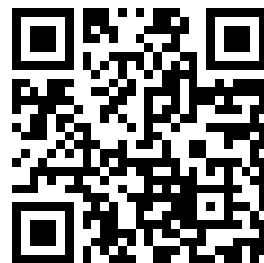

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DEPARTMENT OF THE ARMY TECHNICAL MANUAL



TELETYPEWRITERS
TT-47A/UG, TT-48A/UG
TT-69A/UG, TT-70A/UG



HEADQUARTERS, DEPARTMENT OF THE ARMY
JUNE 1957

Technical Manual)
 No. 11-2229)

HEADQUARTERS, DEPARTMENT OF THE ARMY,

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TELETYPEWRITERS TT-47A/UG, TT-48A/UG,

TT-69A/UG, AND TT-70A/UG

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SAFETY NOTICE

The attention of officers and operating personnel is directed to Chapter 67 of the *Bureau of Ships Manual* or superseding instructions on the subject of radio-safety precautions to be observed.

This equipment employs voltages which are dangerous and may be fatal if contacted by operating personnel. Extreme caution should be exercised when working with the equipment.

While every practicable safety precaution has been incorporated in this equipment, the following rules must be strictly observed:

KEEP AWAY FROM LIVE CIRCUITS:

Operating personnel must at all time observe all safety regulations. Do not change tubes or make adjustments inside equipment with high voltage supply on. Under certain conditions dangerous potentials may exist in circuit with power controls in the off position due to charges retained by capacitors. To

avoid casualties always remove power and discharge and ground circuits prior to touching them.

DON'T SERVICE OR ADJUST ALONE:

Under no circumstances should any person reach within or enter the enclosure for the purpose of servicing or adjusting the equipment without the immediate presence or assistance of another person capable of rendering aid.

DON'T TAMPER WITH INTERLOCKS:

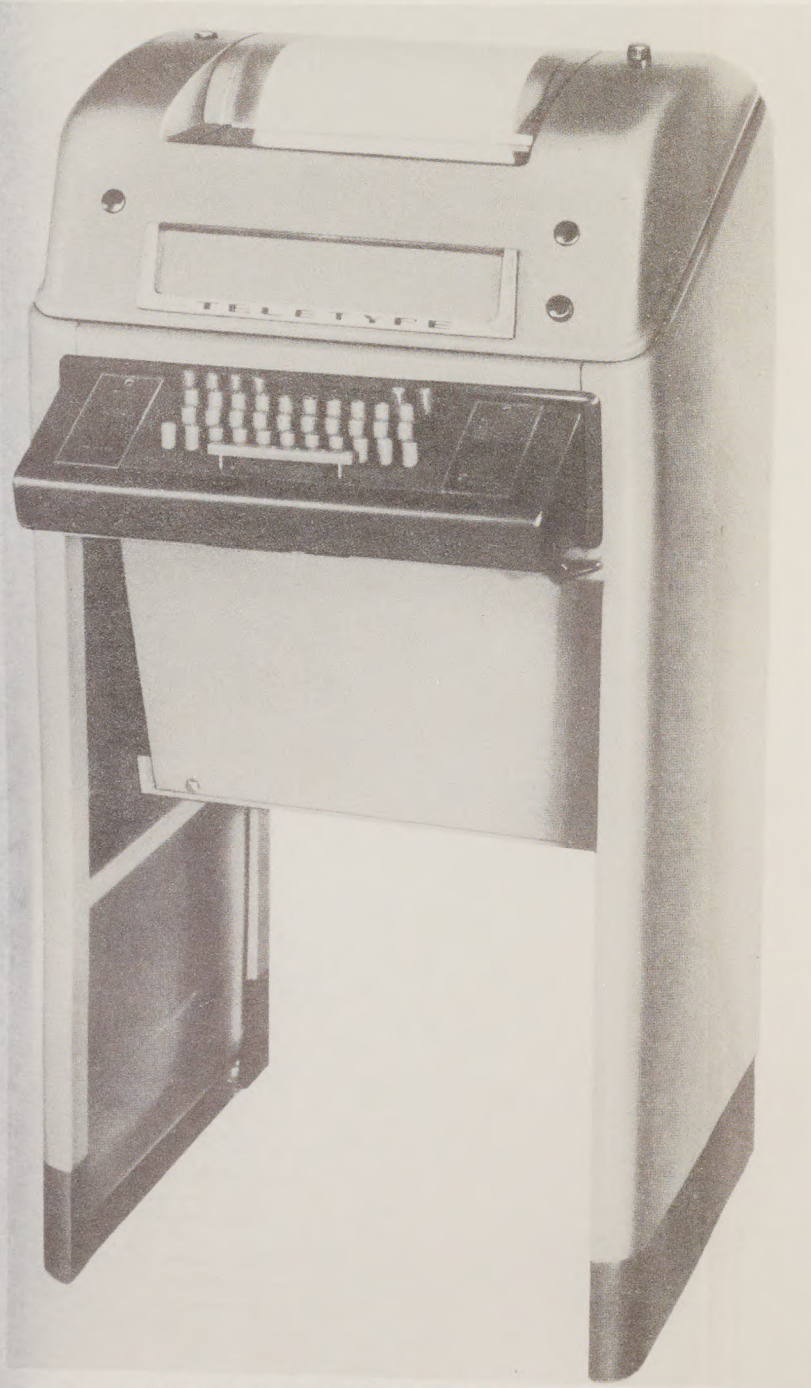
Do not depend upon door switches or interlocks for protection but always shut down motor generators or other power equipment. Under no circumstances should any access gate, door, or safety interlock switch be removed, short-circuited, or tampered with in any way, by other than authorized maintenance personnel, nor should reliance be placed upon the interlock switches for removing voltages from the equipment.

RESUSCITATION

AN APPROVED POSTER ILLUSTRATING THE RULES FOR RESUSCITATION BY THE PRONE PRESSURE METHOD SHALL BE PROMINENTLY DISPLAYED IN EACH RADIO, RADAR, OR SONAR ENCLOSURE. POSTERS MAY BE OBTAINED UPON REQUEST TO THE BUREAU OF MEDICINE AND SURGERY.

1. The first part of the book is a general introduction to the subject of the history of the world, and is divided into two main parts, the first of which is a general introduction to the subject of the history of the world, and the second of which is a general introduction to the subject of the history of the world.

2. The second part of the book is a general introduction to the subject of the history of the world, and is divided into two main parts, the first of which is a general introduction to the subject of the history of the world, and the second of which is a general introduction to the subject of the history of the world.



Teletypewriter TT-47A/UG or TT-48A/UG

Figure 1-1. Teletypewriter Complete

1-0



Teletypewriter TT-69A/UG or TT-70A/UG

ORIGINAL

SECTION 1

GENERAL DESCRIPTION

1. SCOPE OF INSTRUCTION BOOK.

This instruction book describes the TT-47A/UG, TT-48A/UG, TT-69A/UG, and TT-70A/UG Teletype-writers and includes information concerning their installation, adjustment, operation, and maintenance.

2. PURPOSE OF THE EQUIPMENT.

a. The Teletypewriters described herein are used to exchange typewritten page messages between two or more ships or stations that are connected to a radio or wire telegraph channel. The operating speed is in the order of 368 o.p.m. (operations per minute), which is generally referred to as 60 words per minute speed. The speed may be increased to 75 or 100 words per minute by changing to other gears which are not supplied with the Teletypewriters but are available as optional components. Signaling between stations is accomplished electrically by use of the five-unit start-stop permutation code and utilizes the 7.42 unit transmission pattern.

b. The components comprising Teletypewriters described herein are as follows:

(1) TELETYPEWRITER TT-47A/UG.

- (a) Cabinet Type CY-870/UG
- (b) Power Distribution Panel Type SB-154A/UG
- (c) Keyboard Type MX-1114A/UG
- (d) AC Motor Type PD-17A/U
- (e) Automatic Typewriter Type MX-1115A/UG
- (f) Set of Gears for 60 w.p.m. Operation 151060

Optional Components:

- Set of Gears for 75 w.p.m. Operation 151075
- Set of Gears for 100 w.p.m. Operation 151100

(2) TELETYPEWRITER TT-48A/UG.

- (a) Cabinet Type CY-870/UG
- (b) Power Distribution Panel Type SB-154A/UG
- (c) Keyboard Type MX-1114A/UG
- (d) AC Motor Type PD-18/U
- (e) Automatic Typewriter Type MX-1115A/UG
- (f) Set of Gears for 60 w.p.m. Operation 151060

Optional Components:

- Set of Gears for 75 w.p.m. Operation 151075
- Set of Gears for 100 w.p.m. Operation 151100

(3) TELETYPEWRITER TT-69A/UG.

- (a) Cabinet Type CY-871/UG
- (b) Power Distribution Panel Type SB-154A/UG
- (c) Keyboard Type MX-1114A/UG
- (d) AC Motor Type PD-17A/U
- (e) Automatic Typewriter Type MX-1115A/UG
- (f) Set of Gears for 60 w.p.m. Operation 151060

Optional Components:

- Set of Gears for 75 w.p.m. Operation 151075
- Set of Gears for 100 w.p.m. Operation 151100

(4) TELETYPEWRITER TT-70A/UG.

- (a) Cabinet Type CY-871/UG
- (b) Power Distribution Panel Type SB-154A/UG
- (c) Keyboard Type MX-1114A/UG
- (d) AC Motor Type PD-18/U
- (e) Automatic Typewriter Type MX-1115A/UG
- (f) Set of Gears for 60 w.p.m. Operation 151060

Optional Components:

- Set of Gears for 75 w.p.m. Operation 151075
- Set of Gears for 100 w.p.m. Operation 151100

c. It should be noted that the TT-47A/UG and the TT-48A/UG equipments include a cabinet for deck mounting and motors of the synchronous and governed types respectively, while the TT-69A/UG and TT-70A/UG include a cabinet for bulkhead shelf mounting and the same synchronous and governed motors respectively.

d. The apparatus is equipped with a motor control feature which stops the motor every time that the signal line becomes idle for a period not longer than approximately two minutes. The motors start in response to a momentary opening of the signal line at any point on

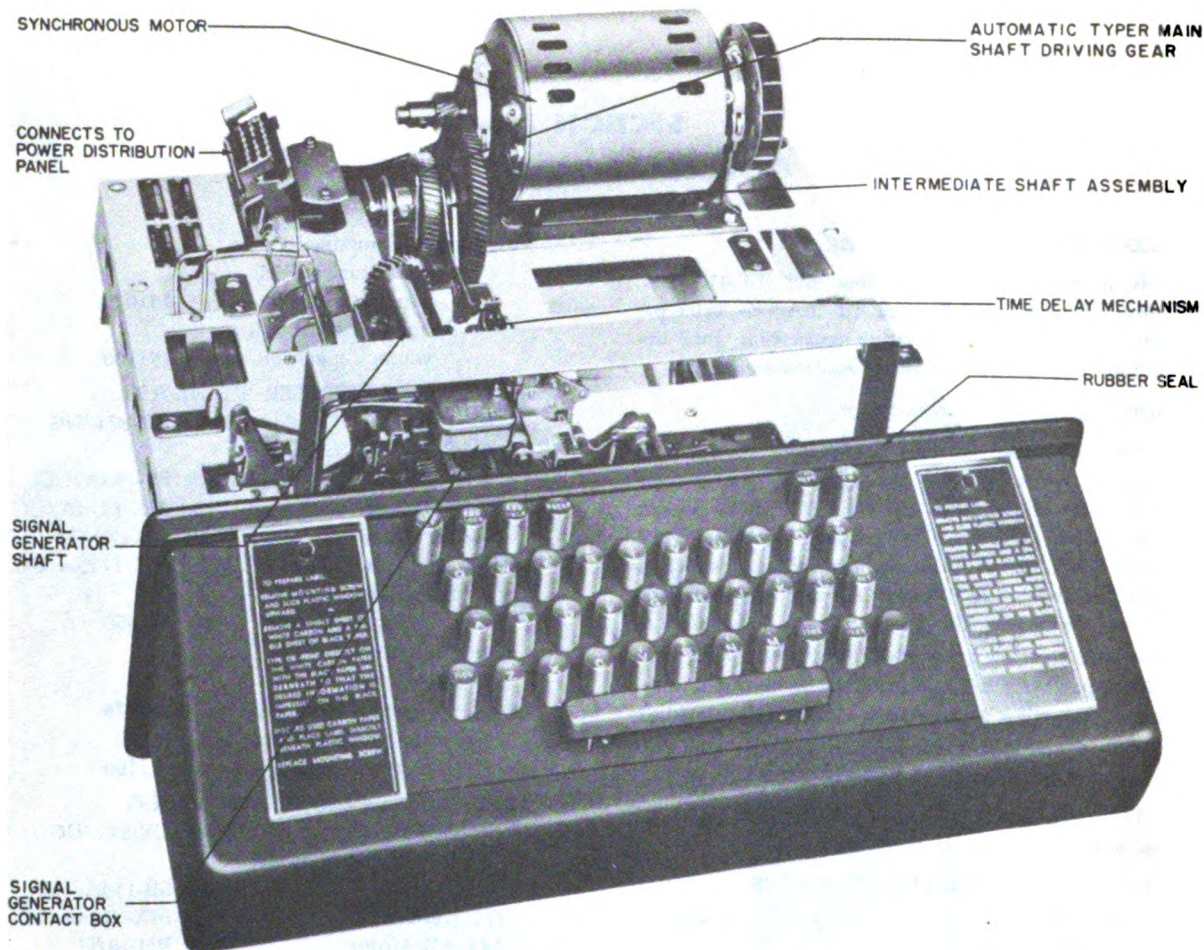


Figure 1-2. Keyboard MX-1114A/UG, With Motor

the circuit or to the reception of code signals. This feature may be readily disabled when not required.

e. The equipment is wired for operation on 0.060 ampere signal line current at the factory but, by making a convenient wiring change in the Power Distribution Panel and readjusting the selector armature spring, it may be adapted for operation on 0.020 ampere signal line current.

f. Messages are ordinarily typed on single-copy paper eight and one-half inches wide. However, paper of lesser varying widths (minimum three inches) may be used.

g. The following components in Teletypewriters TT-47A/UG, TT-48A/UG, TT-69A/UG, and TT-70A/UG differ from the corresponding ones in Teletypewriters TT-47/UG, TT-48/UG, TT-69/UG and TT-70/UG.

(1) **POWER DISTRIBUTION PANEL SB-154A/UG.**—This component differs from SB-154/UG principally in that the connectors on the ends of the cables leading to the Keyboard and to the Automatic Typer have been changed. Therefore, it cannot be connected to the MX-1114/UG Keyboard or to the MX-1115/UG Automatic Typer.

(2) **KEYBOARD MX-1114A/UG.**—This component differs from MX-1114/UG in several respects. It has a 20 terminal receptacle, whereas the MX-1114/UG has a 14 terminal receptacle. Thus this component cannot be connected to a SB-154/UG Power Distribution Panel. The spring powered throwout mechanism has been removed from the MX-1114A/UG clutch. The position of the repeat key has been shifted to the right and the repeat mechanism has been redesigned. Several changes have also been made in the adjustments, and in the lubricating procedure.

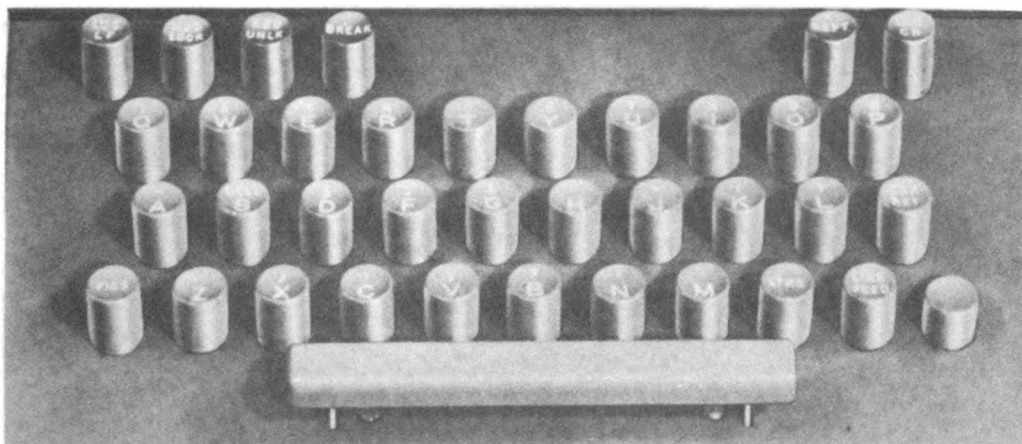


Figure 1-3. Keyboard Keys

(3) AUTOMATIC TYPER MX-1115A/UG.— This component differs from MX-1115/UG in several major respects and in numerous minor details. Since the changes in adjustments are many and varied, the adjustment requirements specified in Section 7 of this instruction book must be adhered to. The MX-1115A/UG has a 20 terminal receptacle, whereas the MX-1115/UG has a 14 terminal receptacle. Consequently, this component cannot be connected to a SB-154/UG Power Distribution Panel. The MX-1115A/UG has a new main shaft, and a redesigned selector mechanism with an improved method for orienting the range finder. The ribbon feed mechanisms have been revised to include an improved slack take up feature and improved feed pawl adjustment. The range of the automatic carriage return-line feed arm on the spacing drum has been increased to accommodate a maximum of 85 characters per line. Also, several ratchet teeth have been removed from the spacing drum to prevent over spacing in the event of spacing clutch stop failure or spacing suppression failure. Changes in the lubrication procedure are few.

3. DESCRIPTION OF COMPONENTS.

a. KEYBOARD MX-1114A/UG (See figure 1-2).— The Keyboard supports the AC Motor and the Automatic Typewriter, and incorporates code selecting and signal generating mechanisms. Signal line and power line circuits are also included. A time delay mechanism for stopping the motor on extended idle periods of the signal line is connected in the Keyboard but may be disabled if not required. The keys are positioned in the conventional three-bank arrangement with numerals, punctuation marks and special symbols available in upper case positions (figure 1-3). Special keys (red)

for line break, keyboard lock and unlock, repeat operation, and local carriage return and line feed are located directly above the standard keys (green) for facility of operation. The Keyboard with the Automatic Typewriter and AC Motor mounted in position is placed upon rails within the Cabinet. The front of the Keyboard protrudes beyond the Cabinet and is fitted with a rubber pad that seals the edges of the aperture for a silencing effect. Motive force for activating the Keyboard is derived from the AC Motor by way of the Automatic Typewriter.

b. AUTOMATIC TYPER MX-1115A/UG. (See figures 1-4 and 1-5.)

(1) The Automatic Typewriter incorporates the necessary electrical and mechanical features for translating the code signals into mechanical action in order to record the message and perform the usual functions incident thereto.

(2) Code signals are applied to a two-coil magnet associated with selecting mechanism which interprets the signal and controls the motions involved in typing a character or performing a required function. Means is provided for orienting the selector to the received signal. The AC Motor is geared to the main shaft of the Automatic Typewriter which, in turn, extends motion to the keyboard mechanism. The typing and various functional sections of the Automatic Typewriter are activated by individual clutches that completely disengage at the termination of each operating cycle and thus reduce the motor load to the minimum when idling.

(3) Paper feeds from a five inch (maximum) diameter roll mounted on the Automatic Typewriter and passes around a stationary platen. Provisions are made

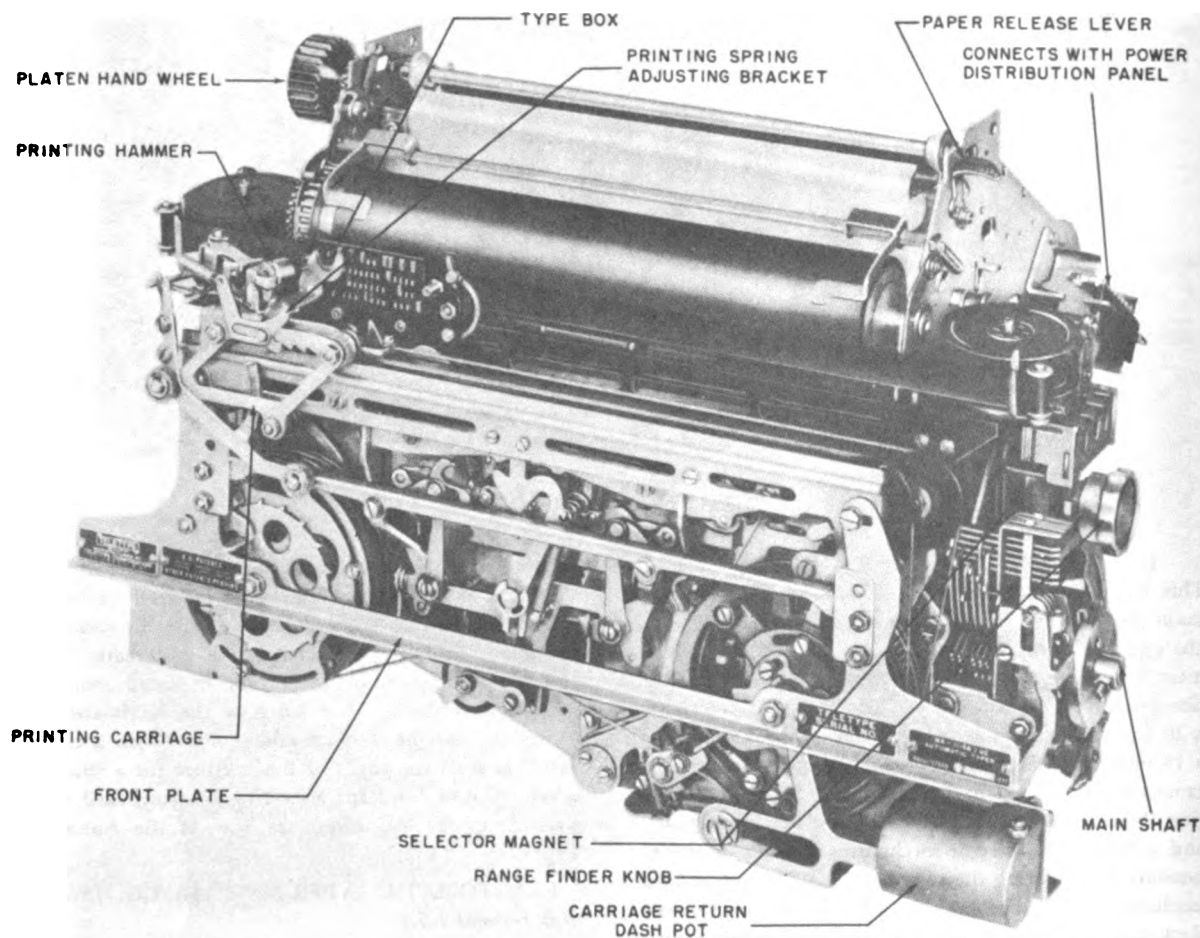


Figure 1-4. Automatic Typewriter MX-1115A/UG, Front View

for readily converting to sprocket type feed for fan-fold forms which may be used optionally in conjunction with friction feed paper. Interchanging of Automatic Typewriter sub-assemblies involves the minimum in readjusting procedure (figures 1-6, 1-7, 1-8). Type pallets are arranged in a compact, lightweight type box which may be readily detached for cleaning or for quick replacement by another type box. In operation, the type box keeps step with a printing carriage and presents the proper type pallets to the printing hammer to receive its strokes as the printing carriage advances along the line. Combined automatic carriage return and line feed functions operate to return the carriages in case overprinting occurs at the end of a line.

(4) In addition to the conventional functions common to teletypewriters, built-in facilities permit the addition of selective station call or recognition func-

tions with electrical circuits associated therewith available for remote extension. In such applications the Automatic Typewriter may be stripped of all typing and paper feeding mechanisms and utilized for circuit switching or similar applications.

c. MOTORS.—The motors are self-contained components that mount on the rear of the keyboard base and have characteristics adaptable to standard power supplies.

(1) AC MOTOR (SYNCHRONOUS) PD-17A/U.
(See figure 1-9.)

(a) The AC Motor, PD-17A/U, is a wound stator, two pole, single phase, capacitor start, synchronous motor. A combination handwheel and fan is mounted on one end of the motor shaft. A motor-starting relay and capacitor, together with a thermal cutout

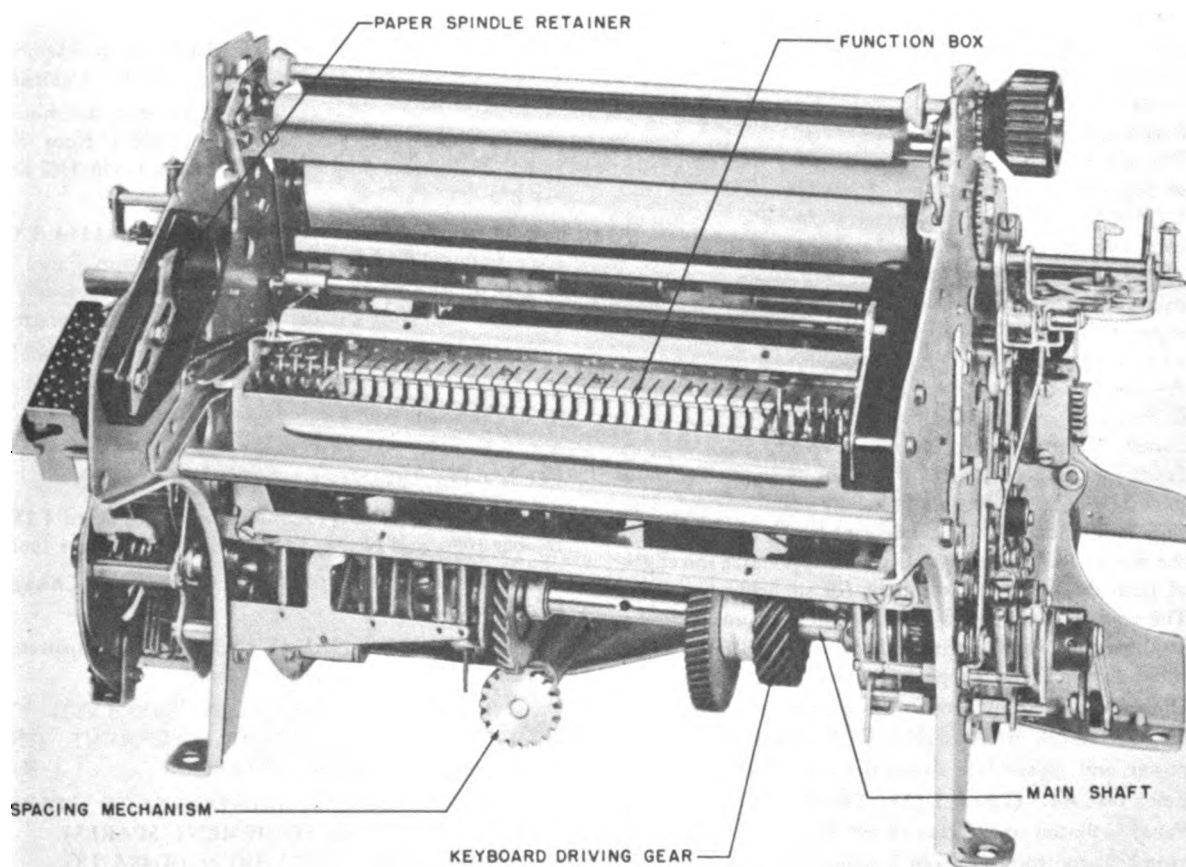


Figure 1-5. Automatic Typewriter MX-1115A/UG, Rear View

switch are mounted in a compartment on the underside of the motor. The thermal cutout switch (manually reset) serves to protect the motor windings from excessive heating.

(b) The motor proper is supported by a cradle to which it is held by straps at each end. Resilient mounts on the hubs of the motor end bells reduce transmission of vibration to the Keyboard.

(2) AC MOTOR (GOVERNED) PD-18/U. (See figure 1-10.)

(a) The AC Motor, PD-18/U is series wound and is similar to the synchronous motor in its mounting arrangement.

(b) A combined governor and fan are positioned on the motor shaft extension. The fan aids in controlling the temperature rise by drawing cooling air through the motor. A target for speed-checking purpose is painted on the governor cover. The cover also serves

to protect the governor mechanism. A screwdriver opening is provided in the cover to facilitate speed adjustments. Brush filter capacitors are provided within the motor end bells.

(c) The entire AC Motor, PD-18/U is shielded to minimize radio interference. A shielded compartment on the underside of the motor, houses the governor resistor and capacitor, as well as a power leads electrical noise suppressor. A number of screened cutouts are provided in the motor shield housing through which air may circulate and the target may be viewed. A threaded plug in the housing may be removed to permit entry of a screwdriver when making speed adjustments.

d. CABINETS.

(1) GENERAL.—Cabinets are of two types; the CY-870/UG for deck mounting and the CY-871/UG for bulkhead shelf mounting. They are of sheet metal construction and are finished internally and externally

in baked enamel. The CY-870/UG Cabinet (figure 1-1) is approximately 40½ inches high (including shock mounts), 20½ inches wide, and 18½ inches deep. The upper portion forms a compartment for housing the mechanical units and Power Distribution Panel. A shelf located in the lower section may be used to support a Rectifier (not furnished as part of these teletypewriters). The CY-871/UG Cabinet (figure 1-1) has no lower section but is otherwise practically identical with the CY-870/UG and has a height of 16 inches. The top of each Cabinet forms a dome that is hinged at the rear. The dome is unlatched by a push button and is counterbalanced by a mechanism that aids in raising it and then supports it in the open position. A copyholder is attached to the front of the dome. A window through which the message may be read while being printed is located in the upper portion of the dome. This window is positioned horizontally to avoid reflection from ceiling lights. A hinged door in the dome is unlatched by a push button to permit access to the printed copy. The copy is illuminated by incandescent lamps located under the dome. Rubber sealing strips are applied to the edges of both the dome and the door for silencing purposes. The cradles, listed below as accessories, include a tilting arrangement which permits the assembled units to be tilted forward and supported when the dome is open (figure 1-11). This provides maximum accessibility to the mechanism while servicing. Terminal boards for power and signal line connections are located on the inner rear wall (figure 1-12). The Power Distribution Panel is placed to the rear of the Keyboard. Its power switch is controllable from a switch lever at the front of the Cabinet.

(2) **ACCESSORIES.**—Accessories to the cabinets consist of the following:

(a) A signal bell to make audible those signals that are transmitted for supervisory purposes. This is incorporated in both the CY-870/UG and CY-871/UG Cabinets.

(b) A rubber mounted cradle assembly used only in the shelf mounting CY-871/UG Cabinet.

(c) A steel mounted cradle assembly used only in the deck mounting CY-870/UG Cabinet.

(d) Shock mounts for mounting the CY-870/UG Cabinet to the deck.

(e) Stop arm assemblies for supporting the dome and copy door in their open positions where the CY-870/UG and CY-871/UG Cabinets are subject to tilting.

(f) A metal panel for reinforcing the lower section of the deck mounting CY-870/UG Cabinet.

(g) A six volt copy light assembly which is used in both the CY-870/UG and CY-871/UG Cabinets.

(h) A transformer assembly to supply six volts to all lamps. This is incorporated in both the CY-870/UG and CY-871/UG Cabinets.

(i) A six volt margin indicator lamp assembly used in both the CY-870/UG and CY-871/UG Cabinets.

(j) Two electrical noise suppressor assemblies which minimize electromagnetic radiation from the power and signal lines external to the CY-870/UG and CY-871/UG Cabinets.

e. **POWER DISTRIBUTION PANEL SB-154A/UG.** (See figure 1-13.)—The Power Distribution Panel is located in the upper compartment of the Cabinet. It incorporates motor control circuit elements, receptacles, fuses, switches, etc., which are associated with the power and signal line circuits.

4. **REFERENCE DATA.**

a. **NOMENCLATURE.**—Teletypewriters TT-47A/UG, TT-48A/UG, TT-69A/UG and TT-70A/UG.

b. **CONTRACT DATA.**—NObsr 52088, dated 4 December 1950, and NObsr 52089, dated 7 December 1950.

c. **CONTRACTOR.**—Teletype Corporation, Chicago 14, Illinois.

d. **COGNIZANT NAVAL INSPECTOR.**—Inspector of Naval Material, Chicago 6, Illinois.

e. **NUMBER OF PACKAGES INVOLVED IN COMPLETE SHIPMENT OF EQUIPMENT (INCLUDING EQUIPMENT SPARES)** 1 Box

f. **TOTAL CUBICAL CONTENTS OF EQUIPMENT (INCLUDING EQUIPMENT SPARES).**

Teletypewriters TT-47A/UG or TT-48A/UG.

Crated 24.09 cu. ft.

Uncrated 12.52 cu. ft.

Teletypewriters TT-69A/UG or TT-70A/UG.

Crated 18.88 cu. ft.

Uncrated 7.36 cu. ft.

g. **TOTAL WEIGHT OF EQUIPMENT (INCLUDING EQUIPMENT SPARES).**

Teletypewriters TT-47A/UG or TT-48A/UG.

Crated 315 lbs.

Uncrated 130 lbs.

Teletypewriters TT-69A/UG or TT-70A/UG.

Crated 250 lbs.

Uncrated 119 lbs.

b. **ELECTRICAL CHARACTERISTICS.**

(1) The **SIGNALING FREQUENCY** of the telegraph output signal is in maximum dot cycles (one cycle is one current impulse followed by one no-current impulse) per second:

Speed

60 words per minute — 22.8 cycles

75 words per minute — 28.5 cycles

100 words per minute — 37.1 cycles

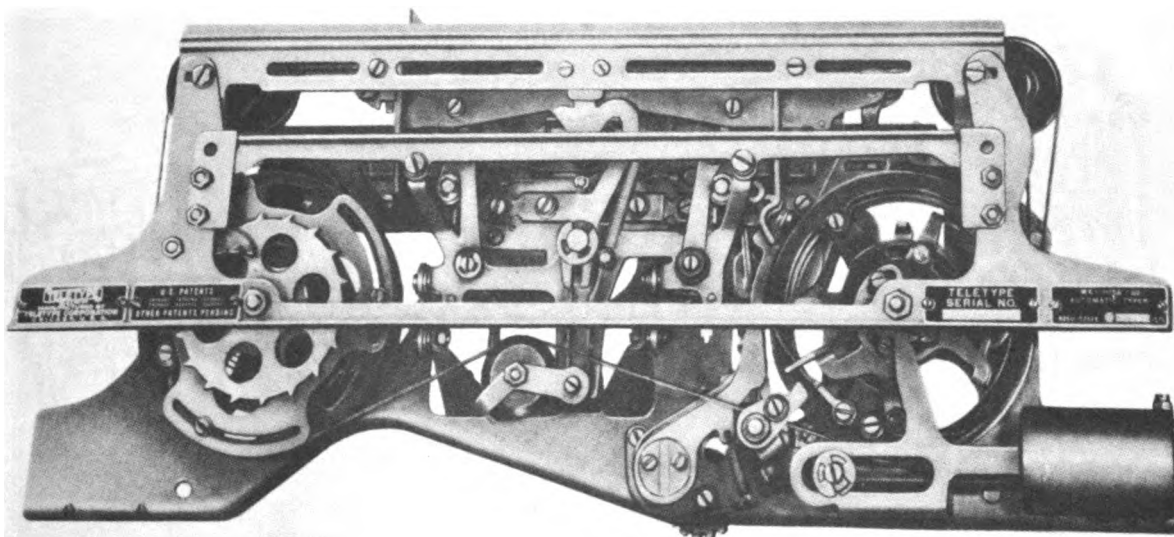


Figure 1-6. Automatic Typer Front Plate

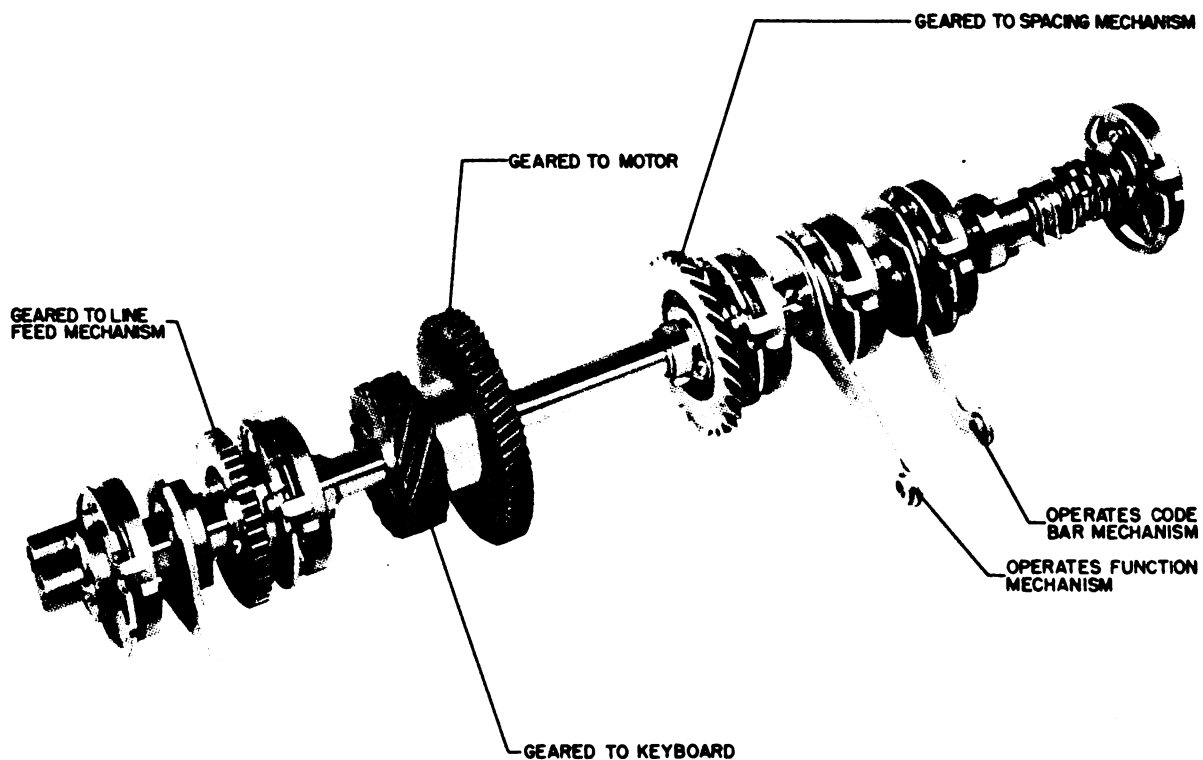


Figure 1-7. Automatic Typer Main Shaft

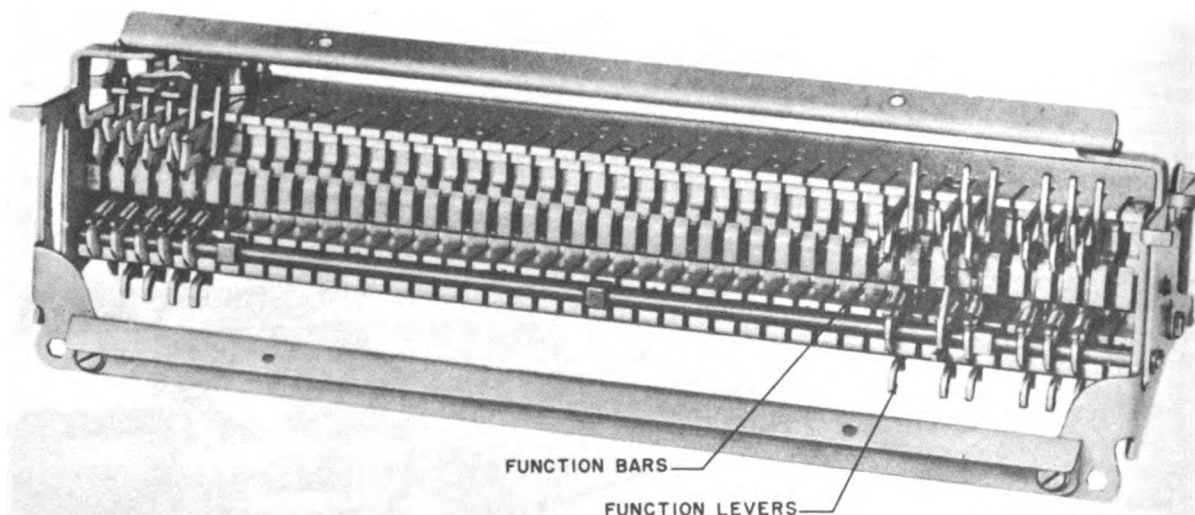


Figure 1-8. Automatic Typewriter Function Box

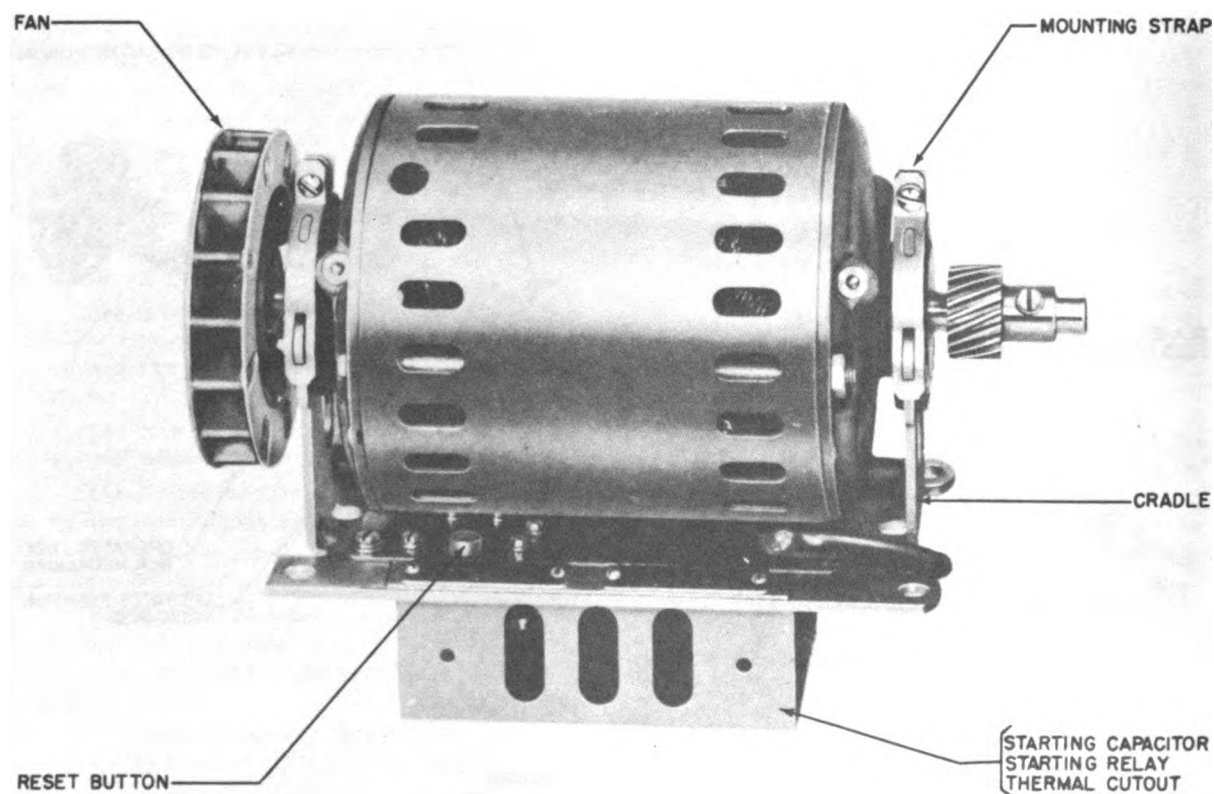


Figure 1-9. AC Motor PD-17A/U, Synchronous

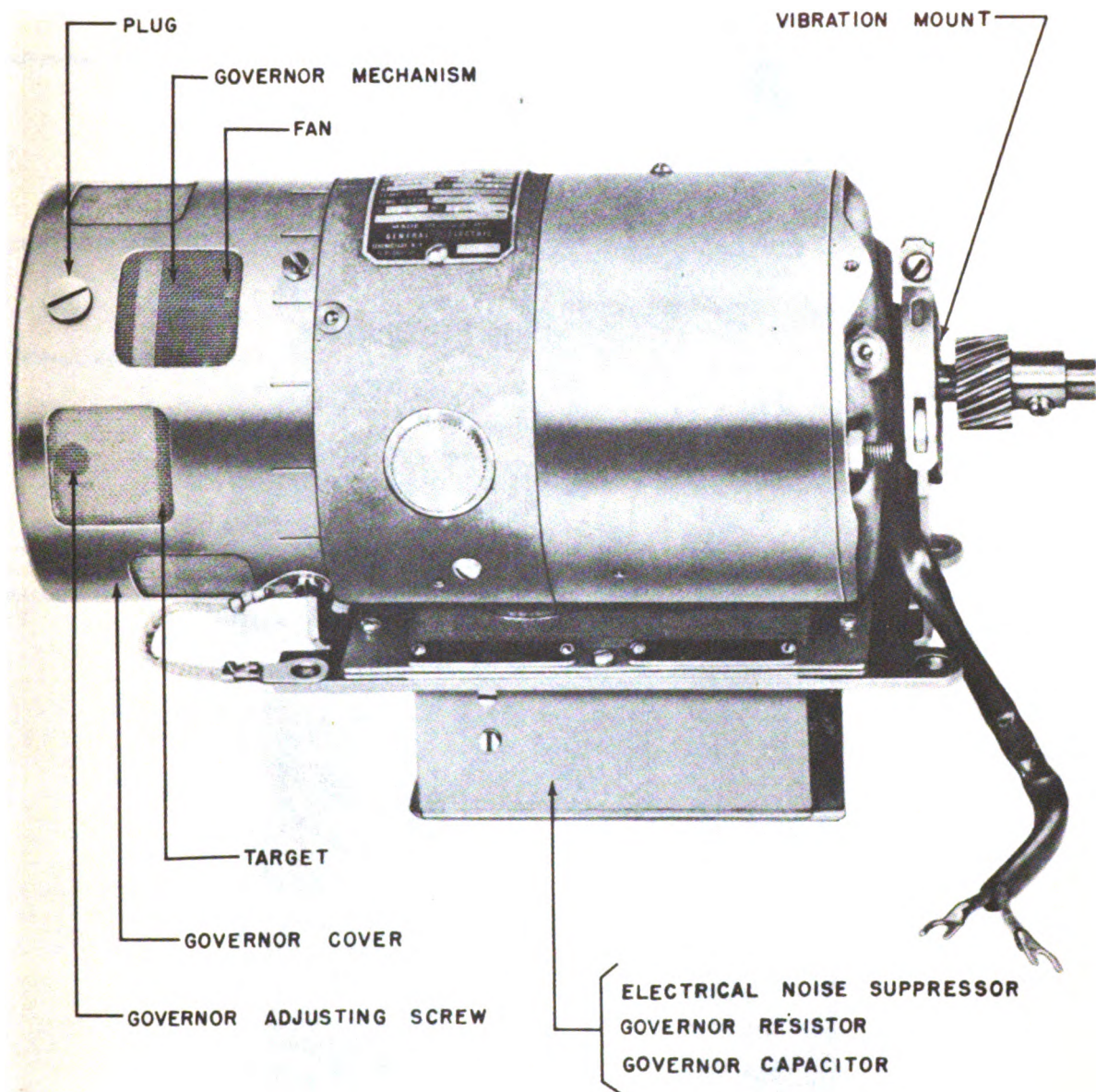


Figure 1-10. AC Motor PD-18/U, Governed

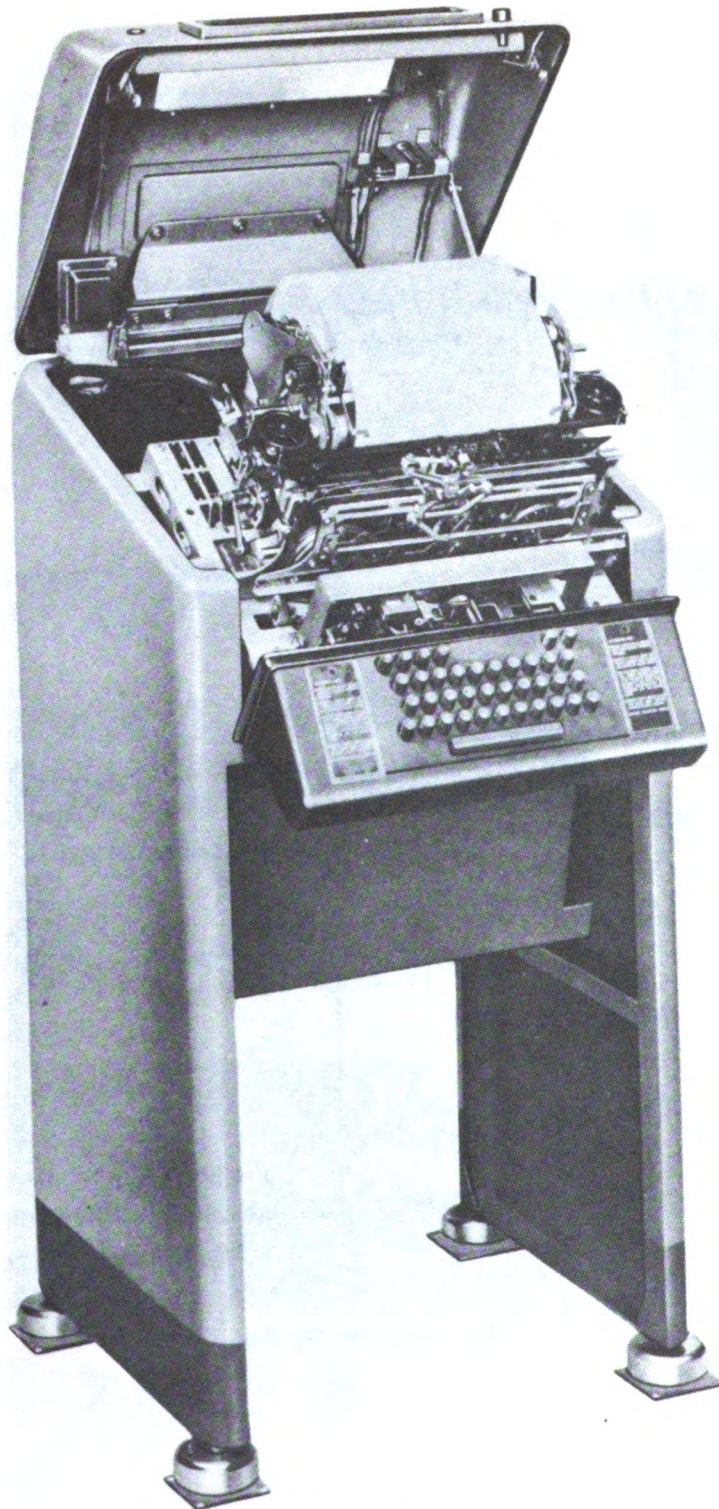


Figure 1-11. Tilting Arrangement

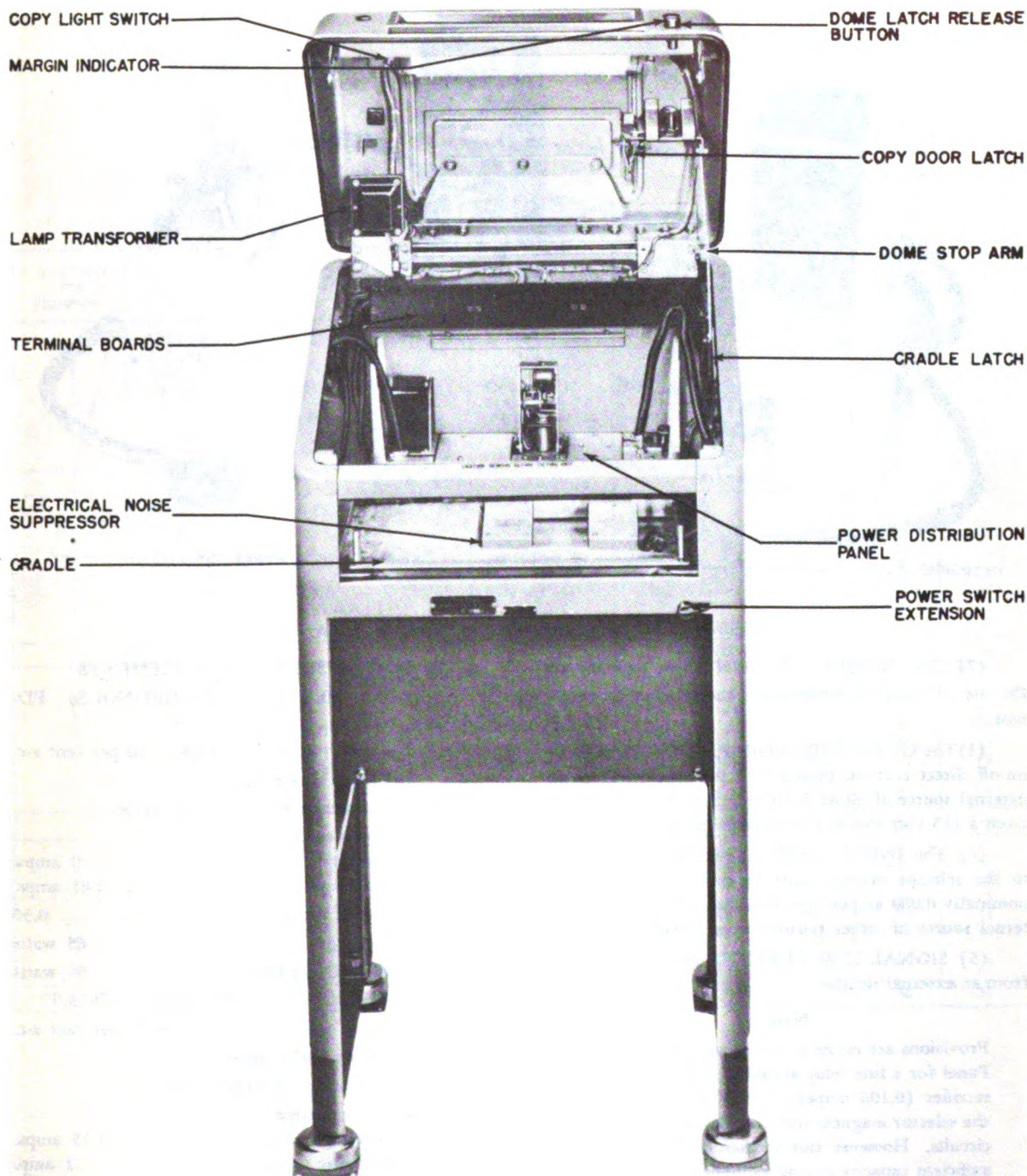


Figure 1-12. Cabinet CY-870/UG, With Power Distribution Panel

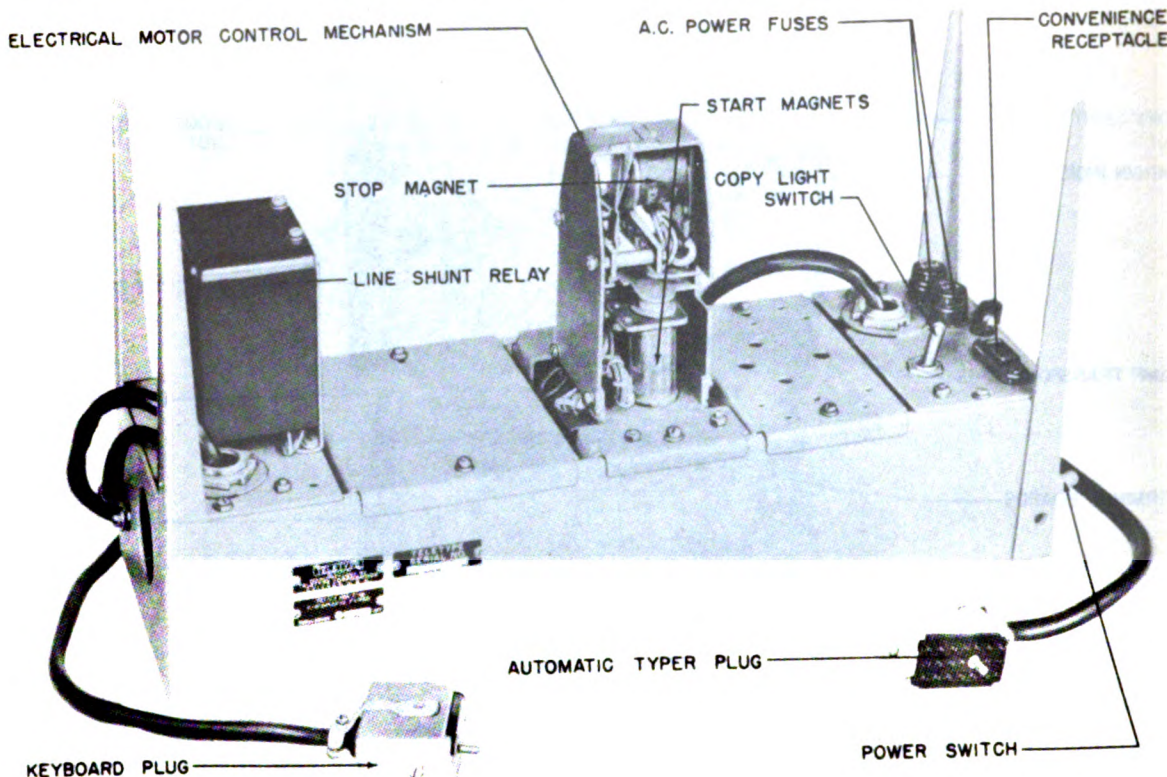


Figure 1-13. Power Distribution Panel SB-154A/UG

(2) The **FREQUENCY CONTROL** depends on the use of either a synchronous motor or a governed motor.

(3) The **OUTPUT TELEGRAPH SIGNAL** must be on-off direct current, nominally 0.060 ampere from an external source of either positive or negative polarity or from a 115 volt source at a rectifier in the Cabinet.

(4) The **INPUT TELEGRAPH SIGNAL** applied to the selector magnet must be on-off direct current, nominally 0.060 ampere (or 0.020 ampere) from an external source of either positive or negative polarity.

(5) **SIGNAL LINE CURRENT** must be furnished from an external rectifier.

Note

Provisions are made in the Power Distribution Panel for a line relay assembly and for a small rectifier (0.100 ampere, 115 VDC) to supply the selector magnets and the relay bias winding circuits. However this rectifier does not have sufficient capacity to also supply the signal line current. Neither the line relay assembly nor the rectifier are supplied with the Teletype-writers.

(6) POWER SUPPLY REQUIREMENTS.

(a) **AC MOTOR (SYNCHRONOUS) PD-17A/U.**

1. Input voltage: 115 volts ± 10 per cent a-c.
2. Phase: Single phase.
3. Frequency: 60 cycles ± 0.5 cycle.
4. Input current:

Starting	9 amps.
Running	1.85 amps.
5. Power factor
6. Wattage
7. Heat Dissipation

(b) **AC MOTOR (GOVERNED) PD-18/U.**

1. Input voltage: 115 volts ± 10 per cent a-c.
2. Phase: Single phase.
3. Frequency: 50 to 60 cycles.
4. Input current:

Starting	1.75 amps.
Running	1 amp.
5. Power factor
6. Wattage
7. Heat Dissipation

(c) PERMISSIBLE TEMPERATURES.

2. Temperature rise: Not in excess of +40° C.

1. Ambient: -20° C. (-4° F.) to +50° C. (+104° F.) above ambient.
(+122° F.)

TABLE 1-1. EQUIPMENT SUPPLIED

QUANTITY PER EQUIPMENT	NAME OF UNIT	NAVY TYPE DESIGNATION	OVER-ALL DIMENSIONS IN INCHES			VOLUME CU. FT.	WEIGHT POUNDS
			HEIGHT	WIDTH	DEPTH		
1	TELETYPEWRITER CONSISTING OF:	TT-47A/UG	40½	20½	18¼	8.77	81
1	CABINET	CY-870/UG	5¾	8½	4	.11	9
1	AC MOTOR	PD-17A/U	8½	4¾	15	.33	5
1	POWER DISTRIBUTION PANEL	SB-154A/UG	4¾	15½	17½	.73	11
1	KEYBOARD	MX-1114A/UG	9¾	10½	15½	.92	19
1	AUTOMATIC TYPER	MX-1115A/UG	21½	19½	7⅞	1.91	5
1	SET OF GEARS (151060)						
1	EQUIPMENT SPARES (152730)						
			TOTAL			12.55	130
1	TELETYPEWRITER CONSISTING OF:	TT-48A/UG	40½	20½	18¼	8.77	81
1	CABINET	CY-870/UG	5¾	8½	4	.11	10
1	AC MOTOR	PD-18/U	8½	4¾	15	.33	5
1	POWER DISTRIBUTION PANEL	SB-154A/UG	4¾	15½	17½	.73	11
1	KEYBOARD	MX-1114A/UG	9¾	10½	15½	.92	19
1	AUTOMATIC TYPER	MX-1115A/UG	21½	19½	7⅞	1.91	5
1	SET OF GEARS (151060)						
1	EQUIPMENT SPARES (152731)						
			TOTAL			12.55	131
1	TELETYPEWRITER CONSISTING OF:	TT-69A/UG	16	20½	18¼	3.46	70
1	CABINET	CY-871/UG	5¾	8½	4	.11	9
1	AC MOTOR	PD-17A/U	8½	4¾	15	.33	5
1	POWER DISTRIBUTION PANEL	SB-154A/UG	4¾	15½	17½	.73	11
1	KEYBOARD	MX-1114A/UG	9¾	10½	15½	.92	19
1	AUTOMATIC TYPER	MX-1115A/UG	21½	19½	7⅞	1.91	5
1	SET OF GEARS (151060)						
1	EQUIPMENT SPARES (152730)						
			TOTAL			7.36	119
1	TELETYPEWRITER CONSISTING OF:	TT-70A/UG	16	20½	18¼	3.46	70
1	CABINET	CY-871/UG	5¾	8½	4	.11	10
1	AC MOTOR	PD-18/U	8½	4¾	15	.33	5
1	POWER DISTRIBUTION PANEL	SB-154A/UG	4¾	15½	17½	.73	11
1	KEYBOARD	MX-1114A/UG	9¾	10½	15½	.92	19
1	AUTOMATIC TYPER	MX-1115A/UG	21½	19½	7⅞	1.91	5
1	SET OF GEARS (151060)						
1	EQUIPMENT SPARES (152731)						
			TOTAL			7.36	120

TABLE 1-2. SHIPPING DATA

SHIPPING BOX NO.	CONTENTS		OVER-ALL DIMENSIONS IN INCHES			VOLUME CU. FT.	WEIGHT POUNDS
	NAME	DESIGNATION	HEIGHT	WIDTH	DEPTH		
1	TELETYPEWRITER CONSISTING OF: CABINET AC MOTOR POWER DISTRIBUTION PANEL KEYBOARD AUTOMATIC TYPER SET OF GEARS (151060) EQUIPMENT SPARES (152730)	TT-47A/UG CY-870/UG PD-17A/U SB-154A/UG MX-1114A/UG MX-1115A/UG	45 $\frac{3}{4}$	22 $\frac{3}{4}$	40	24.09	314
1	TELETYPEWRITER CONSISTING OF: CABINET AC MOTOR POWER DISTRIBUTION PANEL KEYBOARD AUTOMATIC TYPER SET OF GEARS (151060) EQUIPMENT SPARES (152731)	TT-48A/UG CY-870/UG PD-18/U SB-154A/UG MX-1114A/UG MX-1115A/UG	45 $\frac{3}{4}$	22 $\frac{3}{4}$	40	24.09	315
1	TELETYPEWRITER CONSISTING OF: CABINET AC MOTOR POWER DISTRIBUTION PANEL KEYBOARD AUTOMATIC TYPER SET OF GEARS (151060) EQUIPMENT SPARES (152730)	TT-69A/UG CY-871/UG PD-17A/U SB-154A/UG MX-1114A/UG MX-1115A/UG	45	25	29	18.88	249
1	TELETYPEWRITER CONSISTING OF: CABINET AC MOTOR POWER DISTRIBUTION PANEL KEYBOARD AUTOMATIC TYPER SET OF GEARS (151060) EQUIPMENT SPARES (152731)	TT-70A/UG CY-871/UG PD-18/U SB-154A/UG MX-1114A/UG MX-1115A/UG	45	25	29	18.88	250

TABLE 1-3. EQUIPMENT REQUIRED BUT NOT SUPPLIED

QUANTITY PER EQUIPMENT	NAME OF UNIT
1	Set of Tools as listed in Table 7-2.

SECTION 2

THEORY OF OPERATION

1. GENERAL.

a. This section covers the operating principles and circuit descriptions of Teletypewriters TT-47A/UG, TT-48A/UG, TT-69A/UG, and TT-70A/UG. Each equipment serves as a transmitting or receiving page printing telegraph set when connected to the terminal facilities of a wire or radio telegraph channel, and will operate on signal line current of either 20 or 60 milliamperes without a line relay (direct selector magnet operation). The signals transmitted and received on the local loop by these Teletypewriters are of the neutral type (open and close D.C.)—7.42 unit start-stop transmission pattern with a speed of 368 operations per minute (OPM). The equipments also are adaptable to speeds of 460 or 600 opm by gearing changes. The main transmitting or receiving channel may carry any standard type of 7.42 unit start-stop telegraph signals and may be keyed by any conventional method. Synchronous motors require a power supply of 115 volts (plus or minus 10 per cent) 60 cycle, single phase alternating current. To avoid loss in receiving margin with this type of motor, the frequency regulation must be within plus or minus one-half cycle. Governed motors require a like power supply except that the frequency may be from 50 to 60 cycles.

b. The general electrical and mechanical relationships of the units which make up the Teletypewriters are shown in figure 2-1, a functional block diagram.

2. SIGNALING CODE.

a. The signaling code is an electrical code of current and no-current intervals. Impulses which energize the selector magnets are known as marking impulses and those which do not are known as spacing.

b. This five unit code is composed of five selecting intervals which may be either marking (current) or spacing (no-current) according to the code sequence of the character to be transmitted. Each group of five selecting intervals is preceded by a start interval (no-current) and is followed by a stop impulse (current) both of which are used to maintain synchronism between the transmitting and receiving apparatus. Figure 2-2 shows graphically, the code used.

3. KEYBOARD MX-1114A/UG.

a. GENERAL.—The Keyboard consists essentially of an intermediate shaft assembly, a code bar mechanism, and a signal generator. It also contains the time delay and margin indicator switch mechanisms, and provides mounting facilities for the Automatic Typewriter MX-1115A/UG and for either the PD-17A/U or PD-18/U AC Motor. At the time the Keyboard is installed in its Cabinet, a connector P-1101 on the end of a rubber covered cable which emanates from the Power Distribution Panel SB-154A/UG (figure 1-13), is plugged into a receptacle J-101 mounted on the top left rear corner of the Keyboard (figures 1-2 and 1-11). See figure 2-3 for schematic wiring. In operation, the motor drives the intermediate shaft assembly which furnishes motive power to the automatic typewriter main shaft (figures 1-5 and 1-7). This, in turn, drives the signal generator helical driven gear which is connected to the keyboard clutch drum by a sleeve. Thus, the keyboard clutch drum is caused to rotate continually while the motor is running. The transmitting cam-clutch assembly of the signal generator mechanism remains stationary except when motion is extended to it from the keyboard clutch drum. Engagement of the clutch is brought about by the operation of any key in the lower three rows (green), or the space bar, and a transmitting cycle is then initiated.

b. INTERMEDIATE SHAFT ASSEMBLY.—The intermediate shaft assembly, located in the rear central portion of the Keyboard (figure 1-2), mounts two helical gears (one with an overload clutch) and an eccentric cam. When the AC Motor and the Automatic Typewriter are in place on the Keyboard, the intermediate shaft helical driving gear on the motor engages with and drives the intermediate helical driven gear and its attached intermediate shaft assembly. This shaft assembly includes the overload clutch and helical gear assembly which transfers the motive force to the automatic typewriter main shaft, and the eccentric bushing which drives the eccentric follower pawl on the time delay mechanism. The gear ratio between the intermediate shaft helical driving gear on the motor, and the helical driven gear on the intermediate shaft, determines the maximum

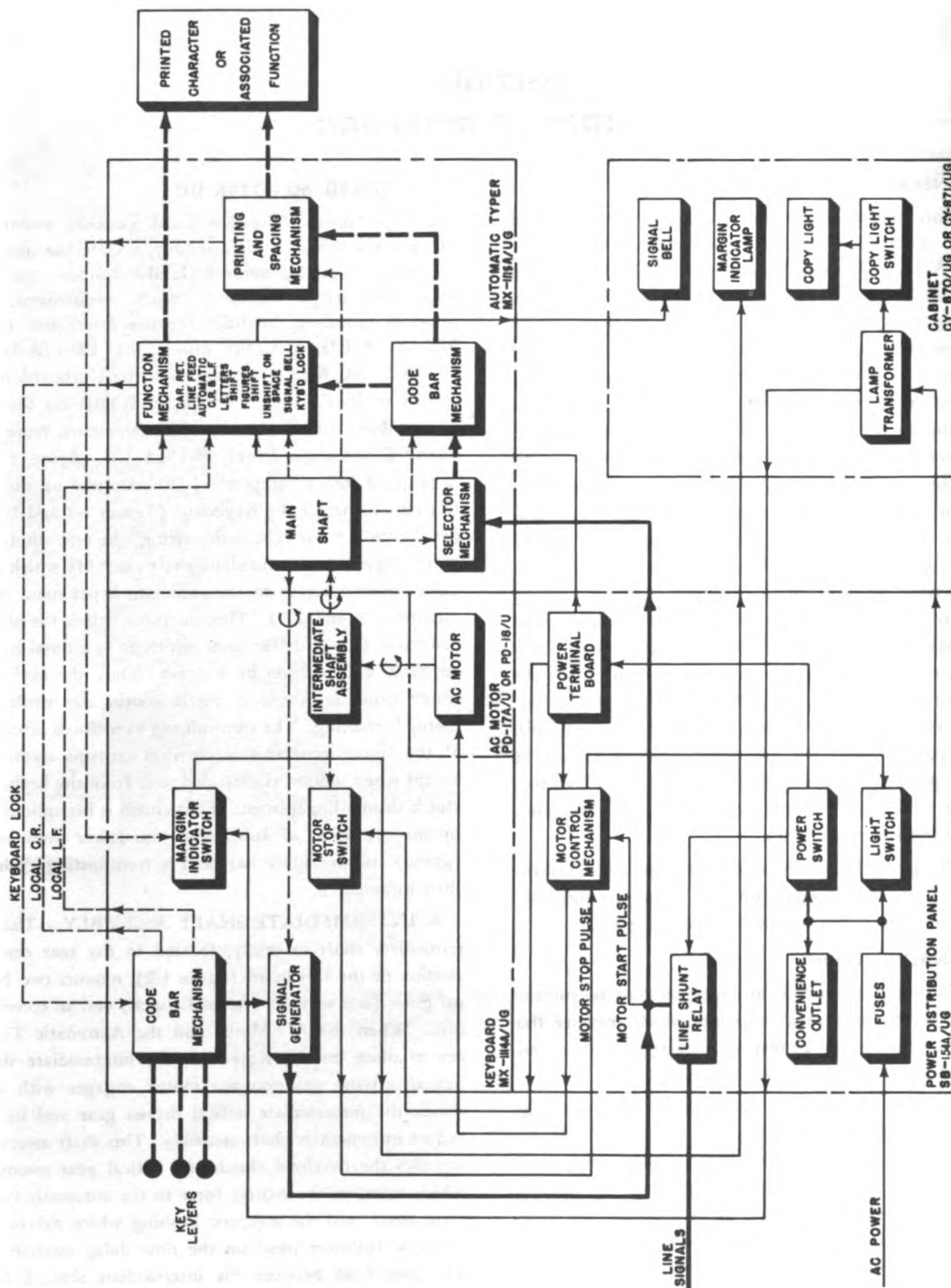


Figure 2-1. Teletypewriters, TT-47A/UG, TT-48A/UG, TT-69A/UG & TT-70A/UG, Functional Block Diagram
ORIGINAL

2-2

FIGURES	-	?	:	\$	3	!	&	8	'	(	)	.	,	9	ø	l	4	BELL	5	7	;	2	/	6	"		BLANK	LETTERS	FIGURES	SPACE	C.R.	L.F.
LETTERS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z						
NUMBERS INDICATE MARKING IMPULSES	1	1			1	1	1				1	1					1		1		1		1	1	1	1		1	1			
	2		2				2		2	2	2	2				2	2	2			2	2	2				2	2				2
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			3				3		3	3		3		3	3		3	3	3		3	3		3	3		3	3		3		
		4	4	4			4	4		4	4		4	4	4		4				4	4		4	4		4	4		4		
		5					5	5				5	5		5	5	5			5		5	5	5	5	5		5	5			

Figure 2-2. Signal Code

speed (operations per minute) at which the equipment will operate. These gears are readily replaceable with gears which will furnish other operating speeds. The overload clutch lever disengages its notch in the main shaft helical driving gear if the Automatic Typewriter or the Keyboard become jammed. This removes all driving torque from these units to prevent further damage to the equipment, and the clacking sound made by the overload clutch lever as it strikes its notch with each revolution of the intermediate shaft, serves as an audible alarm. To re-engage the overload clutch, the power must be removed from the motor, and the motor must then be turned over by hand until the overload clutch lever falls into its notch. If the trouble in the equipment is not cleared before the motor is again started, the clutch will immediately disengage again.

c. **CODE BAR MECHANISM.**--The code bar mech-

anism is located in the front underside portion of the Keyboard. Each keylever in the lower three rows (green) and the space bar is connected to a code lever and each keylever in the upper row (red) is connected to a function lever. The code and function levers pivot about points near their midportions (figure 2-4). Located above the rear half of the code levers and running parallel with the front of the Keyboard are, from rear to front, the clutch trip bar, the numbers 1, 2, 3, 4, and 5 code bars, and the lock bar. The rear portion of each code or function lever normally is held downward by a spring so that the front end with its attached keylever is held upward. A locking wedge is mounted on the projection of the lower front portion of all code levers, the local line feed function lever, and the local carriage return function lever (figures 2-4 and 2-5). If one of these levers is operated, its locking wedge moves downward between the lock balls in the lock ball channel.

