Type wheel register lever, 52432
26 Self-locking hexagonal nut, 10525
27 Flat washer, 10464
28 Self-locking hexagonal nut, 10525
29 Adjusting plate, 52493
30 Self-locking hexagonal nut, 10501 (TT–178/FG and TT–179/FG only)
31 Eccentric stop, 52485 (TT–178/FG and TT–179/FG only)
32 Support plate, 52321A
33 Flat washer, 52651
34 Feed pawl spring, 55164
35 Retainer ring, 10960
36 Feed pawl assembly, 52331A
37 Self-locking hexagonal nut, 10501
38 Feed pawl pivot, 52329
39 Retainer ring, 10960
40 Retainer ring, 10960
41 Code and feed hole punch lever stop pin, 52327
42 Self-locking hexagonal nut, 10525
43 Pivot stud, 52409
44 Flat washer, 52446
45 Code hole punch lever, 52346
46 Flat washer, 52446
47 Code hole punch lever, 52346
48 Flat washer, 52446
49 Feed punch lever, 52347
50 Flat washer, 52446
51 Code hole punch lever, 52346
52 Flat washer, 52446
53 Code hole punch lever, 52346
54 Flat washer, 52446
55 Code hole punch lever, 52346
56 Flat washer, 22446
57 Cam roller, 52354
58 Plain hexagonal nut, 10526
59 Eccentric stud, 52365
60 Punch arm assembly, 52337A
61 Retainer ring, 10971
62 Setscrew, 10210
63 Punch arm pivot post, 52345
64 Register and print levers spring post
65 Spring post
66 Front support frame, 55130A (includes items 3, 4, 5, 6, 64, 65 and items 1, 2, 3, and 4 of figure 272).
67 Felt washer, 61670
68 Felt washer, 61670
69 Felt washer, 61472
70 Felt washer, 61483

Figure 265—Continued.



1 Back space pawl spring, 52192
2 Self-locking hexagonal nut, 10500
3 Pawl eccentric screw, 52643
4 Back space pawl, 52709
5 Back space lever spring, 52193
6 Back space pivot stud, 52644
7 Collar, 52645
8 Back space lever, 52654
9 Detent lever spring, 52166
10 Retainer ring, 10949
11 Detent lever, 52445A
12 Self-locking hexagonal nut, 10501
13 Eccentric stud, 52342
14 Retainer ring, 10969
15 Tape retainer assembly, 52126A
16 Tape retainer spring, 52422
17 Machine screw, 10004
18 Retainer mounting bracket, 56298A
19 Tape guide, 52519
20 Tape tear wire, 56164
21 Lockwasher, 10429
22 Setscrew, 10201
23 Setscrew, 10201
24 Ratchet wheel, 52442A
25 Detent wheel, 52384
26 Tape feed sprocket, 52377
27 Felt washer, 61681
28 Felt washer, 61475
29 Felt washer, 61681

Figure 266. Tape feed mechanism, exploded view. (Superseded)

Page 320, paragraph 229*a*, subparagraph (2). After the sentence add: Remove the felt washer (25), when supplied.

Subparagraph (5), line 7. After "collars" add: and felt washer (26), when supplied,

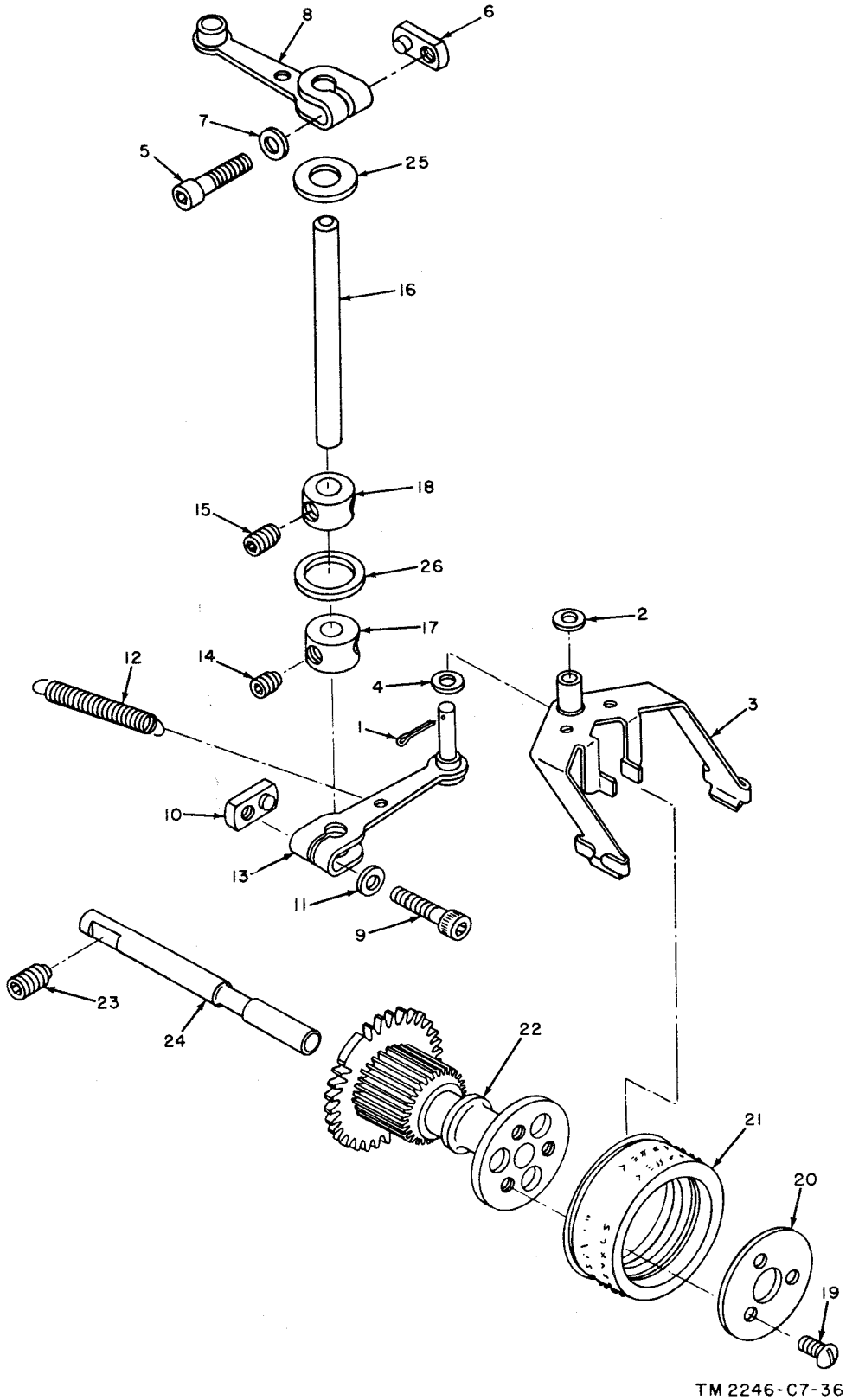


Figure 268. Type wheel group, exploded view. (Superseded)

1 Cotter pin, 10806
2 Flat washer, 50320
3 Ribbon guide, 52416A
4 Flat washer, 50320
5 Machine screw, 10006
6 Nut plate, 50174
7 Flat washer, 10459
8 Typewheel upper bellcrank lever, 52482
9 Machine screw, 10006
10 Nut plate, 50174
11 Flat washer, 10459
12 Typewheel bellcrank lever spring, 52161
13 Typewheel lower bellcrank lever, 52480
14 Setscrew, 10203
15 Setscrew, 10203
16 Reciprocating lever shaft, 52414
17 Shaft collar, 50391
18 Shaft collar, 50391
19 Machine screw, 10305
20 Typewheel clamp plate mounting disk, 52407
21 Typewheel, 55132 (59916, TT–181/FG only)
22 Typewheel hub assembly, 55134A
23 Setscrew, 10210
24 Typewheel post, 52418
25 Felt washer, 61490
26 Felt washer, 61479

Figure 268—Continued.

Page 322. Add the following note to figure 269:

Note. Later models of the equipment include a felt lubrication washer, 61476, between items 4 and 9.

Page 323, paragraph 231*a,* subparagraph (9). After the sentence add: Remove the felt washer (67), when supplied.

Subparagraph (11), line 5. After "plate" add: felt washer (68), when supplied.

Subparagraph (14). After the sentence add: Remove the felt washer (69), when supplied.

Subparagraph (19), line 1. After "(61)" add: and felt washer (70), when supplied.

Page 324, paragraph 231*c,* subparagraph (1). After the first sentence add: Install the felt washer (70), when supplied, on the punch arm pivot post.

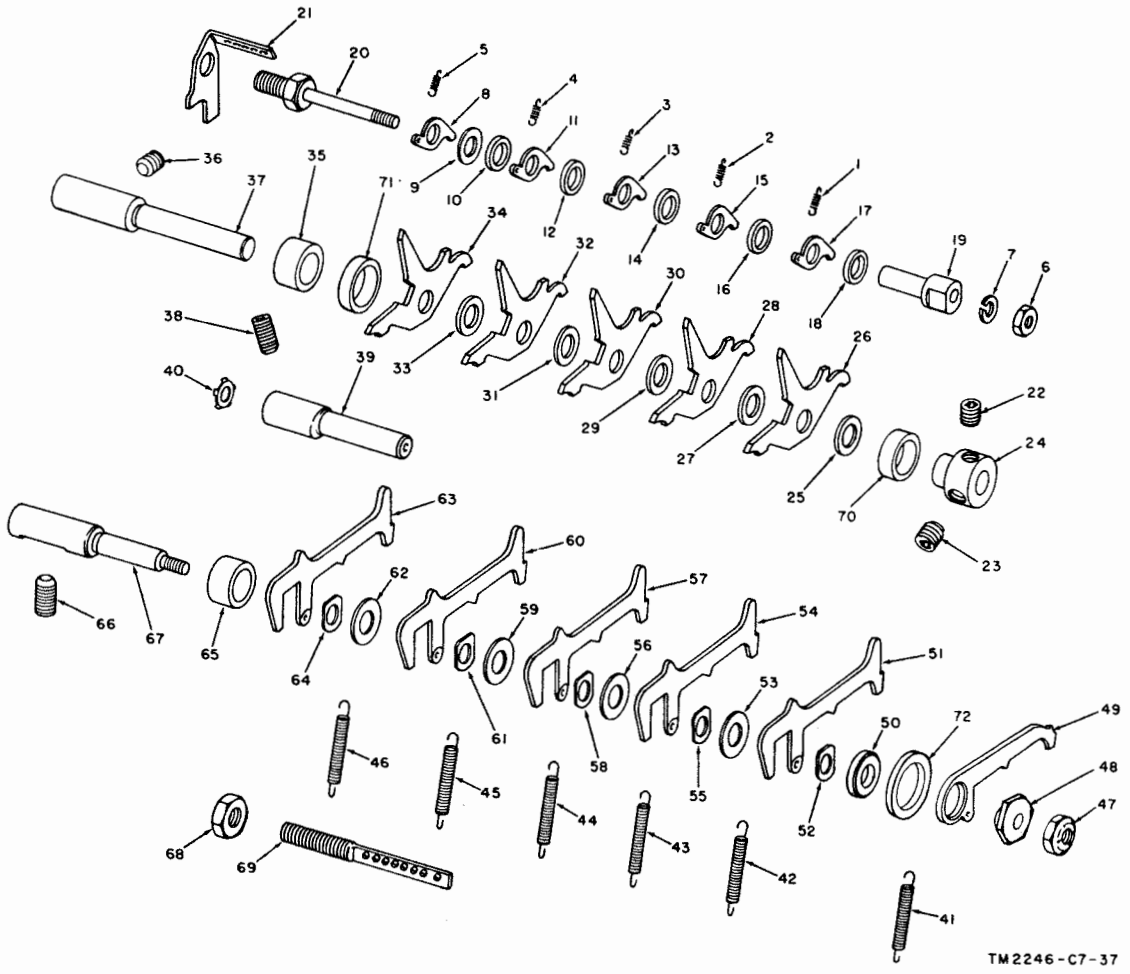


Figure 273. Y-levers and selector levers, exploded view. (Superseded)

1 Y-lever detent spring, 55009
2 Y-lever detent spring, 55009
3 Y-lever detent spring, 55009
4 Y-lever detent spring, 55009
5 Y-lever detent spring, 55009
6 Plain hexagonal nut, 10504
7 Lockwasher, 10434
8 Y-lever detent, 55004
9 Spacer, 55076
10 Detent spacer, 55001
11 Y-lever detent, 55004
12 Detent spacer, 55001
13 Y-lever detent, 55004
14 Detent spacer, 55001
15 Y-lever detent, 55004
16 Detent spacer, 55001
17 Y-lever detent, 55004
18 Detent spacer, 55001
19 Y-lever detent eccentric sleeve, 55007
20 Y-lever detent pivot, 55008
21 Y-lever detent spring bracket, 55002
22 Setscrew, 10209
23 Setscrew, 10209
24 Y-lever retaining collar, 55006
25 Flat washer, 50148
26 Selector Y-lever, 53540A (includes items 28, 30, 32, and 34)
27 Flat washer, 50148
28 Selector Y-lever
29 Flat washer, 50148
30 Selector Y-lever
31 Flat washer, 50148
32 Selector Y-lever
33 Flat washer, 50148
34 Selector Y-lever
35 Selector lever pivot post collar, 51416
36 Setscrew, 10210
37 Y-lever pivot post stud, 53269
38 Setscrew, 10247
39 Y-lever stop, 50152
40 Retainer ring, 10929
41 Selector lever spring, 50902
42 Selector lever spring, 50902
43 Selector lever spring, 50902
44 Selector lever spring, 50902
45 Selector lever spring, 50902
46 Selector lever spring, 50902
47 Self-locking hexagonal nut, 10500
48 Selector camshaft lever eccentric, 50146
49 Selector camshaft locking lever, 50014
50 Flat washer, 50053
51 Selector lever, 51068A (includes items 54, 57, 60 and 63)
52 Bearing, 51604A (includes items 55, 58, 61, and 64)
53 Flat washer, 50147
54 Selector lever
55 Bearing
56 Flat washer, 50147
57 Selector lever
58 Bearing
59 Flat washer, 50147
60 Selector lever
61 Bearing
62 Flat washer, 50147
63 Selector lever
64 Bearing
65 Selector lever pivot post collar, 51416
66 Setscrew, 10211
67 Selector lever pivot stud, 53268
68 Plain hexagonal nut, 10509
69 Selector lever spring post, 50325
70 Felt washer, 61478
71 Felt washer, 61469
72 Felt washer, 61479

Figure 273—Continued.

Subparagraph (6), line 1. After "Position" add: the felt washer (69), when supplied, and.

Subparagraph (9), line 2. After "(33)" add: felt washer (68), when supplied.

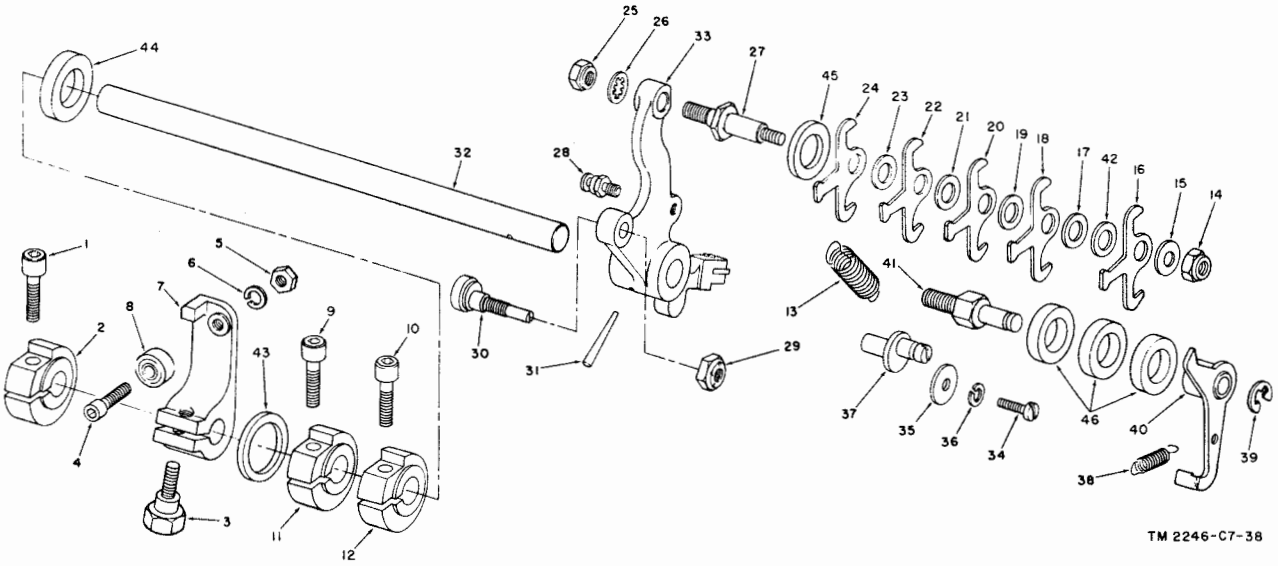
Subparagraph (11), line 2. After "(22)" add: felt washer (67), when supplied.

Page 328. Add the following note to figure 272:

Note. Later models of the equipment include a felt lubrication washer, 61480, between items 18 and 20.

Page 331, paragraph 236*a,* subparagraph (5), line 3. After "collar" add: and felt washer (70), when supplied. After the second sentence add: Remove the felt washer (71), when supplied.

Subparagraph (9), line 4. After "(49)" add: and felt washer (72), when supplied.



1 Machine screw, 10010
2 Shaft collar, 53973
3 Function clutch latch screw, 52176
4 Machine screw, 10000
5 Plain hexagonal nut, 10504
6 Lockwasher, 10434
7 Clutch latch arm, 50535
8 Ball bearing, 10754
9 Machine screw, 10010
10 Machine screw, 10010
11 Shaft collar, 53973
12 Shaft collar, 53973
13 Transfer lever spring, 55674
14 Self-locking hexagonal nut, 10500
15 Flat washer, 50414
16 T-lever, 56766A (includes items 18, 20, 22, and 24)
17 Flat washer, 50148
18 T-lever
19 Flat washer, 50148
20 T-lever
21 Flat washer, 50148
22 T-lever
23 Flat washer, 50148
24 T-lever
25 Plain hexagonal nut, 50651
26 Lockwasher, 10404
27 T-lever pivot stud, 50650
28 Transfer lever spring post, 50649
29 Self-locking hexagonal nut, 10501
30 Transfer lever roller stud, 56185
31 Taper pin
32 Transfer lever shaft, 54745A (includes items 31 and 33)
33 Transfer lever
34 Machine screw, 55511
35 Flat washer, 50839
36 Lockwasher, 10429
37 Transfer lever spring post eccentric, 56076
38 Transfer lever trip latch spring, 50904
39 Retainer ring, 10949
40 Transfer lever trip latch, 50020A
41 Transfer lever latch pivot stud, 52319
42 Shim: 0.002-in., 57072; 0.003-in., 57073
43 Felt washer, 61488
44 Felt washer, 61489
45 Felt washer, 61680
46 Felt washer, 61467

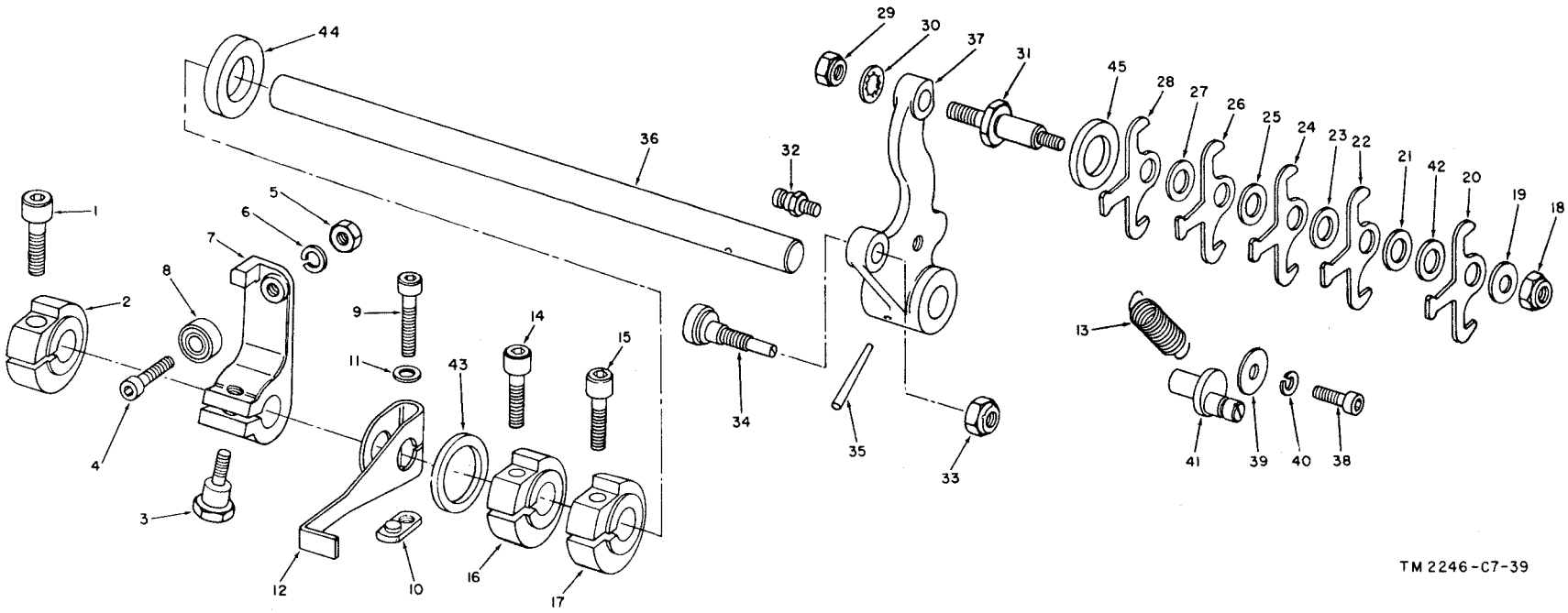
Figure 274. Sequential transfer lever shaft, exploded view. (Superseded)

Page 332, paragraph 237*a*(7), line 4. After "(11 and 12)" add: and felt washers (43 and 44), when supplied.

Page 333, paragraph 239. Change reference after heading from "(fig. 272)" to **(fig. 275)**.

Subparagraph (5), line 5. At end of sentence add: and the felt washer (43), when supplied.

Page 334, paragraph 239*a*(8), last line. After "(16 and 17)" add: and felt washers (43 and 44), when supplied.



1 Machine screw, 10010
2 Shaft collar, 53973
3 Function clutch latch screw, 52176
4 Machine screw, 10000
5 Plain hexagonal nut, 10504
6 Lockwasher, 10434
7 Clutch latch arm, 50535
8 Ball bearing, 10754
9 Machine screw, 10041
10 Nut plate, 50174
11 Flat washer, 10459
12 Clutch release lever, 59977 (56032, TT–178/ FG and TT–179/FG)
13 Transfer lever spring, 50903
14 Machine screw, 10010
15 Machine screw, 10010
16 Shaft collar, 53973
17 Shaft collar, 53973
18 Self-locking hexagonal nut, 10500
19 Flat washer, 50414
20 T-lever, 56766A (includes items 22, 24, 26, and 28)
21 Flat washer, 50148
22 T-lever
23 Flat washer, 50148
24 T-lever
25 Flat washer, 50148
26 T-lever
27 Flat washer, 50148
28 T-lever
29 Plain hexagonal nut, 50651
30 Lockwasher, 10404
31 T-lever pivot stud, 50650
32 Transfer lever spring post, 50649
33 Self-locking hexagonal nut, 10501
34 Transfer lever roller stud, 56185
35 Taper pin
36 Transfer lever shaft, 54740A (includes items 35 and 37)
37 Transfer lever
38 Machine screw, 10003
39 Flat washer, 50839
40 Lockwasher, 10429
41 Transfer lever spring post eccentric, 56076
42 Shim: 0.002-in., 57072; 0.003-in., 57073
43 Felt washer, 61488
44 Felt washer, 61489
45 Felt washer, 61480

Figure 275. Simultaneous transfer lever shaft, exploded view. (Superseded)

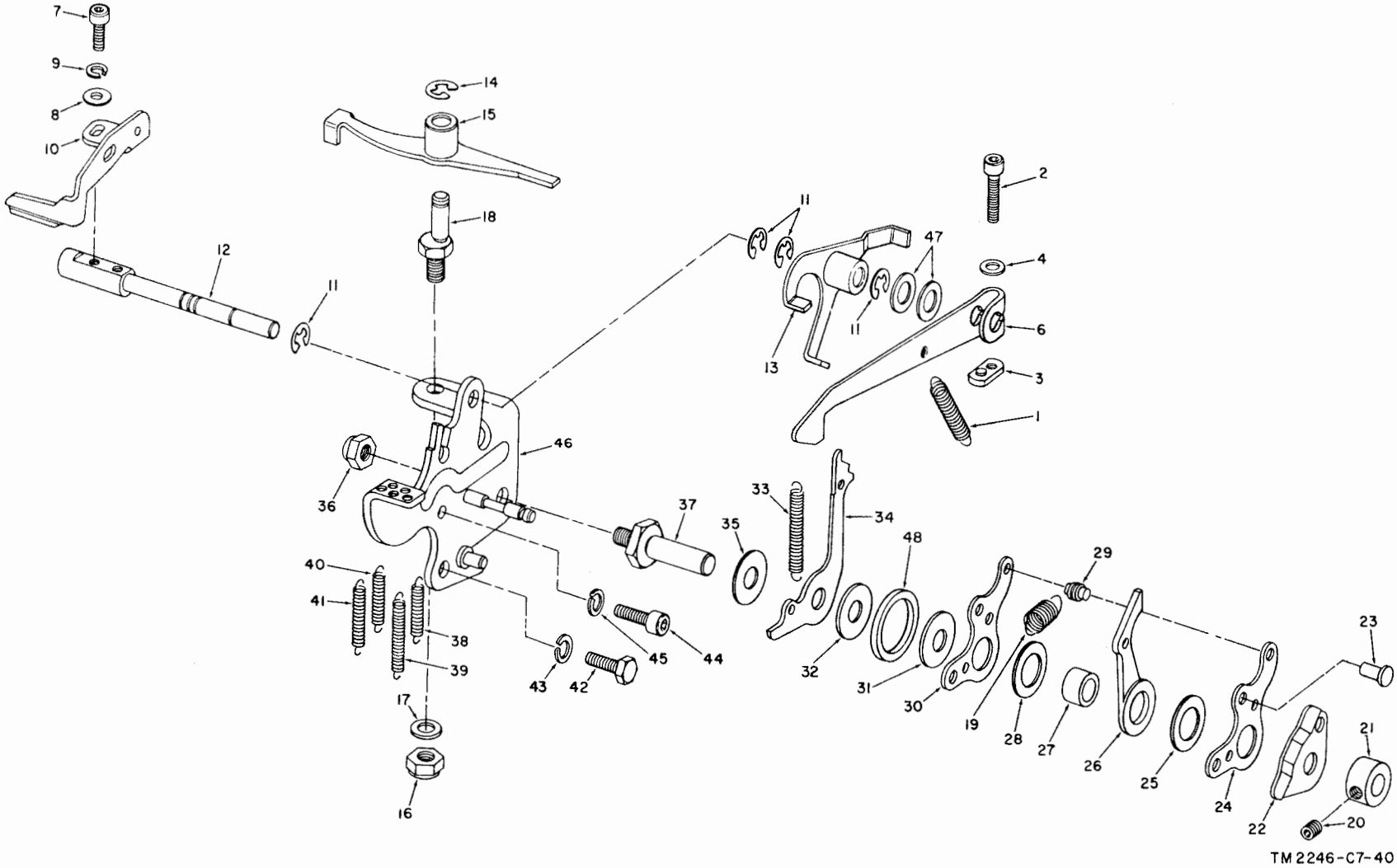


Figure 281. Typewheel reciprocating mechanism, exploded view. **(Superseded)**

Page 335, paragraph 239*c*(2), line 5. After "(16 and 17)" add: and the felt washers (43 and 44), when supplied.