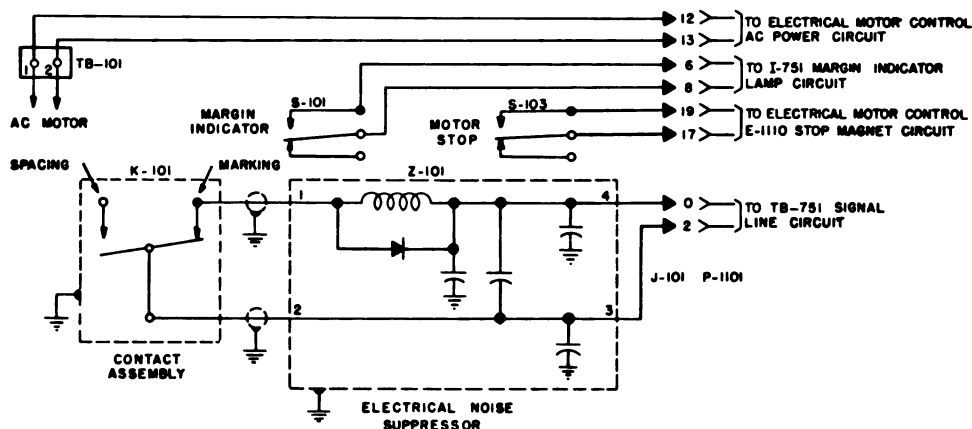


Figure 2-3. Keyboard MX-1114A/UG, Schematic Wiring Diagram

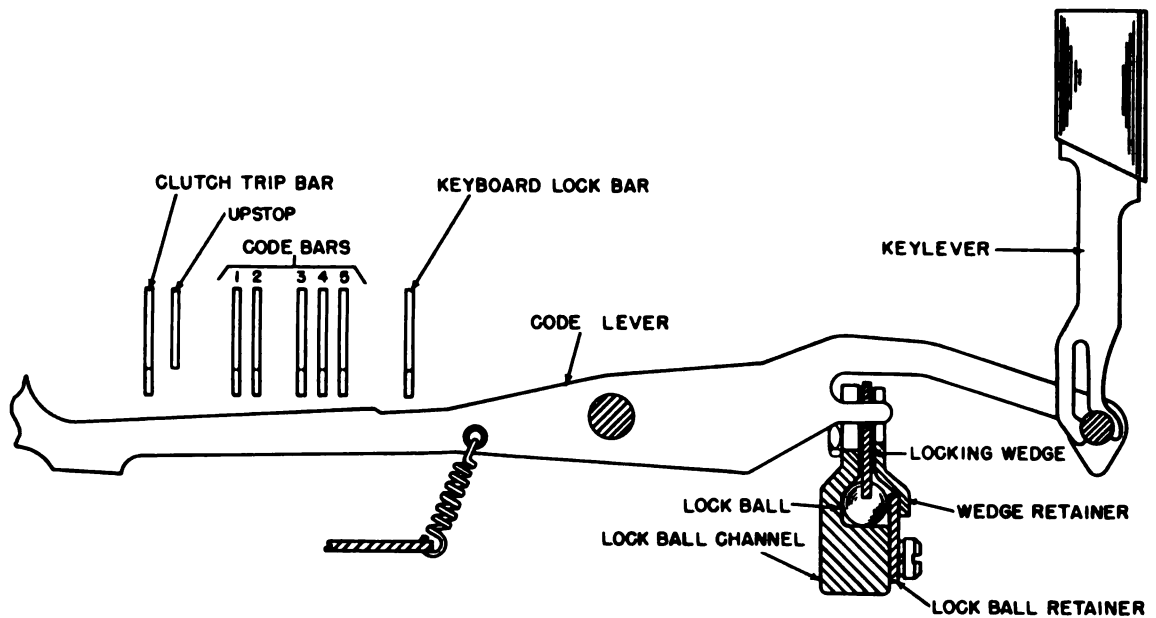


Figure 2-4. Code Bar Arrangement

and crowds them together. This prevents any other lever with a locking wedge from being operated at the same time. With the keyboard shaft in its stop position, the clutch trip bar and the five code bars are held toward the left (front view), against the tension of their springs, by the latched-up code bar bail. When any green keylever or the space bar is depressed, the rear end of the associated code lever engages and lifts the front edge of the code lever bail (figure 2-6). An extension on the code lever bail disengages the code lever bail latch lever and permits it to drop. As the front edge of the code lever bail rises, the back edge rotates around the rear end of the operated code lever and locks it in position. As the code lever bail latch lever drops, it depresses the code bar bail latch lever and releases the code bar bail (figure 2-7). Upon being freed, the code bar bail, the clutch trip bar, and the five code bars are pulled toward the right by their springs, until the code bar bail strikes its bumper. As the five code bars shift, code projections on unselected code bars engage the operated code lever (figure 2-8). Code bars which are permitted to move to the extreme right become selected and carry with them their respective transfer levers. By means of the clutch trip bail and the clutch stop lever, the clutch trip bar releases the keyboard cam-clutch which rotates on the shaft. During the time in which the cam-clutch makes a revolution, an eccentric cam and its follower cause the code bar bail, the five code

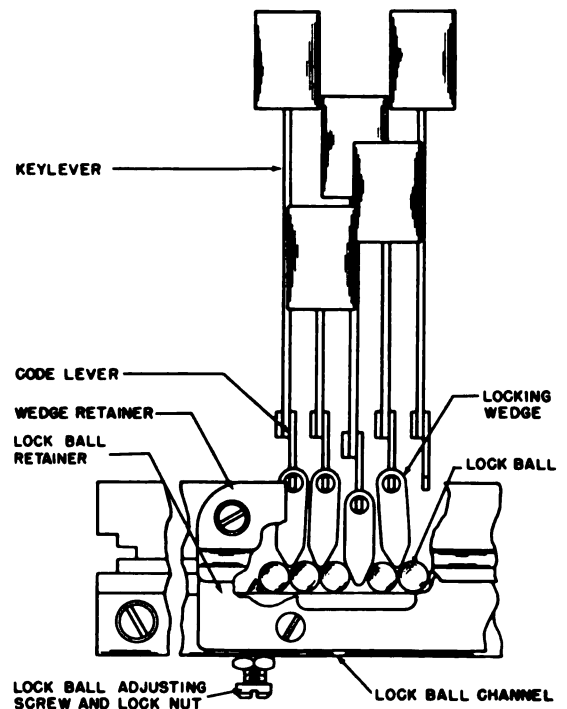


Figure 2-5. Keylever Lock Ball Mechanism

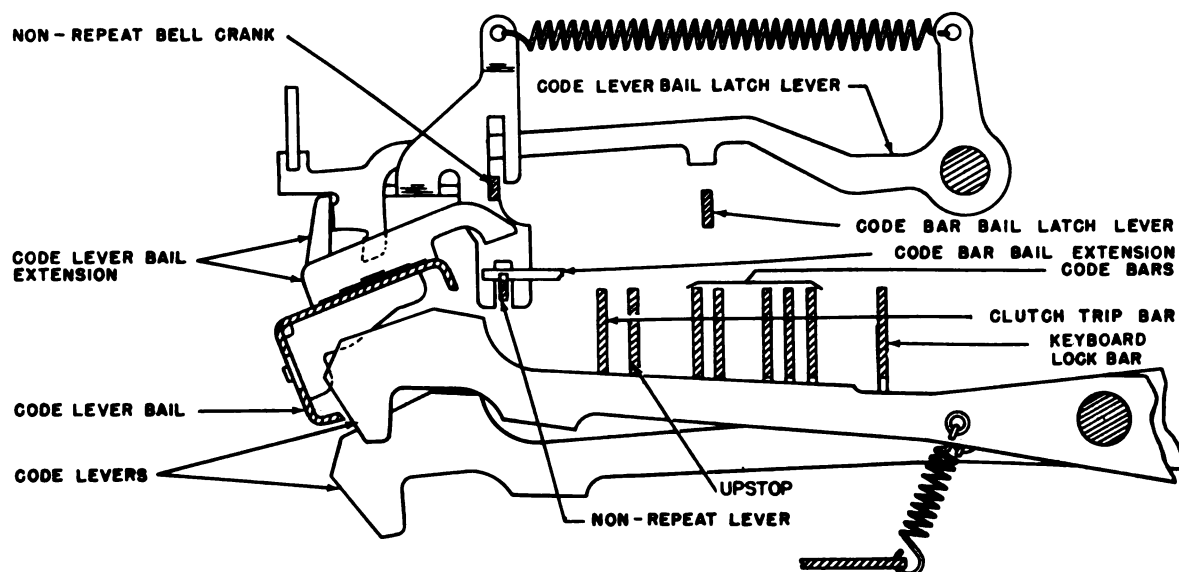


Figure 2-6. Keylever Mechanism, Selected Position

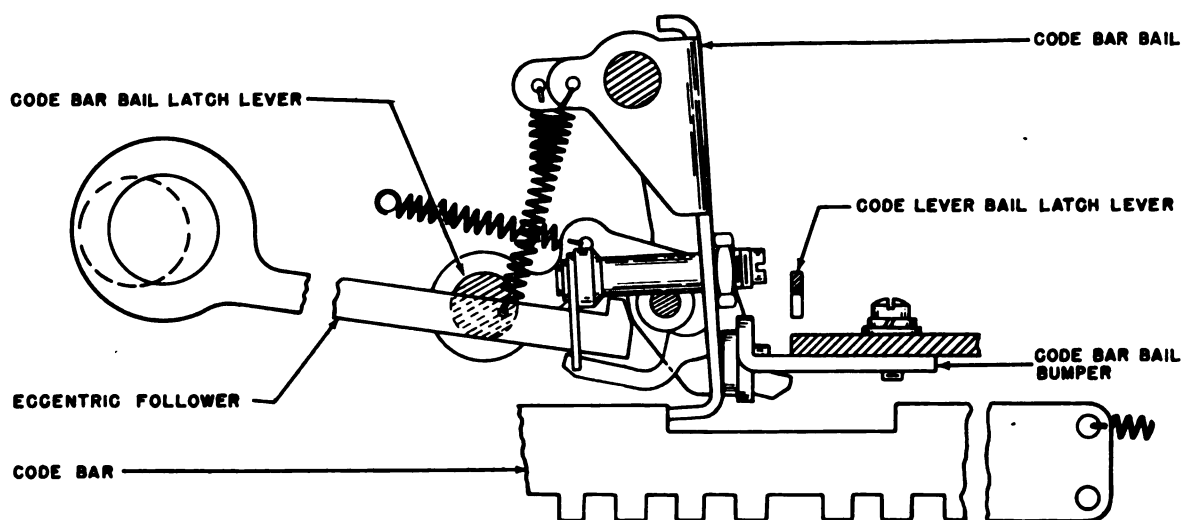


Figure 2-7. Code Bar Bail Mechanism, Released Position

bars, and the clutch trip bar to be returned to their original positions (figures 2-9 and 2-10). As the code bar bail moves to the left, it carries with it the non-repeat lever (figure 2-11). This in turn rotates the non-repeat bell crank about its pivot point until it lifts the code lever bail latch lever out of engagement with the code lever bail extension. While a spring then returns

the code lever bail to its normal position, the code lever bail extension drops on the non-repeat lever to disengage it from the code bar bail. The spring then resets the non-repeat mechanism. As the code lever bail returns to its normal position, it releases the operated code lever and its keylever. As the cam-clutch nears the end of its revolution, the clutch shoe lever strikes the stop lever,

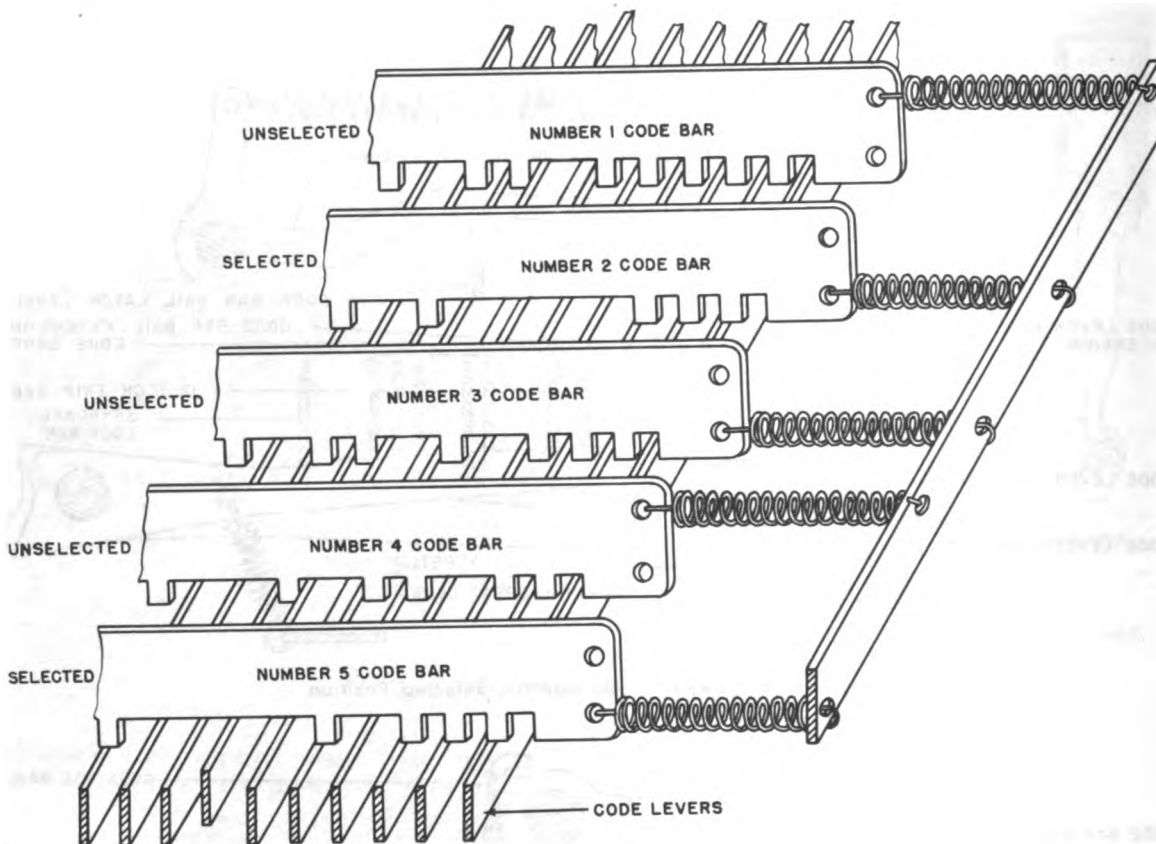


Figure 2-8. Code Bar Selection

and the inertia of the cam disk assembly causes it to continue to turn until its lug makes contact with the lug on the clutch shoe lever. At this point the latch lever drops into the indent in the cam disk and the clutch is held disengaged until the stop lever is again operated (figure 2-12). For detailed information on the operation of the clutch shoes, see paragraph 4.b.(3) of this section.

d. SIGNAL GENERATOR MECHANISM.—The signal generator mechanism is located on the top front part of the keyboard chassis. As was shown in paragraph 3.c., each of the five code bars operates its own transfer lever (figure 2-13). In addition to these five transfer levers, there are two others which are not associated with code bars and which are used to originate the start and stop pulses. The stop pulse transfer lever (seventh from the rear and located next to the fifth pulse transfer lever) is permanently positioned so that its upper end, and its associated selector lever are toward the left or selected position. The start pulse trans-

fer lever (third from rear and located between the second and third pulse transfer levers) is permanently positioned so that its upper end, and its associated selector lever are to the right or unselected position. When a code bar is unselected, the upper end of its transfer lever and its associated selector lever are positioned toward the right (figure 2-13). When a code bar is selected, the upper end of its transfer lever and its associated selector lever are positioned toward the left (figure 2-14). After the code bars have positioned their transfer levers and selector levers, the locking bail which is operated by a cam on the keyboard cam-clutch assembly drops downward between the lock projections on the upper ends of the transfer levers (figure 2-15). When the selected code bars are reset by the code bar bail, the upper ends of their transfer levers are held toward the left by the locking bail. The slotted bearings at their pivot points permit the transfer levers to shift to the left without disturbing the selection set up on the selector levers. Each of the seven selector levers is associated with a cam on the cam-clutch assembly. These

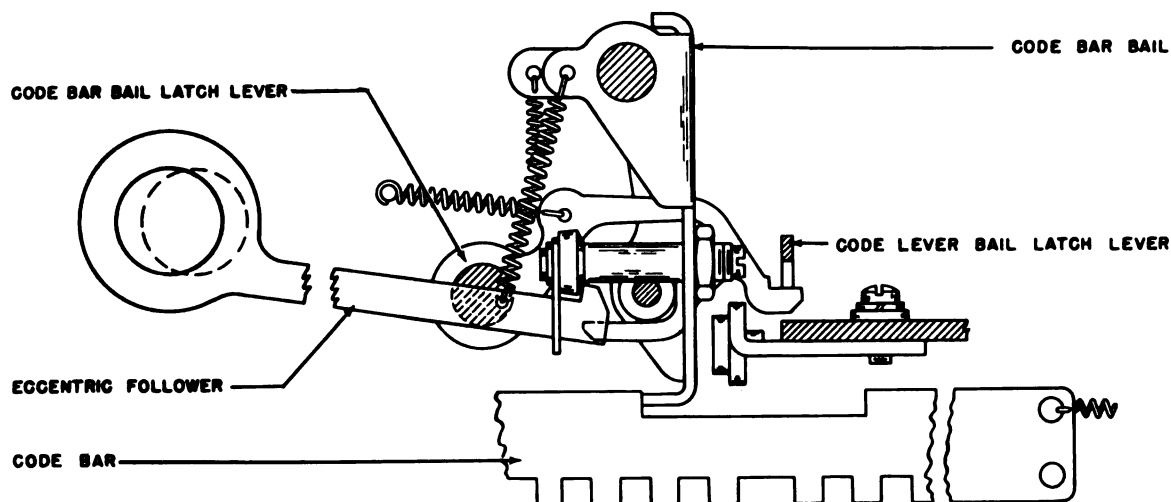
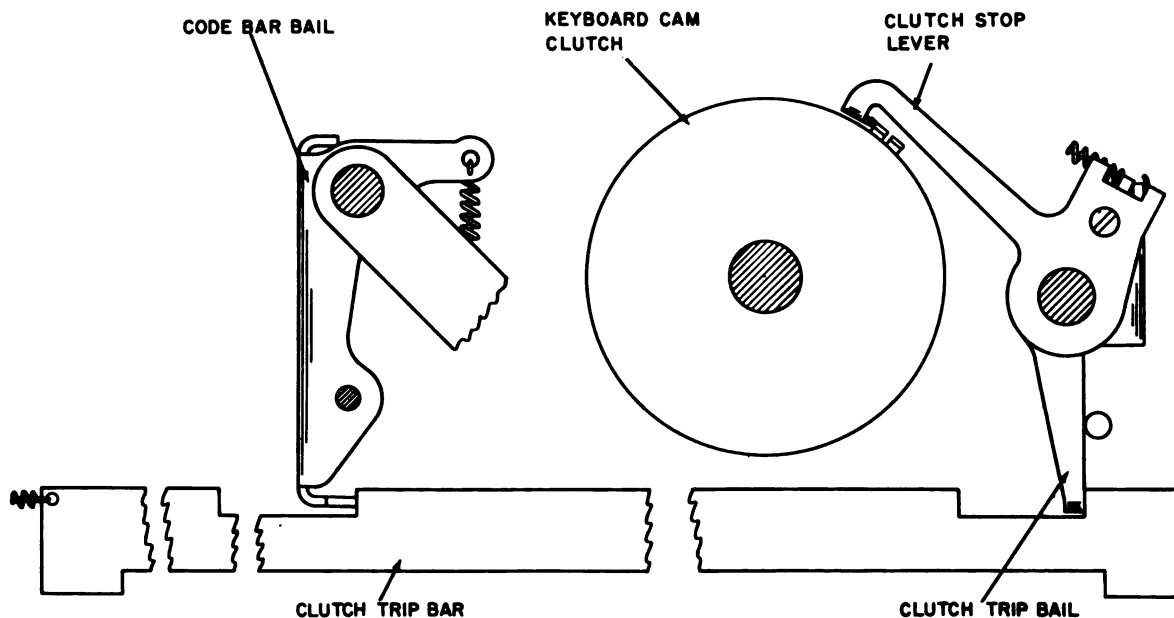


Figure 2-9. Code Bar Bail Mechanism, Reset Position

Figure 2-10. Clutch Trip Mechanism,
Rear View

cams push the levers upward briefly in the order: start, 1, 2, 3, 4, 5, and stop. A rocker bail is located above the selector levers and is actuated by them. A rocker bail detent holds the bail in either of the two positions it can assume. When a selector lever which is in the unselected position (toward the right) is pushed upward by its cam, it rotates the rocker bail clockwise (figure 2-13). When a selector lever which is in the selected

position (toward the left) is pushed upward by its cam, it rotates the rocker bail counterclockwise (figure 2-15). An extension on the rocker bail is moved downward or upward respectively with clockwise or counterclockwise rotations of the bail. On the rear side of the signal generator mechanism, are located the upper or spacing intermediate lever, the lower or marking intermediate lever, the oscillating lever, the flutter lever, the detent

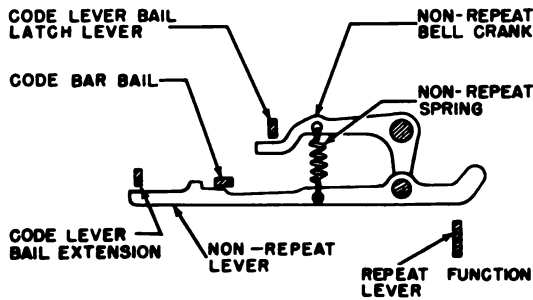


Figure 2-11. Non-Repeat Lever Mechanism

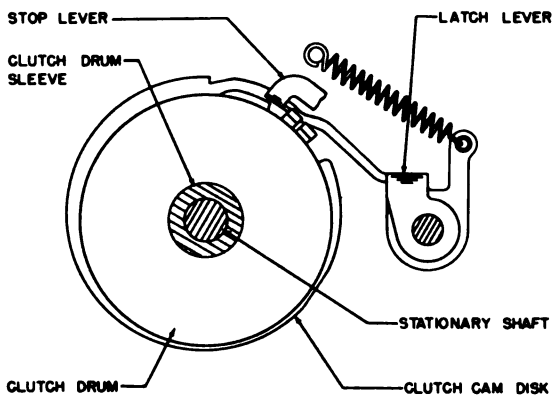


Figure 2-12. Keyboard Clutch Latch Mechanism

toggle, and the detent lever. In the stop position, the rocker extension holds the marking intermediate lever downward and out of engagement with the flutter lever (figure 2-16). As the flutter cam on the keyboard cam-clutch assembly rotates, it moves the flutter lever and the spacing intermediate lever toward the left as viewed from the rear (figure 2-17). The spacing intermediate lever bears on the upper part of the oscillating lever and rotates it counterclockwise so that the detent toggle is shifted toward the left where it is held by the detent lever. The detent toggle moves the toggle extension in the contact assembly K-101 (on the top side of the signal generator mechanism) toward the left and causes the contact toggle to pivot on the spacing contact and break the marking contact (figure 2-18). This breaks the line circuit which passes through the contact toggle and the marking contact and originates a start or spacing element of the signaling code. When the rocker extension is in its upward position, it holds the spacing intermediate lever upward out of engagement with the flutter lever (figure 2-19). Further rotation of the flutter cam moves the flutter lever and the marking intermediate lever toward the left. The marking intermediate lever bears on the lower part of the oscillating lever and rotates it clockwise so that the detent toggle is shifted

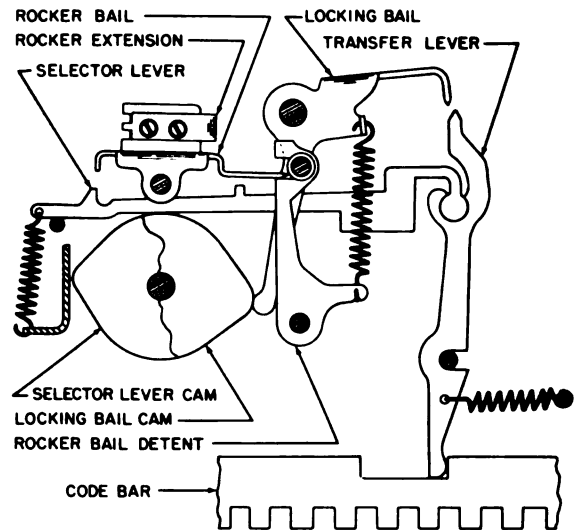


Figure 2-13. Signal Generator Mechanism, Front View

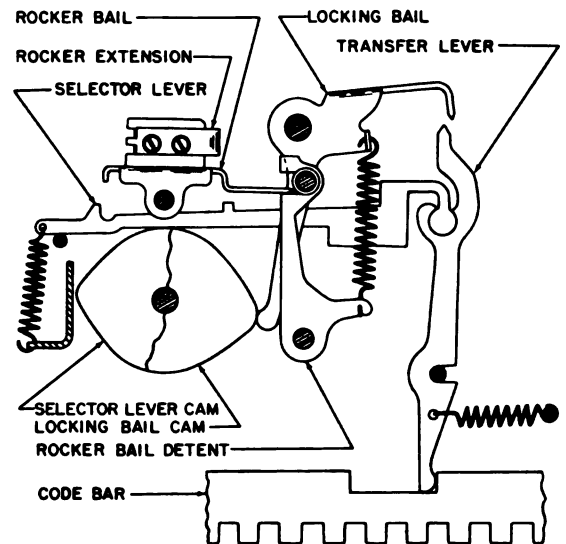


Figure 2-14. Signal Generator Mechanism, Front View

to the right where again it is held by the detent lever. The detent toggle moves the toggle extension in the contact assembly toward the right and causes the contact toggle to close with the marking contact and pivot on it (figure 2-20). This closes the line circuit and originates a marking element of the signaling code. The electrical noise suppressor Z-101 is in the line circuit to aid in the suppression of undesirable radiation when the circuit is broken.

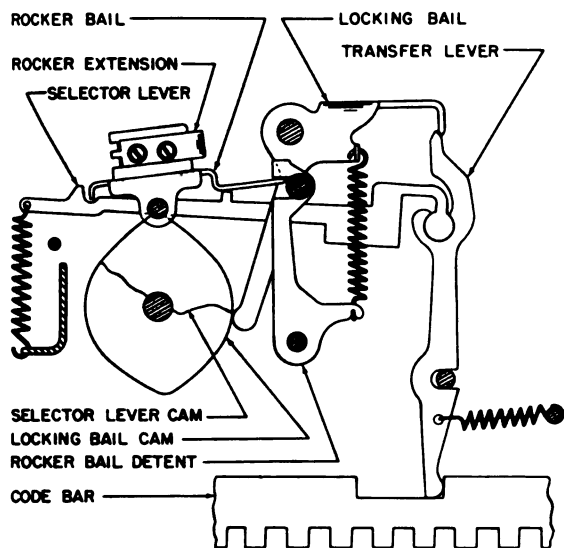


Figure 2-15. Signal Generator Mechanism, Front View

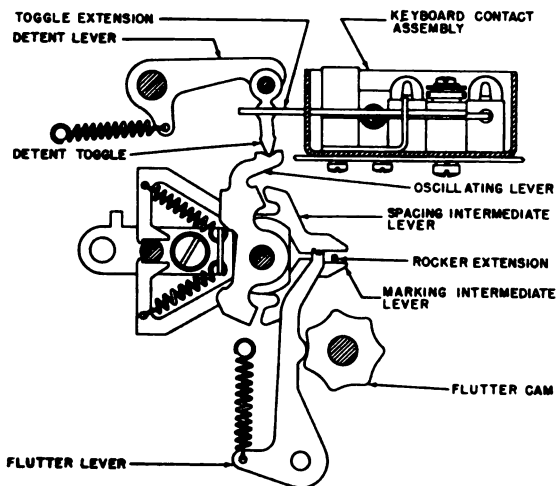


Figure 2-16. Signal Generator, Rear View, Stop Position

e. LOCAL CARRIAGE RETURN MECHANISM.—Operation of the local carriage return keylever (red) causes its function lever to raise the forward end of the local carriage return bail (figure 2-21). The bail rotates about its pivot point until the upper end engages the carriage return lever on the Automatic Typewriter. Thus, the carriage return mechanism on the local Automatic Typewriter is made to operate without disturbing the line circuit. The carriage return mechanism is fully described in paragraph 4.i.(4) of this section.

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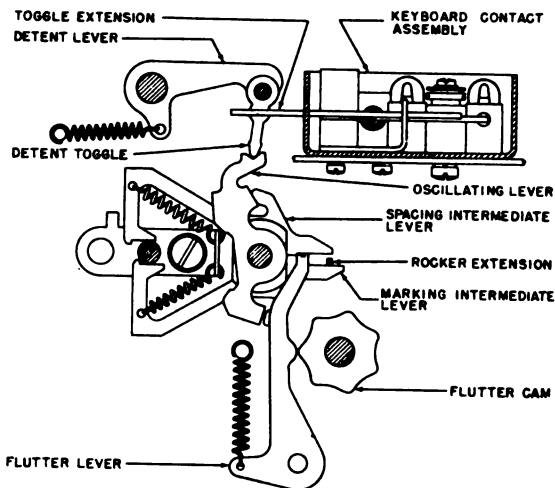


Figure 2-17. Signal Generator, Rear View, Spacing Position

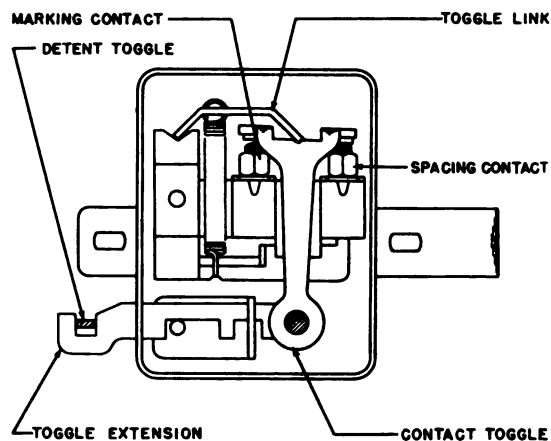


Figure 2-18. Contact Assembly, Spacing Position

f. LOCAL LINE FEED.—Operation of the local line feed keylever (red) causes its function lever to raise the forward end of the local line feed bail (figure 2-22). The bail rotates about its pivot point and the upper end pushes the trip link until the link engages the line feed clutch trip lever on the Automatic Typewriter. Thus, the line feed mechanism on the local Automatic Typewriter is made to operate without disturbing the other Automatic Typewriters on the same line circuit. The line feed mechanism is fully described in paragraph 4.i.(5) of this section.

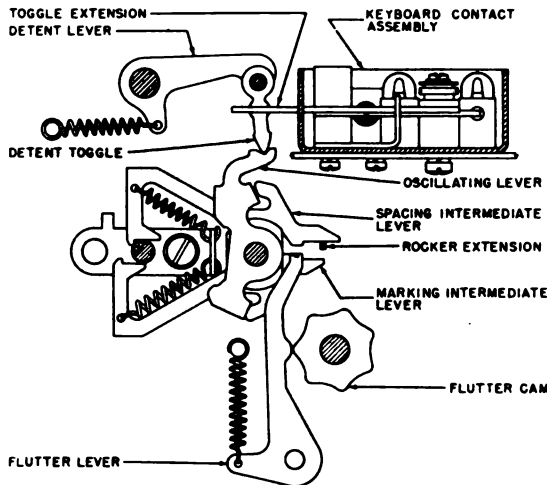


Figure 2-19. Signal Generator, Rear View, Marking Position

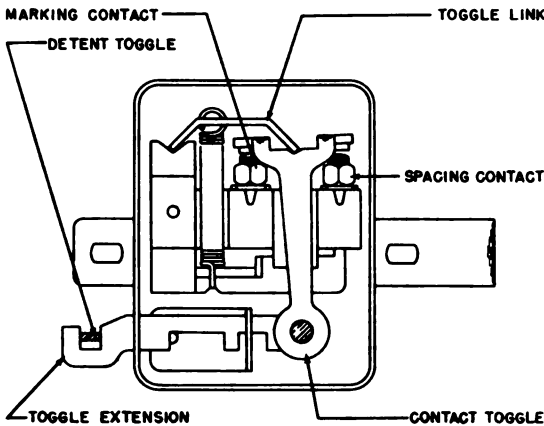


Figure 2-20. Contact Assembly, Marking Position

g. BREAK MECHANISM.—Operation of the break keylever (red) causes its function lever to raise the break rod and shift the break bail (figure 2-23). As the break bail moves upward, its lower end engages the lower end of the oscillating lever to rotate the lever counterclockwise as viewed from the rear (figure 2-24). The oscillating lever shifts the detent toggle toward the left where it is held by the detent lever. The detent toggle moves the toggle extension in the contact assembly toward the left and causes the contact toggle to pivot on the spacing contact and break the marking contact

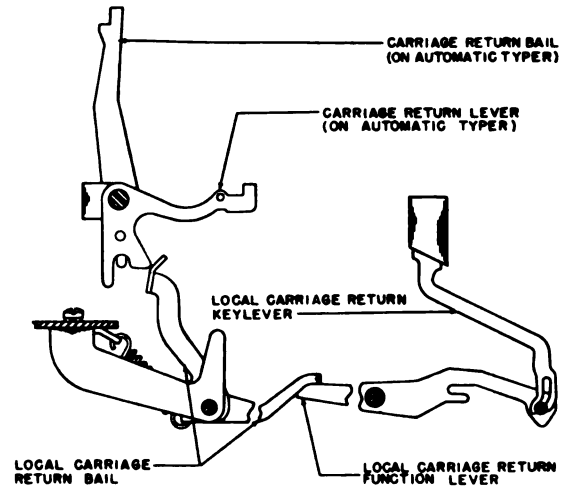


Figure 2-21. Local Carriage Return Mechanism

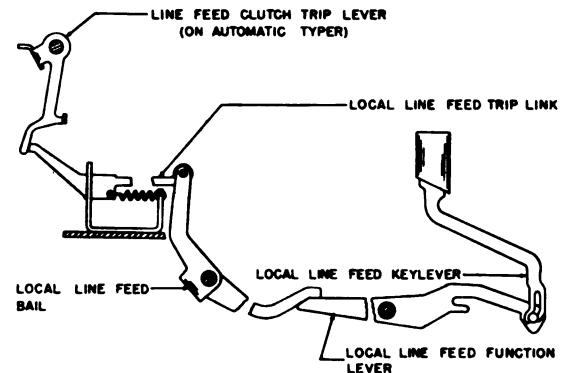


Figure 2-22. Local Line Feed Mechanism

(figure 2-18). This breaks the line circuit until the break keylever is released. When the keylever is released, a spring on the break bail moves it downward. The upper end of the bail engages the upper end of the oscillating lever to rotate it clockwise and close the contacts in the contact assembly.

b. REPEAT MECHANISM.—Operation of the repeat keylever (red) simultaneously with one of the green keylevers or the space bar, disables the non-repeat mechanism and causes the character or function selected to be repeated as long as the repeat keylever is held operated. The operated repeat keylever causes its function lever to raise the right end of the non-repeat lever (figures 2-11 and 2-25), and rotate it about its pivot point. In this position, the non-repeat keylever cannot be engaged and operated by the code bar bail. There-

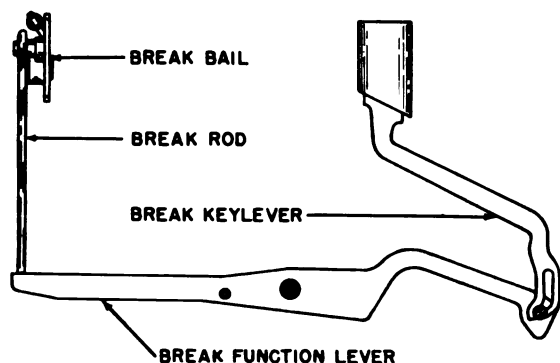


Figure 2-23. Break Mechanism

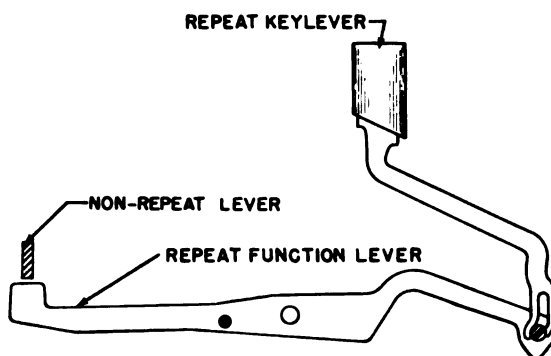


Figure 2-25. Repeat Mechanism

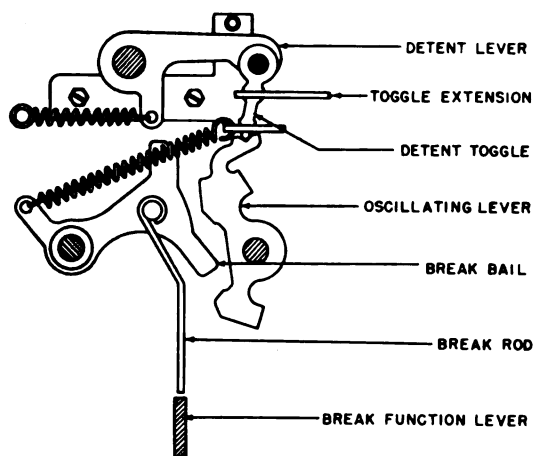


Figure 2-24. Break Mechanism

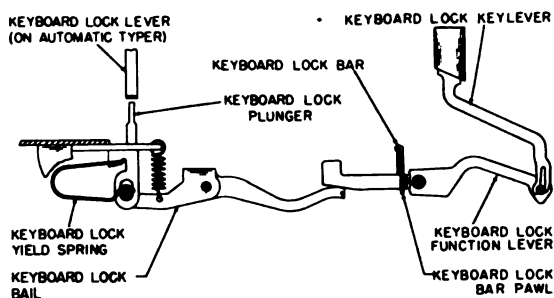


Figure 2-26. Keyboard Lock Mechanism

fore, the non-repeat bell crank will not reset the operated code lever bail latch lever which then maintains both the code lever bail and the code bar bail latch lever in their operated positions until the repeat keylever is released.

i. KEYBOARD LOCK MECHANISM.—Operation of the keyboard lock keylever (red) causes its function lever to raise the keyboard lock bar pawl (figure 2-26). As shown in paragraph 4.i.(8) of this section, the reception of two consecutive blank code signals by the Automatic Typer, results in its driving its keyboard lock lever downward. The lock lever makes contact with the lock plunger on the Keyboard and also pushes it downward. As the plunger moves, it exerts pressure on the yield spring which connects it with the keyboard lock bail. The bail rotates about its pivot point to engage

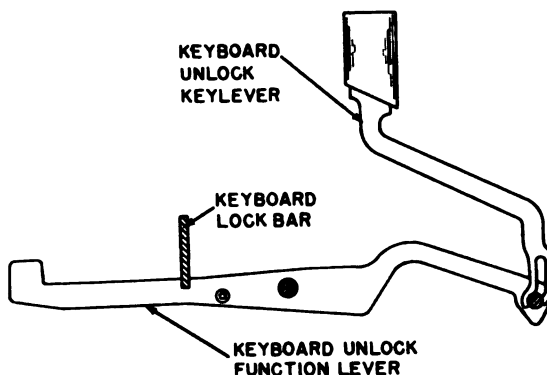


Figure 2-27. Keyboard Unlock Mechanism

the keyboard lock function lever and causes the lever to raise the lock bar pawl. Thus, the pawl may be raised either by local operation of the keyboard lock keylever, or by operation of the blank or break keylevers, on any Keyboard in the line circuit. In its upper position, the pawl releases the keyboard lock bar and a spring pulls the bar toward the right (figure 2-28). In this position, projections on the lower side of the bar block the upward movement of any code lever and the repeat function lever.

j. **KEYBOARD UNLOCK MECHANISM.**—Operation of the keyboard unlock keylever (red) causes its function lever to rise against a camming surface on the keyboard lock bar and drive the bar toward the left

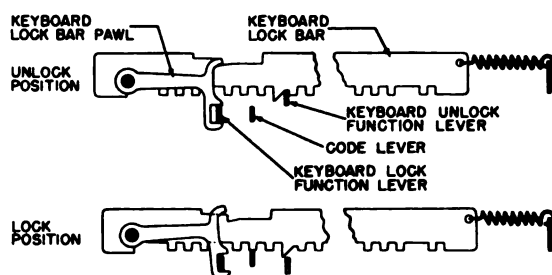


Figure 2-28. Keyboard Lock Mechanism

until the lock bar pawl drops into a notch in the lock bar (figures 2-27 and 2-28). In this position, the projections on the lock bar lie between the code levers and offer no interference with their operation.

k. **MARGIN INDICATOR MECHANISM.**—The margin indicator cam disk on the automatic typer spring drum rotates with the drum as printing or spacing occur. See paragraph 4.g.(1) of this section. As the end of each line is approached, the cam surface of the disk makes contact with the margin indicator contact lever and rotates it clockwise about its pivot point (figure 2-29). When the contact lever leaves the switch plunger, the switch S-101 operates and closes the circuit to a margin indicator light I-751 in the Cabinet (figures 2-3 and 2-79). A carriage return cycle returns the cam disk to its starting position and the margin indicator light switch opens.

l. **TIME DELAY MECHANISM.**—As shown in paragraph 6.c. of this section the electrical motor control mechanism in the Power Distribution Panel must receive an electrical pulse to stop the AC Motor. This pulse is supplied by the time delay mechanism on the Keyboard which contains two ratchet wheels—one with 27 teeth, and one with 28 teeth. The reciprocating eccentric follower pawl, powered by the intermediate shaft, drives the ratchet wheels one tooth at a time (figure 2-30). Therefore, the ratchet wheel with 27 teeth turns a little faster than the one with 28 teeth. The

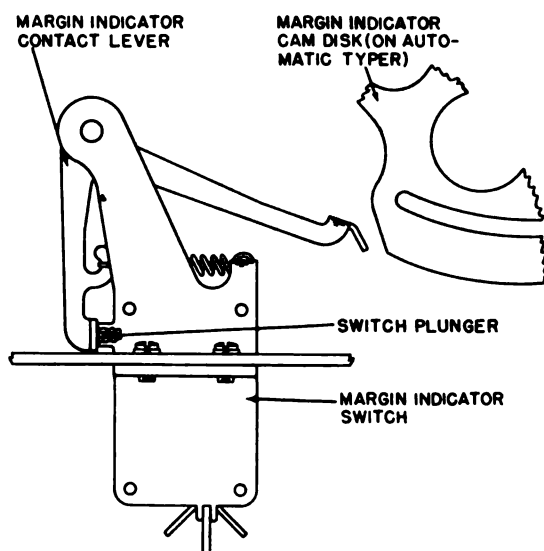


Figure 2-29. Margin Indicator Mechanism

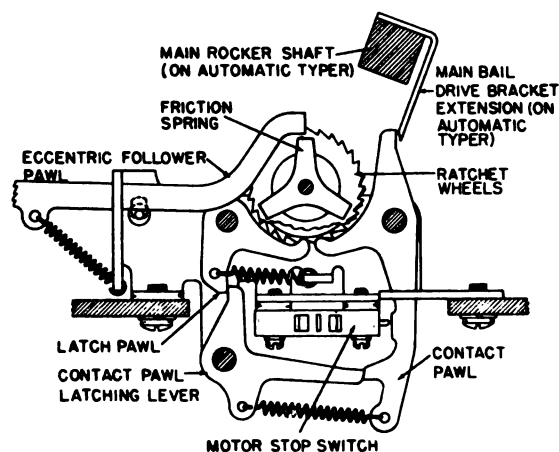


Figure 2-30. Time Delay Mechanism

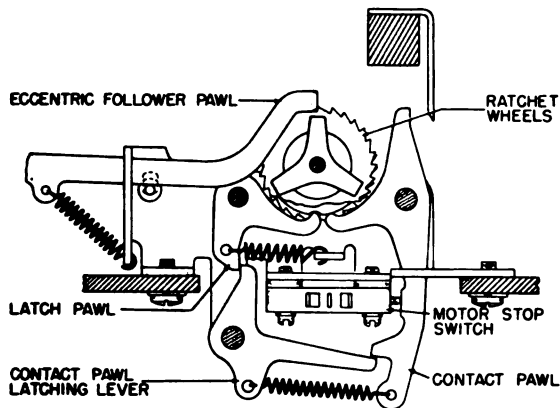


Figure 2-31. Time Delay Mechanism

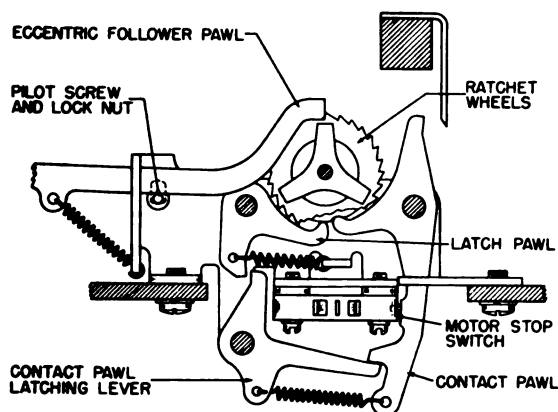


Figure 2-32. Time Delay Mechanism

latch pawl rides the inside flanges of the ratchet wheels. The contact pawl is held away from the flanges by the contact pawl latching lever which is controlled by the latch pawl. Each ratchet wheel has an indentation in its inside flange. After a maximum of 756 revolutions of the intermediate shaft, these indentations are adjacent for nearly one revolution. When the adjacent indentations pass over the latch pawl, it drops into them briefly and disengages the contact pawl latching lever from the contact pawl. This allows the contact pawl to ride the flanges of the ratchet wheels until either one of two things occur (figure 2-31). If a line signal is received before 756 revolutions of the intermediate shaft have taken place, the main bail drive bracket extension on the Automatic Typewriter engages the upper end of the contact pawl and causes it to again be latched by the contact

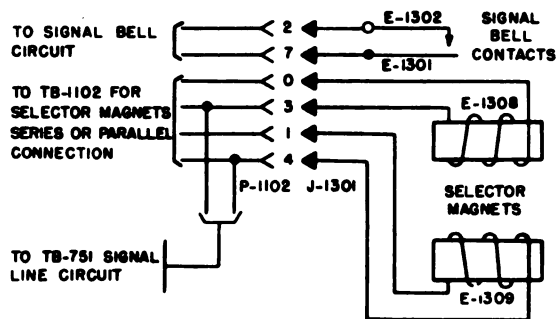
pawl latching lever. If a line signal is not received before 756 revolutions of the intermediate shaft occur, the indentations in the flanges of the ratchet wheels again become adjacent so as to permit the contact pawl to drop into them briefly, and pulses the motor stop switch S-103 (figure 2-32). This pulse is applied to the electrical motor control mechanism in the Power Distribution Panel to shut down the motor. The time lapse between the reception of the last line signal and the shutting down of the motor varies from 86 to 172 seconds for 60 words per minute operation, and from 53 to 106 seconds for 100 words per minute operation. If it is not desirable to have the motor shut down automatically, the time delay mechanism may be disabled. To accomplish this, loosen the nut on the pilot screw, raise it to the top of its slot, and tighten the nut. When the pilot screw is in this position, the eccentric follower pawl is held out of engagement with the ratchet wheels.

4. AUTOMATIC TYPER MX-1115A/UG.

a. GENERAL.

(1) The receiving circuit for the Automatic Typewriter (figure 2-33) consists of two 132 ohm selector magnet coils E-1308 and E-1309 wired to a receptacle J-1301 which is mounted on the automatic typer right frame (figure 1-4). At the time the Automatic Typewriter is installed in its Cabinet, connector P-1102 on the end of a rubber covered cable which emanates from the Power Distribution Panel SB-154A/UG (figure 1-13), is plugged into this receptacle. A terminal board TB-1102 in the Power Distribution Panel provides for the connection of the selector magnet coils in series for 0.020 ampere line current operation, or in parallel for 0.060 ampere line current operation.

(2) The Automatic Typewriter also has a set of electrical contacts E-1301 and E-1302 which are connected to the receptacle J-1301 on its right frame. These are used to pulse a signal bell magnet E-759 in the Cabinet and are operated by a mechanism described in paragraph 4.i.(7).

Figure 2-33. Automatic Typewriter MX-1115A/UG,
Schematic Wiring Diagram

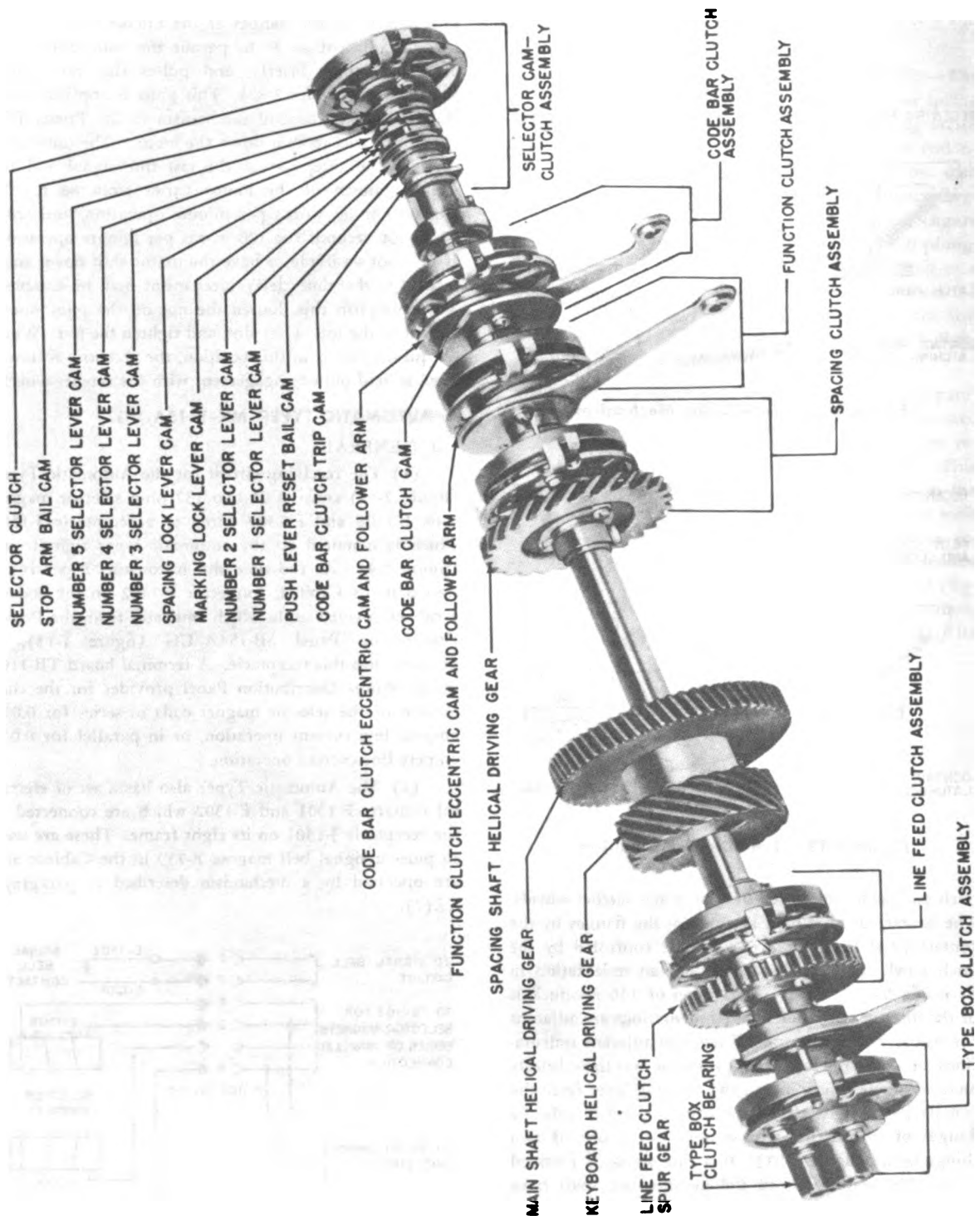


Figure 2-34. Automatic Typewriter Main Shaft

b. MAIN SHAFT. (See figure 2-34.)

(1) The main shaft is located in the lower rear portion of the Automatic Typewriter and extends the full length of the unit. It is supported by ball type bearings mounted in each side frame.

(2) At the time the Automatic Typewriter is mounted on a Keyboard, the keyboard helical driving gear on its main shaft meshes with the signal generator helical driven gear. The main shaft helical driven gear meshes with the main shaft helical driving gear on the motor driven intermediate shaft on the Keyboard. Thus, motive force is extended from the motor to the main shaft which in turn drives the keyboard mechanism.

(3) The main shaft carries six clutches each of which, when tripped, drives its associated mechanism. These clutches have two shoes which bear against the inside surface of a drum which in turn is keyed to the main shaft. They operate as follows:

(a) Figure 2-35 shows a clutch disengaged. Disengagement is accomplished by bringing together lug A on the clutch cam disk, and the lower end of clutch shoe lever B. The upper end of lever B pivots about its ear C and allows its other ear D to move toward the right. The upper spring then pulls the two shoes together and away from the drum.

(b) Figure 2-36 shows the same clutch engaged. This is accomplished by releasing the lower end of lever B. The upper end of lever B pivots about its ear C (which bears against the upper end of the secondary shoe) and moves its ear D, and the upper end of the primary shoe, toward the left until the shoe

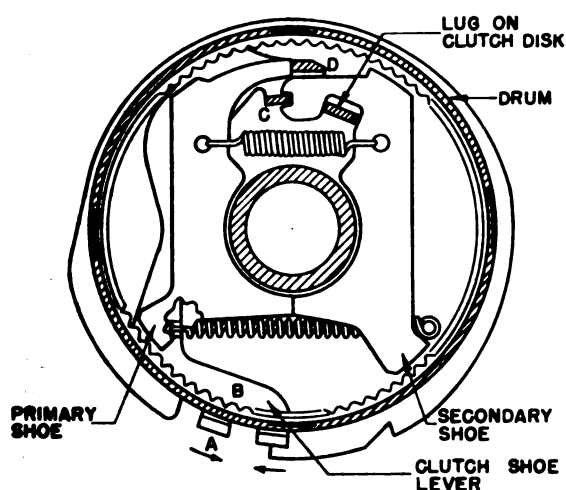


Figure 2-35. Clutch, Disengaged

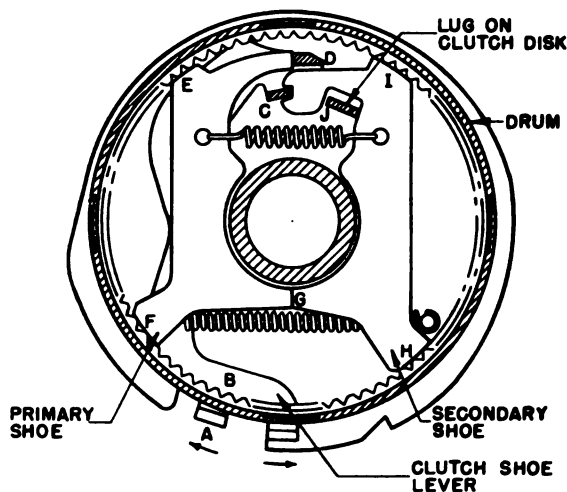


Figure 2-36. Clutch, Engaged

makes contact with the drum at point E. As the drum turns counterclockwise, it drives the primary shoe downward, so that it again makes contact with the drum, this time at point F. There, the combined forces acting on the primary shoe cause it to push against the secondary shoe at point G. The lower end of the secondary shoe then bears against the drum at point H. The revolving drum acts to drive this shoe upward so that it again makes contact with the drum at point I. Since the forces involved are multiplied at each of the preceding steps, the final force developed at point I is very great. This force is applied to the lug J on the clutch cam disk to cause it to turn in step with the drum. The cam disk on each clutch is connected with the particular mechanism involved.

(c) Two of the clutches (namely the line feed and the spacing clutches) have three sets of lugs equally spaced about their periphery for controlling the engagement and disengagement of the clutch shoes with the drum. Thus, these clutches may turn only one-third of a revolution when tripped. The function clutch has two sets of lugs diametrically opposite of each other and may turn only one-half of a revolution when tripped. The remaining clutches have one set of lugs, and must turn a complete revolution when tripped.

c. SELECTING MECHANISM.

(1) The selecting mechanism consists of the selector magnet coils E-1308 and E-1309 and armature, a selector cam-clutch and the associated levers, arms, bails, and slides necessary to convert the electrical elements of the start-stop code to the mechanical arrangements which govern the characters to be printed and the functions to be performed.

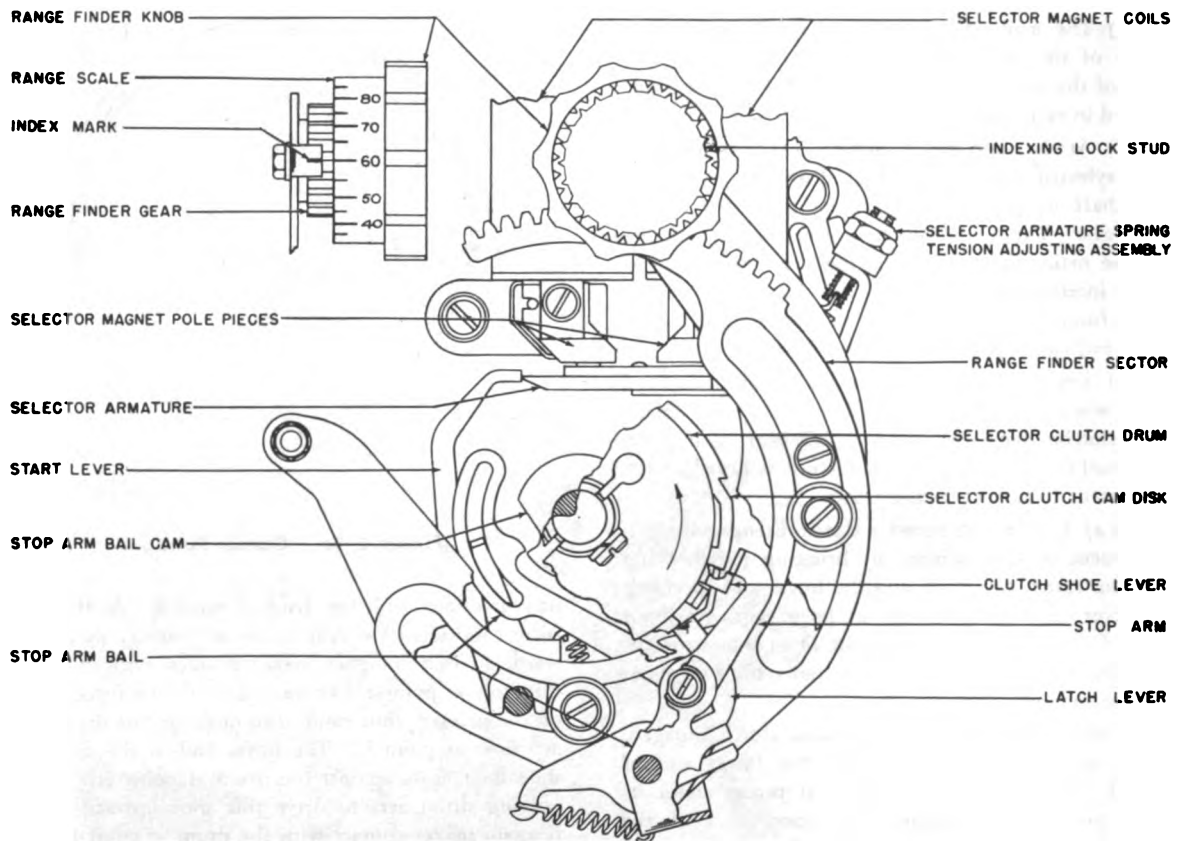


Figure 2-37. Selector Cam Clutch Trip Mechanism

(2) The selector cam-clutch comprises, from right to left (figure 2-34), the clutch, the start lever bail cam, the fifth, the fourth, and the third selector lever cams, the cam for the spacing and the marking lock levers, the second and the first selector lever cams, the push lever reset bail cam, and the code bar clutch trip cam.

(3) During the time in which a closed line circuit (marking) condition exists, the selector magnet coils are energized and hold the selector armature against the selector magnet pole pieces. In this stop position, the selector armature blocks the start lever (figure 2-37). While the signal for any character or function is being received, the start (spacing) element releases the selector armature which, under the tension of its spring, moves away from the magnet cores and thus unlatches the start lever. The start lever turns clockwise under the tension of its spring, to move the stop arm bail into the indent of its cam. As the stop arm bail rotates about its pivot point, the attached stop arm is moved out of engagement with the clutch shoe lever. The selector cam-clutch engages and begins to rotate. The stop arm

bail immediately rides to the high point of its cam where it remains to hold the start lever away from the selector armature during the signaling time. When the stop element at the end of the signal is received, the selector armature is pulled up to block the start lever. Thus, the stop arm bail is prevented from dropping onto the low part of its cam (stop position of cam-clutch), and the attached stop arm is held so as to stop the clutch shoe lever. The selector clutch one-stop cam disk upon which the latch lever rides has an indent at its stop position. When the clutch shoe lever strikes the stop arm, the inertia of the cam disk assembly causes it to continue to turn until its lug makes contact with the lug on the clutch shoe lever. At this point, the latch lever drops into the indent in the cam disk, and the clutch is held disengaged until the next start element is received.

(4) The series of five selecting levers and a marking lock lever ride their respective cams on the selector cam-clutch. As the marking and spacing signal elements are applied to the selector magnet, the selector cam-

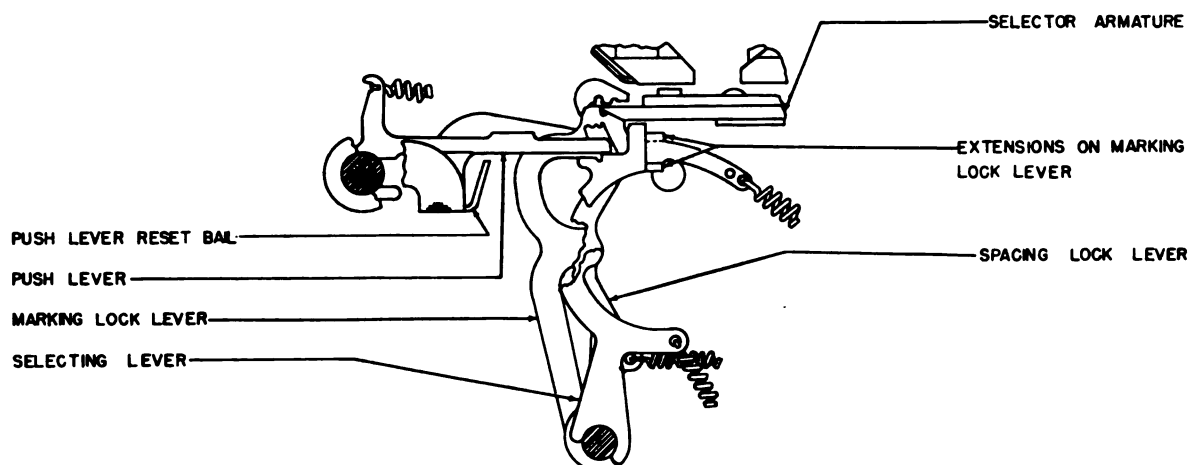


Figure 2-38. Selecting Mechanism, Right End View

clutch rotates and actuates the selector levers. When a spacing impulse is received, the marking lock lever is blocked by the end of the armature and the spacing lock lever swings toward the right, (right end view) above the armature and locks it in the spacing position until the next signal transition is due. Extensions on the marking lock lever prevent the selector levers from following their cams (figure 2-38). When a marking element of the signal is received, the spacing lock lever is blocked by the end of the armature and the marking lock lever swings to the right below the armature to lock it in the marking position until the next signal transition is due. During this marking condition, the selector levers are not blocked by the marking lock lever extensions but are permitted to move against their respective cams. The selecting lever that is opposite the indent in its cam, while the armature maintains a marking condition, swings to the right or selected position momentarily. Each selecting lever has an associated push lever which drops into a notch on the top of the selecting lever when it falls into its cam indent. As the selector cam-clutch turns, each selecting lever together with its latched push lever is moved toward the left and held there until all five code impulses have been received. At that time, all selected push levers are positioned to the left and all unselected push levers are positioned to the right in which positions they are held until the next start element is received. When the subsequent start element again causes the selector cam-clutch to rotate, the push lever reset bail, in following its cam, unlatches the selected push levers. The push levers then return to the unselected (right) position under their spring tension.

d. ORIENTATION.

- (1) In order to establish the operating margins for

the Automatic Typewriter, it is necessary that the sampling of the signal by the selecting mechanism occur at the most favorable portion of the signal elements. This is referred to as orientation.

- (2) When the range finder knob (figure 2-37) is pushed inward and rotated, its attached range finder gear moves the range finder sector (which mounts the stop arm bail, stop arm and latch lever), either clockwise or counterclockwise about the selector cam-clutch. This changes the angular position at which the selector cam-clutch stops with respect to the selecting levers. When an optimum setting is obtained, the range finder knob is released. Its inner teeth engage the teeth of the indexing lock stud to lock the range finder mechanism in position. The setting may be read on the range scale opposite the fixed index mark.

e. PRINTING MECHANISM.

(1) CODE BAR MECHANISM.

(a) GENERAL.—The character which is to be printed is determined basically by the combination set up on the six code bars which are operated by the code bar positioning mechanism. In order to position the code bars, their associated shift bars must first be individually thrown toward the front or rear of the Automatic Typewriter by transfer levers which respond to action of the selecting mechanism. While held in these positions, the code bar shift bars are acted upon by code bar shift levers to which motion is extended from the code bar clutch when activated by the code bar clutch trip cam. Detailed functioning of the coordinated mechanism follow.

(b) CODE BAR POSITIONING.—Each push lever (paragraph 4.c.(4) of this section) has an associated intermediate arm, transfer lever, and code bar shift bar (figure 2-39). In addition, there is a "common"

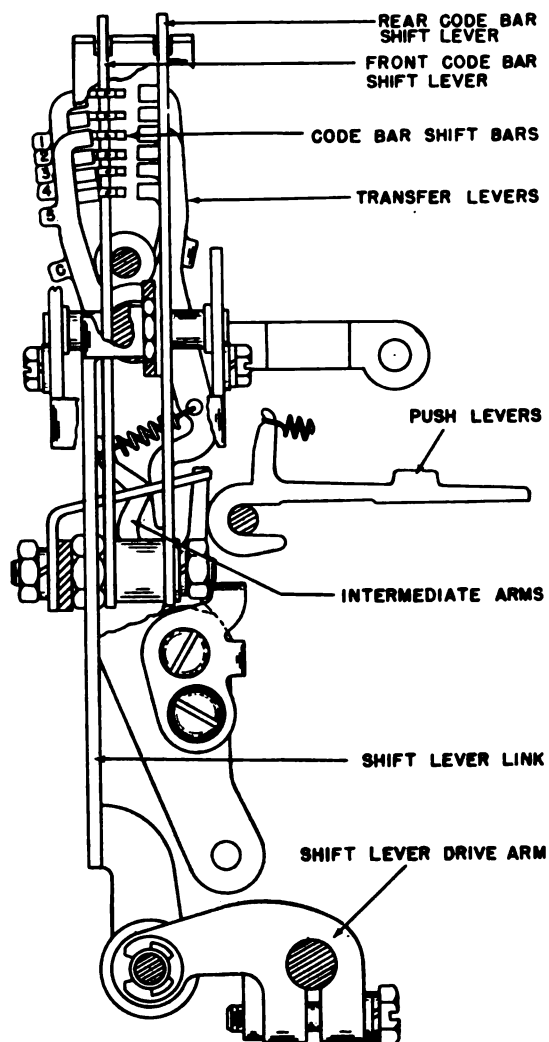


Figure 2-39. Code Bar Positioning Mechanism

transfer lever with its code bar shift bar. When a push lever is toward the right (space position) its associated intermediate arm and transfer lever are pulled toward each other by a spring. This causes the transfer lever to turn counterclockwise about its pivot point (right end view) and position its code bar shift bar toward the front of the Automatic Typewriter (space position). When a push lever is to the left (mark position), it moves the intermediate arm toward the left. This causes the transfer lever to turn clockwise about its pivot point and position its code bar shift bar toward the rear of the Automatic Typewriter (mark position). The common

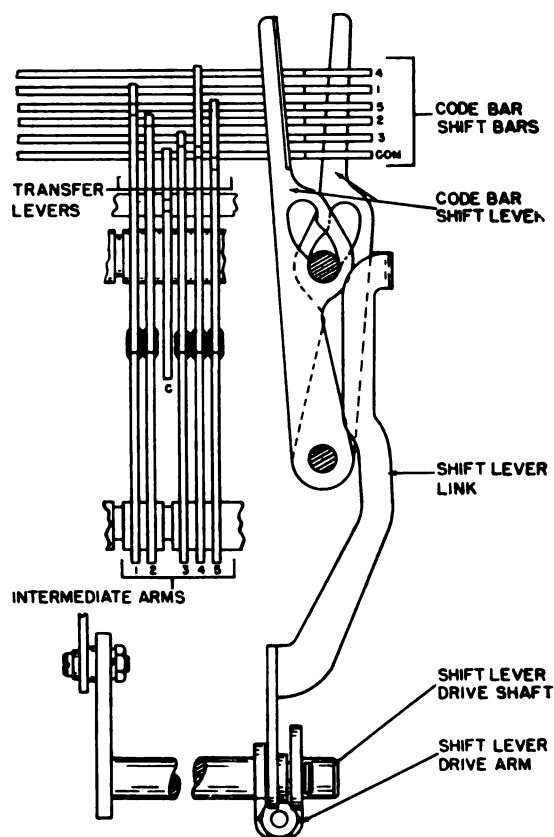


Figure 2-40. Code Bar Positioning Mechanism, Front View

transfer lever (front view—third from the left) has an extension which passes behind the number 1 and number 2 transfer levers (figures 2-40 and 2-41). When either or both of these transfer levers are moved to the rear (mark position), they move the common transfer lever to the rear. This, in turn, moves the common code bar shift bar toward the rear of the Automatic Typewriter (mark position). As the selector cam-clutch completes its revolution, the trip shaft operating lever (fastened to the code bar clutch trip shaft) rides to the peak of the code bar clutch trip cam (figure 2-34). This causes the shaft to turn slightly and its attached code bar clutch trip lever releases the code bar clutch. Rotation of the clutch actuates the code bar shift levers through the intervening shift lever drive shaft, drive arm, and shift lever link (figure 2-40). Code bar shift bars which have been moved toward the rear position by their transfer levers are engaged by the rear code bar shift lever and are shifted to the left. Code bar

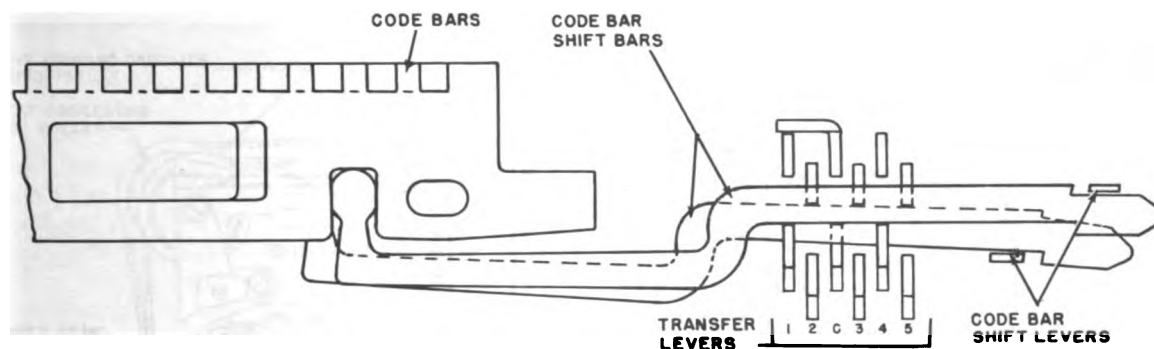


Figure 2-41. Code Bar Positioning Mechanism,
Top View

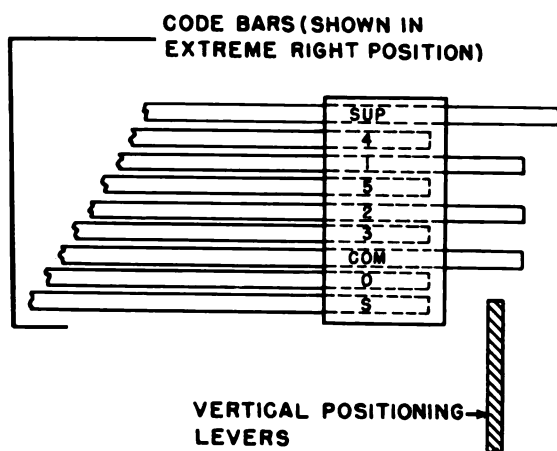


Figure 2-42. Code Bar Arrangement

shift bars which have been moved toward the front position are engaged by the front code bar shift lever and are shifted toward the right (figure 2-41). Thus, the six code bar shift bars shift their respective code bars toward the right or left where they are retained by a detenting mechanism. The code bar clutch one-stop cam disk upon which the latch lever rides has an indent at its stop position. When the clutch shoe lever strikes the code bar clutch trip lever, the inertia of the cam disk assembly causes it to continue to turn until its lug makes contact with the lug on the clutch shoe lever. At this point the latch lever drops into the indent in the cam disk and the clutch is held disengaged until the trip lever is again operated.

(c) ARRANGEMENT OF CODE BARS.—

Three additional code bars bring the total number of code bars to nine. They are arranged from top to bottom as follows: Suppression, number 4, number 1, number 5, number 2, number 3, common, automatic carriage

return and line feed, and shift-unshift (figure 2-42). In the equipment as furnished, the suppression code bar has no connection with a shifting mechanism. The automatic carriage return and line feed code bar and the shift—unshift code bar are actuated by mechanism which will be discussed under FUNCTIONS.

(2) TYPE BOX AND TYPE BOX CARRIAGE.

(a) GENERAL.—All of the characters that may be printed by the Automatic Typewriter are formed by type pallets which are arranged in a type box. The type box is mounted in a carriage from which it may be removed for cleaning or replacement. In order to print any selected character, the type box carriage is so positioned that the character on the pallet is directly over the required location on the paper. Since the pallets are arranged in four horizontal rows and sixteen vertical rows, it is necessary to position the type box carriage both horizontally and vertically. See figure 2-43 for character arrangement. The type box carriage rides on rollers over a track which is moved vertically for positioning in that particular plane. The carriage is positioned horizontally on its track by the oscillating rail slide and type box carriage link. The slide rides the oscillating rail and is clamped to the rear section of the upper draw wire rope. The link provides a flexible connection to permit the type box carriage to follow both the vertical movement of the type box carriage track and the horizontal movement of the oscillating rail slide. The lower right rear end of the upper draw wire rope is fastened to the spacing drum. From this point, it passes part way around the spacing drum, upward and around the right oscillating rail pulley, over to the left oscillating rail pulley, and downward to the spring drum. After passing part way around the spring drum, the upper draw wire rope is doubled backward around it and passes upward to the left printing carriage rail pulley over to the right printing carriage rail pulley, and downward to the spacing drum to which it is again fastened. The lower draw wire rope is fastened at its left

LETTERS				FIGURES			
LEFT				LEFT			
4	5	MARKING	SPACING	4	5	MARKING	SPACING
1ST ROW	2ND ROW	3RD ROW	4TH ROW	1ST ROW	2ND ROW	3RD ROW	4TH ROW
M	N	H	SPACE	.	!	:	;
X	F	Y	S	/	6	Ø	8
V	C	P	I	1-3 4 5	1-3 4 5	2-3 4 5	1-3 4 5
LETTERS	K	Q	U	12 3 4 5	12 3 4 5	12 3 4 5	12 3 4 5
3 MARKING				3 MARKING			
4TH ROW	3RD ROW	2ND ROW	1ST ROW	4TH ROW	3RD ROW	2ND ROW	1ST ROW
RIGHT				RIGHT			
4	5	MARKING	SPACING	4	5	MARKING	SPACING
1ST ROW	2ND ROW	3RD ROW	4TH ROW	1ST ROW	2ND ROW	3RD ROW	4TH ROW
BLANK	T	C. R.	O	BLANK	'	SPACE	
E	Z	D	B	1-3 4 5	1-3 4 5	1-3 4 5	1-3 4 5
L F	L	R	G	2-3 4 5	2-3 4 5	2-3 4 5	2-3 4 5
A	W	J	FIGURES	12 3 4 5	12 3 4 5	12 3 4 5	12 3 4 5
3 MARKING				3 MARKING			
4TH ROW	3RD ROW	2ND ROW	1ST ROW	4TH ROW	3RD ROW	2ND ROW	1ST ROW
LEFT				RIGHT			
4	5	MARKING	SPACING	4	5	MARKING	SPACING
1ST ROW	2ND ROW	3RD ROW	4TH ROW	1ST ROW	2ND ROW	3RD ROW	4TH ROW
BLANK	5	C. R.	9	BLANK	5	C. R.	9
3	"	\$	?	1-3 4 5	1-3 4 5	1-3 4 5	1-3 4 5
L F	)	4	8	2-3 4 5	2-3 4 5	2-3 4 5	2-3 4 5
-	2	∇	FIGURES	12 3 4 5	12 3 4 5	12 3 4 5	12 3 4 5
3 MARKING				3 MARKING			
4TH ROW	3RD ROW	2ND ROW	1ST ROW	4TH ROW	3RD ROW	2ND ROW	1ST ROW

Figure 2-43. Type Box Arrangement, Viewed From Front of Automatic Typewriter

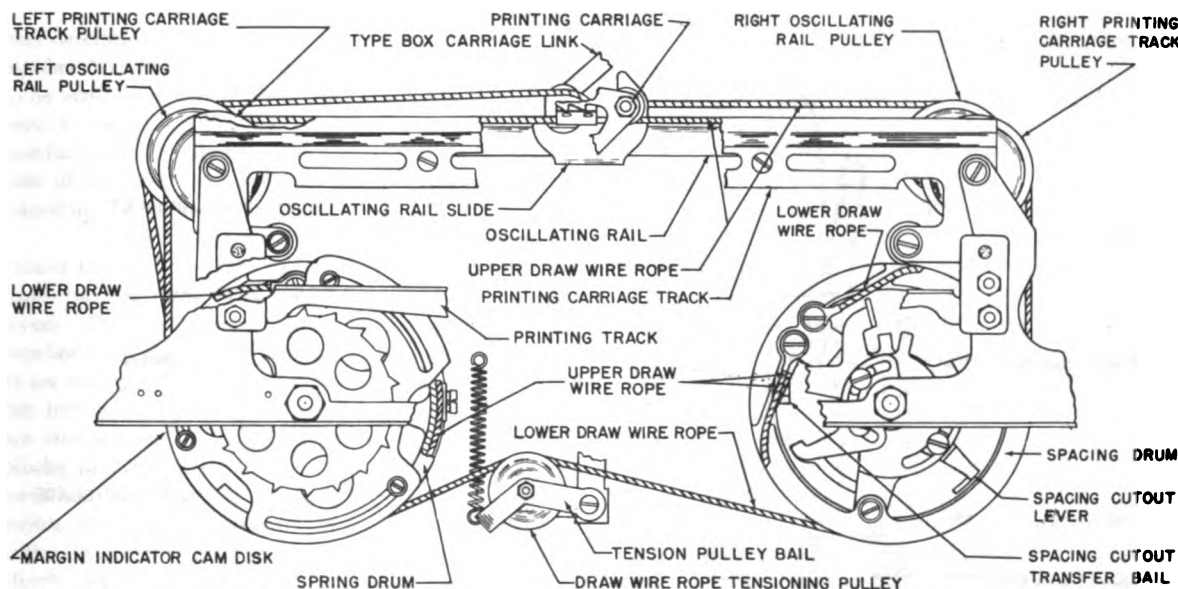


Figure 2-44. Draw Wire Rope Mechanism

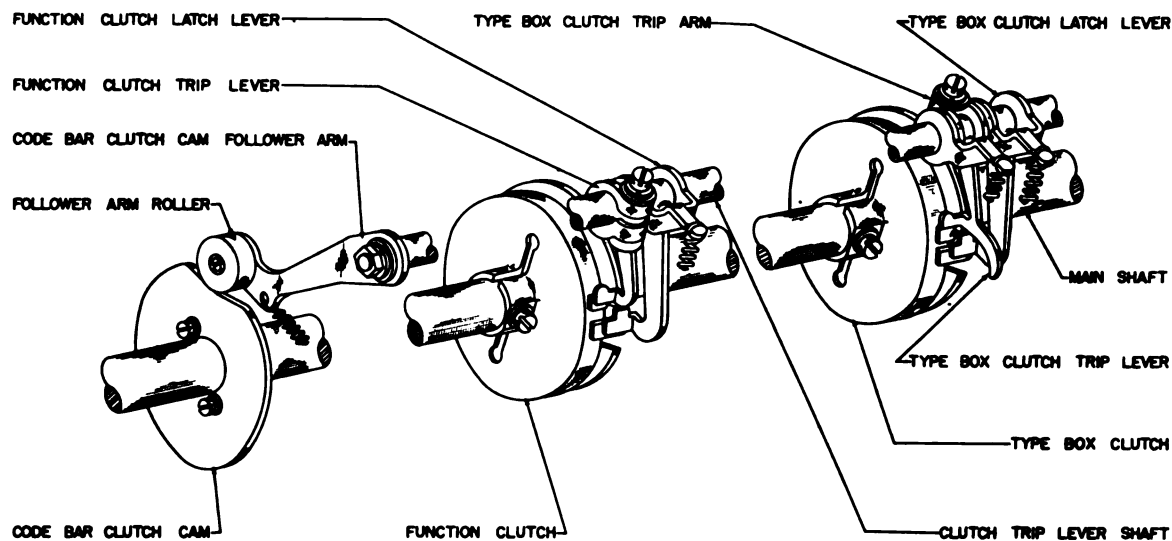


Figure 2-45. Trip Mechanism For Function and Type Box Clutches

end to the spring drum and, at its right end, to the spacing drum. It acts in opposition to the upper draw wire rope and holds the two drums in phase (figure 2-44). A tensioning pulley rides the under side of the lower draw wire rope, to take up any slack which may occur due to stretching of the upper and lower draw

wire ropes. The oscillating rail is supported by pivoted arms at each end. These arms which extend downward are pivoted on the Automatic Typewriter frame at their lower ends. Thus, the oscillating rail and draw wire rope that it carries may be shifted to the left or right with no change in position relative to each other. The oscillating

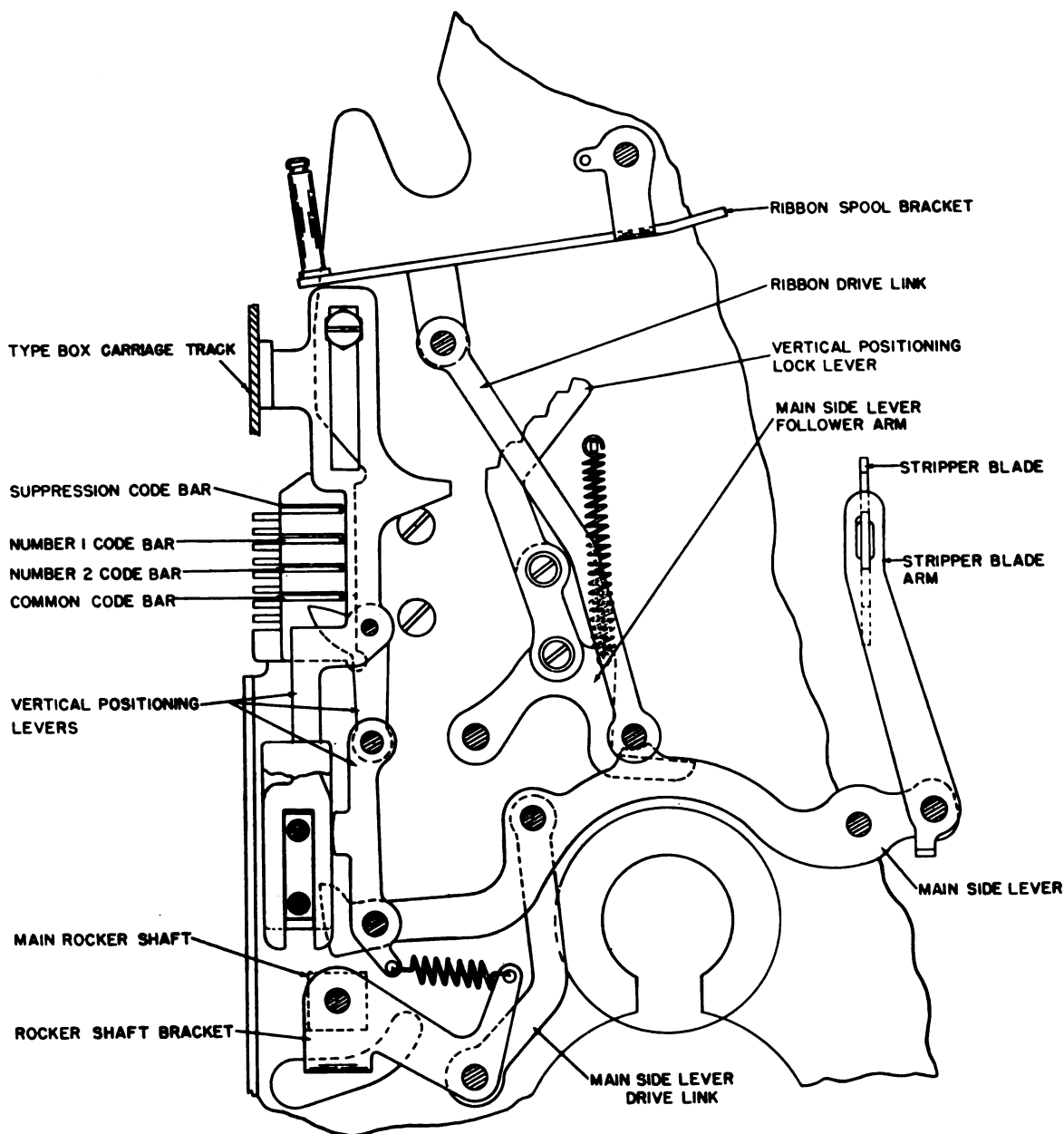


Figure 2-46. Right Side Mechanism

rail shift slide and the two oscillating rail shift links are used to accomplish the horizontal positioning of the oscillating rail and also connect it with the oscillating rail shift slide. The links are pivoted and are of such a length that only one at a time may be fully extended. As will be shown later under FUNCTIONS, the oscillating rail shift links are used to position the oscillating

rail and thus the type box, so that either the left side (letters characters), or the right side (figures characters), of the type box is selected.

(b) POSITIONING.—The selection of the various characters from the four horizontal rows and the eight vertical rows in either the left (LTRS) side or the right (FIGS) side of the type box, and the printing

of those characters take place as follows:

1. Briefly, the number 1 and number 2 code bars determine the selection of the horizontal row. The number 3 code bar determines whether the selection is to be made from the left four vertical rows or right four vertical rows (in either the letters or figures side). The number 4 and number 5 code bars determine the selection of one row from the four vertical rows predetermined by the number 3 code bar.

2. Four code bars (longer than the others), extend through the right code bar bracket and serve as stops for the right "knee action" vertical positioning levers. They are (from top to bottom), suppression, number 1, number 2, and common (figure 2-42). Notches are arranged in the left ends of the code bars so that the left side "knee action" vertical positioning levers are stopped, in each case, by the same code bar that blocks the right side levers. After all the code bars have been positioned by the code bar positioning mechanism, the code bar clutch cam follower arm and its roller, in traversing the sloping indent on the code bar clutch cam rotates the clutch trip lever shaft. As the shaft turns, it first causes the function clutch trip lever to release the function clutch (figure 2-45) and then causes the type box clutch trip arm to engage its trip lever and release the type box clutch. When the type box clutch completes its revolution, it is disengaged by its trip lever and latch lever in the same manner as was the code bar clutch, described in paragraph 4.e. (1)(b) of this section. During its rotation, the type box clutch operates a drive link and a bracket to cause the main rocker shaft to oscillate. This, in turn, through its left and right brackets and the main side lever drive links, extends the motion to the main side levers to operate the "knee action" vertical positioning levers (figure 2-46). These levers are driven upward until they strike a projecting code bar which causes them to buckle. The type box carriage track is mounted between the vertical positioning levers and its vertical motion is controlled by them. When the number 1 and number 2 code bars are toward the right (spacing), the common code bar is also toward the right where it blocks the vertical positioning levers. The top row of pallets in the type box are then in line for printing. When the number 1 code bar is toward the left (marking), and the number 2 code bar is toward the right (spacing), the common code bar is toward the left. The number 2 code bar blocks the vertical positioning levers, and the second row of pallets in the type box are then in line for printing. When the number 1 code bar is toward the right (spacing), and the number 2 code bar is toward the left (marking), the common code bar is toward the left. The number 1 code bar blocks the vertical positioning levers and the third row of pallets in the type box are then in line for printing. When the number 1 and num-

ber 2 code bars are toward the left (marking), the common code bar is also toward the left. The suppression code bar blocks the vertical positioning levers, and the fourth or bottom row of pallets in the type box are then in line for printing. At each of the the four levels at which the vertical positioning levers may be stopped, they are locked momentarily by lock levers which are controlled by the main side lever follower arms.

3. A bracket attached to the main rocker shaft applies vertical motion to the main bail by means of two main bail links (figure 2-47). Attached to each end of the oscillating rail shift slide, are pivoted "buckling" type drive links which extend downward to each end of the main bail. As the main bail moves downward, the left shift slide drive links, if not buckled, will try to shift the oscillating rail shift slide toward the right while the right shift slide drive links, if not buckled, will try to shift the oscillating rail shift slide toward the left. When the number 3 code bar is shifted toward the left (marking), the horizontal motion reversing slide is shifted toward the left by the reversing slide shift lever, and is held there by detent levers. A bracket near the right end of the reversing slide will then make contact with the right shift slide drive links and cause them to buckle. As the main bail is driven downward, the unbuckled left shift slide drive links will start to shift the oscillating rail shift slide toward the right. This positions the type box so that the character to be printed will be found in the left half of the LTRS or FIGS side. In a similar manner, when the number 3 code bar is shifted toward the right (spacing) the horizontal motion reversing slide is also shifted toward the right by the shift lever and is held there by the detent levers. A bracket near the left end of the horizontal motion reversing slide then makes contact with the left shift slide drive links and causes them to buckle. As the main bail is driven downward, the unbuckled right shift slide drive links will start to shift the oscillating rail shift slide toward the left. This positions the type box so that the character to be printed will be found in the right half of the LTRS or FIGS side.

4. After it has been thus determined in which group of four vertical rows the character to be printed is located, the number 4 and number 5 code bars operate three horizontal motion stop slides to determine the row in that group in which the character is to be found (figure 2-47). A wedge shaped horizontal positioning lock lever which is pulled downward by the main bail through a yield spring, bears against the horizontal positioning lock lever arm. This arm drives the oscillating rail shift slide in the direction in which it was started (by the number 3 code bar selection) until one of the two decelerating slides which are mounted on the oscillating rail shift slide strikes an unselected

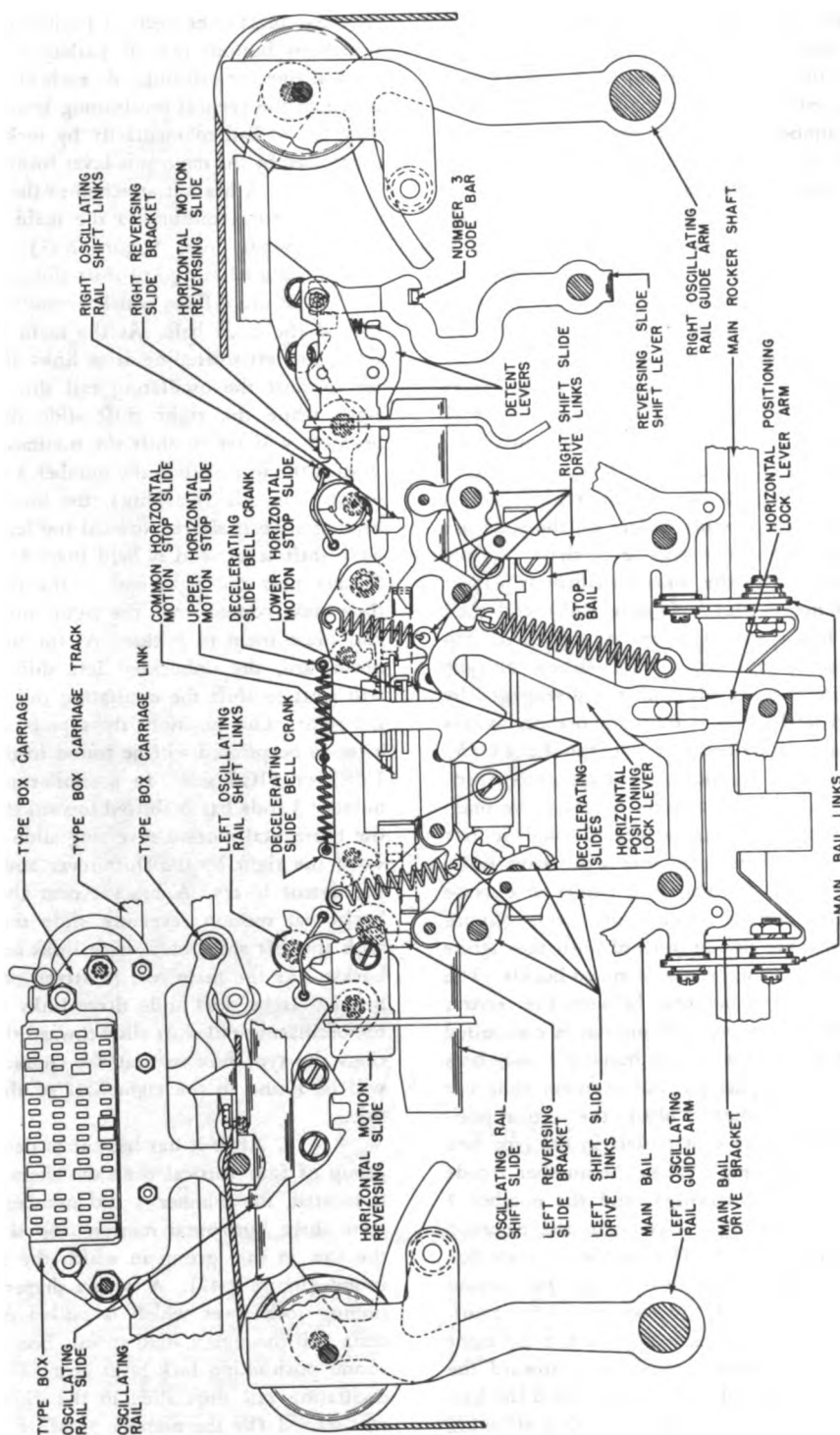


Figure 2-47. Front Plate Horizontal Positioning Mechanism

horizontal motion stop slide. A camming surface on the unbuckled shift slide drive links makes contact with and rolls down the face of the decelerating slide and causes the drive links to buckle. The oscillating rail shift slide finally comes to rest when it strikes the blocked decelerating slide. This in turn ends the downward excursion of the lock lever, and the yield spring extends until the main bail reaches the lowest point of its oscillation. As the main bail returns upward, it centers the oscillating rail shift slide. It is during this time that the horizontal motion stop slides are positioned for the selection of the next character. The number 4 and number 5 code bars each operate a code bar bell crank. Each, in turn, moves a horizontal motion stop slide toward the front (marking), or toward the rear (spacing) (figure 2-48). A third (common) stop slide (spring tensioned toward the rear) is located between the upper and lower stop slides and has projections which pass across the front edges of these slides (figure 2-47). Each stop slide is of a different length. The common stop slide which is the longest stop has an additional step on its shank so that it serves as the shortest stop when all the slides are moved forward. The upper slide (operated from the number 4 code bar) is the second longest stop, and the lower slide (operated from the number 5 code bar) is the third longest stop.

5. When both the number 4 and number 5 code bars are toward the right (spacing), their respective horizontal motion stop slides and the common stop slide are toward the rear. The oscillating rail shift slide is moved to the right or left of its central position (determined by the number 3 code bar) until it is stopped by one end of the common horizontal motion stop slide. This positions the first vertical row (right or left of FIGS center or LTRS center) in line for printing. When the number 4 code bar is toward the right (spacing), and the number 5 code bar is toward the left (marking), the lower and the common stop slides are toward the front, and the upper stop slide is toward the rear. The oscillating rail shift slide is moved to the right or left of its central position until it is stopped by one end of the upper stop slide. This positions the second vertical row (right or left of FIGS center or LTRS center) in line for printing. When the number 4 code bar is toward the left (marking), and the number 5 code bar is toward the right (spacing), the upper and the common stop slides are toward the front and the lower stop slide is toward the rear. The oscillating rail shift slide is moved toward the right or left of its central position until it is stopped by one end of the lower stop slide. This positions the third vertical row (right or left of FIGS center or LTRS center) in line for printing. When both the number 4 and number 5 code bars are toward the left (marking), their respective horizontal motion stop slides and the the common stop slide are to-

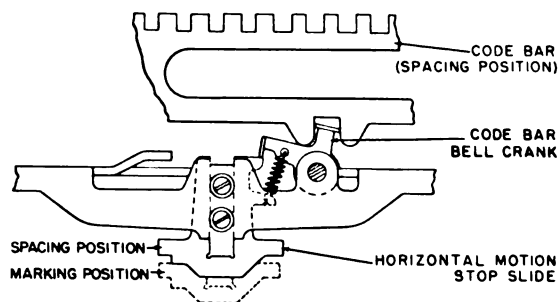


Figure 2-48. Stop Slide Positioning

ward the front. The oscillating rail shift slide is moved toward the right or left of its central position until it is stopped by one side of the shank of the common stop slide. This positions the fourth vertical row (right or left of FIGS center or LTRS center) in line for printing.

(3) PRINTING HAMMER AND PRINTING CARRIAGE.

(a) GENERAL.—After the type box has been moved so that the selected type pallet is in its proper position, it must be struck by a printing hammer in order to print. This is accomplished by the action of the printing carriage located on the printing carriage track.

(b) POSITIONING.—The printing carriage rides (on rollers) on the printing carriage track which is rigidly attached to the automatic typer front plate. The carriage is clamped to the forward section of the upper draw wire rope. This moves the carriage along its track in such a manner that the hammer advances to the next printing position.

(c) PRINTING.—The printing track which is located on the front of the Automatic Typewriter (figure 2-49) is fastened to an extension at each end of the main bail. As the main bail reciprocates vertically, it extends the motion through the printing track which travels in guides located at each end of the track. The printing arm which extends downward from the printing carriage, rides the printing track. As the arm follows the reciprocating motion of the track, its upper end moves first toward the left and then toward the right. When the upper end of the arm moves toward the left, it rotates the printing hammer operating bail clockwise against its spring tension until it becomes latched by the operating bail latch (figure 2-50). The printing hammer operating bail draws the printing hammer bail away from the type box by means of the printing hammer bail spring. When the upper end of the printing arm moves to its extreme right position, it makes contact with the latch and causes it to release the printing hammer operating bail. The operating bail

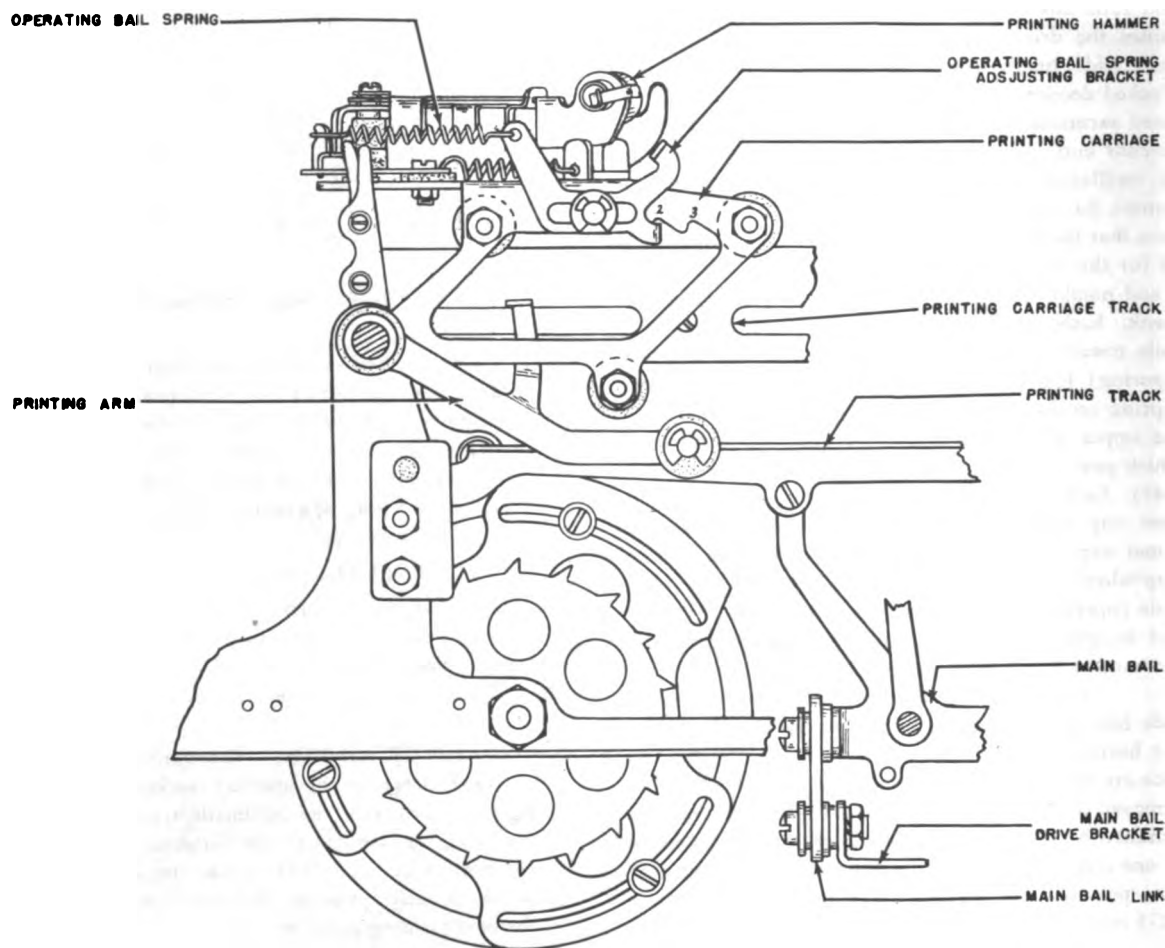


Figure 2-49. Printing Hammer Mechanism, Front View

is swung in a counterclockwise direction by the operating bail spring until it strikes its stop. The printing hammer bail, in being driven by the operating bail, is swung toward the type box. When the operating bail is stopped, momentum causes the printing hammer bail to continue its travel against the tension of the printing hammer bail spring until the printing hammer strikes the selected type pallet.

f. SPACING.

(1) **GENERAL.**—To properly space the printed character, the type box and printing carriages must be advanced with each character printed. As was shown in paragraph 4.e.(2)(a) of this section and in figure 2-44, the carriages are connected to a draw wire rope which, in turn, is fastened to the spring drum and the spacing drum. The purpose of the spring drum which

contains a torsion spring is to tension the draw wire rope and thus the carriages to the left. The spacing drum has ratchet teeth about its perimeter which are engaged by the eccentric driven spacing drum feed pawls (figure 2-51). The spacing shaft which mounts the spacing eccentrics is driven through its helical gear by the helical driving gear attached to the three-stop spacing clutch on the main shaft. The gear ratio of $1\frac{1}{2}$ to 1 causes the spacing shaft to turn one-half a revolution each time the spacing clutch is tripped. This allows the feed pawls to advance the spacing drum by the amount of one ratchet tooth. As shown earlier, each time the Automatic Typewriter operates, the main rocker shaft is made to oscillate about its center. A cam plate which is fastened to the lower side of the rocker shaft is in its lowest position during the rest time. During the time

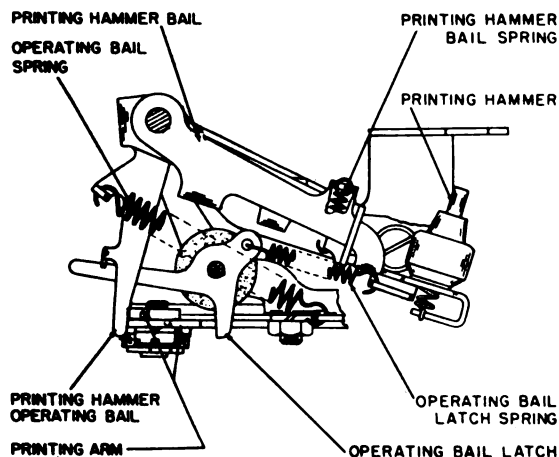


Figure 2-50. Printing Hammer Mechanism,
Top View

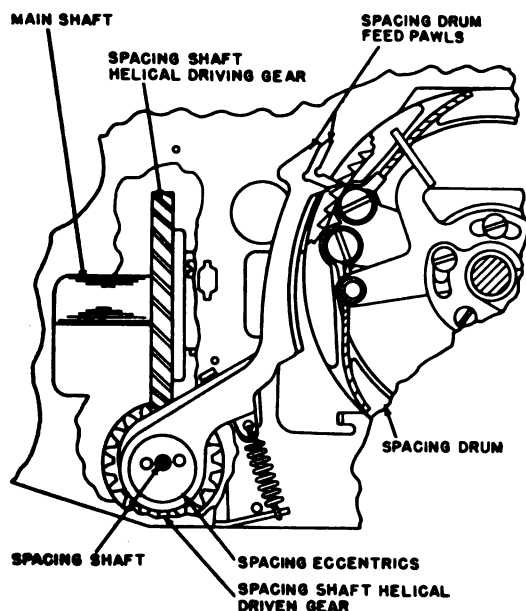


Figure 2-51. Spacing Drum Drive Mechanism

that printing is to take place, the cam plate is moved upward by the shaft and operates the spacing trip lever bail. As this bail is rotated about its pivot point, it raises the spacing trip lever until it latches onto the spacing clutch trip lever arm (figure 2-52). As the rocker shaft reverses its direction of rotation, the spac-

ing trip lever bail and the trip lever move downward thus causing the latched up spacing clutch trip lever arm to operate the spacing clutch trip lever and release the spacing clutch. Before the spacing clutch completes one-third of a revolution, its restoring cam moves the spacing trip lever about its pivot point until it releases the spacing clutch trip lever arm. This, in turn, releases the spacing clutch trip lever which returns to its normal position in time to stop the spacing clutch after one-third of a revolution. The spacing clutch three-stop cam disk upon which the latch lever rides has an indent at each stop position. When one of the three lugs on the clutch shoe lever disk strikes the spacing clutch trip lever, the inertia of the cam disk assembly causes it to continue to turn until its lugs make contact with the lugs on the clutch shoe lever disk. At this point the latch lever drops into an indent in the cam disk and the clutch is held disengaged until the trip lever is again operated.

(2) SPACING SUPPRESSION.—When certain functions are selected or when the carriages reach their extreme right position, it is necessary to suppress spacing. This is accomplished by moving the spacing suppression slide forward. In this position, it will hold the upper end of the spacing trip lever forward and prevent it from engaging the spacing clutch trip lever arm. In the case of spacing suppression on functions, the spacing suppression slide is shifted by means of the spacing suppression bail. The manner in which this bail is operated will be discussed under FUNCTIONS. When the carriages are near their extreme right position, an adjustable cutout lever on the spacing drum, engages the spacing cut-out transfer bail, which in turn operates the spacing cut-out bail. The adjustable spacing cut-out lever and the end of the spacing cut-out transfer bail are shown in figure 2-44. The spacing cut-out bail shifts the spacing suppression slide and prevents spacing until the carriages are returned. The maximum number of characters which the Automatic Typer may print is eighty-five. In order to prevent spacing beyond this point with subsequent damage to the machine, several teeth are omitted from the spacing drum ratchet wheel.

g. MARGIN INDICATOR.—Before the type box carriage and the printing carriage reach the end of their travel, the margin indicator light I-751 in the Cabinet is illuminated. The contact mechanism which controls the lamp circuit is mounted on the Keyboard and is fully described in paragraph 3.k. of this section. The actuator of this contact mechanism is a disk which is mounted on the spring drum of the Automatic Typer (figure 2-44). The angular position of this cam disk with respect to the spring drum may be altered to change the point at which the indicator will light.

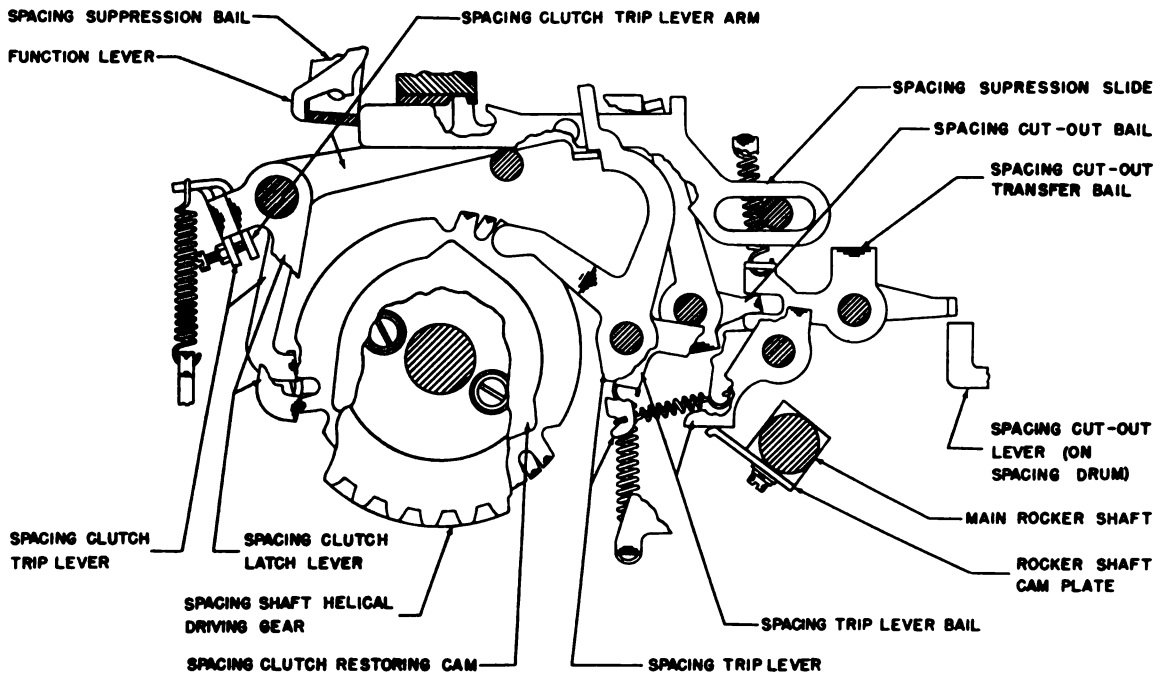


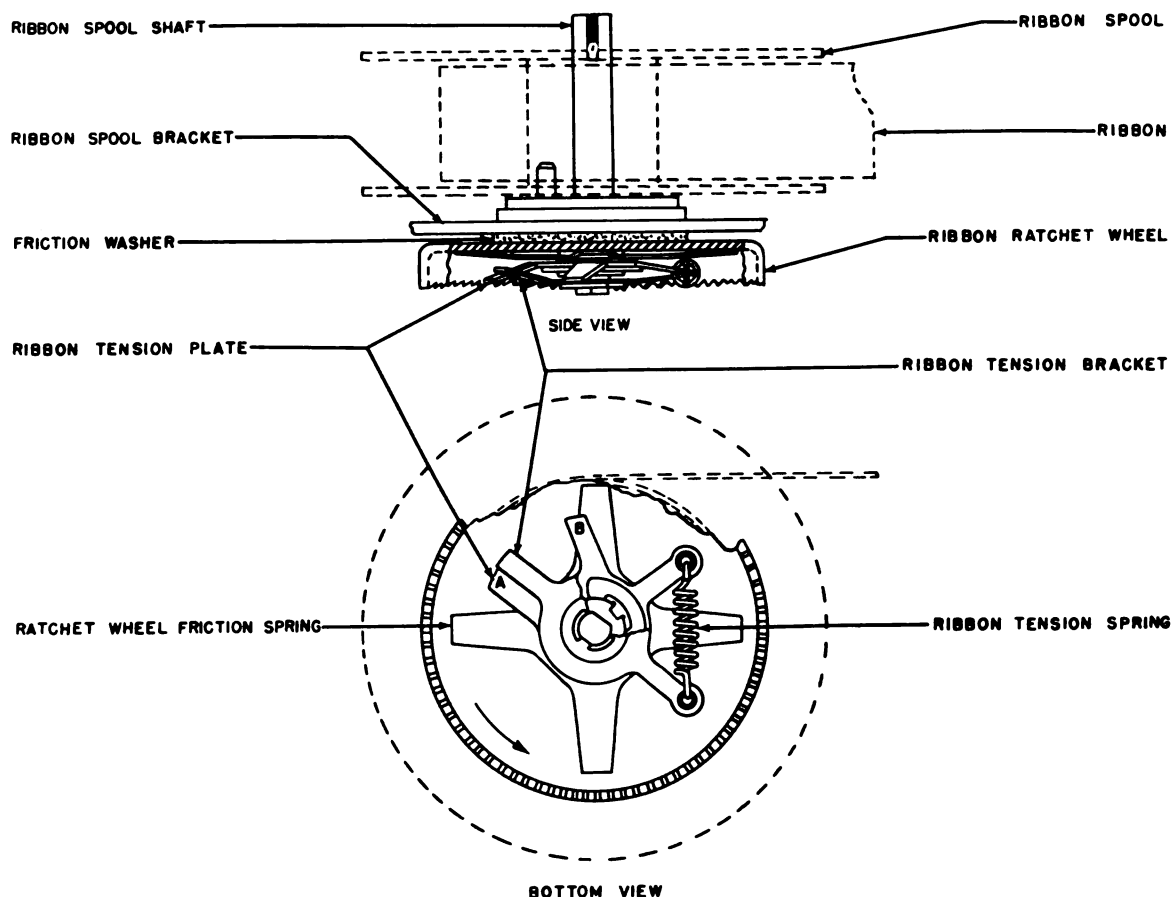
Figure 2-52. Spacing and Spacing Suppression Mechanism

b. RIBBON MECHANISM.

(1) POSITIONING.—The left and right ribbon feed mechanisms oscillate in a vertical plane with each revolution of the type box clutch. They are driven by ribbon drive links which are attached to the main side levers (figure 2-54). At their uppermost position, the ribbon mechanisms position the ribbon relative to the line which is being printed. After each character is printed, the ribbon mechanisms are dropped downward together with the type box, in order that the last character printed may be viewed. The ribbon is held in place at the point of printing by a ribbon guide which is fastened to the rear of the type box carriage.

(2) FEEDING.—Each of the ribbon mechanisms consists of a bracket which is hinged at its rear end, and upon which is mounted a ribbon spool shaft (figures 2-53 and 2-54). A ribbon tension bracket is keyed to the lower end of the ribbon spool shaft. A ribbon ratchet wheel is mounted freely on the ribbon spool shaft just below the ribbon spool bracket from which it is separated by a friction washer. The ratchet wheel friction spring on the under side of the ribbon ratchet wheel causes the ratchet wheel to bear against the felt friction washer. This applies a constant drag to the ratchet wheel. A ribbon tension plate which is keyed to the

hub of the ribbon ratchet wheel has two projecting lugs (A and B in figure 2-53) that straddle the lug on the ribbon tension bracket. A ribbon tension spring tends to maintain the ribbon tension bracket against lug A of the ribbon tension plate. In operation the ribbon spool bracket, driven by the ribbon drive link, pivots about point A in figure 2-54. The ratchet feed and ratchet detent levers pivot about points B and C respectively, and are held against the saw tooth shaped teeth on the ribbon ratchet wheel by their springs. As the ribbon spool bracket is moved upward, the ratchet wheel feed lever skips over one tooth, while the ratchet detent lever holds the ribbon ratchet wheel from turning backward. When the ribbon spool bracket is moved downward, the ratchet feed lever engages a ratchet tooth and pushes the ratchet wheel. A tooth on the ribbon ratchet wheel then skips over the ratchet detent lever. The teeth on the left and right ribbon ratchet wheels face in opposite directions so that, when their feed levers are engaged, the left ribbon ratchet wheel turns clockwise, and the right ribbon ratchet wheel turns counterclockwise (viewed from the top). In order for the ribbon to be pulled from one ribbon spool to the other, only one of the ribbon mechanisms can have its ratchet feed and ratchet detent levers engaged with its ribbon ratchet



wheel at a time. As the ribbon ratchet wheel turns (figure 2-53), the ribbon tension plate also turns, and extends the ribbon tension spring. When the lug B of the ribbon tension plate makes contact with the ribbon tension bracket, the ribbon spool shaft is made to turn and the ribbon is thus wound on the ribbon spool. When the ribbon has become completely unwound from one spool, it is necessary to reverse its direction so it can rewind. This is accomplished automatically by disengaging one set of ratchet feed and ratchet detent levers and engaging the other set. While the ribbon is passing from the left spool to the right spool, the right set of levers are engaged. The left set are held disengaged against the tension of their springs by the left ribbon feed reverse lever which is in its downward position (figure 2-56). The lever is held in this position by means of the ribbon reverse detent lever through the intervening ribbon reverse detent cam, ribbon reverse

shaft and ribbon reverse spur gear. As the ribbon unwinds from the ribbon spool, it passes around the ribbon roller (figure 2-55) and through the slot in the end of the ribbon lever. When the ribbon nears its end on the ribbon spool, an eyelet which is fastened to the ribbon, catches in the ribbon lever slot and pulls the lever toward the right. The next time the ribbon mechanism is moved upward, the displaced ribbon lever engages the end of the left ribbon reversing lever and causes it to move to the dashed position shown in figure 2-56. As the lever moves, its teeth rotate the left spur gear which, through the ribbon reverse shaft, turns the detent cam and the right spur gear. As the right spur gear moves the right ribbon reversing lever downward, a pin on the lever drives the right ribbon feed reverse lever downward to disengage the ratchet feed and ratchet detent levers from the right ribbon ratchet wheel. At the same time a pin on the left ribbon reversing lever moves the

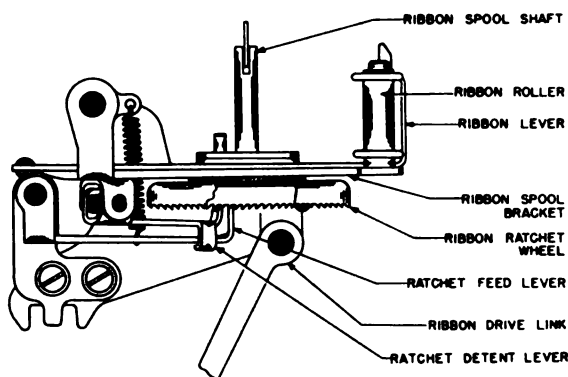


Figure 2-54. Ribbon Mechanism, Left Side

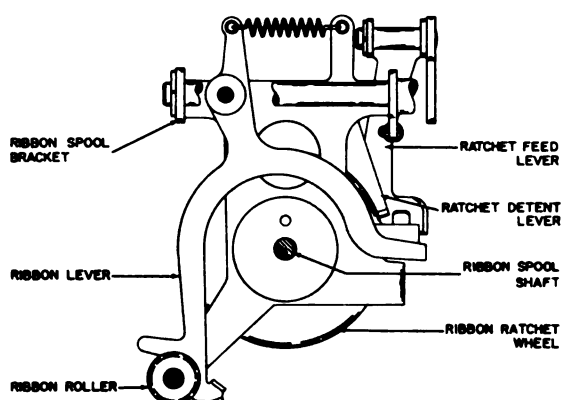


Figure 2-55. Ribbon Mechanism, Left Top View

left ribbon feed reverse lever upward to permit the left ratchet feed and ratchet detent levers to engage the left ribbon ratchet wheel. Thus, the ribbon mechanisms are positioned to rewind the ribbon on the left ribbon spool. When it nears its end on the right ribbon spool, the ribbon is again reversed in a manner similar to that just described. During the reversing cycle the ribbon is maintained taut by the previously extended ribbon tension spring (figure 2-53).

i. FUNCTIONS.

(1) GENERAL.

(a) There are two types of operations which can be performed by the Automatic Typewriter. The first

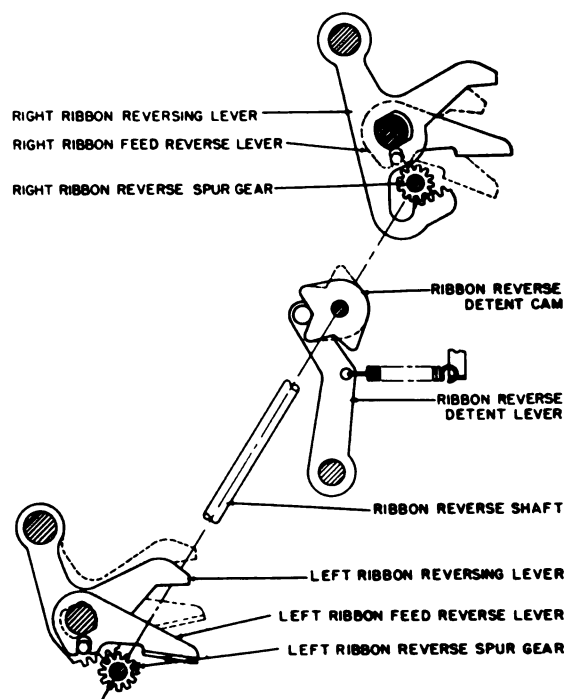


Figure 2-56. Ribbon Reversing Mechanism

embodies those mechanical actions which are directly necessary to the actual printing of a character. The second embodies mechanical action which is supplementary to the printing of a character, or which alters the positions of the various mechanisms, and is known as a function.

(b) As in printing, the reception of function codes results in the positioning of the code bars. The back edges of the code bars are notched. Positioned directly behind the code bars is a function box, which contains the function bars for the various functions (figure 2-57). Each function bar has a series of lugs on its end which are offset to one side or the other to correspond with the marking and spacing elements of the particular code to which it is to respond. When the two-stop function clutch is tripped (paragraph 4.e.(2)(b)2. of this section, and figure 2-45), it rotates one-half of a revolution. During this time it extends motion to the function bar reset bail (through the intervening cam and follower arm, function rocker shaft, and reset bail drive links), to cause the function bar reset

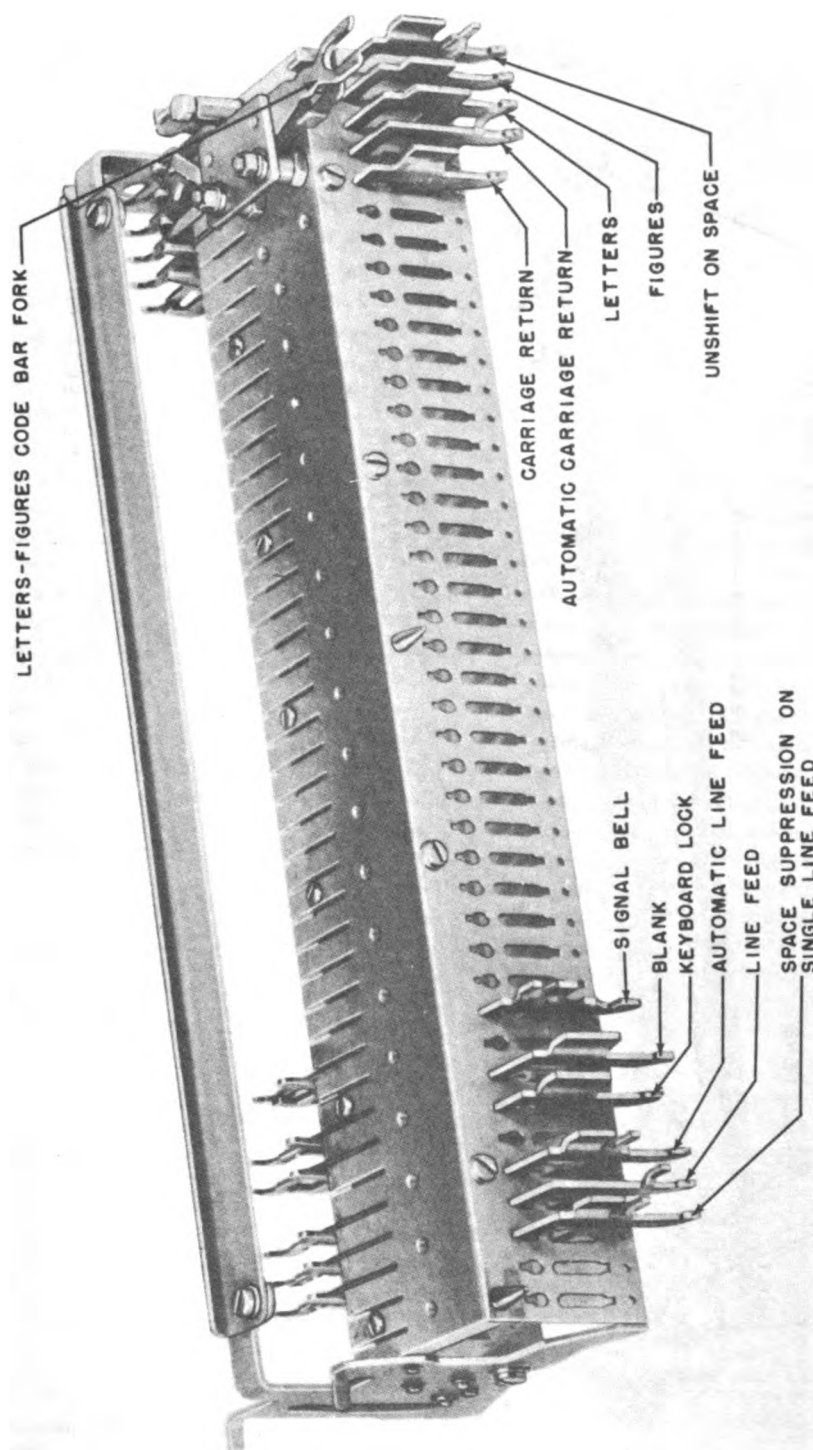


Figure 2-57. Function Box, Front View Showing Function Bars

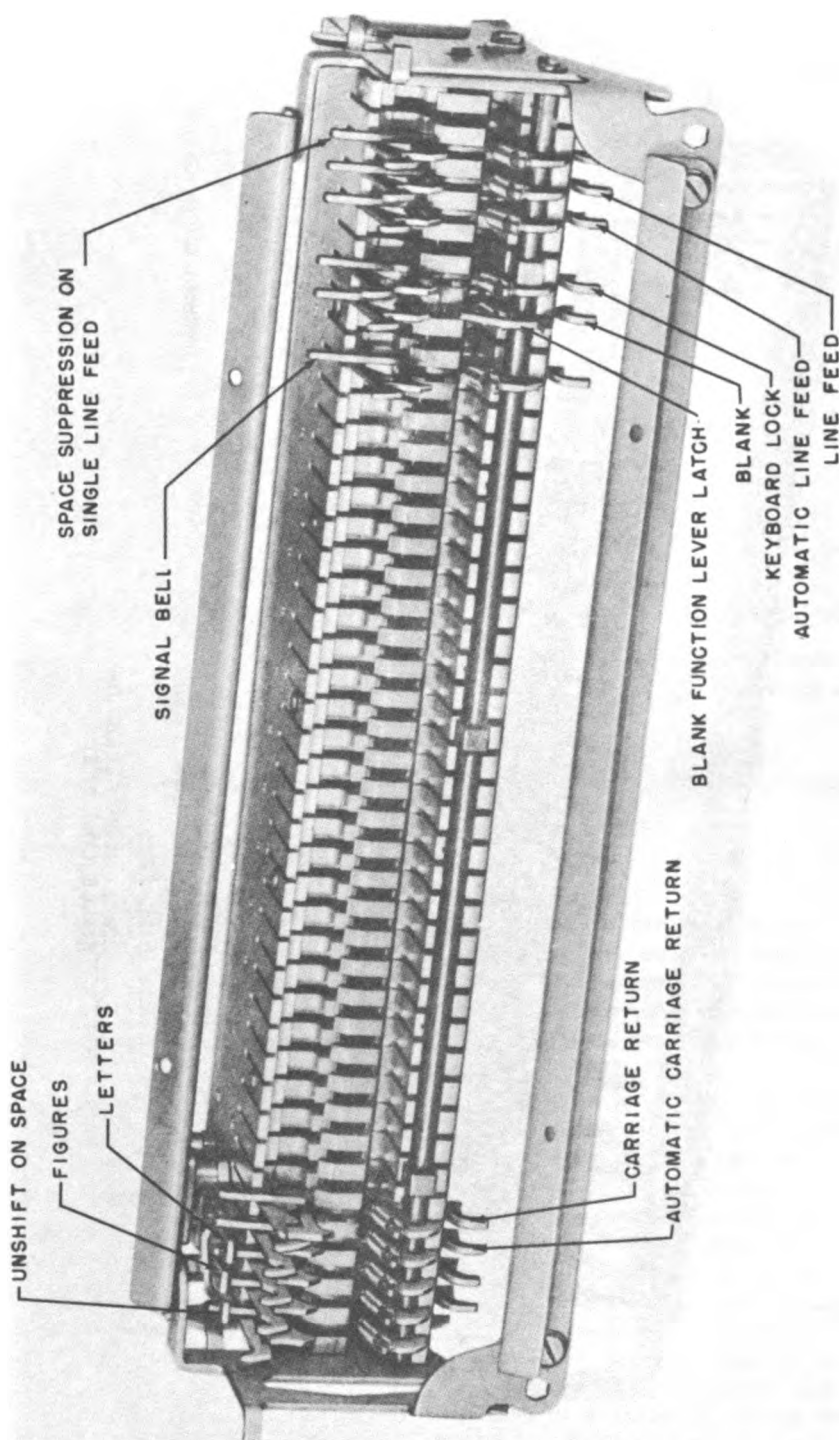


Figure 2-58. Function Box, Rear View Showing Function Levers

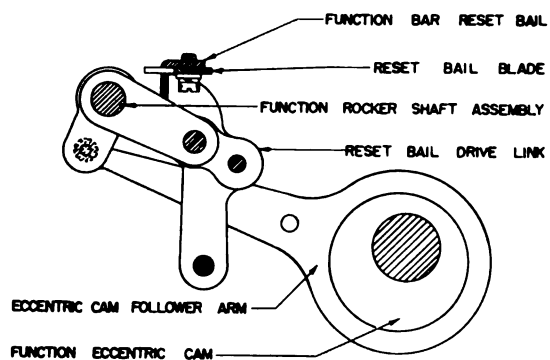


Figure 2-59. Function Reset Bail Mechanism

bail with its attached reset bail blade to release the function bars momentarily (figure 2-59). As the spring tensioned function bars are released, they move forward to make contact with the code bars. If the code bars are positioned for a function, each lug on the function bar for that function will be opposite a slot in a code bar. This will permit the selected function bar to move forward into the code bars while the other function bars are blocked by one or more code bars (figure 2-60). Associated with each function bar in the function box, is a function pawl and a function lever. In the unselected position, the function bar is not latched with its function pawl (figure 2-61). When the function bar reset bail blade releases the functions bars, any bar

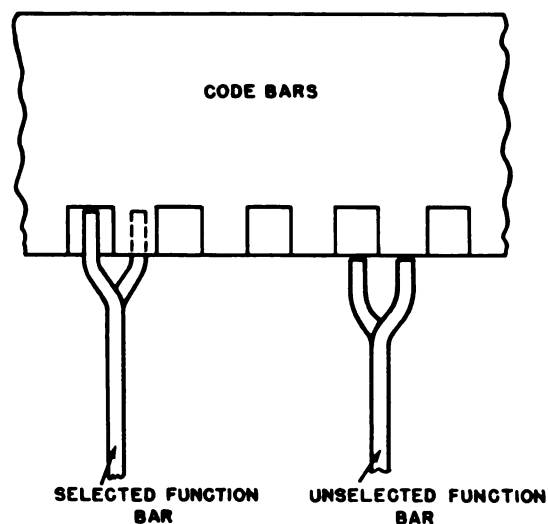


Figure 2-60. Function Selection, Top View

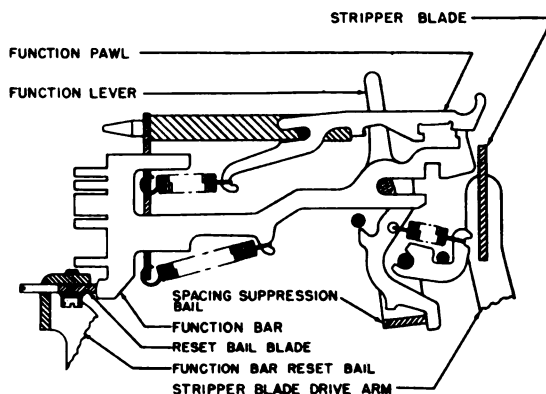


Figure 2-61. Typical Function Box Mechanism, Unselected

which may be selected will move sufficiently far forward (to the left in the figure) to permit it to engage its function pawl. Then, as the reset bail blade returns the function bar to its initial position, the function bar carries the function pawl to the rear (to the right in figure 2-62). The function pawl in turn, moves the function lever clockwise about its pivot point. A projection at the lower end of most function levers operates the spacing suppression bail (paragraph 4.f.(2) of this section) and either the upper or lower ends of the levers operate the various functions. Near the completion of the function cycle, a stripper blade (operated by the main side levers through the stripper blade arm, figure 2-46), rises to engage any selected function pawl and strip it from its function bar. Springs return the released function pawl and the function lever to their original position (figure 2-16). It should be noted here that, to prevent printing during the function cycle,

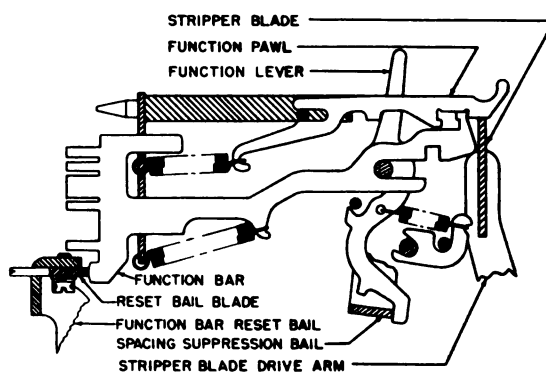


Figure 2-62. Typical Function Box Mechanism, Selected

whenever a function selection occurs the type box is positioned such that the printing hammer will strike where there is no type pallet. The function clutch two-stop cam disk upon which the latch lever rides has an indent at each stop position. When one of the two lugs on the clutch shoe lever disk strikes the function clutch trip lever, the inertia of the cam disk assembly causes it to continue to turn until its lugs make contact with the lugs on the clutch shoe lever disk. At this point, the latch lever drops into an indent in the cam disk and the clutch is held disengaged until the trip lever is again operated.

(2) **LETTERS AND FIGURES SHIFT FUNCTION.**—The letters and figures function bars, pawls and levers which are located near the right end of the function box operate on letters and figures codes respectively. The upper ends of the function levers engage the letters and figures function slides (figures 2-63 and 2-64). The front ends of these function slides have camming surfaces which, when a slide is shifted to the rear by its function lever, move the letters-figures code bar fork to the right (letters position—figure 2-63) or to the left (figures position—figure 2-64). The letters-figures code bar fork engages a pin on the bracket which is fastened to the letters-figures shift code bar, and positions the code bar toward the right for letters function or toward the left for figures function (figure 2-65). A slotted extension of the code bar engages a tongue from the right end of the letters-figures shift slide and causes the shift slide to follow the movements of the code bar. Pins at the end of the shift slide serve as lower guides for the right and left shift link breaker slides. Pins which project from the front plate serve as upper guides and pivot points. Mounted on the ends of the main bail are the left and right breaker slide bails. When letters function code is received, the shift slide is shifted to the right as shown. This places the left shift link breaker slide in a vertical position with its lower end over the left breaker slide bail. The right breaker slide is positioned such that its lower end is to the right of the right breaker slide bail. As the main bail moves upward, the right breaker slide bail clears the right breaker slide while the left breaker slide bail engages the left breaker slide and moves it upward. This action causes the left oscillating rail shift links to break and shift the oscillating rail to the right for the printing of LTRS characters. In a similar manner, when figures function code is received, the right oscillating rail shift links are broken and the rail is shifted to the left for the printing of FIGS characters.

(3) **SPACING FUNCTION.**

(a) **SPACING.**—For spacing between words or any spacing other than that which accompanies printing, the operator uses the space bar which is attached to the

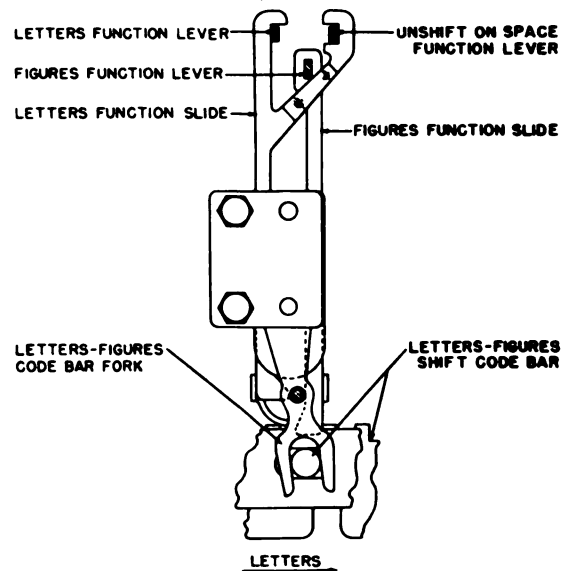


Figure 2-63. Letters-Figures Function Slides, Letters Position

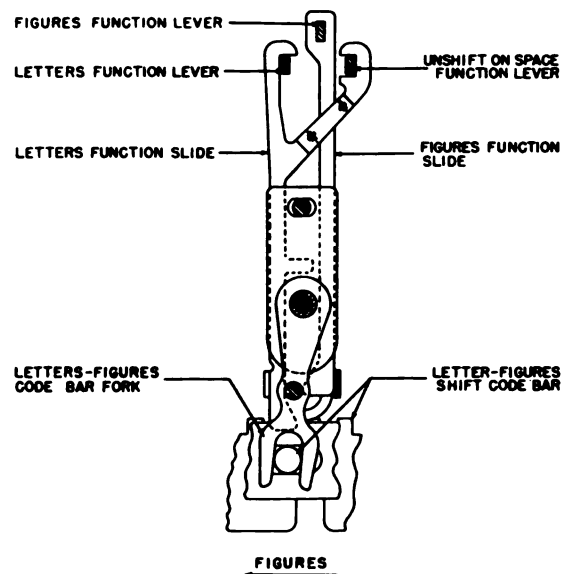


Figure 2-64. Letters-Figures Function Slides, Figures Position

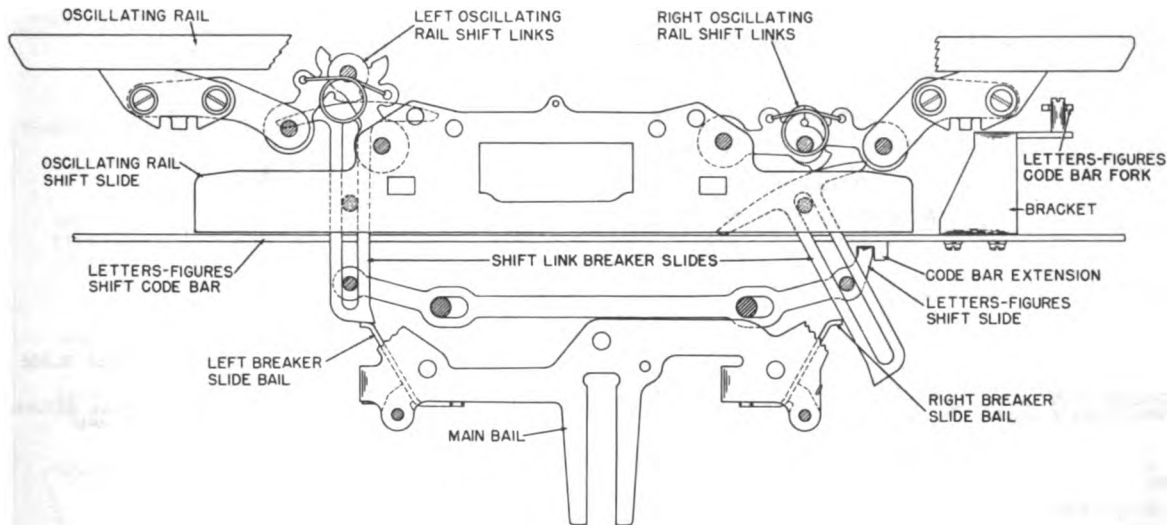


Figure 2-65. Letters-Figures Shift Mechanism, Letters Position

space keylever on the Keyboard. The function operates in the manner described under SPACING, paragraph 4.f.(1) of this section. However, as in all the functions printing does not occur.

(b) UNSHIFT ON SPACE.—A function bar which operates on spacing code is located at the right end of the function box. Its associated function lever engages an extension of the letters function slide (figure 2-66). Thus, when a spacing function occurs, letters shift will take place in the manner described in paragraph 4.i.(2). The projection at the lower end of the spacing function lever is removed in order not to operate the spacing suppression bail which would suppress spacing. When it is undesirable to use the unshift on space feature, the mechanism may be disabled. This is accomplished by turning a screw (located over the front end of the function pawl) downward until the rear end of the pawl is raised to clear the function bar.

Note

The space function bar must be in its rear-most position when turning the screw down.

(4) CARRIAGE RETURN FUNCTION.

(a) The carriage return function mechanism is located in the right end of the Automatic Typewriter. Reception of the carriage return code causes the carriage return function bar, pawl and lever to operate (figure 2-67). The lower end of the function lever engages the carriage return slide arm and pushes it forward (toward the left in the figure). The slide arm, in turn, moves the carriage return bail and its lever about their pivot point. As the front portion of the lever moves down-

ward, it takes with it the lower section of the spacing drum feed pawl release link. This causes the upper portion of the link to turn and disengage the spacing drum feed pawls from the spacing drum (figure 2-68). When the carriage return lever reaches the lowest point, the carriage return latch bail locks it there. The disengagement of the spacing drum feed pawls from the spacing drum, permits the spring drum to return the printing and type box carriages toward the left side of the Auto-

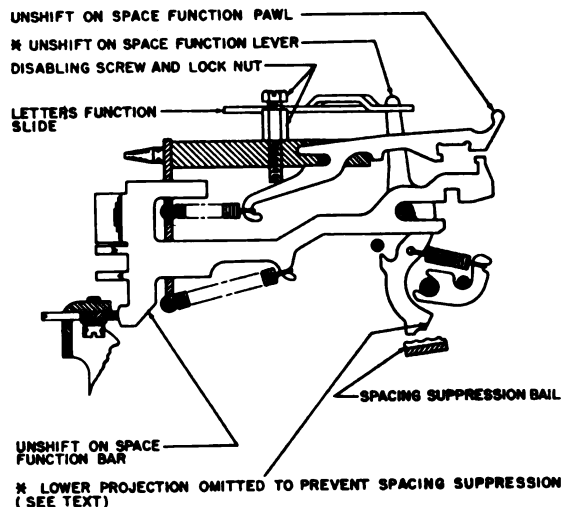


Figure 2-66. Unshift On Space Function Mechanism, Disabled Position

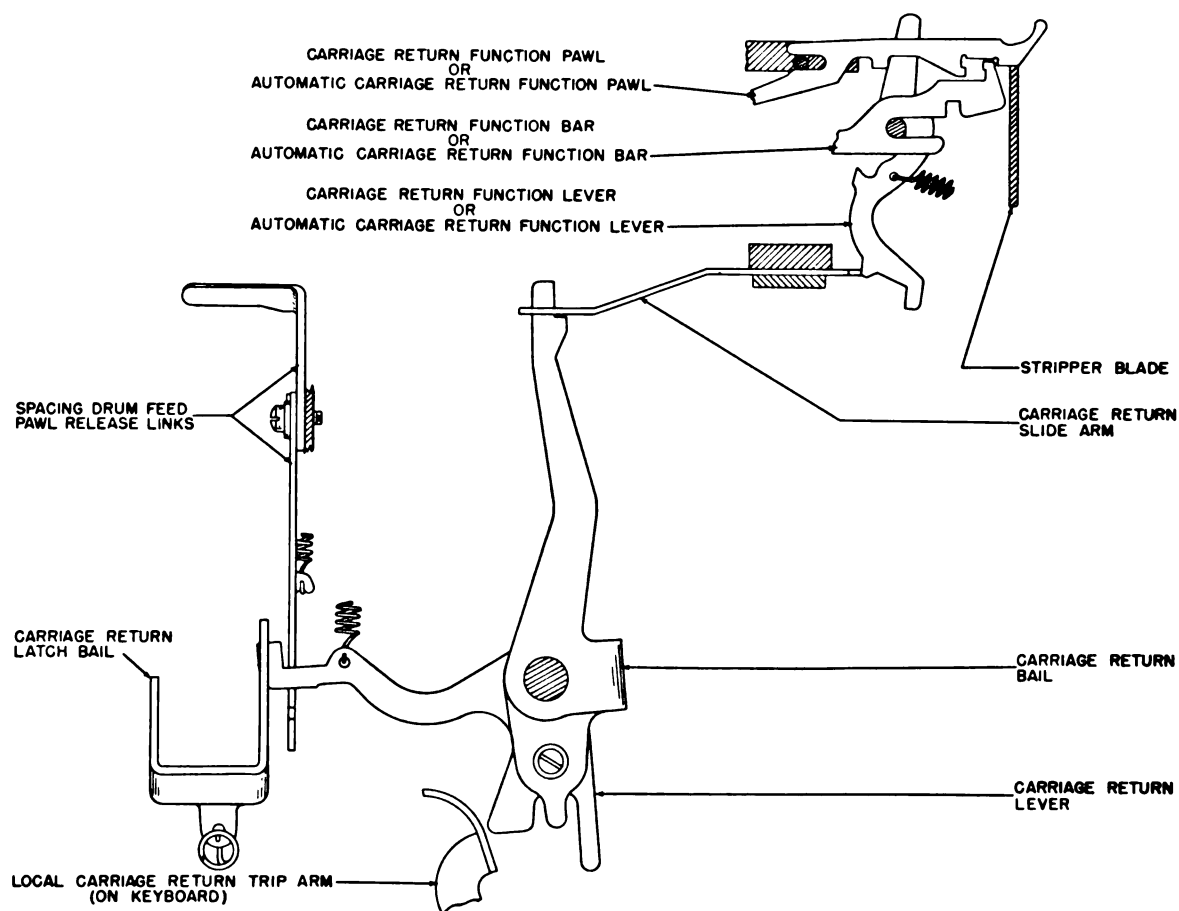


Figure 2-67. Carriage Return Function Mechanism

matic Typewriter. As the spacing drum nears the end of its counterclockwise rotation, the roller on its stop arm contacts the transfer slide which, in turn, drives the dashpot piston into the dashpot cylinder. A small passageway with an inlet from the inside of the cylinder and three outlets to the outside is incorporated in the end of the cylinder. Two of the openings to the outside are closed by a steel ball which is held in its seat by means of a compression spring. A set screw which may be locked in place with a nut is used to regulate the spring pressure on the ball. The rate of deceleration provided by the cushioning effect of the trapped air is automatically regulated for various lengths of lines by means of the ball valve. This, together with the direct opening to the outside, determines the rate at which the air may escape from the cylinder. When the spacing drum reaches its extreme counterclockwise position, an extension on the stop arm trips the carriage return latch

bail plate which is fastened to the carriage return latch bail. The latch bail disengages the carriage return lever and the feed pawls are again permitted to engage the spacing drum.

(b) Local (offline) operation of the carriage return mechanism may be obtained from the Keyboard. The Keyboard mechanism described in paragraph 3.e. of this section, engages a projection on the carriage return lever, and causes the operations described in the preceding paragraph to take place.

(5) LINE FEED FUNCTION.

(a) The line feed function mechanism is located in the left end of the Automatic Typewriter. The reception of the line feed code causes the line feed function bar, pawl and lever to operate (figure 2-69). The lower end of the line feed function lever engages the line feed slide arm and pushes it forward (to the left of the figure). The slide arm in turn, moves the line feed clutch

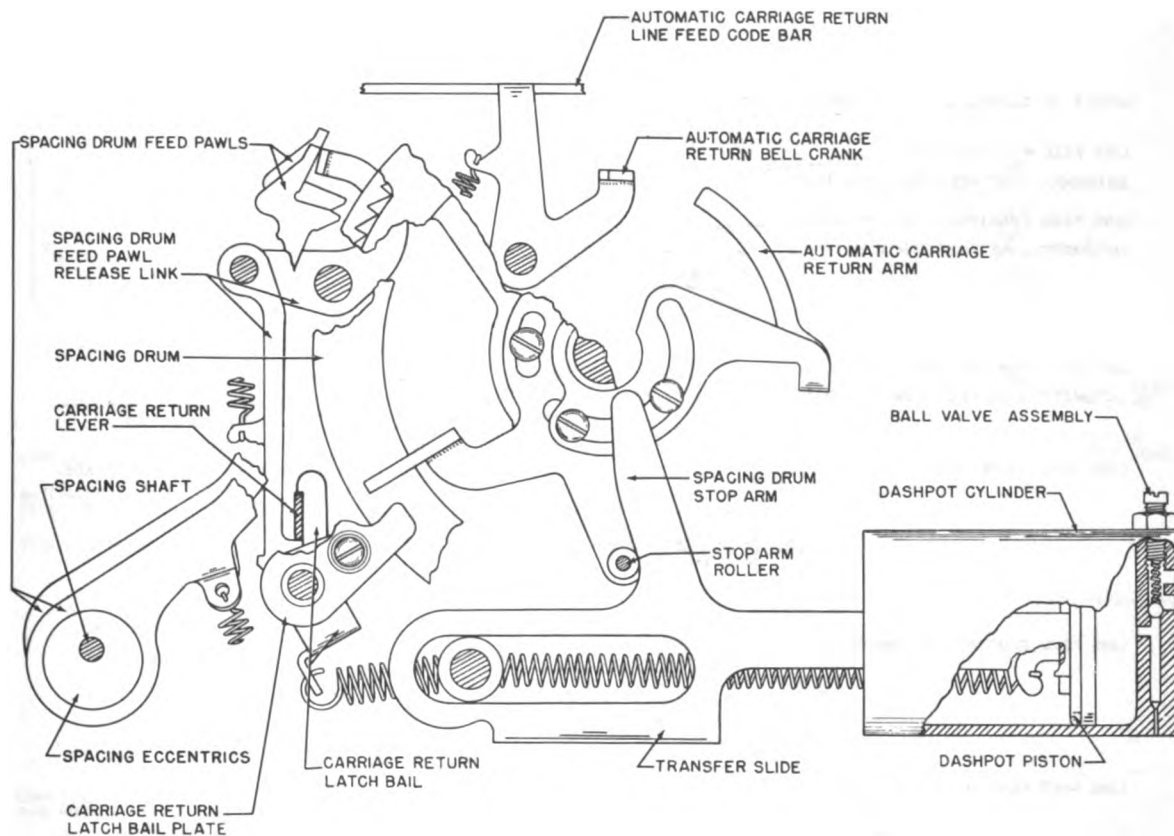


Figure 2-68. Carriage Return Mechanism

trip arm and the trip lever above their pivot point until the trip lever releases the three-stop line feed clutch. The line feed gearing is such that each one-third revolution of the clutch will advance the platen by one line. Therefore, the length of time that the line feed clutch trip lever is held away from the clutch will determine the number of line feeds that occur. The timing relationship between the stripper blade cycle and the main shaft rotation is such that the function pawl is not stripped from a function bar until after more than one-third of a revolution of the clutch has occurred. Thus, the line feed clutch trip lever will stop the clutch after two-thirds of a revolution, or double line feed has occurred. When single line feed is desired, it is necessary to strip the function pawl from the line feed function bar before the line feed clutch completes one-third of a revolution. This is accomplished by the use of an auxiliary line feed function pawl stripper which is driven by a stripper bail. The cam disk on the three-stop line feed clutch furnishes the motive force to operate the stripper bail once each one-third revolution

of the line feed clutch. The stripper blade on which the slotted line feed function pawl stripper rides may be shifted toward the right or left by the camming action of the single or double line feed lever (figure 2-70). The upper end of the pivoted jingle or double line feed lever protrudes from the upper left rear portion of the Automatic Typewriter where it rides in the two position side frame detent extension. When the lever is in position 1 (toward the front of the Automatic Typewriter), the stripper blade is positioned such that the two ears at the upper end of the line feed and automatic line feed function pawls are under the line feed and automatic line feed function pawls. When the lever is in position 2 (toward the rear of the Automatic Typewriter), the stripper blade is positioned such that the ears on the line feed function pawl stripper are between the function pawls. All the other function pawls are stripped with the stripper blade in either position. When single line feed is being used, the line feed function lever is released too soon (by the line feed function pawl stripper) to prevent spacing. Therefore, an additional line feed function bar, pawl, and lever are installed in the extreme left end of the

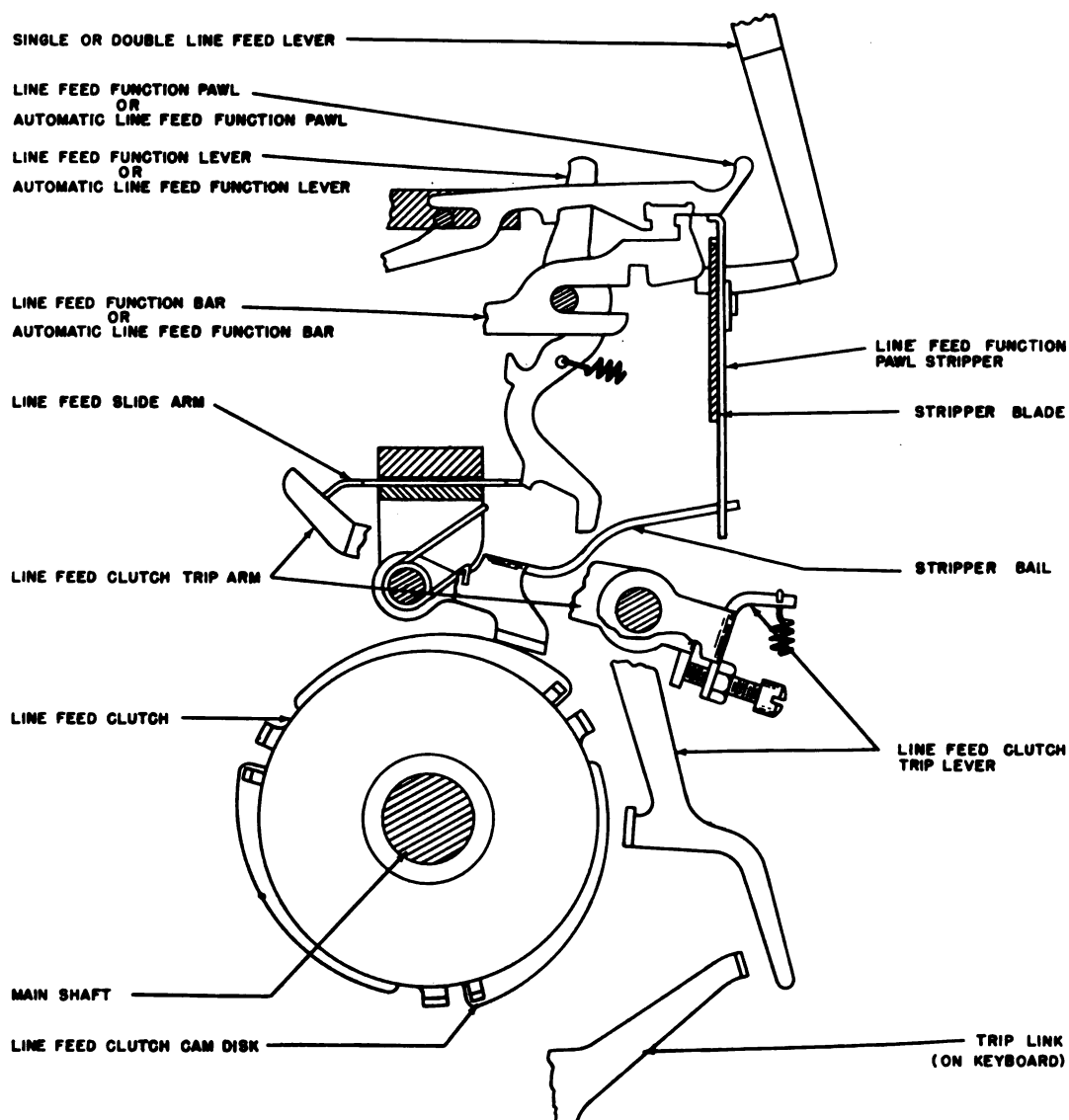


Figure 2-69. Line Feed Function and Clutch Trip Mechanism

function box for the sole purpose of suppressing spacing on single line feed function (figure 2-57). This mechanism, which always operates on the line feed function code, is released only by the stripper blade, and therefore holds the spacing suppression bail operated until the spacing cycle is completed. After the line feed clutch is stopped by its trip lever, it is disengaged by the trip lever and latch lever in the same manner as the three-stop spacing clutch.

(b) Each one-third revolution of the line feed clutch causes its attached spur gear to rotate the line feed eccentric spur gear and its attached eccentrics one-half of a revolution (figure 2-71). The eccentrics which are offset in opposite directions each carry a line feed bar. These bars guided by the line feed bar bell crank alternately engage the line feed spur gear on the platen and advance the platen one line for each one-half turn of the eccentrics. A platen detent bail engages the line

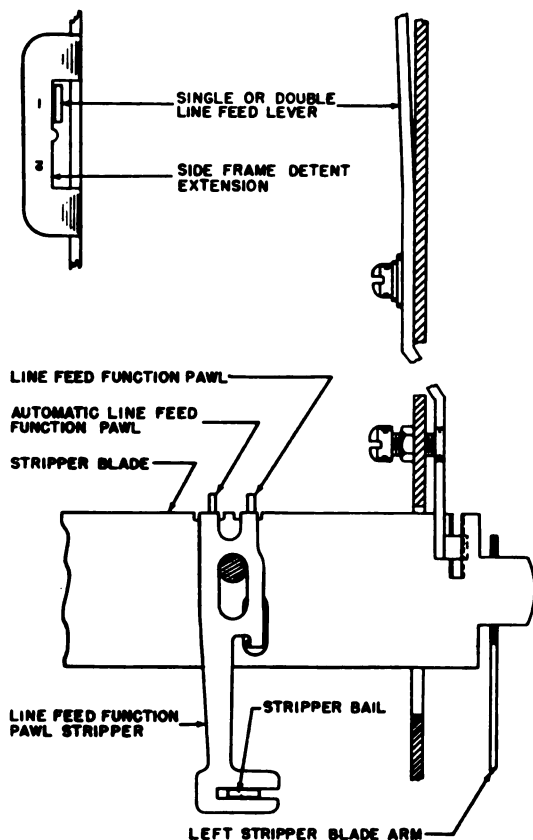


Figure 2-70. Positioning Mechanism For Single or Double Line Feed

feed spur gear to retain the platen at each setting.

(c) When it is desired to manually position the platen, this may be accomplished by bearing down on and turning the platen handwheel. This causes the platen handwheel spur gear to engage the platen idler spur gear which in turn is engaged with the platen spur gear on the platen shaft. At the same time the line feed bar release lever bears on the line feed bar bell crank and causes it to disengage the line feed bars from the line feed spur gear.

(d) Local (off-line) operation of the line feed mechanism may be obtained from the Keyboard. A keyboard mechanism, described in paragraph 3.f. of this section, engages a projection on the line feed clutch trip lever and may hold the clutch engaged to provide continuous line feeding (figure 2-69).

(6) AUTOMATIC CARRIAGE RETURN—LINE FEED FUNCTION.—If an operator fails to send the

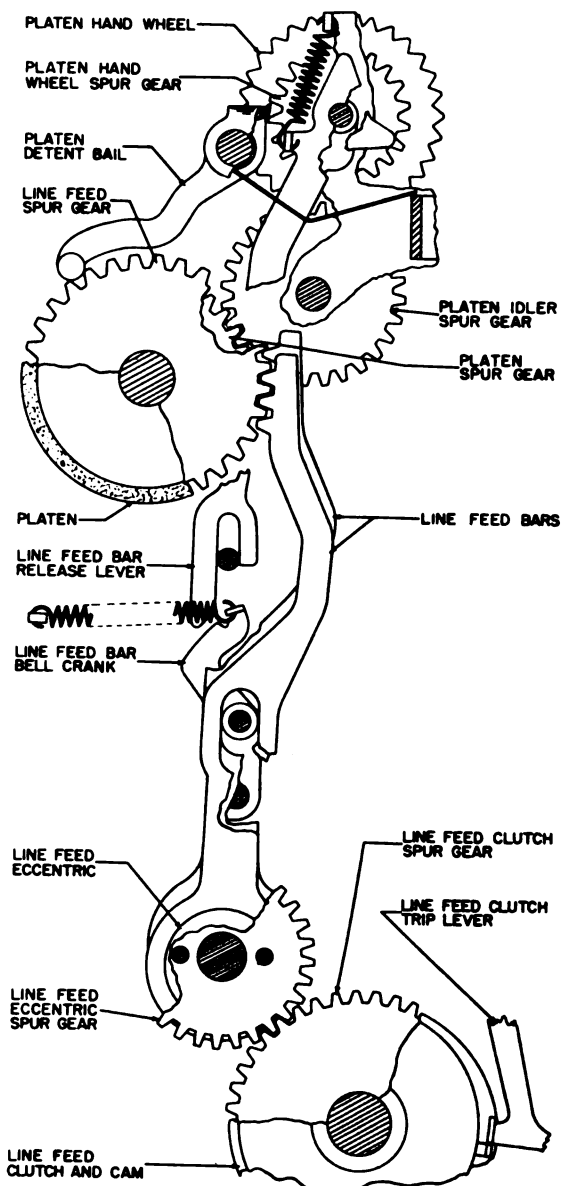


Figure 2-71. Line Feed Mechanism

carriage return and line feed functions before the carriage is within one character of the right end of the line, the automatic carriage return arm on the spacing drum trips the automatic carriage return bell crank (figure 2-68). As the bell crank turns clockwise, it shifts the automatic carriage return-line feed code bar to the right. Located adjacent to the carriage return and line feed function bars in the function box are automatic

carriage return and line feed function bars (figure 2-57). These two function bars are identical and have only one code projection. This projection is located opposite the automatic carriage return-line feed code bar which normally blocks the automatic carriage return and line feed function bars. When the code bar is shifted to the right, these function bars and their associated function pawls and levers are operated. The automatic carriage return and line feed function levers operate the carriage return slide arm and the line feed slide arm respectively and thereby cause the carriage return and line feed functions to occur simultaneously.

(7) **SIGNAL BELL FUNCTION.**—For signaling purposes, a bell is located in the CY-870/UG and CY-871/UG cabinets. The circuit to the bell magnet E-759 is controlled by a set of normally open electrical contacts E-1301 and E-1302 mounted on the function box (figures 2-33 and 2-72). The signal bell function bar has six code lugs—five for the signal code and one for the letters-figures shift code bar (figure 2-57). In order to select the signal bell function, the letters-figures shift code bar must first be shifted to figures position. Then, each time the signal code for the letter S is received, the function lever will pulse the upper signal bell contact once (figure 2-73). If the signal code for the letter S is received when the letters-figures shift code bar is in the letters position, the signal bell function bar will be blocked by the shift code bar.