Page 338. Add the following note to figure 277.

Note. Later models of the equipment include a felt lubrication washer, 61496, between items 4 and 5.

Page 341. Add the following note to figure 279.

Note. Later models of the equipment include a felt lubrication washer, 61496, between items 10 and 11.

Page 343, paragraph 246*a*(2). After the sentence add: Remove the two felt washers (47), when supplied.

Figure 280, legend, item 21. Add: (61326A on TT–270/FG and TT–272/FG).

Page 344, paragraph 246*a*(9). After the last sentence add: Remove the felt washer (48), when supplied.

1 Code-ring locking bail cam follower spring, 53569
2 Machine screw, 10006
3 Anchor nut, 50174
4 Flat washer, 10459
6 Code-ring locking bail cam follower, 52657
7 Machine screw, 10004
8 Flat washer, 10458
9 Lockwasher, 10429
10 Code-ring locking bail, 52653
11 Retainer ring, 10949
12 Code-ring locking bail shaft, 52291
13 Letters-figures shift latch lever, 52411
14 Retainer ring, 10949
15 Typewheel reciprocating transfer lever, 52478
16 Self-locking hexagonal nut, 10525
17 Flat washer, 52430
18 Typewheel reciprocating transfer lever eccentric stud, 52399
19 Typewheel reciprocating lever spring, 52167
20 Setscrew, 10209
21 Shaft collar, 50209
22 Retainer plate, 53652
23 Drive pin, 52404
24 Typewheel reciprocating drive lever, 52362
25 Flat washer, 52402
26 Typewheel reciprocating spring lever, 52405
27 Sleeve bearing, 52401
28 Flat washer, 52402
29 Spring pin, 52403
30 Typewheel reciprocating drive lever, 52362
31 Flat washer, 53261
32 Flat washer, 52413
33 Spring, 52168
34 Figures-letters shift lever, 52406
35 Flat washer, 53261
36 Self-locking hexagonal nut, 10525
37 Typewheel shift lever stud, 52417
38 Bell sensing lever spring, 52173
39 Shift cam follower spring, 52172
40 Letters sensing lever spring, 52169
41 Figures sensing lever spring, 52171
42 Machine screw, 10076
43 Lockwasher, 10430
44 Machine screw, 10025
45 Lockwasher, 10430
46 Function plate, 52419A
47 Felt washer, 61477
48 Felt washer, 61471

Figure 281—Continued.

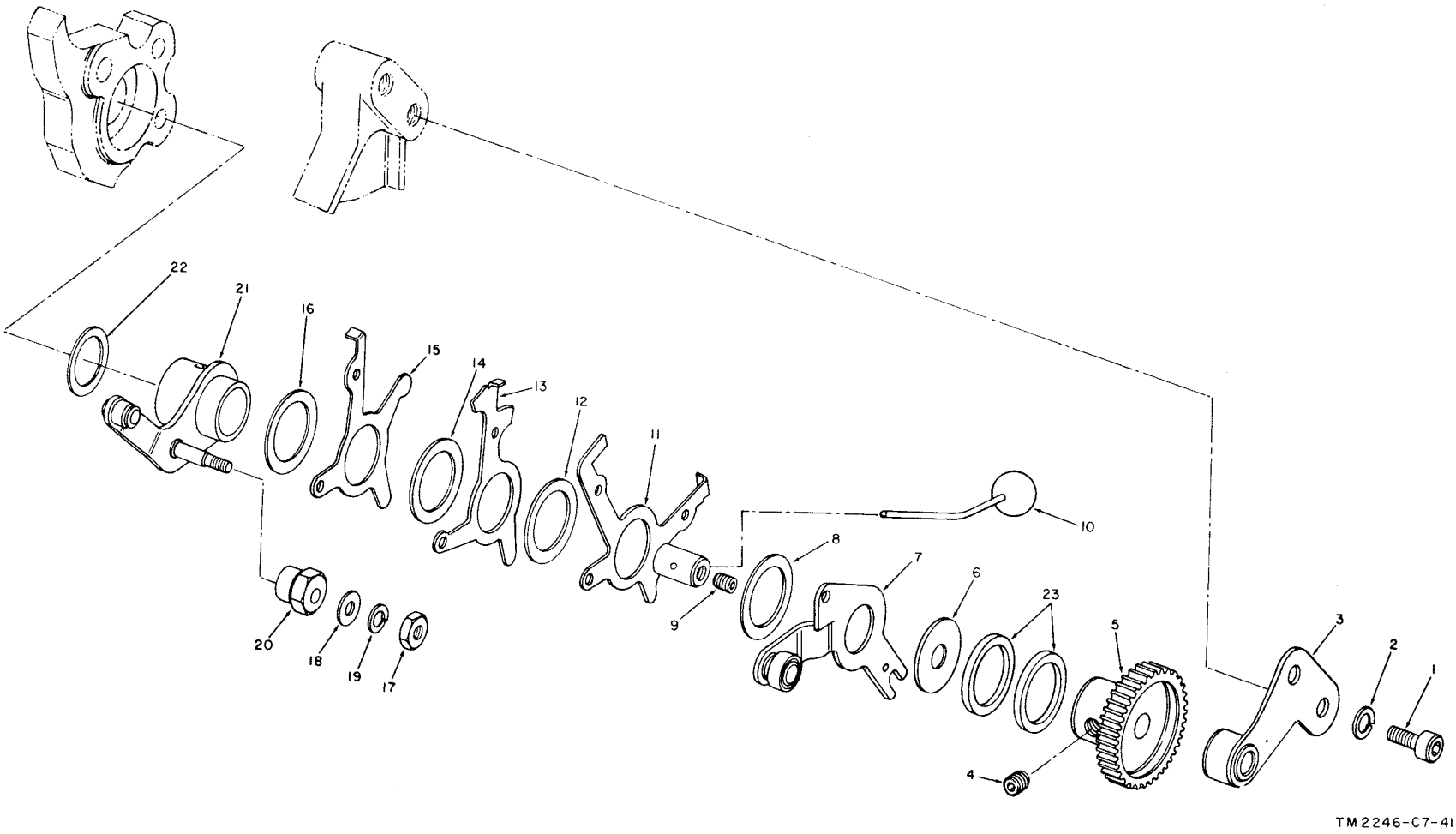


Figure 282. Function sensing mechanism, exploded view. (Superseded)

1 Machine screw, 10012
2 Lockwasher, 10430
3 Stop arm shaft support plate, 56732A
4 Setscrew, 10209
5 Stop arm shaft driven gear, 52344
6 Thrust bearing, 50374
7 Typewheel reciprocating cam follower, 52477A
8 Sensing lever spacer, 52649
9 Setscrew, 10203
10 Signal bell clapper, 52682
11 Bell sensing lever, 52638A
12 Sensing lever spacer, 52649
13 Figures sensing lever, 52483
14 Sensing lever spacer, 52649
15 Letters sensing lever, 52484
16 Sensing lever spacer, 52649
17 Plain hexagonal nut, 10512
18 Flat washer, 50414
19 Lockwasher, 10429
20 Restoring lever eccentric, 52664
21 Cam lever assembly, 52459A
22 Laminated spacer, 52679
23 Felt washer, 61471

Figure 282—Continued.

Page 348. Add the following note to figure 283:

Note. Later models of the equipment include a felt lubrication washer, 61485, between items 6 and 7.

Page 353, figure 286, legend, item 67. Change "20223[a]" to: **20220[a].**

Item 127. Change "54652 (54653[a])" to: **54652A (54653A[a]).**

Page 357, figure 287, legend. Change item 7 to: Cable assembly, 56315A, TT–178/FG and TT–179/FG; 59899A, all other models (both assemblies include plug 20441).

Add the following below the legend:

Note. The following legend applies to figure 287 and lists the TT–178A/FG, TT–179A/FG, TT–181/FG, TT–270/FG, and TT–272/FG:

1 FL205, 54568
2 P227, 54084A
3 CR201, 54578A
4 R214, 20059; R205, 20028; R202, 20032
5 C206, 20219
6 59897A (synchronous motor); 59913A, TT–178A/FG (series-governed motor)
7 P235, 59899
8 TB204, 20370
9 20382
10 59983A
11 TB201, 59981A
12 S211, 54584
13 S204, 54585
14 S213, 20119
15 S210, 54588
16 S203, 54589
17 20713
18 R216, R1628 (series-governed motor)
19 C209, 20214
20 FL208, 54581 (series-governed motor)
21 J231, 20264
22 CR202, 54578A
23 56101
24 TB203, 59926A
25 J228, 20267
26 R212, 20028; R213, 20029
27 56101
28 S212, 20115

Page 358, paragraph 263. Delete the last sentence.

Page 359, paragraph 264. Below the heading. Add:

Note. Perform the adjustment in paragraph 301.1 before proceeding with the following adjustment.

Page 361. Add paragraph 270.1 after paragraph 270.

270.1. Stop Bar Bracket Adjustment (fig. 293.1)

Note 1. Perform the adjustment in paragraph 285 before proceeding with the following adjustment.

Note 2. On weather communication equipments only, an electrical contact is mounted on the stop bar bracket. This does not alter the requirements and method of performing this adjustment.

a. Requirements.

(1) The stop bar bracket should be positioned so that the line feed and carriage-return function stop bars do not come out of the code-ring cage slots when the automatic carriage-return and line feed linkage is in the operated position.

(2) The stop bar bracket should not bind the line feed and carriage-return function stop bars. Binding may cause a failure in shifting of the code rings.

b. Method of Checking.

(1) Manually actuate the automatic carriage-return and line feed linkage with the unit in the stopped position and the "T" code selection set up in the code rings. Move the free end of the line feed stop bar toward the stop bar bracket. Attempt to slide the line feed stop bar away from the code rings and out of the code-ring cage. At the same time, push in on the line feed stop bar located next to the line feed fulcrum. Check to see that the line feed stop bar does not come off the stop bar shift blade. Use the same procedure to check the carriage-return function stop bar.

(2) Make sure no binding exists between the narrow end of the line feed and carriage-return function stop bars and and the stop bar bracket when the unit is in the stopped position and the "T" code selection is set up in the code rings.

c. Adjustment. Loosen the two mounting screws and position the stop bracket to meet the requirements. If the requirements cannot be met, recheck the fulcrum adjustment (par. 285) and the automatic carriage-return and line feed adjustments (pars. 274, 313, 314, 315, 336, 337, 338, and 343). When the requirements are met, tighten the mounting screws. Recheck the requirements.

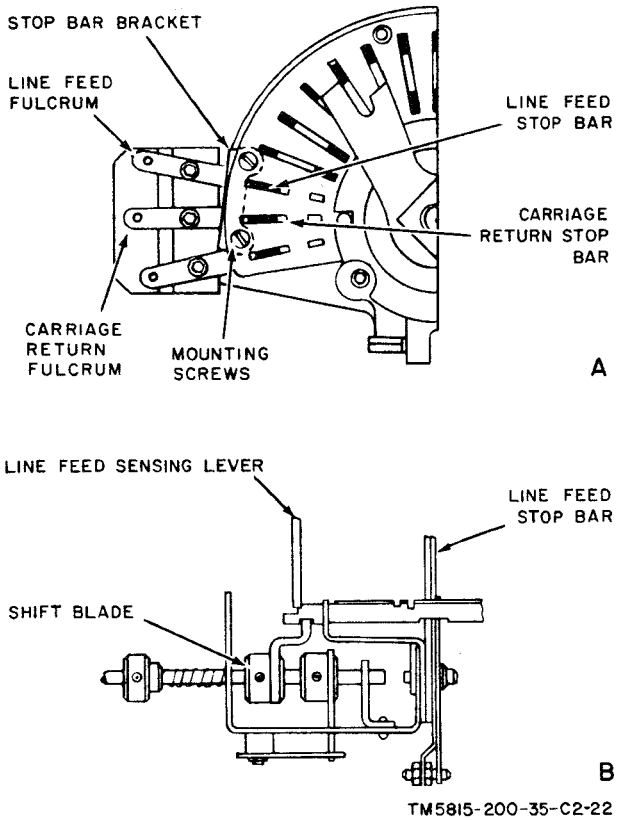


Figure 293.1. Stop bar bracket adjustment (standard symbol communications equipment). (Added)

Page 362, paragraph 273, note, line 3. After "272" add: and 298.

Page 364. Delete paragraph 277 and substitute:

277. Code-Ring Locking Bail Cam Follower Adjustment

(fig. 300)

a. Requirement.

(1) The locking bail collar blade should operate freely between the letters and J-stop bars without touching either stop bar.

(2) There should be 0.010-inch minimum clearance between the cam follower lever and the figures function stop bar when the cam follower is on the high part of the locking bail cam and the figures stop bar is selected.

b. Adjustment.

(1) With the function shaft in the stop position (fig. 300), loosen the mounting screw that holds the cam follower. Position the cam follower until the locking bail collar blade operates freely between the letters and the J-stop bars. Tighten the mounting screw. Set up repeated letters and J-code group on the code rings and check the requirements visually.

(2) The code-ring locking lever blade should be positioned equidistant from the letters and J-stop bar, but it may have to be positioned closer to either the letters or J-stop bar to maintain the requirement. Check related adjustments (par. 300).

Paragraph 278. Below the heading add the following note:

Note. Perform the adjustments in paragraphs 300, 301, 302, 264, 279, and 280 before proceeding with the adjustment below.

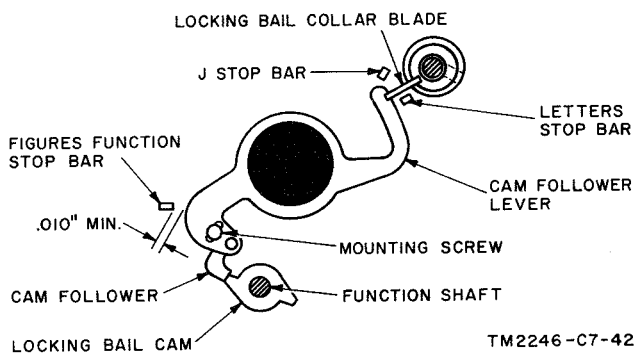


Figure 300. Code-ring locking bail cam follower adjustment. (Superseded)

Page 366, paragraph 281*b*. After the last sentence add: Check related adjustments (pars. 284, 292, and 295).

Delete paragraph 283 and substitute.

283. Y-Levers Detent End Play Adjustment

(fig. 305)

a. Requirements.

(1) End play of the Y-lever detents must not be great enough to prevent the Y-lever detents from engaging their associated Y-levers by at least 25 percent of the Y-lever detent thickness.

(2) Y-lever detents should have a minimum of 0.002 inch end play.

b. Method of Checking.

(1) Check the engagement requirement (*a*(1) above) visually by moving the Y-lever detents back and forth.

(2) Check the end play requirement (*a*(2) above) with a feeler gage.

c. Adjustment. Remove the hexagonal nut and lockwasher. Slide the Y-lever detent eccentric sleeve and detent assembly from the Y-lever detent pivot. If the end play of the Y-lever detents is less than 0.002 inch, peel the laminated washer to size as required in *a*(2) above. If the end play of the Y-lever detents is so great that requirement in *a*(1) above is not met, add another laminated washer (55076), peeled to a size so the requirement in *a*(1) above will be met. Replace the parts on the pivot, tighten the nut, and recheck the requirement. Do not insert peeled laminated washers less than 0.006 inch thick. Make sure peeled laminated washers are flat and free of burs before inserting.

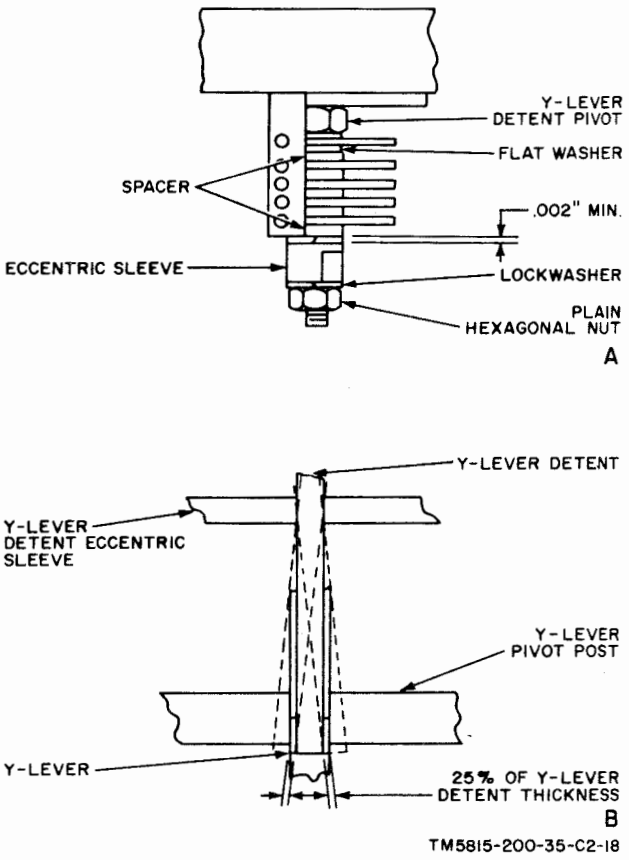


Figure 305. Y-levers detent end play adjustment. (Superseded)

Page 367, paragraph 284. Delete the designation (1) from subparagraph *a* and delete subparagraph (2).

Subparagraph *b*, lines 2 and 3. Change "both requirements are met" to: **the requirement is met.**

Figure 306. Delete the two callouts "30 to 60 GRAMS TO START LEVER MOVING."

Paragraph 285. Below the heading. Add the following note:

Note. Perform the adjustment in paragraph 343 before proceeding with the following adjustment.

Page 368, paragraph 287*a*, line 2. Change ".015-inch" to: **0.027- to 0.033-inch gap.**

Figure 309. Change callout ".015" to: **.027–.033.**

Page 369. Delete paragraph 288 and substitute.

288. Selector Magnet Pole Faces and Armature Alignment (fig. 310)

Note. Remove selector magnet bracket from the teletypewriter (par. 163*a*(1)) before making this adjustment.

a. Requirements.

(1) Clearance between the pole face of the selector magnet and the toffets on the armature should be 0.004 inch.

(2) The pole faces of the selector magnet and the toffets on the armature should be parallel within 0.002 inch.

(3) When positioned for mark or space, the armature should not touch the armature adjusting screws.

b. Method of Checking.

(1) Use two 0.004-inch feeler gages and check the requirements in *a*(1) and (2) above.

(2) Position the armature for mark or space. Check the requirement in *a*(3) above visually.

c. Adjustments.

(1) Loosen the setscrews behind the selector magnet. Loosen the two machine screws that secure the selector magnet to the selector magnet bracket. Insert 0.004-inch feeler gages between the pole faces of the selector magnet and the toffets on the armature. Position the selector magnet to meet requirements in *a*(1) and (2) above.

Tighten the setscrews and two machine screws.

(2) Position the armature for mark, then for space. Adjust the armature adjusting screws so that the armature does not touch them. Tighten the adjusting screw lock. Check related adjustments (pars. 289 and 290).

Page 370. Delete paragraph 289 and substitute.

289. Selector Magnet Armature Positioning Adjustment (fig. 311)

a. Requirements.

(1) With the end play of the armature taken up in either direction, the step in the armature blade should not interfere with the No. 1 selector lever while maintaining 100 percent engagement with the stop lever.

Page 371, paragraph 290*b*. After the last sentence add: (On equipments with selector magnet brackets that have locking tabs, loosen or tighten the leaf spring stop screws by

(2) The pole faces and toffets on the armature must be alined.

b. Method of Checking.

(1) Take up the end play of the armature in either direction. Visually check the requirement in *a*(1) above.

(2) Visually check the requirement in *a*(2) above.

c. Adjustment. Loosen the setscrew and position the armature shaft to meet the requirements. Tighten the setscrew and recheck the requirement (*b* above).

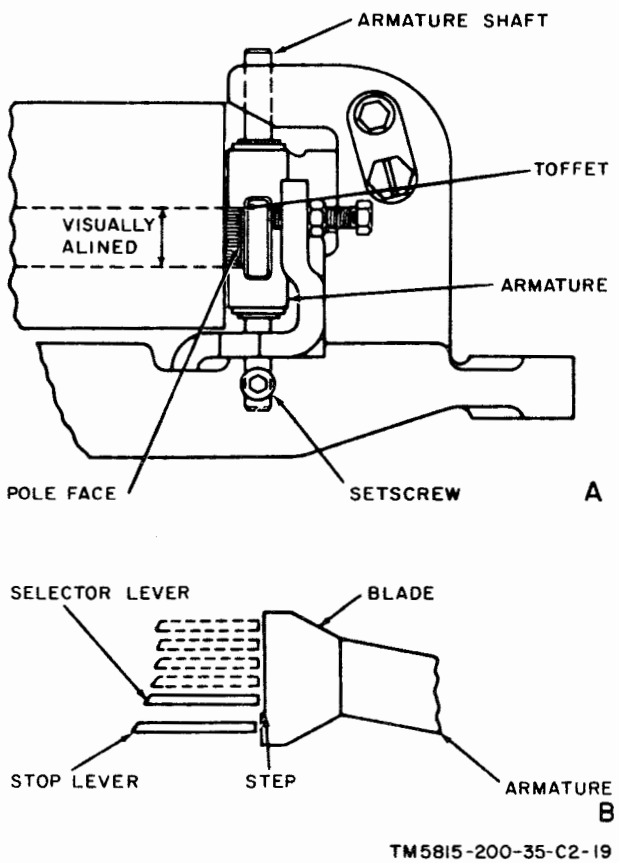


Figure 311. Selector magnet armature positioning adjustment. (Superseded)

loosening or tightening the locking tab machine screws.)

Page 372, paragraph 292. Delete subparagraph *b* and substitute:

b. Method of Checking.

(1) With the motor on, select the blank code group. Insert a 0.006-inch feeler gage between the Y-levers and the Y-lever eccentric stop. Select the letters code group and check the requirement.

(2) With the motor on, select the blank code group. Insert a 0.002-inch feeler gage between the Y-levers and the Y-lever eccentric stop. Select the letters code group and check the requirement.

Page 373, paragraph 293*a*, line 1. Change ".018" to: **0.015.**

After subparagraph *a*. Add:

a.1. Method of Checking. Position the selector camshaft so that the selector levers are not operated. Place the armature in mark position and check the requirement with feeler gages.

Paragraph 294, subparagraph *a*, line 6. After "drum." Add: and the function driven gear is shifted as far as possible toward the sliding clutch drum.

After subparagraph *a*. Add:

a.1. Method of Checking. Make sure the teletypewriter is in the stop position. Hold the function driven gear as far as possible toward the function shaft sliding clutch drum and insert a flat feeler gage between the gear and the sliding clutch drum. Repeat the check when the opposite finger of the sliding clutch drum is engaged by the clutch latch.

Subparagraph *b*. Delete the first sentence and substitute: Loosen the clamping screw in the shaft collar next to the clutch latch. Loosen the clamping screw in the clutch latch.

Paragraph 295*a*, line 1. Change ".008- to .012" to: **0.015- to 0.020.**

Figure 318. Change the callout ".008"–.012"" to: 015"–020".

Page 374. Delete paragraph 298 and substitute.

298. Selector Camshaft Clutch Load Adjustment
(fig. 320)

a. Requirements.

(1) There should be a 0.005- to 0.025-inch clearance between the friction clutch disk and the bearing of the clutch fork.

(2) It should require a pull from 48 to 54 ounces to hold the stop plate away from the stop lever with the motor on.

b. Method of Checking.

(1) Insert a flat feeler gage between the friction clutch and the bearing of the selector friction clutch fork to determine the clearance.

(2) Place the hook end of the spring scale on the stop plate retainer of the selector camshaft. Pull on the spring scale until the stop plate moves away from the stop lever. Read the scale.

c. Adjustment.

(1) Loosen the two setscrews in the friction clutch disk and position the disk until the requirement in *a*(1) above is met. Tighten the two setscrews.

(2) Loosen the clamping screws of the friction clutch adjusting collar and turn the collar to meet the requirement in *a*(2) above. Tighten the clamping screws.