(8) **BLANK FUNCTION.**—Near the left end of the function box, are two identical function bars coded to operate when the signal code for blank function is received (figure 2-57). If, at any time, two consecutive blank signal codes are received, the mechanism operated by these two function bars will lock up the Keyboard. The single-blank function lever has a projection which reaches over to engage the notch in the keyboard lock function bar and prevent the function bar from moving forward even though a blank signal code is received (figure 2-58). Therefore, the first blank signal code received will operate only the blank function bar. This function bar moves its function pawl which, in turn, operates the blank function lever and causes it to move out of engagement with the keyboard lock function bar and to be latched in place by the blank function lever latch (figure 2-74). If the next consecutive signal code is not a blank, the keyboard lock function bar will be blocked by the code bars, and the lower edge of the stripper blade will trip the blank function lever latch. The latch will release the blank function lever and permit it to re-engage the keyboard lock function bar and reset the mechanism. If, however, the next consecutive signal code is a blank, the keyboard lock function bar will move forward before the stripper blade can trip the

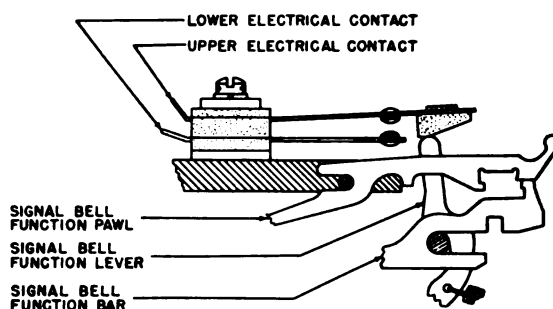


Figure 2-72. Signal Bell Contact Mechanism, Unselected

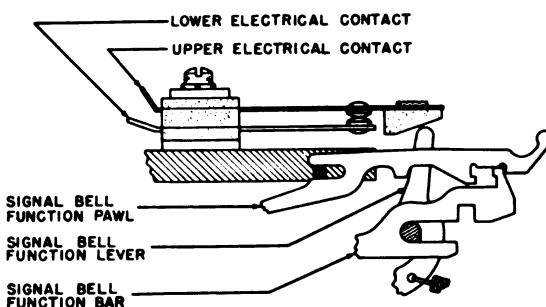


Figure 2-73. Signal Bell Contact Mechanism, Selected

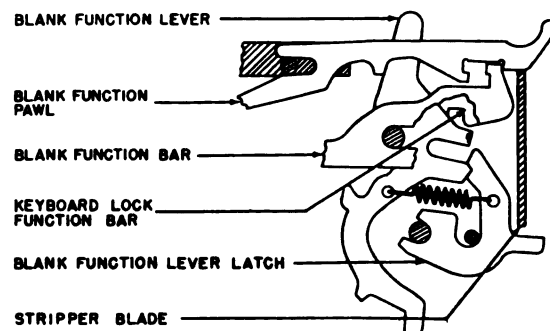


Figure 2-74. Keyboard Lock Priming Mechanism

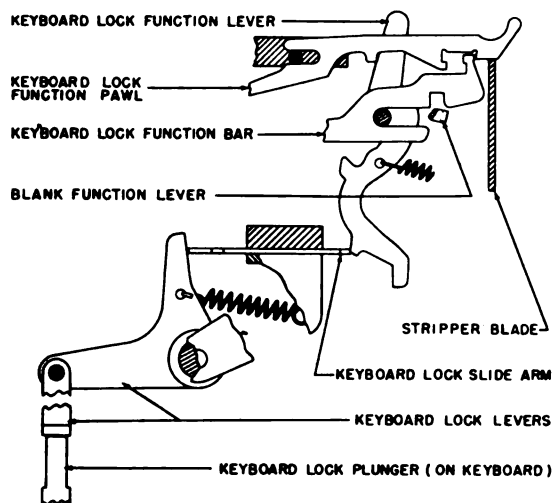
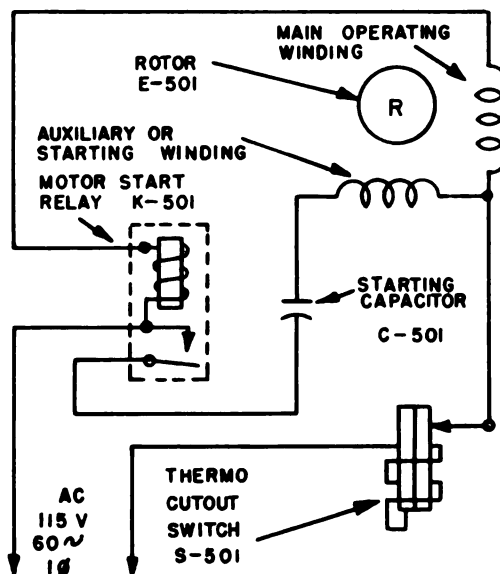


Figure 2-75. Keyboard Lock Mechanism

blank function lever latch and release the blank function lever. The keyboard lock function bar operates its function pawl which in turn operates the keyboard lock function lever (figure 2-75). The keyboard lock function lever moves the keyboard lock slide arm forward (toward the left in the figure). This, in turn, actuates the keyboard lock levers and causes them to push downward on a plunger (which projects upward from the keyboard) and lock the Keyboard. The operation of the keyboard lock mechanism in the Keyboard is described in paragraph 3.i. of this section.

5. MOTORS.

a. AC MOTOR (SYNCHRONOUS) PD-17A/U. (See figures 1-9 and 2-76.)—The synchronous motor is for use with single phase, 115 volt (plus or minus 10 per cent) alternating current, at a frequency of 60 cycles per second (plus or minus 0.5 cycle). It is a $\frac{1}{20}$ horsepower, 3600 rpm, two pole, wound stator, ball bearing motor, with a squirrel cage type rotor. The stator has two windings, a main operating winding, and an auxiliary winding. The auxiliary winding is in series with a 43 mf a.c. electrolytic capacitor C-501, and with a current operated motor starting relay K-501. The initial starting current causes the relay to pull up and its contacts close the auxiliary winding circuit. As the rotor gains speed, the current flowing through the motor (and also the relay coil), decreases. When a predetermined current value is reached the relay armature is released, the relay contacts are opened, and the auxiliary winding circuit is disconnected from the line. The rotor E-501 continues to accelerate until it reaches synchronous speed (3600 rpm). The motor is wired in such a man-

Figure 2-76. AC Motor (Synchronous) PD-17A/U,
Schematic Wiring Diagram

ner that the rotor rotates counterclockwise when viewed from the fan end. The starting relay and capacitor together with a thermal cutout switch S-501 are mounted in a compartment on the underside of the motor. The thermal cutout switch is in series with both the main and auxiliary motor windings, and if excessive current is drawn by the motor, (due, for example, to a blocked rotor), the switch will open the circuit. This is to prevent overheating and possible damage to the motor if it is stalled. The switch may be manually reset if tripped, by depressing its red button which projects upward through the motor mounting plate. There are two fans located within the motor housing, one at each end of the rotor. These draw cooling air in through the slots in the end bells and exhaust it through the slots in the motor housing. The end bells have rubber vibration mounts by means of which the motor sets in the ends of its mounting bracket. The rubber mounts are held in the bracket by means of mounting straps. The motor shaft has a tapped hole for use in fastening the intermediate shaft driving helical gear. All end play is taken up by means of a conical shaped spring which bears against the outer race of one of the ball bearings. The motor mounting bracket is fastened to the Keyboard by means of four screws and lock washers.

b. AC MOTOR (GOVERNED) PD-18/U. (See figures 1-10 and 2-77.)—The series governed motor is for use with single phase, 115 volt (plus or minus 10 per cent) alternating current, at a frequency of 50 to 60

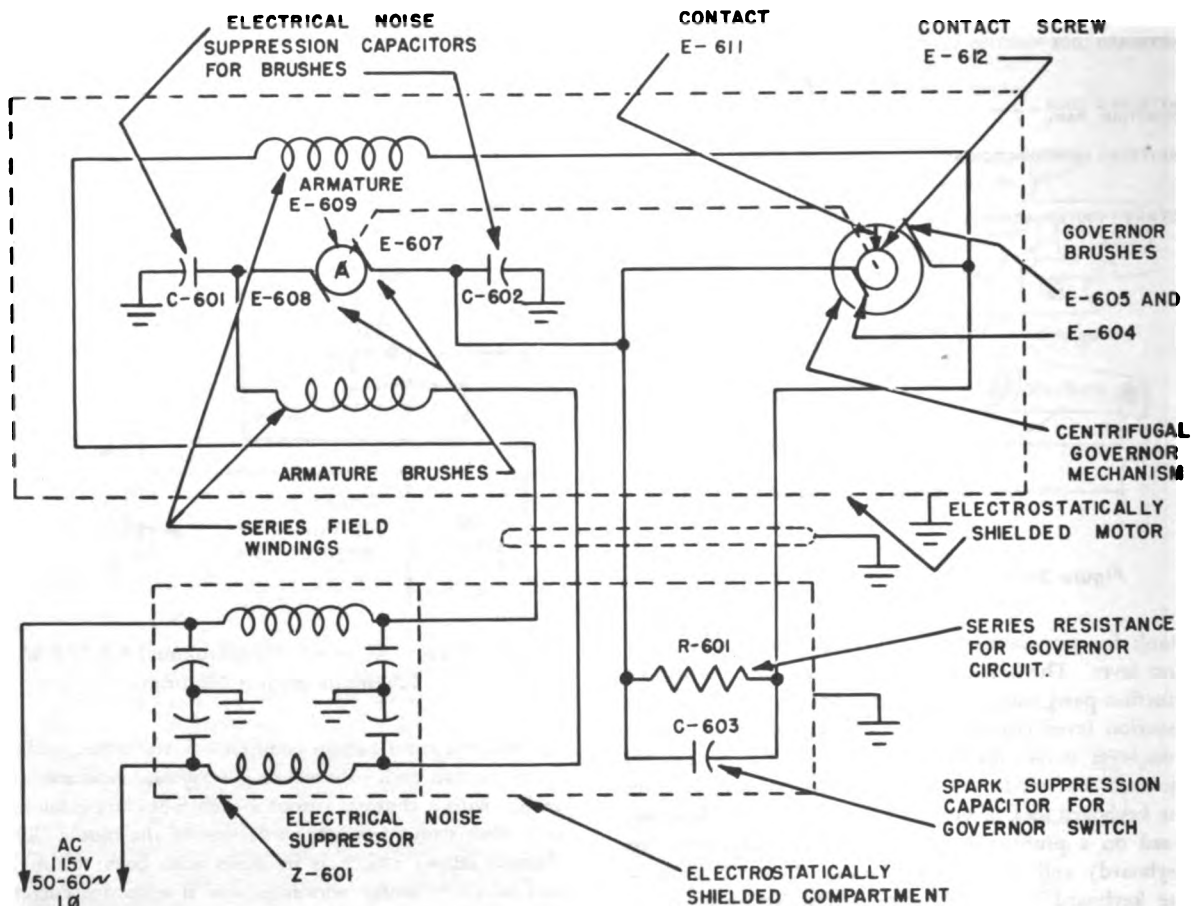


Figure 2-77. AC Motor (Governed) PD-18/U, Schematic Wiring Diagram

cycles per second. It is a $\frac{1}{20}$ horsepower, 3600 rpm ball bearing motor which depends on an electromechanical governor for its speed regulation. The armature E-609, with a 48 segment commutator is wired in series with the two field windings, and the governor contacts E-611 and E-612. A 250 ohm, 40 watt resistor R-601 and a 0.5 mf capacitor C-603, are connected in parallel with the governor contacts. When the contacts are closed the resistor is shorted out. When the contacts are open the resistor is in series with the motor, to limit its operating current, and thus reduce its speed. The capacitor serves as a spark suppressor for the governor contacts. The combination fan and governor is mounted on one end of the motor shaft. The fan draws cooling air through the motor housing, and also serves as a mounting plate for the governor slip rings and for the governor contact mechanism (mounted on opposite sides of the fan). Connections to the two slip rings, which are wired to the governor contacts, are made by means of two brushes E-604, and E-605, mounted on the ends

of the motor housing. Normally the governor contact spring holds the governor contact E-611 against the contact screw E-612 (figure 2-78). When the motor shaft exceeds a predetermined speed, the centrifugal force developed on the governor contact overcomes briefly the pull of the governor spring, and the governor contact leaves the contact screw until the motor

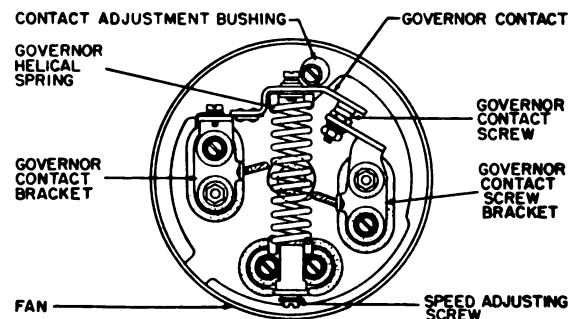


Figure 2-78. Governor For AC Motor PD-18/U

slows down. The tension on the contact spring may be adjusted to maintain the motor speed at 3600 rpm. In order to make this adjustment, means are provided to compare the motor speed with a standard. An aluminum cover fits against the side of the fan and encloses the governor contact mechanism. The outside of the cover

is finished in white, with four black stripes equally spaced about its periphery. This serves as a target which should appear to stand almost still at 3600 rpm, when viewed through the moving shutter of a 120 vibrations per second tuning fork. The two motor brushes E-608 and E-607 are protected by 8000 mmf capacitors C-601

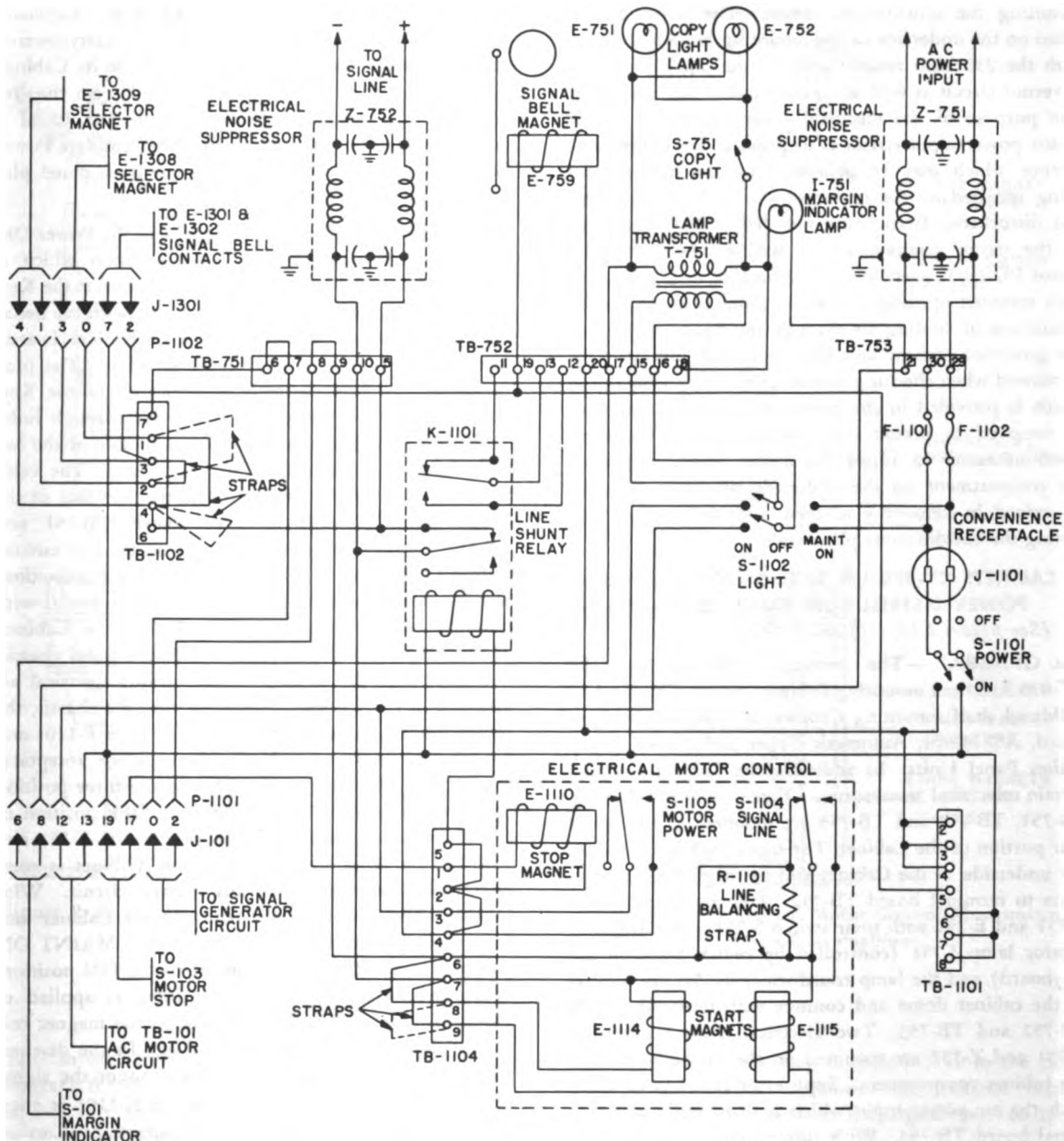


Figure 2-79. Power Distribution Panel SB-154A/UG and Cabinets CY-870/UG and CY-871/UG, Schematic Wiring Diagram

and C-602 which are connected between the brushes and the grounded frame of the motor. These tend to bypass any electrical noise created by the brushes as they make and break contact with the various segments of the armature commutator. The motor is wired in such a manner that the armature rotates counterclockwise when viewed from the governor end. The method of mounting the series motor is similar to the method of mounting the synchronous motor. The housing provided on the underside of the mounting bracket contains both the 250 ohm resistor and 0.5 mf capacitor in the governor circuit as well as an electrical noise suppressor. The purpose of the electrical noise suppressor in the motor power input circuit is to prevent any radio interference which may be generated by the motor from being radiated by the motor power leads. To prevent this disturbance from being radiated directly from any of the motor components or wiring, the entire AC motor PD-18/U is enclosed by grounded metal housings with screened openings. The screening is to permit the circulation of cooling air through the motor and across the governor resistor and also to permit the target to be viewed when checking motor speed. A threaded plug which is provided in the governor shield housing may be removed to permit the insertion of a screwdriver when necessary to adjust the motor speed. Access to the compartment on the underside of the motor may be gained by removing a screw and lock washer and sliding the bottom cover plate aside.

**6. CABINETS CY-870/UG AND CY-871/UG, AND
POWER DISTRIBUTION PANEL SB-154A/UG.**

(See figures 1-12, 1-13 and 2-79.)

a. GENERAL.—The principal purpose for the CY-870/UG deck mounting Cabinet and the CY-871/UG bulkhead shelf mounting Cabinet, is to house the Keyboard, AC Motor, Automatic Typer and Power Distribution Panel Units. In addition, the Cabinet contains certain electrical accessories. Three terminal boards, TB-751, TB-752 and TB-753 are mounted in the upper rear portion of the Cabinet. The signal bell is located on the underside of the Cabinet and its magnet E-756 connects to terminal board TB-752. The copy light lamps E-751 and E-752 with their switch S-751, the margin indicator lamp I-751 (controlled by switch S-101 in the Keyboard) and the lamp transformer T-751, are located in the cabinet dome and connect with terminal boards TB-752 and TB-753. Two electrical noise suppressors Z-751 and Z-752 are mounted on the inside bottom of the cabinet compartment. Suppressor Z-751 is in series with the a-c power input which is then brought to terminal board TB-753. With single loop operation, suppressor Z-752 is in series with the signal line which is then brought to terminal board TB-751. With double loop operation, suppressor Z-752 is in series with the

send line which is then brought to terminal board TB-751. The receiver line is brought directly to terminal board TB-751. The Power Distribution Panel is located behind the Keyboard inside the Cabinet, and is held in place by two studs. The main power switch, located in the lower front corner of the right end of the panel chassis, is engaged by the fork on the power switch extension shaft. This shaft extends through the front of the Cabinet below the right end of the Keyboard and is equipped with a knob so that the Teletypewriter may be turned "on" or "off" from outside its Cabinet. Four legs on the chassis project upward from the corners, for use when the Power Distribution Panel is turned upside down for servicing. The complete Power Distribution Panel is composed of the basic panel plus an electrical motor control accessory.

b. BASIC PANEL.—The basic part of the Power Distribution Panel consists of a chassis upon which is mounted all of the cabling which interconnects the Keyboard and the Automatic Typer, together with the necessary plug connectors, fuses, switches, terminal boards, convenience receptacle, and line shunt relay. The plug connector and cable assemblies which go to the Keyboard and to the Automatic Typer pass through holes in the top mounting plates which are located at the left and right ends respectively of the chassis. The cable with lug terminations which enters the left side of the chassis connects with terminal boards TB-751 and TB-752 in the Cabinet to bring all signal line circuits into the panel chassis. The cable with lug terminations which enters the right side of the chassis connects with terminal boards TB-752 and TB-753 in the Cabinet. This cable brings the AC power into the panel chassis, and completes the circuits to the various electrical accessories in the Cabinet. Upon entering the chassis, the power input is fused by two 10 ampere fuses F-1101 and F-1102 before it reaches the convenience receptacle J-1101, the power switch S-1101, and the three position light switch S-1102. In the center or OFF position of S-1102 which connects with the primary of T-751 and TB-752, the lamp transformer in the Cabinet is completely disconnected from any power circuit. With S-1101 OFF, the copy light lamps in the Cabinet may be turned ON by throwing S-1102 to the MAINT ON position, and S-751 in the Cabinet to the ON position. When S-1101 is ON, the power input is applied to power terminal board TB-1101 and to the magnet coil of the signal line shunt relay K-1101. In the de-energized position of K-1101, its contacts shunt the signal line at TB-751 in the Cabinet. When K-1101 is energized by operation of S-1101, the contacts open to remove the shunt. In the left or ON position of S-1102, power for transformer T-751 in the Cabinet is taken from TB-1101 and is controlled by the motor switch

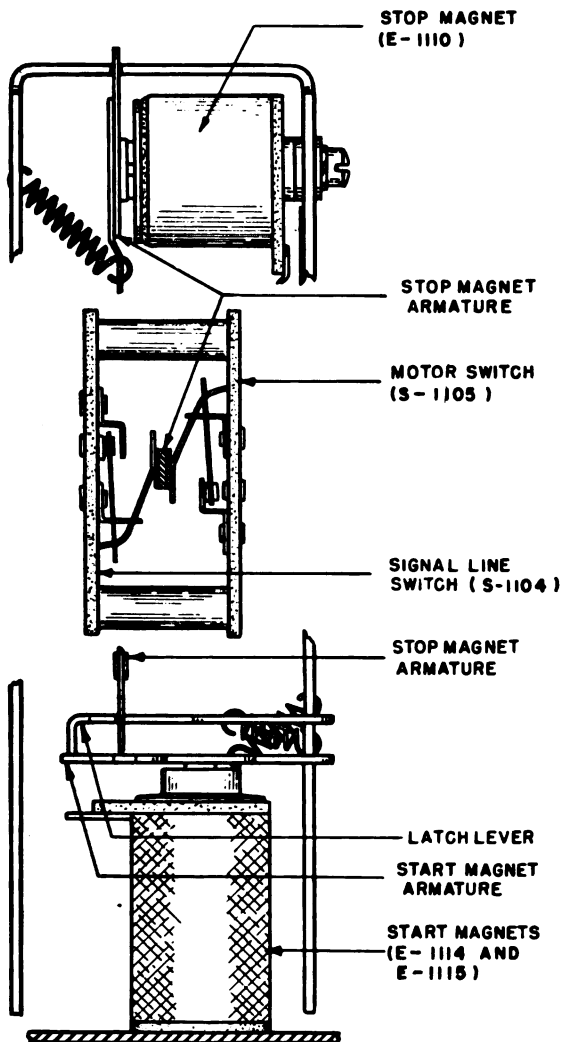


Figure 2-80. Electrical Motor Control Mechanism,
Stop Position

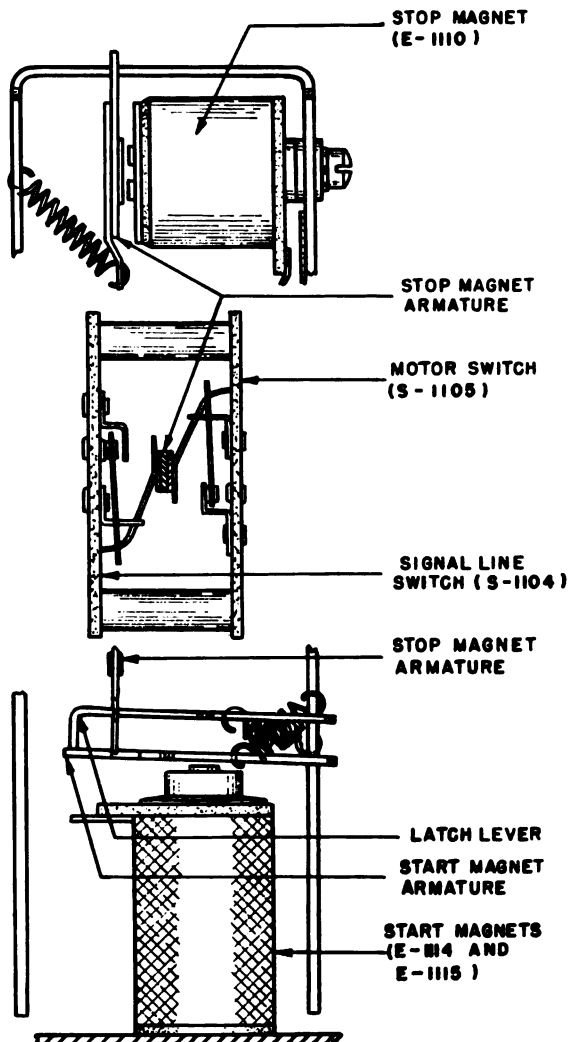


Figure 2-81. Electrical Motor Control Mechanism,
Open Line Position

S-1105 in the electrical motor control mechanism. See paragraph 6.c. of this section. The circuit from the margin indicator switch S-101 in the Keyboard connects with the margin indicator lamp circuit in the Cabinet at terminal boards TB-752 and TB-753. The circuit from the motor stop switch S-103 on the time delay mechanism in the Keyboard picks up power at TB-1101

and connects with the stop magnet E-1110 in the electrical motor control mechanism at terminal board TB-1104. The circuit from the signal bell contacts E-1301 and E-1302 in the Automatic Typewriter picks up power at TB-1101 and connects with the circuit to the signal bell magnet E-759 at TB-752 in the Cabinet. The AC Motor circuit from TB-101 in the Keyboard picks

ORIGINAL

2-45

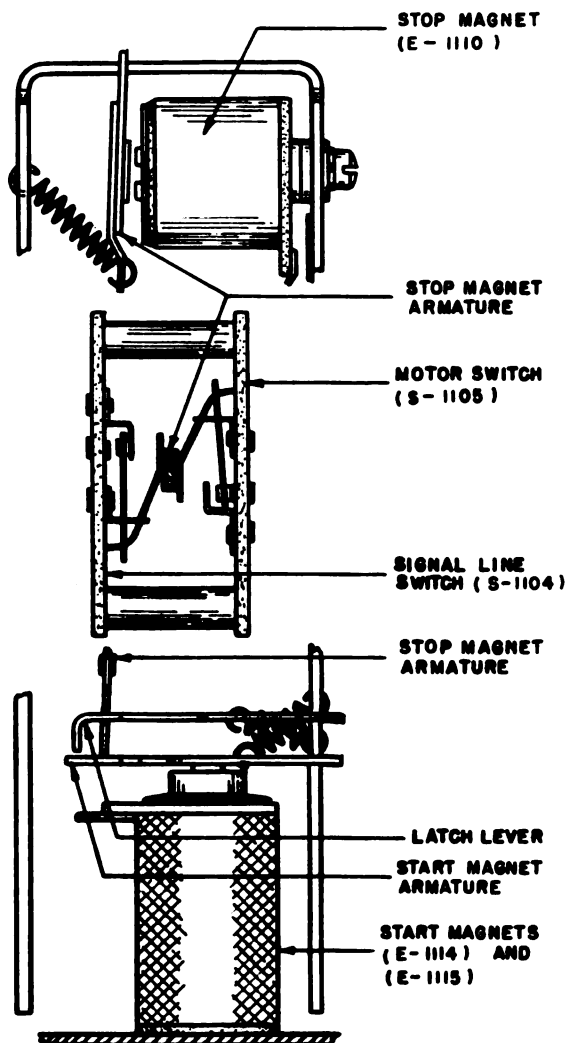


Figure 2-82. Electrical Motor Control Mechanism,
Start Position

up power at TB-1101, and connects with the motor power switch S-1105 in the electrical motor control mechanism at TB-1104. The signal line circuits from both the Keyboard and the Automatic Typewriter connect with TB-751, where they may be arranged for either single loop or double loop operation. In addition, wires from the selector magnets E-1308 and E-1309 in the

Automatic Typewriter connect with terminal board TB-1102 in the Power Distribution Panel. Two strap wires on TB-1102 which connect E-1308 and E-1309 "in parallel" for 0.060 ampere signal line current operation may be re-arranged (dashed lines in figure 2-79) to connect E-1308 and E-1309 "in series" for 0.020 ampere operation.

c. ELECTRICAL MOTOR CONTROL MECHANISM.—The electrical motor control mechanism is mounted in the center of the Power Distribution Panel. All connections to this mechanism are made through its terminal board TB-1104. The purpose of the mechanism is to start the AC Motor when the signal line current is interrupted, and, in conjunction with the time delay mechanism in the Keyboard, to stop the AC Motor if the signal line becomes idle for a period of not longer than approximately two minutes. In the equipment as furnished, the start magnets E-1114 and E-1115 in the electrical motor control mechanism are wired in parallel for 0.060 ampere signal line current operation. For 0.020 ampere operation, the strap wires on TB-1104 may be rearranged (dashed lines in figure 2-79) to connect E-1114 and E-1115 in series. Also, the strap across the line balancing resistor R-1101 must be removed for 0.020 ampere operation. The resistor R-1101 is switched into the line circuit by S-1104 when the start magnet coils are switched out, in order to compensate for the loss of their resistance and to minimize unbalance in the line circuit. The following paragraphs describe the operation of the electrical motor control mechanism through a complete cycle.

(1) STOP POSITION. (See figure 2-80.)—In this position the AC Motor is shut down, and the steady signal line current holds the start magnets, E-1114 and E-1115 energized. The start magnet armature is pulled downward and the stop magnet armature is positioned toward the right where it is held by the latch lever. The motor switch S-1105, operated by the stop magnet armature, is open and the signal line switch S-1104 completes the start magnet circuit.

(2) OPEN LINE POSITION. (See figure 2-81.)—In this position, the signal line has just been opened, the start magnets E-1114 and E-1115 are de-energized, and the start magnet armature is released. When the start magnet armature moved upward, it carried the latch lever with it. The latch lever released the stop magnet armature which started to swing toward the left. However, the stop magnet armature was immediately blocked by the start magnet armature. The slight movement of the stop magnet armature was not sufficient to change the positions of the switches S-1104 and S-1105.

(3) START POSITION. (See figure 2-82.)—In this position, the signal line has just been closed, and the start magnets E-1114 and E-1115 have been ener-

gized to pull the start magnet armature downward and release the stop magnet armature. The stop magnet armature has swung to the left and has operated switches S-1104 and S-1105. When S-1104 was operated, it removed the start magnets E-1114 and E-1115 from the signal line circuit so that their armature would not vibrate with the line signals. When S-1105 was operated, it completed the circuit to the AC Motor and to the copy light lamps.

(4) STOP POSITION. (*See figure 2-80.*)—In order for the electrical motor control mechanism to return to this position and stop the AC Motor, the motor

stop switch S-103 in the Keyboard was pulsed by the time delay mechanism as shown in paragraph 3.i. of this section. This pulse energized the stop magnet briefly and caused the stop magnet armature to swing to the right and again operate switches S-1104 and S-1105. As S-1104 was operated, it placed the start magnet coils back in the signal line circuit where they became energized and pulled the start magnet armature downward. This allowed the latch lever to engage the stop magnet armature and hold it in the stop position. As S-1105 was operated, it opened the circuit to the AC Motor and to the copy light lamps.

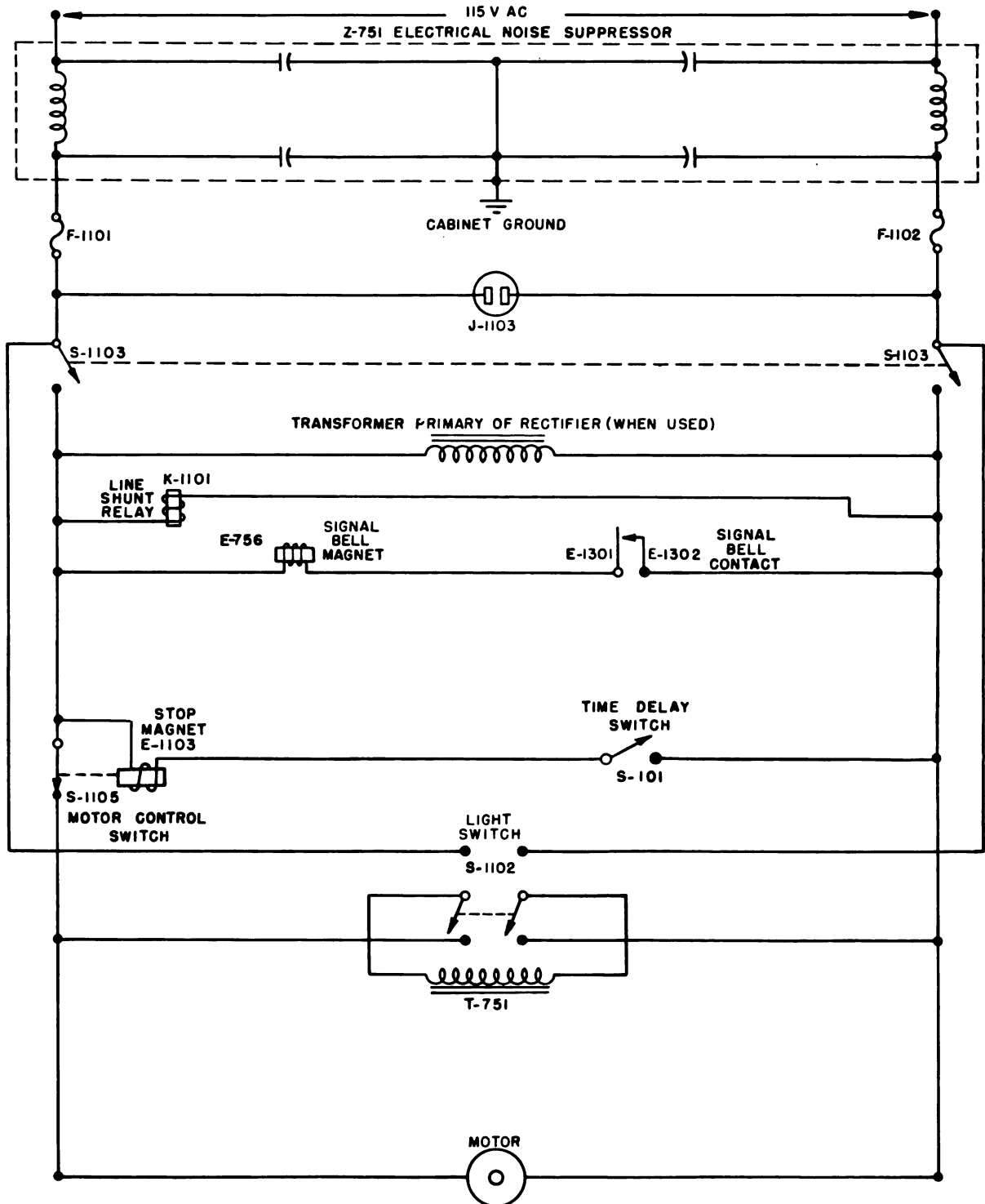


Figure 3-1. Primary Power Distribution Diagram

SECTION 3 INSTALLATION

1. GENERAL.

The Teletypewriters TT-47A/UG and TT-48A/UG are packed complete in one wooden box. Teletypewriters TT-69A/UG and TT-70A/UG are similarly packed. Each set has eight packages enclosed by the outer wooden box. These eight packages contain one each of the following items: Automatic Typer, Keyboard, Power Distribution Panel, AC Motor, console-type or shelf-type Cabinet, spare parts, and instruction books.

2. UNPACKING THE EQUIPMENT.

- a. Cut the steel strapping along the top edges of the box.
- b. Pry the lid off the box and tear the waterproof barrier.
- c. Remove the eight cartons from the box.
- d. Open each carton and remove the contents.

3. INSTALLING THE CABINETS.

- a. Four tapped bushings are provided in the feet of the Cabinet to secure the shelf model. In selecting the bolts to be used, make certain to choose a length that will not extend through the top of the bushing. Thread size and necessary dimensions are shown in figure 3-5.

Note

The signal line and power cables must be installed before securing the shelf-type Cabinet. Make sure external signal line and power voltage are off.

- b. Four shock mounts are provided to secure the console-type Cabinet. Hardware for securing the shock mounts to the floor is not furnished with the equipment. Assembly of shock mounts to Cabinet and necessary dimensions are shown in figure 3-5. The shock mounts are packed in a carton which is taped to the rail inside the Cabinet and stamped 151593.

4. POWER AND LINE CONNECTIONS.

(See figures 1-11 and 1-12.)

- a. CABINET CY-870/UG.

- (1) Remove the panel that extends across the front of the lower section by removing its four mounting screws. Remove the insulator covers from the three terminal boards located in the upper rear portion of

the Cabinet. Insert an a-c power cable through the large opening in the left rear corner of the lower shelf and up through the right BX connector in the center of the upper shelf. Connect the leads to the electrical noise suppressor as shown in figure 3-2. (For any specific installation refer to the applicable installation drawing.)

- (2) Insert the signal line cable through the same opening in the lower shelf but through the left BX connector in the center of the upper shelf. For single loop operation (Keyboard and Automatic Typer in series), connect the positive (+) lead to the upper terminal and the negative (−) lead to the lower terminal of the electrical noise suppressor as shown in figure 3-2. For double loop operation as an alternate method (Keyboard and Automatic Typer separated) connect the SEND line as described above. Insert the RECEIVE line through the large opening in the left rear corner of the lower shelf and up through the 7/8 inch hole in the upper shelf. Remove the white wire from the upper half of terminal 5 on TB-751 and connect it to terminal 7. Remove the black wire from terminal 10 and connect it to terminal 8. Connect the positive (+) lead of the RECEIVE line to terminal 5 and the negative (−) lead to terminal 10 of TB-751 as shown in figure 3-3.

- (3) To relieve tension on the terminal connections, clamp the cables in place by means of the BX connectors. If additional thickness is required, friction tape may be wound around the cables at the clamping point.

- (4) Replace the panel across the front of the lower section.

- b. CABINET CY-871/UG.—Insert the power and signal line cables into the right and left BX connectors respectively. The connections are the same as described in paragraphs 4.a.(1) and 4.a.(2).

- c. When installing any of the above sets, a ground wire should be brought in and connected to the Cabinet ground screw located just above terminal board TB-753 as shown in figure 3-3. The ground wire should also be connected to the signal line electrical noise suppressor ground terminal as shown in figure 3-2.

CAUTION

A good ground is important for satisfactory operation of the equipment.

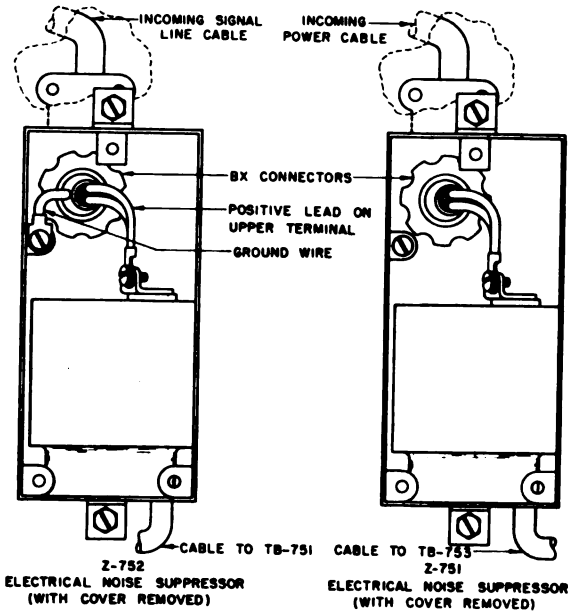


Figure 3-2. Power and Signal Line Connections

5. ASSEMBLY OF EQUIPMENT.

a. POWER DISTRIBUTION PANEL SB-154A/UG.

(1) With the dome raised, place the Power Distribution Panel in the rear of the Cabinet with the legs extending upward and name plate and serial number plate facing the front of the Cabinet. Secure the Panel to the shelf by means of the two studs furnished in the muslin bag tied to the Panel. Drop the studs through the holes located at each end of the Panel and screw them into the nuts welded to the underside of the shelf.

(2) For single loop operation, connect the leads of the cables from the Power Distribution Panel to terminal boards TB-751, TB-752 and TB-753 as shown in the applicable portion of figure 3-3. (If double loop operation is used, make connections to terminal boards TB-752 and TB-753 the same as for single loop operation. Make connections to terminal board TB-751 in accordance with the DOUBLE LOOP OPERATION diagram of figure 3-3.)

Note

Make certain that the black strap is removed from terminal 6 and taped or connected to terminal 7.

(3) The unit is wired for 0.060 ampere operation at the factory. If 0.020 ampere operation is desired, change wiring as shown in NOTE 7 on wiring diagram (figure 7-140).

Note

Provisions have been made in the Power Distribution Panel for installing a signal line relay assembly next to the line shunt relay mounting plate, and a small rectifier assembly next to the fuse mounting plate. These assemblies, which are normally used together, are not furnished with the Teletypewriters.

(4) Remove the rear cross bar of the cradle assembly by removing its two mounting screws, lock washers, and flat washers.

(5) Untie the power switch extension shaft from the hinge bar and bracket. Remove the knob from the shaft by loosening the two set screws. Insert the shaft, from inside of Cabinet, through the hole located at the right end of the front panel. Push the shaft through far enough to allow the rear end of the shaft to enter the locating hole in the Power Distribution Panel, and at the same time place the slotted extension of the shaft over the toggle switch which is mounted on the right side of the Power Distribution Panel. Replace the knob on the end of the shaft which protrudes through the Cabinet, and keep the narrow portion of the knob to the right. Tighten the set screws. Hook one end of the spring (furnished) around the switch extension shaft and hook the other end into the hole in the right arm of the cradle assembly.

b. AC MOTORS PD-17A/U AND PD-18/U.

(1) Remove the motor gear and intermediate driven gear from the small cardboard box stamped 151060 (furnished with Teletypewriters), 151075, or 151100. Remove the screw and lock washer in the left end of the motor shaft. Place the motor gear on the motor shaft with the geared end toward the Motor. Secure the gear with the screw and lock washer just removed. Remove the two screws and lock washers from the hub on the right end of the intermediate gear shaft. Mount the intermediate driven gear on the shaft with the flat side of the gear to the right. Secure the gear with the two screws and lock washers just removed.

(2) Remove the four 1/4-32 hex head screws from the muslin bag tied to the Motor. Place the Motor in position on the Keyboard and secure it with the four screws and lock washers just removed. Before tightening the mounting screws make certain that the motor gear and intermediate driven gear are properly meshed.

(3) Remove the insulator cover from terminal board TB-101 just to the left of the Motor. Connect the motor leads to terminals 1 and 2 of this terminal board. When installing a governed motor, connect the ground strap to the right rear motor mounting screw. Replace the insulator cover with the No. 1 stamping toward the rear.

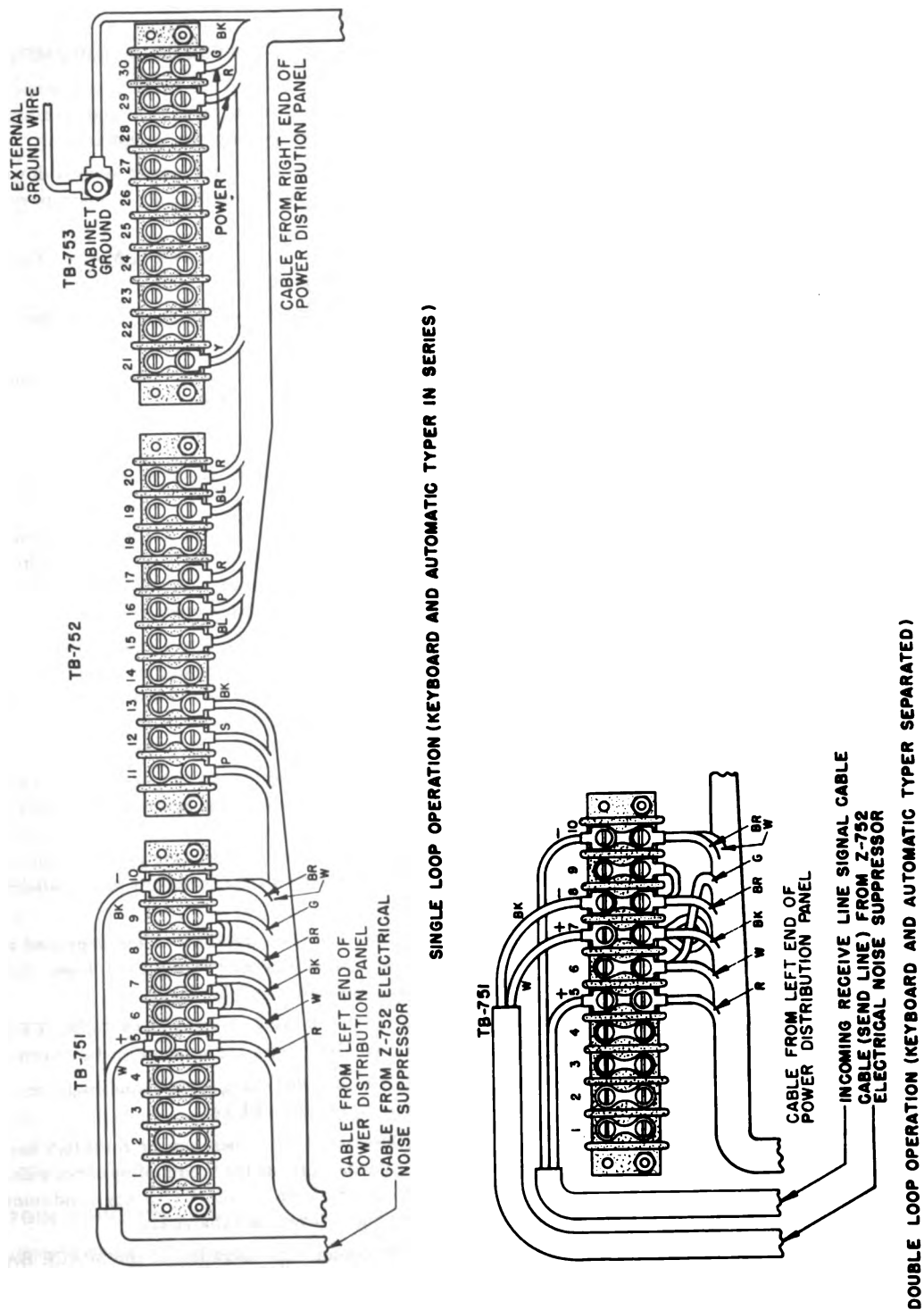


Figure 3-3. Power Distribution Panel Connections

c. AUTOMATIC TYPER MX-1115A/UG. (See figure 7-21.)

(1) Remove the four 1/4-32 hex head screws, with captive lock washers, from the Keyboard. Place the Automatic Typer on the Keyboard. Make certain that the front feet on the Typer are placed over the locating studs provided on the Keyboard. Rotate the Motor by hand to insure proper meshing of the gears. Secure the Automatic Typer with the four screws just removed.

(2) INITIAL ADJUSTMENTS.—The following two adjustments, shown in section 7, should be made before placing the component in the Cabinet.

(a) Keyboard and Motor Gearing (figure 7-25).

(b) Time Delay Mechanism (figure 7-27).

d. KEYBOARD MX-1114A/UG.

(1) Remove the cross bar from the front of the Cabinet by loosening the two knurled thumb screws that secure it.

(2) Remove the two studs from the rear cross bar previously removed from the cradle assembly. With the centerline of the tapped holes to the rear of the centerline of the elongated holes in the rear cross bar, secure the Keyboard, with Motor and Typer, to the rear cross bar by means of the two studs just removed.

(3) Remove the two studs from the front cross bar hinge. Place the Keyboard on the cradle assembly in the Cabinet. Loosen the two front cross bar mounting screws and position the bar in its elongated mounting holes so that the holes in the Keyboard and the tapped holes in the hinge are in alignment. Secure the Keyboard to the front cross bar hinge by means of the two studs just removed.

(4) Replace the front cabinet cross bar, stamped "CAUTION: REMOVE BEFORE TILTING UNIT", in its mounting slots with the wider side of the bar downward. Be careful not to jam the bar against the keyboard contact box. Tighten the two knurled thumb screws.

(5) To seal the rubber sealing plate around the Keyboard against the Cabinet, push the Keyboard toward the rear of the Cabinet as far as possible. Hold it in this position and tighten the two front cross bar mounting screws.

(6) Secure the rear cross bar to the cradle assembly by means of the two screws, lock washers, and flat washers previously removed.

(7) Insert the plug on the cable from the right end of the Power Distribution Panel into the receptacle on the right side of the Automatic Typer until it is latched in position.

(8) Insert the plug on the cable from the left end of the Power Distribution Panel into the receptacle

on the left rear corner of the keyboard until it is latched in position.

6. MECHANICAL CHECKING OF EQUIPMENT.

a. A visual check of all fuses, plugs, screw terminal connections, and lamps for loosening or breakage should be made before putting the equipment into operation.

b. Make certain that the power knob is downward in its OFF position before closing the main power line to the equipment.

c. The light switch (ON, OFF, MAINT ON) should be in the ON position.

d. The copy light switch should be in the ON position.

e. Refer to section 4, paragraph 5, for instructions on installing paper and ribbon.

7. OPERATING TESTS.

a. Type several lines of a test sentence such as "The quick brown fox . . . etc." and check for accuracy.

b. The local line feed key (LOC LF), when depressed, shall cause paper to feed out of the machine at approximately three times the speed obtained when the line feed key is repeatedly operated.

c. The keyboard lock key (KBD LOCK), when depressed, shall prevent operation of any other key except the local line feed, keyboard unlock, break, and local carriage return keys. It shall remain depressed until released by the keyboard unlock key.

d. The keyboard unlock key (KBD UNLK), when depressed, shall unlock the keyboard. The BREAK key, when depressed, shall hold the transmitting line open. If the duration of the open-line interval is greater than two character cycles the keyboard lock shall be caused to operate.

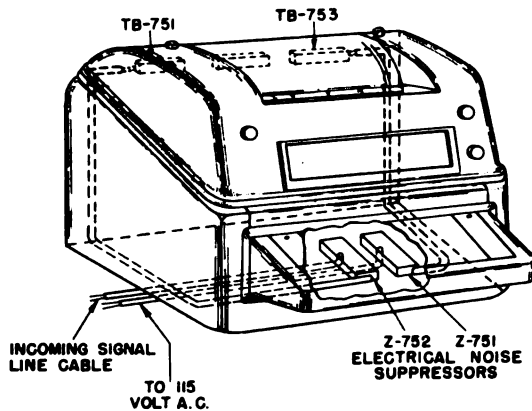
e. The repeat key (REPT), when depressed together with any other key except the local keys, shall cause repeat transmissions of the signal.

f. The local carriage return key (LOC CR), when depressed shall cause the carriage to be returned.

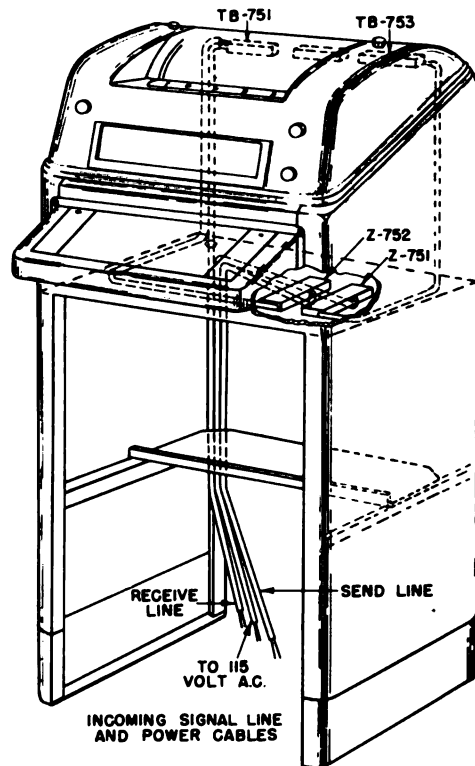
g. The bell shall ring clearly on single or repeated operations of the BELL key.

b. Determine that operation of the FIGS key conditions the machine for the typing of upper case characters and that operation of the LTRS key conditions it for the typing of lower case characters.

i. Determine that operation of the SPACE BAR conditions the machine for the typing of lower case characters where this feature is desirable. If not desirable, disable by adjusting the function pawl disabling screw (section 7, figure 7-87).



TELETYPEWRITERS TT-69A/UG AND TT-70A/UG
WIRED FOR SINGLE LOOP OPERATION



TELETYPEWRITERS TT-47A/UG AND TT-48A/UG
WIRED FOR DOUBLE LOOP OPERATION

Figure 3-4. System Pictorial Diagram

j. Determine that the Motor shuts off after an idle period of from one-half to two minutes where this feature is desirable, and restarts when the break key is depressed or when the selector starts to receive signals. If this feature is not desirable, disable the delay mechanism on the Keyboard as indicated in section 7, figure 7-28.

k. If irregularities in operation are observed, notify authorized maintenance personnel. (In any case of failure of a part, complete failure report form NAVSHIPS 383 and forward to BuShips.)

8. MARGIN INDICATING LAMP.

The margin indicating lamp should illuminate between the 66th and 68th space from the beginning of a line. Adjust if necessary by positioning the margin indicator cam disk on the spring drum with its three screws loosened (figures 2-29 and 2-44).

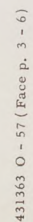
ORIGINAL

9. FINAL CHECKS.

The equipment has been thoroughly tested and adjusted at the factory and should not require further adjusting. However it is recommended that the setting of the range scale and the motor speed (governed type) be checked. Refer to section 4, paragraph 8 for the procedure to be followed in checking the motor speed and to section 4, paragraph 9 for the procedure in checking the orientation range.

Note

Under certain conditions, filter Z-101 may contribute to signal distortion in the signal line circuit. At the time of installation, the signals should be checked for excessive distortion. When present, it should be compensated for in order to retain the desired quality of the signals. This may be accomplished by the addition of wave shaping elements in the signal line circuit.



21 $\frac{1}{8}$ "

2 $\frac{1}{2}$ "

3"

3"

2 $\frac{1}{2}$ "

2 $\frac{1}{2}$ "

18 $\frac{1}{4}$ "

SECTION B-B

NUT

LOCK WASHER

CABINET

NUT (WELDED TO CABINET)

SHOCK MOUNT

BOLT

0.266 DIA. MTG. HOLES (16 PLACES)

SHOCK MOUNT LAYOUT FOR MOUNTING CONSOLE MODEL

20 $\frac{1}{2}$ "

FRONT

17 $\frac{13}{16}$ "

2 $\frac{11}{16}$ "

1 $\frac{5}{16}$ "

9"

9 $\frac{9}{16}$ "

12 $\frac{15}{16}$ "

18 $\frac{1}{4}$ "

SECTION A-A

CABINET SHELF

BUSHING

$\frac{1}{4}$ -20 THD.

NUT

$\frac{5}{8}$ "

FOOT

1"

13 $\frac{1}{16}$ "

FOR USE WITH ELECTRICAL NOISE SUPPRESSOR

POWER CORD ENTRANCE

FOR USE WITHOUT ELECTRICAL NOISE SUPPRESSOR

REAR

○ LINE CORD ENTRANCE

BOTTOM VIEW BULKHEAD MODEL

$\frac{7}{8}$ " DIA. HOLE (3 PLACES)

Figure 3-5. Outline and Mounting Dimensions

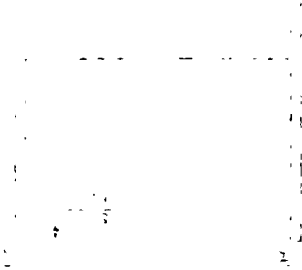
3-7, 3-8



3. 2710. 1. 2000. 14



4. 2710. 1. 2000. 14



5. 2710. 1. 2000. 14



6. 2710. 1. 2000. 14



7. 2710. 1. 2000. 14

SECTION 4

OPERATION

1. INTRODUCTION.

Teletypewriters TT-47A/UG, TT-48A/UG, TT-69A/UG, or TT-70A/UG provide means for exchanging typewritten page messages between two or more ships or stations which are similarly equipped and connected by a telegraph or radio channel. The Keyboard of the Teletypewriter is essentially similar to the keyboard of a conventional typewriter. However, the following differences should be noted: The Keyboard of the Teletypewriter has only three rows of conventional keys. The platen is held stationary while the type box carriage, and printing carriage, advance from left to right during the typing process. Nontyping functions such as the return of the carriages for starting a new line, the shifting operations, and line feeding are performed automatically as a result of signals that originate either at a distant station or at the local Keyboard. The Teletypewriter is arranged for operation on five-unit start-stop permutation code and prints the alphabet in capitals only. It is designed to operate at speeds of 368, 460 or 600 operations per minute (opm). Conversion from one speed to another necessitates a change in the driving gears. The Keyboard must be operated with a uniform rhythm in order to prevent omission errors in

the copy due to speed in excess of that for which the machine is adjusted. The action performed by the function keys (figure 4-1) is detailed in the following paragraphs.

2. ON-LINE FUNCTIONS.

a. SPACE BAR.—This bar, located at the front of the Keyboard, is used to send spaces (as between words).

b. CAR. RET.—The carriage return key is used to return both the type box carriage and the printing carriage to the left to start a new line of typing.

c. LINE FEED.—This key, when depressed, causes the paper to feed upward one or two spaces depending upon the position of a single-double line feed lever located on the Automatic Typewriter (figure 4-2).

d. FIGS.—The figures key is used to condition the machine for printing of figures, punctuation marks or other upper-case symbols.

e. LTRS.—The letters key is used to condition the machine for printing of letters characters.

f. BELL.—Operation of this key (which is upper-case action of the S key) subsequent to pressing the FIGS key, will cause a signal bell to ring locally and at the distant stations.

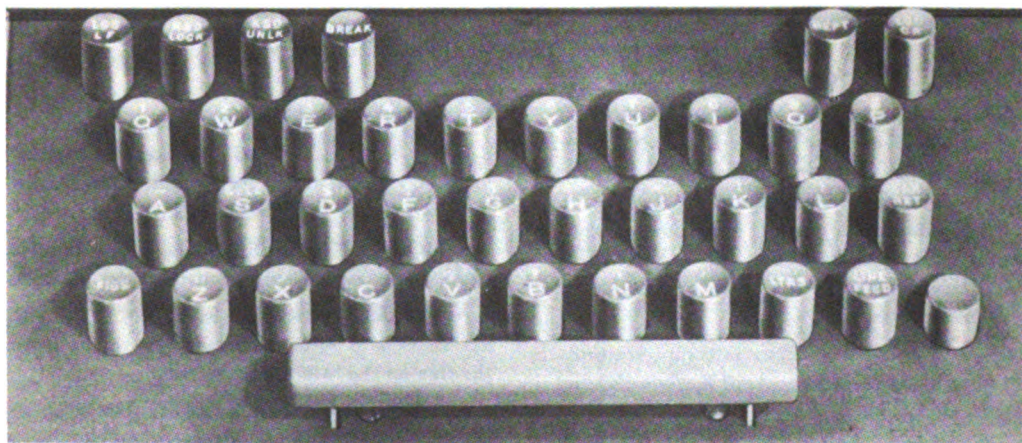


Figure 4-1. Keyboard Keys

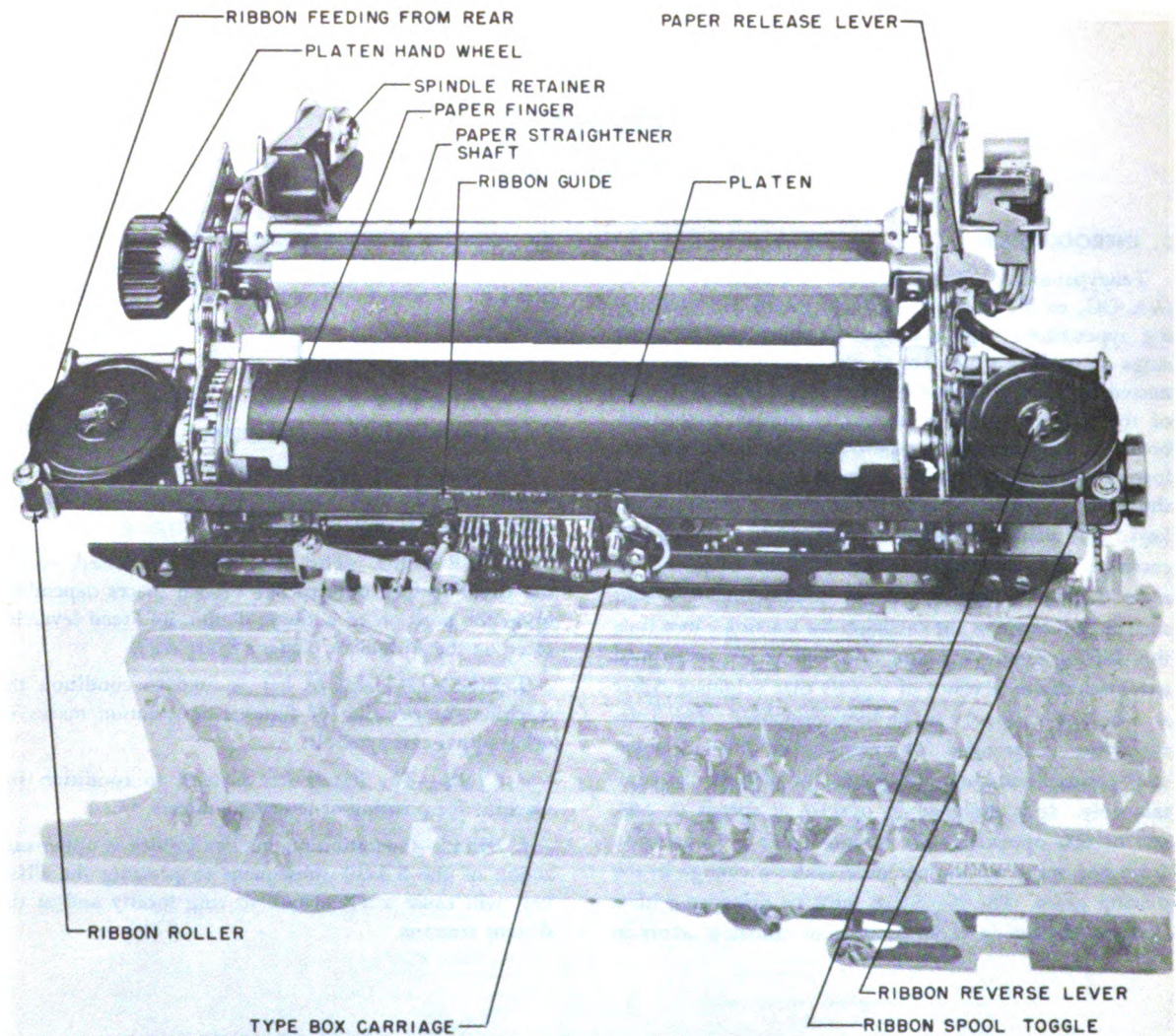


Figure 4-2. Automatic Typewriter MX-1115A/UG, Top View

g. BLANK.—Depressing this key twice, (effective in either upper or lower case) will lock all Keyboards in the circuit and render them inoperative by setting up the RECEIVE condition. Restoration to the SEND condition is accomplished, under individual circumstances, through the operation of a KEYBOARD UNLOCK (KBD UNLK) key by the operator who desires to send from his Keyboard.

b. BREAK.—This key is used to interrupt transmission from a distant station or to lock all Keyboards prior to initiating transmission.

i. REPEAT (REPT).—This key is used in conjunction with other keys or the space bar to accomplish repeat transmission while the two keys are held depressed.

3. OFF-LINE FUNCTIONS.

When it is desirable to apply certain functions to the local equipment only, the operator may utilize special keys, which are identified as follows:

a. LOCAL LINE FEED (LOC LF).—This key is used to feed the paper upward on the local machine only.

b. LOCAL CARRIAGE RETURN (LOC CR).—This key is used to return the carriages to the beginning of the line on the local machine only.

c. KEYBOARD LOCK (KBD LOCK).—Operation of this key conditions local equipment for receiving only by locking the Keyboard.

d. KEYBOARD UNLOCK (KBD UNLK).—This

key is used to condition the local Keyboard prior to starting transmission.

4. CHARACTERS PER LINE.

a. The margin indicator lamp located to the right of the copyholder is illuminated six characters before the end of the line. Care should be exercised not to over-type the last character. In case overtyping should occur, the Automatic Typewriter is arranged to carriage return and line feed automatically when it reaches an adjustable setting somewhere between the 66th and 73rd character.

b. The margin lamp illuminates on the 66th printed character (spaces included) for lines of 72 character length (standard communications practice).

CAUTION

The left and right margins of Teletypewriters are adjusted as directed in Section 7. The operator is not authorized to make these adjustments.

5. PAPER AND RIBBON.

(See figures 4-2, 4-4 and 4-5.)

a. To replenish the supply of paper, open the dome of the Cabinet, move the paper release lever (figure 4-2) on the Automatic Typewriter toward the rear, slide one of the spindle retainers toward the rear and remove the paper spindle. Insert the spindle in a fresh roll of paper and remount it so that the paper unwinds from underneath. Feed the paper over the paper straightener shaft and fold the end of the paper backward to square it off. With the paper release lever toward the rear, start the paper feeding around the platen and then restore the release lever to its forward position. Depress the platen handwheel and continue to feed the paper upward. Do not disturb the ribbon. Make certain that the paper passes under the paper fingers which may be raised temporarily to facilitate the operation. It may be necessary to operate the release lever momentarily when finally straightening the paper.

b. To replace the ribbon, open the hinged door in the dome, raise the ribbon spool toggles (figure 4-2) to the vertical position and remove both spools. Engage the hook that is on the end of the new ribbon in the hub of the empty spool. Wind a few turns of the ribbon onto the empty spool to make sure that the reversing eyelet has been wound upon the spool. Place the spools on the ribbon spool shafts in such a manner that the ribbon feeds from the rear of each spool without twisting. Turn each spool shaft slightly until the driving pins on the spool shafts engage the holes in the spools. Thread the ribbon forward around both ribbon rollers, through the slots in the ribbon reverse levers, and through the ribbon guide on the type box carriage. Make certain that the ribbon remains in the guide slots

and that both reversing eyelets are between the ribbon spools and the reverse levers. Eliminate any slack in the ribbon.

6. MULTIPLE COPIES.

The printing blow should not be heavier than that required to produce satisfactory copies. The printing spring adjusting bracket (figure 1-4) may be readily moved to any one of three notches. Use notch "1" for printing one to three copies with paper of usual weight, notch "2" for four or five copies, and notch "3" for six or more copies.

7. STARTING PROCEDURE.

Controls which are frequently used are external to the Cabinet while those infrequently used are located on the Power Distribution Panel (figure 4-3) within the Cabinet, and on the inside of the cabinet dome (figure 1-12). Make sure that the cables from the Power Distribution Panel are plugged into their respective receptacles on the Automatic Typewriter and Keyboard.

a. The LIGHT SWITCH (three position), when in the ON position, causes the copy light to be operated by the electrical motor control mechanism and/or the power switch (provided that the copy light switch in the cabinet dome is ON). In the MAINT ON position, the light is on for maintenance purposes irrespective of the power switch position. With the switch in the OFF position (center), the light remains extinguished.

b. The POWER SWITCH (figure 4-3), when thrown to the upper position, applies power to the Teletypewriter and likewise to a Rectifier when used.

Note

Where delay mechanism on the Keyboard base is used to stop the Motor on extended idling periods, the operator must press the BREAK key prior to transmission in order to restart the Motors.

8. SPEED SETTING.

Motor speed requires attention from the operator only when a governed Motor is used, in which case, a speed indicator (120 vps tuning fork) is used for checking the motor speed. The rotating spots on the governor target appear stationary when viewed through the shutters of the vibrating fork if the Motor is on speed. If the Motor is not on speed it may be adjusted as follows: Stop the Motor and remove the plug from the governor cover. Rotate the motor shaft until the opening in the target lines up with the opening in the governor cover. Turn the adjusting screw clockwise to increase the speed or counterclockwise to decrease the speed. The Motor may be considered on speed if not more than 12 spots pass a given point in ten seconds.

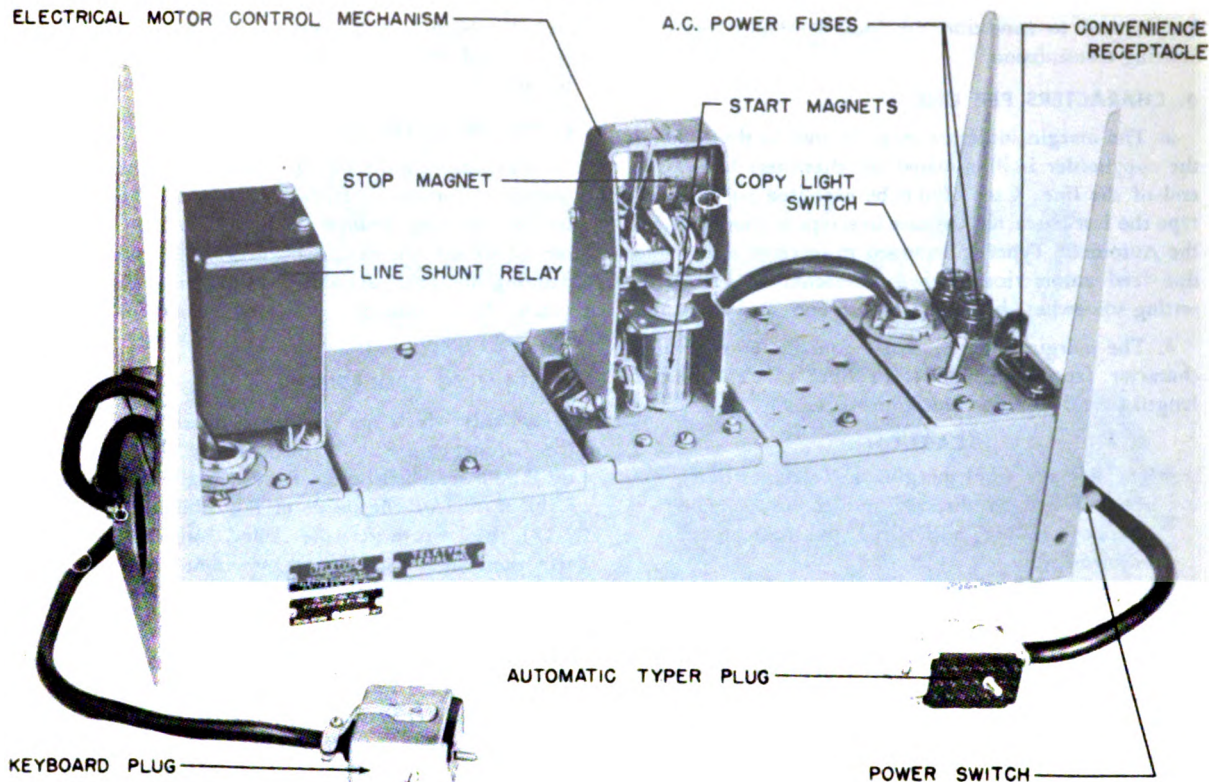


Figure 4-3. Power Distribution Panel SB-154A/UG

As an aid in bringing the Motor approximately on speed, hold the repeat key and a character key simultaneously operated. At 60-word speed, 60 characters should be typed in ten seconds; 100 characters for 100-word speed.

9. ORIENTATION RANGE.

a. In order to utilize the receiving margin of the selecting mechanism to the best advantage, the starting position of the selector cam-clutch must be located at the most favorable angle. This is accomplished by positioning the clutch stop arm (figure 7-41) by means of the range finder knob.

b. When available, a signal distortion test set should be used for orienting the range scale. Its final setting should be at the optimum position for bias in accordance with procedures outlined in the Teletype distortion distributor bulletin applying to the test set. See section 7, paragraph 4.i.

c. When a signal distortion test set is not available, the orientation range can be best determined while receiving the characters RY from the distant station. Rotate the range finder knob in one direction until errors appear in the typed copy and then retract it slowly until

the errors disappear. After noting this position, rotate the range finder knob in the opposite direction and determine the other limit in a similar manner. The final setting should be midway between the determined limits.

d. When it is not feasible to determine the range scale setting by either the use of distortion test set or signals received from a distant station, it will be necessary to utilize transmission from the local Keyboard. In so doing, strike the R and Y keys alternately and determine the overall orientation range. Nominal range is 72 points. The final setting should be midway between the determined limits. Where no distortion test set is available this overall orientation range is the only means for determining the efficiency of the selector with regard to its adjustments.

10. SUMMARY OF OPERATION.

a. Throw the POWER switch on the front of the Cabinet to the ON position (upward). Allow several seconds to elapse in order for the Motors to attain running speeds and for the Rectifier, if used, to deliver current.

b. Hold the BREAK key depressed for at least two seconds to insure starting of the Motors (when con-

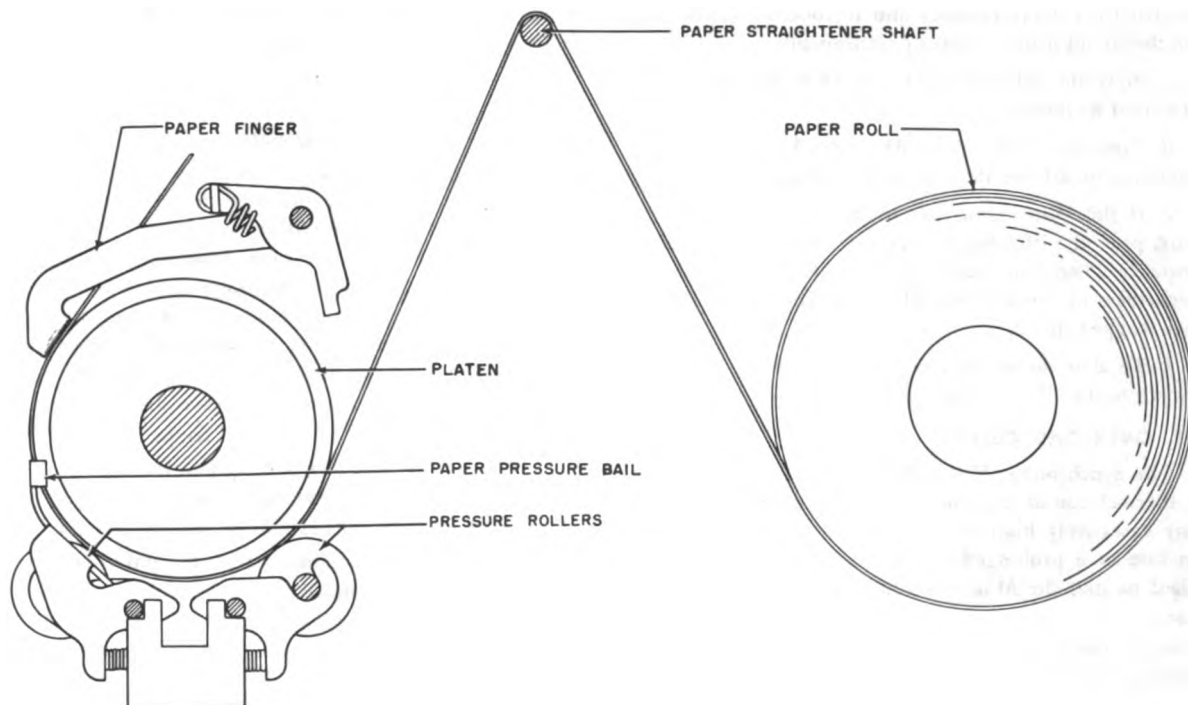


Figure 4-4. Path of Paper

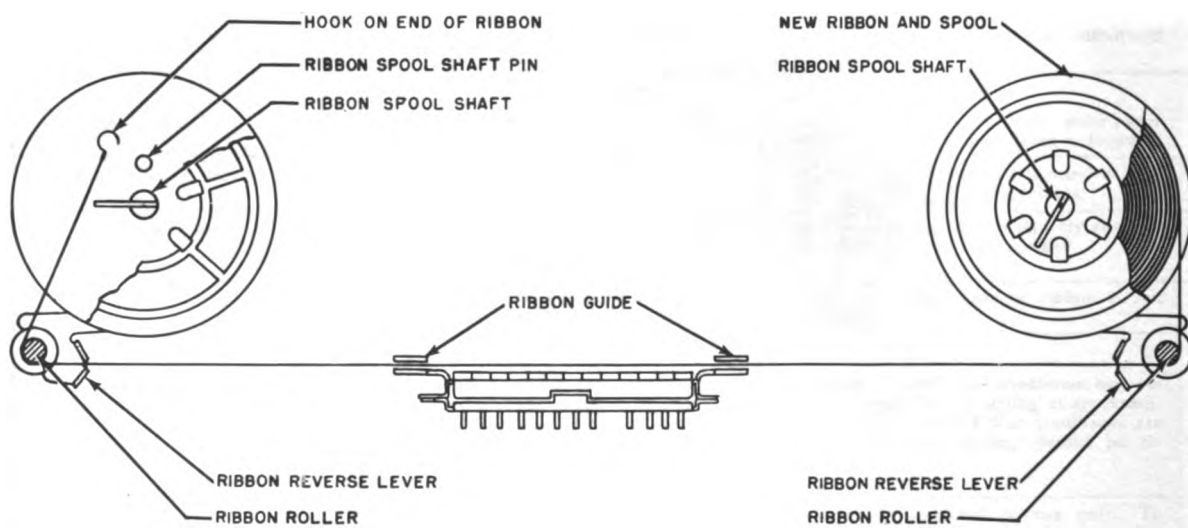


Figure 4-5. Path of Ribbon

trolled by a delay feature) and to lock the Keyboards on the circuit prior to starting transmission.

c. Press the KEYBOARD UNLOCK key to unlock the local Keyboard.

d. Press the CARRIAGE RETURN key to bring the carriages on all machines to the beginning of the line.

e. If the Motor is subject to stops by the delay feature, press the BREAK key prior to transmission in each instance where the circuit has been idle for one minute regardless of whether the Motor on the local machine has stopped or not.

f. To shut down the equipment throw the POWER switch to the OFF position (downward).

11. OVERLOAD CUTOUT.

The Synchronous Motor PD-17A/U is equipped with a thermal cutout element to protect the Motor against any excessively high temperature which might develop in case of a prolonged overload that would be insufficient to stall the Motor and blow the protecting fuses.

Once operated, this cutout device must be reset manually by pressing a reset button (figure 1-9) (to the rear of the Motor on the motor plate) before it can be restarted.

CAUTION

If the Motor stops and does not restart in response to regularly operated controls, check fuses F-1101 and F-1102 in the Power Distribution Panel. If the fuses have not blown, check the Motor for excessive temperature. Where excessive temperature is indicated, rotate the Motor by hand to determine whether any abnormal mechanical condition is present. If the load appears normal, leave the cabinet dome raised and permit the temperature to drop before resetting the cutout feature. If the Motor continues to cutout or if any abnormal load conditions cannot be readily corrected turn the equipment over to authorized maintenance personnel.

SECTION 5

OPERATOR'S MAINTENANCE

1. ROUTINE CHECKS.

During normal operation, the printed copy of the message should be observed from time to time for indications of failure in the communication system. Additional checks should be made as indicated in table 5-1.

2. EMERGENCY MAINTENANCE.

NOTICE TO OPERATORS

Operators shall not perform any of the following emergency procedures without proper authorization.

a. FUSE LOCATIONS AND SYMPTOMS OF FAILURE.—Two cartridge-type fuses are located in the Power Distribution Panel and are accessible when the cabinet dome is raised. The fuse designations, current ratings, and symptoms of failure are listed in table 5-2. Fuse locations appear in table 5-3.

WARNING

Never replace a fuse with one of higher rating unless continued operation of the equipment is more important than probable damage. If a fuse burns out immediately after replacement, do not replace it a second time until the cause has been corrected.

b. REPLACEMENT OF LAMPS.—The end-of-line indicator lamp and the two lamps in the copy light assembly, all of which are mounted in the front of the cabinet dome, have the conventional miniature bayonet type base. All are accessible when the dome is raised.

TABLE 5-1. ROUTINE CHECK CHART

WHAT TO CHECK	HOW TO CHECK	REMARKS
	Each Watch	
1. General operation	Apply operating tests as detailed in section 3, paragraph 7.	If irregularities occur notify authorized maintenance personnel.
	Daily Routines	
2. Paper supply	Replace roll if only a few turns remain on the spindle.	Be sure that paper is straight under paper fingers, and that release lever is forward.
3. Condition of ribbon	Change if copy is too light.	Be sure that ribbon is in guides on type box and ribbon reversing levers.
4. Condition of type	If smudging is evident, remove the type box and clean the type by means of a stiff brush.	Be sure that type box is securely attached and that ribbon is not disturbed.
5. Condition of cover glass	Clean if required by means of soft cloth.	Make sure that paper or ribbon is not disturbed.
	Quarterly Routines	
6. Orientation range	Note should be made of the pointer setting on the range scale so that if it is disturbed for any reason it can be repositioned conveniently. If a further check is necessary see section 4, paragraph 9.	Abnormal signal line conditions may require changes in the setting as an expediency. When normal line conditions are restored, normal setting should be re-established.
7. Motor speed	Check with speed indicator (120 vps tuning fork). Motor may be considered on-speed if not more than 12 target spots pass a given point in ten seconds.	Applies to governed motors only. To adjust, turn the governor adjusting screw (fig. 1-10) in the direction indicated by the stamping on the governor cover.