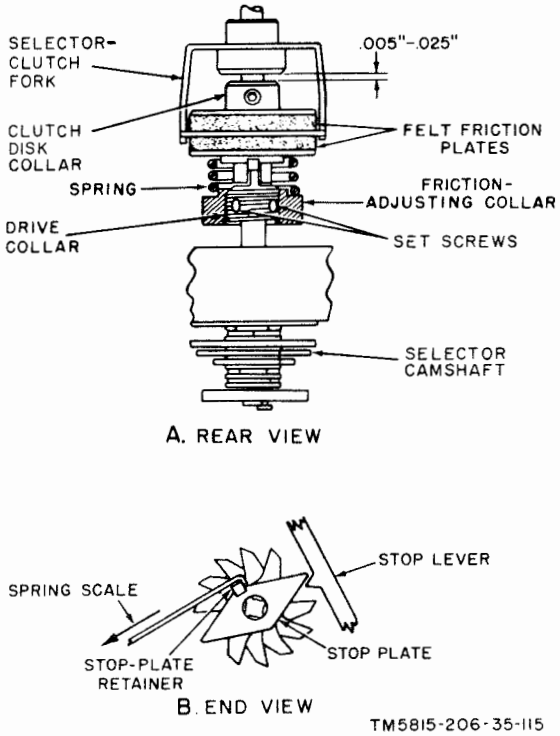


Figure 320. Selector camshaft clutch load adjustment. (Superseded)

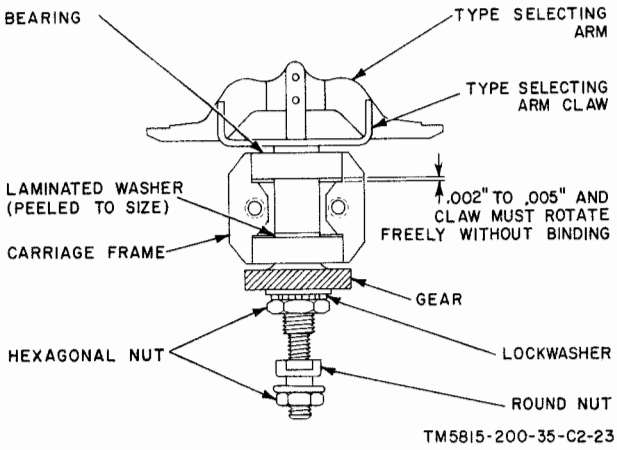


Figure 320.1. Type selecting arm claw end play adjustment. (Added)

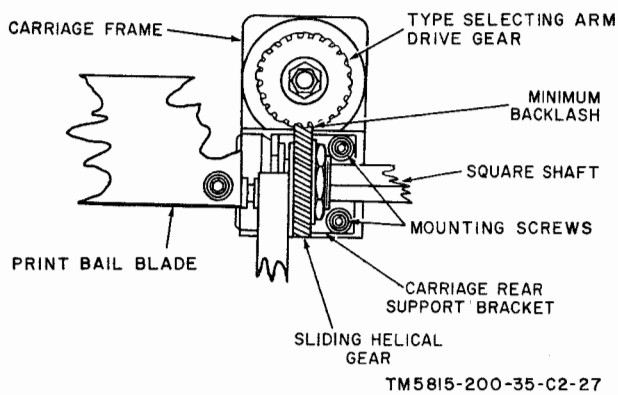


Figure 320.2. Carriage rear support bracket adjustment. (Added)

Page 375. Add paragraphs 298.1 and 298.2 after paragraph 298.

298.1. Type Selecting Arm Claw End Play Adjustment
(fig. 320.1)

Perform this adjustment only when replacing bearings, spacer, or carriage frame.

a. Requirements. Clearance between the carriage frame and the type selecting arm claw bearing should not exceed 0.005 inch. The claw assembly must rotate freely.

b. Method of Checking. Remove the bearing cap and place the type selecting arm assembly in its bearing seat on the type bar carriage. Move the type selecting arm assembly back and forth to see that the claw assembly rotates freely at all positions of the type selecting arm assembly. Push on the gear toward the type selecting arm to take up all the end play. Check the maximum clearance with a feeler gage. Make sure the claw assembly rotates freely.

c. Adjustments. Assemble the parts on the claw assembly and include a full laminated washer (50551). Tighten the hexagonal nut from 35 to 40 inch-pounds torque. Place the claw assembly in the carriage frame and check the requirement in *a* above; use the method of checking in *b* above. If the requirement in *a* above is not met, disassemble the claw assembly. Peel the 0.002-inch thick laminations from the laminated washer to meet the requirement in *a* above.

298.2. Carriage Rear Support Bracket Adjustment
(fig. 320.2)

a. Requirement. Backlash between the square shaft sliding helical gear and the claw driving helical gear should be at a minimum.

b. Method of Checking. Attempt to rotate the claw driving gear back and forth. Move the square shaft sliding helical gear to various positions. Check the requirement at each position.

c. Adjustment. Move the carriage frame to the left-hand margin. Loosen the carriage rear support bracket mounting screws. Move the rear of the carriage up or down to meet the requirement. Tighten the mounting screws and recheck the requirement. Check the related adjustment (par. 322).

Paragraph 299. Below the heading. Add:

Note. Perform the adjustment in paragraph 322 before proceeding with the following adjustment.

Page 376. Delete paragraph 300 and substitute.

300. Code-Ring Locking Bail Shaft Adjustment
(fig. 322)

a. Requirements.

(1) There should be a 0.010- to 0.020-inch clearance between the code-ring locking bail and the code-ring projections (A, fig. 322) when the function shaft is in the stopped position.

(2) There should be a 0.002- to 0.005-inch end play in the code-ring locking bail shaft (B, fig. 322).

b. Method of Checking.

(1) With the function shaft in the stopped position, place the No. 1 code ring so that it projects directly opposite the locking edge of the code-ring locking bail. Check the requirement with a feeler gage.

(2) Insert a flat feeler gage between the collar of the code-ring locking lever and the code bar cage plate to determine the end play.

c. Adjustments.

(1) Loosen the setscrews in the code-ring locking lever collar. Rotate the code-ring locking bail shaft until the requirement in *a*(1) above is met.

(2) Position the collar to obtain the requirement in *a*(2) above. Tighten the setscrews in the code-ring locking lever collar.

Paragraph 301, heading. Change "(fig. 322)" to: **(fig. 322.1)**.

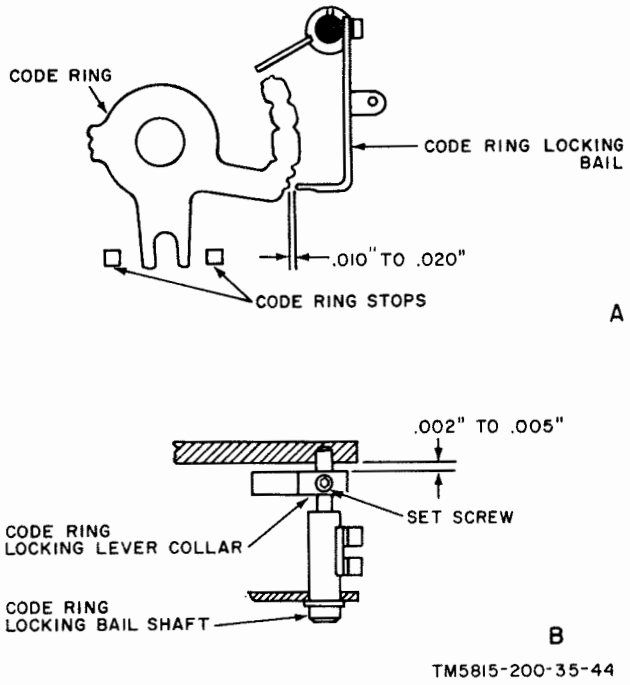


Figure 322. Code-ring locking bail shaft and locking bail adjustments. (Superseded)

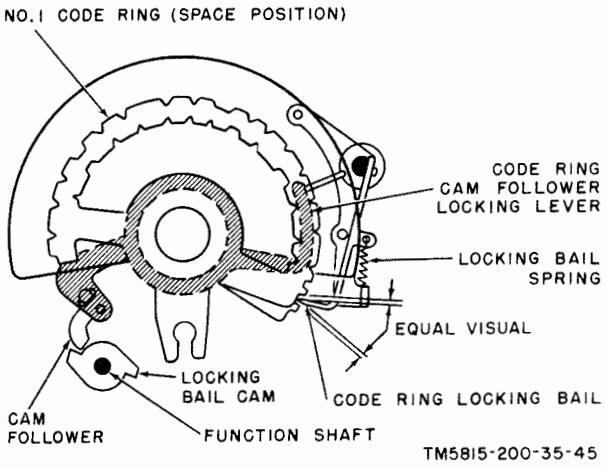


Figure 322.1. Code-ring locking bail adjustment. (Added)

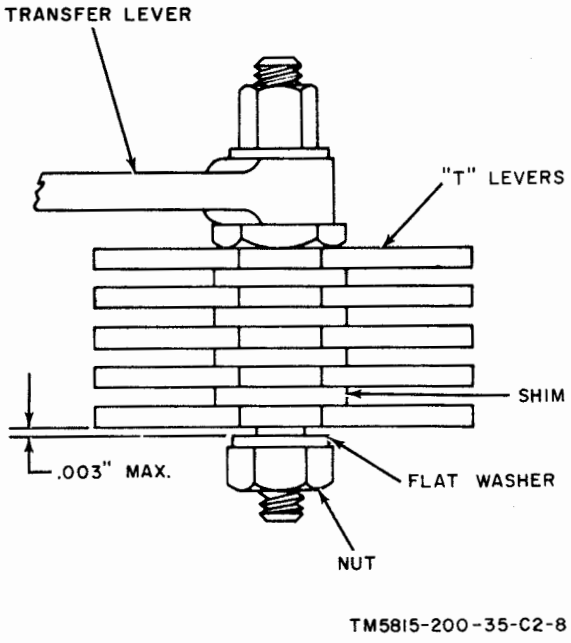


Figure 322.2. T-lever end play adjustment. (Added)

Page 377. Add paragraph 301.1 after paragraph 301.

301.1. T-Lever End Play Adjustment (fig. 322.2)

a. Requirement. End play of the T-levers on the T-lever stud should not exceed 0.003 inch.

b. Method of Checking. Measure the clearance between the first T-lever and the flat washer, with the end play of the T-levers taken up toward the transfer lever.

c. Adjustment. Remove the hexagonal nut, flat washer, and first T-lever. Add or remove shims (57072 and 57073), to meet the requirement. Replace the bottom T-lever, flat washer, and hexagonal nut. Tighten the hexagonal nut and recheck the requirement.

Paragraph 302, subparagraph *a*. After the sentence. Add: The decelerating cam is positioned as shown in C, figure 326 on all models except the AN/FGC–26. On the AN/FGC–26, the dimension should be 2 7/32 inches $\pm\frac{1}{16}$ inch.

Subparagraph *b*. After the last sentence add: Check related adjustments (pars. 350 and 351).

Page 378. Add paragraph 304.1 after paragraph 304.

304.1. Decelerating Cam and Carriage-Feed Clutch Positioning Adjustment
(fig. 326)

a. Requirement. With the carriage at the left-hand margin, the top of the decelerating cam should be centered, $\pm\frac{1}{16}$-inch, with the adjacent hole in the carriage-return driven gear. Check this requirement visually.

b. Method of Checking. Turn on the motor. Return the carriage to the left-hand margin. Check the requirement visually, then turn off the motor.

c. Adjustment.

(1) Loosen the carriage rack machine screw far enough to disengage the rack from the carriage rack driving gear. Move the carriage to the right-hand margin.

(2) Loosen the machine screws that hold the carriage-return latch tripping arm and rotate the arm as far clockwise as possible (C, fig. 326).

(3) Loosen one of the two setscrews that holds the carriage-feed shaft collar to the carriage-feed shaft (fig. 327). Turn the shaft so that the other setscrew is straight up. Remove the double-blocking lever spring and manually disengage the carriage-feed clutch. Rotate the carriage rack driving gear until the decelerating cam is positioned as close as possible to the requirement. Reengage the carriage-feed clutch and replace the double-blocking lever spring. The mechanism is now positioned for easy adjustment.

(4) Loosen the other setscrew in the carriage-feed shaft collar. Hold the carriage-feed ratchet firmly against the carriage-feed pawl and rotate the collar until the decelerating cam is positioned to meet the requirement. Tighten the setscrews.

(5) Make the adjustment described in paragraph 305.

(6) Make the adjustments described in paragraphs 302 and 304.

Delete paragraph 305 and substitute.

305. Carriage-Return Latch Tripping Arm Adjustment
(fig. 326)

a. Requirement. The carriage-return latch tripping arm should trip the carriage-return latch (A, fig. 326) just as the decelerating cam reaches the position shown in C, figure 326, and the carriage-feed clutch is aligned to mesh properly.

b. Method of Checking. Space the carriage out 10 or more spaces and turn off the motor. Press the carriage-return key and turn the motor by hand until the carriage nears the left-hand margin. When the carriage-return latch tripping arm touches the carriage-return latch (B, fig. 326), turn the motor slowly. See that the carriage-feed clutch teeth mesh properly and the decelerating cam is positioned as shown in C, figure 326.

c. Adjustment. Loosen the clamping machine screw in the clutch throwout lever (fig. 329) before proceeding with this adjustment. With the carriage-feed clutch and the decelerating cam in the position shown in C, figure 326, loosen the two machine screws that hold the carriage-return latch tripping arm and position the latch tripping arm so that it is in contact with the carriage-return latch (A, fig. 326). Tighten one machine screw and recheck the adjustment. If the carriage-return latch is tripped too soon, position the carriage-return latch tripping arm clockwise. If the carriage-return latch is tripped too late, position the carriage-return latch tripping arm counterclockwise. Tighten both machine screws. Check related adjustment (par. 312).

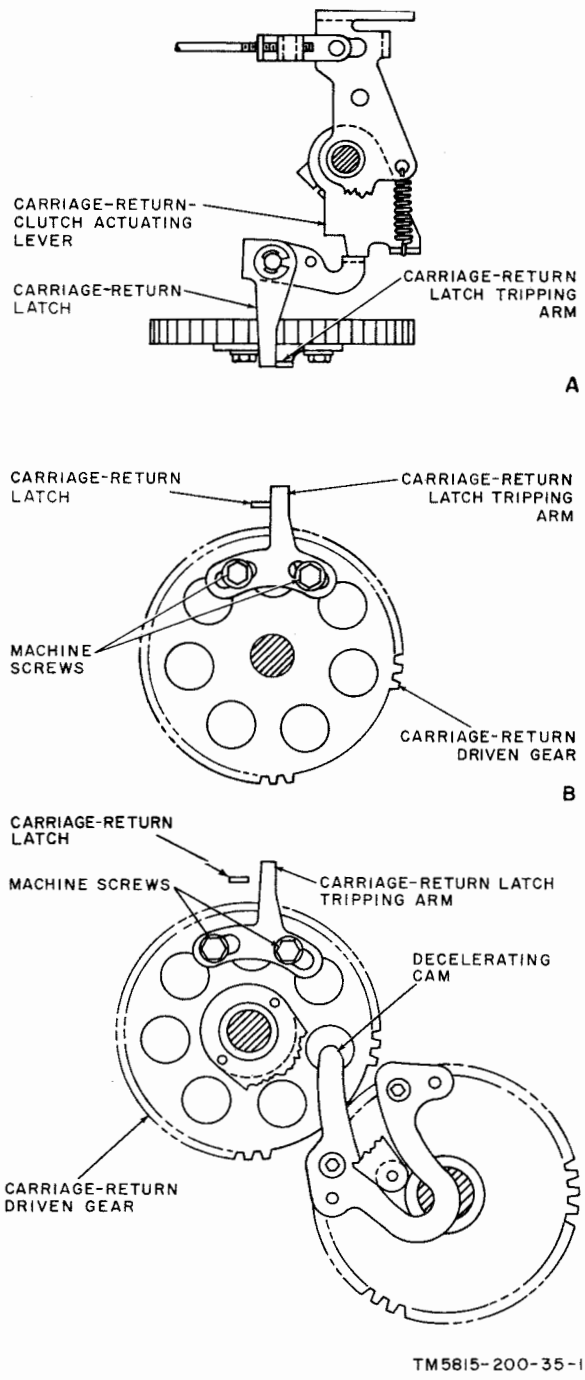


Figure 326. Decelerating cam and carriage-feed clutch positioning adjustment. (Superseded)

Page 379, figure 328. Below the callout "COLLAR" insert a callout indicating a maximum of 0.010-inch clearance between the ball bearing and the collar.

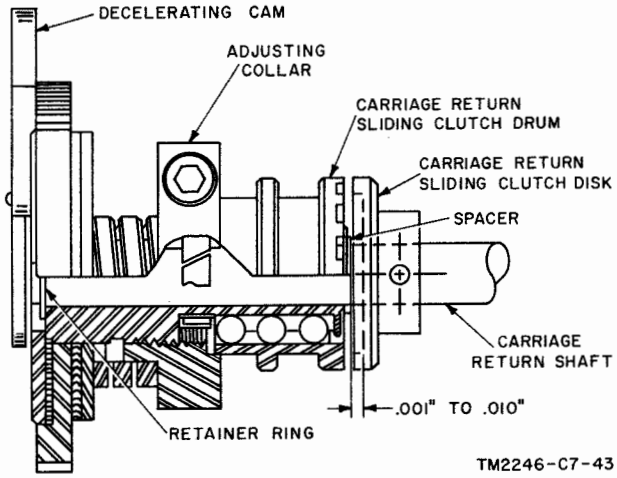


Figure 328.1. Carriage-return safety clutch and play adjustment. (Added)

Paragraph 307. Below the heading add:

Note. Perform the adjustment in paragraph 308 before proceeding with the following adjustment.

Delete subparagraph *a* and substitute:

a. Requirement. The clearance between the collar and the ball bearing should not exceed the maximum of 0.010 inch when the shoulder on the carriage rack drive shaft is tight against the ball bearing.

Subparagraph *c*. Delete the last sentence and substitute: Hold the carriage rack drive shaft in this position, and measure the clearance between the ball bearing and the collar with a 0.005-inch feeler gage; remove the gage.

After paragraph 307 add:

307.1. Carriage-Return Safety Clutch End Play Adjustment (fig. 328.1)

Note. Perform the following adjustment only when the carriage-return shaft assembly has been removed.

a. Requirement. There should be from 0.001- to 0.010-inch end play of the carriage-return safety clutch assembly on the carriage-return shaft.

b. Method of Checking. Attempt to move the carriage-return safety clutch assembly back and forth along the carriage-return shaft. Check the end play between the driven member and the driving member. If no end play is present, check the carriage-return safety clutch assembly for free rotation.

c. Adjustment. Remove the carriage-return safety clutch from the carriage-return shaft. Install or remove any combination of the 0.005 (52117) and 0.010 (52118) spacers until the requirement is met. Reassemble the safety clutch on the shaft and check the requirement. Reshim if necessary.

Page 380, paragraph 308*b* (1). After the last sentence add: Make adjustment as described in paragraph 310 before tightening the clamping screw on the carriage-return clutch actuating lever.

Delete paragraph 309 and substitute.

309. Carriage-Return Horizontal Link Adjustment
(fig. 330)

Note. Perform the adjustment in paragraph 310 before proceeding with the following adjustment.

a. Requirement. The carriage-return clutch should be fully engaged before the carriage-return sensing lever strikes the lowest portion of the restoring cam, and the carriage-feed clutch should not bounce when characters other than carriage-return are selected.

b. Method of Checking. Press the space bar and the repeat key. While the carriage is moving to the right, watch the carriage-feed clutch. The clutch should remain fully closed while the carriage is moving. With the carriage at least one or more spaces from the left-hand margin, turn off the motor. Select any key, except carriage-return, trip the transfer lever latch, and turn the motor by hand until the carriage-return sensing lever contacts the carriage-return stop bar. Rotate the double-locking lever so that it just touches the carriage-return actuating lever.

c. Adjustment. Select any character, except carriage-return. Trip the transfer lever latch and rotate the motor by hand until the carriage-return sensing lever contacts the carriage-return stop bar. Detach and adjust the horizontal carriage-return link so that when it is fitted over the stud on the carriage-return bellcrank, the double-blocking lever is just touching the carriage-return clutch actuating lever.

Paragraph 310, Subparagraph *a.* Delete "There should be .001- to .005-inch clearance" and substitute: There should be some clearance, not exceeding 0.005 inch.

Delete subparagraph *c* and substitute the following:

c. Adjustment. Disconnect the carriage-feed clutch lever spring and the horizontal carriage-return link. Manually hold the carriage-return clutch members closed. Loosen the carriage-return clutch actuating lever clamping screw and rotate the lever to meet the requirement. Hold the carriage-return clutch actuating lever down against the shaft collar and tighten the clamping screw. Reconnect the carriage-feed clutch lever spring, and make the adjustment described in paragraph 309. Check related adjustments (pars. 312, 315, and 317).

Page 381. Delete paragraph 311. Delete figure 332.

Paragraph 312, heading. Below the heading. Add:

Note. Perform the adjustment in paragraph 315 before proceeding with the following adjustment.

Subparagraph *c.* After the second sentence add: Check the related adjustment (par. 308) before tightening the clamping screw.

Page 382, paragraph 314*a,* line 1. Change ".005- to .015" to: **0.010- to 0.020.**

Paragraph 315*a,* line 1. Change ".025- to .035" to: **0.015- to 0.025.**

Figure 335, callout. Change "005" to .015"" to: **0.010" to 0.010".**

Figure 336, callout. Change ".025" to .035"" to: **0.015" to 0.025"**

Page 387. Add paragraph 324.1 after paragraph 324.

324.1. Platen Trough End Play Adjustment
(fig. 344.1)

a. Requirement. Hold the platen trough and the platen shaft to the left. Clearance between the platen trough and the platen should be from 0.002 to 0.005 inch.

b. Adjustment. Loosen the two setscrews that hold the platen to the platen shaft. Position the platen to meet the requirement. Tighten the setscrews. Recheck the requirement.

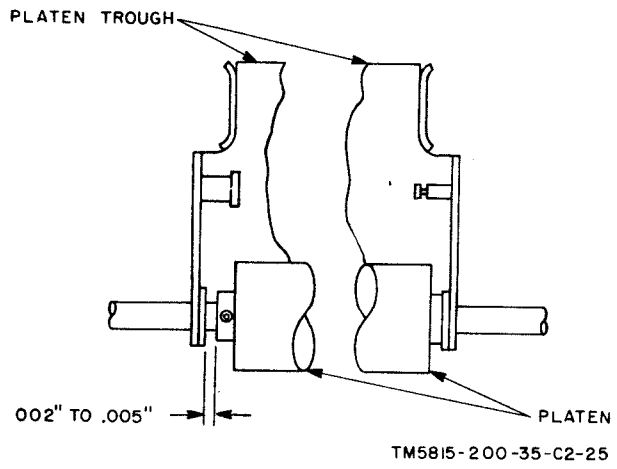


Figure 344.1. Platen trough end play adjustment.
(Added)

Page 389. Delete paragraph 326 and substitute:

326. Sprocket Feed Pin Load Adjustment
(fig. 346)

a. Requirement. It should require from 30 to 60 ounces of torque to protract or retract the pinwheel pins.

b. Method of Checking. Insert the L-shaped end of a spring scale in one of the slots of the sprocket cam plate. Turn the platen crank to protract and retract the sprocket feed pins.

c. Adjustment. Remove the platen as described in paragraph 155*a*. Remove the retainer rings (5 and 13, fig. 205). Install or remove shims (55169) to meet the requirement. Reassemble the platen as described in paragraph 155*b*. Check related adjustments (pars. 328, 325, 337, 336, and 335).

Paragraph 328*a*(1), line 3. Change "9/32" to: **9/16.**

Page 391. Add paragraph 332.1 after paragraph 332.

332.1. Letters Shift Lever Shaft End Play Adjustment
(fig. 352.1)

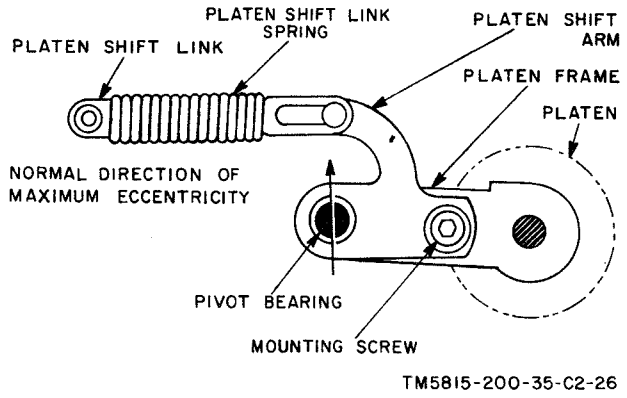


Figure 350. Platen shift preliminary adjustment.
(Superseded)

a. Requirement. The letters shift lever and the platen latch should be in visual alignment. The carriage-feed lever and the support lever should be in visual alignment. There should

be clearance up to a maximum of 0.005 inch between the collar and the carriage-feed lever.

b. Adjustment. Hold the letters shift lever so that it is parallel with the function bracket while the adjustment is being made or measured. Hold the letters shift lever shaft against the function bracket and loosen the setscrews in the collar. Position the collar to meet the requirement. Tighten the setscrews.

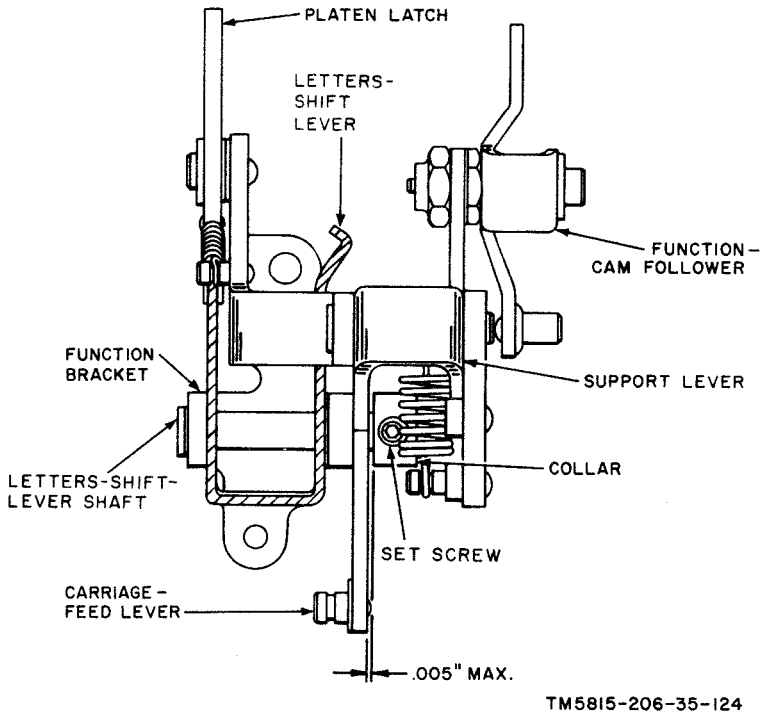


Figure 352.1. Letters shift lever shaft end play adjustment. (Added)

Page 392. Delete paragraph 334 and substitute:

334. Platen Blocking Arm Adjustment (fig. 354)

a. Requirement. There should be from 0.010- to 0.020-inch clearance between the platen stop screw and the lower surface of the platen frame when the platen is moved to the letters shift position and then pushed upward manually.

b. Method of Checking. Move the platen to the letters shift position. Check to be sure that the platen blocking arm is latched by the platen lower case latch. Push upward on the platen and insert a flat feeler gage between the platen stop screw and the lower surface of the platen frame.

c. Adjustment. Loosen the clamping screw on the platen blocking arm, position the platen blocking arm to meet the requirement, tighten the clamping screw, and recheck the requirement.

After paragraph 334 add:

334.1. Platen Blocking Arm Adjustment (fig. 354.1)

a. Requirement. There should be from 0.005 to 0.020-inch clearance between the figures shift sensing lever and the platen lower case latch when other than the figures or letters combination is selected and when figures shift sensing lever drops off the high portion of its restoring cam and is blocked by the figures stop bar.

b. Method of Checking. Select a combination other than letters or figures. Trip the transfer lever latch by hand. Rotate the motor until the figures shift sensing lever drops off the high portion of its restoring cam and is blocked by the figures stop bar. Measure the clearance between the figures shift sensing lever and the platen lower case latch.

c. Adjustment. Loosen the mounting screws of the platen blocking arm bracket. Move the platen blocking arm bracket until the requirement is met. Tighten the mounting screws. Recheck the requirement.

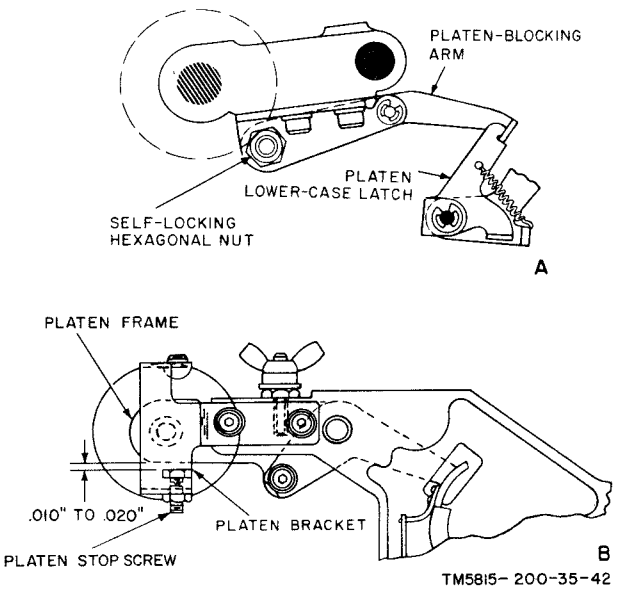


Figure 354. Platen blocking arm adjustment. (Superseded)

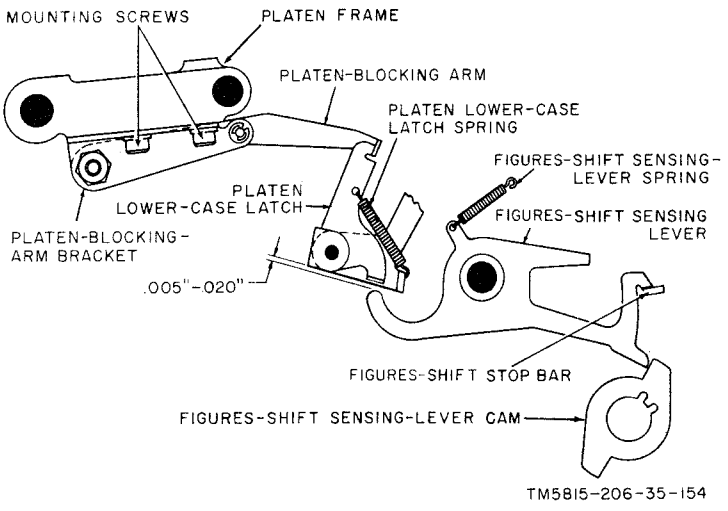


Figure 354.1. Platen blocking arm bracket adjustment. (Added)

Paragraph 335. Below the heading add:

Note. Perform the adjustment in paragraph 336 before proceeding with the following adjustment.

Delete subparagraph *a*(1) and substitute.

(1) While the teletypewriter is receiving line feed code groups, a forward pull of 40 ounces applied to the upper arm of the line feed lever should not prevent the line feed mechanism from turning the platen one line space when the single-double line feed lever is in the single-line feed position, or two line spaces when the single-double line feed lever is in the double-line feed position.

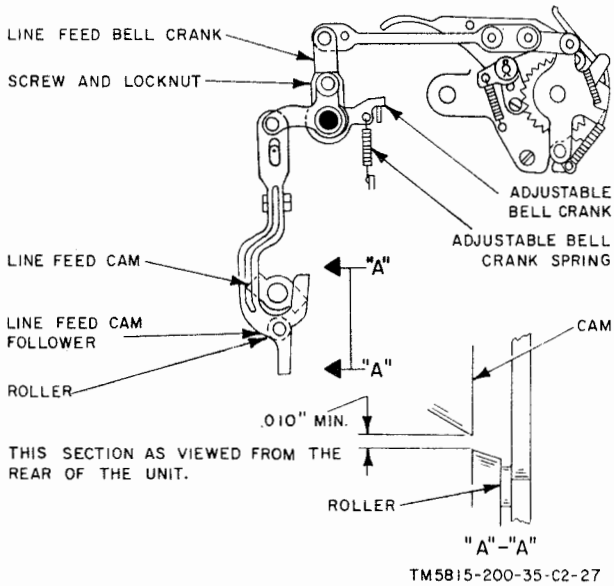


Figure 355. Line feed bellcrank and line feed connecting link adjustments. (Superseded)

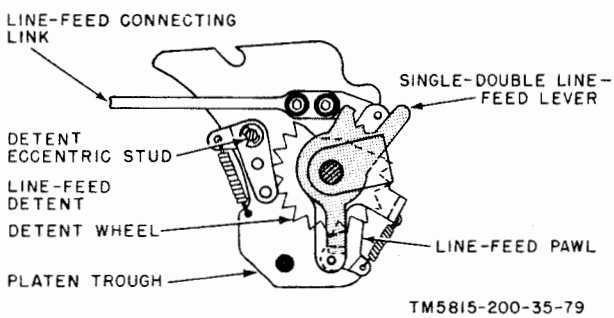


Figure 355.1. Line feed detent adjustment. (Added)

Delete paragraph 336 and substitute:

336. Line Feed Bellcrank Adjustment
(fig. 355)

Note. Perform the adjustment in paragraph 337 before proceeding with the following adjustment.

a. Requirement. Clearance between the roller on the line feed cam follower and the line feed cam should be at least 0.010 inch, when the line feed sensing lever is released and pulled to the low part of its restoring cam.

b. Method of Checking. Select the line feed code group. Trip the transfer lever latch and turn the motor by hand until the line feed sensing lever is pulled to the low part of its restoring cam. The roller on the line feed cam follower should move under the line feed cam. Pull the line feed cam follower toward the rear of the unit. Check the requirement with a feeler gage at both low points of the line feed cam.

c. Adjustment. Loosen the screw and locknut on the line feed bellcrank. Position the adjustable arm of the bellcrank to meet the requirement. Tighten the locknut and recheck the requirement at both low points of the line feed cam. Check the related adjustment (par. 335).

Page 393. Delete paragraph 337 and substitute:

337. Line Feed Detent Adjustment
(fig. 355.1)

a. Requirement. The line feed pawl should seat fully into one of the notches of the detent wheel when the single-double line feed lever is in the double-line feed position and the line feed connecting link is moved slowly toward the rear of the teletypewriter.

b. Method of Checking. Move the line feed connecting link manually toward the rear of the teletypewriter and check the requirement as the line feed pawl moves into a notch in the detent wheel.

c. Adjustment. Loosen the nut that holds the detent eccentric stud to the platen trough. Turn the eccentric stud until the requirement is met. Tighten the nut and recheck the requirement. Check the related adjustment (par. 335).

Paragraph 338. Below the heading add:

Note. Perform the adjustment in paragraph 356 before proceeding with the following adjustment.

Subparagraph *a.* Designate the existing material after the heading "(1)" and add the following:

(2) When the letters shift button is depressed, clearance between the tip of the platen latch and the projection on the aperture gate should be at least 0.015 inch.

(3) When the platen is in the figures position, the platen latch should disengage each time the button is pressed.

a.1. Method of Checking.

(1) Put the manual letters shift mechanism in the unoperated position. Check the requirement.

(2) Put the platen in the figures position. Press the shift button. Position the tip of the platen latch horizontal with the projection on the aperture gate. Check the requirement.

(3) Put the platen in the figures position. Press the shift button. The platen should drop to the letters position.

Delete paragarph 340 and substitute:

340. Carriage-Feed Shaft Driving Collar Adjustment
(fig. 358)

a. Requirement. The friction clutch assembly should be compressed against the carriage-feed ratchet with a 1- to 1½-pound pressure.

b. Adjustment. Loosen the setscrews in the driving collar. Apply a 1¼-pound pressure on the end of the carriage-feed shaft and against the drive collar; tighten the setscrews.

After paragraph 340 add:

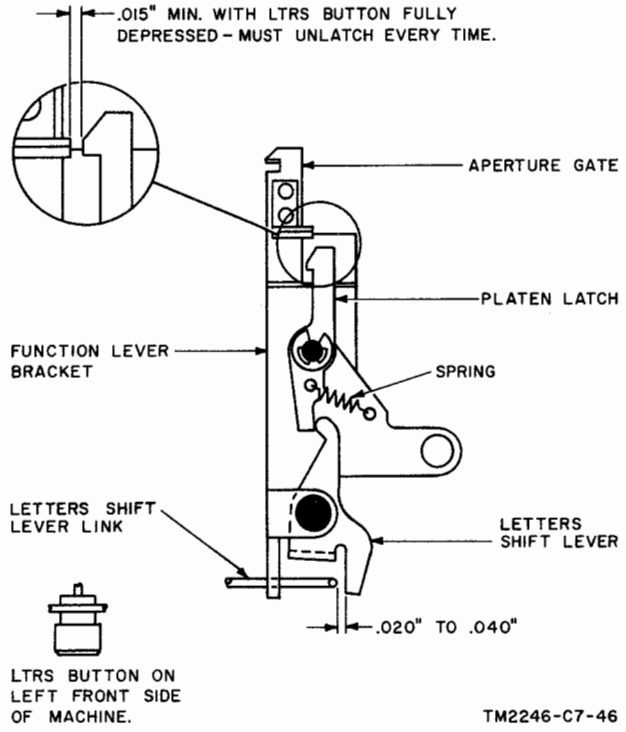


Figure 356. Manual unshift lever link adjustment.
(Superseded)

Subparagraph *b*. Designate the existing material after the heading "(1)" and add the following:

(2) If necessary, to meet requirements in *a*(2) and (3) above, form the tip of the letters shift lever that touches the platen latch.

Paragraph 339*a*. Delete subparagraph *a* and substitute:

a. Requirement. The end of the ratchet wheel and the end of the flat on the shaft should be visually flush.

Figure 357. Delete the callout ".010" TO .020"."

340.1. Carriage-Feed Driving Gear End Play Adjustment
(fig. 358.1)

a. Requirement. There should be a 0.001- to 0.005-inch clearance between the flat washer and the shoulder on the carriage-feed shaft when the carriage-feed driving gear is held tight against the ball bearing.

b. Method of Checking. Push the carriage-feed clutch drum back and hold the carriage-feed driving gear tight against the ball bearing. Check the clearance with a feeler gage.

c. Adjustment. Loosen the self-locking hexagonal nut on the rear of the carriage-feed

shaft. Rotate the adjusting nut clockwise or counterclockwise until the requirement is met. Tighten the self-locking hexagonal nut and recheck the clearance.

gear should be centered with the carriage-feed worm on the main shaft.

b. Adjustment. Loosen the setscrews in the

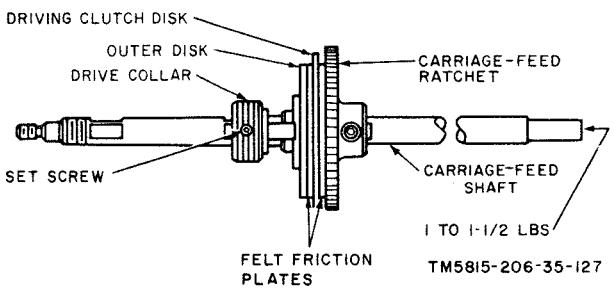


Figure 358. Carriage-feed shaft drive collar adjustment. (Superseded)

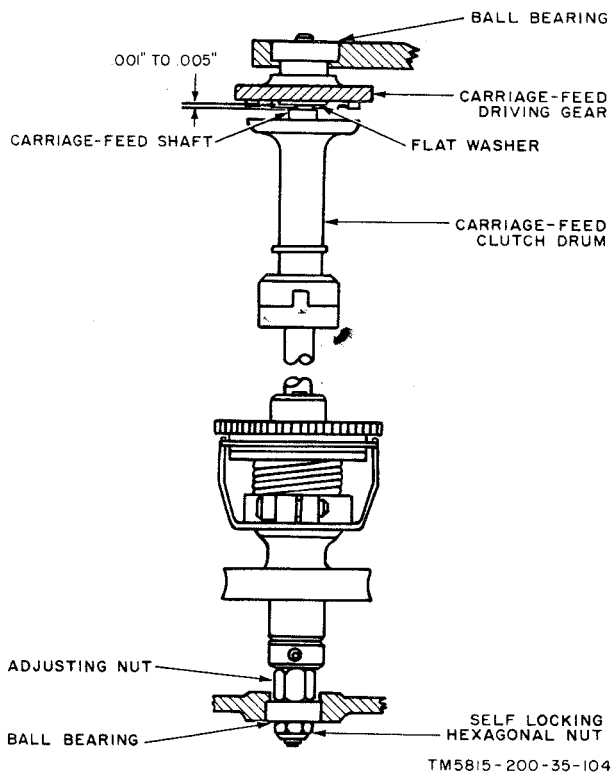


Figure 358.1. Carriage-feed driving gear end play adjustment. (Added)

Page 394. Delete paragraph 341 and substitute:

341. Carriage-Feed Driven Gear Adjustment (fig. 359)

a. Requirement. The carriage-feed driven shaft collar. Push the carriage-feed driven gear forward until it is tight against the carriage-feed worm. Measure the distance Y as shown.

Pull the carriage-feed driven gear rearward until tight and measure the distance X as shown. Divide the difference of the measurement by two, and add it to distance X. Use this dimension and position the carriage-feed driven gear. Slide the shaft collar against the carriage-feed driven gear and tighten the setscrews in the shaft collar.

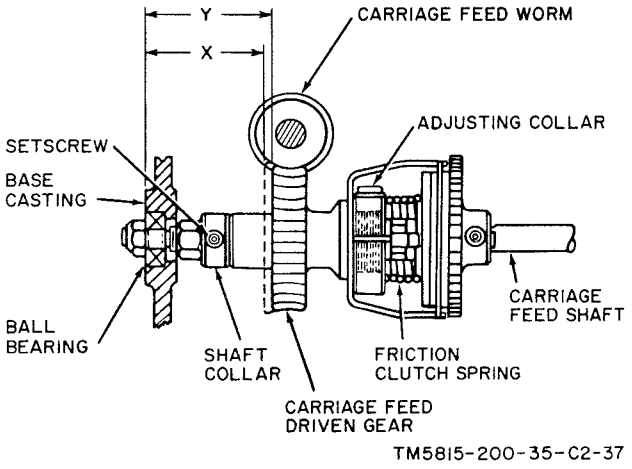


Figure 359. Carriage-feed driven gear adjustment. (Superseded)

Add paragraphs 341.1 and 341.2 after paragraph 341.

341.1. Feed Pawl End Play Adjustment
(fig. 359.1)

a. Requirement. Clearance between the feed pawl and the spacer on the feed pawl stud, while the feed pawl is held against the self-locking hexagonal nut, should be a maximum of 0.004 inch, without binding.

b. Method of Checking. Disconnect the feed pawl spring and the carriage-feed link from the feed pawl. Rotate the feed pawl manually and check for binding. Hold the feed pawl toward the self-locking hexagonal nut. Check the 0.004-inch maximum clearance with a feeler gage.

c. Adjustment. Disconnect the feed pawl spring and the carriage-feed link from the feed pawl. Remove the self-locking hexagonal nut, washer, and feed pawl from the bracket. Peel the spacer to meet the requirement, or insert a new spacer. Reassemble the feed pawl, washer, and self-locking hexagonal nut. Recheck the requirement. Connect the feed pawl spring and the carriage-feed link.

341.2. Feed Pawl Alignment
(fig. 359.2)

a. Requirement. The feed pawl should be centered on the ratchet, and should engage the teeth of the ratchet squarely.

b. Method of Checking. Check the requirement visually.

c. Adjustment. Loosen the two machine screws that hold the feed pawl bracket to the chassis. Position the feed pawl bracket to meet the requirement. Tighten the machine screws and recheck the requirement. Check related adjustments (pars. 323 and 304).

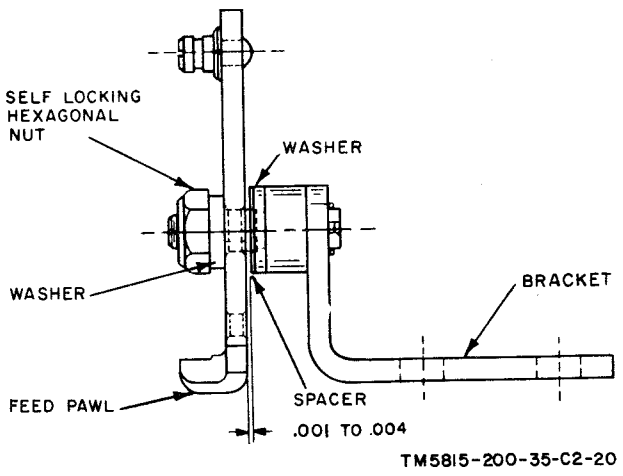


Figure 359.1. Feed pawl end play adjustment. (Added)

Paragraph 342*a*, line 2. Change "40" to: 44.

Figure 360. Change the callout "40 TO 48 OZ" to: **44 TO 48 OZ.**

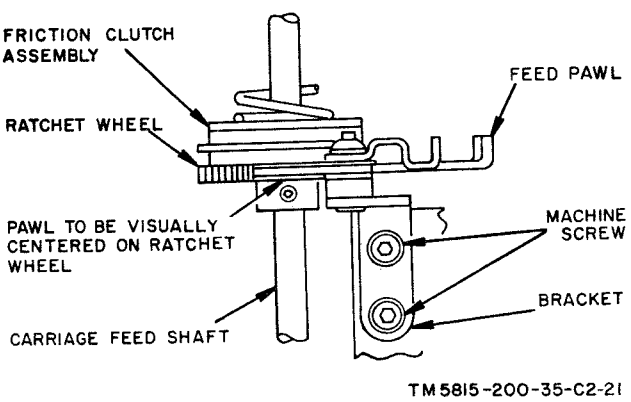


Figure 359.2. Feed pawl adjustment. (Added)

Page 395, paragraph 344. Below the heading add:

Note. Perform the adjustment in paragraph 345 before proceeding with this adjustment.

After paragraph 344 add:

344.1. Print Bail End Play Adjustment (fig. 363.1)

a. Requirement. When the print bail assembly is held toward the printer side casting, clearance between the print bail assembly and the bearing in the printer center function shaft bearing cap should not exceed 0.005 inch, with no binding.

b. Method of Checking. Take up the end play of the print bail assembly toward the printer side casting. Measure the clearance.

c. Adjustment. Loosen the sockethead clamping screw in the print cam follower. Position the print bail assembly to meet the requirement. Tighten the sockethead clamping screw. Recheck the requirement. Check the requirements of the related adjustment (par. 344).

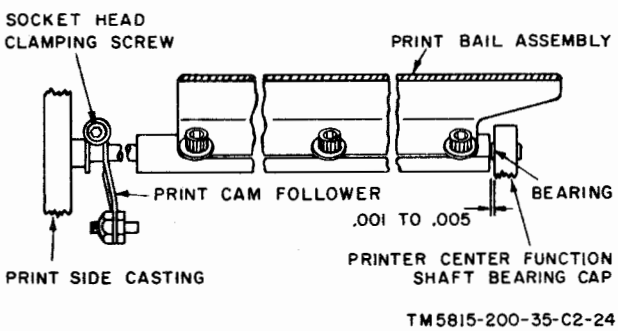


Figure 363.1. Print bail end play adjustment. (Added)

Page 400. Delete paragraph 355 and substitute:

355. Margin Signal Bell and Bracket Adjustment (fig. 371)

a. Requirements.

(1) The margin signal bell should ring when the carriage is 66 spaces from the left-hand margin (70 spaces on weather machines).

(2) There should be a clearance of 0.020 to 0.025 inch between the margin bell pawl and the pawl tripping arm when the carriage is 66 spaces from the left-hand margin (70 spaces on weather machines).

b. Method of Checking.

(1) Turn the motor on and space the carriage 65 spaces from the left-hand margin (69 spaces on weather machines). Press any of the character keylevers once; the margin bell should ring.

(2) With the carriage 66 spaces from the left-hand margin (70 spaces on weather machines), move the margin bell clapper up and down to determine the closest point between the margin bell pawl and the pawl tripping arm. Check the clearance at the closest point.

c. Adjustment.

(1) Loosen the two nuts that hold the pawl tripping arm to the carriage-rack driving gear, position the arm to meet the requirement (*a*(1) above), and tighten the nuts.

(2) Loosen the machine screws that hold the margin bell bracket to the page printer frame. Position the bracket to meet the requirements (*a*(2) above) and tighten the screws.

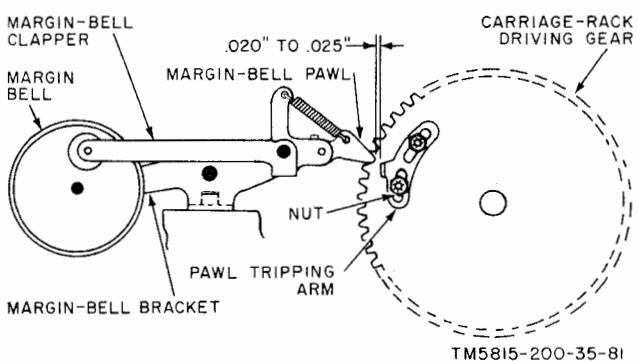


Figure 371. Margin signal bell and bracket adjustment. (Superseded)

Figure 372. Change the callout ".040" TO 060"" to: **.002" TO .010".** Change "MOTOR STOP ACTUATING LEVER" to: **MOTOR STOP FUNCTION LEVER.**

Delete paragraph 356 and substitute:

356. Motor Stop Contacts Bracket Adjustment
(fig. 372)

Note. This adjustment does not apply to teletypewriters which are adjusted to make the motor stop function inoperative.

a. Requirement. There should be a 0.002- to 0.010-inch clearance between the motor stop function lever and the damper leaf spring when the platen is in the letters shift position and movement of the motor stop function lever is taken up in the direction of the damper leaf spring.

b. Adjustment. Place the platen in the letter shift position. Loosen the bracket mounting screws, position the switch bracket to obtain the required clearance, and tighten the screws. Recheck the requirement.

After paragraph 356 add:

356.1. Motor Stop Disabling Adjustment
(fig. 372.1)

Note. This adjustment should be performed only to make the motor stop function inoperative.

a. Requirement. The motor should continue operating when an H-code group is received while the teletypewriter is in the figures shift position.

b. Adjustment. Loosen the two bracket mounting screws, position the switch bracket to obtain the greatest possible clearance between the damper leaf spring and the motor stop function lever, and tighten the mounting screws. Recheck the requirement.

Page 401. Delete paragraph 358 and substitute:

358. Signal Bell Clapper Preliminary Adjustment
(fig. 374)

a. Requirements.

(1) With the teletypewriter in the stopped position, the clapper stud should be vertical.

(2) With the teletypewriter in the stopped position, there should be a clearance not exceeding 0.050 inch between the signal bell clapper and the clapper stop.

b. Method of Checking. Remove the upper locknut and the signal bell. With the teletypewriter in the stopped position, check the requirements. Perform the margin signal bell adjustment (par. 355) when reinstalling the signal bell.

c. Adjustment. Remove the upper locknut and the signal bell. Loosen the lower locknut and position the clapper stop to meet requirement in *a*(1) above. Tighten the lower locknut and recheck the requirement (*a*(1) above). Readjust if necessary. With the teletypewriter still in the stopped position, form the signal bell clapper to meet requirement in *a*(2) above. Replace the signal bell and locknut as described in paragraph 355.

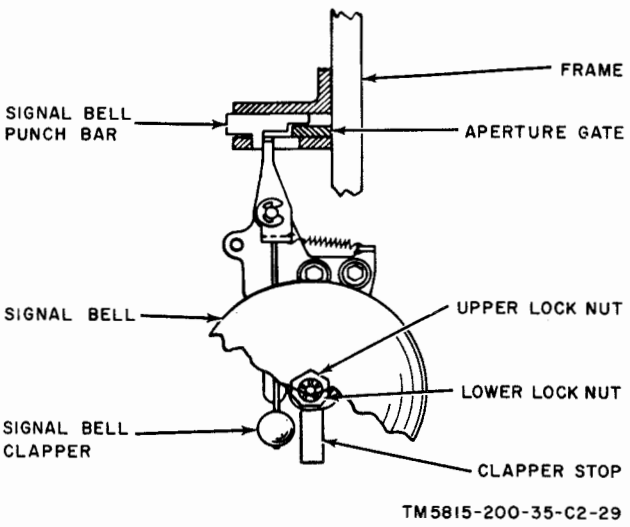


Figure 374. Signal bell clapper preliminary adjustment. (Superseded)

Page 402. Delete paragraph 359*b* and substitute:

b. Adjustment. Loosen the upper locknut on the mounting stud. Position the signal bell so that the mounting stud is centered in the elongated hole. Tighten the locknut and check the requirements. If necessary, reposition the signal bell in any direction to meet the requirements. If the requirement in *a*(1) above cannot be met by repositioning the signal bell, decrease the clearance between the clapper and the clapper stop (par. 358).

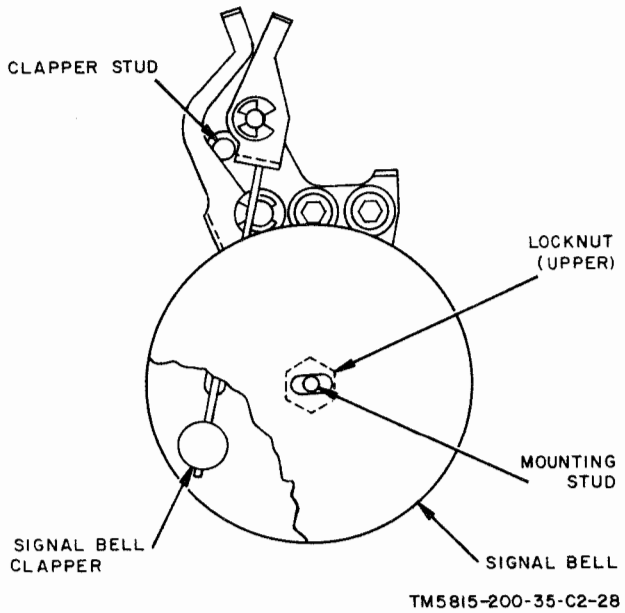


Figure 375. Signal bell adjustment. (Superseded)

Page 403, paragraph 363*a*, line 3. Change ".003-inch" to: **0.005-inch.**

Delete paragraph 364 and substitute:

364. Stop Selector Lever Latch and Transmitter Contact Adjustment (TT–117/FG, TT–117A/FG, TT–118/FG, TT–119/FG, and TT–119A/FG)

(fig. 380)

a. Requirements.