TABLE 5-2. SYMPTOMS OF FUSE FAILURE

MOTOR	MAINTENANCE LIGHT	CONVENIENCE RECEPTACLE	BLOWN FUSE	VALUE (AMPS.)	COMMENTS
OFF	OUT	Dead	F-1101	10	In Power Distribution Panel
OFF	OUT	Dead	F-1102	10	In Power Distribution Panel

TABLE 5-3. FUSE LOCATIONS

SYMBOL	LOCATION	PROTECTS	AMPS.	VOLTS	NUMBER
F-1101	Power Distribution Panel	AC Supply	10	250	ABC-10
F-1102	Power Distribution Panel	AC Supply	10	250	ABC-10

SECTION 6

PREVENTIVE MAINTENANCE

1. GENERAL.

a. Preventive maintenance is applied for the purpose of detecting and correcting troubles before they develop to the point of interference with the satisfactory operation of the equipment. Use care to prevent the introduction of trouble when work on the equipment is necessary. Do not disturb the adjustments unnecessarily.

b. A thorough visual examination of the equipment during periodic checks may uncover conditions that could possibly cause trouble later. The appearance of oxidized (red) metal dust adjacent to any bearing surface may indicate insufficient lubrication. The adjustable clearances of working parts should also be observed. A visual examination should be accompanied by a manual one. Connections at terminal board should be tested for tightness. Nuts and screws that lock adjustable features should be carefully observed for looseness and tightened if necessary. While cleaning the units, care should be exercised to avoid damage or distortion to delicate springs that might weaken their tension.

Note

The attention of maintenance personnel is invited to the requirements of Chapter 67 of

the Bureau of Ships Manual, of the latest issue.

2. ROUTINE MAINTENANCE CHECK CHARTS.

Routine maintenance checks of the Teletypewriters shall be performed as directed in table 6-1.

3. LUBRICATION.

Lubricate the Teletypewriter as directed in figures 6-1 through 6-17, inclusive. These figures indicate the lubrication interval, the points to be lubricated, and the type and quantity of lubricant to be used. At 60-word speed, lubricate the Teletypewriter every four months. At 75-word speed, lubricate every three months. At 100-word speed, lubricate every two months. For normal or high temperatures—5° to 55° C. (41° to 131° F.) use Teletype KS-7470 oil at all locations where the use of oil is indicated. For lower temperatures dilute the KS-7470 oil with kerosene (half and half). Use type MIL-G-3278 grease on all surfaces where grease is indicated except the motor bearings. Apply two drops of KS-7470 oil to motor bearings every four months (depress oiler with metal object). If the motor is disassembled at any time, repack the bearings with MIL-G-3278 grease.

TABLE 6-1. ROUTINE MAINTENANCE CHECK CHART

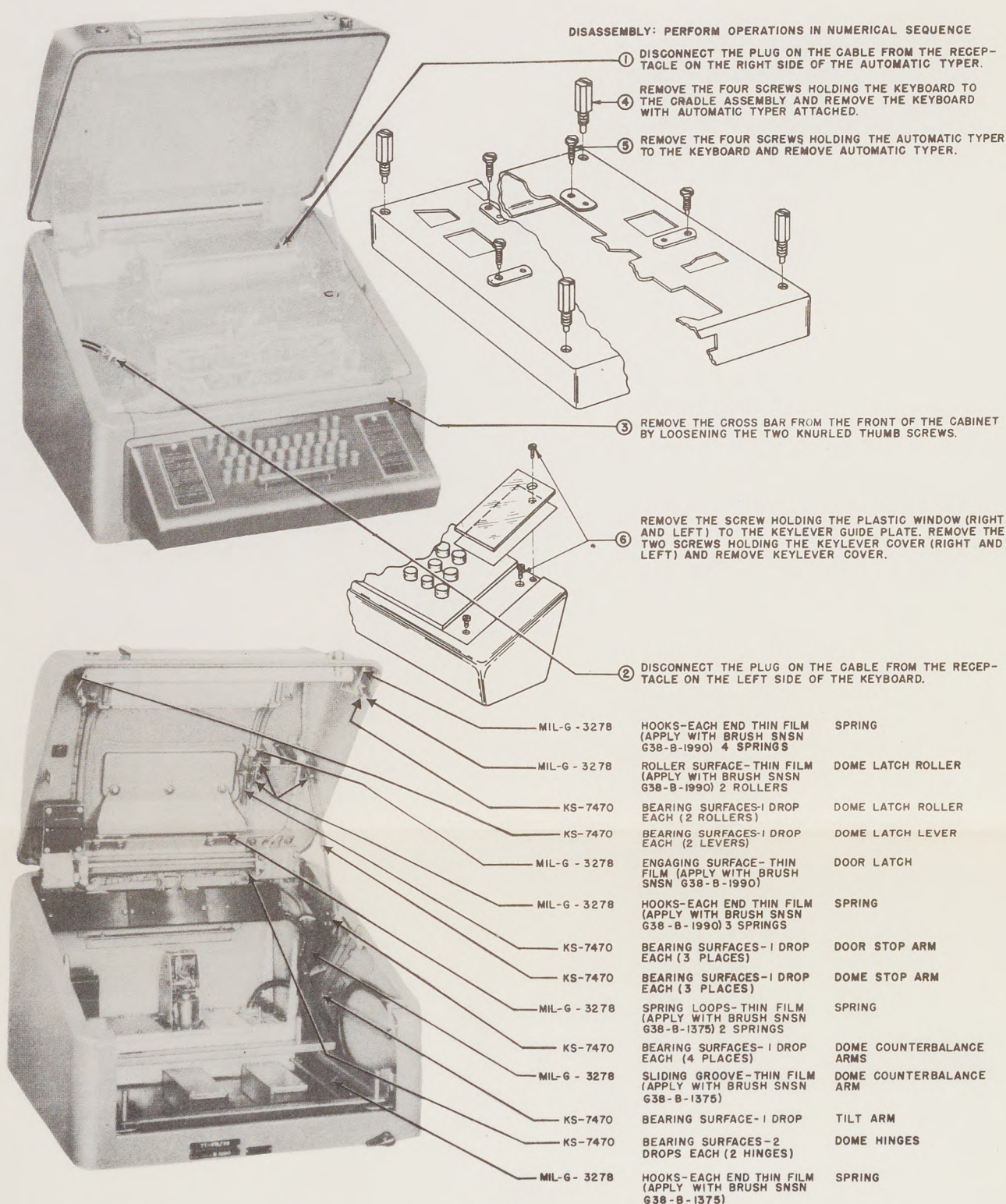
WHAT TO CHECK	HOW TO CHECK	PRECAUTIONS
	<i>Quarterly Routines</i>	
1. Accumulation of dust and dirt.	Check for dust from paper beneath its path through typer and for dust and dirt on other parts of the equipment. Clean by wiping with a soft lint-free cloth. Cleaning with an air hose should be avoided.	Be sure that springs are not disengaged or other parts disturbed in cleaning. Avoid getting dust or dirt into bearings or other moving parts.
2. Selector response.	If the selector responds to distorted signals in the manner specified in section 7, paragraph 4.i. no maintenance is required. See section 4, paragraph 9. If the requirements are not met the following routine should be observed: a. Clean the magnet pole faces by running a clean piece of paper between them and the armature. b. Examine selector parts for wear and replace if worn. c. Check adjustment of selector mechanism. See figures 7-31, 7-32, 7-33. d. Check selector mechanism springs and replace if necessary.	
3. Adjustments.	Most adjustments will remain within specification limits for the life of the equipment and, therefore, do not require checking unless trouble occurs. The following adjustments should be checked and remade if necessary. a. Dashpot, figure 7-67. b. Carriage wire rope, figure 7-63. c. Signal generator contact, figure 7-10. d. All clutches, figures 7-48, 7-49.	Exercise extreme precaution to guard against overtightening screws which might result in stripping.
4. Motor brushes.	Remove and replace if length is less than $\frac{3}{8}$ inch. Wipe and blow off the accumulation of carbon dust.	Relationship of brush to armature should be maintained (governed motors only).
5. Governor brushes.	Examine length and replace if less than $\frac{3}{8}$ inch remains. Wipe and blow off accumulation of carbon dust.	Be sure brush springs are in place (governed motors only).
6. Governor contacts.	Replace if badly burned.	Be sure that contacts are properly aligned.
7. Governor speed.	See section 4, paragraph 8.	Applies to governed motor only. Motor may be considered on-speed if not more than 12 target spots pass a given point in ten seconds.
8. Lubrication.	For disassembly prior to lubrication, see instructions in figure 6-1. Remove the typer from the keyboard. Examine all of its mechanism for signs of lubrication failure usually evidenced by the presence of red powdery substance at point of failure. If failure is observed, parts should be examined and if damaged they should be replaced. Lubricate the equipment in accordance with paragraph 3 of this section and wipe off excessive lubricant with a clean cloth.	Be sure that springs are not disengaged and that other parts are not disturbed during examination and lubrication.

ORIGINAL

CABINETS CY-870/UG & CY-871/UG

PREVENTIVE
MAINTENANCENAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

**CAUTION:** Wipe off excessive lubricant. Do not distort or disturb springs.

Notes:

1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

*FORMERLY ANG-25

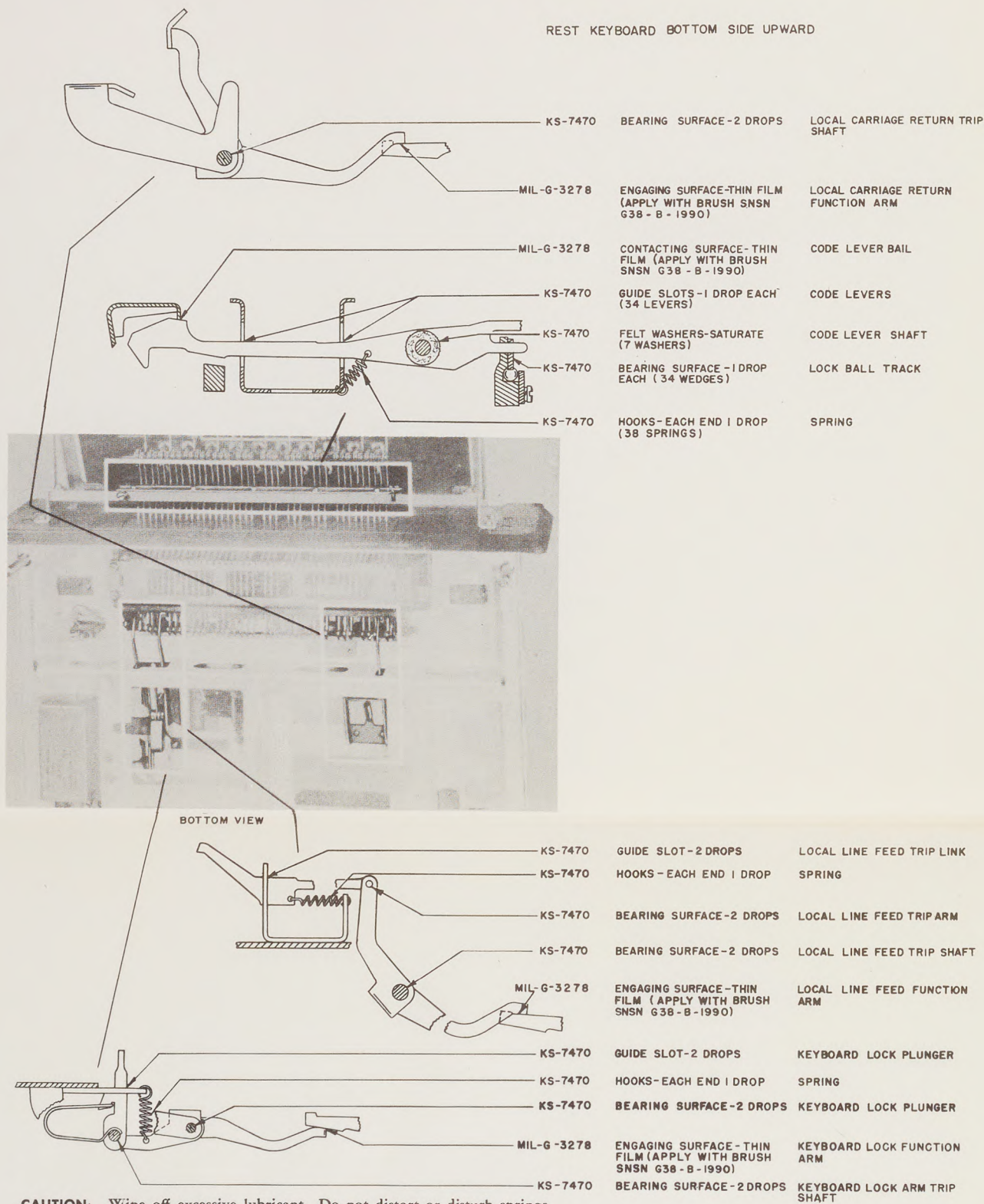
Figure 6-1. Lubrication Data
Cabinets CY-870/UG and CY-871/UG

6-3, 6-4

ORIGINAL

KEYBOARD MX-1114A/UG

REST KEYBOARD BOTTOM SIDE UPWARD

**CAUTION:** Wipe off excessive lubricant. Do not distort or disturb springs.

Notes: 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

*FORMERLY ANG-25

Figure 6-2. Lubrication Data
Keyboard MX-1114A/UG

6-5, 6-6

PREVENTIVE
MAINTENANCENAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

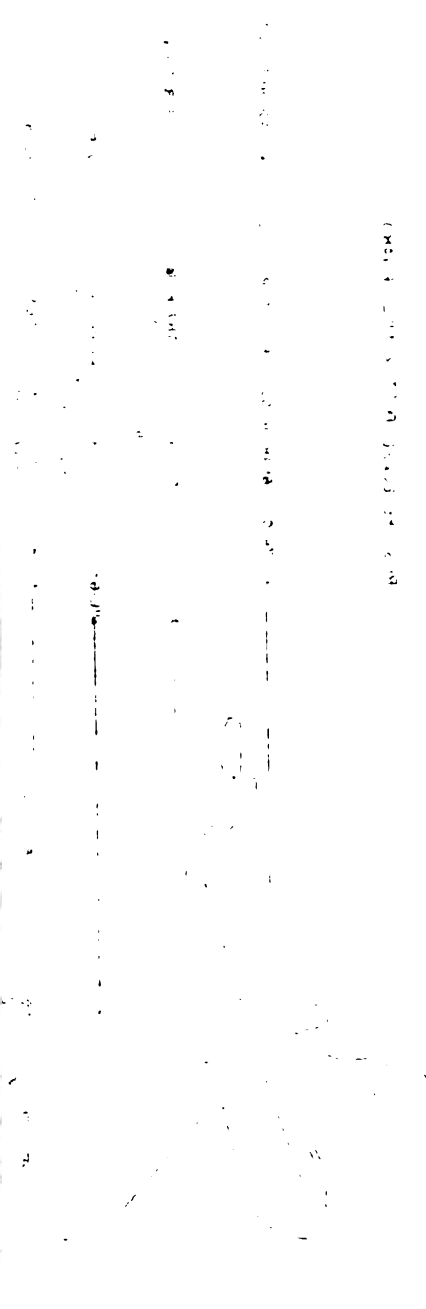
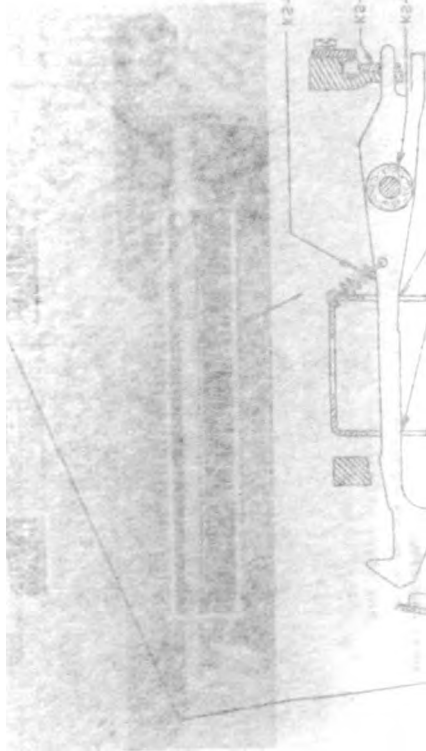


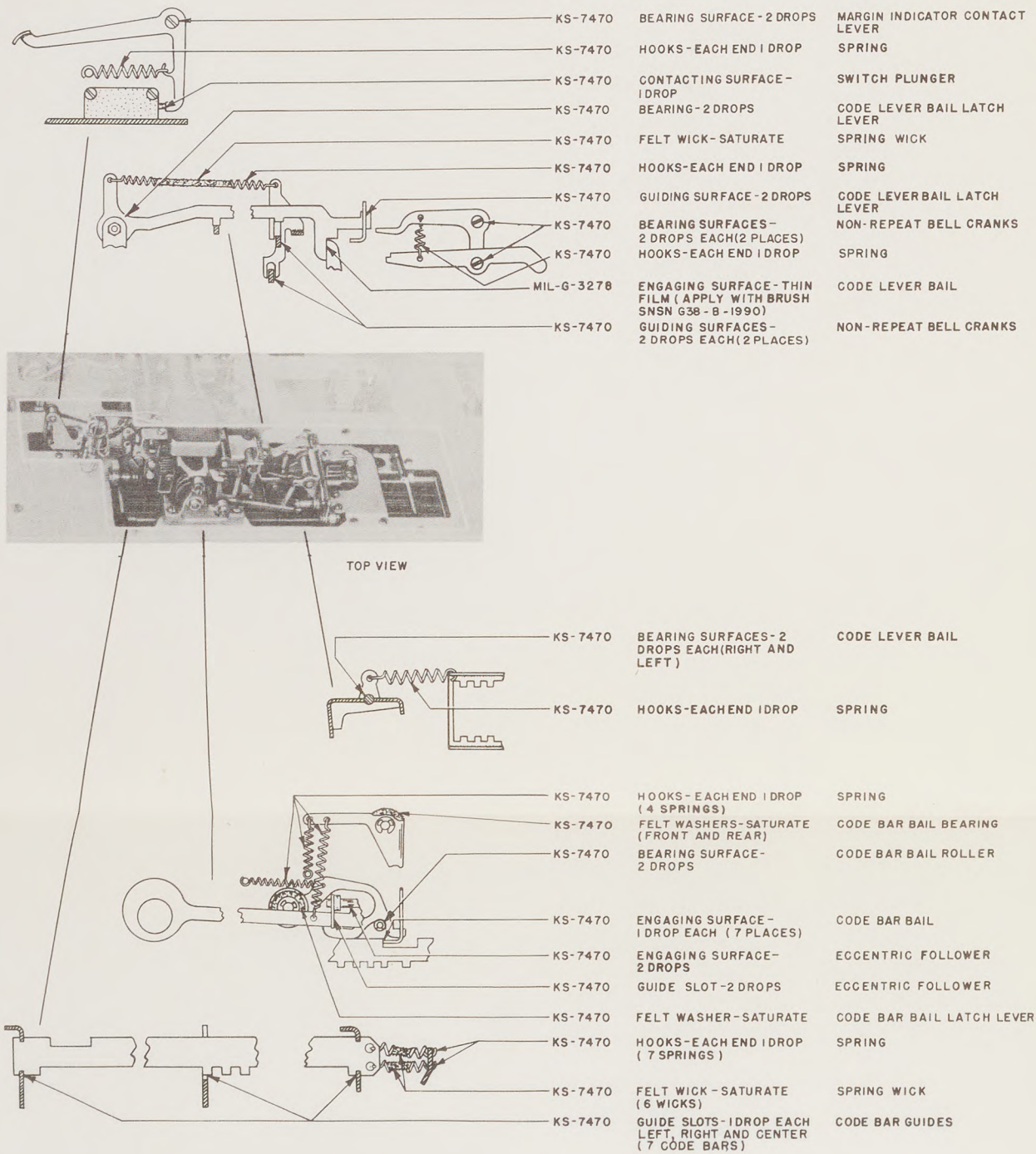
Diagram of the K2-1410 and K2-1411 components.

ORIGINAL

KEYBOARD MX-1114A/UG

PREVENTIVE
MAINTENANCE

REST KEYBOARD IN UPRIGHT POSITION

**CAUTION:** Wipe off excessive lubricant. Do not distort or disturb springs.

- Notes:**
- Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 - Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

* FORMERLY ANG-23

Figure 6-3. Lubrication Data
Keyboard MX-1114A/UG

6-7, 6-8

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

SECRET
CONFIDENTIAL

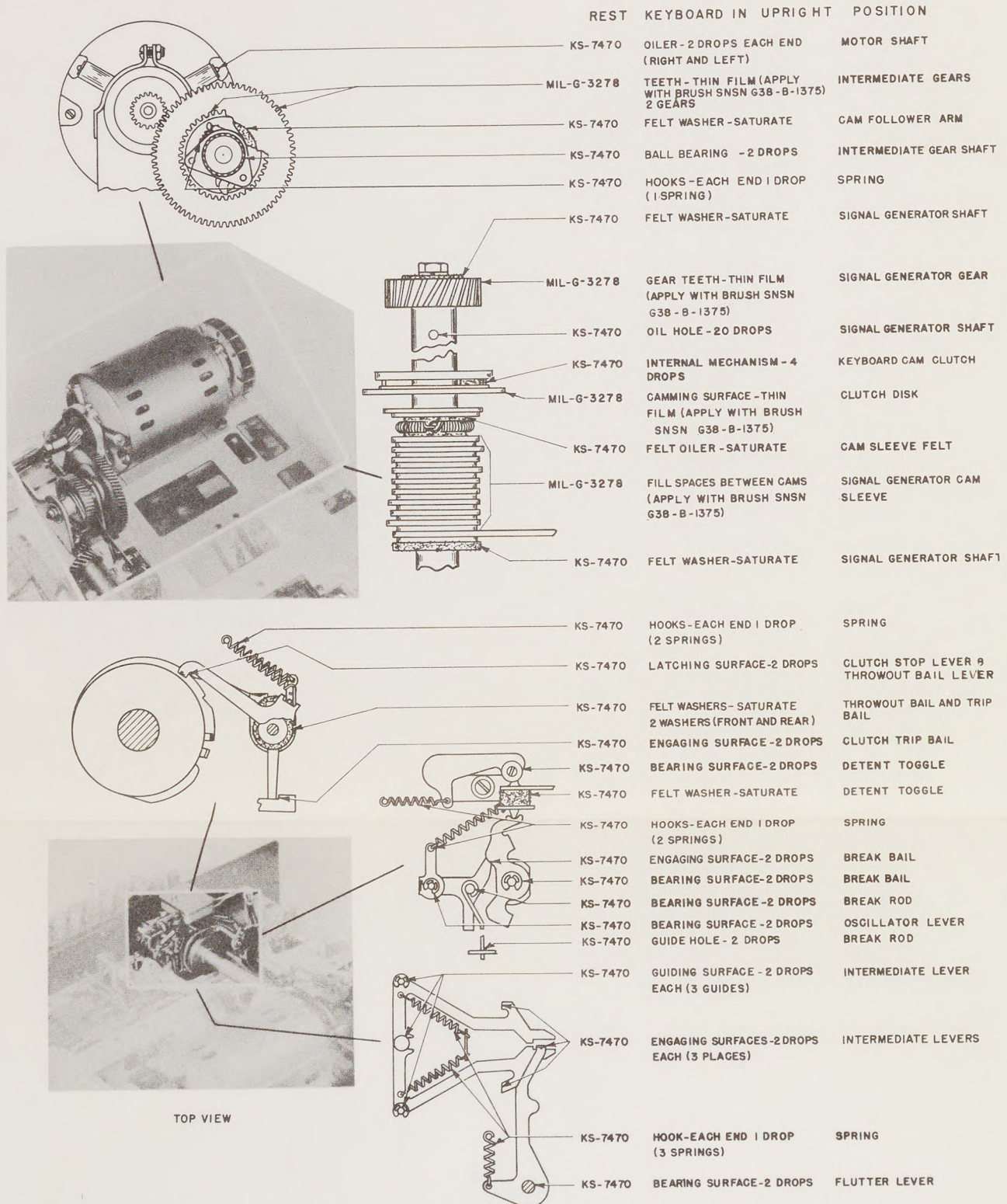
RECEIVED 1 APR 1968

21 187

TO: DIRECTOR, CENTRAL INTELLIGENCE AGENCY
FROM: DIRECTOR, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
SUBJECT: [Illegible]
[The following text is extremely faint and largely illegible due to poor scan quality. It appears to be a memorandum or report containing technical details and administrative information.]

ORIGINAL

KEYBOARD MX-1114A/UG

PREVENTIVE
MAINTENANCE**CAUTION:** Wipe off excessive lubricant. Do not distort or disturb springs.

Notes: 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

*FORMERLY ANG-25

Figure 6-4. Lubrication Data
Keyboard MX-1114A/UG

6-9, 6-10

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

RECEIVED
MAY 19 1964

RECEIVED
MAY 19 1964

UNITED STATES SUPPLY SYSTEM

UNITED STATES SUPPLY SYSTEM

UNITED STATES SUPPLY SYSTEM

UNITED STATES SUPPLY SYSTEM

UNITED STATES SUPPLY SYSTEM

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UNITED STATES SUPPLY SYSTEM

ORIGINAL

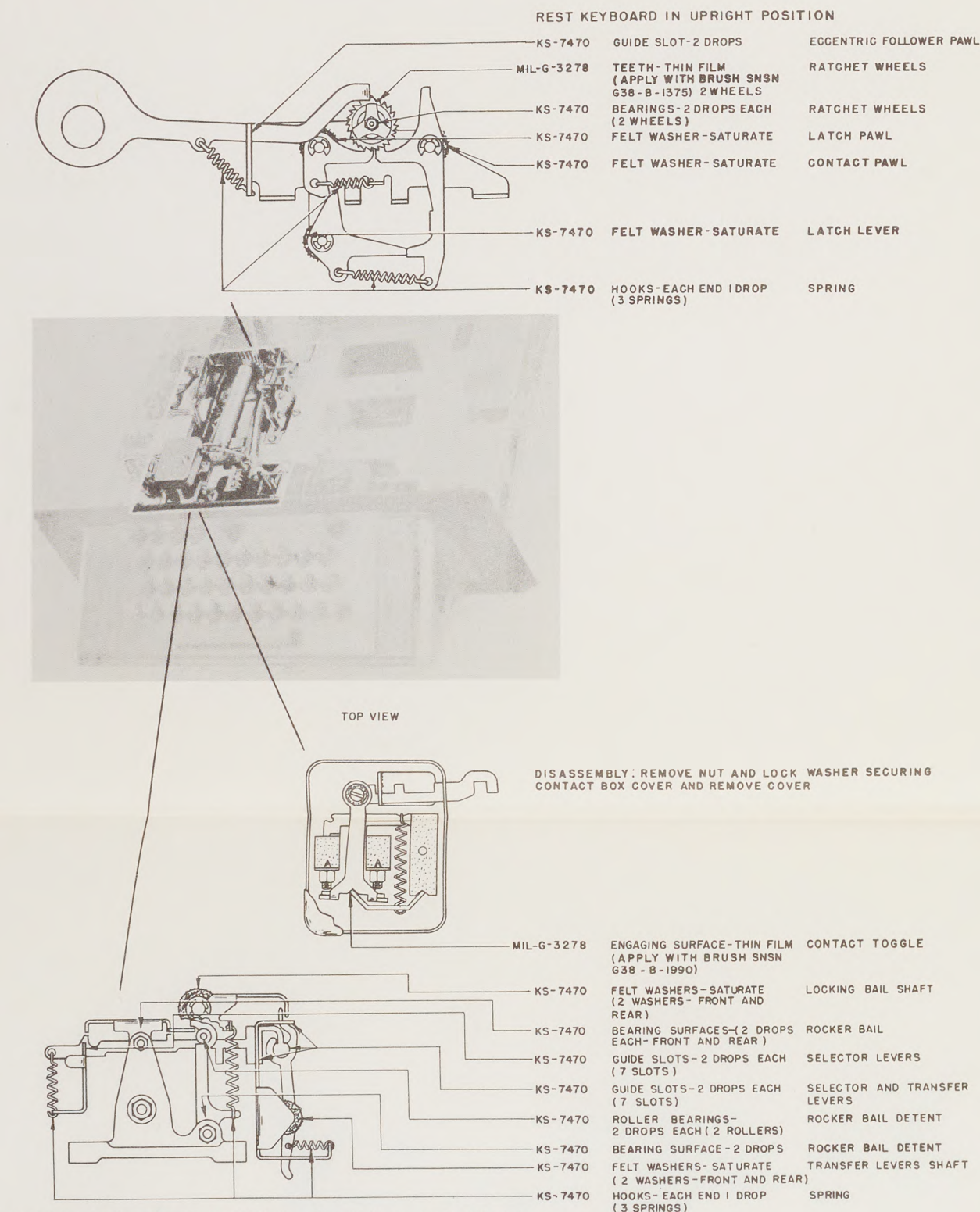
KEYBOARD MX-1114A/UG

PREVENTIVE
MAINTENANCE

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6



CAUTION: Wipe off excessive lubricant. Do not distort or disturb springs.

- Notes:**
- Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 - Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

* FORMERLY ANG-25

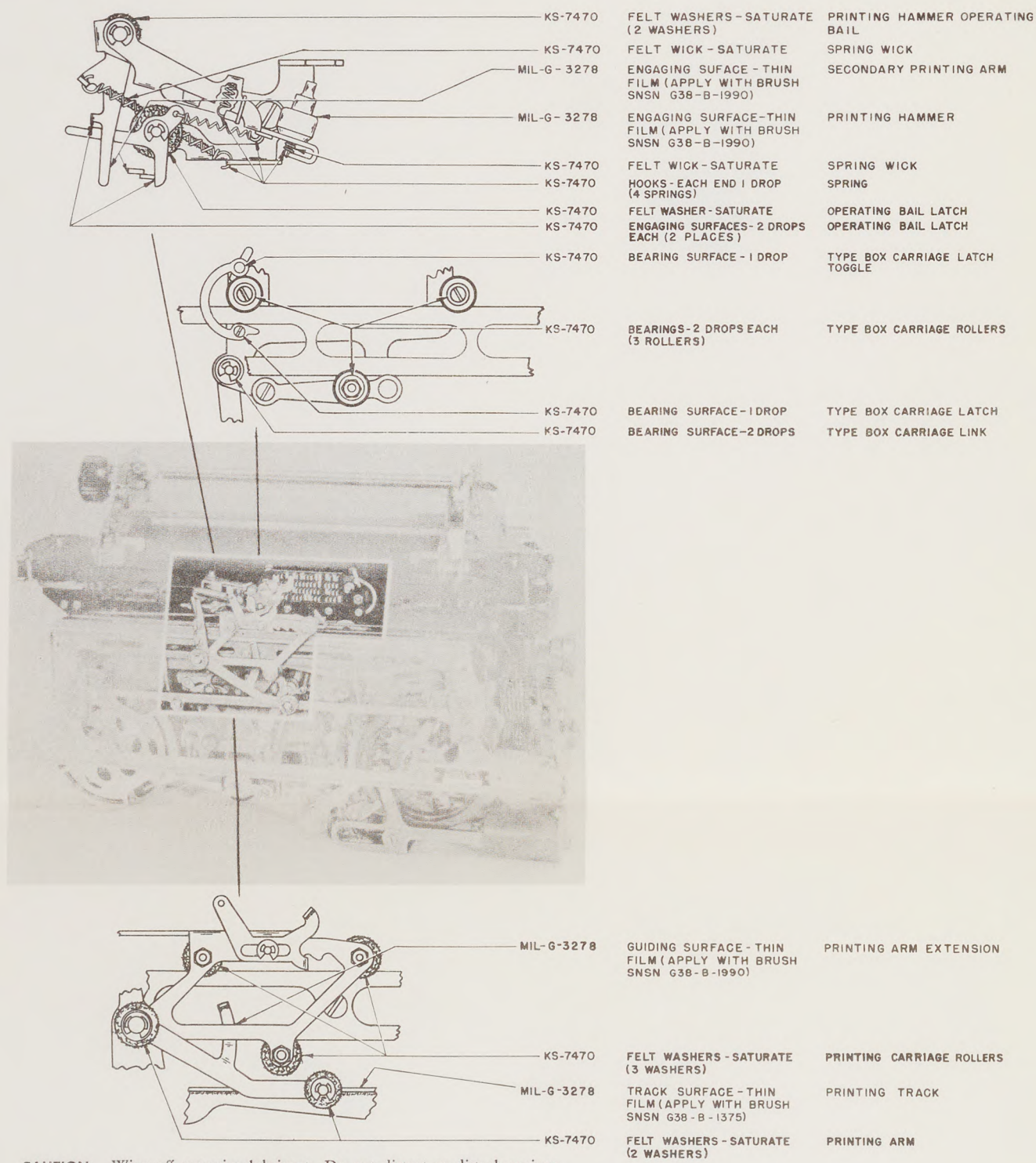
Figure 6-5. Lubrication Data
Keyboard MX-1114A/UG

6-11, 6-12

ORIGINAL

AUTOMATIC TYPER MX-1115A/UG

AUTOMATIC TYPER IN UPRIGHT POSITION



CAUTION: Wipe off excessive lubricant. Do not distort or disturb springs.

- Notes:** 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

*FORMERLY ANG-25

Figure 6-6. Lubrication Data
Automatic Typer MX-1115A/UG

6-13, 6-14

PREVENTIVE
MAINTENANCENAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

ORIGINAL

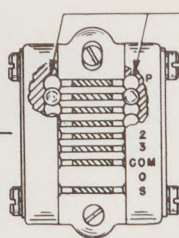
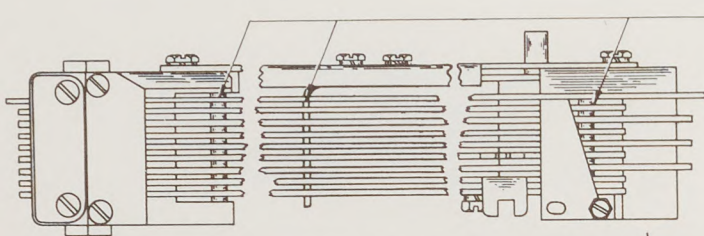
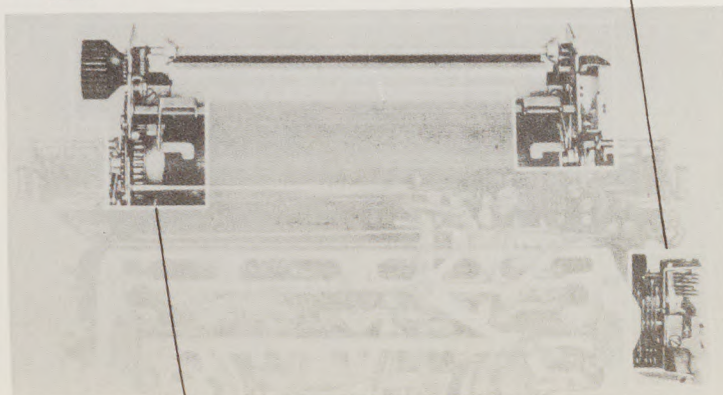
AUTOMATIC TYPER MX-1115A/UG

PREVENTIVE
MAINTENANCE

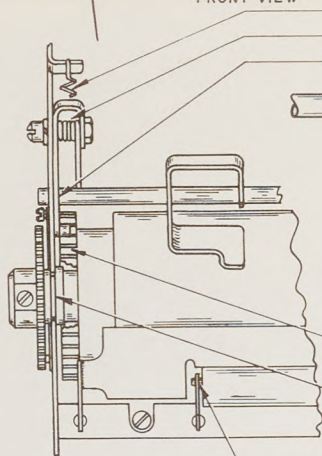
REST AUTOMATIC TYPER IN UPRIGHT POSITION



LEFT SIDE VIEW

KS-7470 BEARING BALLS - 2 DROPS
EACH (9 BALLS) CODE BAR DETENTKS-7470 GUIDE SLOTS - 2 DROPS
EACH (RIGHT, CENTER, AND
LEFT) 9 BARS CODE BARS

FRONT VIEW



KS-7470 HOOKS - EACH END 1 DROP SPRING
 KS-7470 BEARING SURFACE - 2 DROPS PLATEN DETENT BAIL
 KS-7470 BEARING SURFACE - 2 DROPS (EACH END) PAPER FINGER SHAFT
 KS-7470 BEARING SURFACE - 2 DROPS (EACH END) PAPER STRAIGHTENER SHAFT
 KS-7470 BEARING SURFACES - 2 DROPS EACH (RIGHT AND LEFT) PAPER STRAIGHTENER LEVERS
 KS-7470 HOOKS - EACH END 1 DROP SPRING
 KS-7470 BEARING SURFACE - 2 DROPS RELEASE LEVER
 KS-7470 BEARING SURFACES - 2 DROPS (EACH END) RELEASE LEVER LINK
 MIL-G-3278 TEETH - THIN FILM (APPLY WITH BRUSH SNSN G38-B-1990) PLATEN GEAR
 KS-7470 BEARINGS - 2 DROPS (EACH END) PLATEN SHAFT
 KS-7470 BEARING SURFACE - 1 DROP EACH END (6 ROLLERS) PAPER PRESSURE ROLLER SHAFTS (WIPE OFF EXCESS OIL)

CAUTION: Wipe off excessive lubricant. Do not distort or disturb springs.

Notes: 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.).
 For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

* FORMERLY ANG-25

Figure 6-7. Lubrication Data
Automatic Typewriter MX-1115A/UG

TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

NAVSHIPS 91713

Section 6

6-15, 6-16

ORIGINAL

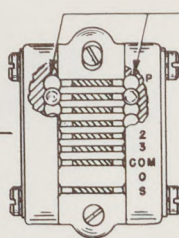
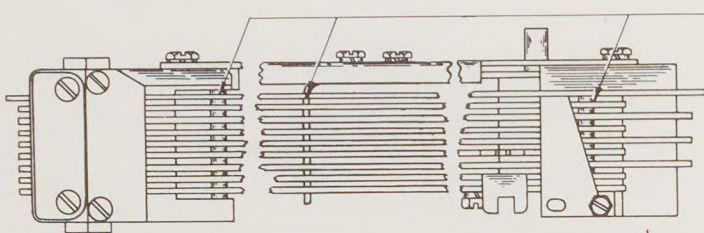
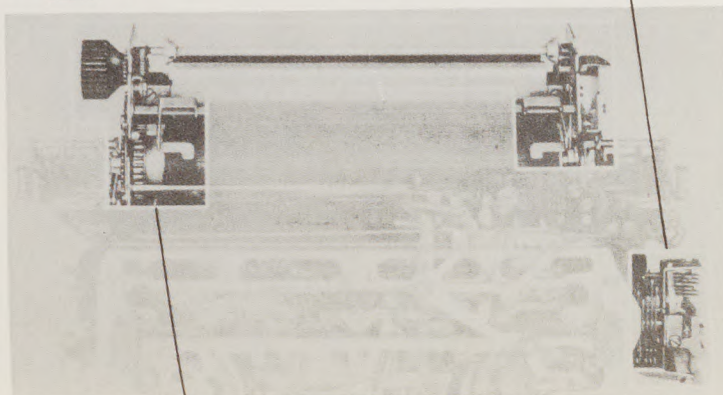
AUTOMATIC TYPER MX-1115A/UG

PREVENTIVE
MAINTENANCE

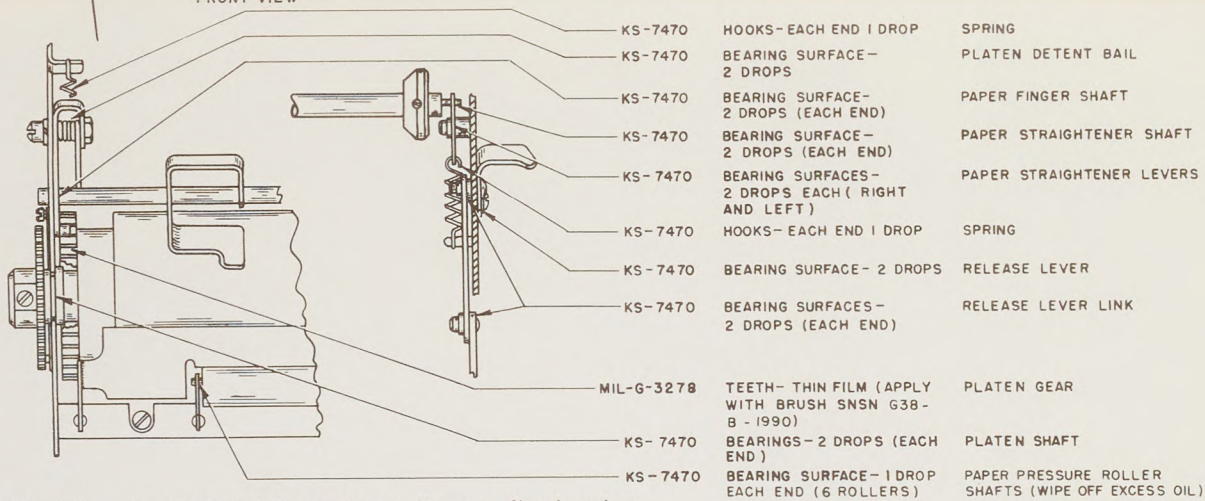
REST AUTOMATIC TYPER IN UPRIGHT POSITION



LEFT SIDE VIEW

KS-7470 BEARING BALLS - 2 DROPS
EACH (9 BALLS) CODE BAR DETENTKS-7470 GUIDE SLOTS - 2 DROPS
EACH (RIGHT, CENTER, AND
LEFT) 9 BARS CODE BARS

FRONT VIEW



KS-7470 HOOKS - EACH END 1 DROP SPRING
 KS-7470 BEARING SURFACE - 2 DROPS PLATEN DETENT BAIL
 KS-7470 BEARING SURFACE - 2 DROPS (EACH END) PAPER FINGER SHAFT
 KS-7470 BEARING SURFACE - 2 DROPS (EACH END) PAPER STRAIGHTENER SHAFT
 KS-7470 BEARING SURFACES - 2 DROPS EACH (RIGHT AND LEFT) PAPER STRAIGHTENER LEVERS
 KS-7470 HOOKS - EACH END 1 DROP SPRING
 KS-7470 BEARING SURFACE - 2 DROPS RELEASE LEVER
 KS-7470 BEARING SURFACES - 2 DROPS (EACH END) RELEASE LEVER LINK
 MIL-G-3278 TEETH - THIN FILM (APPLY WITH BRUSH SNSN G38-B-1990) PLATEN GEAR
 KS-7470 BEARINGS - 2 DROPS (EACH END) PLATEN SHAFT
 KS-7470 BEARING SURFACE - 1 DROP EACH END (6 ROLLERS) PAPER PRESSURE ROLLER SHAFTS (WIPE OFF EXCESS OIL)

CAUTION: Wipe off excessive lubricant. Do not distort or disturb springs.

Notes: 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.).
 For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

* FORMERLY ANG-25

Figure 6-7. Lubrication Data
Automatic Typewriter MX-1115A/UG

TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

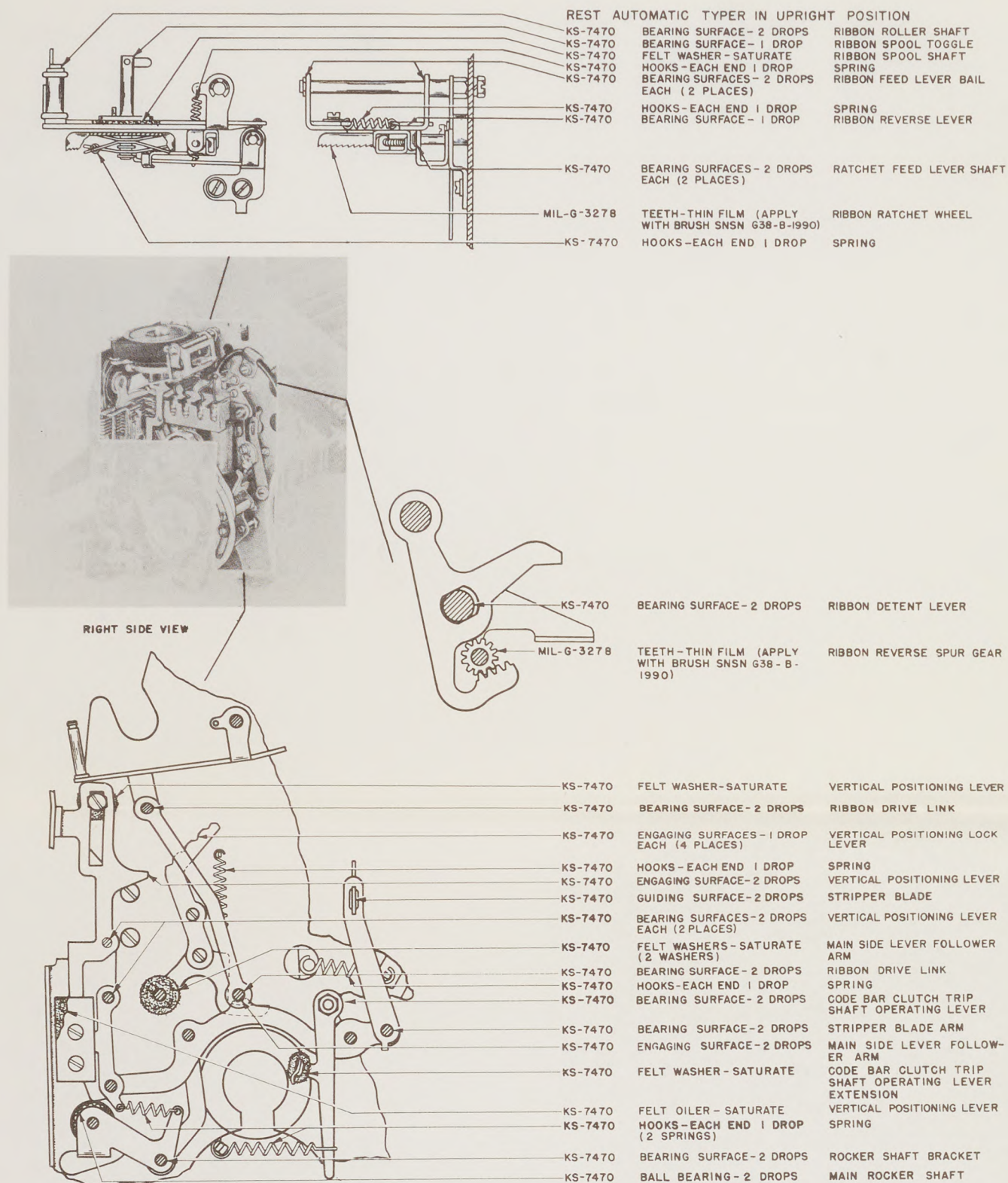
NAVSHIPS 91713

Section 6

6-15, 6-16

ORIGINAL

AUTOMATIC TYPER MX-1115A/UG

PREVENTIVE
MAINTENANCE

CAUTION: Wipe off excessive lubricant. Do not distort or disturb springs.

- Notes: 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.).
 For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 C.T.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

*FORMERLY ANG-25

Figure 6-8. Lubrication Data
Automatic Typewriter MX-1115A/UG

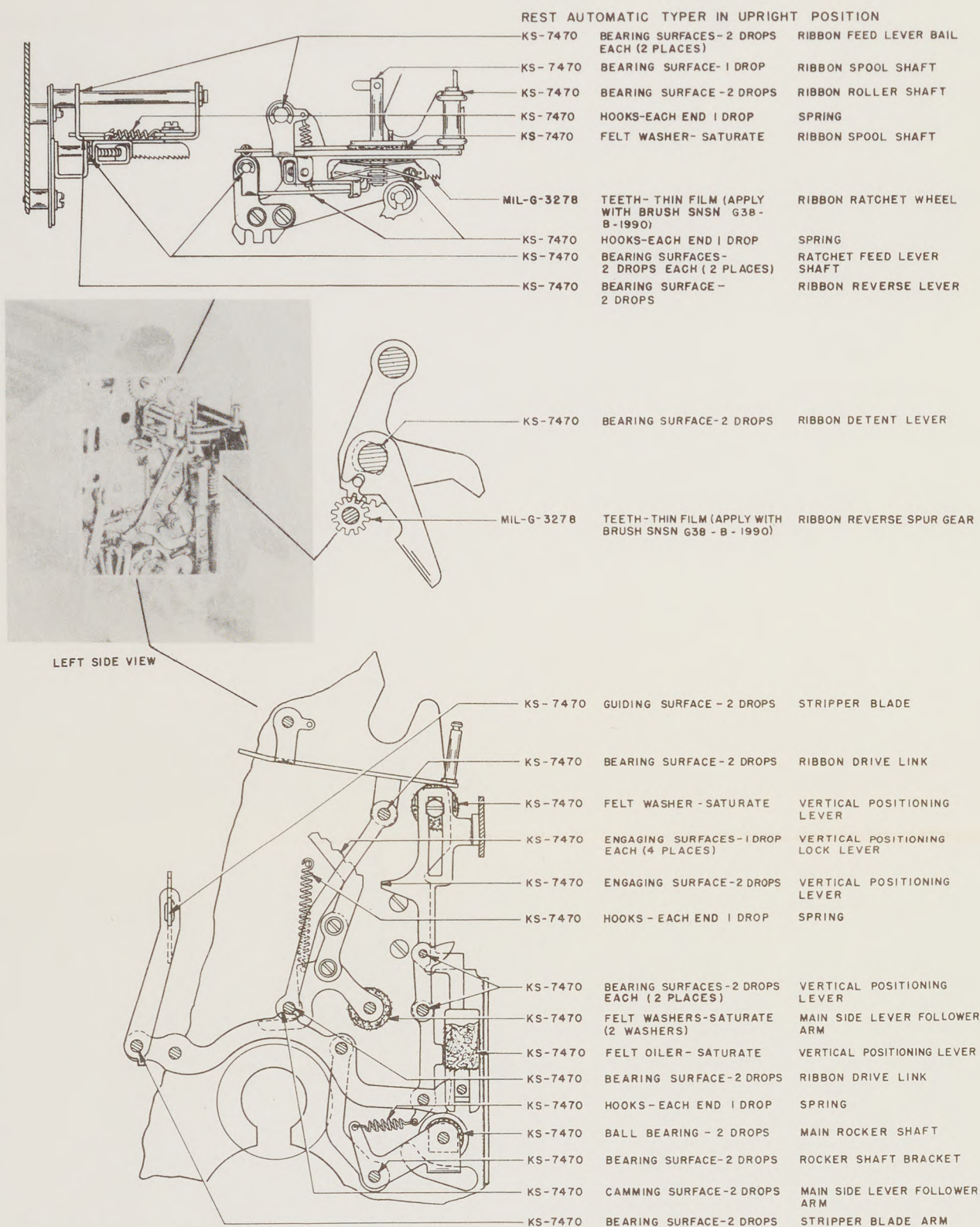
6-17, 6-18

TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG
NAVSHIPS 91713TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG
NAVSHIPS 91713

Section 6

ORIGINAL

AUTOMATIC TYPER MX-1115A/UG



CAUTION: Wipe off excessive lubricant. Do not distort or disturb springs.

Notes: 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

*FORMERLY ANG-25

Figure 6-9. Lubrication Data
Automatic Typer MX-1115A/UG

PREVENTIVE
MAINTENANCE

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

1. The first part of the paper discusses the importance of the study of the history of the United States. It is argued that a knowledge of the past is essential for a full understanding of the present. The author points out that the United States has a long and rich history, and that it is important to study this history in order to understand the country's development and the challenges it faces.

2. The second part of the paper discusses the role of the federal government in the United States. It is argued that the federal government has a responsibility to protect the rights of its citizens and to promote the general welfare. The author points out that the federal government has a long history of intervention in the lives of its citizens, and that it is important to understand the reasons for this intervention.

3. The third part of the paper discusses the role of the states in the United States. It is argued that the states have a responsibility to protect the rights of their citizens and to promote the general welfare. The author points out that the states have a long history of intervention in the lives of their citizens, and that it is important to understand the reasons for this intervention.

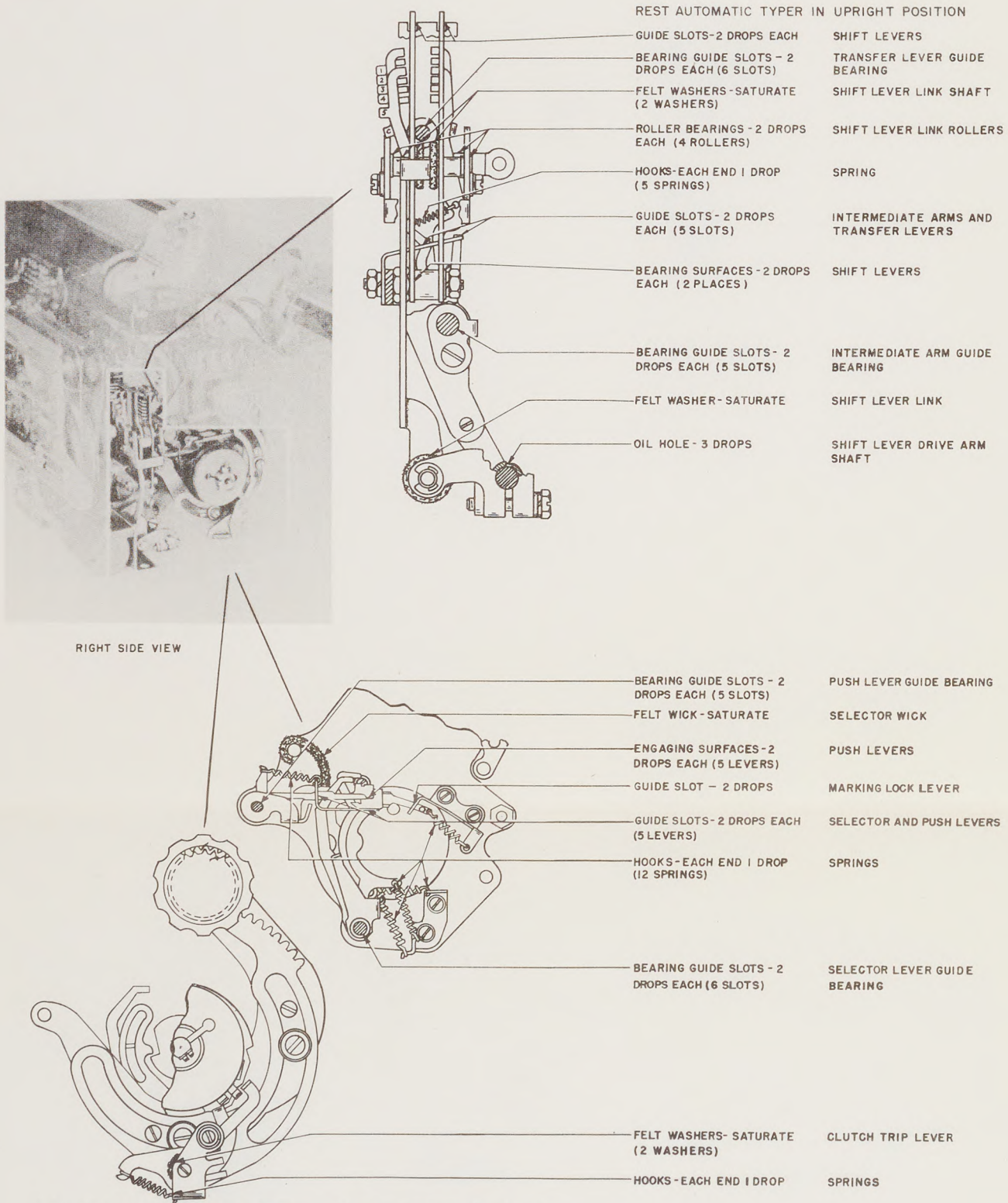
4. The fourth part of the paper discusses the role of the courts in the United States. It is argued that the courts have a responsibility to protect the rights of its citizens and to promote the general welfare. The author points out that the courts have a long history of intervention in the lives of its citizens, and that it is important to understand the reasons for this intervention.

5. The fifth part of the paper discusses the role of the people in the United States. It is argued that the people have a responsibility to protect the rights of their citizens and to promote the general welfare. The author points out that the people have a long history of intervention in the lives of their citizens, and that it is important to understand the reasons for this intervention.

ORIGINAL

AUTOMATIC TYPER MX-1115A/UG

PREVENTIVE
MAINTENANCE



CAUTION: Wipe off excessive lubricant. Do not distort or disturb springs.

- Notes:**
- Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 - All lubricant is type KS-7470. Use as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 oil with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

*FORMERLY ANG-25

Figure 6-10. Lubrication Data Automatic Typewriter MX-1115A/UG

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

2000

1. The first part of the paper discusses the importance of the study of the history of the United States. It is argued that the study of the history of the United States is essential for a full understanding of the country and its people. The paper then goes on to discuss the various factors that have shaped the history of the United States, including the role of the government, the economy, and the culture.

2. The second part of the paper discusses the role of the government in the history of the United States. It is argued that the government has played a central role in the development of the country, and that its actions have shaped the course of history. The paper then goes on to discuss the various ways in which the government has influenced the history of the United States, including through its policies, its actions, and its decisions.

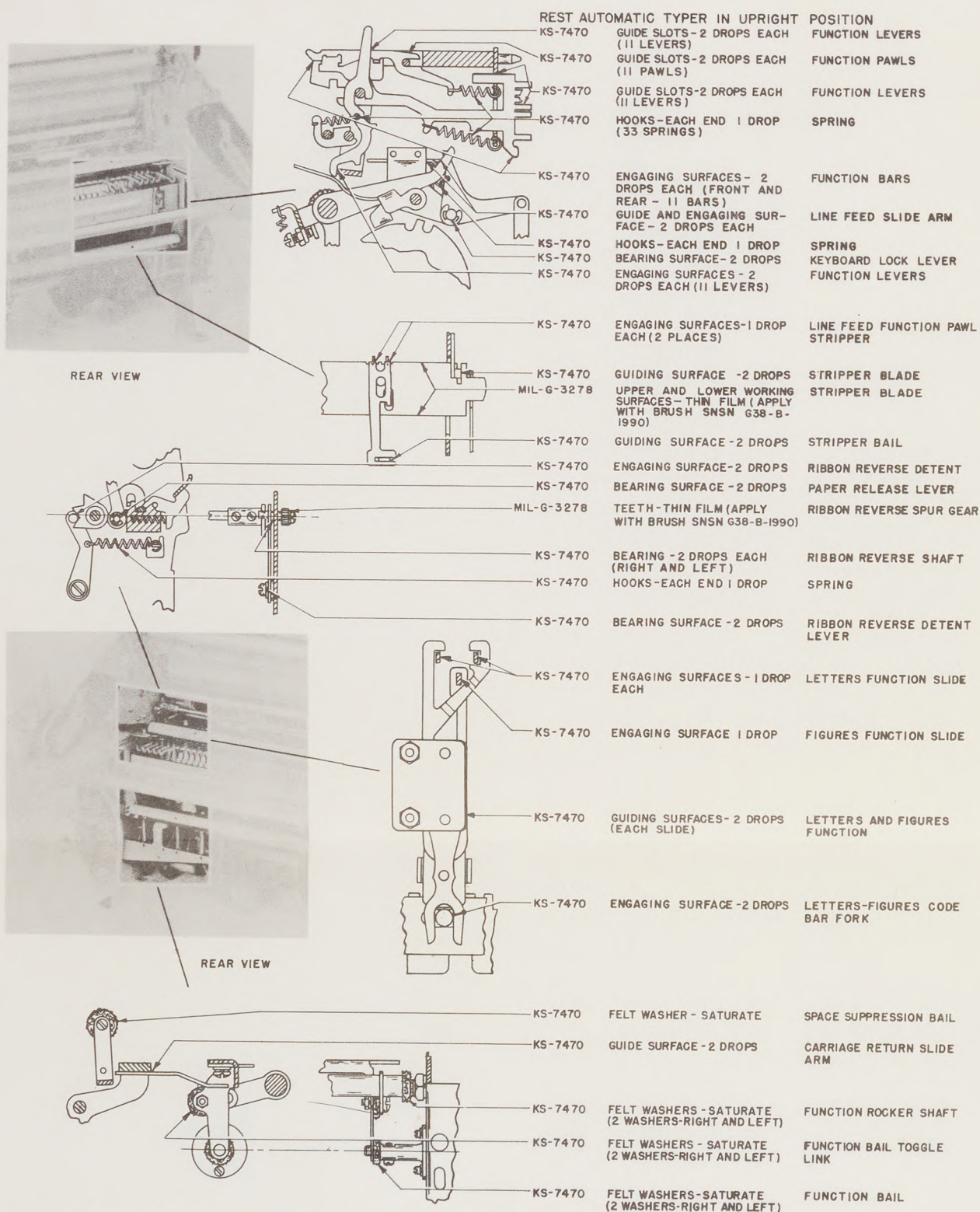
3. The third part of the paper discusses the role of the economy in the history of the United States. It is argued that the economy has played a central role in the development of the country, and that its actions have shaped the course of history. The paper then goes on to discuss the various ways in which the economy has influenced the history of the United States, including through its policies, its actions, and its decisions.

4. The fourth part of the paper discusses the role of the culture in the history of the United States. It is argued that the culture has played a central role in the development of the country, and that its actions have shaped the course of history. The paper then goes on to discuss the various ways in which the culture has influenced the history of the United States, including through its policies, its actions, and its decisions.

5. The fifth part of the paper discusses the role of the people in the history of the United States. It is argued that the people have played a central role in the development of the country, and that their actions have shaped the course of history. The paper then goes on to discuss the various ways in which the people have influenced the history of the United States, including through their policies, their actions, and their decisions.

6. The sixth part of the paper discusses the role of the future in the history of the United States. It is argued that the future has played a central role in the development of the country, and that its actions have shaped the course of history. The paper then goes on to discuss the various ways in which the future has influenced the history of the United States, including through its policies, its actions, and its decisions.

AUTOMATIC TYPER MX-1115A/UG



CAUTION: Wipe off excessive lubricant. Do not distort or disturb springs.

- Notes:** 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

*FORMERLY ANG-25

Figure 6-11.

Lubrication Data
Automatic Typer MX-1115A/UG

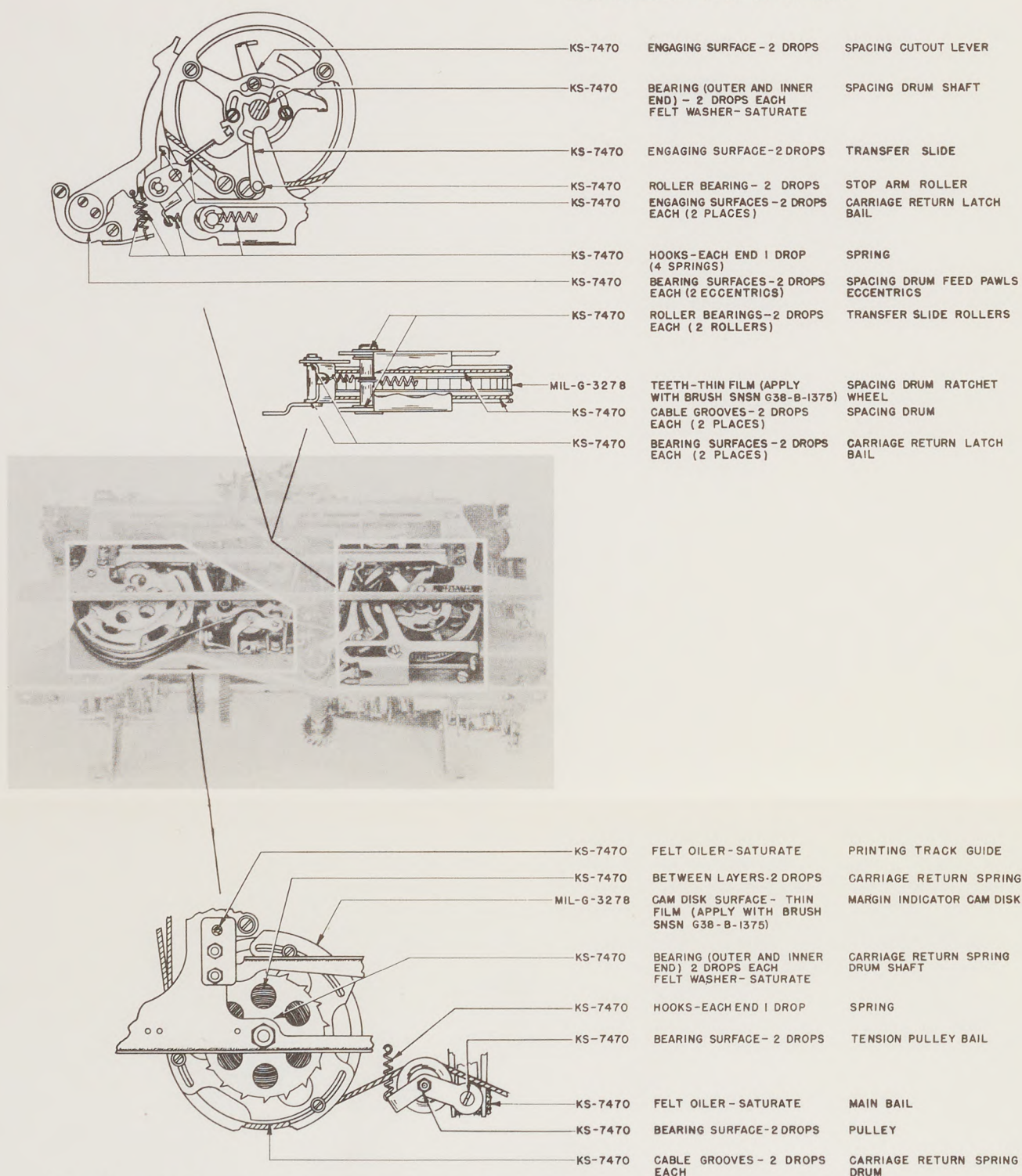
ORIGINAL

6-23, 6-24

ORIGINAL

AUTOMATIC TYPER MX-1115A/UG

REST AUTOMATIC TYPER ON ITS BACK

**CAUTION:** Wipe off excessive lubricant. Do not distort or disturb springs.

Notes: 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.

2. Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

* FORMERLY ANG-25

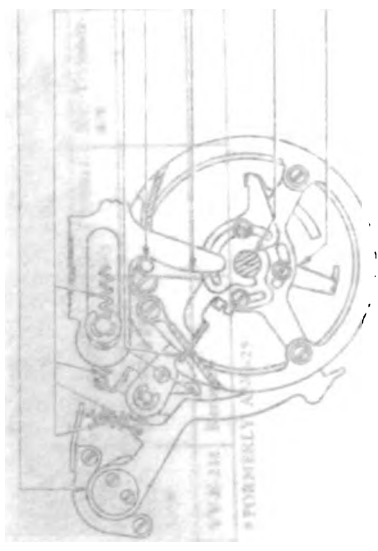
Figure 6-12. Lubrication Data
Automatic Typer MX-1115A/UG

6-25, 6-26

PREVENTIVE
MAINTENANCENAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

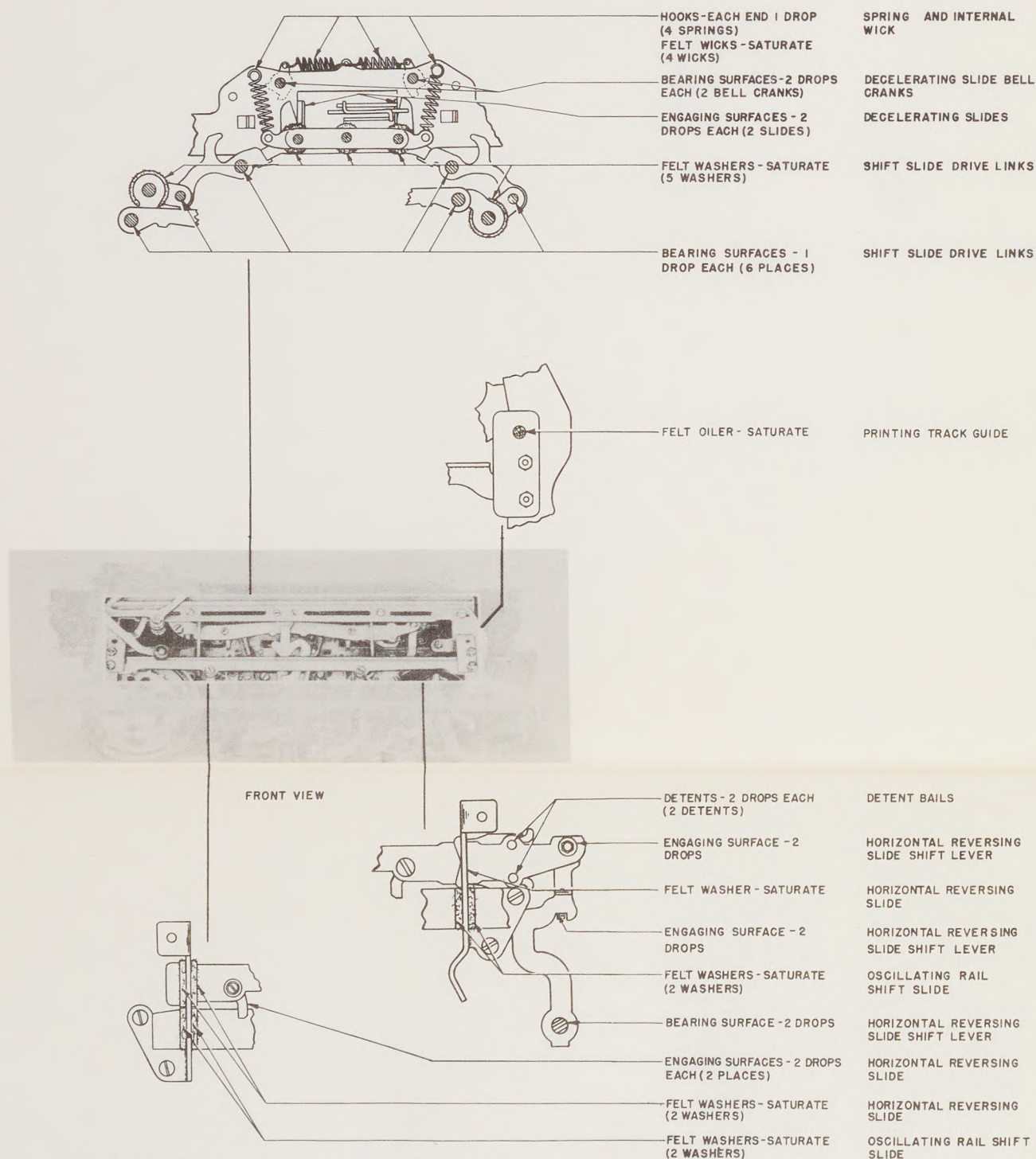
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ORIGINAL

AUTOMATIC TYPER MX-1115A/UG

REST AUTOMATIC TYPER ON ITS BACK

**CAUTION:** Wipe off excessive lubricant. Do not distort or disturb springs.

Notes: 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 2. All lubricant is type KS-7470. Use as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 oil with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

* FORMERLY ANG-25

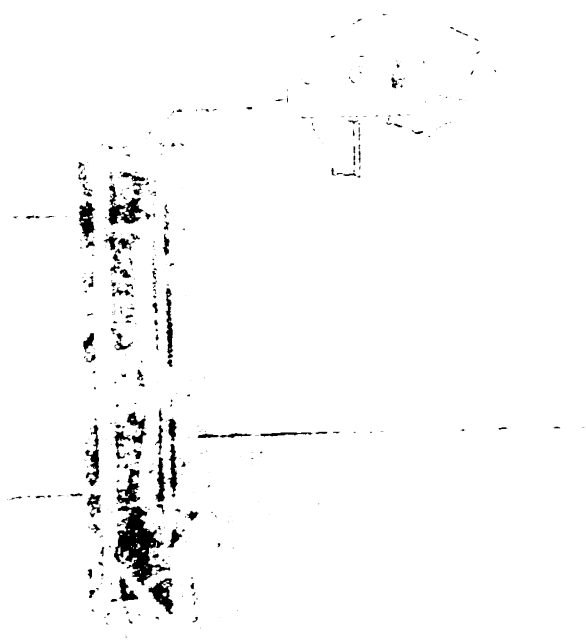
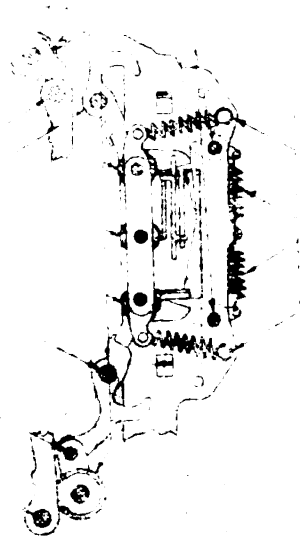
Figure 6-13. Lubrication Data
Automatic Typewriter MX-1115A/UG

6-27, 6-28

PREVENTIVE
MAINTENANCENAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

SECRET

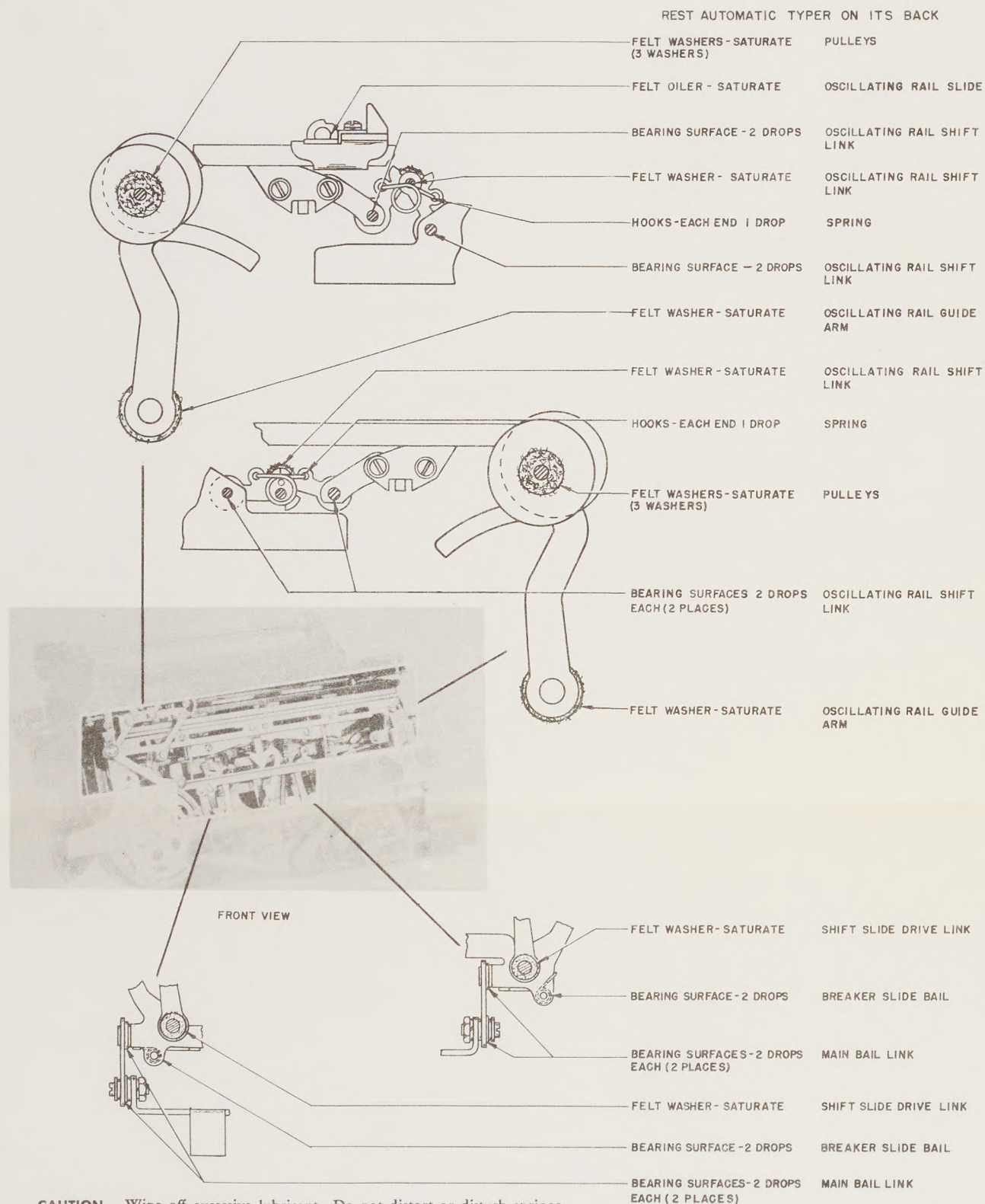
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ORIGINAL

AUTOMATIC TYPER MX-1115A/UG

PREVENTIVE
MAINTENANCENAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6



CAUTION: Wipe off excessive lubricant. Do not distort or disturb springs.

Notes: 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.

2. All lubricant is type KS-7470. Use as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 oil with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

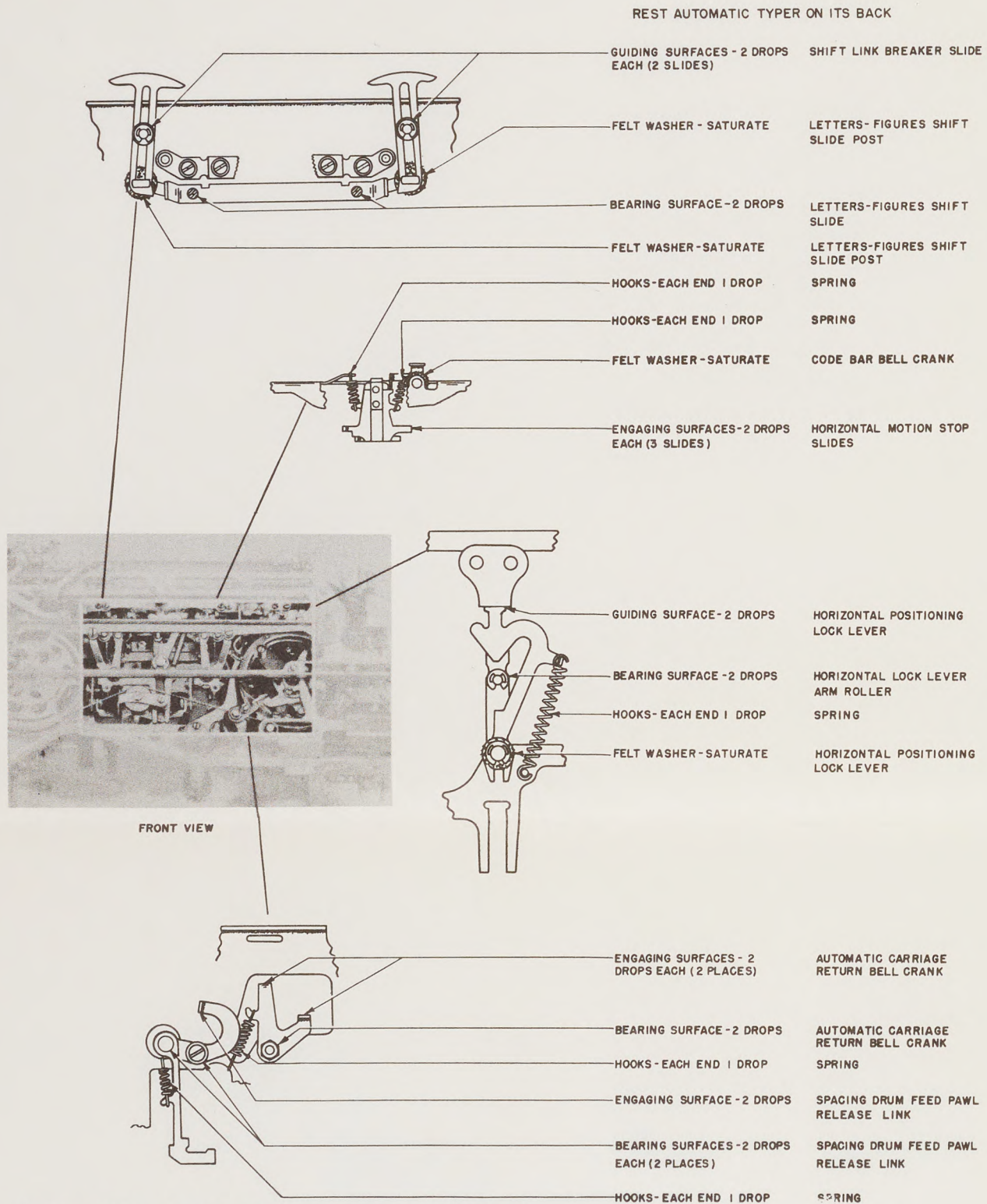
* FORMERLY ANG-25

Figure 6-14. Lubrication Data
Automatic Typewriter MX-1115A/UG

6-29, 6-30

ORIGINAL

AUTOMATIC TYPER MX-1115A/UG

PREVENTIVE
MAINTENANCE**CAUTION:** Wipe off excessive lubricant. Do not distort or disturb springs.**Notes:** 1. Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.