(1) There should be a minimum break in the send circuit between successive marking impulses.

(2) The stop selector lever latch should be adjusted to give a minimum break in the send circuit between the marking fifth intelligence impulse and the stop impulse. There should be a 0.005-inch minimum clearance between the stop selector lever and the stop selector lever latch when the stop selector lever is on the low part of its cam.

b. Method of Checking.

(1) Use Distortion Test Set TS–383/GG to measure the signal transmitted by the teleprinter.

(2) Connect a milliammeter in series with the send circuit. Press the LTRS keylever and slowly turn the motor by hand. There should be slight, but minimum, breaks between the successive marking impulses.

(3) Connect a milliammeter in series with the send circuit. Press the T-keylever and turn the motor slowly by hand. There should be a slight, but minimum, break between the marking fifth intelligence and the stop impulse. With the stop selector lever on the low part of its cam, check the clearance between the stop selector lever and the stop selector lever latch with a feeler gage.

c. Adjustment.

(1) Loosen the machine screws. Turn the motor on and push the REPEAT key and blank key. With a screwdriver in the notch of the selector lever latch and the latch bracket, move the selector lever latch to obtain the required stop signal length on a TS–383/GG. Move to the left to decrease and to the right to increase pulse length; tighten the screws and recheck the signal length.

(2) Connect a milliammeter in series with the send circuit. Press the LTRS keylever and slowly turn the motor by hand. Adjust (by turning) the mark stationary contact in or out until the requirement of *a*(2) above is met.

(3) With the milliammeter connected in series with the send circuit, loosen the machine screws that hold the stop selector lever latch. Press the T-keylever and slowly turn the motor by hand. Move the selector lever latch to the right or left until a slight but minimum break is obtained between the marking fifth intelligence impulse and the stop impulse. Move the selector lever latch to the right to decrease the break and to the left to increase the break. With the stop selector lever against the low part of its cam, check the clearance between the stop selector lever and the selector lever latch. If

the clearance is less than 0.005 inch, remake the adjustment described in paragraph 363. Reposition the selector lever latch to meet the requirement of *a*(2) above. Tighten the two machine screws and recheck the requirement.

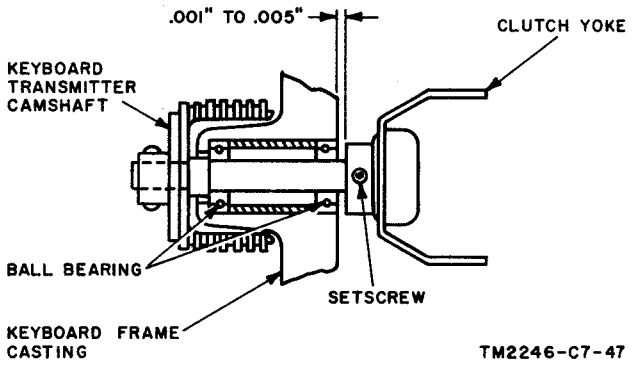


Figure 390.1. Transmitter camshaft end play adjustment. (Added)

Page 409. After paragraph 374 add:

374.1. Transmitter Camshaft End Play Adjustment
(fig. 390.1)

a. Requirement. There should be 0.001- to 0.005-inch clearance between the clutch yoke hub and the adjacent ball bearing when the cam end of the transmitter camshaft is pressed toward the keyboard frame casting.

b. Adjustment. Loosen the setscrews in the clutch fork and insert a 0.003-inch feeler gage between the clutch yoke hub and the bearing. Press the transmitter camshaft and clutch fork toward each other; align the setscrews with the flats on the camshaft and tighten the setscrews. Remove the feeler gage. Recheck the requirement.

Page 410, paragraph 377*a,* line 2. Change "010-inch" to: **0.020-inch.** Line 4. Change the comma to a period and delete "with maximum clearance of .025 inch between the ratchet wheel and line indicator drive shaft."

Subparagraph *b*. Delete the last sentence.

Delete subparagraph *c* and substitute.

c. Adjustment. Loosen the setscrews and rotate the ratchet wheel until the requirement is met. Tighten the setscrews. Recheck the requirement.

Figure 393. Delete the callout ".025" MAX."

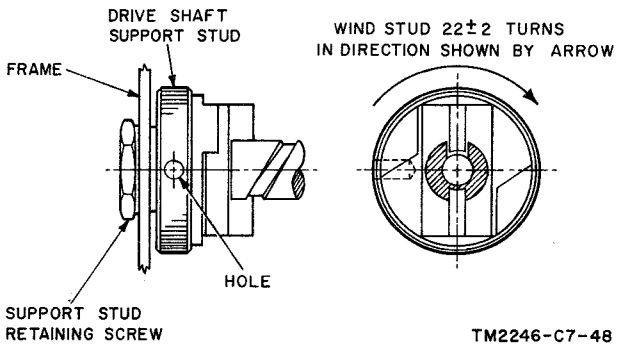


Figure 400.1. Indicator return spring tension adjustment, (Except TT-117/FG, and TT-119/FG). (Added)

Page 414. After paragraph 385 add:

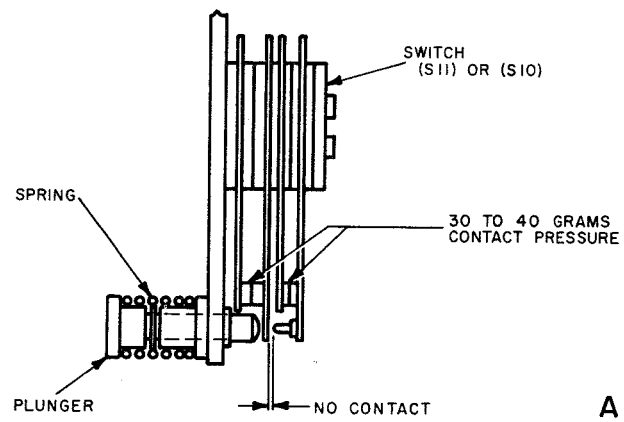
385.1. Indicator Return Spring Tension Adjustment (Except TT-117/FG, and TT-119/FG)
(fig. 400.1)

a. Requirement. The indicator carriage should return to the left-hand margin from only one space out when the carriage-return is selected.

b. Adjustment. With the indicator carriage all the way to the left, loosen the support stud retaining screw until the drive shaft support stud stops unwinding counterclockwise. Wind the support stud clockwise 22 turns ±2. Use the hole in the knurled surface of the support stud as a reference when counting turns. Tighten the support stud retaining screw; be careful not to let the drive shaft unwind. Recheck the requirement.

Paragraph 386*a,* line 4. Change "some clearance not more than .005 inch" to: **0.003- to 0.010-inch clearance.**

Figure 401. Change the callout ".005"" to: **.003" to .010".**



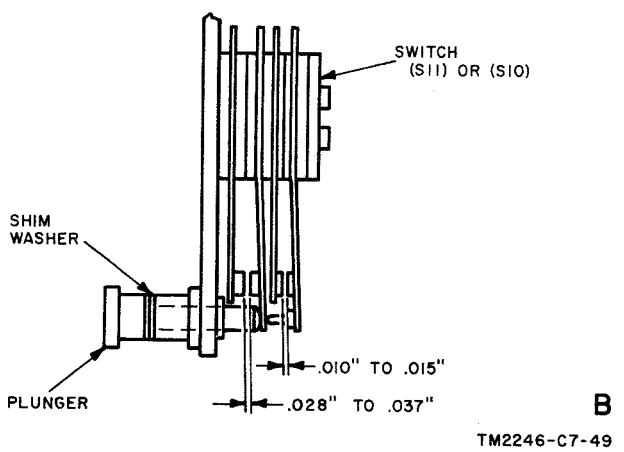
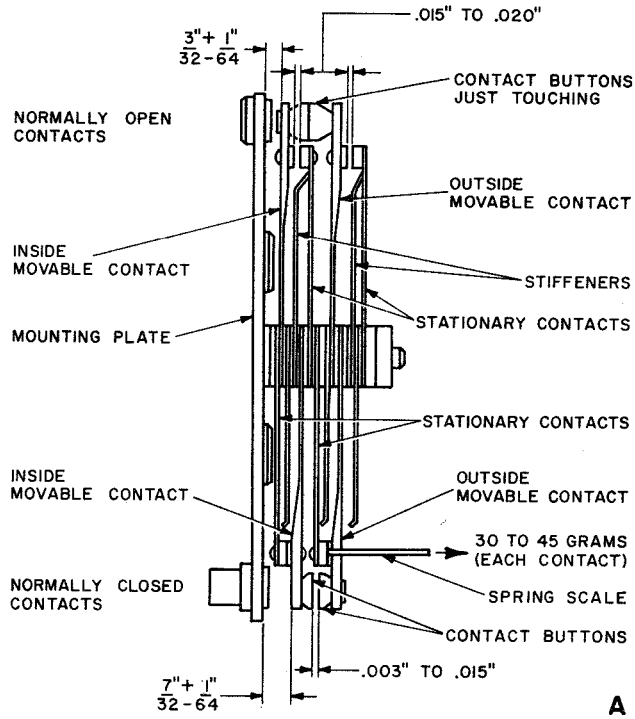


Figure 402. Lower pulse switch contact adjustment. (Superseded)



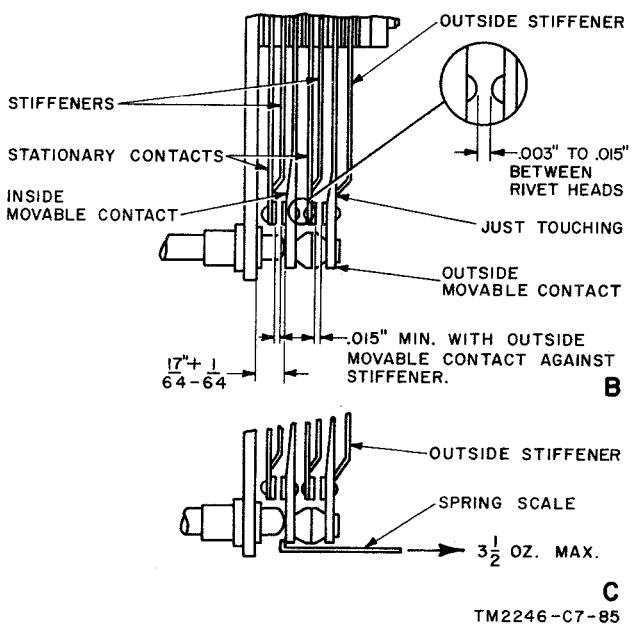


Figure 402.1. Preliminary pulse switch adjustment. (Added)

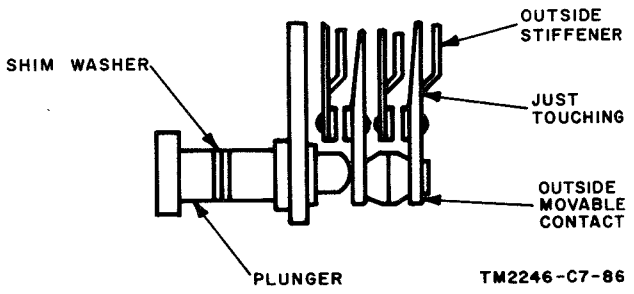


Figure 402.2. Lower pulse switch contact adjustment. (Added)

Page 415. Delete paragraph 387 and substitute:

387. Lower Pulse Switch Contact Adjustment (fig. 402)

a. Requirements.

(1) There should be 30 to 45 grams pressure between the contacts.

(2) There should be 0.028- to 0.037-inch clearance between the contacts closest to the plunger when the plunger is pushed against the bushing.

(3) There should be 0.010- to 0.015-inch clearance between the contacts farthest from the plunger when the plunger is pushed against the bushing.

b. Adjustment.

(1) Bend the spring contact to meet the requirement in *a*(1) above.

(2) Remove or add shim washers under the head of the plunger as required.

(3) Bend the spring contact to meet the requirement in *a*(3) above.

Add paragraphs 387.1 and 387.2 after paragraph 387.

387.1. Pulse Switch Preliminary Adjustment (fig. 402.1)

Note. This adjustment applies to teletypewriter sets supplied with keyboard contact assembly 61698A.

a. Requirements.

(1) *Normally open contacts.*

(*a*) There should be $\frac{3}{32}$-inch $\pm\frac{1}{64}$ clearance between the mounting plate and the inside movable contact (A, fig. 402.1). The contact buttons should just touch.

(*b*) There should be 0.015- to 0.020-inch clearance between each of the two sets of normally open contacts.

(2) *Normally closed contacts.*

(*a*) There should be $\frac{7}{32}$-inch $\pm\frac{1}{64}$ clearance between the mounting plate and the inside movable contact (A, fig. 402.1). There should be 0.003- to 0.015-inch clearance between the buttons of the movable contacts.

(*b*) It should require a pull of 30 to 45 grams to open each of the two sets of stationary contacts (A, fig. 402.1).

(*c*) When the inside movable contact has been moved to a position $\frac{17}{64}$-inch $\pm\frac{1}{64}$ away from the mounting plate (B, fig. 402.1), there should be 0.015-inch minimum clearance between each of the two sets of stationary contacts. The outside movable contact should just touch the outside stiffener and there should be 0.003- to 0.015-inch clearance between the rivet heads (B, fig. 402.1).

(*d*) It should require a maximum force of $3\frac{1}{2}$ ounces to move the normally open movable contacts against the outside stiffener (C, fig. 402.1).

b. Method of Checking.

(1) *Normally open contacts.*

(*a*) Check the $\frac{3}{32}$-inch dimension in *a*(1) (*a*) above with a 6-inch steel rule. Check the position of the contact buttons visually.

(*b*) Check the requirement in *a*(1) (*b*) above with a feeler gage.

(2) *Normally closed contacts.*

(*a*) Check the $\frac{7}{32}$-inch dimension in *a*(2) (*a*) above with a 6-inch steel rule. Check the clearance between the buttons of the movable contacts with a feeler gage.

(*b*) Check the requirement in *a*(2) (*b*) above with a gram scale.

(*c*) Position the inside movable contact to meet the requirement in *a*(2) (*c*) above and check the clearance between each of the two sets of contacts with a feeler gage. Check the

position of the outside movable contact visually. Check the clearance between the rivets with a feeler gage.

(*d*) Check the requirement with a spring scale.

c. Adjustments.

(1) *Normally open contacts.*

(*a*) Form the inside movable contact to meet the $\frac{3}{32}$-inch $\pm\frac{1}{64}$ requirement. Form the outside movable contact to meet the requirement for the contact buttons.

(*b*) Form the stiffeners to position them against each normally open contact to meet the requirement.

(2) *Normally closed contacts.*

(*a*) Form the inside movable contact to meet the $\frac{7}{32}$-inch $\pm\frac{1}{64}$ requirement. Form the outside movable contact to meet the clearance requirement.

(*b*) Form the stationary and movable contacts of each set equally to meet the requirement in *a*(2) (*b*) above. Recheck the requirement in *a*(2) (*a*) above.

(*c*) Position the inside movable contact to meet the requirement in *a*(2) (*c*) above and form the stiffener of each of the two sets of stationary contacts to meet the clearance requirement. Form the outside stiffener to meet the requirement. It may be necessary to file the rivet heads to meet the clearance requirement. Recheck the requirements in *a*(2) (*a*) and (*b*) above.

(*d*) Check the requirement of *a*(2) (*d*) above. If the reading exceeds the requirement, adjust the stationary contacts to meet the low figure of the tolerance given in *a*(2) (*b*) above. Check requirement in *a*(2) (*a*) above.

Note. After the switch is installed, perform related adjustments (pars. 387, 387.2, and 397).

387.2. Lower Pulse Switch Contact Adjustment

(fig. 402.2)

Note. This adjustment applies to teletypewriter sets supplied with keyboard contact assembly 61698A.

a. Requirement. The outside movable contact should just touch the outside stiffener when the plunger is pushed tight against the bushing.

b. Adjustment. Remove or add shim washers under the head of the plunger as required.

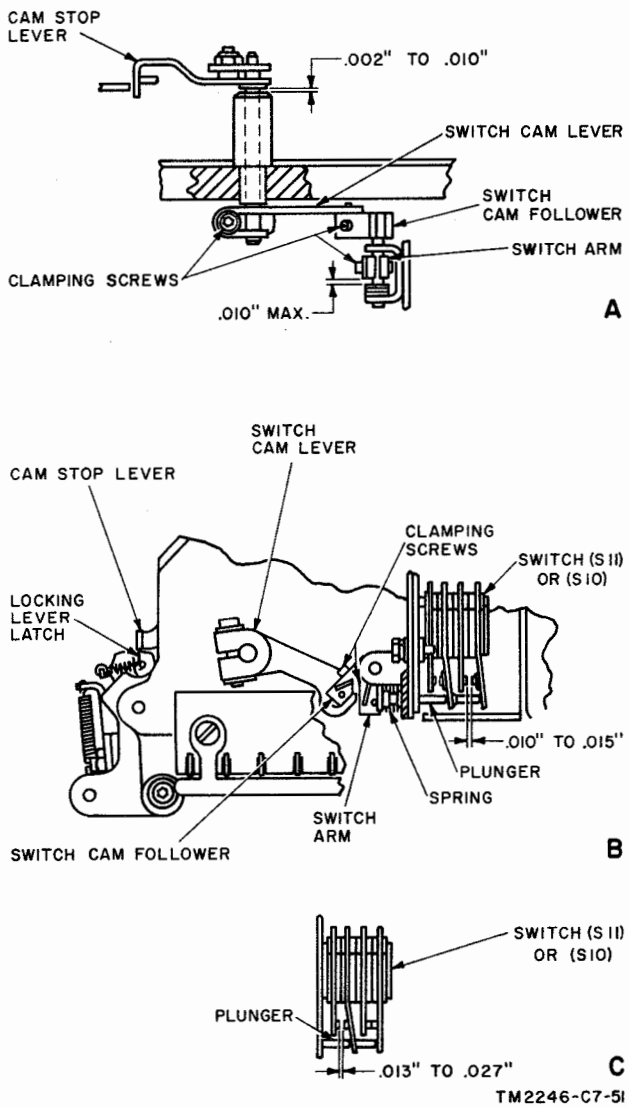


Figure 404. Lower pulse switch adjustment. (Superseded)

Page 416. Delete paragraph 389 and substitute:

389. Lower Pulse Switch Adjustment (fig. 404)

Note. When adjusting teletypewriter sets procured subsequent to and including Order No. 42770–PC–59–C5–51, perform the adjustments described in paragraphs 387.1 and 387.2 before proceeding with the following instructions.

a. Requirements.

(1) When the switch cam lever is held tight against its bearing and the switch cam follower is held against the switch cam lever, there should be a maximum of 0.010-inch end play in the switch arm shaft.

(2) When the cam stop lever is resting on the locking lever latch there should be 0.010- to 0.015-inch clearance between the contacts farthest from the plunger.

(3) When the contacts farthest from the plunger have just closed, there should be 0.013- to 0.027-inch clearance between the contacts closest to the plunger.

Note. Requirement (3) above does not apply to teletypewriter sets supplied with keyboard contact assembly 61648A.

b. Adjustments.

(1) Loosen the switch arm clamping screw to meet the requirement in *a*(1) above.

(2) Rotate the switch arm to meet the requirement in *a*(2) above. Tighten the switch arm clamping screw. Recheck the requirement in *a*(1) above.

(3) Set the cam stop lever in the tripped position and actuate the plunger with the finger until the contacts farthest from the plunger have just closed. Check the gap of the contacts closest to the plunger. Bend stationary contact to meet the requirement in *a*(3) above.

Page 418 paragraph 396*c*, line 4. Change "0.50"" to: **.010-inch.**

Figure 411. Change the callout ".050"" to: **.010" TO .030".**

Page 419. Delete paragraph 400 and substitute:

400. Transmitter Friction Clutch Adjustment (fig. 415)

a. Requirements.

(1) There should be 0.005- to 0.025-inch clearance between the friction clutch disk and the bearing of the friction clutch yoke.

(2) It should require 25 to 30 ounces to keep the friction clutch yoke from turning when the motor is running.

b. Method of Checking.

(1) Insert a flat feeler gage between the friction clutch disk and the bearing of the friction clutch yoke to determine the clearance.

(2) With the motor on, hook a spring scale on the yoke. Depress the spacebar and read the scale.

c. Adjustments.

(1) Loosen the two setscrews in the friction clutch disk and position the disk until the requirement of *a*(1) above is met. Tighten the setscrews.

(2) With the motor off, loosen the clamping screws in the friction adjusting collar. Turn the friction adjusting collar in or out to meet the requirement; tighten the clamping screws. Turn the motor on and recheck the tension.

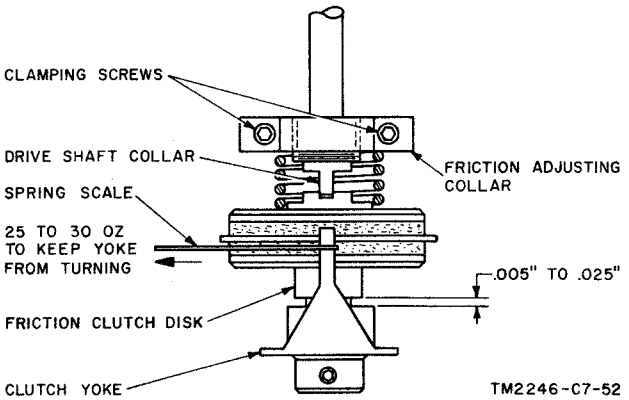


Figure 415. Transmitter friction clutch adjustment. (Superseded)

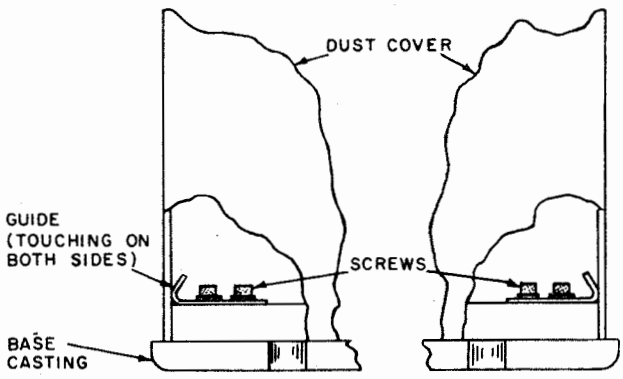


Figure 417.1. Dust cover guide adjustment. (Added)

Page 420. After paragraph 402. Add:

402.1. Dust Cover Guide Adjustment
(fig. 417.1)

a. Requirement. The dust cover guides should just touch the inside of the dust cover.

b. Adjustment. Loosen the two screws on each dust cover guide. Push both of the guides out as far as they will go. Tighten the screws but leave them loose enough so that the dust cover guides can be moved. Put the dust cover on. This will position the guides into place. Remove the dust cover and tighten the screws. Recheck the requirement.

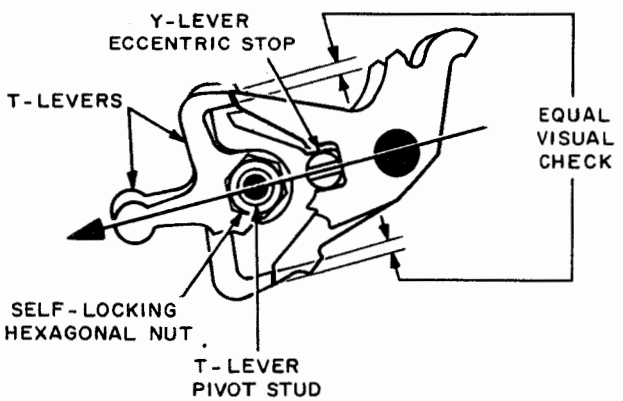


Figure 421.1 Sequential T-lever pivot stud adjustment. (Added)

Page 422. Add paragraphs 407.1 and 407.2 after paragraph 407.

407.1. Sequential T-Lever End Play Adjustment
(fig. 322.2)

a. Requirement. End play of the T-levers on the T-lever stud should not exceed 0.003 inch.

b. Method of Checking. Measure the clearance between the first T-lever and the flat washer, with the end play of the T-levers taken up toward the transfer lever.

c. Adjustment. Remove the hexagonal nut, flat washer, and first T-lever. Add or remove shims (57072 and 57073) to meet the requirement. Replace the bottom T-lever, flat washer, and hexagonal nut. Tighten the hexagonal nut and recheck the requirement.

407.2. Sequential T-Lever Pivot Stud Adjustment
(fig. 421.1)

a. Requirement. The T-levers should engage the Y-levers an equal amount for both mark and space positions of the Y-levers.

b. Method of Checking. With the transfer lever latched, set the No. 1 Y-lever in a mark position. Trip the transfer lever so the T-levers engage the Y-levers. Visually check the amount of engagement. Reposition the transfer lever and the T-levers by turning the motor by hand. Set the No. 1 Y-lever in a space position, trip the transfer lever and visually check the amount of engagement.

c. Adjustment. Loosen the self-locking hexagonal nut on the rear of the T-lever pivot stud. Position the pivot stud until the requirement is met. Tighten the nut and recheck the adjustment. Note the normal direction of maximum eccentricity in figure 421.1.

Paragraph 408, chart. After the first item. Add:

Adjustment	Par. ref.	Fig. ref.
Y-lever retaining collar adjustment	296	291

Page 423 paragraph 410. After subparagraph *a* add:

a.1. Method of Checking.

(1) With the motor on, select the blank code group. Insert a 0.006-inch feeler gage between the Y-levers and the Y-lever eccentric stop. Select the letters code group and check the requirement.

(2) With the motor on, select the blank code group. Insert a 0.002-inch feeler gage between the Y-levers and the Y-lever eccentric stop. Select the letters code group and check the requirement.

Paragraph 411*a*, line 3. Change ".018-inch" to: **0.015.**

After subparagraph *a* add:

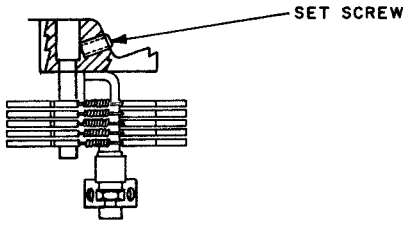
a.1. Method of Checking. Position the selector camshaft so that the selector levers are not operated. Place the armature in mark position and check the requirement with feeler gages.

After paragraph 411. Add:

411.1. Sequential Y-Lever Pivot Post Stud Positioning Adjustment (fig. 424.1)

a. Requirement. The Y-lever pivot post stud should be positioned in the normal direction of maximum eccentricity within ±10° as shown.

b. Adjustment. Loosen the Y-lever pivot post stud setscrew. Use the screwdriver slot in the Y-lever pivot post stud as reference to indicate the normal direction of maximum eccentricity. Position the post to meet the requirement. Tighten the setscrew. Check related adjustments (pars. 407.2, 412, 419, and 424).