2. All lubricant is type KS-7470. Use as supplied for normal or high temperatures —5° to +55° C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 oil with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

* FORMERLY ANG-25

Figure 6-15. Lubrication Data
Automatic Typer MX-1115A/UG

6-31, 6-32

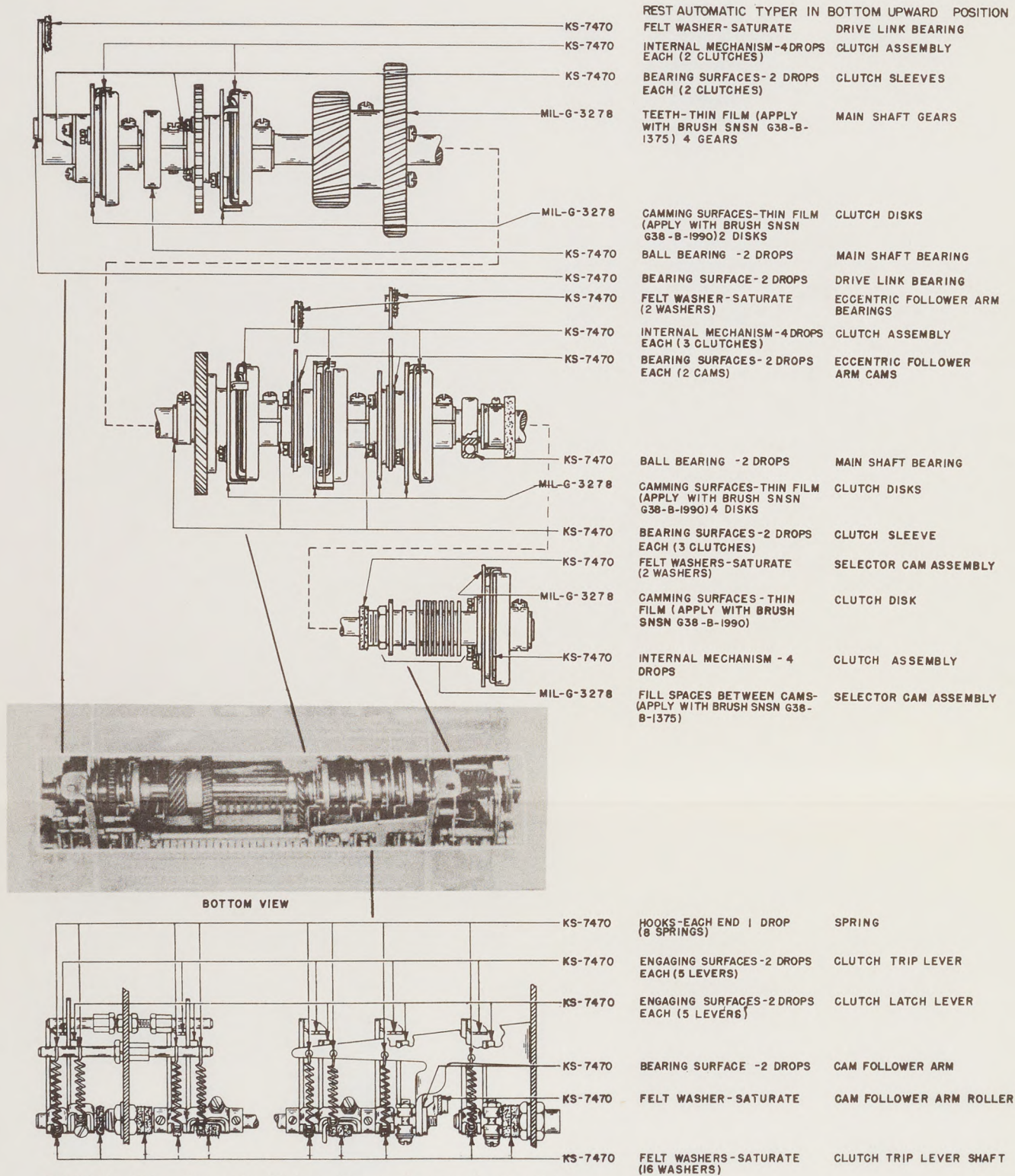
NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 6

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ORIGINAL

AUTOMATIC TYPER MX-1115A/UG

PREVENTIVE
MAINTENANCE**CAUTION:** Wipe off excessive lubricant. Do not distort or disturb springs.

- Notes:**
- Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
 - Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER								
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698						
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550 R14-G-984-560
VV-K-211	Kerosene				W7-K-505					

*FORMERLY ANG-25

Figure 6-16. Lubrication Data
Automatic Typewriter MX-1115A/UG

6-33, 6-34

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGNAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

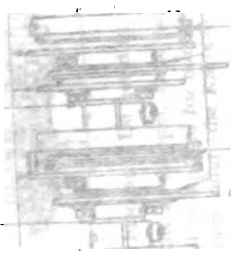
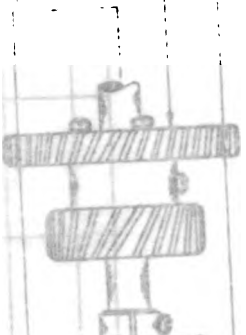
Section 6

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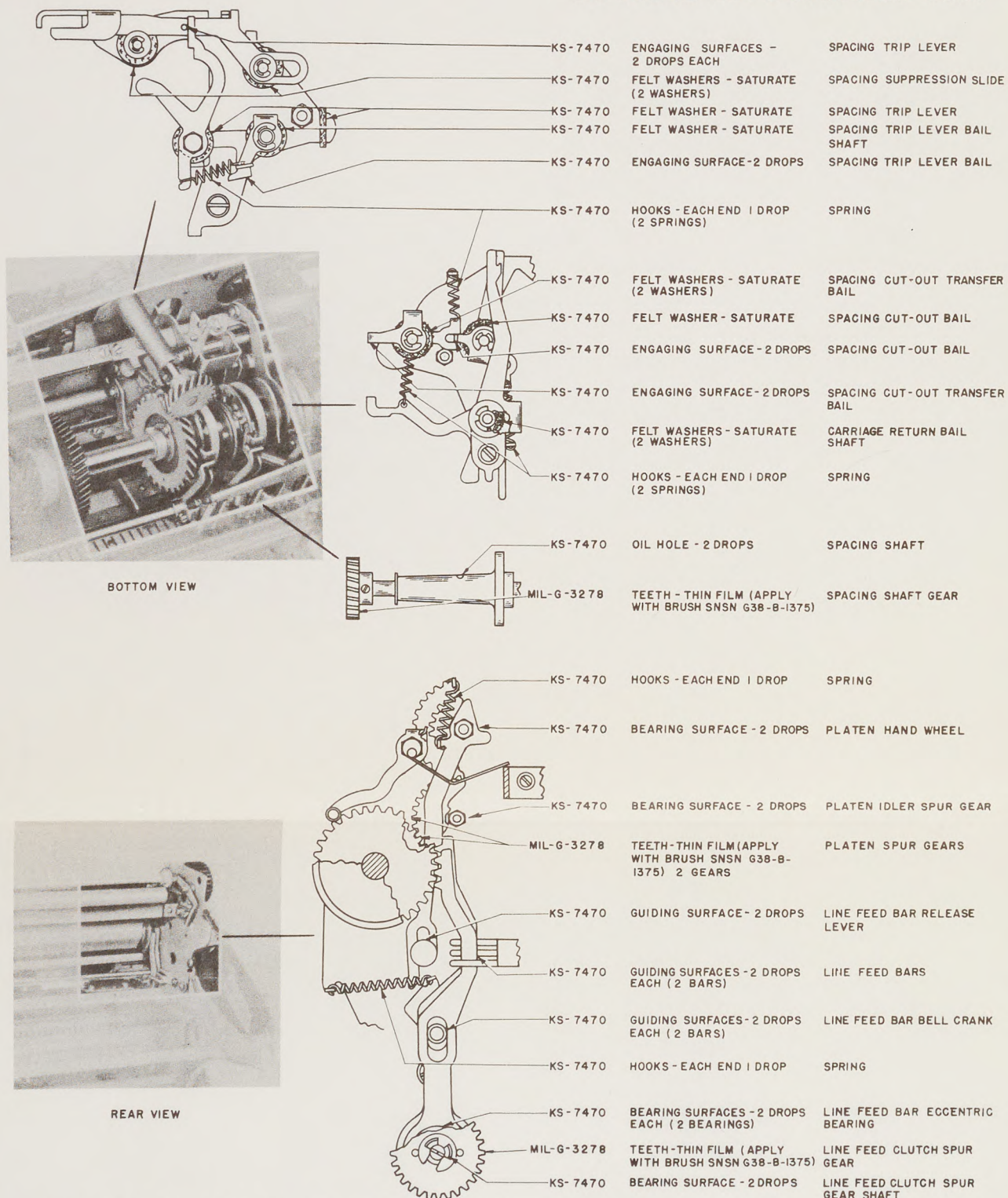


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ORIGINAL

AUTOMATIC TYPER MX-1115A/UG

REST AUTOMATIC TYPER IN BOTTOM UPWARD POSITION

**CAUTION:** Wipe off excessive lubricant. Do not distort or disturb springs.

Notes:

- Interval—four months at 60-wpm; three months at 75-wpm; two months at 100-wpm.
- Use type KS-7470 oil as supplied for normal or high temperatures -5° to $+55^{\circ}$ C. (41° to 131° F.). For lower temperatures, dilute the KS-7470 with kerosene (half and half).

NAVY LUBRICANT		STANDARD NAVY STOCK NUMBER									
SPECIFICATION	TITLE	1 PT.	1 QT.	1 GAL.	5 GAL.	8 OZS.	1 LB.	5 LB.	25 LB.	35 LB.	100 LB.
Teletype KS-7470	Lubricating oil	N17-T-350011-463	N17-T-350002-878	N17-T-350009-698							
MIL-G-3278*	Lubricating grease					R14-G-984-500 W14-G-611-5	R14-G-982-20 W14-G-611-10	R14-G-984-520	R14-G-984-540	R14-G-984-550	R14-G-984-560
VV-K-211	Kerosene				W7-K-505						

*FORMERLY ANG-25

Figure 6-17. Lubrication Data
Automatic Typer MX-1115A/UG

6-35, 6-36

PREVENTIVE
MAINTENANCE

TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

NAVSHIPS 91713

TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

NAVSHIPS 91713

Section 6

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SECTION 7

CORRECTIVE MAINTENANCE

1. GENERAL.

a. The information contained in this section is planned so as to provide maintenance personnel with effective means for locating and clearing trouble. It is necessary that the technician be thoroughly familiar with the theory of operation of the equipment and with the adjusting routine before attempting any maintenance procedures.

b. The system of assigning symbols to component items deserves mention since it is frequently desirable to identify a component item with a particular unit.

Component Numbering System

Component	Numerical Range
Keyboard MX-1114A/UG	101-499
AC Motor PD-17A/U	501-599
AC Motor PD-18/U	601-699
Cabinets CY-870/UG and CY-871/UG	701-1099
Power Distribution Panel SB-154A/UG	1101-1299
Automatic Typewriter MX-1115A/UG	1301-2199

2. TROUBLE SHOOTING.

a. GENERAL.—Failures of the equipment can be traced functionally by means of the chart, Table 7-4. By following the appropriate leads as manifested by the behavior of the equipment, a block will be found which will provide index numbers to a group of probable faults tabulated in paragraph 2.*b.* An elimination process relative to these probabilities should greatly facilitate the clearing of trouble. (In every case where a part fails, a failure report Navships 383 should be made and forwarded to BUShips.)

b. TABULATION OF FAULTS INDICATED IN TROUBLE SHOOTING CHART, PAGE 7-145.

(1) MOTOR DOES NOT START.

(a) Power failure—check for 115 volt, 60 cycle applied voltage between terminals 29 and 30 on Cabinet.

(b) Fuse failure—check Power Distribution Panel fuses F-1101 and F-1102. If open, rotate the Motor by hand and check for excessive load. Refer to Primary Power Distribution Diagram, figure 7-138, and Wiring Diagram, figure 7-140, and check the following items for possible failure.

1. Stop magnet E-1110, line shunt relay K-1101 and signal bell magnet E-759—shorted windings.

2. Motor—shorted windings.

(c) Motor control assembly—not functioning properly. Check requirements in figure 7-91.

(d) Open windings—start magnets E-1114 and E-1115.

(e) Motor—brushes not making contact (governed motor only).

(f) Governor—contact open, dirty (governed motor only).

(2) MOTOR DOES NOT STOP.

(a) Motor stop switch S-103 not closing—check requirements in figures 7-23, 7-27, and 7-28.

(b) Motor control mechanism not functioning properly—check requirements in figure 7-91.

(c) Stop magnet E-1110—open windings.

(3) INCORRECT MOTOR SPEED.

(a) Incorrect voltage (governed motor only).

(b) Incorrect frequency (synchronous motor only).

(c) Governor adjustment—check requirements in figure 7-89 (governed motor only).

(d) Governor—contacts burnt (governed motor only).

(e) Open resistor R-601—check resistor (governed motor only).

(f) Poor brush contact (governed motor only).

(4) UNCONTROLLABLE MOTOR SPEED.

(a) Shorted capacitor C-603—check capacitor.

(b) Shorted resistor R-601—check resistor.

(c) Governor contacts stuck—burnish and re-adjust.

(5) NO SIGNALS FROM KEYBOARD.

(a) OPEN SIGNAL LINE.

1. Contacts dirty—burnish.

2. Contacts incorrectly adjusted—check adjustment figure 7-10.

3. Open electrical noise suppressor Z-101.

4. Flutter lever out of adjustment figure 7-6.

5. Binding mechanism—check freeness of moving parts.

(b) SIGNAL LINE NOT OPENING.

1. Shorted contacts.

2. Shorted electrical noise suppressor Z-101.
3. Contact fails to open—check adjustment in figures 7-6 and 7-10.

4. Binding mechanism—check chain of linkage for freeness.

(6) SHORT ON MARGIN.

- (a) Line current—inadequate or excessive.
- (b) Shorted selector magnet coils E-1308 and E-1309.

(c) Incorrect motor speed—see paragraphs 2.b.(3) and 2.b.(4).

(d) Armature dirty, or oily—drag thin piece of clean paper between armature and magnet core.

(e) Binds in moving parts of code bar linkage—check for freeness.

(f) Incorrect adjustment—check following:

1. Selector Magnet Bracket, figure 7-32.
2. Selector Armature, figure 7-31.
3. Selector Armature Spring, figure 7-31.
4. Stop Arm Bail Spring, figure 7-41.
5. Start Lever Spring, figure 7-39.

(7) INTERMITTENT ERRORS.

- (a) Range finder set beyond range limits.
- (b) Line current—inadequate or excessive.
- (c) Shorted selector magnet coils E-1308 and E-1309.

(d) Incorrect motor speed—see paragraphs 2.b.(3) and 2.b.(4).

(e) Armature dirty—drag thin piece of clean paper between armature and magnet core.

(f) Binds in moving parts of selector and code bar linkage—check for freeness.

(g) Incorrect adjustment—check following:

1. Selector Magnet Bracket, figure 7-32.
2. Shift Lever Link Guide, figure 7-38.
3. Code Bar Detent, figure 7-88.
4. Selector Push Lever Spring, figure 7-36.
5. Selector Transfer Lever Spring, figure 7-35.

(8) GAINING OR LOSING A PULSE.

(a) Binds in moving parts of selector and code bar linkage on particular pulse in trouble—check for freeness.

(b) Incorrect adjustment—check following adjustments on particular pulse in trouble:

1. Selector Magnet Bracket, figure 7-32.
2. Shift Lever Link Guide, figure 7-38.
3. Code Bar Detent, figure 7-88.
4. Push Lever Spring, figure 7-36.
5. Transfer Lever Spring, figure 7-35.

(9) GARBLING.

(a) Incorrect line current.

(b) Defective selector coils.

(c) Incorrect motor speed—see paragraphs 2.b.(3) and 2.b.(4).

(d) Range finder setting out of range.

(e) Armature dirty—drag thin piece of clean paper between armature and magnet core.

(f) Binds in moving parts of selector and code bar linkage—check following for freeness:

1. Selector Magnet Bracket, figure 7-32.
2. Code Bar Detent, figure 7-88.
3. Armature Spring, figure 7-31.
4. Stop Arm Bail Spring, figure 7-41.

(10) SPACING FAILURE OR MULTIPLE SPACING.

(a) Binds in moving parts of spacing chain of linkage, figures 7-50 and 7-56—check for freeness.

(b) Incorrect adjustment—check following:

1. Spacing Trip Lever Bail Cam Plate, figure 7-56.

2. Spacing Clutch Trip Lever, figure 7-45.

3. Carriage Return Lever, figure 7-66.

4. Spacing Trip Lever Spring, figure 7-56.

5. Spacing Trip Lever Bail Spring, figure 7-56.

6. Spacing Feed Pawl Spring, figure 7-55.

7. Clutch Trip Shaft Set Collar, figure 7-44.

8. Function Stripper Blade Arm, figure 7-80.

9. Function Bar Spring, figure 7-77.

(11) FAILURE ON LETTERS—FIGURES SHIFT.

(a) Binds in moving parts of letters—figures shift linkage—check for freeness of selector and code bar linkage, and letters and figures function slide (figure 7-57).

(b) Incorrect adjustment—check following:

1. Function Stripper Blade Arm, figure 7-79.

2. Shift Code Bar Operating Slides, figure 7-57.

3. Function Lever Spring, figure 7-77.

4. Function Pawl Spring, figure 7-77.

5. Function Bar Spring, figure 7-77.

(12) FAILURE ON CARRIAGE RETURN.

(a) Binds in moving parts of linkage for carriage return function. Check for freeness of selector and code bar linkage, function bar reset bail and function bar linkage in function box and carriage return bail and slide.

(b) Incorrect adjustment—check following:

1. Function Reset Bail Blade, figure 7-59.
2. Function Lever, Function Pawl, and Function Bar Springs, figure 7-77.

(13) FAILURE ON LINE FEED.

(a) Binds in moving parts of linkage for line feed function—check for freeness of selector and code bar linkage, function bar reset bail and function bar linkage in function box, line feed function slide arm and line feed clutch trip lever, figure 7-46, line feed bars, figure 7-51, and line feed stripper and stripper bail, figure 7-81—check position of single-double line feed lever.

(b) Incorrect adjustments—check following:

1. Line Feed Clutch Trip Lever Eccentric Post, figure 7-46.
2. Line Feed Clutch Trip Lever Adjusting Screw, figure 7-46.
3. Function Stripper Blade Arms, figure 7-80.
4. Line Feed Clutch Trip Lever Spring, figure 7-45.
5. Function Reset Bail Blade, figure 7-59.
6. Function Bar Spring, figure 7-77.
7. Function Pawl Spring, figure 7-77.
8. Function Lever Spring, figure 7-77.

(14) FAILURE ON SIGNAL BELL.

(a) Electrical contacts on function box—dirty or burnt.

(b) Open magnet E-759 in signal bell.

(c) Low voltage.

(d) Bell armature dirty.

(e) Binds in moving parts of linkage for signal bell function—check for freeness of selector and code bar linkage, function bar reset bail, function bar linkage in function box, and armature in signal bell assembly.

(f) Incorrect adjustment—check following:

1. Function Reset Bail Blade, figure 7-58.
2. Bell contact, figure 7-86.
3. Remote Signal Bell, figure 7-92.
4. Remote Signal Bell Armature Spring, figure 7-92.
5. Function Bar Spring, figure 7-77.
6. Function Pawl Spring, figure 7-77.
7. Function Lever Spring, figure 7-77.

(15) RIBBON FAILS TO FEED OR REVERSE.

(a) Binds in moving parts of ribbon feeding or reversing mechanism—check for freeness of ribbon feed levers, ribbon lever, ribbon reversing lever, and ribbon reverse detent lever.

(b) Detent cam loose—check set screws and adjustment, figure 7-74.

(c) Eyelet missing from ribbon.

(d) Incorrect adjustment—check following:

1. Ribbon Feed Lever Stop Bracket, figure 7-75.
2. Ribbon Reverse Spur Gear, figure 7-74.
3. Ribbon Reverse Detent, figure 7-74.
4. Ribbon Feed Lever Spring, figure 7-75.
5. Ribbon Ratchet Wheel Friction, figure 7-75.
6. Ribbon Lever Spring, figure 7-75.
7. Ribbon Reverse Detent Lever Spring, figure 7-74.

(16) FAILURE TO POSITION.

(a) Binds in moving parts of linkage for type bar positioning mechanism—check freeness of main rocker shaft; vertical positioning linkage, figures 7-53 and 7-54; SUP., 1, 2, 3, and COM code bars; reversing slide, shift slide drive linkage and oscillator rail linkage, figure 7-60.

(b) Incorrect adjustment—check following:

1. Rocker Shaft Left Bracket, figure 7-51.
2. Vertical Positioning Lever Eccentric Stud, figures 7-53 and 7-54.
3. Shift Slide Drive Linkage, figure 7-61.
4. Vertical Positioning Lever Spring, figure 7-53.
5. Shift Linkage Spring, figure 7-71.
6. Vertical Positioning Lock Lever Spring, figure 7-54.

(17) FAILURE TO PRINT.

(a) Binds in printing carriage assembly—check for freeness in moving parts, and for missing springs.

(b) Ribbon not properly installed.

(c) Incorrect adjustments—check following:

1. Printing Track, figure 7-72.
2. Printing Arm, figure 7-73.
3. Printing Hammer Plunger Springs, figure 7-72.

3. REMOVAL AND REPAIR.

Note

If a part that is mounted on shims is to be removed, the number of shims used at each of its mounting screws should be noted so that the same shim pile-up can be replaced when the part is remounted.

a. **AUTOMATIC TYPER.** (See figures 7-24 and 7-95.)—To remove the Automatic Typer from the base proceed as follows: Remove the four H-107 screws that secure the Typer to the base. Remove the P-1102 cable plug from the right side frame. Lift the Typer from the base.

(1) TYPE BOX. (See figure 7-130.)

(a) To remove the type box, proceed as follows:

1. Trip the O-1906 type box latch toggle (figure 7-130) to the right.
2. Lift the right end of the type box upward to an angle of approximately 45° and pull the type box toward the right to disengage it from the left hand bearing stud.

3. The disassembly of the type box is shown in figure 7-130.

(b) To reinstall the type box, reverse the procedure used in removing it. The type box should be firmly seated on the bearing studs and the point of the latch toggle should be placed in the notch of the type box plate before moving the toggle to its latched position.

(2) PRINTING CARRIAGE. (See figure 7-115.)

(a) To remove the printing carriage, proceed as follows:

1. Loosen the two H-1308 screws (figure 7-115) which clamp the O-1315 plate to the wire rope and disengage the carriage from the wire rope.

2. Move the carriage to the left end of its track and tilt the lower part forward to disengage the rollers from the track.

3. The disassembly of the printing carriage is shown in figure 7-115.

(b) To reinstall the carriage, reverse the procedure used in removing it. Make certain that the A-1304 printing arm is correctly re-engaged with the A-1348 printing track.

(c) Position the carriage clamp on the wire rope for correct printing position as specified in figure 7-70.

(3) TYPE BOX CARRIAGE. (See figure 7-130.)

(a) To remove the type box carriage, proceed as follows:

1. Move the type box carriage to its extreme right hand position.

2. Hold the O-1351 to O-1356 code bar shift bars in the marking position and rotate the main shaft so that the type box is in its uppermost position.

3. Remove the H-1910 retainer ring from the stud in the right hand end of the O-1905 type box carriage link and disengage the link from the carriage.

4. Hold the O-1907 ribbon guide forward and the O-1409 ribbon reverse lever back and pull the carriage toward the right to disengage it from the carriage track.

5. The disassembly of the type box carriage is shown in figure 7-130.

(b) To reinstall the carriage, reverse the procedure used in removing it. See figure 7-68 for adjustment.

(4) FRONT PLATE. (See figures 7-123, 7-124 and 7-125.)

(a) To remove the front plate, proceed as follows:

1. Remove the Automatic Typewriter from the Keyboard.

2. Remove the H-1910 retainer ring from the O-1905 type box carriage link right hand stud and disengage the link from the carriage. See instructions for removing the link retainer in paragraph 3.a.(3).

3. Remove the two H-2009 screws, figure 7-131, which secure the O-1349 main bail drive bracket (figure 7-123) to the O-2017 rocker shaft.

4. Remove the O-1669 spacing shaft gear.

5. Remove the four H-1640 screws which secure the front plate assembly to the typer side frames.

6. Pull the front plate assembly forward to disengage it from its connecting parts in the Typewriter.

7. The disassembly of the front plate is shown in figures 7-123 to 7-125.

(b) To reinstall the front plate assembly, reverse the procedure used in removing it. Make certain that the O-1661 and O-1659 code bar bell cranks (figure 7-124), the O-1650 letters-figures shift slide, the O-1664 reversing slide shift lever (figure 7-124), the O-1617 automatic C.R.-L.F. bell crank, and the O-2118 carriage return lever extension are properly engaged with their mating parts before tightening the front plate mounting screws. Replace the O-1669 spacing shaft gear. See figure 7-50 for adjustment on phasing the spacing gears.

(5) FUNCTION BOX. (See figure 7-119.)

(a) To remove the function box, proceed as follows:

1. Remove the Automatic Typewriter from the Keyboard.

2. Remove the O-2067 rear tie bar from the Automatic Typewriter side frames.

3. Remove the O-2107 line feed function pawl stripper from the O-2016 stripper blade.

4. Remove the O-2176 single-double line feed lever bearing screw and disengage the lever from the notch in the stripper blade.

5. Hold the stripper blade toward the right side of the Automatic Typewriter and unhook the O-2811 stripper blade left hand arm from the blade.

6. Pull the stripper blade toward the left side of the Automatic Typewriter to disengage the stripper blade from the O-1931 right hand arm and remove the stripper blade from the Automatic Typewriter.

7. Remove the H-1440 and H-1442 screws which secure the function box assembly in the Automatic Typewriter (figure 7-119).

8. Lift the function box assembly upward to disengage it from its locating brackets and pull toward the rear to disengage the O-1439 letters-figures code bar fork from the code bars. Remove the contact assembly and cable clamp from the function box. Remove the function box.

9. Disassembly of the function box is shown in figure 7-119. (Replace the contact assembly and cable clamp before reinstalling the function box.)

(b) To reinstall the function box assembly, push it forward in its guide rails to within $\frac{1}{8}$ inch of its final position, then manually disengage the function pawls from their function levers and push the function box assembly forward and downward until it is latched in place on its locating brackets.

(c) Replace the function box mounting screws, the function stripper blade, the single-double line feed lever, the line feed pawl stripper, and the rear tie bar.

(6) FUNCTION BAR. (See figure 7-119.)

(a) To remove a function bar, proceed as follows:

1. Remove the function box from the Automatic Typewriter. See paragraph 3.a.(5).

2. Unhook the O-1436 function bar spring.

3. Hold the function bar toward the rear of the function box and disengage its function pawl from the function bar.

4. Pull the function bar toward the front to remove it from the function box.

5. Disassembly of the function box is shown in figure 7-119.

(b) To replace the function bar, reverse the procedure used in removing it.

(7) CODE BARS. (See figure 7-116.)

(a) To remove the code bar assembly, proceed as follows:

1. Remove the Automatic Typewriter from the Keyboard.

2. Remove the function box assembly. See paragraph 3.a.(5).

3. Remove the front plate assembly. See paragraph 3.a.(4).

4. Remove the H-1344, H-1345 and H-1353, H-1354 screws (figure 7-116) which secure the code bar assembly to the side frame.

5. Remove the O-1357 code bar shift bar retainer plate from the A-1307 right hand code bar casting.

6. Remove the O-1351 to O-1356 code bar

shift bars from the code bars and pull the code bar assembly forward and to the left.

7. Disassembly of the code bars is shown in figure 7-116.

(b) To install the code bar assembly, reverse the procedure used in removing it, except do not tighten the mounting screws. Loosen the H-1337 code bar assembly tie bar screws and hold the code bar castings back and downward firmly against their locating surfaces on the side frame and tighten the four mounting screws. Tighten the two tie bar screws.

(8) MAIN SHAFT. (See figures 7-128 and 7-129.)

(a) To remove the main shaft, proceed as follows:

1. Remove the Automatic Typewriter from the Keyboard.

2. Remove the selector cam-clutch assembly. See paragraph 3.a.(12).

3. Set the Automatic Typewriter upside down.

4. Return the carriage to its left hand position.

5. Remove the H-1653 screw (figure 7-124) which secures the O-1668 spacing shaft in the O-1626 spacing pawl hub.

6. Remove the spacing shaft with gear.

7. Remove the H-1846 screw which secures the O-1819 collar and the H-1845 clamp from the right end of main shaft. Remove the O-1818 main shaft right hand bearing retainer plate, figure 7-128.

8. Remove the O-1882 retainer plate at the O-1881 clutch bearing and remove the O-1879 link.

9. Remove the two H-1873 screws from the H-1872 main shaft left hand bearing clamp.

10. Unhook the O-1775, O-1772, O-1766, O-1763, O-1743, O-1748, O-1751, O-1755, O-1732 and O-1738 springs from the trip levers and latch levers associated with all clutches. Position the code bar clutch so that the low part of the clutch cam clears the spring arm on the cam follower.

11. Move the main shaft assembly toward the left to disengage the code bar clutch and function clutch links from their connecting pins.

12. Lift the left end of the shaft assembly out of the side frame and position the shaft so that the function clutch link passes the suppression assembly bracket and remove the shaft assembly from the Automatic Typewriter.

13. When assembling the clutches which have cams and disks marked "O" for identification, the marked side of the parts should face away from the clutch side of the assembly. The function and code bar clutches should have their driving links assembled so that the

larger end of the hub faces away from the clutch side of the assembly.

14. Disassembly of the main shaft and clutches is shown in figures 7-128 and 7-129.

(b) To reinstall the shaft assembly, reverse the procedure used in removing it.

(c) To phase the spacing gears and the line feed gears, see figures 7-50 and 7-51 respectively.

(9) UPPER DRAW WIRE ROPE. (See figure 7-126.)

(a) To remove the upper draw wire rope, proceed as follows:

1. Return the carriage to the left hand position.

2. Loosen the H-1756 nut on the front end of the H-1742 spring drum bearing post, figure 7-125. Operate the O-1695 ratchet escapement lever to unwind the O-1719 carriage return spring.

3. Remove the W-1307 wire rope from the O-1315 clamp plate on the printing carriage, and the O-1705 clamp on the O-1697 oscillating rail slide.

4. Loosen the H-1747 clamp screw which secures the wire rope to the O-1715 spring drum, and remove the wire rope from the drum.

5. Remove the H-1770 screw in the spacing drum which secures the ends of the wire rope, and remove the rope from the drum.

6. Disassembly of the wire rope, spring drum and spacing drum is shown in figure 7-126.

(b) To replace the upper draw wire rope, reverse the procedure used in removing it.

(10) LOWER DRAW WIRE ROPE. (See figure 7-126.)

(a) To remove the lower draw wire rope, proceed as follows:

1. Remove the H-1765 screw which secures the W-1306 lower draw wire rope to the O-1722 spacing drum, and remove the end of the rope from the drum.

2. Loosen the H-1752 screws which secure the O-1720 margin indicator cam disk on the spring drum and position the disk to expose the wire rope mounting screw.

3. Remove the H-1766 lower draw wire rope screw and remove the rope from the spring drum.

4. Loosen the H-1697 screws in the H-1706 bearing studs which mount the O-1677 printing carriage pulleys and move the studs toward the center of the Automatic Typer.

5. Disassembly of the lower draw wire rope is shown in figure 7-126.

(b) To replace the wire rope, reverse the procedure used in removing it. Make certain that each rope is in its correct track around the drums.

(c) Adjust the position of the type box, the printing carriage, and the wire rope tension as specified in the figures 7-68, 7-70 and 7-63.

(11) PLATEN. (See figure 7-132.)

(a) To remove the platen, proceed as follows:

1. Remove the O-2033 line feed spur gear.

2. Remove the O-2050 and O-2051 platen bearing retainers.

3. Remove the O-2129 paper finger shaft.

4. Hold off the O-2156 detent and lift the platen out of the side frame.

5. Disassembly of the platen is shown in figure 7-132.

(b) To replace the platen, reverse the procedure used in removing it. When replacing each platen bearing retainer, put its upper screw in first. Leave the screw slightly loose. Press the lower end of the retainer downward and hook it into the elongated hole in the side frame. Replace the lower screw. Tighten both screws.

(12) SELECTOR CAM-CLUTCH. (See figures 7-121 and 7-128.)

(a) To remove the selector cam-clutch, proceed as follows:

1. Lift the O-1498 push lever reset bail cam follower from its cam and latch it in its raised position on the push lever guide by pushing it toward the left. Lift the selector levers and the marking lock lever from their cams by moving the marking lock lever forward until the armature drops behind it.

2. Remove the H-1854 screw which mounts the O-1839 selector clutch drum and position the cam clutch so that the stop lug on the O-1827 disk is in the uppermost position.

3. Hold the O-1508 start lever and the O-1509 spacing lock lever away from their cams with the thumb and forefinger of the left hand. Withdraw the cam clutch assembly by pulling forward while rocking it back and forth slightly.

4. Disassembly of the selector cam clutch is shown in figure 7-128.

(b) To replace the cam-clutch assembly, reverse the procedure used in removing it except as follows:

1. As the cam-clutch approaches its fully installed position, move the trip shaft lever and the cam clutch latch lever so that they ride on their respective cams.

2. Restore the push lever reset bail and the armature to their operating position.

(13) SELECTOR MECHANISM. (See figures 7-121 and 7-128.)

(a) To remove the selector mechanism, proceed as follows:

1. In order to remove the selector mechanism from the Automatic Typewriter the selector cam-clutch assembly must be removed. See paragraph 3.a.(12).

2. Remove the O-1561 felt wick. Remove the H-2148 screw which secures the selector mechanism to the A-1346 bracket on the code bar positioning mechanism.

3. Remove from the selector mechanism the O-1553 spring which connects with the O-1552 common transfer lever on the code bar positioning mechanism.

4. Remove the remaining three H-1515 selector mounting screws and lift the selector from the main shaft bearing housing.

5. Disassembly of the selector mechanism is shown in figure 7-121.

(b) To replace the selector mechanism, reverse the procedure used in removing it.

(c) To readjust the selector mechanism see the adjusting figures 7-31 to 7-33 and 7-39 to 7-41.

(14) CODE BAR POSITIONING MECHANISM.
(See figure 7-116.)

(a) To remove the code bar positioning mechanism, proceed as follows:

1. Remove from the selector the O-1553 spring attached to the common transfer lever and restore any operating push levers to the spacing position by raising the O-1498 reset bail.

2. Loosen the H-1552 clamp screw on the O-1544 shift lever drive arm, and remove the two screws which mount the mechanism—the H-1567 to the side frame, and the H-1571 to the A-1338 selector plate.

3. Manipulate the O-1547 to O-1552 transfer levers and O-1351 to O-1356 code bar shift bars while gently twisting the mechanism so as to slide the mechanism off the code bar shift bars.

4. Disassembly of the code bar positioning mechanism is shown in figure 7-116.

(b) To replace the mechanism on the Automatic Typewriter, reverse the procedure used in removing it, except for the following: With the main shaft in the stop position, push the code bar shift bars to the marking position (left front view). Manipulate the code bar shift bars and transfer levers so that the shift bars line up with their respective slots in the A-1344 bracket, and slide the shift bars through the slots, one at a time (leave the bottom slot vacant).

(15) SELECTOR MAGNET ASSEMBLY. (See figure 7-120.)

(a) To remove the selector magnet assembly proceed as follows:

1. Remove the two H-1492 screws and H-1491 nut which mount the range finder to the selector.

2. Remove the W-1320 cable from the H-1485 coil terminal screws.

3. Remove the two H-1484 magnet assembly mounting screws and lift the assembly out.

4. Disassembly of the selector magnet assembly is shown in figure 7-120.

b. KEYBOARD. (See figure 7-95.)—Remove the four H-101 screws at each corner of the base that secure the base to the cradle. Remove the P-1101 plug from its receptacle at the left rear corner of the base. Lift the Keyboard base from the cradle.

(1) SIGNAL GENERATOR. (See figure 7-104.)

(a) To remove the signal generator from the Keyboard, proceed as follows:

1. Remove the two H-420 screws located to the right and left of the contact box, and raise the A-138 contact box.

Note

Do not unsolder connections.

2. Remove the four H-351 mounting screws which mount the signal generator casting, two at the front end of the casting, and two at the rear.

3. Lift the signal generator upward from the Keyboard.

4. Disassembly of the signal generator is shown in figures 7-104 through 7-107.

(b) To replace the signal generator, reverse the procedure used in removing it.

(2) KEYBOARD SELECTOR CAM ASSEMBLY.
(See figure 7-105.)

(a) To remove cam assembly from signal generator, proceed as follows:

1. Remove signal generator from Keyboard. See paragraph 3.b.(1) above.

2. Disconnect the O-312 clutch latch lever spring.

3. Disconnect the O-317 clutch stop lever spring.

4. Disconnect the O-372 lever spring.

5. Remove the H-360 front nut of the O-347 stationary shaft.

6. Remove the two H-361 screws that hold the O-346 rear plate to casting.

7. Remove the shaft assembly by lifting it upward and pulling to the rear simultaneously.

8. Disassembly of the cam assembly is shown in figure 7-105.

(b) To replace the Keyboard selector cam assembly

bly, reverse the procedure used in removing it.

(3) **KEYBOARD LABEL.** (*See figure 7-103.*)

(a) To remove the labels, proceed as follows:

1. Remove the H-294 plastic cover mounting screw and remove the plastic cover.

2. Pick up plastic cover at top edge first.

3. See figure 7-103 for disassembly.

(b) To replace the Keyboard label, reverse the procedure used in removing it.

(4) **KEYLEVER COVER.** (*See figure 7-103.*)

(a) To remove cover, proceed as follows:

1. Remove the H-293 label covers and labels. See paragraph 3.b.(3).

2. Remove the four H-291 screws located under the labels, two at the extreme right side and two at the extreme left side.

3. Pull keylever cover forward to remove.

4. See figure 7-103 for disassembly.

(b) To replace the keylever cover, reverse the procedure used in removing it.

(5) **KEYLEVER.** (*See figure 7-97.*)

(a) To remove keylever, proceed as follows:

1. Use keylever remover tool No. 151383 (No. 14, figure 7-94). Insert the smaller lug of the keylever remover in the slot of the keylever and engage the shoulder of the larger lug on the top of the code lever. Pry upward to unsnap keylever from code lever. The plastic keytop should not be removed from any keylever to change a character.

2. See figure 7-98 for disassembly.

(b) To replace the keylever, place the fork of the keylever over the stud on the code lever. Support the code lever from underneath and press the keylever into position.

(6) **SPACE BAR.** (*See figure 7-103.*)

(a) To remove space bar, proceed as follows:

1. Remove the keylever cover. See paragraph 3.b.(4).

2. Remove the two H-290 pivot shoulder screws on left and right sides of the O-294 space bar assembly.

3. See figure 7-103 for disassembly of the space bar.

(b) To replace the space bar, reverse the procedure used in removing it.

(7) **KEYLEVER GUIDE PLATE.** (*See figure 7-103.*)

(a) To remove keylever guide plate, proceed as follows:

1. Remove the keylever cover. See paragraph 3.b.(4).

2. Remove the six H-292 mounting screws on top side of guide plate.

3. See figure 7-103 for disassembly.

(b) To replace the keylever guide plate, reverse the procedure used in removing it.

(8) **KEYBOARD LOCKBALL CHANNEL.** (*See figure 7-103.*)

(a) To remove lockball channel proceed as follows:

1. Remove the keylever cover. See paragraph 3.b.(4).

2. Remove the two H-278 channel mounting screws at the left and right ends.

3. Pull channel forward with caution to avoid dropping the wedges that are located on the code levers. Wedges must be replaced separately when reassembling.

4. See figure 7-103 for disassembly.

(b) To replace the keyboard lockball channel, reverse the procedure used in removing it.

(9) **KEYBOARD SEALING PLATE.** (*See figure 7-103.*)

(a) To remove sealing plate, proceed as follows:

1. Remove the keylever cover. See paragraph 3.b.(4).

2. Remove the keylevers. See paragraph 3.b.(5).

3. Disconnect the O-203 space bar link at its snap connection.

4. Remove ten mounting screws, two H-264 and two H-268, at extreme right and left sides and two H-264 at bottom edge of the sealing plate.

5. See figure 7-103 for disassembly.

(b) To replace the keyboard sealing plate reverse the procedure used in removing it.

(10) **KEYBOARD LOCK-LOCAL LINE FEED MECHANISM.** (*See figure 7-102.*)

(a) To remove keyboard lock-local line feed mechanism proceed as follows:

1. Remove the signal generator from the Keyboard. See paragraph 3.b.(1) above.

2. Unhook the O-134 code lever bail spring from the O-138 code lever bail.

3. Loosen the two H-179 pilot screws and remove the O-138 code lever bail.

4. Remove the H-257 shoulder screw from the O-284 local line feed extension link.

5. Remove the two H-262 mounting screws and remove the mechanism through the hole in the bottom of the base.

6. See figure 7-102 for disassembly.

(b) To replace the keyboard lock-local line feed mechanism, reverse the procedure used in removing it.

(11) KEYBOARD CODE BAR ASSEMBLY. (See figure 7-97.)

(a) To remove code bar assembly, proceed as follows:

1. Remove the keylever cover. See paragraph 3.b.(4).

2. Remove the keylevers. See paragraph 3.b.(5).

3. Disconnect the O-293 space bar link at its snap connection.

4. Remove the signal generator. See paragraph 3.b.(1).

5. Remove the four H-200 code bar assembly mounting screws located on top of base.

6. Remove the two H-244 mounting screws and remove the A-119 local C.R. bracket.

7. Remove the keyboard lock-local line feed mechanism. See paragraph 3.b.(10).

8. Remove the H-199 nut and the O-153 code lever bail latch lever with spring. Remove the three H-184 screws which mount the O-152 non-repeat bell crank plate assembly. Remove the plate assembly. Remove code bar assembly through the opening in top side of the base.

9. The disassembly of the keyboard code bar assembly is shown in figure 7-97.

(b) To replace the keyboard code bar assembly, reverse the procedure used in removing it.

(12) CODE BAR. (See figure 7-97.)

(a) To remove a code bar from the keyboard code bar assembly, proceed as follows:

1. Remove the signal generator from the Keyboard. (See paragraph 3.b.(1) above.

2. Remove the two H-192 mounting screws and remove the A-111 non-repeat bracket.

3. Remove the three H-184 mounting screws and remove the O-152 non-repeat assembly mounting plate.

4. Disconnect the O-174 code bar springs.

5. Remove the H-126 mounting screw and remove the O-174 latch from the O-145 lock bar if the lock bar is to be removed.

6. Loosen the H-174 mounting screws for the left and right code bar guides until they are friction tight and lift the O-135 and O-132 guides to their extreme upward position.

7. Remove code bar by sliding it to the left or right to get one end of the code bar out of its guide.

8. Disassembly of the code bar mechanism is shown in figure 7-97.

(b) To replace a code bar, reverse the procedure used in removing it. When reinstalling the non-repeat bracket, the O-150 non-repeat bell crank should be under the O-153 code lever bail latch lever, and the O-149 non-repeat lever under the O-159 code lever bail adjustable extension.

c. MOTOR. (See figure 7-109.)—Remove the four H-528 screws that secure the motor base plate to the base. Remove the H-113 screws that secure the E-102 cover and remove the motor leads from terminals 1 and 2 of the TB-101 terminal board.

(1) SYNCHRONOUS.—Disassembly of the Synchronous Motor is shown in figure 7-108.

(2) GOVERNED.

(a) Disassembly of the Governed Motor is shown in figure 7-109.

(b) In order to prolong the life of governor slip ring brushes, the slip rings are machined to close concentricity requirements after assembly. These slip rings should not be replaced unless facilities for machining operation are available.

(c) After the governor parts are assembled, the governor is carefully balanced to reduce vibration; therefore, when it becomes necessary to replace contacts, only the parts being replaced should be moved.

d. POWER DISTRIBUTION PANEL. (See figure 7-113.)—In order to remove the Power Distribution Panel completely from the Cabinet, it will be necessary to remove the wires from the TB-751, TB-752, and TB-753 terminal boards. However the panel may be turned bottom side upward for maintenance purposes by removing the two H-1109 studs.

4. ADJUSTMENTS.

a. GENERAL.—The adjustments of each unit are arranged in a sequence that would be followed if a complete readjustment of the unit were undertaken. Tools required to perform the adjustments are listed in table 7-2. After an adjustment has been completed, be sure to tighten any nuts or screws that may have been loosened. The adjusting illustrations, in addition to indicating the adjusting tolerances, positions of moving parts, and spring tensions, also show the angles at which the scale should be applied when measuring spring tensions.

Note

When rotating the main shaft of the Automatic Typewriter by hand, the clutches do not fully disengage upon reaching their stop positions. In order to relieve the drag on the clutches and permit the main shaft to rotate freely, apply

pressure on the lug of each clutch disk (figure 7-42) with a screwdriver to cause it to engage its latch lever. This procedure should always be followed prior to placing the Typer on the Keyboard and switching on the power.

b. MANUAL SELECTION OF CHARACTERS OR FUNCTIONS.—To manually operate the Automatic Typer while removed from the Keyboard, hold the selector magnet armature (figure 7-41) operated and rotate the main shaft in a counterclockwise direction (by means of the handwheel listed in table 7-2) to bring all clutches to their stop positions. Fully disengage all clutches as described in the preceding note. Release the armature momentarily to permit the selector clutch to

engage. Turn the main shaft slowly and observe the actions of the marking and spacing lock levers (figure 7-32). While turning the main shaft, move the armature in coordination with the locking levers so as to lock the armature in the attracted position for each MARKING element of the code and in the released position for each SPACING element. It should be noted that the selector levers (figure 7-35) move in succession starting with the inner lever (number one). As soon as the armature is unlocked on the fifth interval, hold it in the attracted position to simulate the affect of the stop impulse and to bring the selector mechanism and associated parts to their stop positions. Continue to rotate the main shaft until all operations initiated by selector action clear through the unit.

c. KEYBOARD MX-1114A/UG

NOTE

IN ORDER TO PERFORM ALL SIGNAL GENERATOR ADJUSTMENTS, IT WILL BE NECESSARY TO REMOVE THE GENERATOR FROM THE KEYBOARD. TO REMOVE, PROCEED AS FOLLOWS: REMOVE THE TWO MOUNTING SCREWS FROM THE CONTACT BOX ADJUSTING BRACKET (FIGURE 7-10) AND DETACH THE BRACKET. ROTATE THE GENERATOR SHAFT TO ITS STOP POSITION; REMOVE THE FOUR MOUNTING SCREWS AND REMOVE THE GENERATOR CAREFULLY.

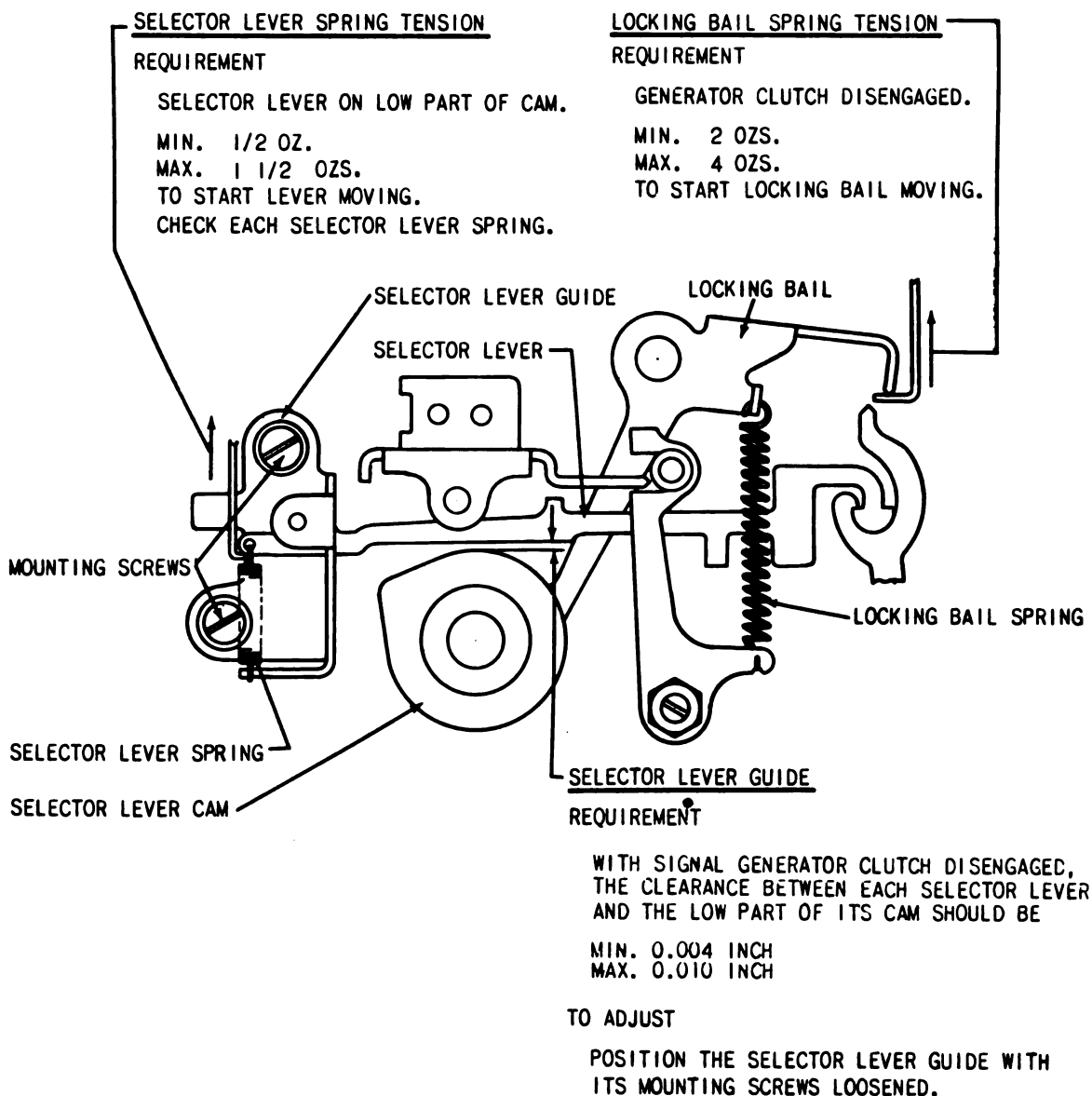


Figure 7-1. Keyboard, Signal Generator, Front View

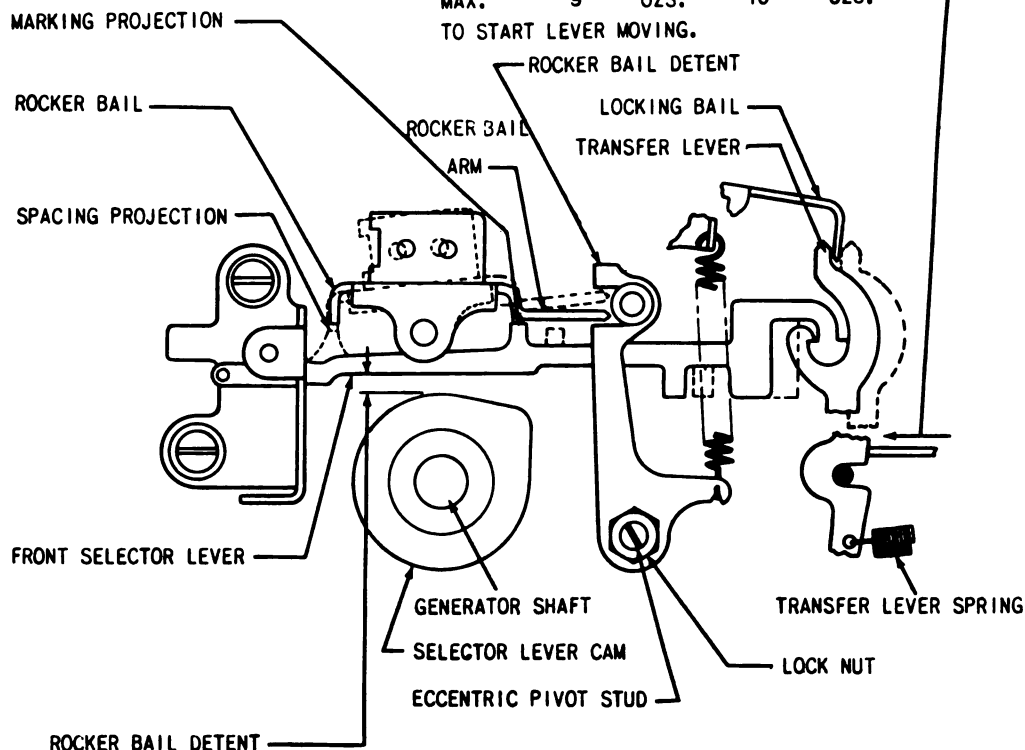
TRANSFER LEVER SPRING TENSION

REQUIREMENT

TRANSFER LEVERS IN MARKING POSITION.
RESET BAIL LATCH SPRING REMOVED.
START TRANSFER LEVER (5TH FROM FRONT)
MANUALLY MOVED TO MARKING POSITION.

	TRANSFER LEVERS	START LEVERS
MIN.	6-1/2 OZS.	7-1/2 OZS.
MAX.	9 OZS.	10 OZS.

TO START LEVER MOVING.

ROCKER BAIL DETENT

REQUIREMENT

CLEARANCE BETWEEN THE ROCKER BAIL ARM AND BOTH THE MARKING AND THE SPACING PROJECTIONS OF THE SELECTOR LEVERS SHOULD BE EQUAL WITHIN 0.005 INCH.

TO CHECK

ROTATE THE CAM SLEEVE UNTIL THE FRONT SELECTOR LEVER IS OPPOSITE THE LOW PART OF THE CAM. WITH THE FRONT SELECTOR LEVER IN THE MARKING (LEFT) POSITION, AND THE ROCKER BAIL ARM AGAINST THE LOWER STOP OF ITS DETENT, HOLD THE SELECTOR LEVER LIGHTLY UP AGAINST THE ROCKER BAIL AND GAUGE THE CLEARANCE BETWEEN THE SELECTOR LEVER AND THE CAM. SHIFT THE ROCKER BAIL ARM AGAINST THE UPPER STOP OF ITS DETENT AND HOLD THE FRONT SELECTOR LEVER TO THE RIGHT AND UP SO THAT THE SPACING PROJECTION TOUCHES THE ROCKER BAIL. GAUGE THE CLEARANCE BETWEEN THE SELECTOR LEVER AND THE CAM. THESE TWO CLEARANCES SHOULD BE EQUAL WITHIN 0.005 INCH.

TO ADJUST

EQUALIZE CLEARANCES BY ROTATING THE ECCENTRIC PIVOT STUD OF THE DETENT WITH ITS LOCK NUT LOOSENED. KEEP THE HIGH PART OF THE ECCENTRIC TOWARD GENERATOR SHAFT.

Figure 7-2. Keyboard, Signal Generator, Front View

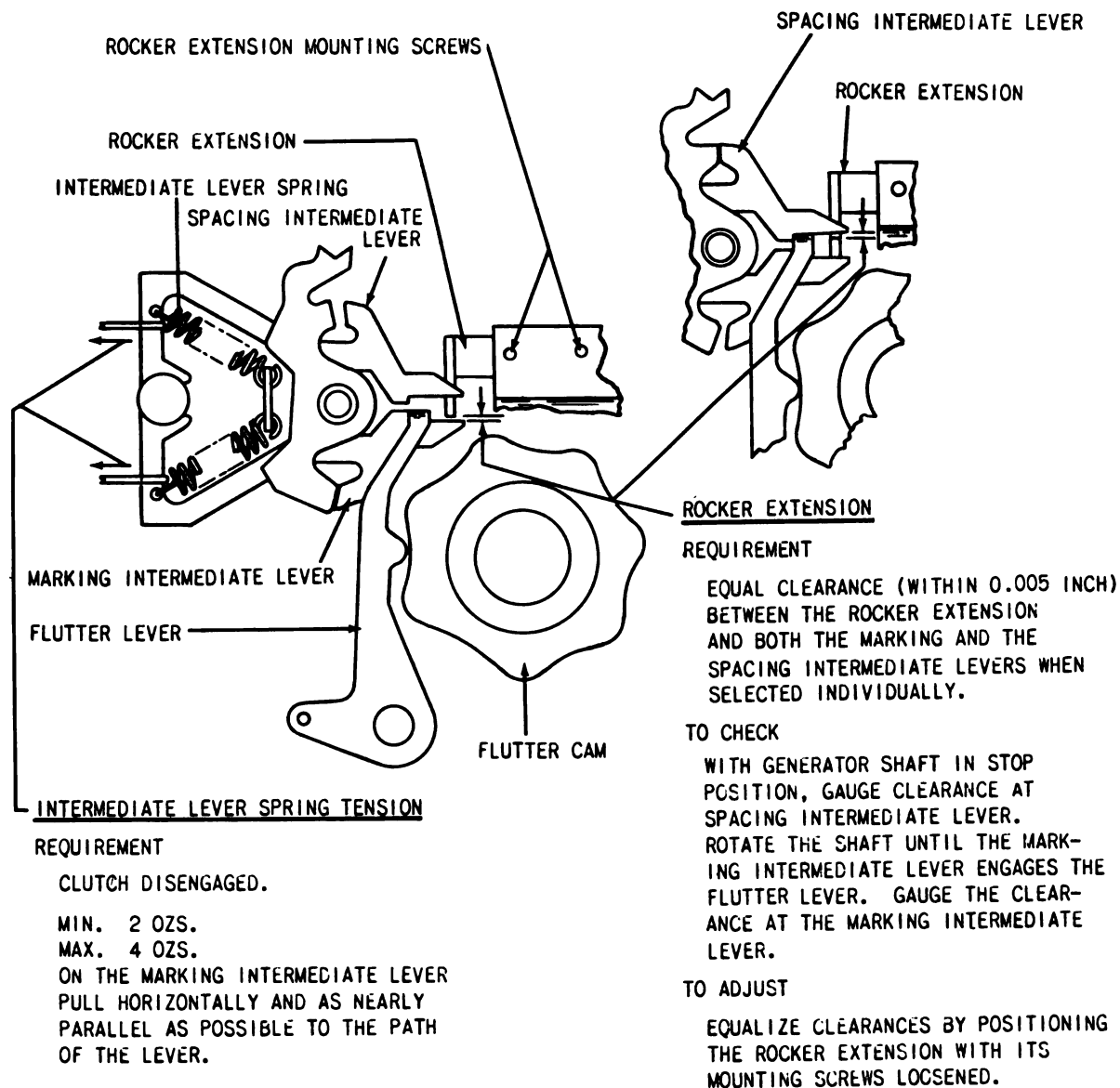
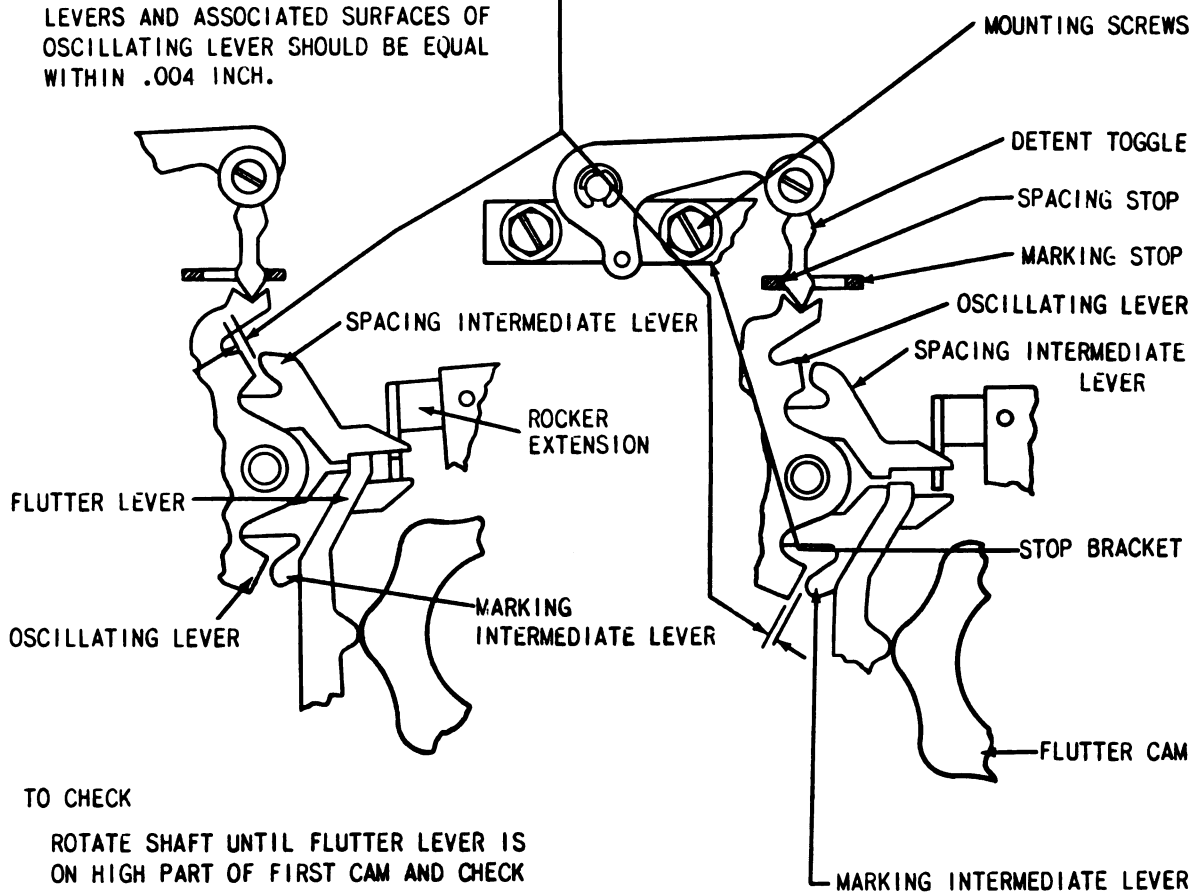


Figure 7-3. Keyboard, Signal Generator, Rear View

DETENT TOGGLE STOP BRACKET

REQUIREMENT

CLEARANCE BETWEEN ENGAGING SURFACES OF SPACING AND MARKING INTERMEDIATE LEVERS AND ASSOCIATED SURFACES OF OSCILLATING LEVER SHOULD BE EQUAL WITHIN .004 INCH.



TO CHECK

ROTATE SHAFT UNTIL FLUTTER LEVER IS ON HIGH PART OF FIRST CAM AND CHECK CLEARANCE AT MARKING INTERMEDIATE LEVER.. CONTINUE ROTATION OF SHAFT UNTIL FLUTTER LEVER IS ON HIGH PART OF NEXT CAM AND CHECK CLEARANCE AT SPACING INTERMEDIATE LEVER.

TO ADJUST

EQUALIZE THE CLEARANCES BY POSITIONING THE STOP BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

Figure 7-4. Keyboard, Signal Generator, Rear View

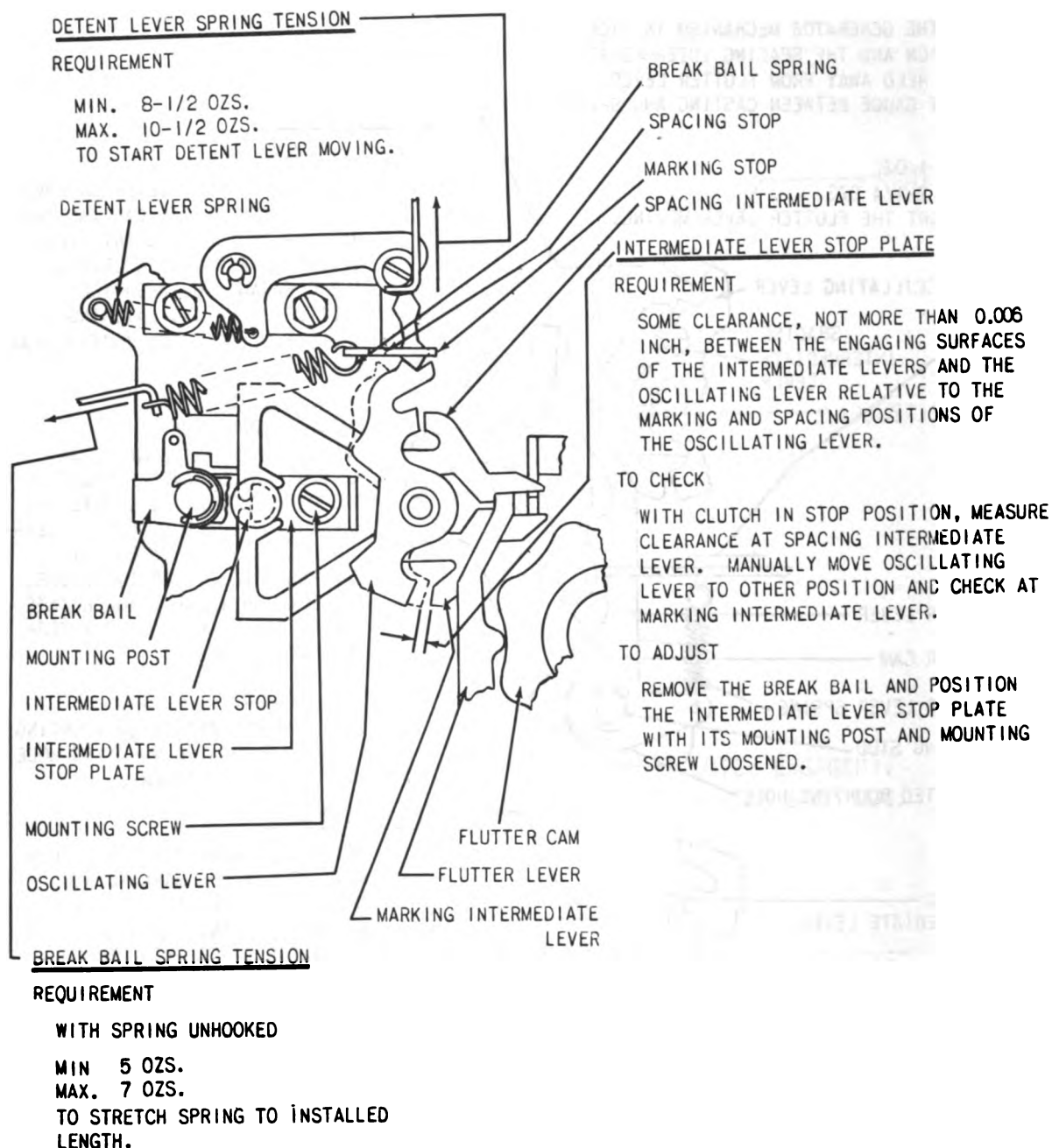


Figure 7-5. Keyboard, Signal Generator, Rear View

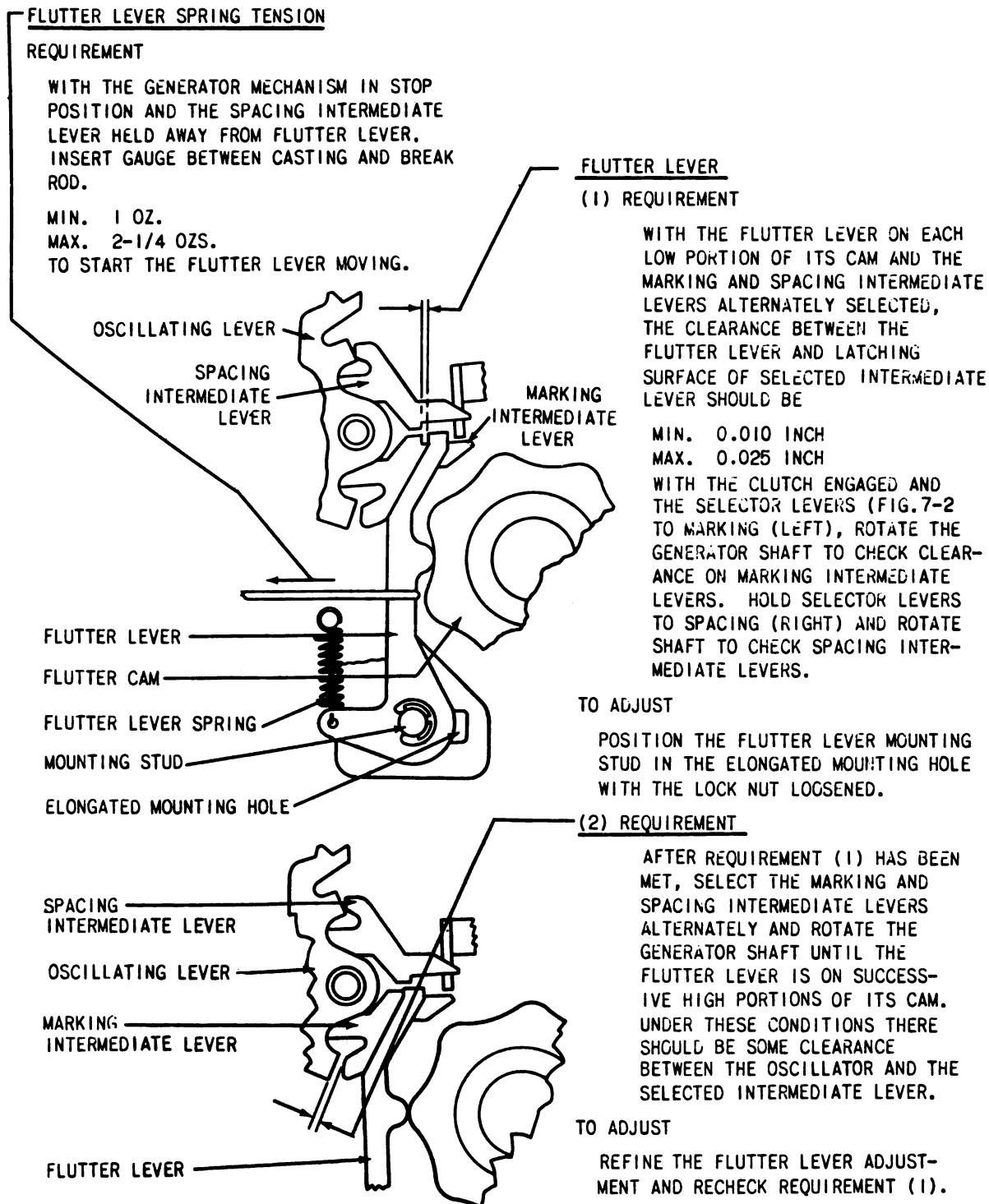
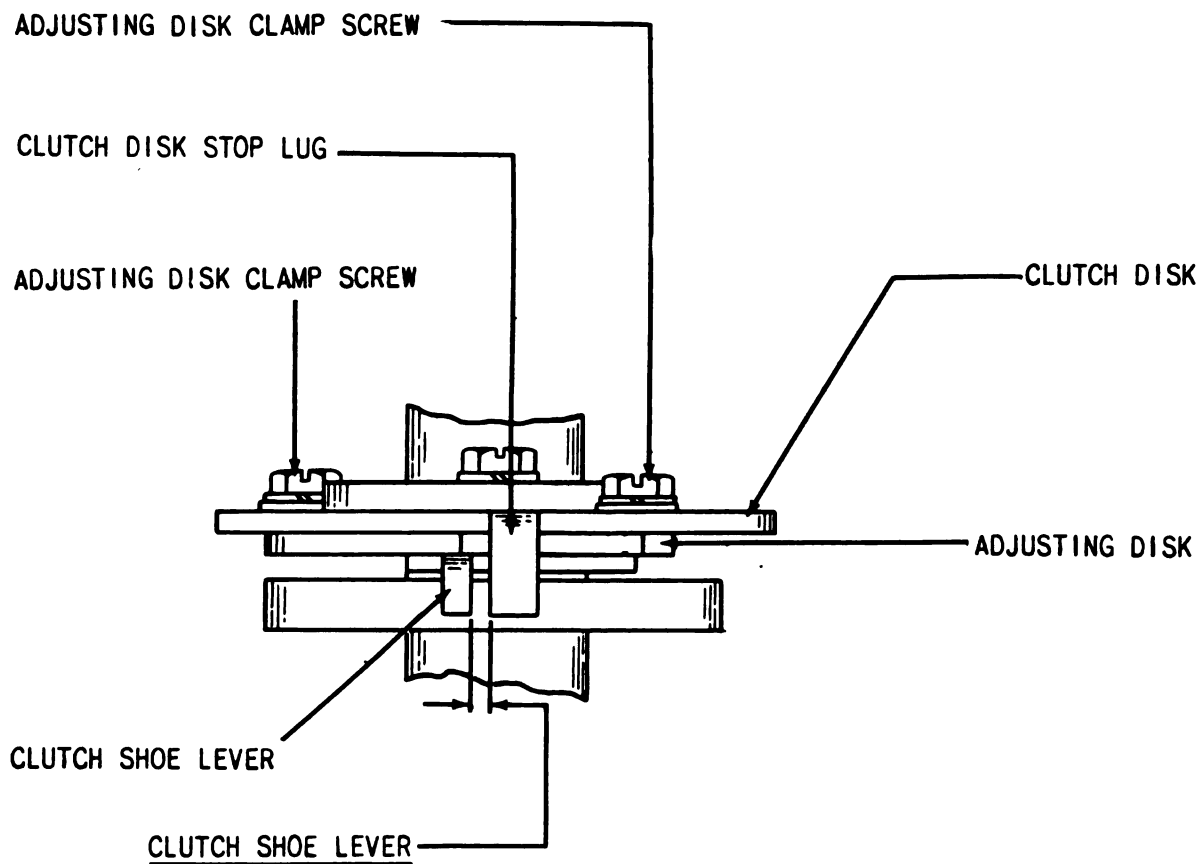


Figure 7-6. Keyboard, Signal Generator, Rear View



REQUIREMENT

CLUTCH STOP LEVER (FIG. 7-8) TRIPPED (CLUTCH ENGAGED).
CLEARANCE BETWEEN CLUTCH SHOE LEVER AND CLUTCH STOP LUG.

MIN. 0.090 INCH

MAX. 0.110 INCH

TO ADJUST

ROTATE THE ADJUSTING DISK WITH THE CLAMP SCREWS LOOSENED.
USE GAUGE 151379.

NOTE

AFTER THE ABOVE ADJUSTMENT IS MADE, DISENGAGE THE CLUTCH,
REMOVE THE DRUM MOUNTING SCREW AND ROTATE THE DRUM IN ITS
NORMAL DIRECTION OF ROTATION TO MAKE CERTAIN THAT IT DOES
NOT DRAG ON THE SHOES. IF THE DRUM DRAGS, REFINES THE
ABOVE ADJUSTMENT.

Figure 7-7. Keyboard, Clutch Mechanism

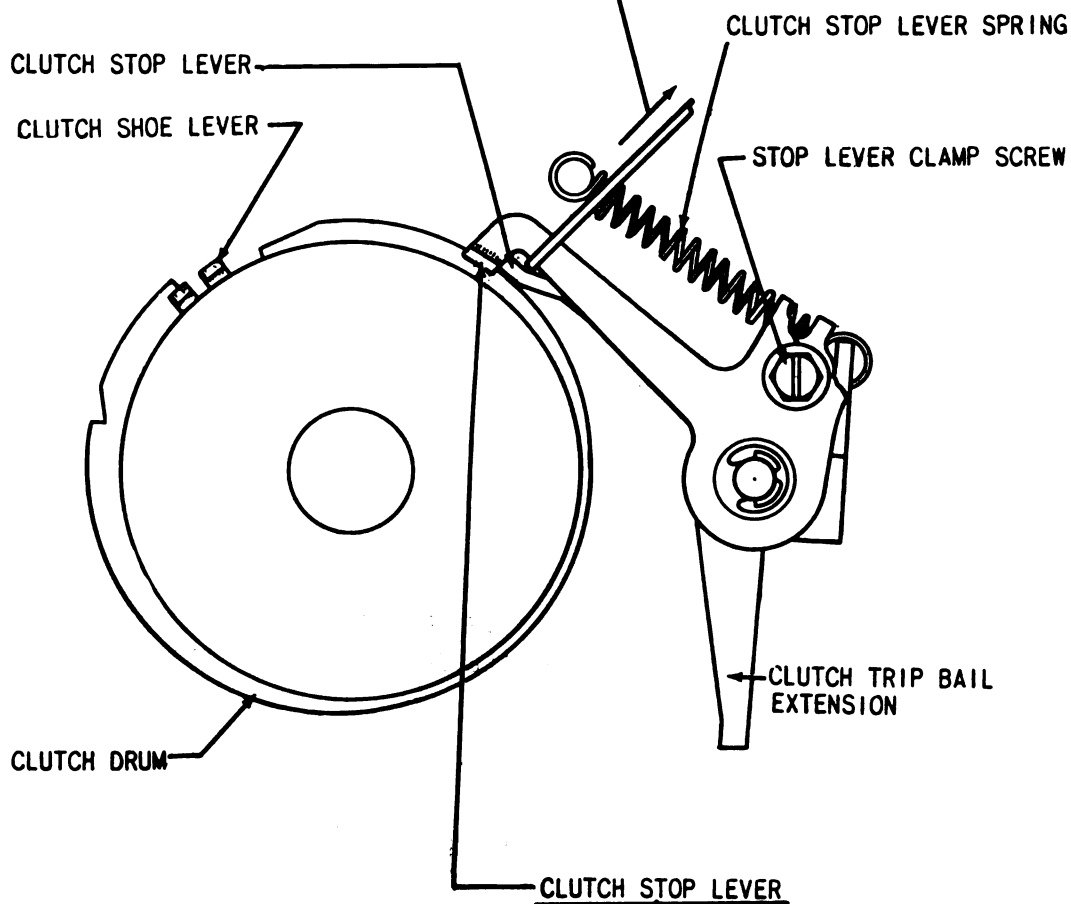
CLUTCH STOP LEVER SPRING TENSION
REQUIREMENT

OPERATE CLUTCH STOP LEVER, CLUTCH
ENGAGED, ROTATE SHAFT 1/4 TURN.

MIN. 3 OZS.

MAX. 3-1/2 OZS.

TO START THE LEVER MOVING.