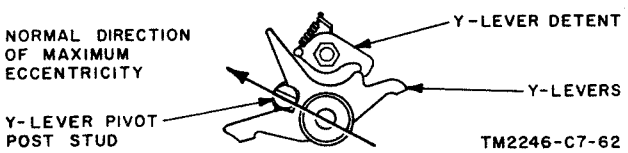


Figure 424.1. Sequential Y-lever pivot post stud positioning adjustment. (Added)

Page 427. After paragraph 420 add:

420.1. Code Actuated Switch Function Camshaft Gear End Play Adjustment (fig. 431.1)

a. Requirement. There should be a 0.005-inch maximum clearance between the flat washer and the inner race of the ball bearing when the function camshaft gear is held against the retainer ring farthest from the clutch teeth.

b. Method of Checking. Hold the function camshaft gear against the retainer ring farthest from the clutch teeth and check the requirement with a feeler gage.

c. Adjustment. Disassemble the function shaft (par. 272*a*) to gain access to the function camshaft gear. Remove the retainer ring and install or remove any combination of the 0.010-inch thickness or 0.005-inch thickness (55034 or 55035) flat washers to meet the requirement. Reinstall the retainer ring. Make sure it is seated properly in the groove in the function shaft. Recheck the requirement. Reassemble the function shaft. Check related adjustments (pars. 421–425).

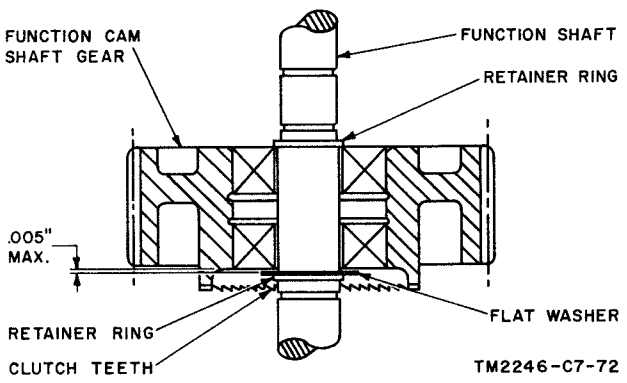


Figure 431.1. Code actuated switch function camshaft gear end play adjustment. (Added)

Page 428. Delete paragraph 422 and substitute:

422. Code Actuated Switch Function Shaft Clutch Adjustment (fig. 432)

a. Requirement. There should be 0.080- to 0.100-inch clearance between the clutch coupling and the sliding clutch drum when the slid-

ing clutch drum is fully engaged with the function camshaft gear.

b. Method of Checking. Check the requirement in *a* above with a feeler gage.

c. Adjustment. Trip the transfer lever trip latch and turn the motor by hand until the sliding clutch drum has fully engaged the function camshaft gear. Loosen the setscrews in the clutch coupling and shift the coupling in the proper direction to meet the requirement in *a* above. Tighten the setscrews and recheck the requirement.

Paragraph 423*a*, line 1. Change ".008- to .012-inch to: **0.008- to 0.017-inch.**

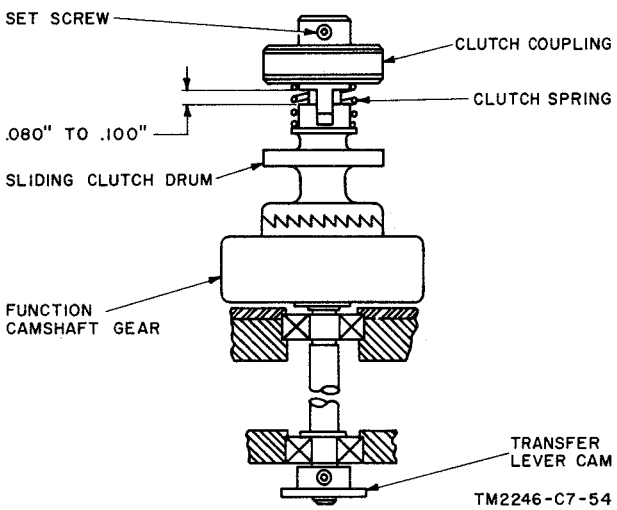


Figure 432. Code actuated switch function shaft clutch adjustment. (Superseded)

Figure 433. Change the callout ".008"–.012"" to: **.088"–.017"**.

Page 429. After paragraph 426 add:

426.1. Selector Camshaft Drive Collar Adjustment (Except TT–178/FG and TT–179/FG)

(fig. 436.1)

Note. Perform this adjustment only when removal of selector camshaft is necessary.

a. Requirement. The end of the drive shaft collar should be flush (visual check) with the edge of the camshaft flat nearest the selector cam.

b. Adjustment. Loosen the machine screws on the friction clutch adjusting collar and back off the collar to relieve the spring tension. Remove the collar. Loosen the setscrews on the drive shaft collar and adjust to meet the requirement. Tighten the setscrews and reinstall the friction clutch adjusting collar. Perform related adjustment (par. 427).

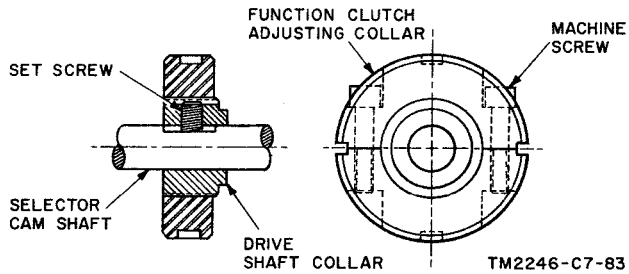


Figure 436.1. Selector camshaft drive collar adjustment (except TT–178/FG and TT–179/FG). (Added)

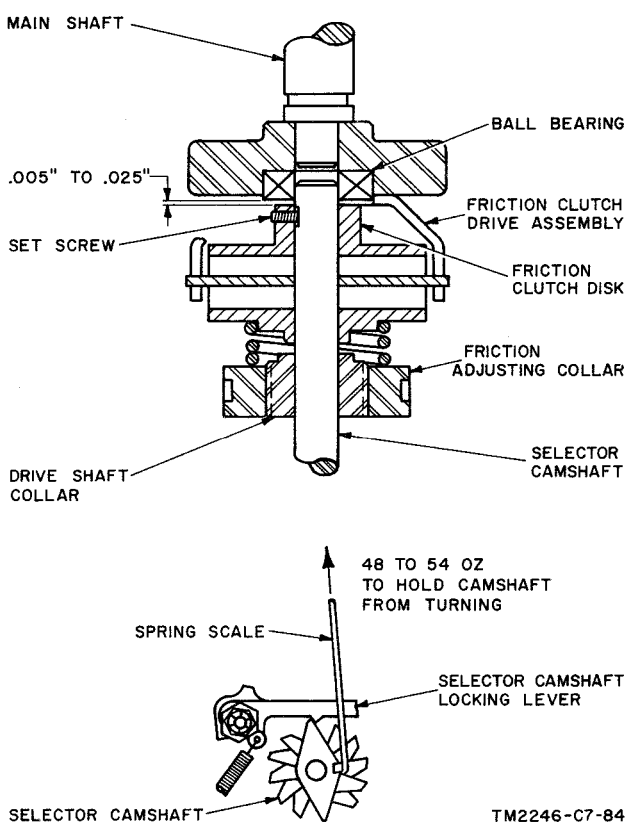


Figure 436.2. Selector camshaft clutch load adjustment. (Added)

Page 430. Delete paragraph 427 and substitute:

427. Selector Camshaft Clutch Load Adjustment

(fig. 436.2)

a. Requirements.

(1) There should be 0.005- to 0.025-inch clearance between the friction clutch disk and the bearing of the friction clutch drive assembly.

(2) It should require a pull of 48 to 54 ounces to hold the stop plate away from the stop lever with the motor on.

b. Method of Checking.

(1) Insert a flat feeler gage between the friction clutch and the bearing of the friction clutch drive assembly to determine the clearance.

(2) Place the hook end of the spring scale on the stop plate retainer of the selector camshaft. Pull on the spring scale until the stop plate moves away from the stop lever. Read the scale.

c. Adjustment.

(1) Loosen the two setscrews in the friction clutch disk and position the disk until the requirement of *a*(1) above is met. Tighten the two setscrews.

(2) Loosen the clamping screw of the friction clutch adjusting collar and turn the collar to meet the requirement in *a*(2) above. Tighten the clamping screw.

Page 431. Delete paragraph 430 and substitute:

430. Code-Ring End Play Adjustment

(fig. 437.1)

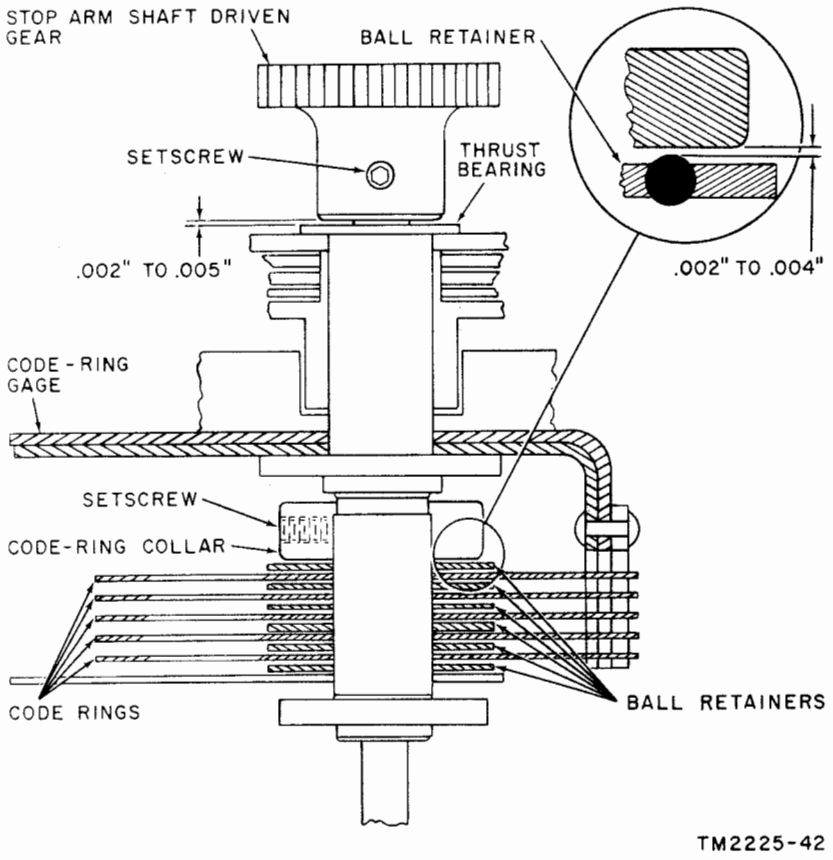


Figure 437.1. Code-ring end play adjustment. **(Added)**

Note. Perform the adjustment in paragraph 297 before proceeding with the following adjustment.

a. Requirements.

(1) There should be a 0.002- to 0.004-inch clearance between the code-ring collar and the ball retainer.

(2) There should be a 0.002- to 0.010-inch clearance between the sleeve bearing and the code-ring cam follower locking lever.

b. Method of Checking.

(1) Insert a flat feeler gage from the bottom of the code-ring cage between the code-ring collar and the ball retainer.

(2) Insert a flat feeler gage from the bottom of the code-ring cage between the sleeve bearing and the code-ring cam follower locking lever.

c. Adjustment. Two setscrews secure the code-ring collar and the sleeve bearing to the shaft of the code-ring cage. One setscrew can be easily reached from the bottom side of the code-ring cage; the other can be reached between the top center stop bars and through the hole in the code-ring cage spacer.

(1) Loosen the two setscrews and insert a 0.003-inch flat feeler gage between the ball retainer and the code-ring collar.

(2) Hold the 0.003-inch flat feeler gage between the ball retainer and the code-ring collar while positioning the sleeve bearing to meet the requirement in *a*(2) above. Tighten the setscrews and recheck the clearance.

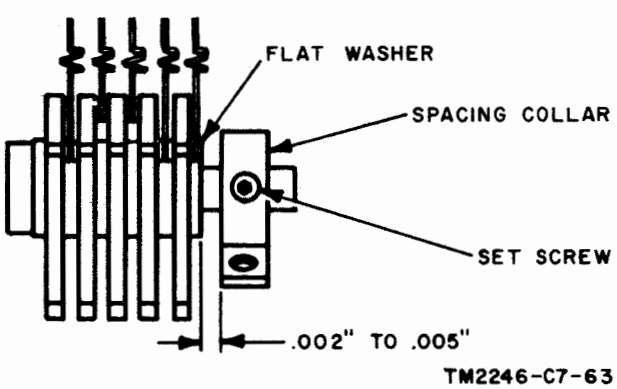


Figure 442.1 Multisolenoid Y-lever collar adjustment (except TT–178/FG and TT–179/FG). (Added)

Page 433. After paragraph 435. Add:

435.1. Multisolenoid Y-Lever Collar Adjustment (Except TT–178/FG and TT–179/FG).

(fig. 442.1)

a. Requirement.

(1) There should be 0.002- to 0.005-inch clearance between the collar and the flat washer.

(2) When the machine is equipped with a manual tape feed out link, position the collar for free movement of the manual tape feed out link.

b. Adjustment. Loosen the setscrew in the collar and position the collar to meet appropriate requirement above.

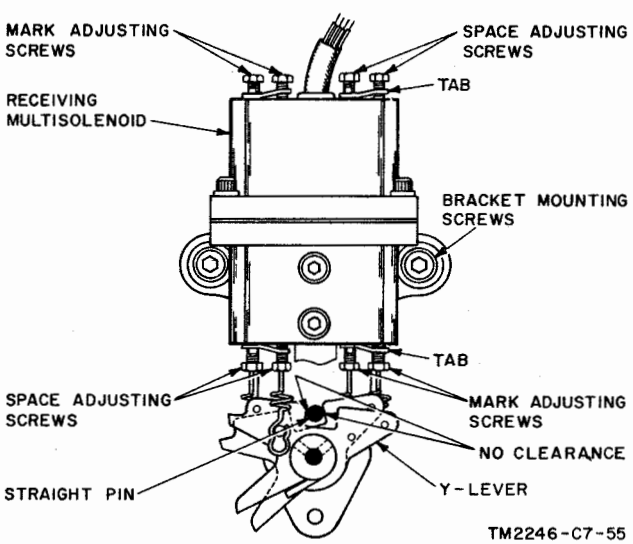


Figure 443.1. Multisolenoid Y-lever adjustment (except TT–178/FG and TT–179/FG). (Added)

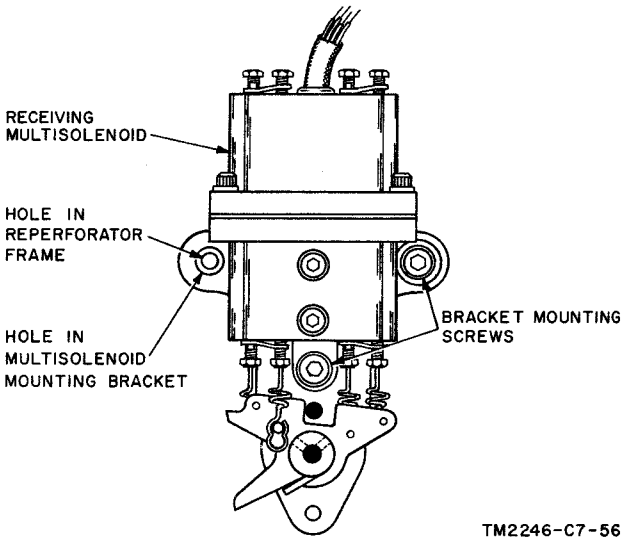


Figure 444. Multisolenoid mounting bracket adjustment. (Superseded)

Page 434. After paragraph 436 add:

436.1. Multisolenoid Y-Levers Adjustment (Except TT–178/FG and TT–179/FG). (fig. 443.1)

a. Requirements.

(1) In the mark position, there should be no clearance between the Y-levers and the straight pin.

(2) In the space position, there should be no clearance between the Y-levers and the straight pin.

b. Adjustments.

(1) Back out the mark adjusting screw of one of the multisolenoid plungers. Energize the multisolenoid in the mark position. This will place the Y-lever against the straight pin. Turn in the mark adjusting screw until the Y-lever begins to move away from the pin. Carefully back out the mark adjusting screw until the requirement in *a*(1) above is met. Repeat the adjustment for all five mark adjusting screws.

(2) Back out the space adjusting screw of one of the multisolenoid plungers. Energize the multisolenoid in the space position. This will place the Y-lever against the straight pin. Turn in the space adjusting screw until the Y-lever begins to move away from the pin. Carefully back out the adjusting screw until the requirement in *a*(2) above is met. Repeat the adjustment for all five space adjusting screws.

Note. Check multisolenoid operation in the teletypewriter by using an R-Y test message. If Y-lever bouncing is present, back out the associated mark or space adjusting screw slightly.

Delete paragraphs 437 and 438 and substitute:

437. Multisolenoid Mounting Bracket Adjustment (fig. 444)

a. Requirement. The multisolenoid bracket must be positioned on the perforator frame so the larger holes in the multisolenoid mounting bracket and the mounting holes in the frame are aligned.

b. Adjustment. Remove one of the three machine screws and lockwashers that hold the multisolenoid bracket to the perforator frame. Loosen the two remaining machine screws. Position the multisolenoid bracket visually to meet the requirement. Tighten the two machine screws and recheck the requirement. Readjust if necessary. Replace the machine screw and lockwasher.

438. Multisolenoid T-Lever Pivot Stud Adjustment (fig. 444.1)

a. Requirement. The T-levers should engage the Y-levers an equal amount for both mark and space positions of the Y-levers.

b. Method of Checking. With the transfer lever latched, set the No. 1 Y-lever in a mark position. Trip the transfer lever, causing the T-levers to engage the Y-levers. Visually check the amount of engagement. Reposition the transfer lever and the T-levers by turning the motor by hand. Set the No. 1 Y-lever in a space position, trip the transfer lever, and visually check the amount of engagement.

c. Adjustment. Loosen the self-locking hexagonal nut on the rear of the T-lever pivot stud. Position the pivot stud until the requirement is met. Tighten the nut and recheck the adjustment. Note the normal direction of maximum eccentricity in figure 444.

After paragraph 438. add:

438.1. Code-Ring Cage Adjustment
(fig. 444.1)

a. Requirement. There should be no clearance between the code-ring tails and their corresponding stops in either marking or spacing positions.

b. Method of Checking. With the transfer lever latched, set the Y-levers for either the R- or Y-code combination. Then trip the transfer lever to cause the code rings to be positioned according to the Y-lever settings. Check the requirement visually.

c. Adjustment. Loosen the two code-ring cage mounting machine screws and position the code-ring cage to meet the requirement. Tighten the code-ring cage mounting machine screws. Recheck the requirement. If the position of the code-ring cage must be changed, check related adjustments (pars. 438, 440, 447, 455, 458, 459, 469, and 488).

Paragraph 440. Delete subparagraph *a* and substitute:

a. Requirement. There should be 0.005- to 0.010-inch clearance between the function sensing lever closest to its associated stop-bar when the cam lever is on the high part of its cam and none of the stop bars are in the selected position. Adjust the one that is closest to its stop bar.

Page 435, paragraph 440. After subparagraph *b* add:

Note. Ignore the clearance between the remaining sensing levers and associated stop bars, unless functional failures occur. Then replace the defective sensing lever or levers associated with the failure.

Paragraph 441. After subparagraph *a* add:

a.1. Method of Checking. Set up the proper code combination in the Y-levers. Trip the transfer lever latch and turn the motor by hand until the selected function sensing lever is adjacent to its function stop bar. Check the requirement with feeler gages.

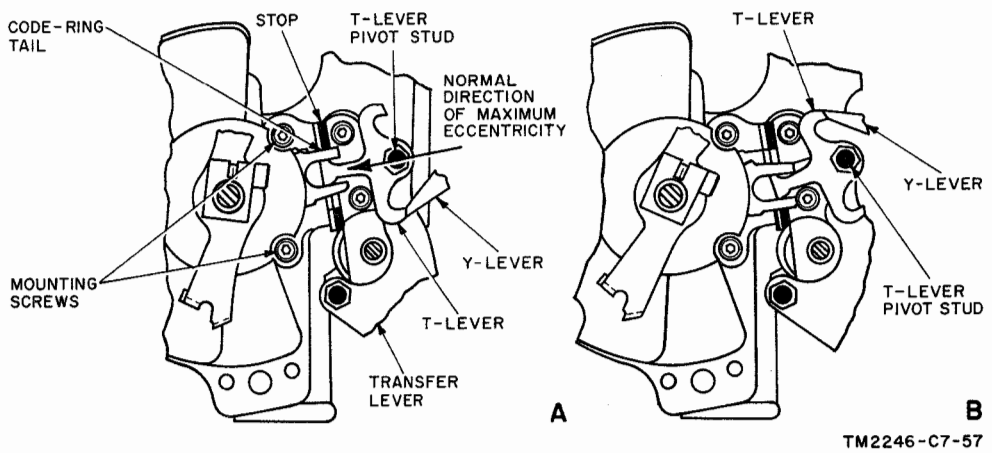


Figure 444.1. Code-ring cage and T-lever pivot stud adjustment. (Added)

Figure 446. At the top of the illustration, delete the two callouts ".015" TO .030"." In the right center of the illustration, change the callout ".015" to .030"" to: **0.010" TO 0.015".**

Delete paragraphs 442 and 443 and substitute:

442. Simultaneous Transfer Lever Roller Stud Adjustment
(fig. 448)

a. Requirement. There should be a 0.001- to 0.005-inch clearance between the transfer lever roller stud bearing and the transfer lever cam (as shown) when the T-levers and Y-levers are fully engaged.

b. Method of Checking. Select either the R- or Y-code group. Release the transfer lever and check the requirement with a feeler gage.

c. Adjustment. Select either the R- or Y-code group and release the transfer lever. Loosen the self-locking hexagonal nut and position the transfer lever roller stud in the normal direc-

tion of maximum eccentricity as shown. Turn the transfer lever roller stud in either direction until the requirement in *a* above is met. Tighten the nut and recheck the clearance.

443. Receiving Multisolenoid Function Shaft Driven Gear End Play Adjustment
(fig. 449)

a. Requirement. There should be a 0.010-inch maximum clearance between the flat washer and the inner race of the ball bearing when the function shaft driven gear is held towards the casting.

b. Method of Checking. Hold the function shaft driven gear toward the casting and check the requirement with a feeler gage.

c. Adjustment. Disassemble the function shaft (par. 244*a*) clutch to gain access to the driven gear. Remove the retainer ring and install or remove any combination of the 0.010-inch or 0.005-inch flat washers (55034 or 55035) to meet the requirement. Reinstall the retainer ring. Make sure it is seated properly in the groove on the function shaft. Recheck the requirement. Reassemble the function shaft (par. 244*b*).

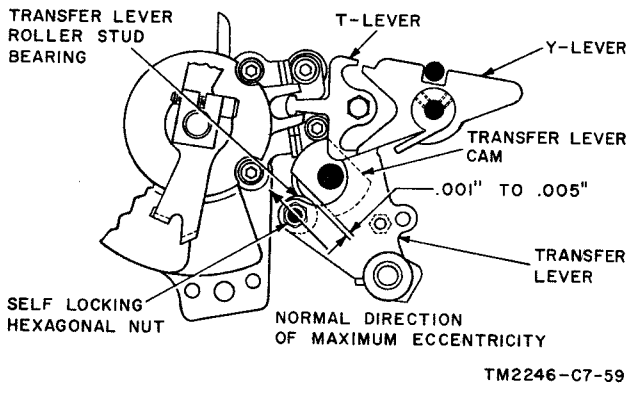


Figure 448. Simultaneous transfer lever roller stud adjustment. (Superseded)

Page 436. After paragraph 443 add:

443.1. Idler Gear Bracket Positioning Adjustment
(fig. 449.1)

a. Requirement. There should be a minimum of backlash, without binding, between the idler gear mounted on the idler gear bracket and the receiving multisolenoid function shaft gear.

b. Method of Checking. With the receiving multisolenoid function shaft in the stopped position, hold the idler gear stationary and, by hand, attempt to rotate the function shaft gear back and forth to check the requirement. Check the requirement in various positions of the gears.

c. Adjustment. Loosen the two machine screws that secure the idler gear bracket to the perforator frame and position the idler gear to meet the requirement. Tighten the machine screws and recheck the requirement. Readjust if necessary.

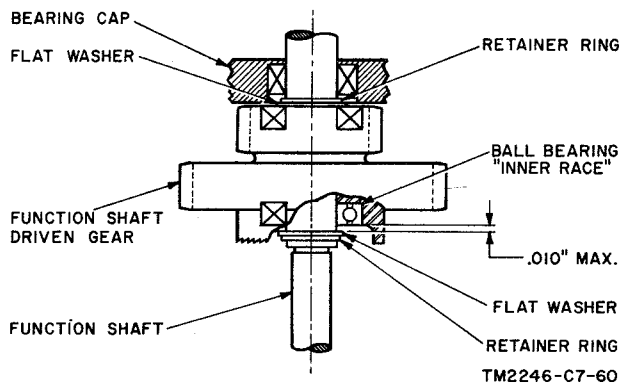


Figure 449. Receiving multisolenoid function shaft driven gear end play adjustment. (Superseded)

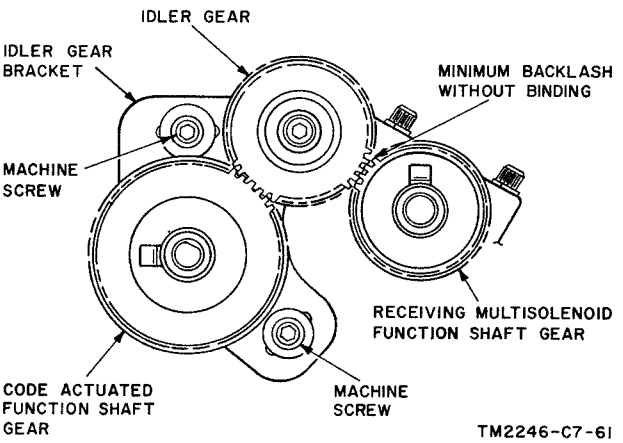


Figure 449.1. Idler gear bracket positioning adjustment. (Added)

After paragraph 445 add:

445.1. Receiving Multisolenoid Function Shaft Drum Clutch Adjustment
(fig. 450.1)

a. Requirement. There should be 0.002- to 0.008-inch clearance between the sliding drum clutch finger and the clutch latch arm when in the stopped position.

b. Adjustment. With the machine in the stopped position, loosen the clamping screws on the friction adjusting collar and release the spring tension. Loosen the setscrews in the type wheel and function lever cam assembly. Be sure the cam followers are in the indents of the type wheel and function lever cam assembly. Turn the function shaft to meet the required clearance. Tighten the setscrews. Check both fingers of the drum clutch. For readjustment of the friction adjusting collar, perform the adjustment described in paragraph 457.

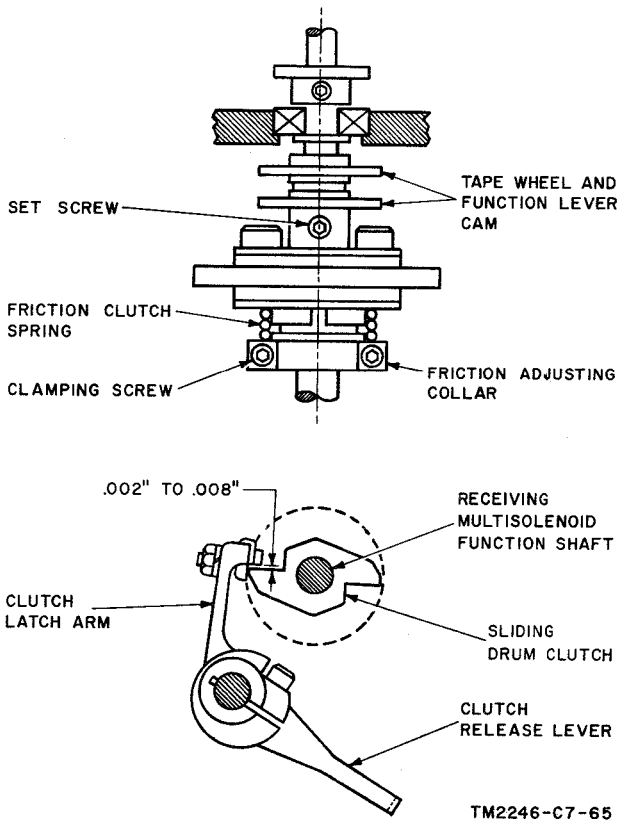


Figure 450.1. Receiving multisolenoid function shaft drum clutch adjustment. (Added)

Page 437. After paragraph 446 add:

446.1. Receiving Multisolenoid Function Shaft Keyed Collar Adjustment
(fig. 450.2)

a. Requirement. The keyed collar should be positioned 1/16 to 5/64 inch from the edge of the flat on the function shaft.

b. Adjustment. Loosen the setscrews in the keyed collar and position the collar to meet the requirement. Make sure the setscrews are positioned properly over the flats on the shaft. Tighten the setscrews and recheck the requirement.

Paragraph 447*a*, line 2. Change ".012-inch" to: **0.017-inch.**

Figure 451. Change the callout ".008–.012 IN." to: **.008–.017 IN.**

Paragraph 450*a*, line 2. Change ".020-inch" to: **0.017-inch.**

Page 438, figure 454. Change the callout ".007–.020 IN." to: **.007–.017 IN.**

Paragraph 451*c*. After the sentence add: Tighten the machine screws and recheck the requirement.

Page 439, paragraph 454, subparagraph *a*. Designate the existing material after the heading: "(1)". Line 1. Change ".002- to .004-inch" to: **0.001- to 0.005-inch.**

After subparagraph *a*(1) add:

(2) The type wheel reciprocating cam follower should be centered with the spring pin of the type wheel reciprocating drive levers.

Subparagraph *b*. Designate the existing material after the heading "(1)", and add the following:

(2) Peel the laminated washer until the requirement is met or if necessary install a new washer peeled to meet the requirement. Remove burs from the laminated washer.

Add paragraphs 454.1 and 454.2 after paragraph 454.

454.1. Type Wheel Post Positioning Adjustment
(fig. 457.1)

a. Requirement. The end of the type wheel post and the back of the front support frame should be flush within ±1/64 inch (visual check).

b. Adjustment. Loosen the setscrew in the front support frame and position the type wheel post to meet the requirement. Tighten the setscrew and recheck the requirement.

454.2. Type Wheel Gears Backlash Adjustment
(fig. 457.2)

a. Requirement. Backlash between the type wheel driving gear and the type wheel hub assembly gear should be at a minimum, without binding.

b. Method of Checking. Position a T-lever midway between its mark and space position. Rotate the stop arm shaft at least one revolution while checking the requirements at various selected positions of the type wheel driving gear.

c. Adjustments. Loosen the three machine screws that hold the front support frame to the perforator frame. Remove the two machine screws that hold the ribbon feed mounting bracket to the front support frame. Position the front support frame to meet the requirement. Tighten the three machine screws and recheck the requirement. Reinstall the two machine screws that hold the ribbon feed mounting bracket to the front support frame.

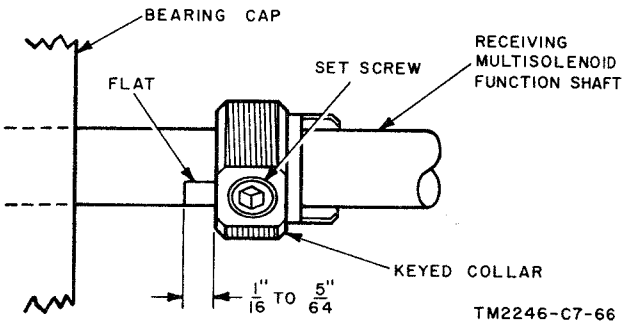


Figure 450.2. Receiving multisolenoid function shaft keyed collar adjustment. (Added)

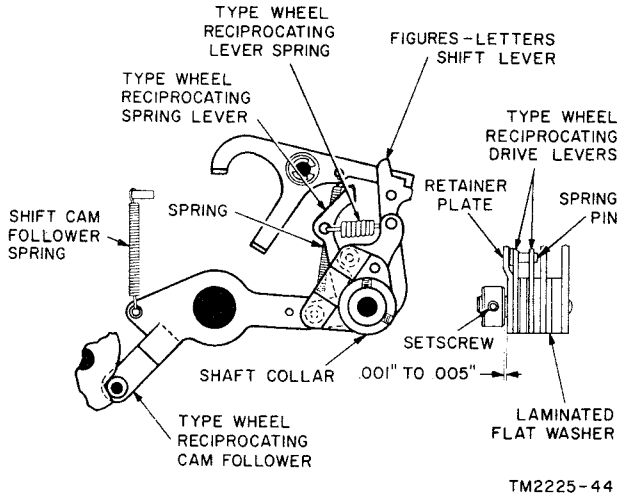


Figure 457. Type wheel shift levers end play adjustment. (Superseded)

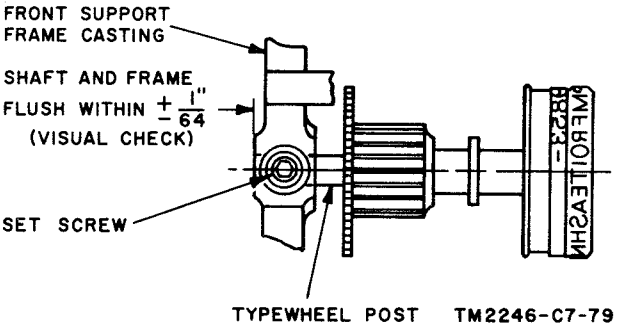


Figure 457.1. Type wheel post positioning adjustment. (Added)

Page 440, paragraph 458*a*, line 3. Change "fourth" to: **fifth.**

Subparagraph *b*(2), line 4. Change "fourth" to: **fifth.**

After the last sentence add: Check related adjustment (par. 459).

Figure 461. In the lower center of the illustration, change the callout "FOURTH" to: **FIFTH.**

Page 441, paragraph 459*a*, line 2. Change "fourth" to: **fifth.**

After the last sentence in subparagraph *b* add: All characters must print fully.

Paragraph 460*a*(1), line 1. Change ".040- to .050-inch" to: **0.040- to 0.005-inch minimum.**

Subparagraph *b*(3). After the sentence. add: Check related adjustment (par. 463).

After paragraph 460 add:

460.1. Type Wheel Driving Gear Positioning Adjustment
(fig. 463.1)

a. Requirement. When the type wheel hub assembly is against the front support casting, the type wheel driving gear should be positioned on the stop arm shaft to clear (visual check) the ribbon guide.

b. Adjustment. Position a T-lever midway between its mark and space positions. Rotate the stop arm shaft to gain access to a setscrew in the type wheel driven gear hub; loosen the setscrew. Rotate the stop arm shaft to gain access to the other setscrew in the driven gear hub; loosen the setscrew enough to move the driven gear back and forth on the stop arm shaft. With the type wheel hub assembly against the casting, position the type wheel driving gear to meet the requirement. Tighten the setscrews and recheck the requirement.

Figure 462. In the callout, change "FOURTH" to **FIFTH.**

Figure 463. Change the callout "040"–050"" to: **0.40" TO 0.005" MIN.**

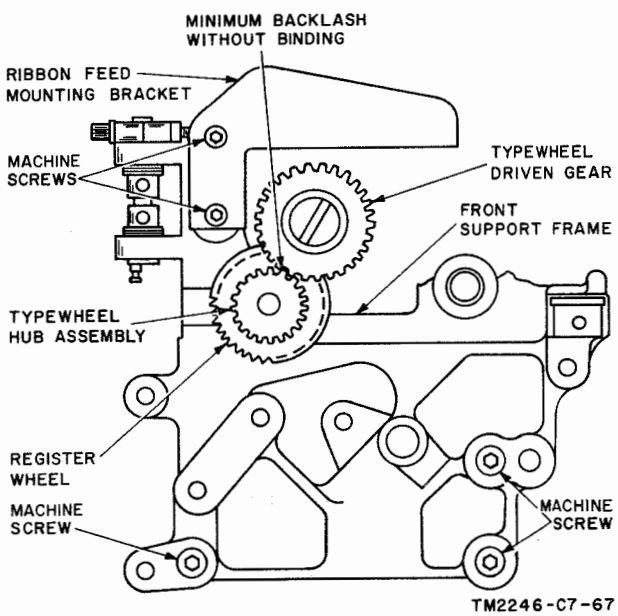


Figure 457.2. Type wheel gears backlash adjustment. (Added)

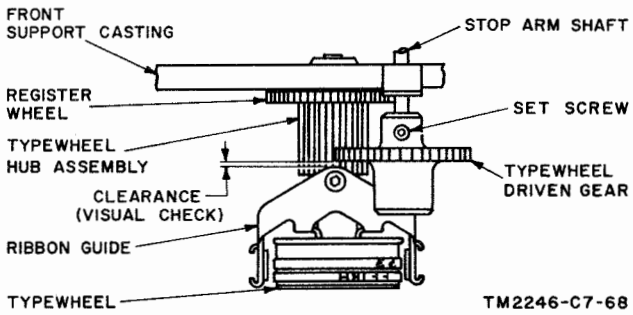


Figure 463.1. Type wheel driving gear positioning adjustment. (Added)

Page 442. After paragraph 462 add:

462.1. Print and Register Cam Positioning Adjustment
(fig. 465.1)

a. Requirement.

(1) The cam followers of the print hammer lever and the type wheel register lever should be centered on their respective cams.

(2) There should be no bind between the cam followers of the print hammer lever and the type wheel register lever and their respective separator washers.

b. Adjustments.

(1) Loosen a setscrew in the print and register cam assembly. Rotate the function camshaft to gain access to the other setscrew; loosen the setscrew and position the cam assembly to meet the requirement in *a*(1) above. Tighten the setscrews.

(2) The separator washers may be straightened with a pair of smooth long-nosed pliers or duckbill pliers to meet the requirement in *a*(2) above.

Page 443. Delete paragraph 465 and substitute:

465. Type Wheel and Print Hammer Legible Copy Adjustment
(fig. 468)

a. Requirement. There should be 0.003- to 0.010-inch clearance between the type wheel and the print hammer when the type wheel register lever and the print hammer lever are

on the low part of their respective cams. The copy should be legible and free of smudge.

b. Adjustment. Loosen the self-locking hexagonal nut and adjust the print hammer eccentric stop until the requirement in *a* above is met. Tighten the self-locking hexagonal nut. Recheck the requirements. Readjust if necessary.

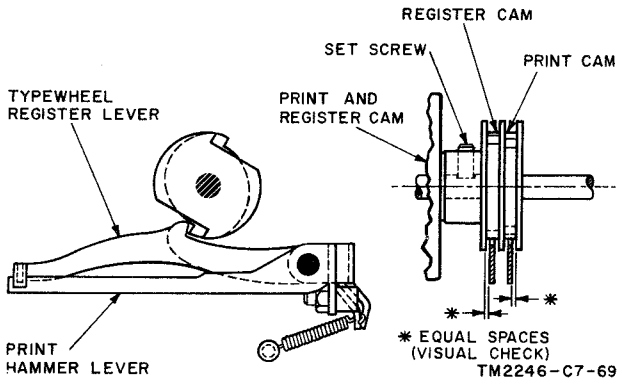


Figure 465.1. Print and register cam positioning adjustment. (Added)

Paragraph 467*a*(1), line 1. Change ".001- to .006-inch" to: **0.00.- to 0.013-inch.**

Figure 470. Change the callout ".001"–.006"" to: **.001"–.013".**

Page 444, paragraph 468*a*, line 1. Change "lever" to: **levers and the.**

Subparagraph *b*. After the sentence add: Check related adjustment (par. 467).

Paragraph 469. Delete subparagraph *a* and substitute:

a. Requirement. There should be 0.015- to 0.025-inch clearance between the first code hole punch lever and its associated punch interference lever when the interference levers are in the space position.

Figure 472. Change the callout ".015"–.020"" to: **.015"–.025".**

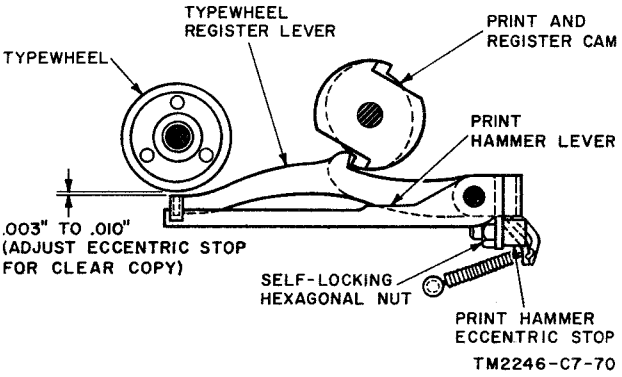


Figure 468. Type wheel and print hammer, legible copy adjustment. (Superseded)

Page 447. After paragraph 476 add:

476.1. Tape Retainer Assembly Adjustment (fig. 479.1)

a. Requirement. The surfaces on both sides of the clearance groove of the tape retainer assembly roller should exert equal pressure on the paper tape at the same time.

b. Method of Checking. Raise the roller by pressing down on the tape retainer assembly lever. While holding the detent lever away from the detent wheel, rotate the tape feed sprocket and slowly lower the tape retainer roller until it makes contact with the tape feed sprocket. Check the requirement visually.

c. Adjustment. Form the retainer mounting bracket to meet the requirement.

Paragraph 477, subparagraph *a*. Designate the existing material after the heading "(1)" and add the following:

(2) When the requirement in (1) above has been met and the back space lever is depressed, the indicator should point directly at the previously typed character on the message tape.

Subparagraph *b*. Designate the existing material after the heading "(1)" and add the following:

(2) Remove the retainer ring, paper guide lever, and paper guide lever spring from the paper guide lever pivot. Loosen the pivot and position the indicator to meet the requirement in *a*(2) above. Tighten the pivot and recheck the requirement. Reassemble the paper guide lever spring, paper guide lever, and retainer ring on the paper guide lever pivot.

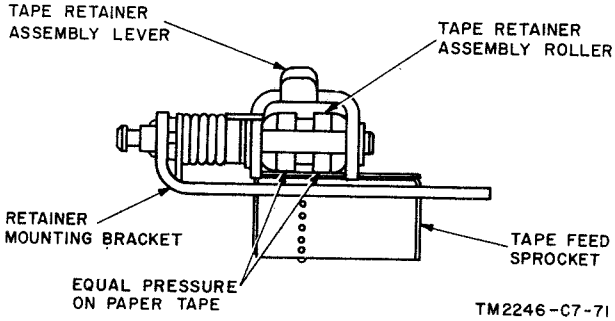


Figure 479.1. Tape retainer assembly adjustment. (Added)

Page 449, figure 485. Change the callout ".001–.005 In." to: **.015 MAX.**

Paragraph 482, subparagraph *a*, line 3. Change ".005-inch" to: **0.015-inch.**

Subparagraph *b*. Delete the note and substitute:

Note. The ribbon reversing arm should engage the empty spool sensing lever by at least the thickness of the sensing lever just before the ribbon reversing operation occurs.

Delete paragraph 483 and substitute.

483. Ribbon Feed Lever Adjustment
(fig. 486)

a. Requirement. The ribbon feed lever should engage the ribbon feeding detent wheel a minimum of 75 percent. However, there should be some clearance between the feed lever and the bottom of the tooth in the ribbon feeding detent wheel.

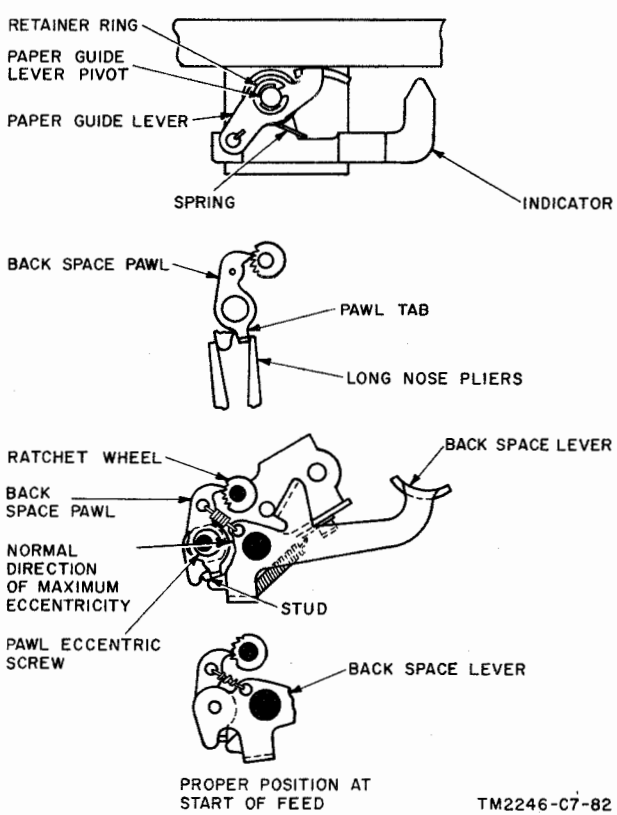


Figure 480. Back space mechanism alignment.
(Superseded)

Note. The other ribbon reversing arm should be against its limiting tab as shown.

b. Method of Checking. Turn the motor off. Manually trip the transfer lever latch and turn the motor by hand until the feed lever engages the ribbon feeding detent wheel. Check the requirement visually.

c. Adjustment. If the feed lever does not meet the requirement, carefully bend the toggle limiting tab. Check both feed levers.

Page 450. After paragraph 485 add:

485.1. Manual Tape Feed-Out Shaft End Play Adjustment
(fig. 488.1)

a. Requirement. There should be 0.001- to 0.005-inch end play of the manual tape feed-out shaft.

b. Method of Checking. Take up the end play of the shaft so that there is no clearance between the shaft collar and the front support plate. Check the clearance between the front support plate and the flat washer with a feeler gage.

c. Adjustment. Loosen the setscrews in the shaft collar. Insert a 0.003-inch feeler gage between the front support plate and the flat washer on the shaft. Position the collar to meet the requirement above. Tighten the setscrews and recheck the requirement.

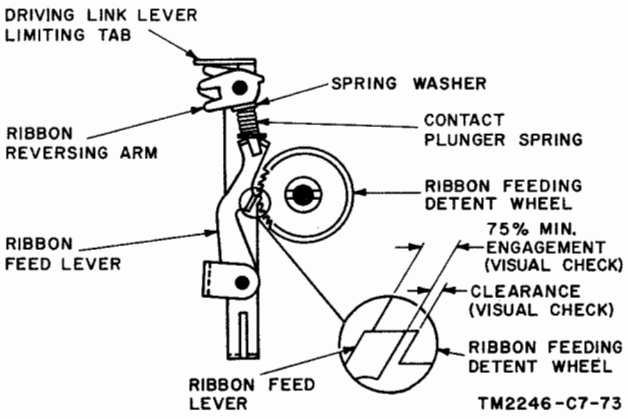


Figure 486. Ribbon feed lever adjustment. (Superseded)

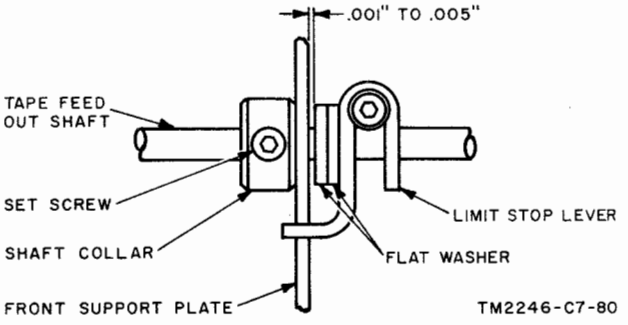


Figure 488.1. Manual tape feed-out shaft end play adjustment. (Added)

Page 452, paragraph 490, subparagraph *a*. Designate the existing material after the heading "(1)", and add the following:

(2) There should be a minimum of ⅛-inch clearance between the alarm lever and the supply reel when the alarm lever is against its stop.

Delete subparagraph *b* and substitute the following:

b. Adjustment. Loosen the nut on the switch actuating stud and position the stud to meet the requirements. Tighten the nut and recheck the requirements.

After paragraph 490 add:

490.1. Supply Reel Assembly Adjustment (Except TT–178/FG and TT–179/FG)

a. Requirement.

(1) There should be a 1/32-inch minimum clearance between the inside surface of the alarm lever tip and the periphery of the tape reel when the alarm lever is held by the detent.

(2) The alarm lever should be free and pulled by the alarm lever spring when the alarm lever tip travels a maximum of 1/16 inch (as shown) from the periphery of the tape reel.

b. Adjustment. Loosen the detent screw and position the detent to meet the requirements in *a* above. Tighten the screw and recheck the requirements.

Page 453, paragraph 492. Below the heading add:

Note. This adjustment applies to pulsing contacts that have either two or three buffers.

Subparagraph *a*(1), last line. Change "496" to: **495.**

Subparagraph *a*(2), line 2. Change ".005 to .008 inch" to: **0.003- to 0.006-inch.** Last line, Change "496" to: **495.**

Add subparagraphs *a*(3) and (4) and *a*.1 after subparagraph *a*(2).

(3) There should be clearance between the cam follower and the cam when the end of the cam follower is aligned with the notch on the cam (A, fig. 495).

(4) There should be 0.015- to 0.020-inch clearance between the contacts farthest from the cam. The clearance between the contacts closest to the cam should be .005 inch less than the measured clearance between the contacts farthest from the cam (A, fig. 495).

a.1. Method of Checking.

(1) With the machine in the stopped position, check the requirement in *a*(1) and (3) above visually.

(2) Rotate the pulsing cam until the contacts farthest from the cam just close. Measure the clearance between the cam follower stop and the cam. Continue to rotate the cam until the cam

follower is on the high part of the cam. Measure the clearance between the cam follower stop and the cam. This clearance should meet the requirement in *a*(2) above. Check both cam sides.

(3) With the machine in the stopped position, check the requirement in *a*(4) with a feeler gage. Also check both sets of normally closed contacts for continuity.

Subparagraph *b*. Delete subparagraph (1) and substitute.

(1) With the machine in the stopped position, loosen the setscrew in the pulsing cam and rotate the pulsing cam to meet the requirements in *a*(1) and (3) above.

Subparagraph *b*(2), line 6. After "S20," insert: or S218. Lines 11 and 15. Change ".005 to .008 inch" to: **0.003- to 0.006-inch.**

After subparagraph *b*(2) add:

(3) Form the stationary contacts to meet the requirement in *a*(4) above.

Paragraph 493*a*. Below the heading add:

Note. Check to see that both sides of the cam meet the requirements.

Delete subparagraph (1) and substitute.

(1) With the machine in the stopped position, the setscrew of the receiving multisolenoid pulsing cam should be aligned with the end of the cam follower. The contacts farthest from the cam should be open 0.010 to 0.015 inch (A, fig. 496).

After subparagraph (1) add:

(1.1) When the contacts farthest from the cam have just closed, there should be a 0.008- to 0.012-inch clearance between the contacts nearest the cam (C, fig. 496).

Subparagraph (2), line 2. Change ".005 to .008": to **0.003 to 0.006 inch.**

Page 454, paragraph 493. After subparagraph *b*(1) add:

(1.1) Bend the contacts to meet the requirement in *a*(1.1) above.