CLUTCH STOP LEVER

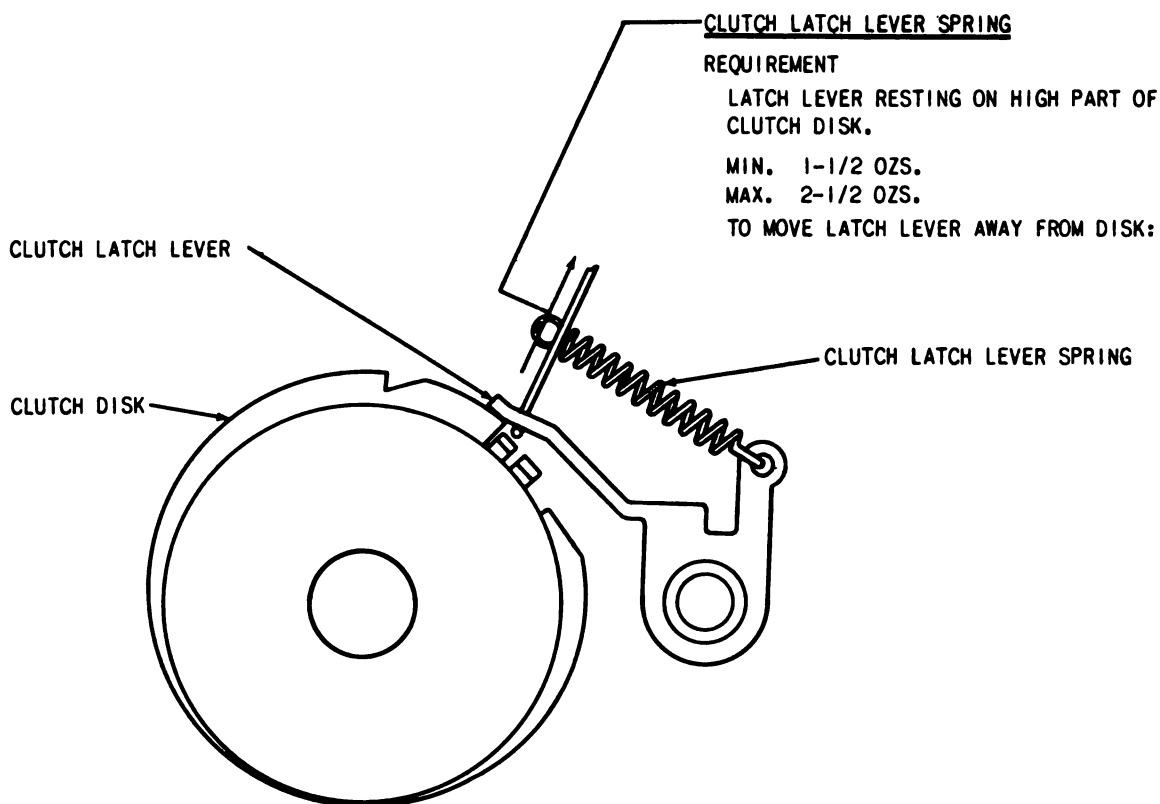
REQUIREMENT

CLUTCH STOP LEVER SHOULD FULLY EN-
GAGE THE CLUTCH SHOE LEVER VERTICALLY.

TO ADJUST

POSITION THE STOP LEVER WITH ITS
CLAMP SCREW LOOSENED.

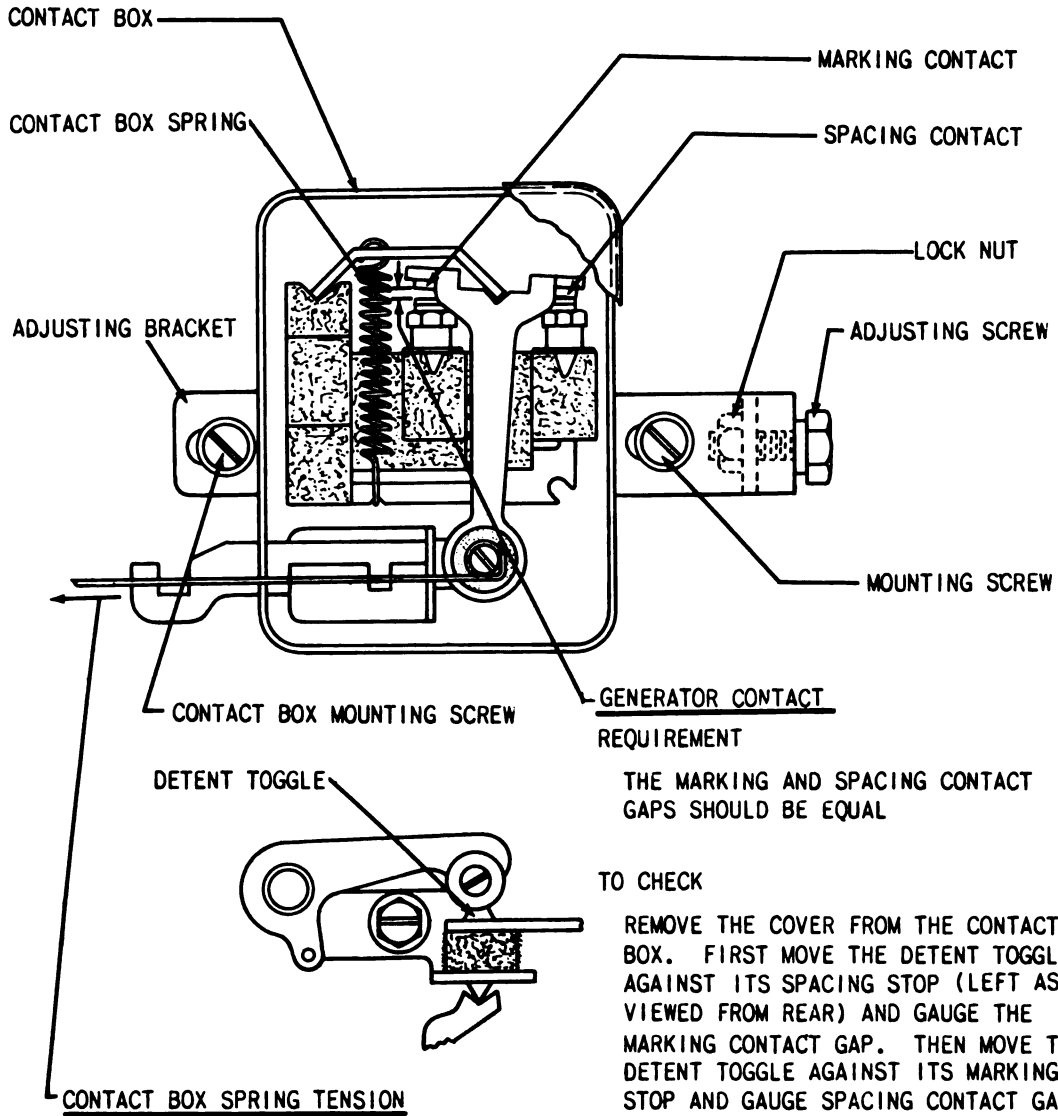
Figure 7-8. Keyboard, Clutch Mechanism



NOTE

REPLACE SIGNAL GENERATOR ON THE KEYBOARD. MAKE CERTAIN THAT THE RESET BAIL LATCH LEVER (FIG. 7-11) IS UNDER THE CODE LEVER BAIL LATCH LEVER (FIG. 7-13), THAT THE BREAK KEY ROD (ATTACHED TO BREAK BAIL FIG. 7-5) IS IN ITS GUIDE HOLE IN THE CODE LEVER GUIDE, AND THAT THE CLUTCH TRIP BAIL EXTENSION (FIG. 7-8) IS IN THE NOTCH PROVIDED IN THE UNIVERSAL (REAR) CODE BAR.

Figure 7-9. Keyboard, Clutch Mechanism

CONTACT BOX SPRING TENSION

REQUIREMENT

CONTACT BOX COVER REMOVED. DETENT TOGGLE SPRING DISCONNECTED.

MIN. 3 OZS.

MAX. 4-1/2 OZS.

TO BREAK CONTACT.

GENERATOR CONTACT
REQUIREMENT

THE MARKING AND SPACING CONTACT GAPS SHOULD BE EQUAL

TO CHECK

REMOVE THE COVER FROM THE CONTACT BOX. FIRST MOVE THE DETENT TOGGLE AGAINST ITS SPACING STOP (LEFT AS VIEWED FROM REAR) AND GAUGE THE MARKING CONTACT GAP. THEN MOVE THE DETENT TOGGLE AGAINST ITS MARKING STOP AND GAUGE SPACING CONTACT GAP.

TO ADJUST

ROTATE THE ADJUSTING SCREW WITH ITS LOCK NUT LOOSENED AND WITH THE CONTACT BOX MOUNTING SCREWS FRICTION TIGHT. REPLACE CONTACT BOX COVER.

CAUTION

CHECK BY MEANS OF A SIGNAL CHECKING DEVICE WHERE POSSIBLE AND CAREFULLY REFINE THE ADJUSTMENT TO ELIMINATE ALL BIAS FROM THE SIGNALS BY EQUALIZING THE CURRENT-ON AND CURRENT-OFF INTERVALS.

Figure 7-10. Keyboard, Contact Assembly

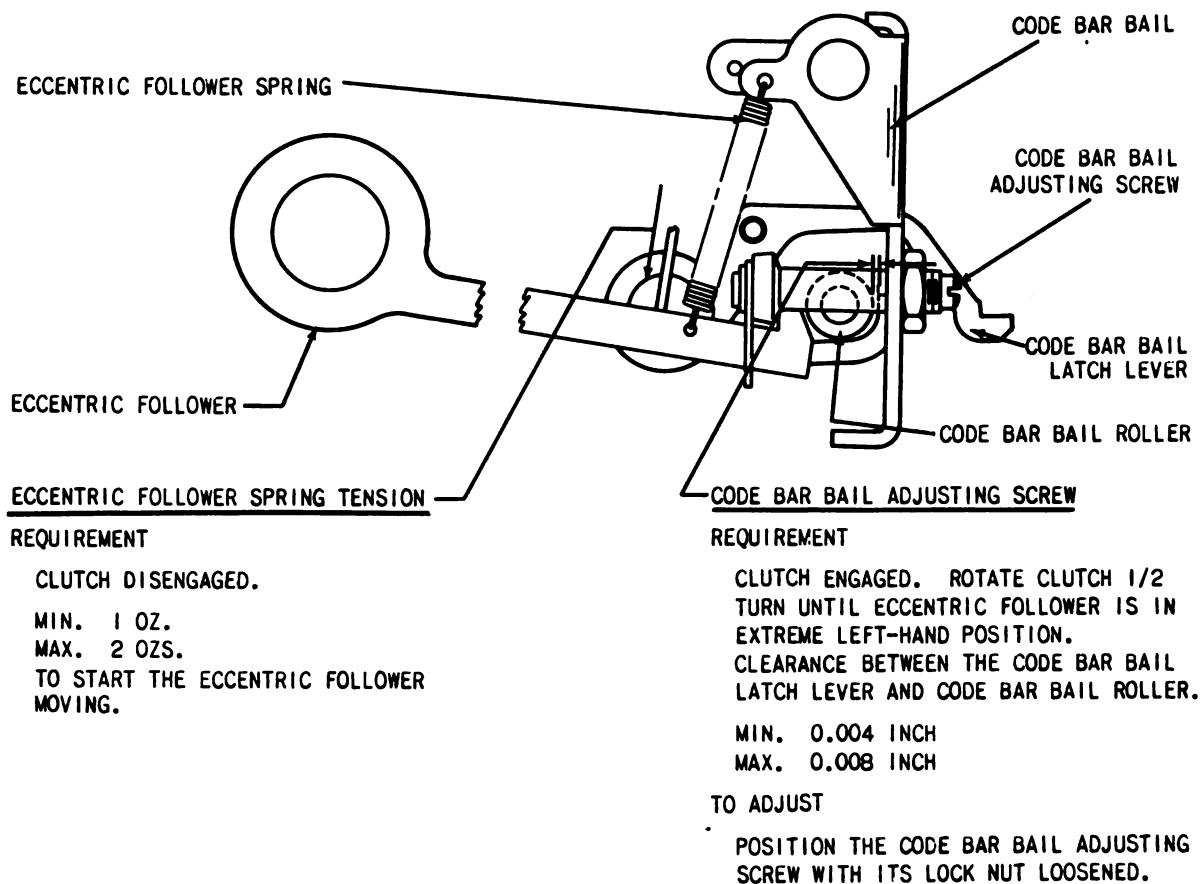


Figure 7-11. Keyboard, Code Bar Bail Mechanism

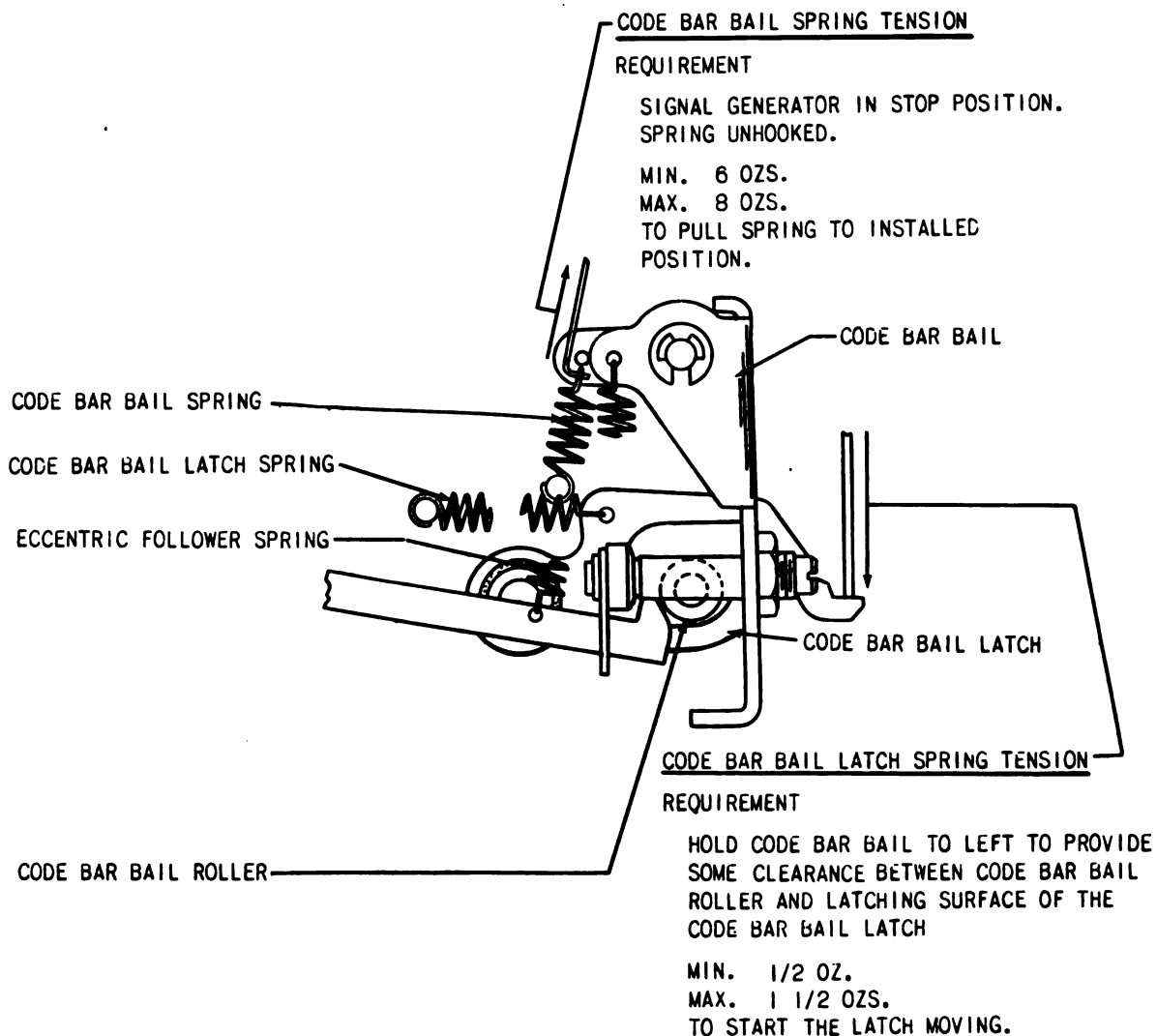


Figure 7-12. Keyboard, Code Bar Bail and Repeat Slide

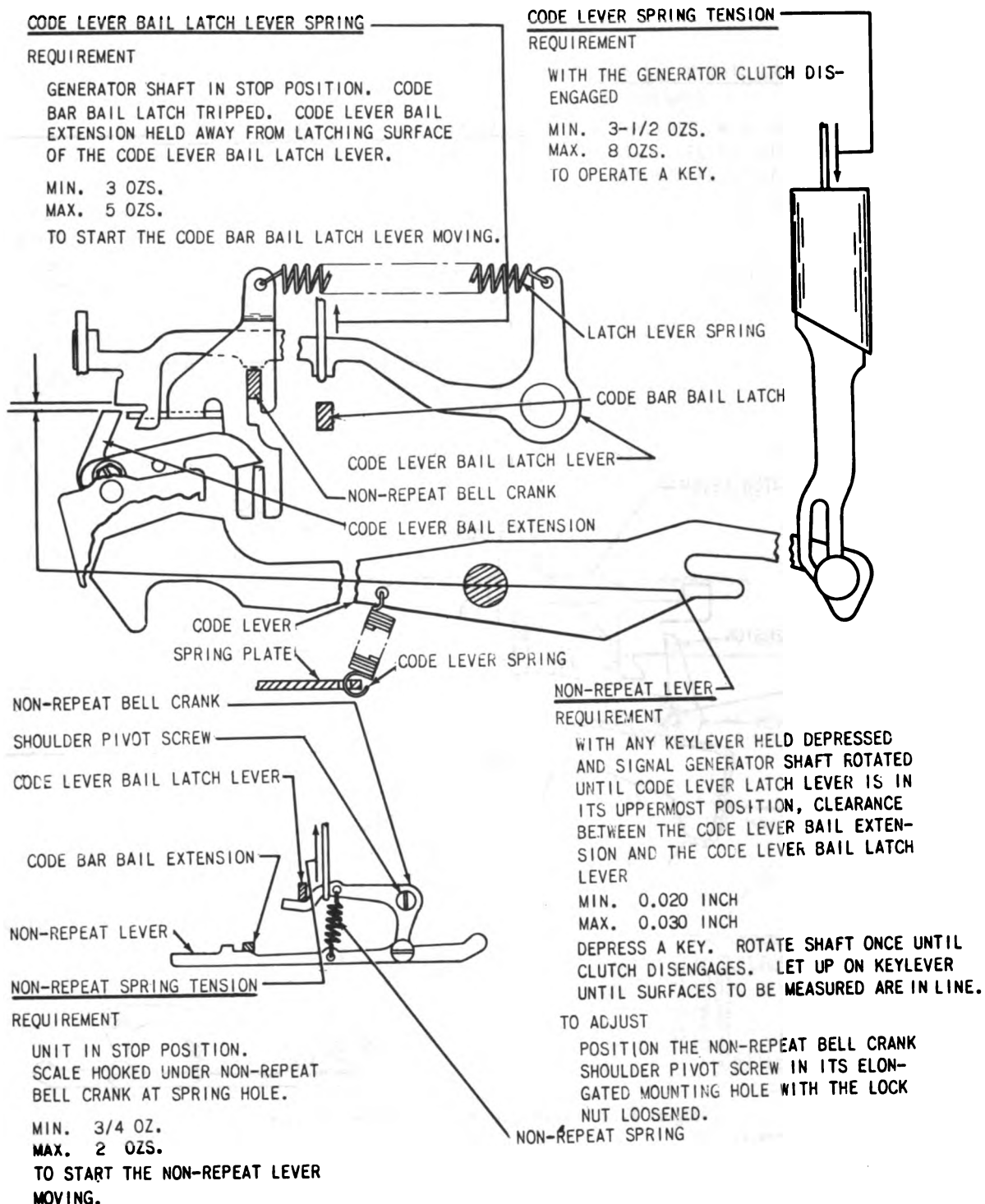


Figure 7-13. Keyboard, Non-Repeat Mechanism

CODE LEVER BAIL NON-REPEAT EXTENSION

REQUIREMENT

GENERATOR CLUTCH DISENGAGED. CODE LEVER BAIL ROTATED UNTIL CODE LEVER BAIL LATCH LEVER JUST TRIPS. BAIL LATCHING EXTENSION RESTING AGAINST VERTICAL SURFACE OF LATCH LEVER. NON-REPEAT LEVER FULLY LATCHED ON CODE LEVER BAIL EXTENSION. SOME CLEARANCE MAX. 0.008 INCH

BETWEEN THE ADJUSTABLE EXTENSION AND THE NON-REPEAT LEVER.

TO ADJUST

POSITION THE ADJUSTABLE EXTENSION WITH ITS CLAMP SCREWS LOOSENED.

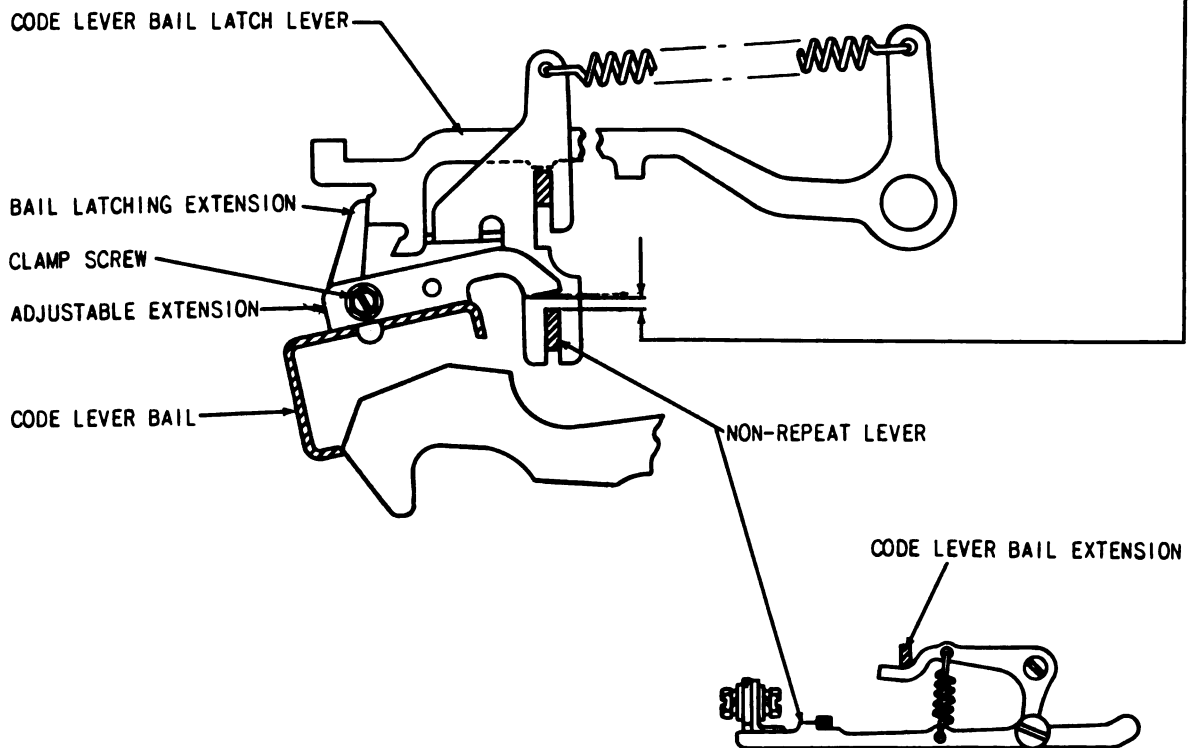


Figure 7-14. Keyboard, Non-Repeat Mechanism

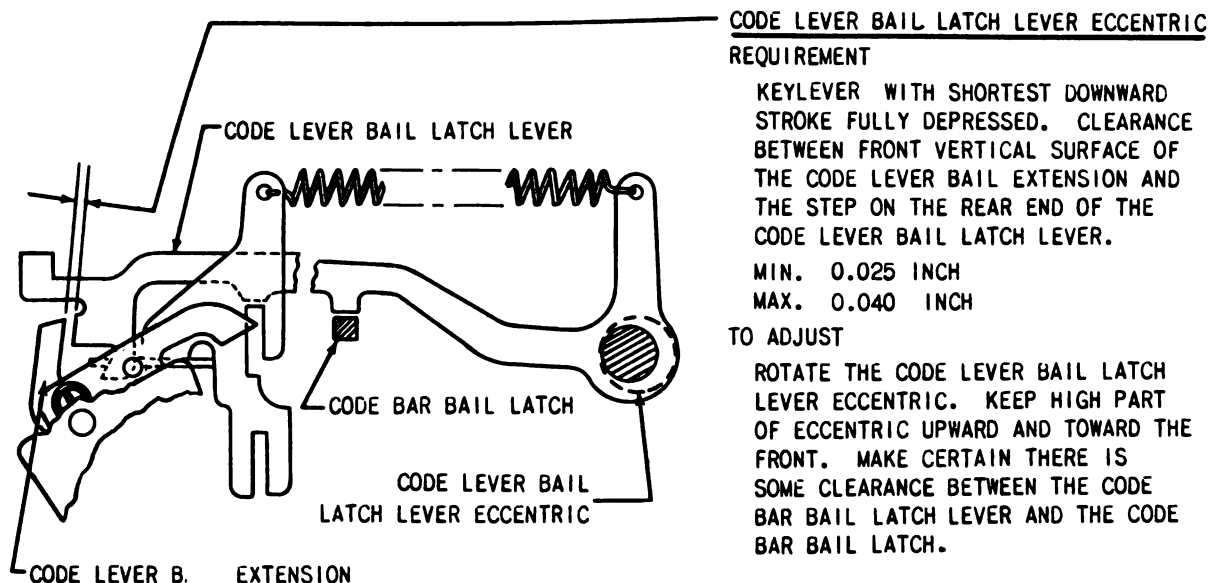


Figure 7-15. Keyboard, Code Lever Bail Latch Mechanism

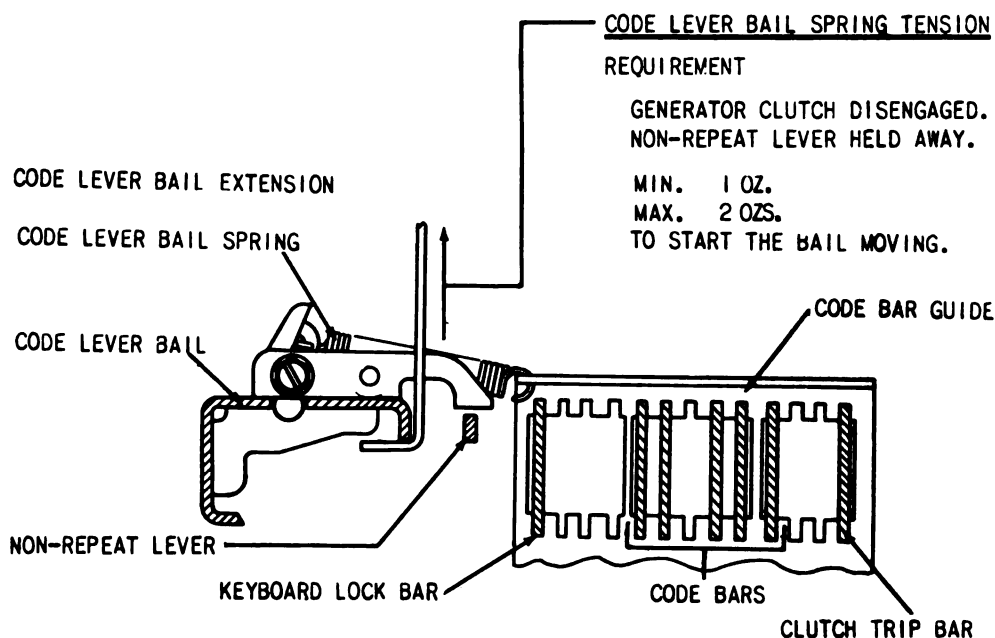


Figure 7-16. Keyboard, Code Bar Mechanism

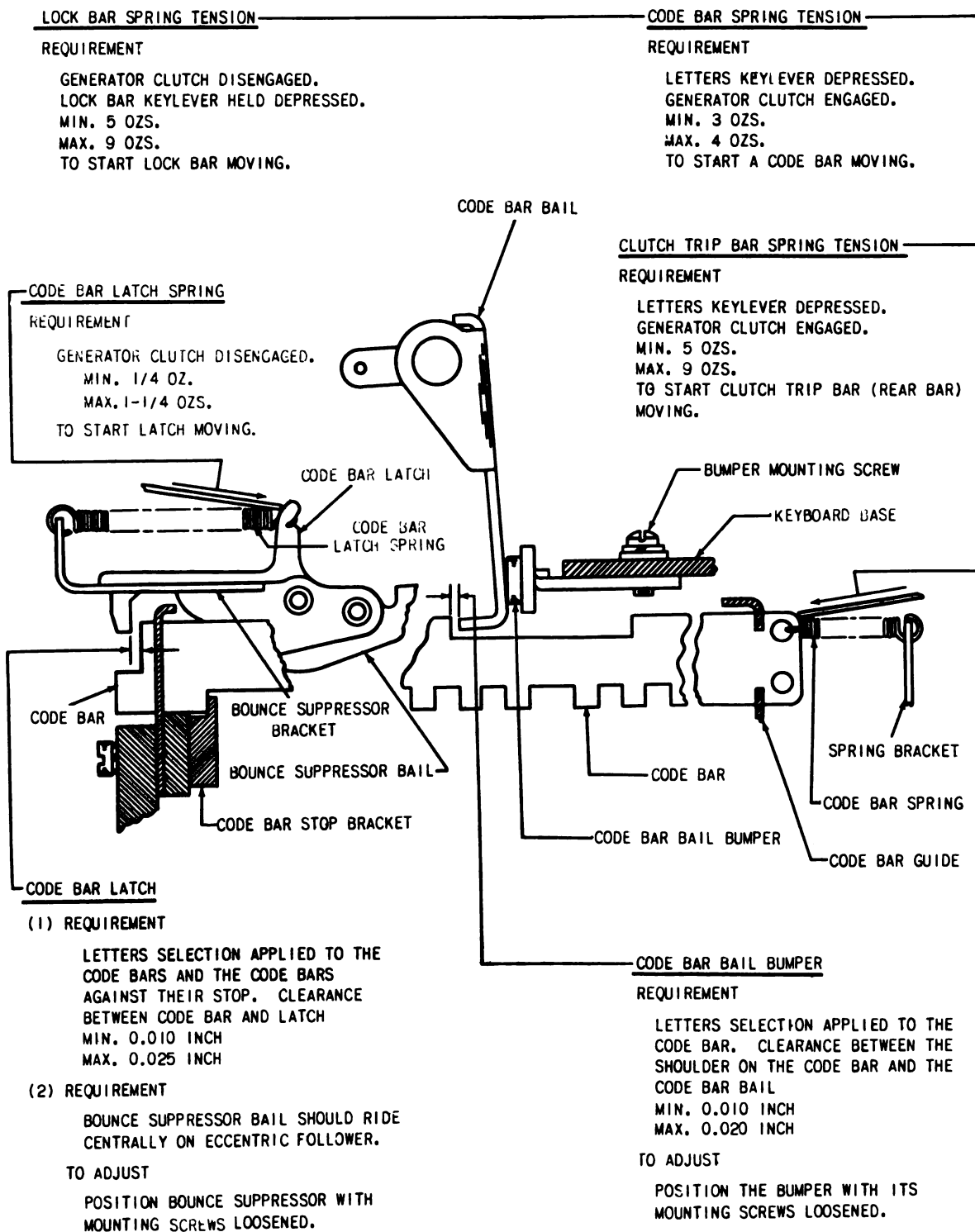


Figure 7-17. Keyboard, Code Bar Mechanism

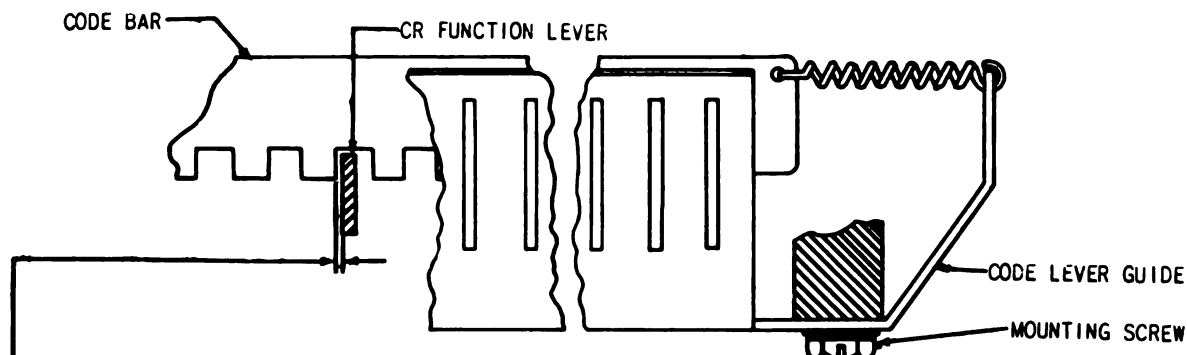
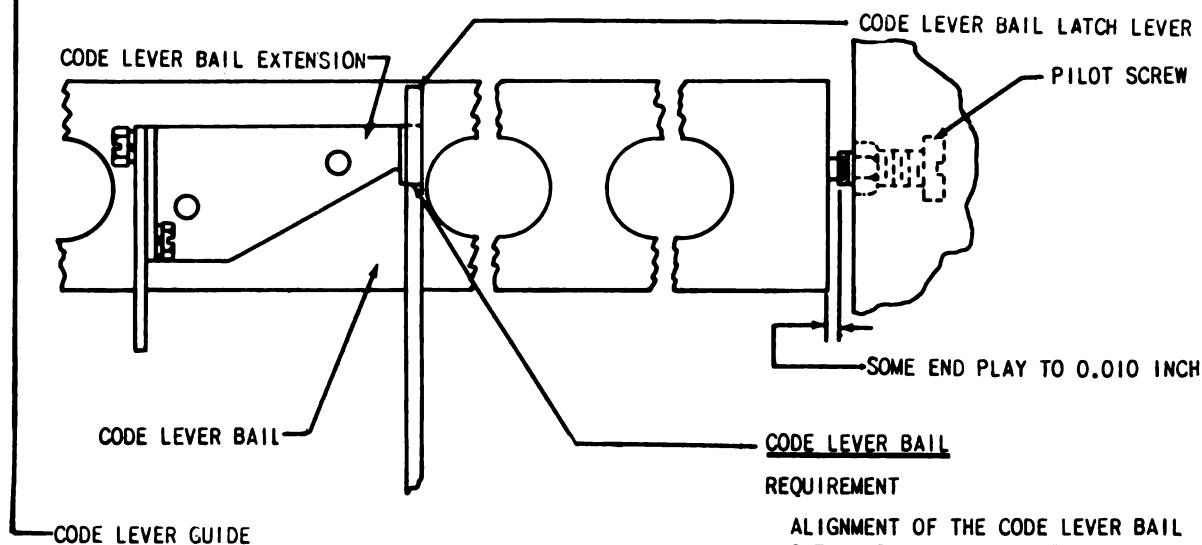


Figure 7-18. Keyboard, Code Bar Mechanism



WITH CR KEYLEVER HELD DEPRESSED AND SIGNAL GENERATOR SHAFT ROTATED TO STOP POSITION CLEARANCE BETWEEN THE CR FUNCTION LEVER AND THE STOPPING EDGE OF THE NO. 5 CODE BAR SHOULD BE

MIN. 0.010 INCH
MAX. 0.015 INCH

TO ADJUST

POSITION THE CODE LEVER GUIDE WITH ITS FOUR MOUNTING SCREWS LOOSENED

CODE LEVER BAIL
REQUIREMENT

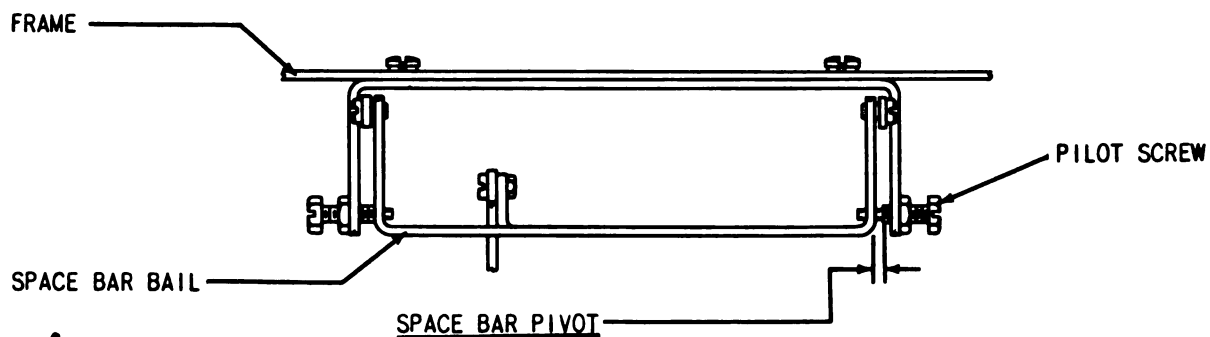
ALIGNMENT OF THE CODE LEVER BAIL EXTENSION AND THE CODE LEVER BAIL LATCH LEVER SHOULD BRING THE EDGES FLUSH WITHIN 0.010 INCH. CODE LEVER BAIL SHOULD HAVE SOME END PLAY.

MAX. 0.010 INCH.

TO ADJUST

POSITION THE CODE LEVER BAIL BY MEANS OF THE PILOT SCREWS.

Figure 7-19. Keyboard, Code Lever Bail

**REQUIREMENT**

THE SPACE BAR SHOULD BE FREE ON ITS
PIVOTS AND HAVE SOME END PLAY
MAX. 0.010 INCH

IT SHOULD ALSO BE FREE FROM BINDS IN THE
SLOTS OF THE KEYTOP GUIDE PLATE.

TO ADJUST

POSITION THE SPACE BAR BAIL PILOT SCREWS.

Figure 7-20. Keyboard, Space Bar

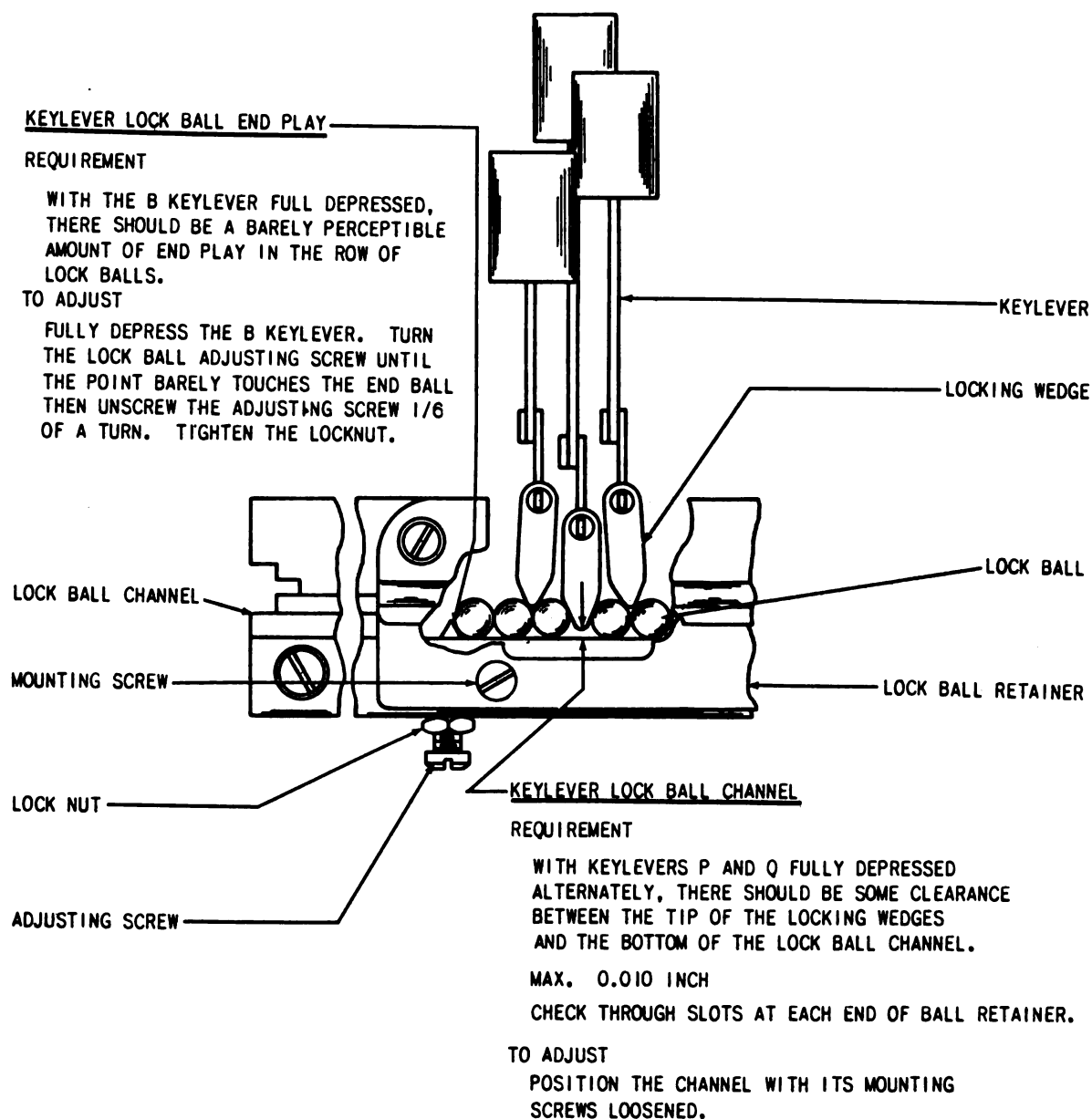


Figure 7-21. Keyboard, Keylever Locking Mechanism

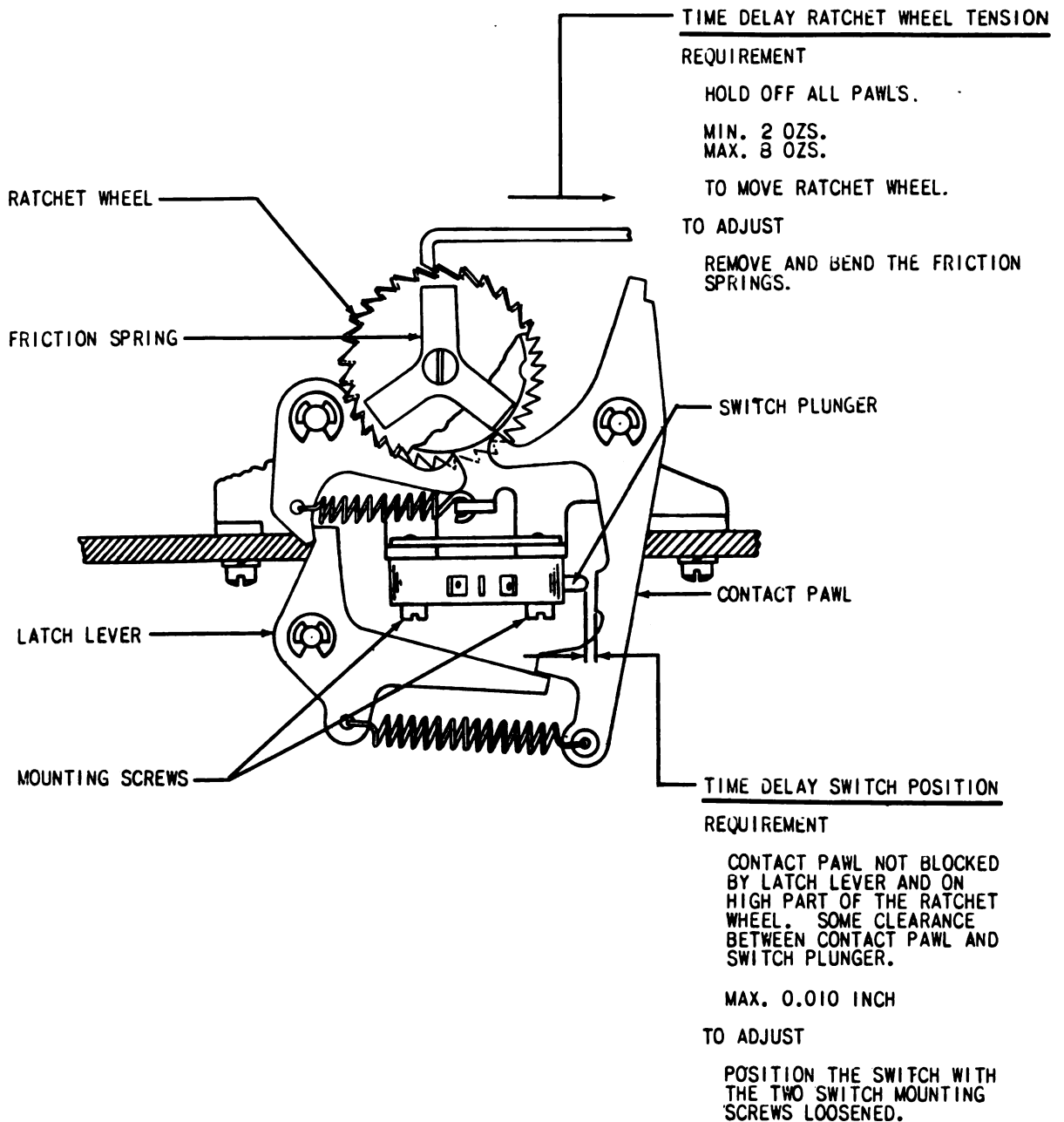


Figure 7-22. Keyboard, Time Delay Mechanism

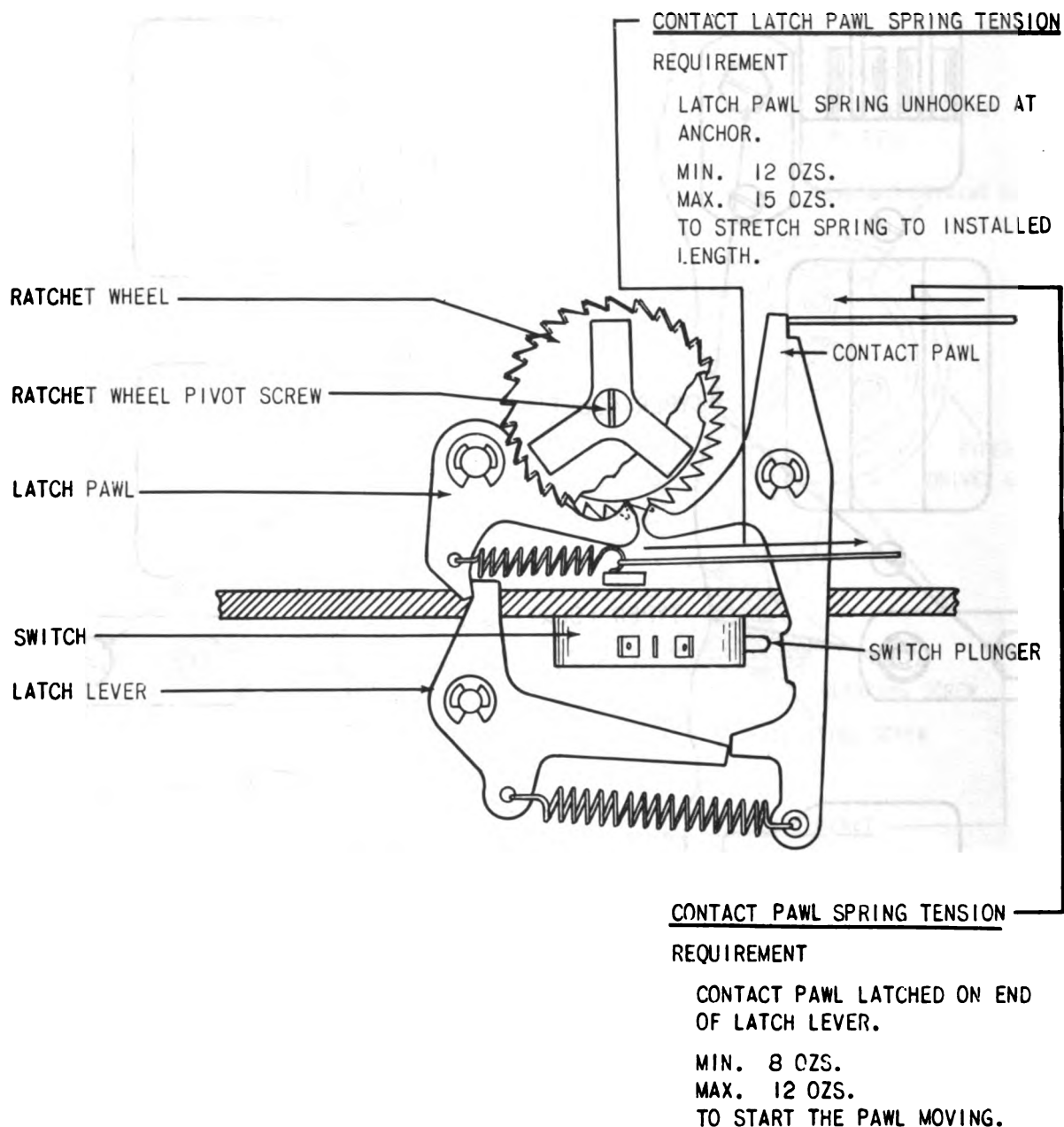
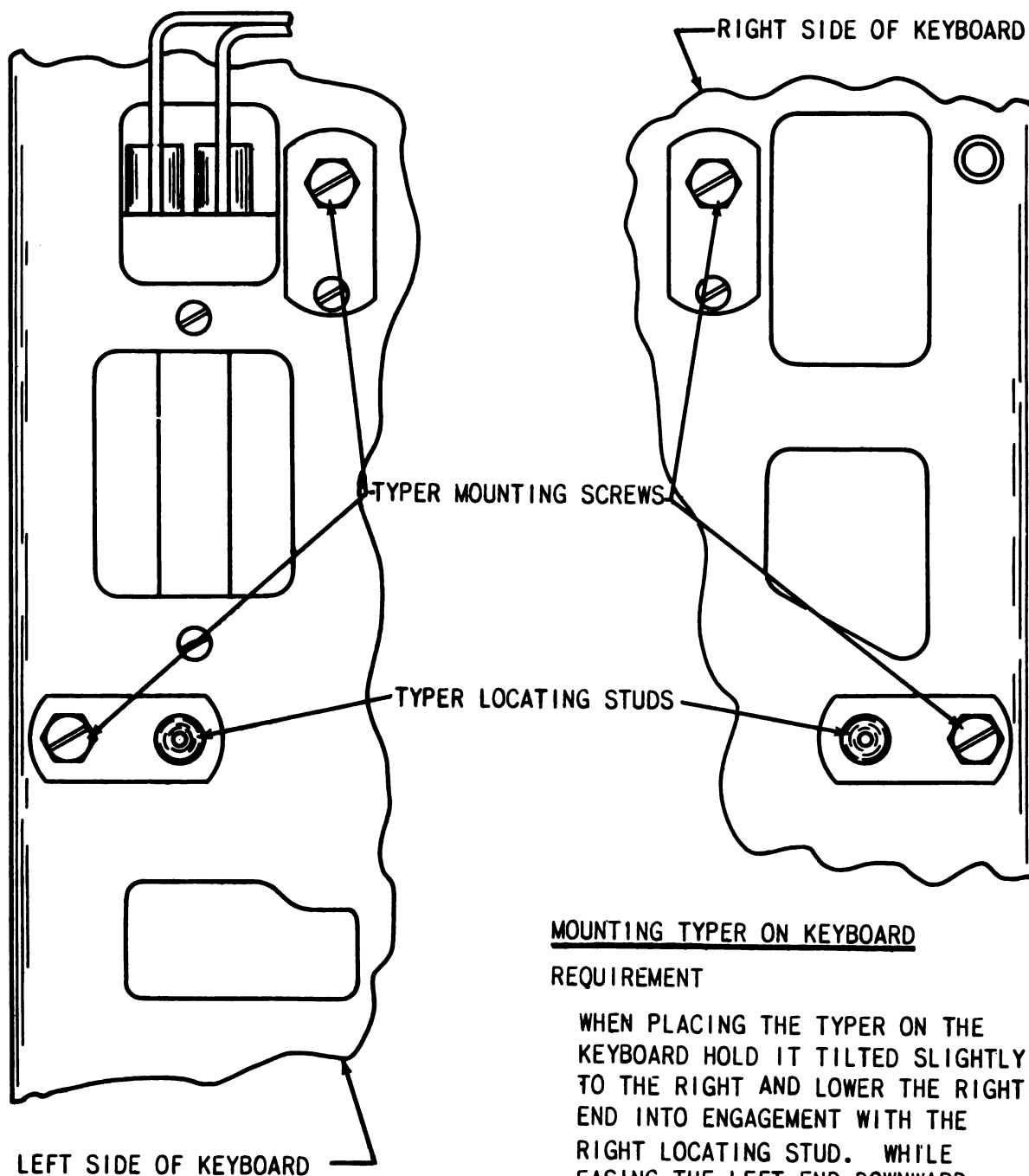


Figure 7-23. Keyboard, Time Delay Mechanism

MOUNTING TYPYER ON KEYBOARD

REQUIREMENT

WHEN PLACING THE TYPYER ON THE KEYBOARD HOLD IT TILTED SLIGHTLY TO THE RIGHT AND LOWER THE RIGHT END INTO ENGAGEMENT WITH THE RIGHT LOCATING STUD. WHILE EASING THE LEFT END DOWNWARD ROTATE THE MOTOR BY HAND TO PROPERLY MESH THE GEARS. SECURE BY FOUR MOUNTING SCREWS.

Figure 7-24. Mounting Typyer on Keyboard

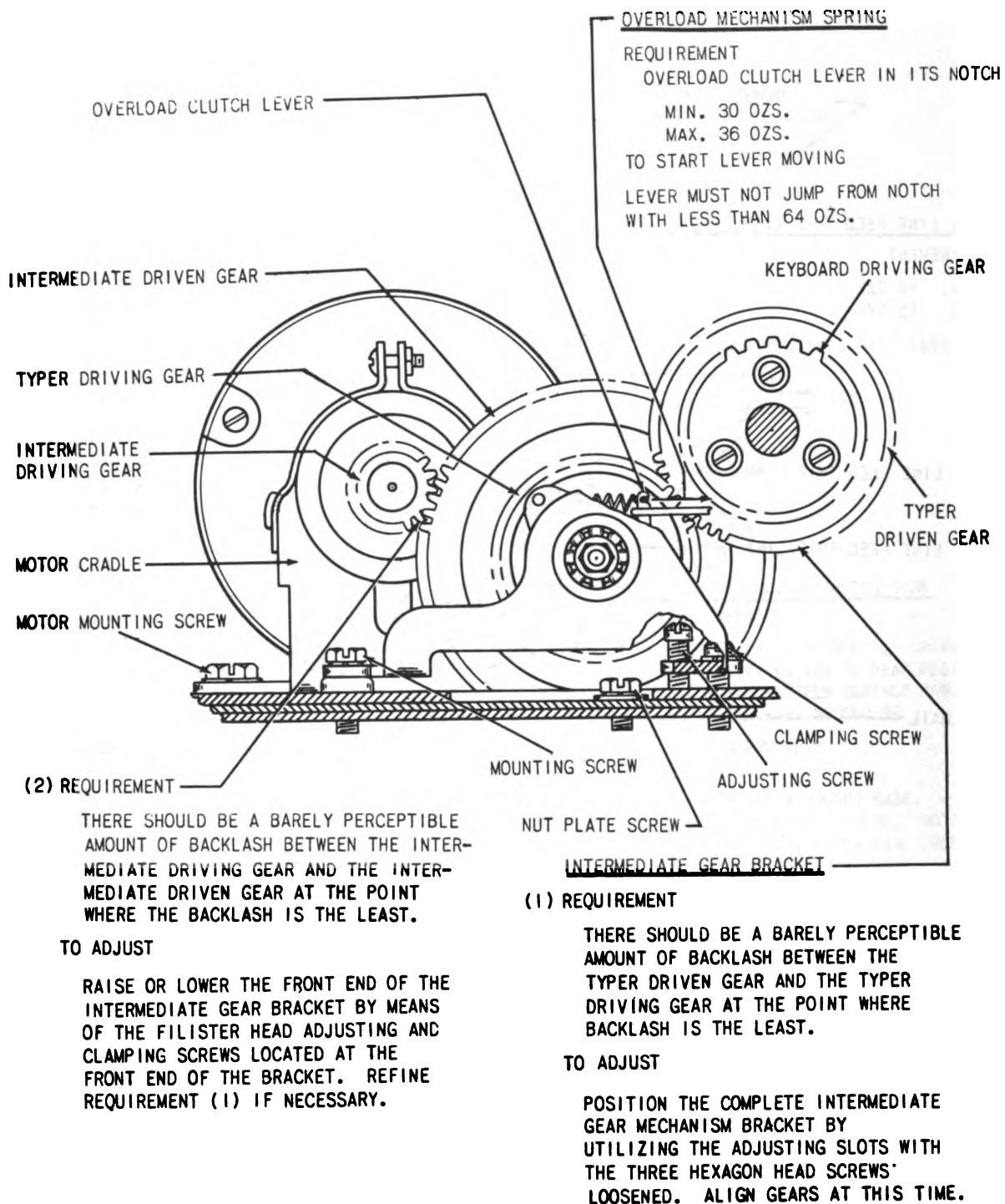


Figure 7-25. Keyboard and Motor Gearing

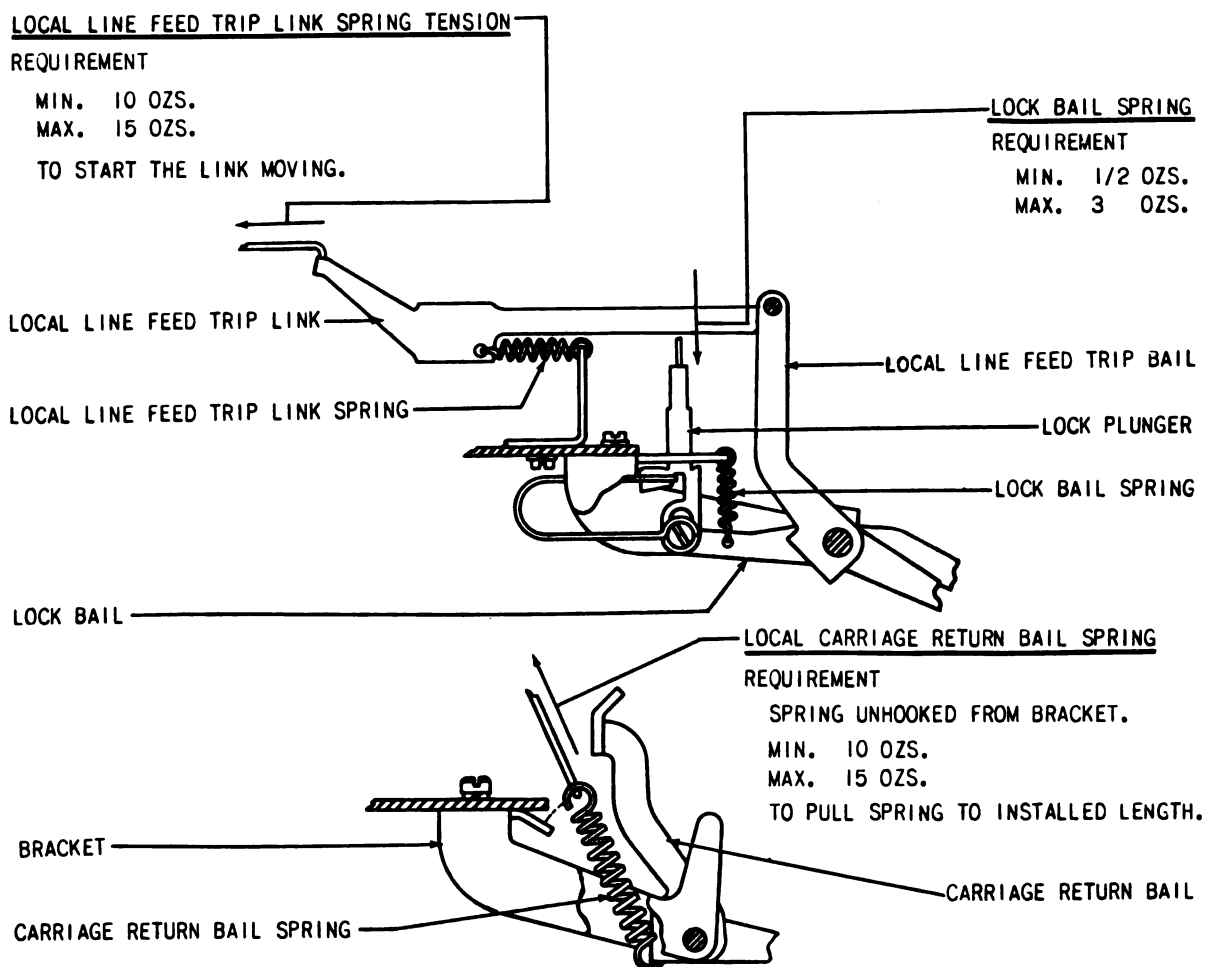


Figure 7-26. Keyboard Lock and Local Line Feed Mechanism

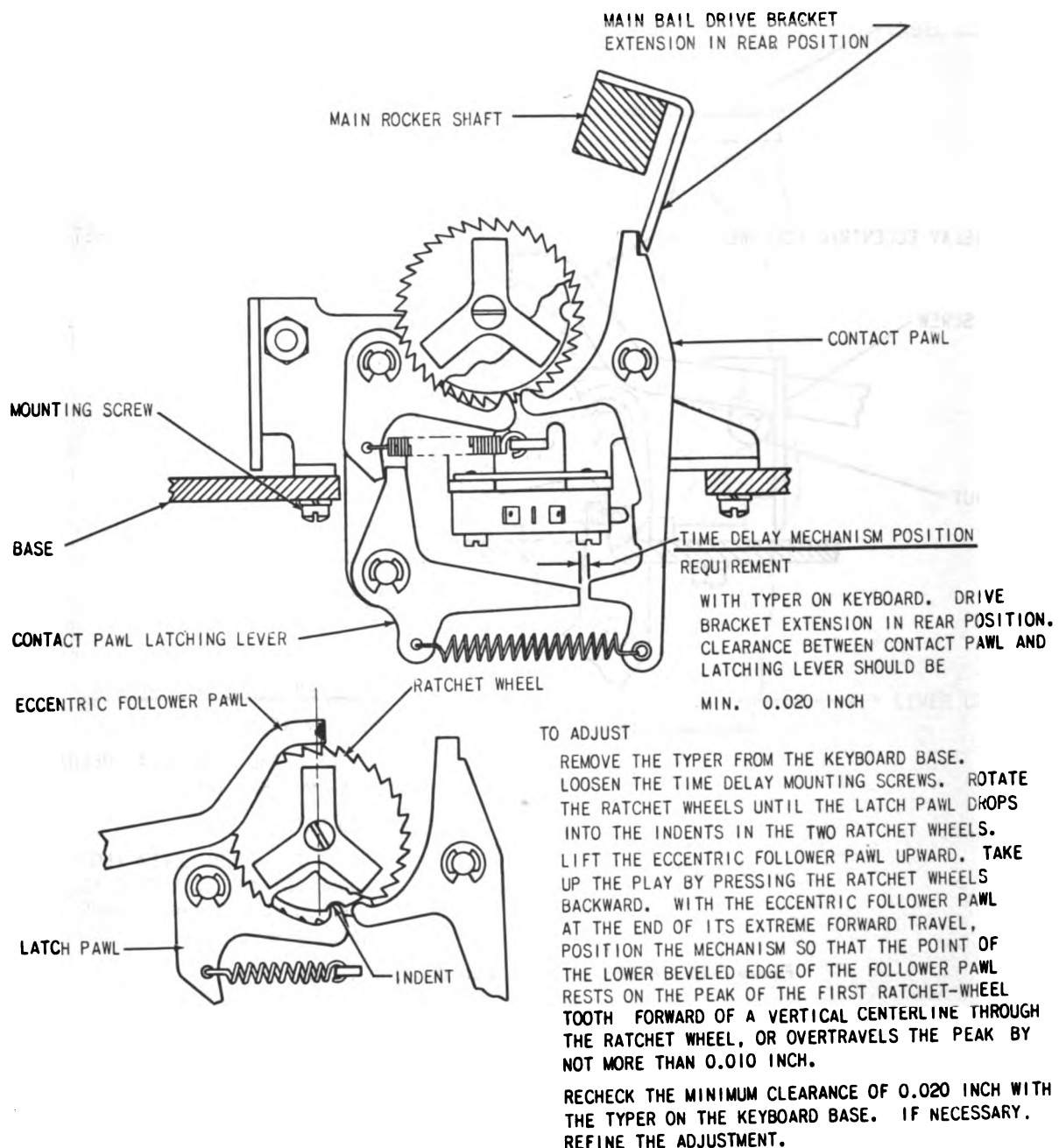
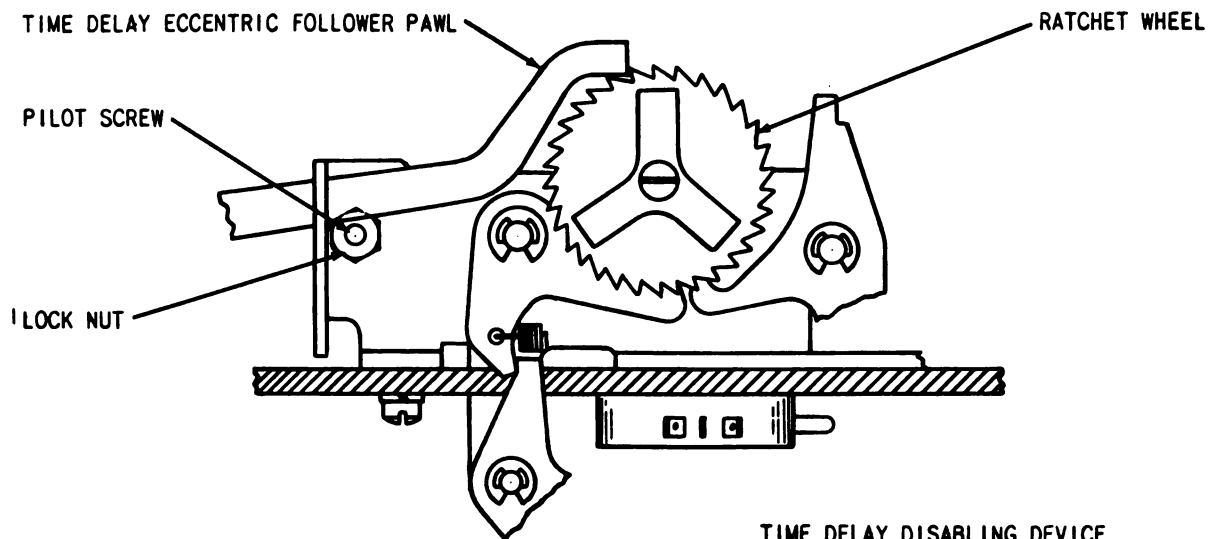


Figure 7-27. Keyboard, Time Delay Mechanism



TIME DELAY DISABLING DEVICE

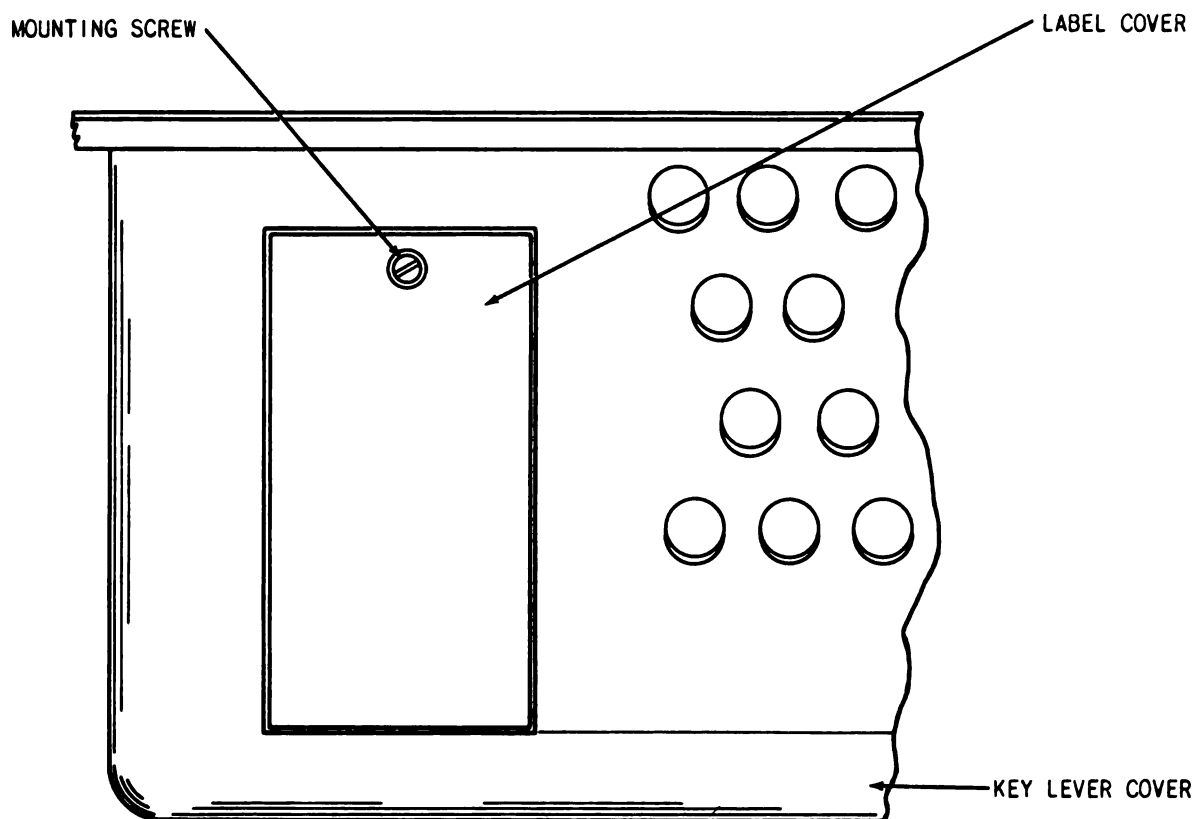
REQUIREMENT

DISABLE THE TIME DELAY MECHANISM
WHEN NOT REQUIRED.

TO ADJUST

RAISE THE PILOT SCREW (LOCK NUT
LOOSENED) AND ECCENTRIC FOLLOWER
PAWL UNTIL THE PAWL CLEARS THE
RATCHET WHEEL.

Figure 7-28. Keyboard, Time Delay Disabling Device



LABEL COVER (PLASTIC COVER)

REQUIREMENT

THE PLASTIC COVER SHOULD BE FULLY
SEATED IN POSITION BEFORE TIGHTEN-
ING THE MOUNTING SCREW.

TO ADJUST

POSITION THE LABEL COVER WITH THE
MOUNTING SCREW LOOSENED.

Figure 7-29. Keyboard, Label Cover, Plastic Window

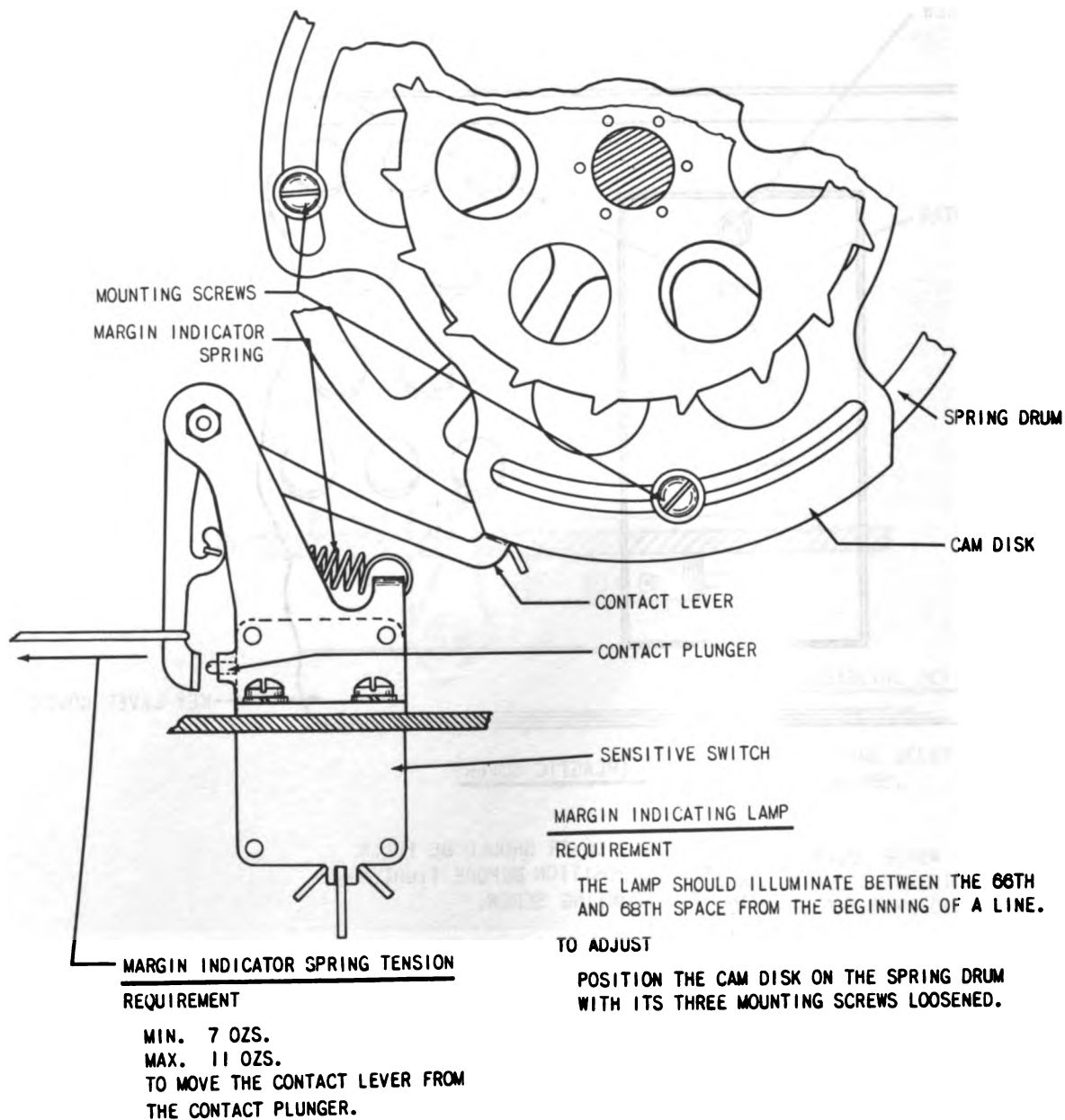


Figure 7-30. Keyboard, Margin Indicating Mechanism

d. AUTOMATIC TYPER MX-1115A/UG

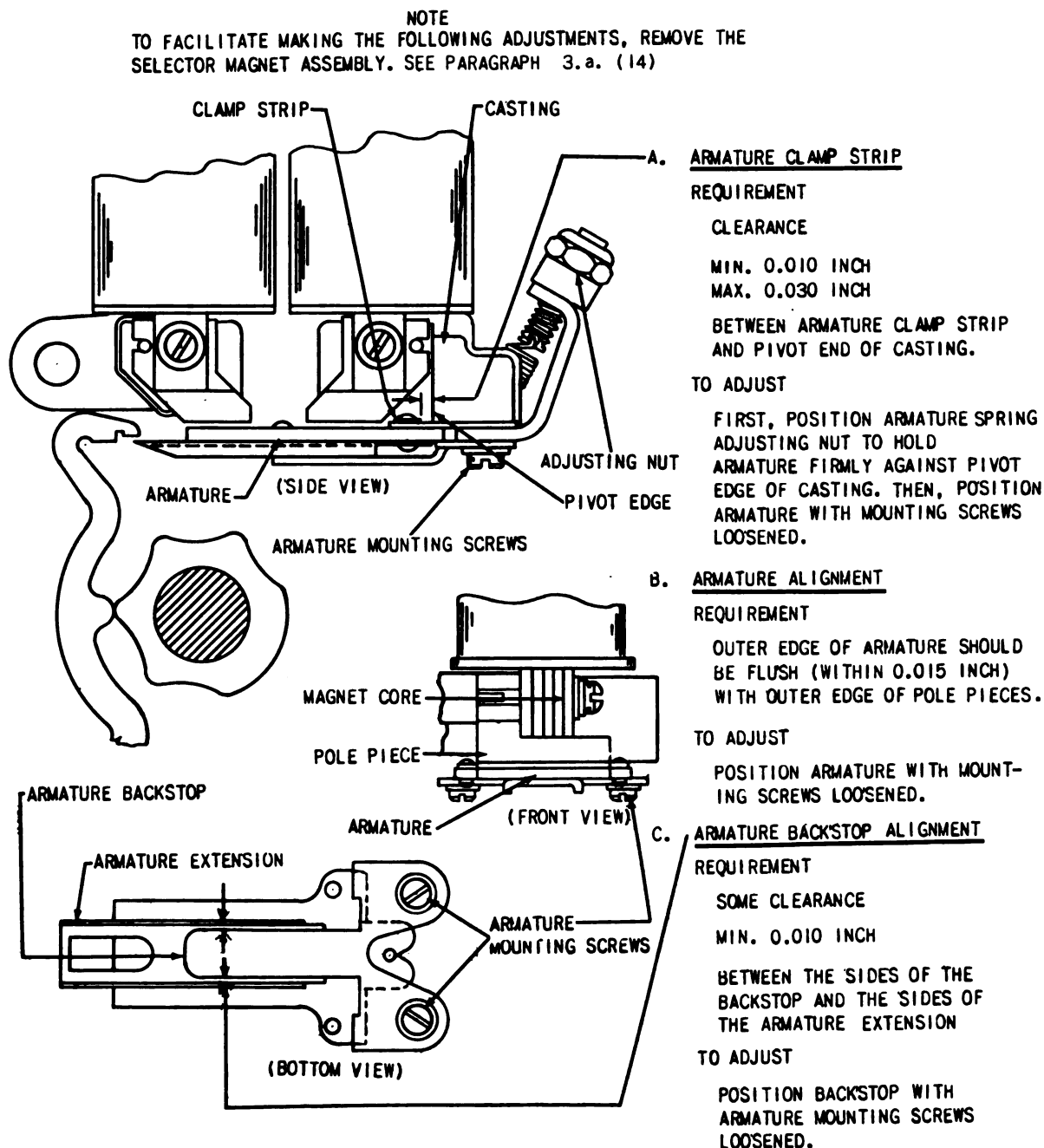


Figure 7-31. Automatic Typewriter, Selector Magnet

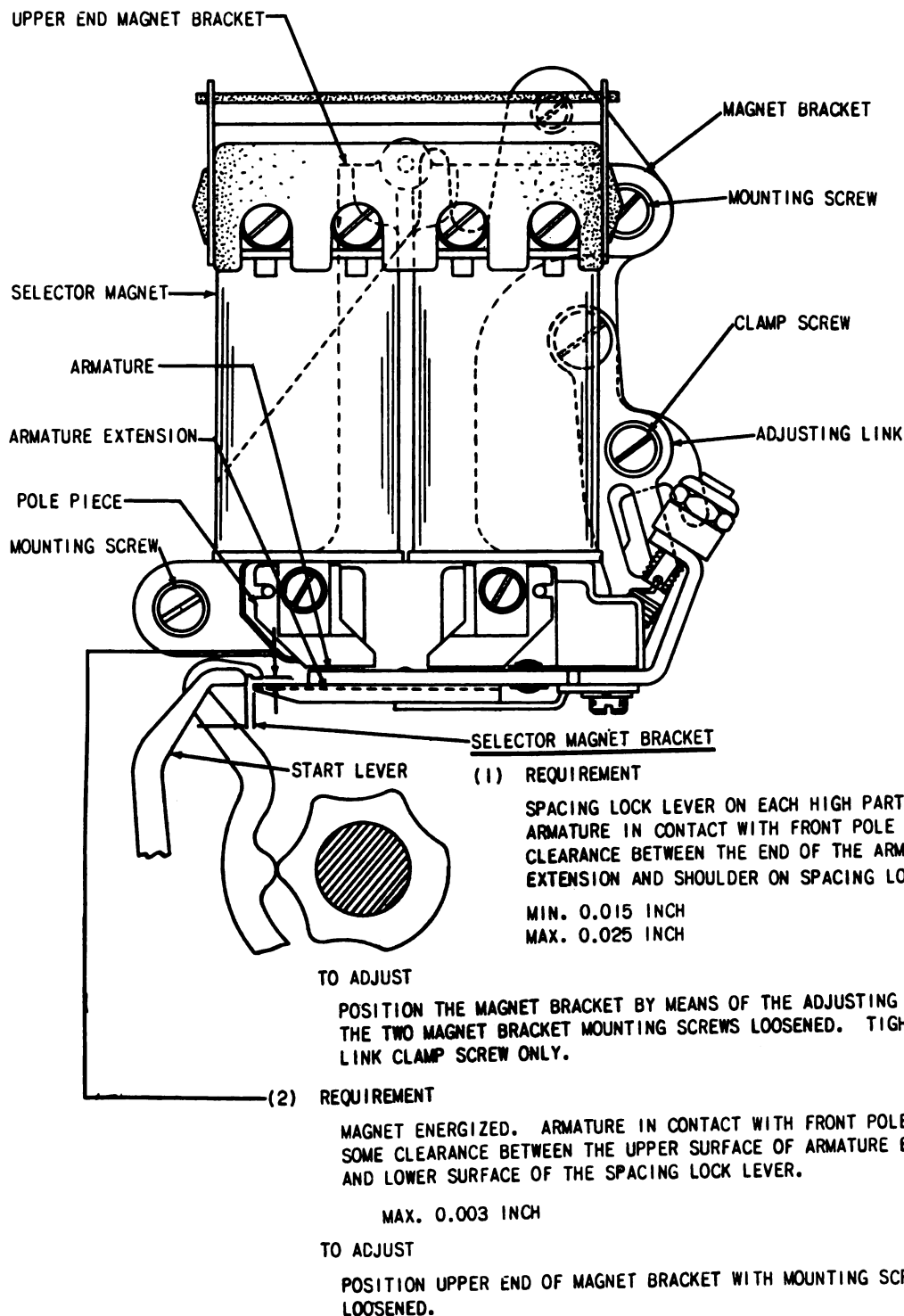


Figure 7-32. Automatic Typewriter, Selector Magnet

SELECTOR ARMATURE SPRING - PRELIMINARY

REQUIREMENT

WITH THE MARKING LOCK LEVER, SPACING LOCK LEVER, AND START LEVER ON HIGH PART OF THEIR CAMS. SCALE APPLIED UPWARD AT END OF ARMATURE EXTENSION.