Subparagraph (2), lines 10 and 14. Change ".005 to .008" to: **0.003 to 0.006.**

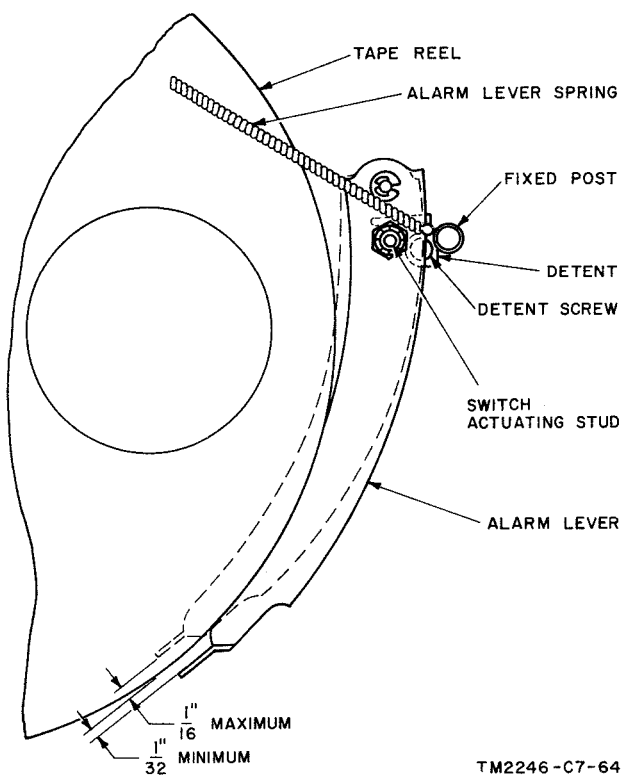


Figure 493.1 Supply reel assembly adjustment, except TT–178/FG, and TT–179/FG. (Added)

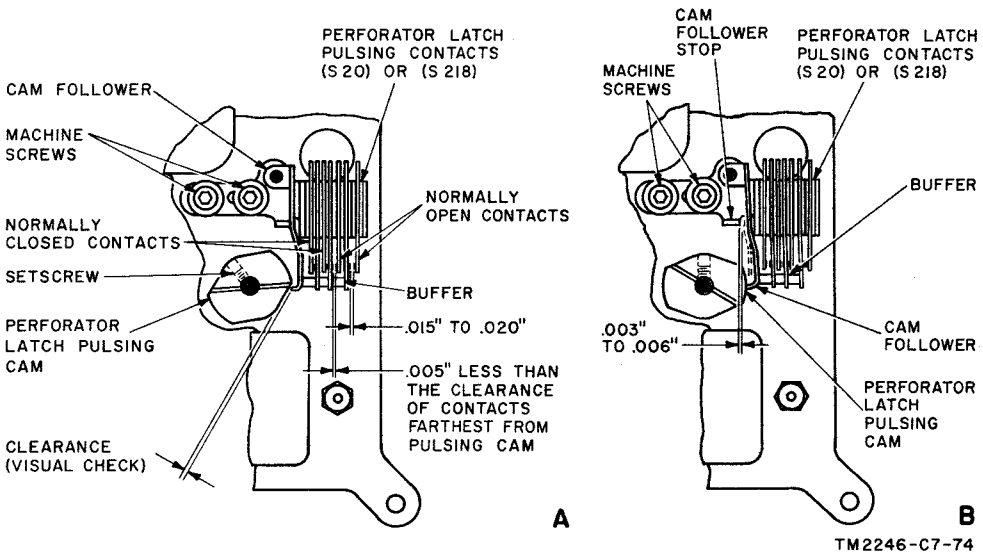
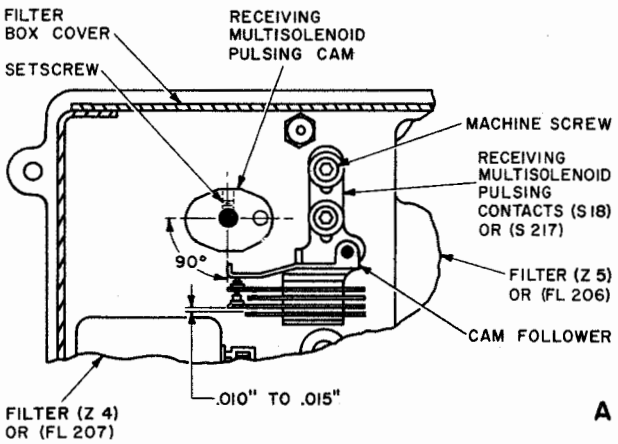
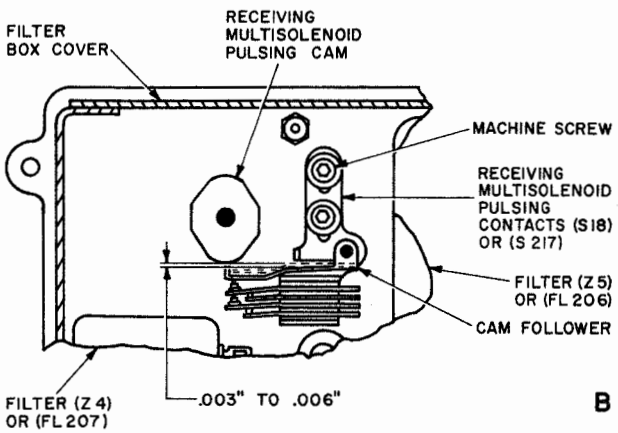


Figure 495. Perforator latch pulsing cam adjustment. (Superseded)





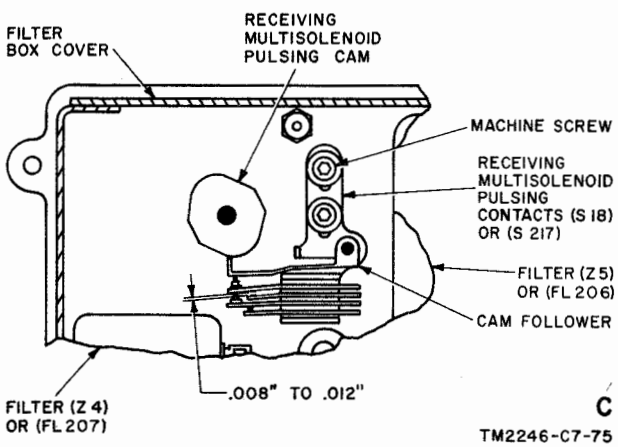


Figure 496. Receiving multisolenoid pulsing cam cam adjustment. (Superseded)

Page 455. After paragraph 494 add:

494.1. Copy Light Director Adjustment
(fig. 496.1)

a. Requirements.

(1) The straight end of the copy light director should be positioned 1/8 to 3/8 inch away from the lamp.

(2) The copy light director should be positioned parallel with the dust cover.

b. Method of Checking.

(1) Check the requirement in *a*(1) above with a steel rule.

(2) Check the requirement in *a*(2) above visually.

c. Adjustment. Loosen the two machine screws and position the copy light director in the clamps to meet the requirements. Tighten the machine screws and recheck the clearance.

Paragraph 497*a*, line 2. Change "1/32-inch" to: **1/8-inch.**

After paragraph 497 add:

497.1. Transmitter-Distributor Camshaft End Play Adjustment
(fig. 499.1)

a. Requirement. There should be a 0.001- to 0.005-inch clearance between the flat washer and the adjacent ball bearing when the cam end of the transmitter-distributor is pressed toward the transmitter-distributor frame.

b. Adjustment. Loosen the setscrews in the friction clutch fork and insert a 0.003-inch feeler gage between the flat washer and ball bearing. Press the camshaft and the clutch fork toward each other. Aline the setscrews with the flats on the camshaft and tighten the setscrews. Remove the feeler gages. Recheck the requirement.

Figure 499. Change the callout "1/64–1/32 IN." to: **1/64–1/8 IN.**

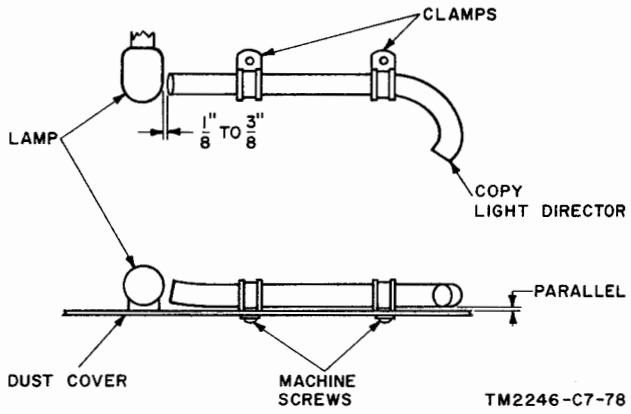


Figure 496.1. Copy light director adjustment. (Added)

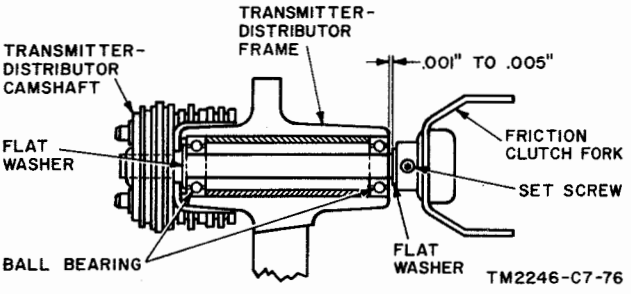


Figure 499.1. Transmitter-distributor camshaft end play adjustment. (Added)

Page 457. After paragraph 500 add:

500.1. Transmitter-Distributor Comb Adjustment
(fig. 502.1)

a. Requirement. There should be a minimum of 0.010-inch clearance between the code sensing levers and the code sensing lever comb and between the tape feed claw and the comb when the transmitter-distributor is in the stopped position.

b. Adjustment. Loosen the two mounting screws of the sensing lever comb and position the comb to meet the requirement. Tighten the two mounting screws and recheck the requirement.

Figure 503. Change the callout ".002–.004 IN" to: **.003–.006 IN.**

Paragraph 501*a*, line 1. Change ".002- to .004-inch" to: **0.003- to 0.005-inch.**

Page 461. After paragraph 515 add:

515.1. Tape-Out Lever Alinement
(fig. 516.1)

a. Requirement. The tape-out lever should be centered (visual check) between the third and fourth sensing levers, when the start-stop lever is in the FEED RETRACT position.

b. Adjustment. Remove the three machine screws and lockwashers that hold the top cover to the transmitter-distributor frame and remove the cover. Place the start-stop lever in the FEED RETRACT position. Loosen the two plain hexagonal nuts that position the tape-out lever shaft and reposition the shaft to meet the requirement above. Tighten the two hexagonal nuts and recheck the requirement. Position the top cover on the frame of the transmitter-distributor; hold with three machine screws and lockwashers. Perform related adjustments (pars. 515 and 516).

After paragraph 516 add:

516.1. Start-Stop Lever Adjustment
(fig. 517.1)

a. Requirements.

(1) With the start-stop lever in the stop position, there should be a minimum of 75 percent engagement (visual check) of the start-stop lever with the step on the transmitter-distributor front plate.

(2) The start-stop lever should be moved into the FEED RETRACT position by first applying pressure to the left and then pushing downward into position.

(3) The neoprene-covered end of the start-stop lever should not rub against the transmitter-distributor front cover.

b. Adjustments.

(1) Remove the outside cover of the transmitter-distributor. Grasp the start-stop lever firmly with a pair of long-nosed pliers in the area shown (fig. 517.1) and with thumb and forefinger bend the neoprene end of the start-stop lever slightly until the requirements in *a*(1) and (2) above are met.

(2) Trim the neoprene on the start-stop lever to meet requirement in *a*(3) above. Replace the outside cover and recheck the requirements.

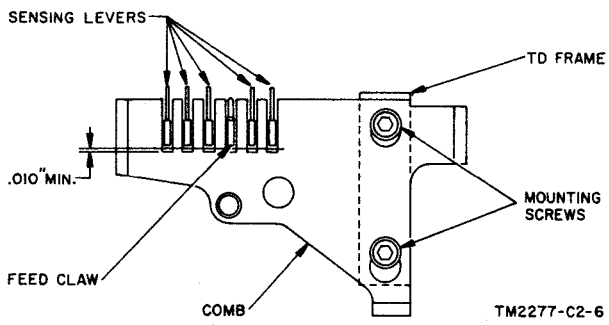


Figure 502.1. Transmitter-distributor comb adjustment. (Added)

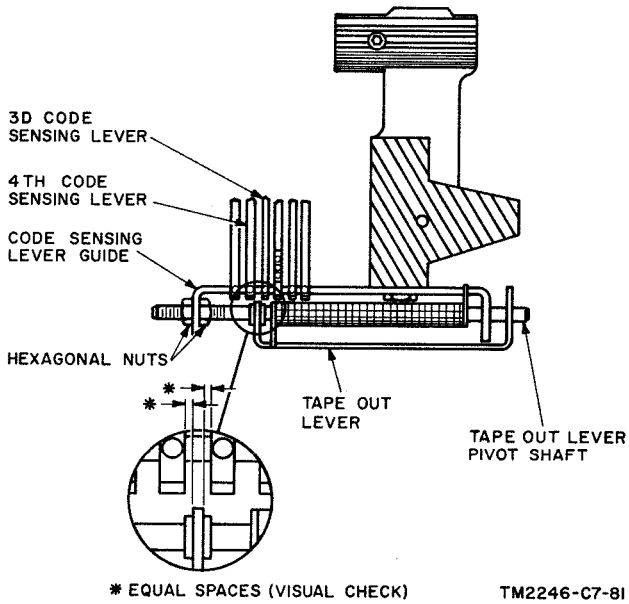


Figure 516.1. Tape-out lever alinement. (Added)

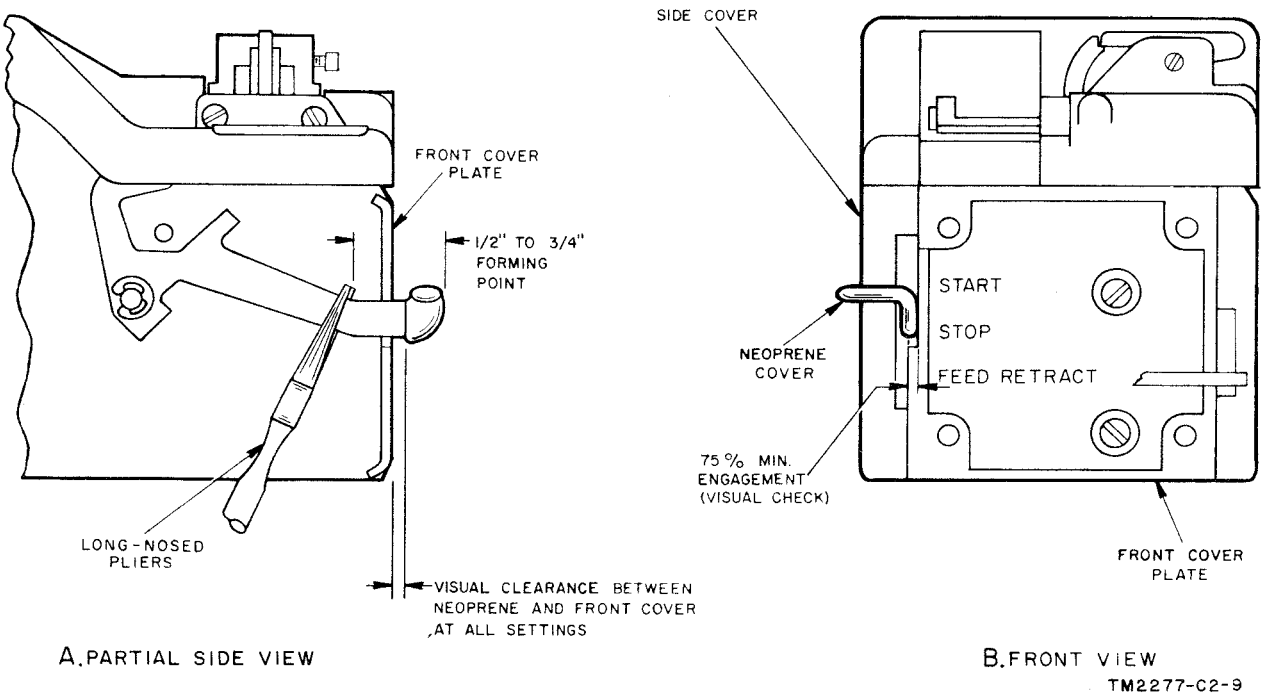


Figure 517.1. Start-stop lever adjustment. (Added)

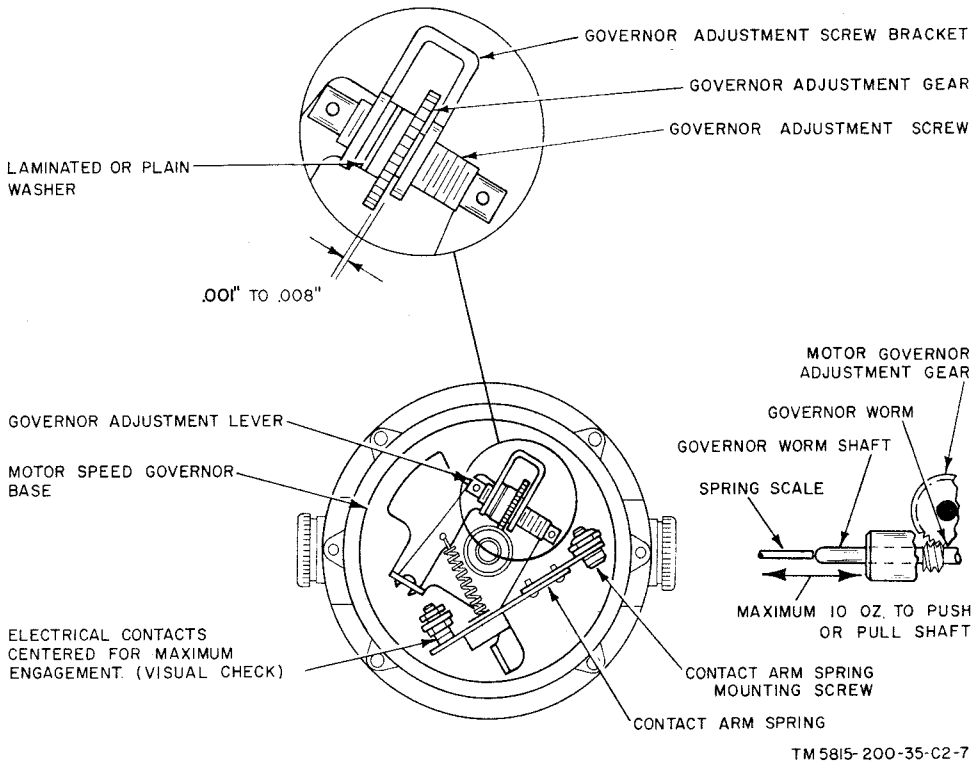


Figure 519. Motor governor contacts alinement (AN/FGC–25X and AN/FGC–52X). (Superseded)

Page 463, paragraph 519, heading. Change "(AN–FGC–25X)" to: **(Series-Governed Motors).**

Page 464, paragraph 520, heading. Change "(AN–FGC–25X)" to: **(Series-Governed Motors.** Add paragraph 520.1 after paragraph 520).

520.1. Motor Mounting Adjustment
(fig. 521.1)

a. Requirements.

(1) The motor should be visually centered with the worm gear.

(2) Backlash between the motor worm gear and the main shaft driven gear should be at a minimum without binding.

b. Adjustment.

(1) Remove the four machine screws and lockwashers that hold the motor to the perforator frame. Install or remove any combination of the 0.002-inch (51509) and 0.005-inch (51510) shims until the requirement in *a*(1) above is met. Replace the four machine screws and lockwashers; leave them loose enough so that the motor can slide back and forth.

(2) Slide the motor back or forth to a position that meets the requirement in *a*(2) above. Tighten the four machine screws and recheck the requirement.

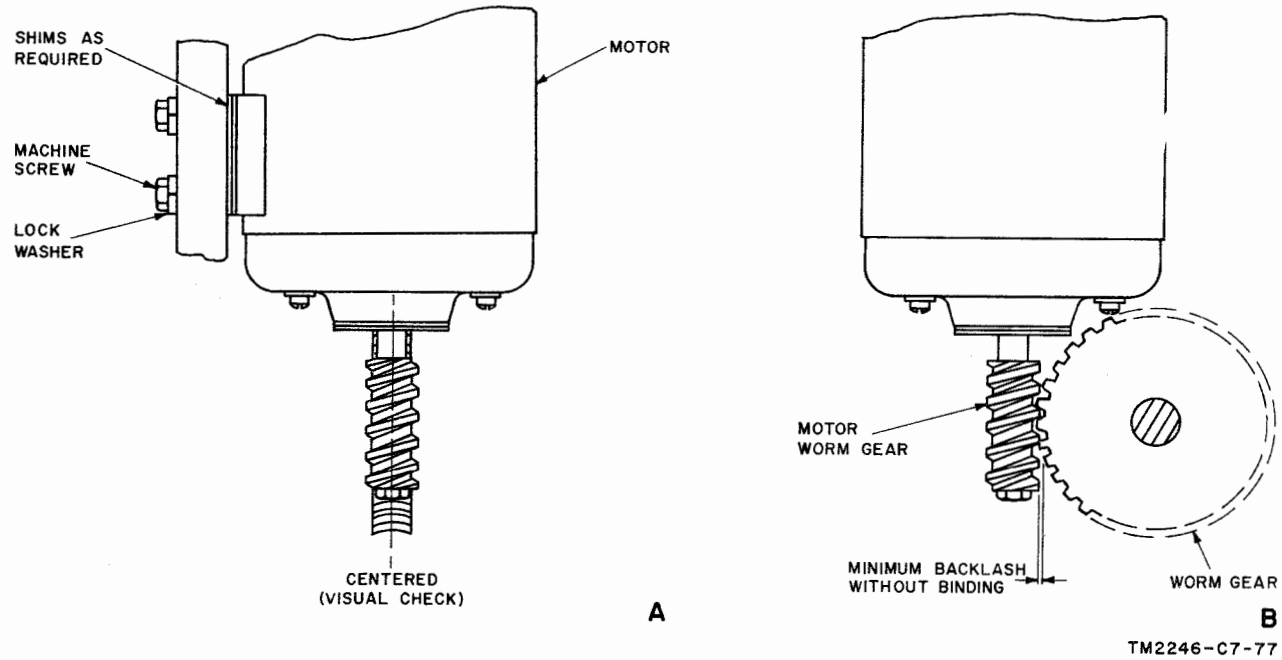


Figure 521.1. Motor mounting adjustment. (Added)

Page 469. After paragraph 527 add:

527.1. Felt Lubricating Washer Data

(fig. 156.1)

a. Type A Plain Round Washer.

Reference No.	A Outside diameter (in.)	B Inside diameter (in.)	C Thickness (in.)
61466	3/4	15/32	1/16
61467	5/8	3/8	1/8
61468	5/16	7/32	1/8
61469	33/64	3/8	1/8
61471	13/16	5/8	1/16
61472	9/16	3/8	1/4
61473	7/16	1/4	1/8
61474	7/16	3/16	1/8
61475	15/32	3/16	1/8
61476	1/2	3/16	1/16
61477	7/16	1/4	1/32
61478	7/16	5/16	1/8
61479	5/8	7/16	1/16
61480	5/8	3/8	1/16
61481	5/8	3/16	1/8
61482	9/16	3/8	1/16
61483	33/64	5/16	1/16
61484	1 1/8	3/8	1/8
61485	3/4	1/2	1/16
61486	15/32	9/32	1/16
61487	3/4	7/16	1/4
61488	3/4	9/16	1/16
61489	3/4	7/16	1/8
61490	5/8	5/16	1/16
61491	15/16	9/16	1/8
61492	1/2	5/16	1/32
61497	15/16	3/4	1/8
61667	5/8	3/8	1/4
61668	3/4	3/8	1/8
61669	3/4	3/8	1/4
61670	3/4	7/16	1/32
61672	15/32	5/16	1/32
61673	9/16	3/8	1/8
61678	15/16	1/2	1/8
61681	5/16	3/16	1/32

b. Type B Split Round Washer.

Reference No.	A Outside diameter (in.)	B Inside diameter (in.)	C Thickness (in.)
61494	1	1/2	1/4
61495	1 1/4	3/4	1/4

c. Type C Rectangular Washer.

Reference No.	A Outside diameter (in.)	B Inside diameter (in.)	C Thickness (in.)
61496	2 1/2	3/8	1/16
61677	1 5/16	1/2	1/16

d. Type D T-Shaped Washer.

Reference No.	Dim. A (in.)	Dim. B (in.)	Dim. C (in.)	Dim. D (in.)	Dim. E (in.)	Dim. F (in.)
61460	1 1/64	13/16	1/2	9/64	1/8	1/16 ±0.007

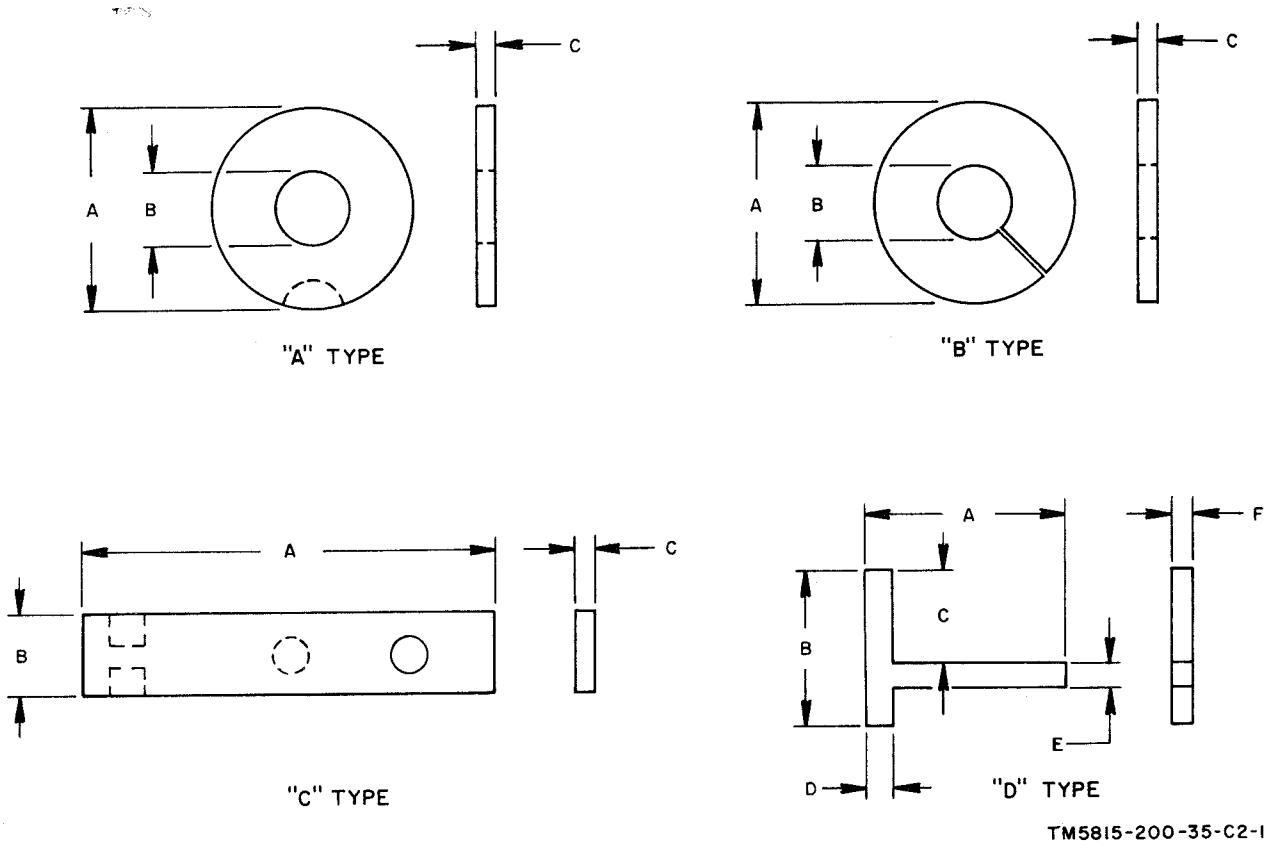


Figure 548.1. Lubricating felt washer forms. (Added)

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USA SIG Msl Spt Agcy (13)
Sig Fld Maint Shops (3)
USA Corps (3)
Def Log Svc Cen (1)
JBUSMC (2)
Units org under fol TOE (2 cy ea UNOINDC)
11–7
11–16
11–57
11–97
11–98
11–117
11–155
11–157
11–500 (Tms AA–AE) (4)
11–557
11–587
11–592
11–597

NG: None.

USAR: None.

For explanation of abbreviations used, see AR 320–50.

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