0.060 AMP. 0.020 AMP.

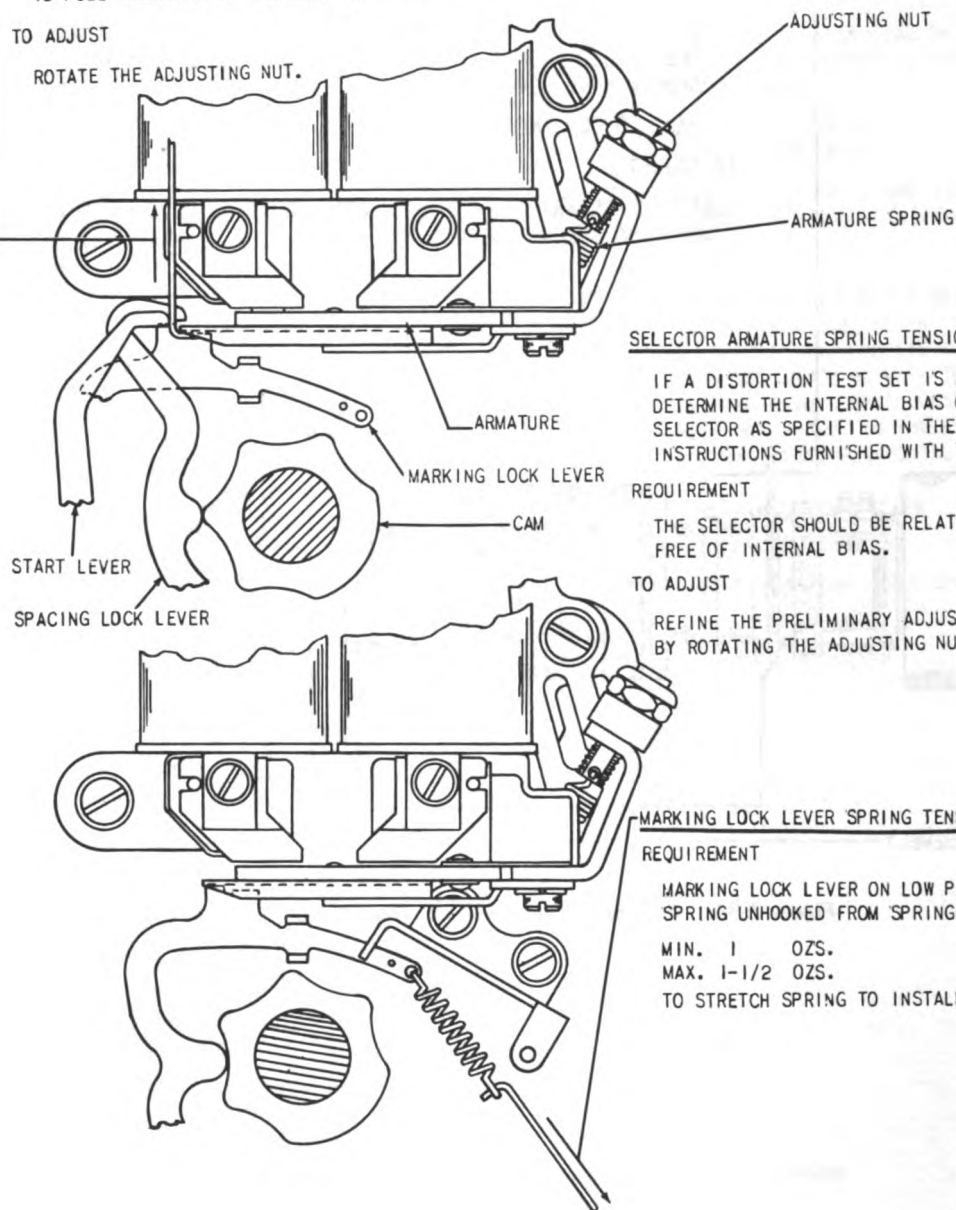
TENSION: MIN. 2-1/2 OZS. MIN. 1-1/2 OZS.

MAX. 3 OZS. MAX. 2 OZS.

TO PULL ARMATURE TO MARKING POSITION.

TO ADJUST

ROTATE THE ADJUSTING NUT.



SELECTOR ARMATURE SPRING TENSION - FINAL

IF A DISTORTION TEST SET IS AVAILABLE
DETERMINE THE INTERNAL BIAS OF THE
SELECTOR AS SPECIFIED IN THE
INSTRUCTIONS FURNISHED WITH THE SET.

REQUIREMENT

THE SELECTOR SHOULD BE RELATIVELY
FREE OF INTERNAL BIAS.

TO ADJUST

REFINE THE PRELIMINARY ADJUSTMENT
BY ROTATING THE ADJUSTING NUT.

MARKING LOCK LEVER SPRING TENSION

REQUIREMENT

MARKING LOCK LEVER ON LOW PART OF CAM.
SPRING UNHOOKED FROM SPRING BRACKET.

MIN. 1 OZS.

MAX. 1-1/2 OZS.

TO STRETCH SPRING TO INSTALLED LENGTH.

Figure 7-33. Automatic Typewriter, Selector Mechanism

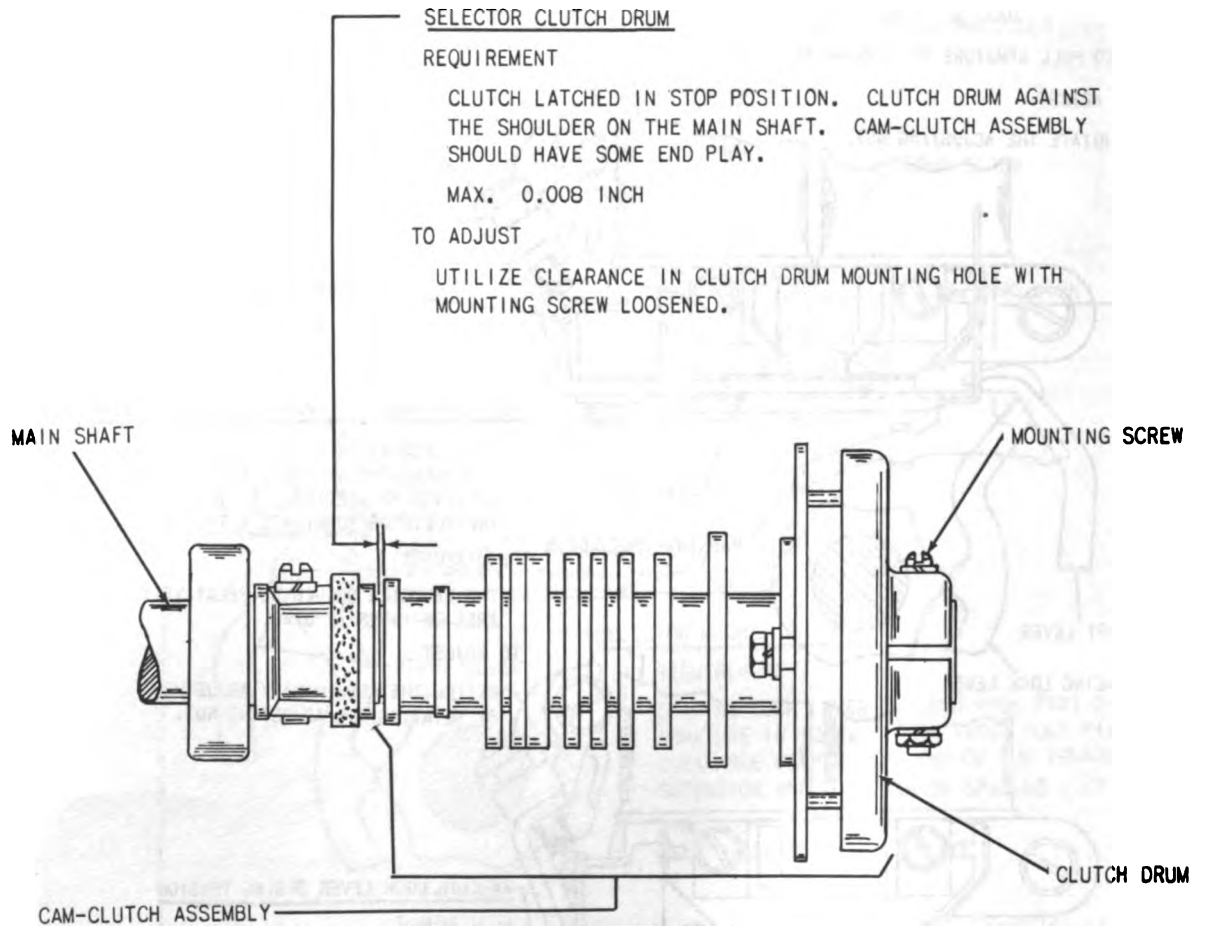


Figure 7-34. Automatic Typewriter, Selector Cam Clutch

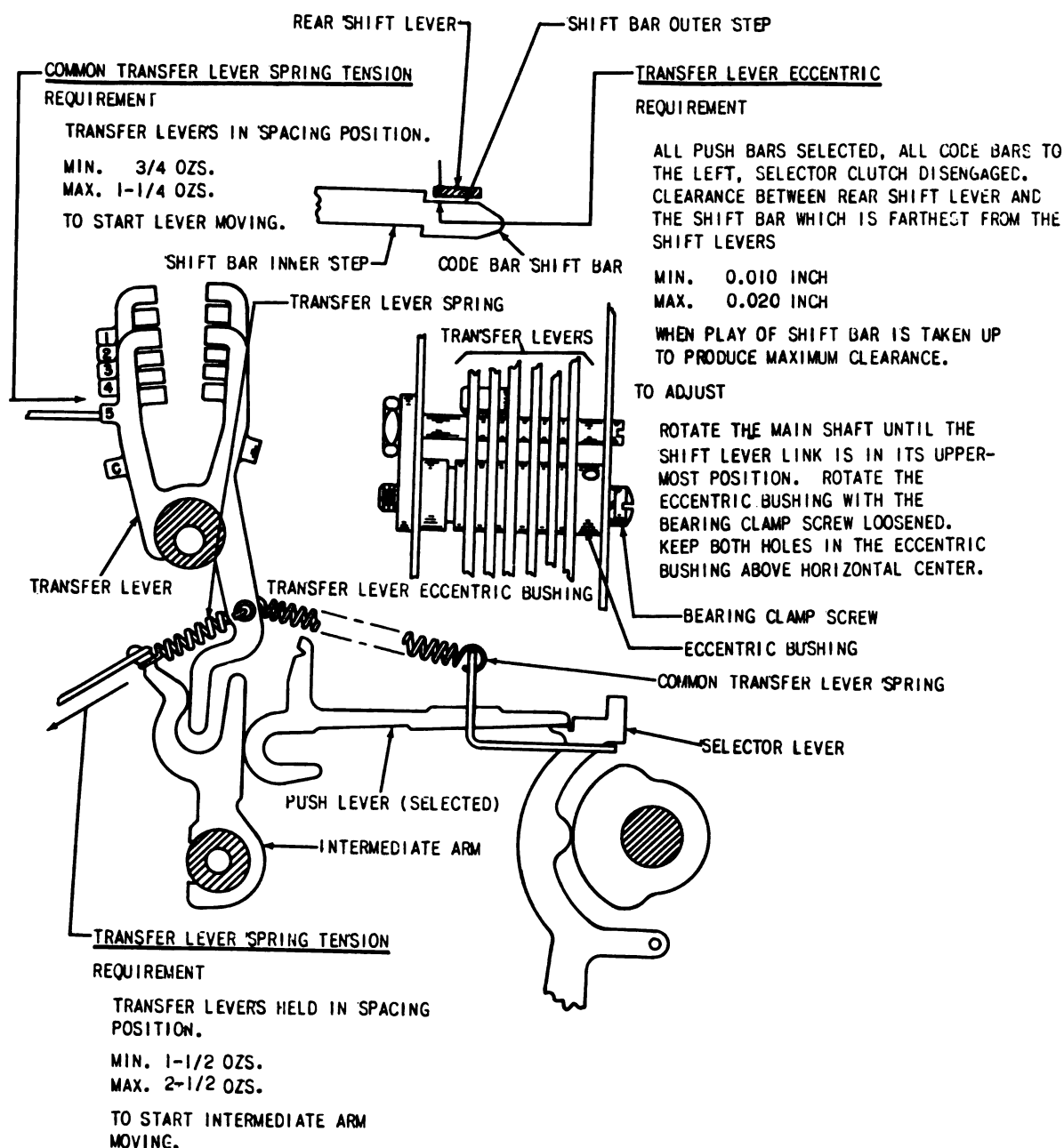


Figure 7-35. Automatic Typewriter, Code Bar Shift Mechanism

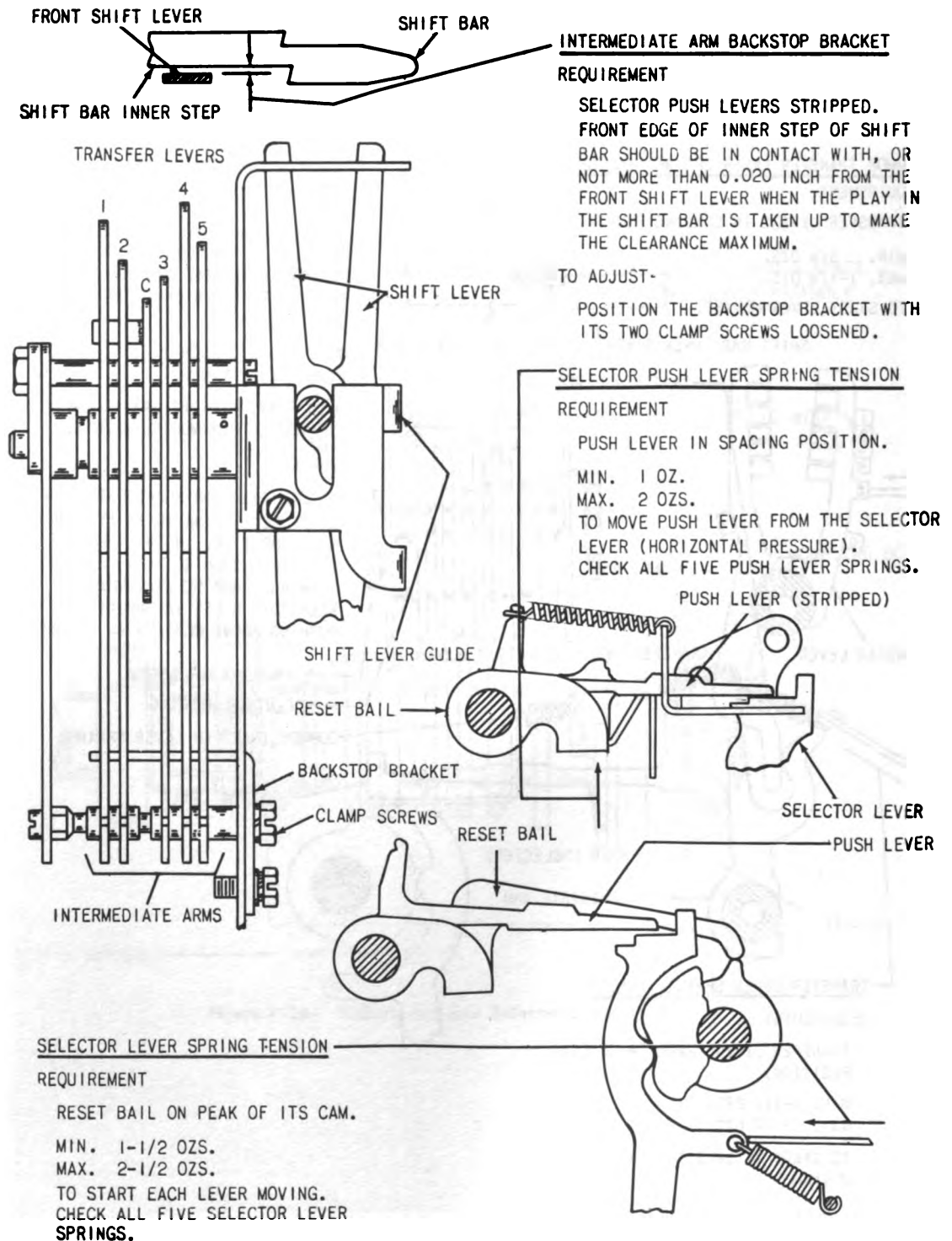


Figure 7-36. Automatic Typewriter, Code Bar Shift Mechanism

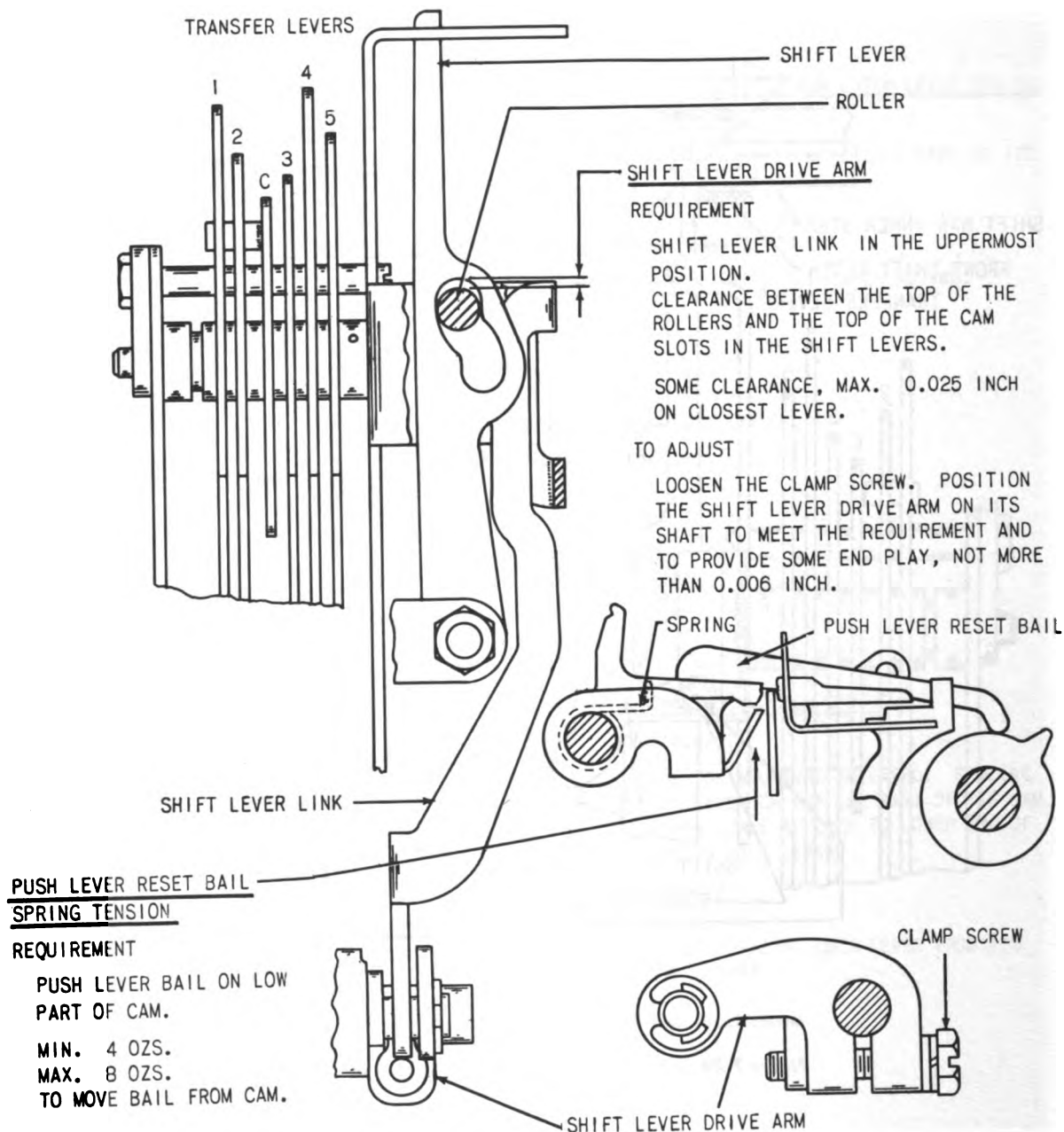


Figure 7-37. Automatic Typewriter, Code Bar Shift Mechanism

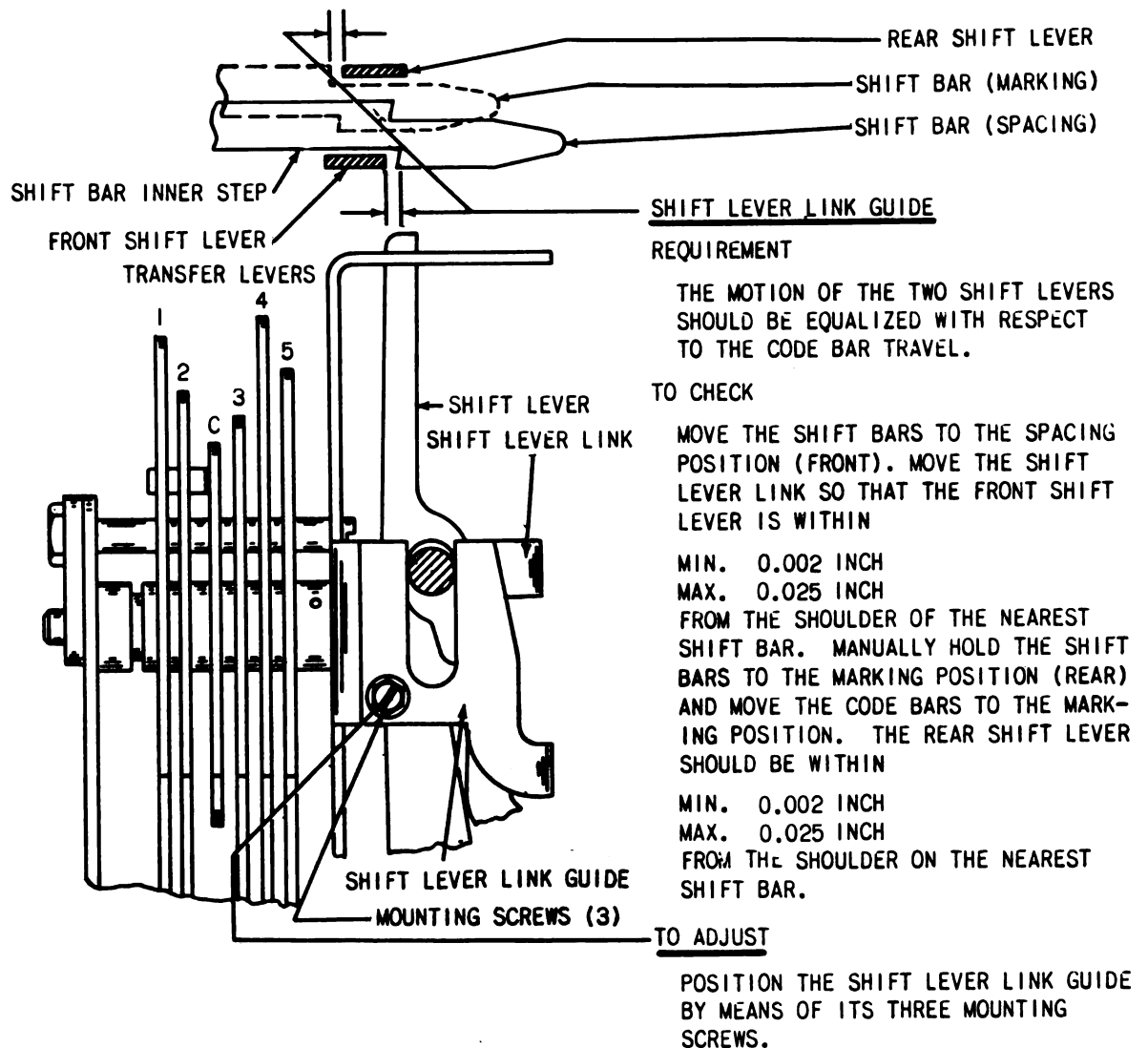


Figure 7-38. Automatic Typer, Code Bar Shift Mechanism

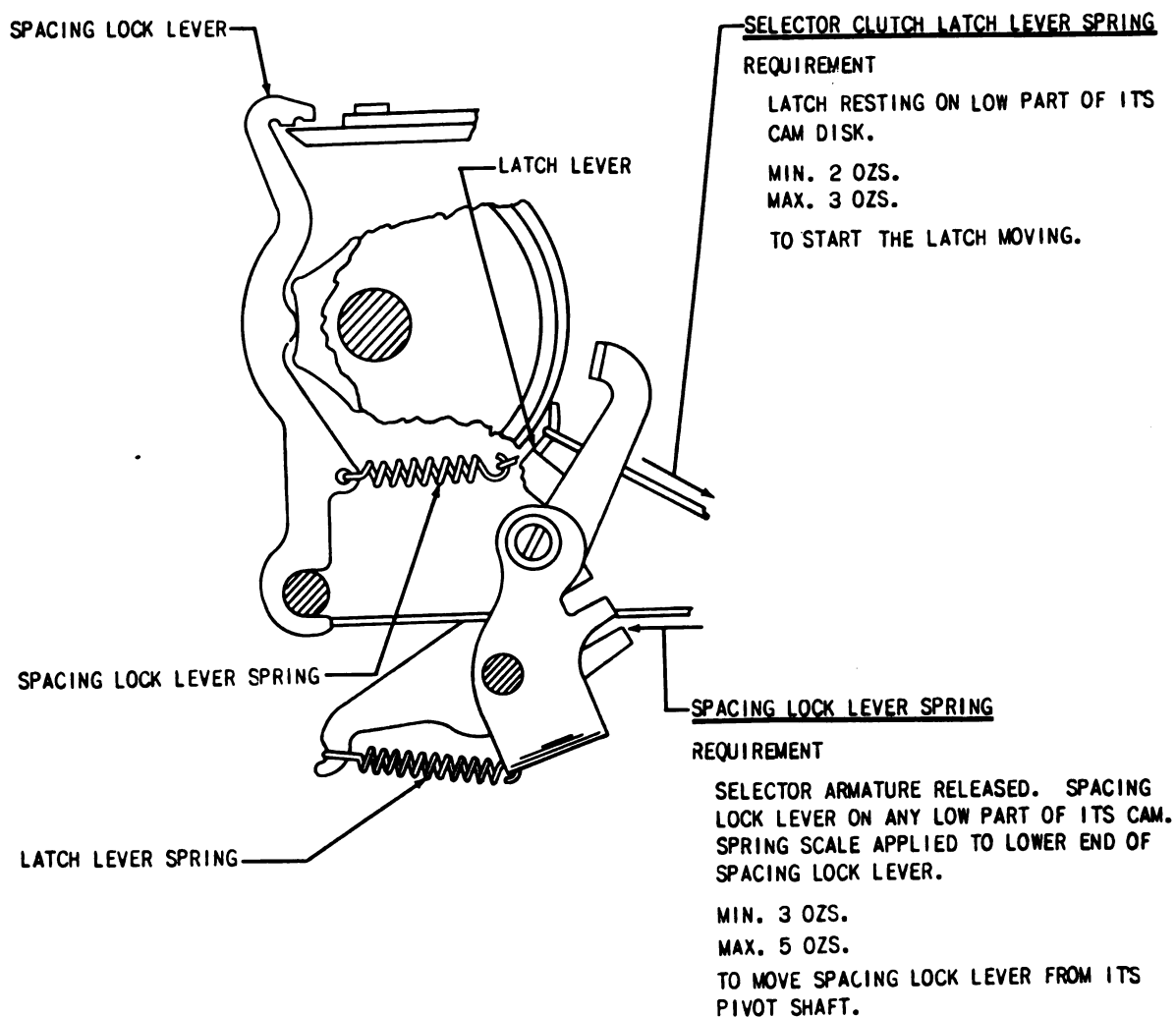


Figure 7-39. Automatic Typewriter, Selector Clutch Mechanism

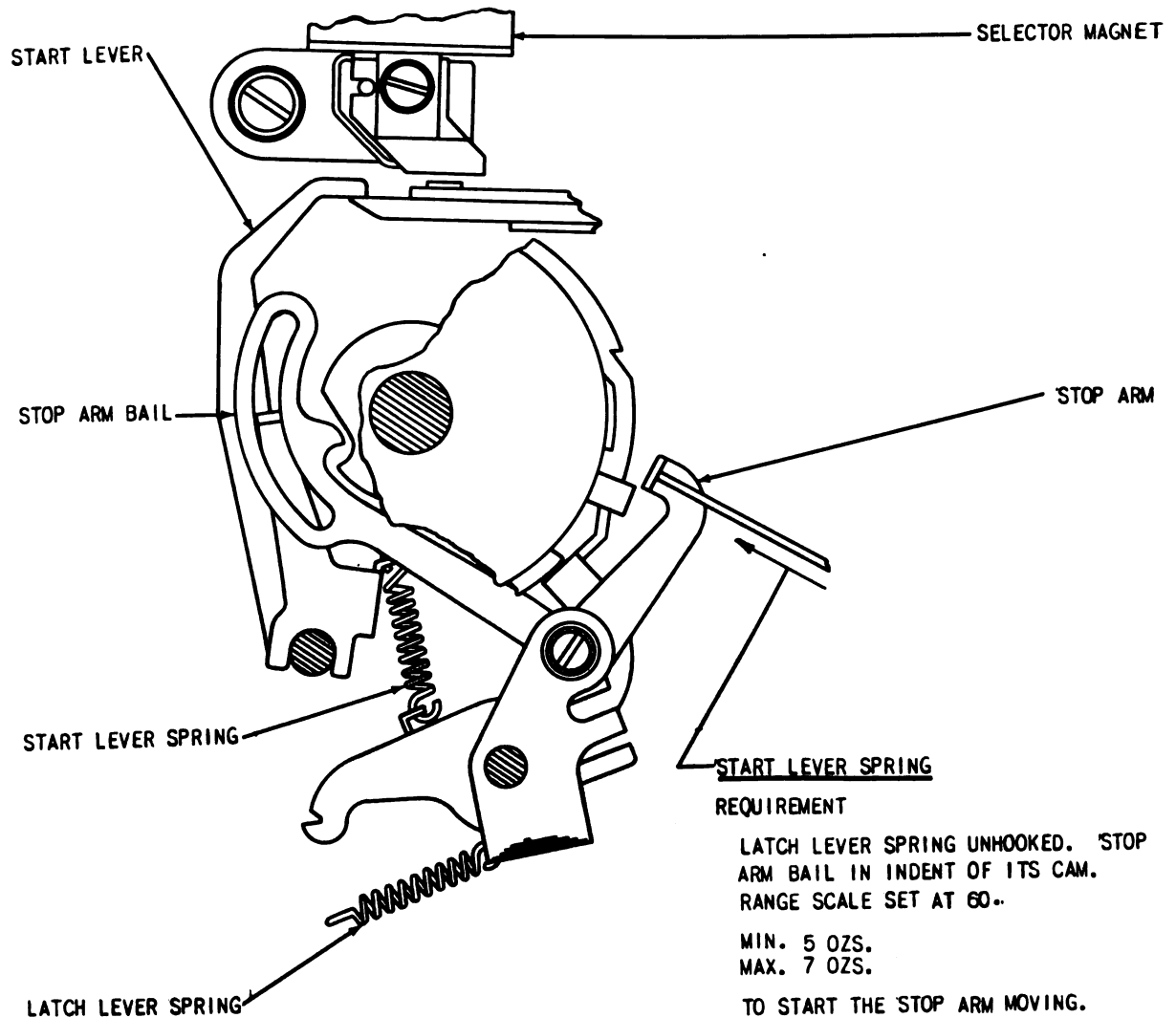


Figure 7-40. Automatic Typewriter, Selector Clutch Mechanism

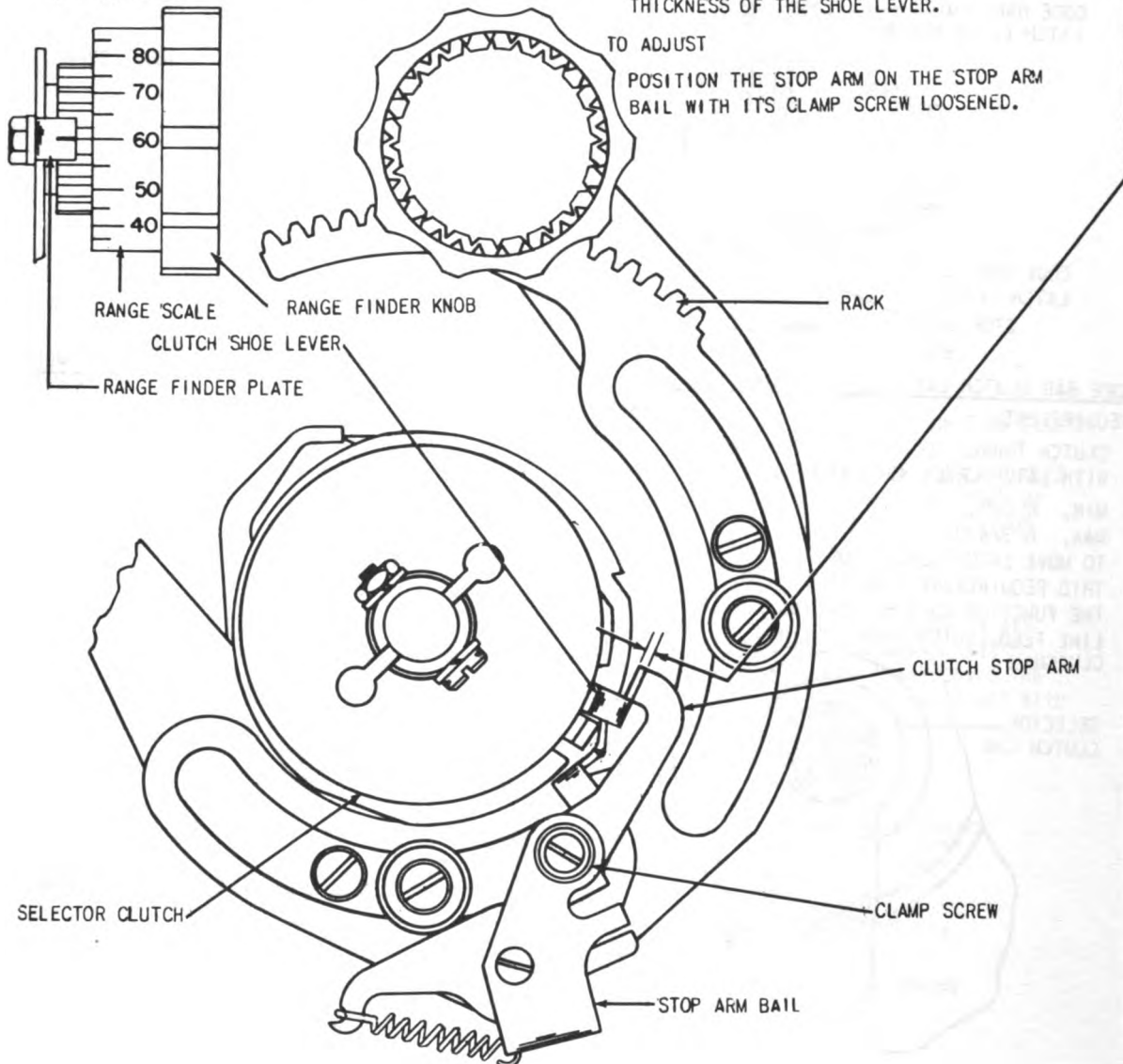
RANGE FINDER KNOB PHASING

REQUIREMENT

WITH RANGE FINDER KNOB TURNED TO EITHER END OF RACK, ZERO MARK ON SCALE SHOULD BE IN LINE WITH SCRIBED LINE ON RANGE FINDER PLATE

TO PHASE

REMOVE PLATE AND POSITION KNOB WITH MOUNTING NUT LOOSE



SELECTOR CLUTCH STOP ARM

REQUIREMENT

RANGE SCALE SET AT 60. SELECTOR CLUTCH DISENGAGED. ARMATURE IN MARKING POSITION. CLUTCH STOP ARM SHOULD ENGAGE THE CLUTCH SHOE LEVER BY APPROXIMATELY THE FULL THICKNESS OF THE SHOE LEVER.

TO ADJUST

POSITION THE STOP ARM ON THE STOP ARM BAIL WITH ITS CLAMP SCREW LOOSE

Figure 7-41. Automatic Typewriter, Range Finder Mechanism

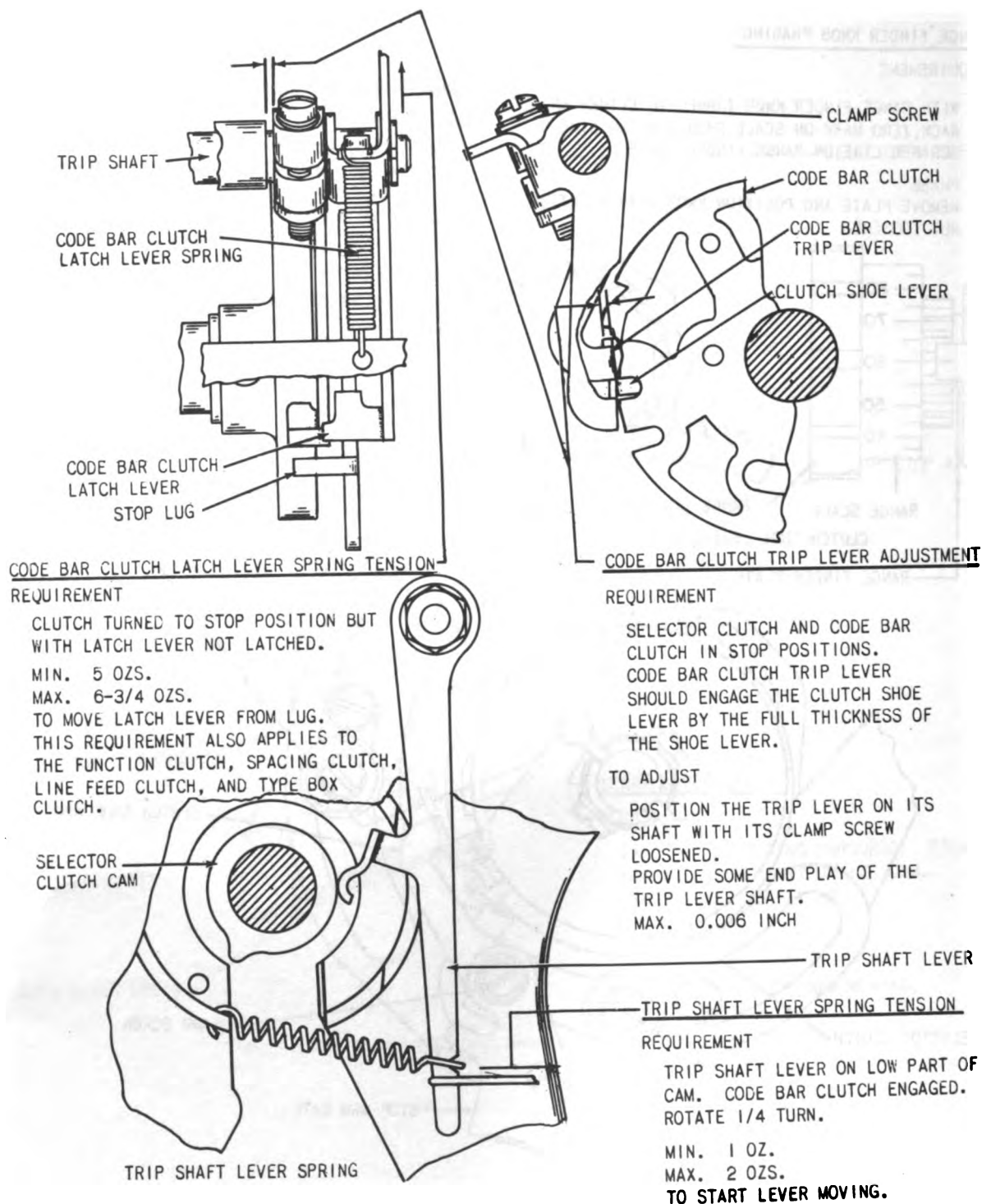


Figure 7-42. Automatic Typewriter, Code Bar Clutch Trip Shaft Mechanism

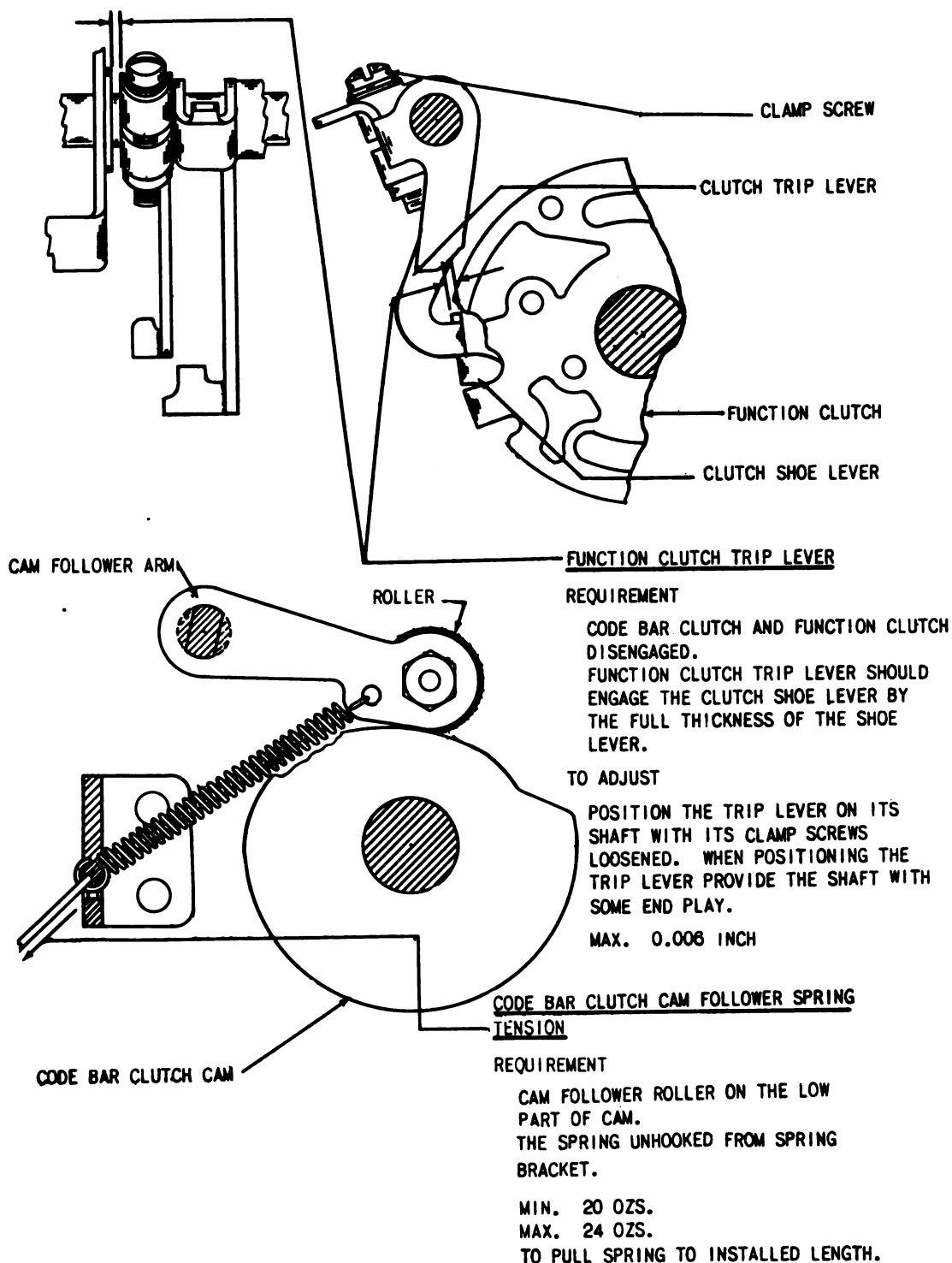


Figure 7-43. Automatic Typewriter, Function Clutch Mechanism

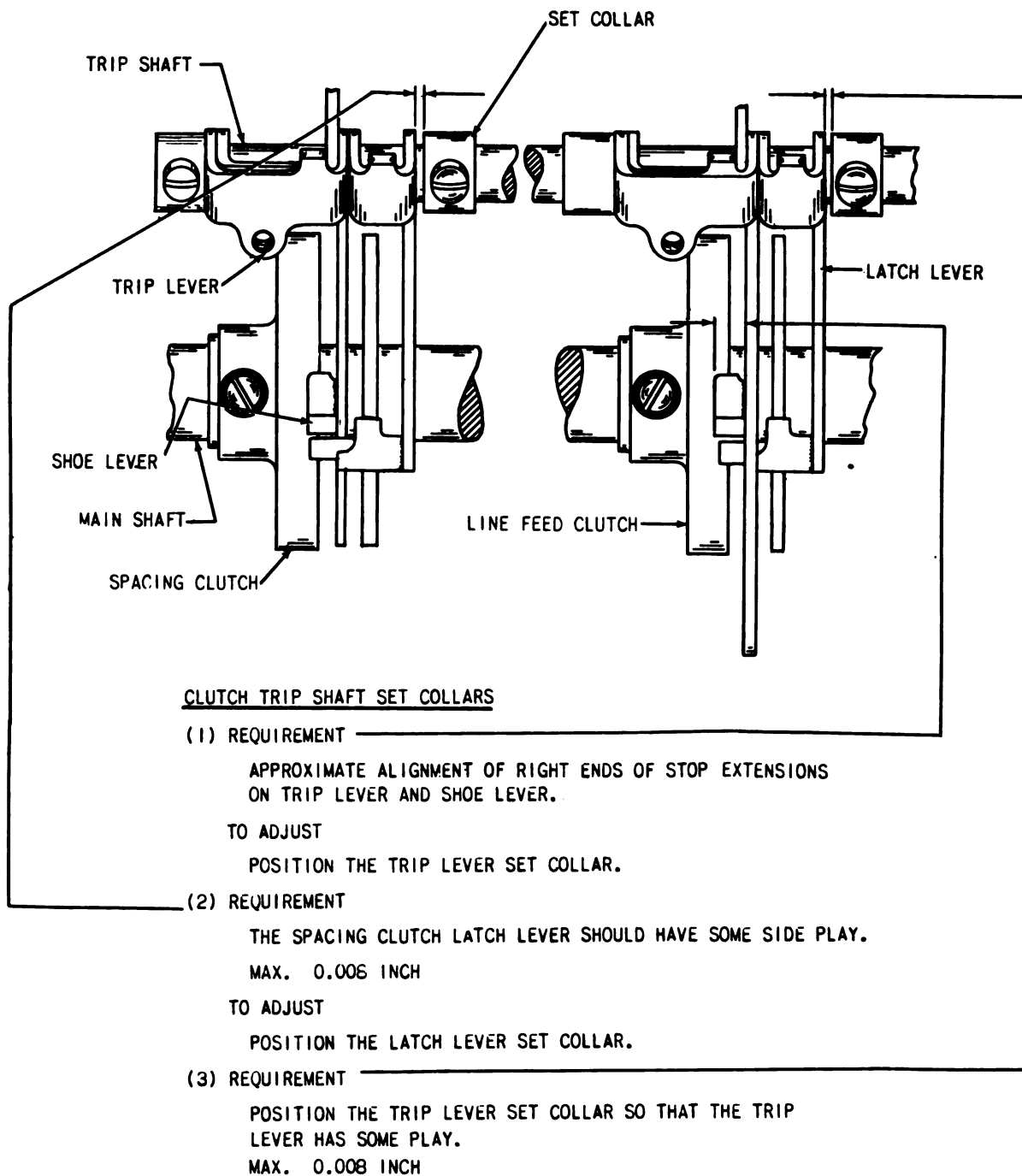


Figure 7-44. Automatic Typewriter, Trip Shaft Mechanism

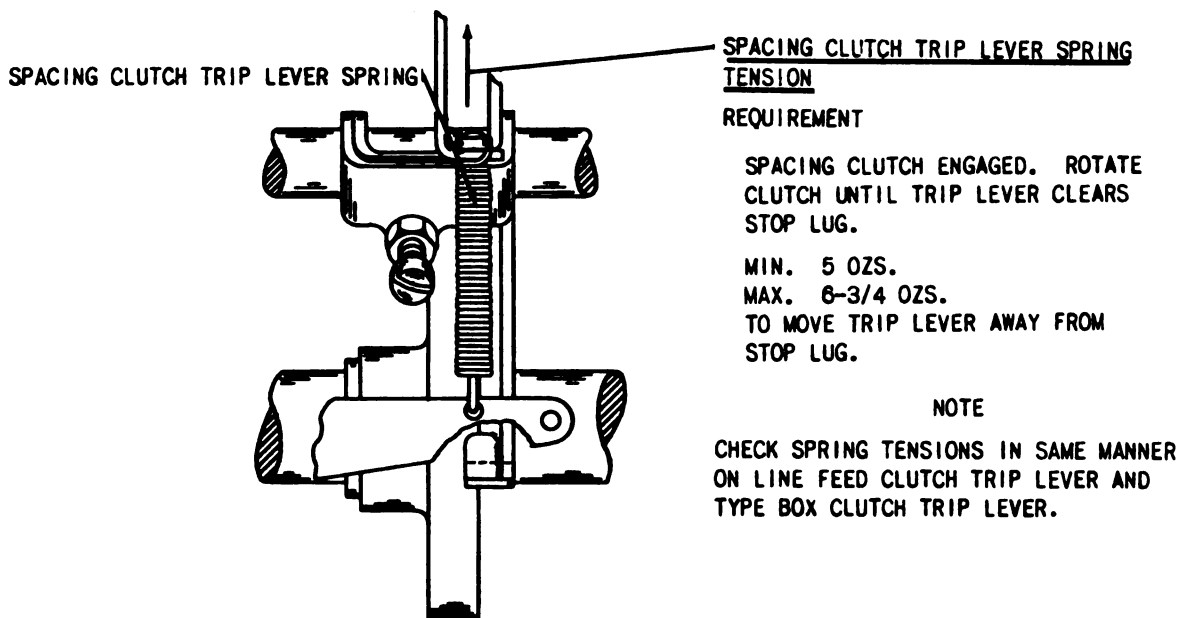
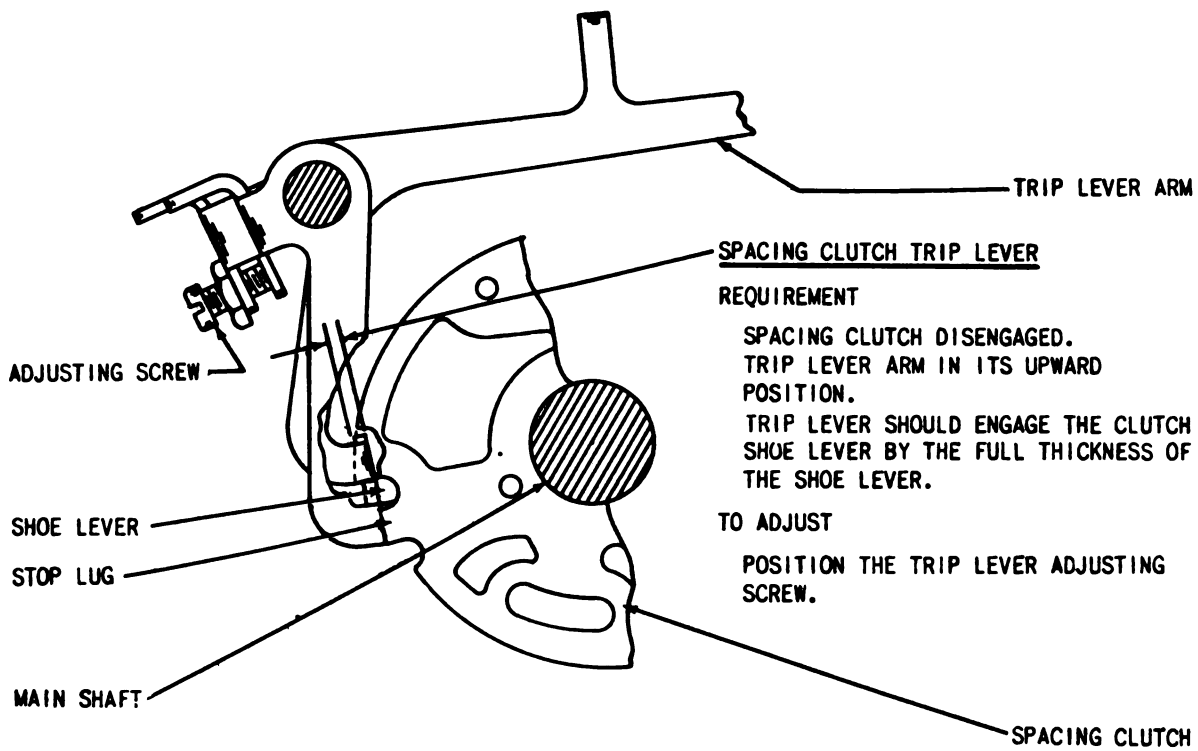


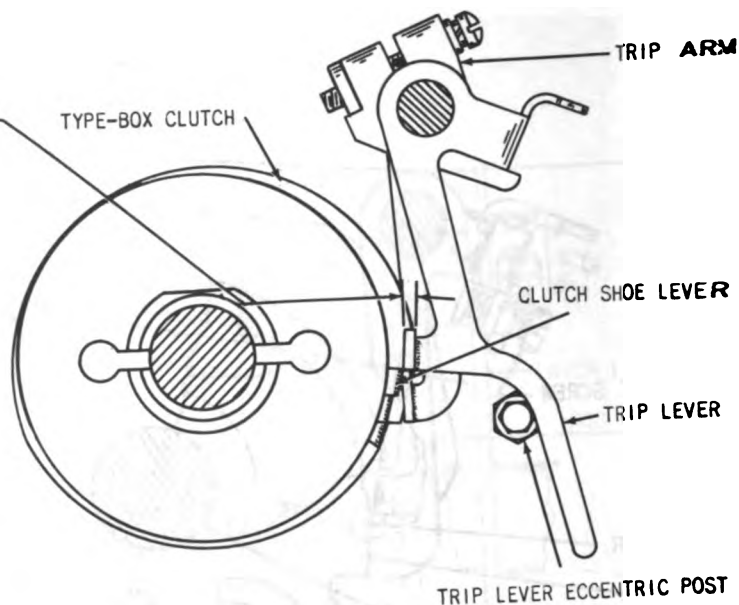
Figure 7-45. Automatic Typewriter, Spacing Clutch Mechanism

**A. TYPE BOX CLUTCH TRIP LEVER
ECCENTRIC POST****REQUIREMENT**

TYPE BOX CLUTCH DISENGAGED.
TRIP LEVER SHOULD ENGAGE THE CLUTCH
SHOE LEVER BY THE FULL THICKNESS OF
THE SHOE LEVER.

TO ADJUST

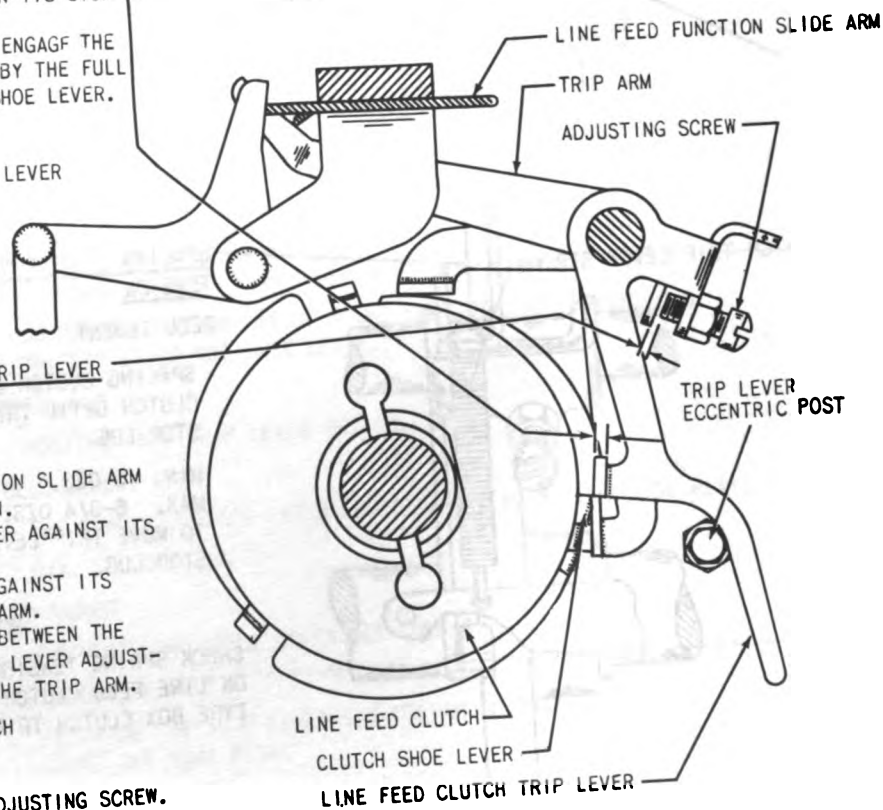
POSITION THE TRIP LEVER ECCENTRIC
POST.

**B. LINE FEED CLUTCH TRIP LEVER
ECCENTRIC POST****REQUIREMENT**

TRIP LEVER ADJUSTING SCREW
BACKED OFF.
LINE FEED CLUTCH IN ITS STOP
POSITION.
TRIP LEVER SHOULD ENGAGE THE
CLUTCH SHOE LEVER BY THE FULL
THICKNESS OF THE SHOE LEVER.

TO ADJUST

POSITION THE TRIP LEVER
ECCENTRIC POST.

**C. LINE FEED CLUTCH TRIP LEVER
ADJUSTING SCREW****REQUIREMENT**

LINE FEED FUNCTION SLIDE ARM
IN REAR POSITION.
CLUTCH TRIP LEVER AGAINST ITS
ECCENTRIC POST.
TRIP ARM HELD AGAINST ITS
FUNCTION SLIDE ARM.
SOME CLEARANCE BETWEEN THE
END OF THE TRIP LEVER ADJUST-
ING SCREW AND THE TRIP ARM.
MAX. 0.006 INCH

TO ADJUST

POSITION THE ADJUSTING SCREW.

Figure 7-46. Automatic Typewriter, Type Box Clutch and Line Feed Clutch Mechanism

ORIGINAL

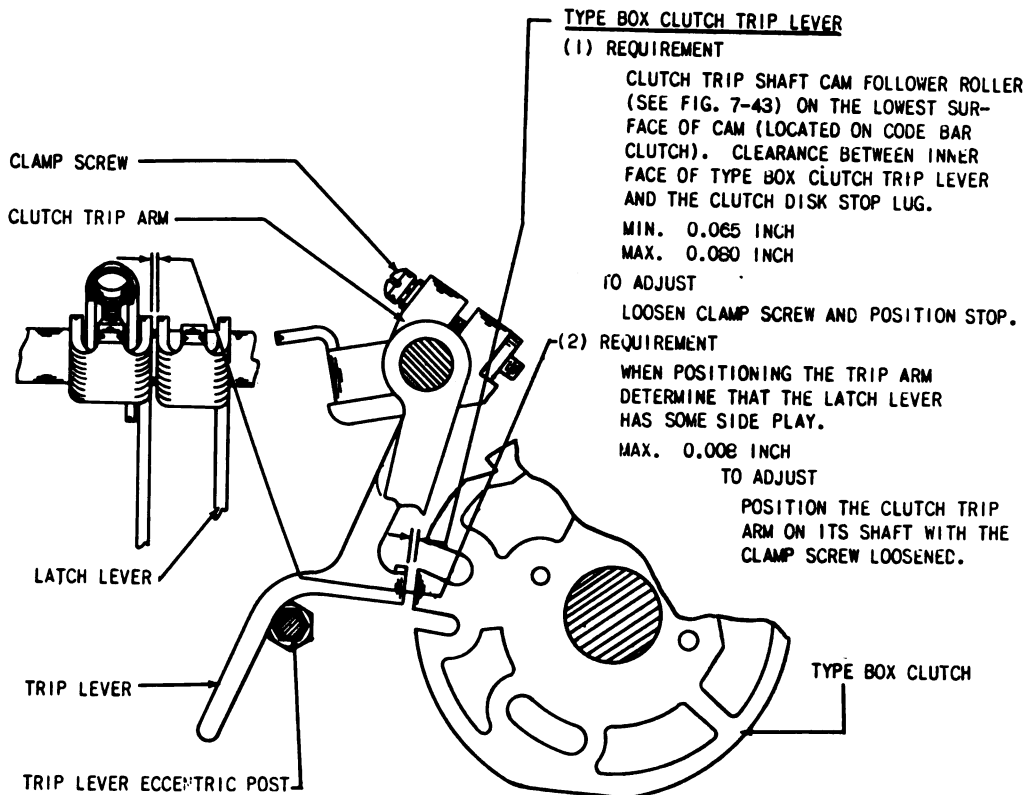


Figure 7-47. Automatic Typewriter, Type Box Clutch Mechanism

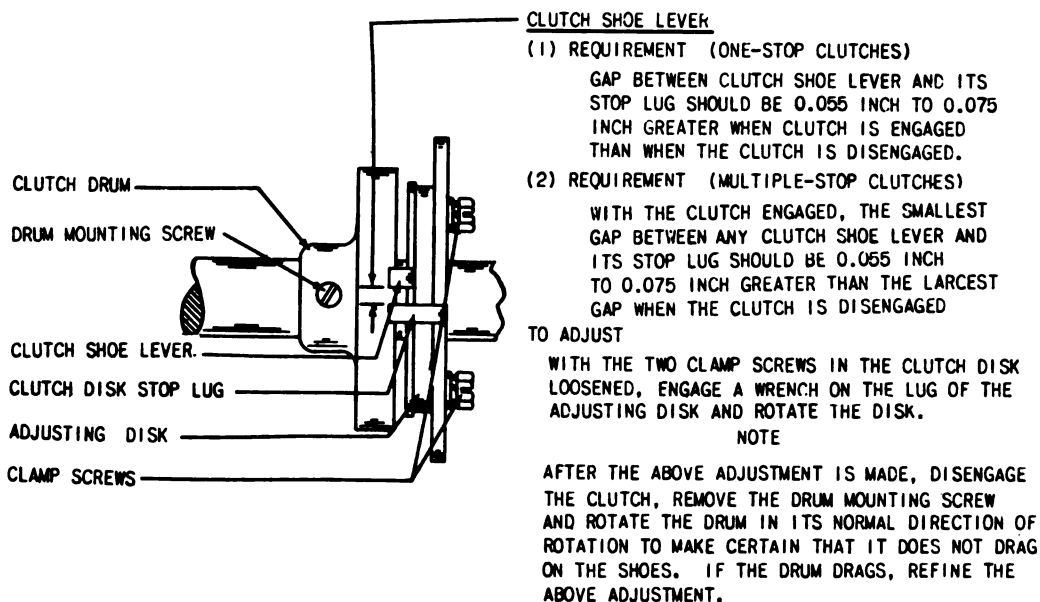


Figure 7-48. Automatic Typewriter, Clutch Shoe Mechanism, All Clutches

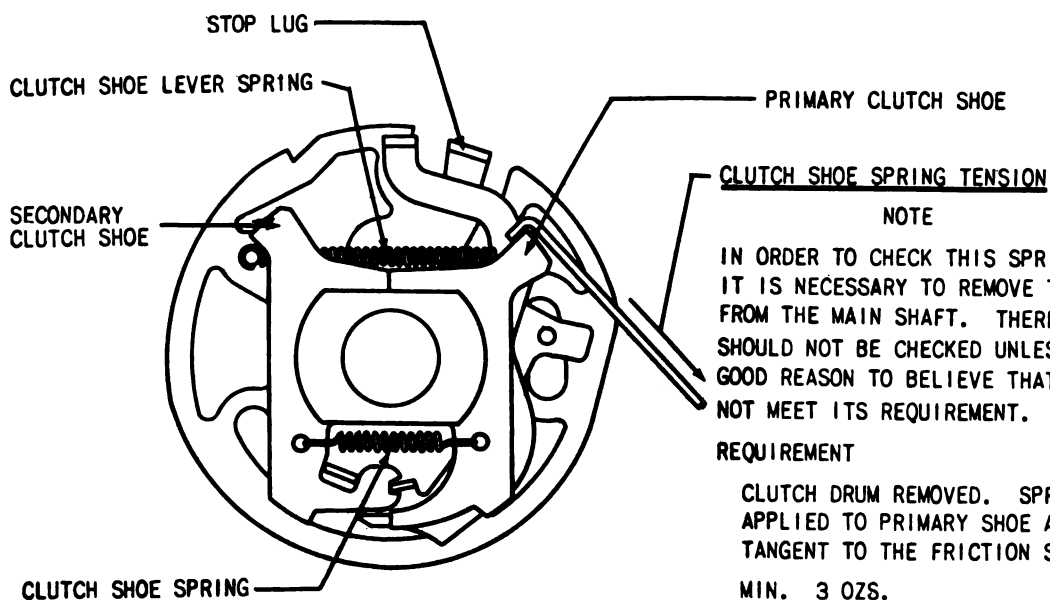
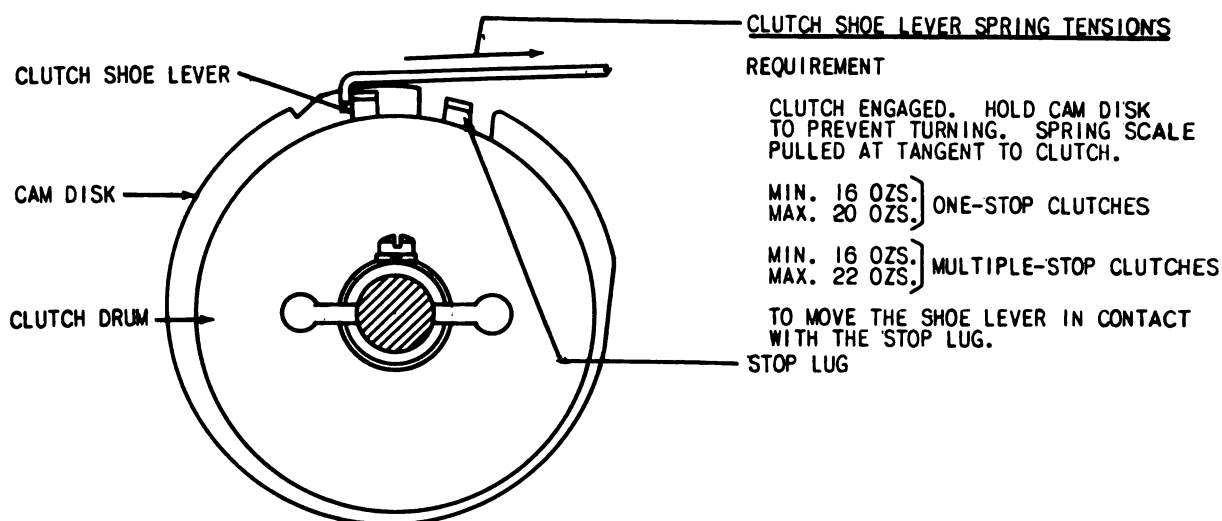


Figure 7-49. Automatic Typewriter, Clutch Mechanism

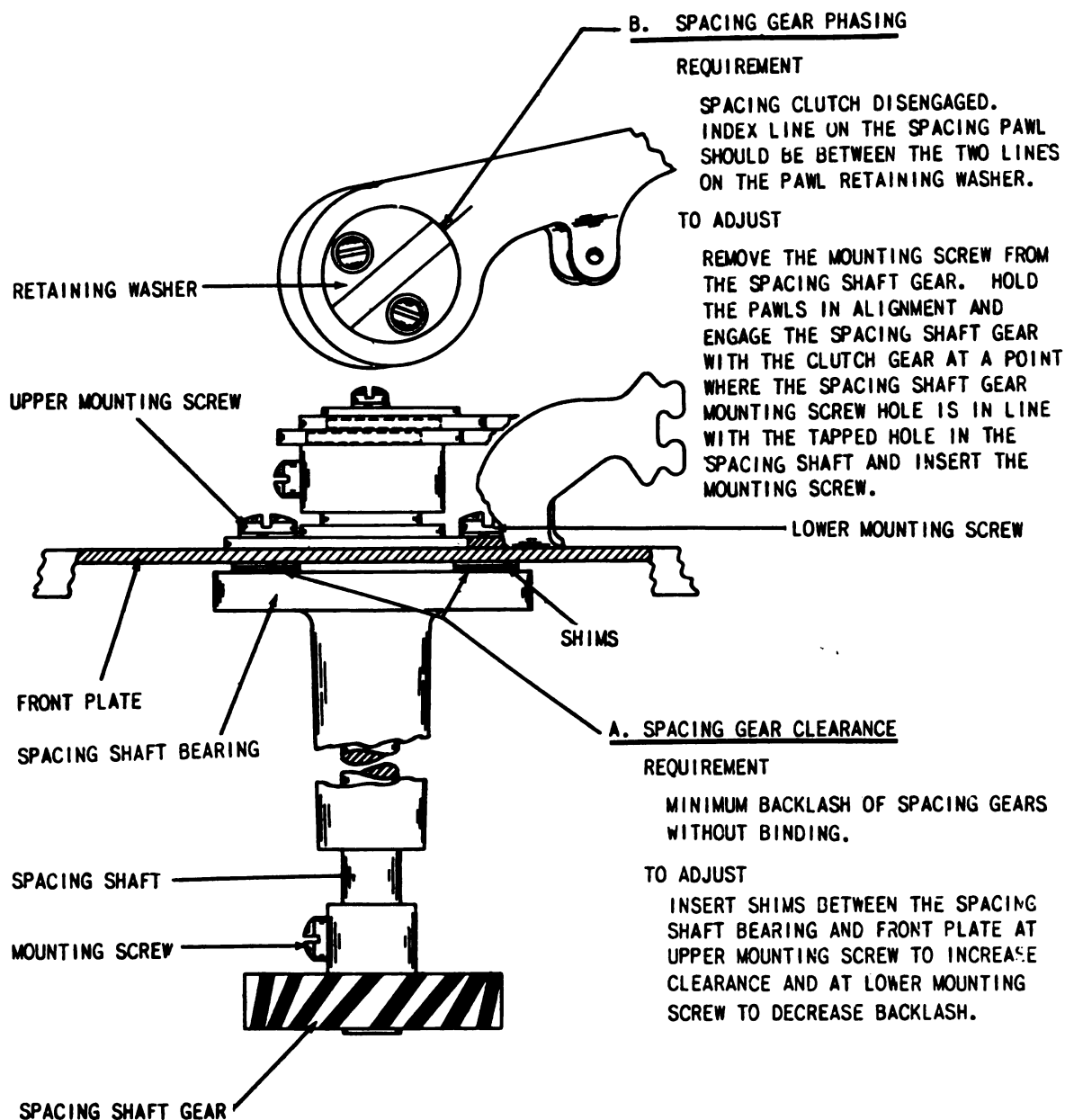


Figure 7-50. Automatic Typewriter, Spacing Mechanism

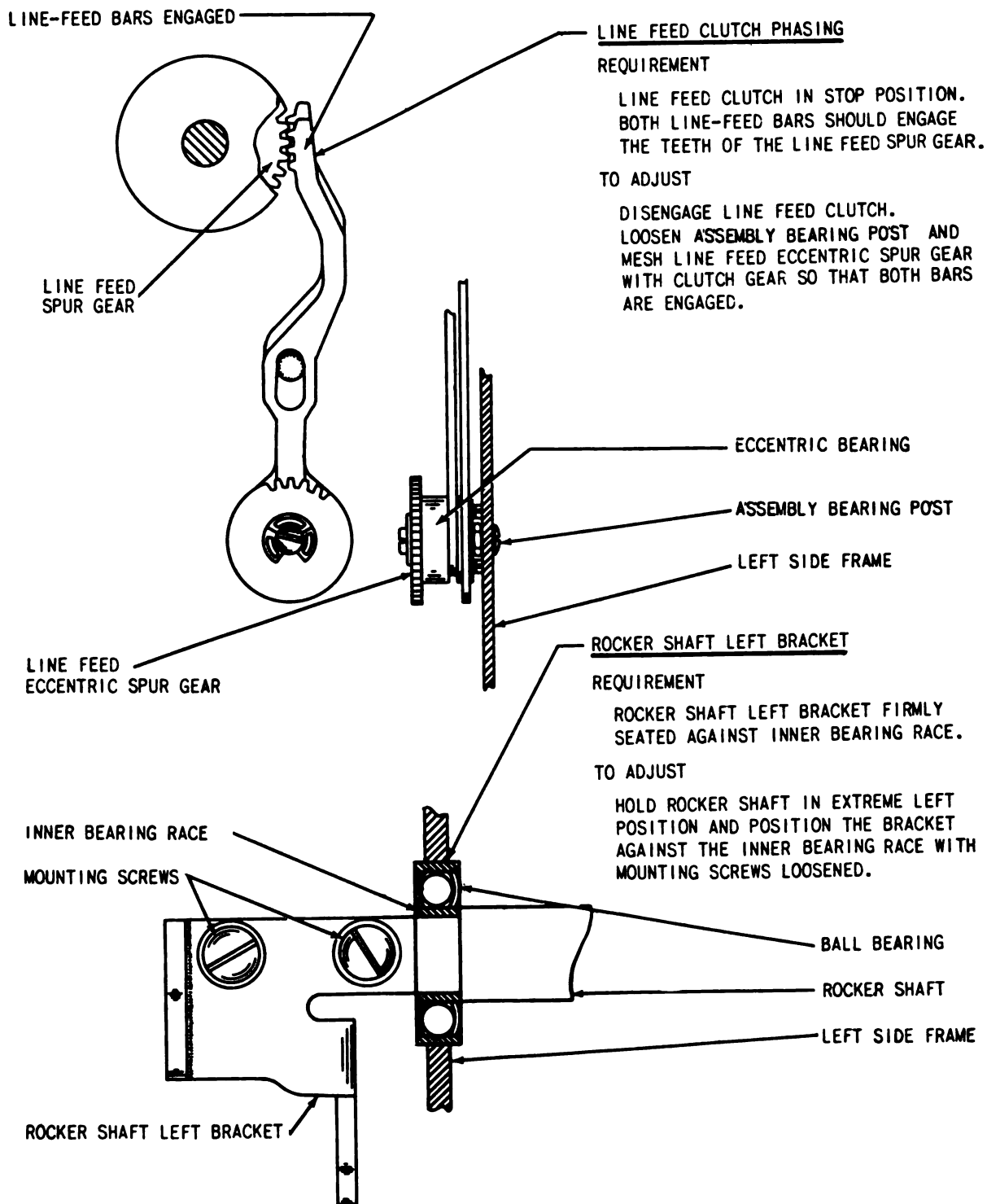


Figure 7-51. Automatic Typewriter, Line Feed and Rocker Shaft Mechanism

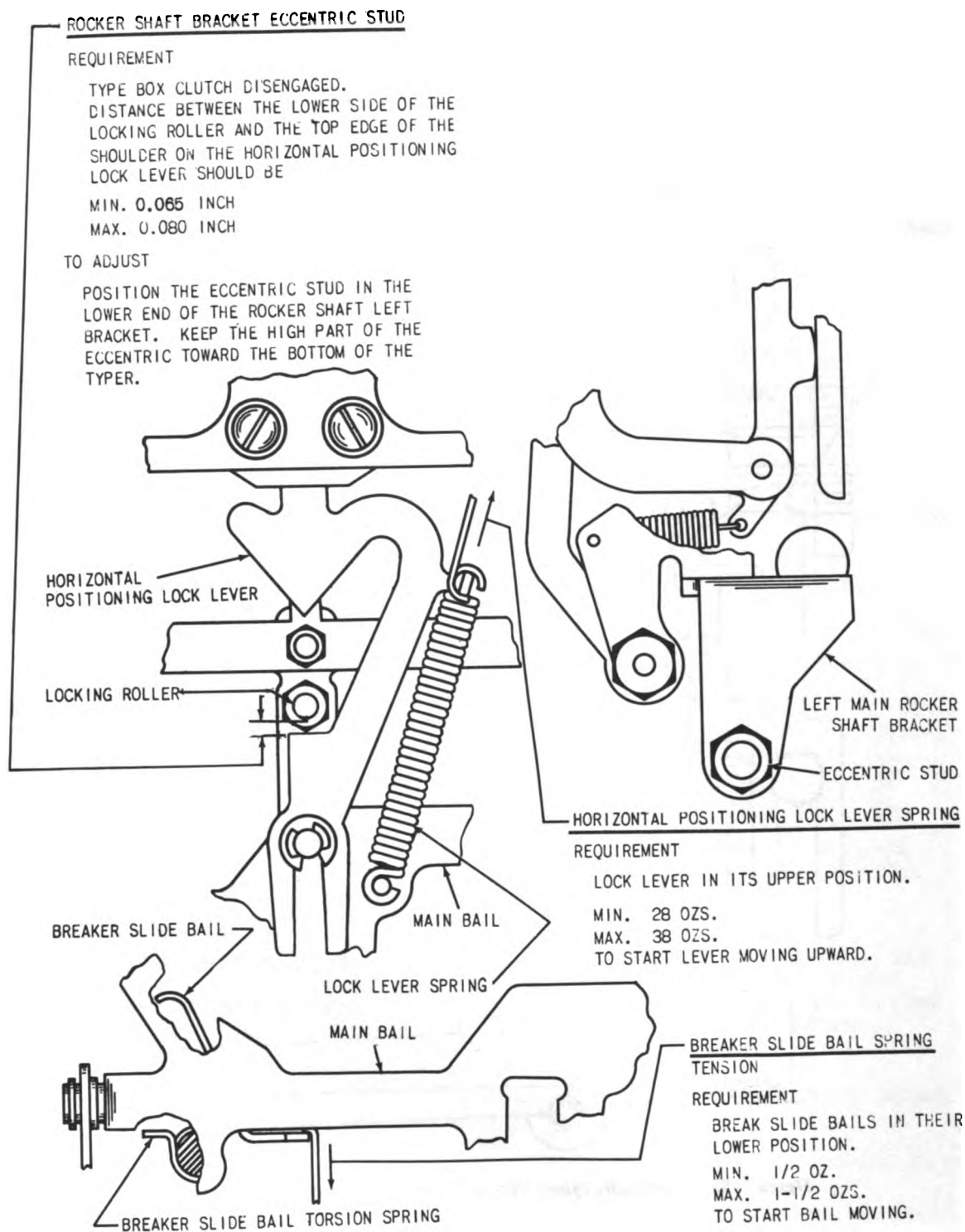


Figure 7-52. Automatic Typewriter, Shift and Positioning Mechanism

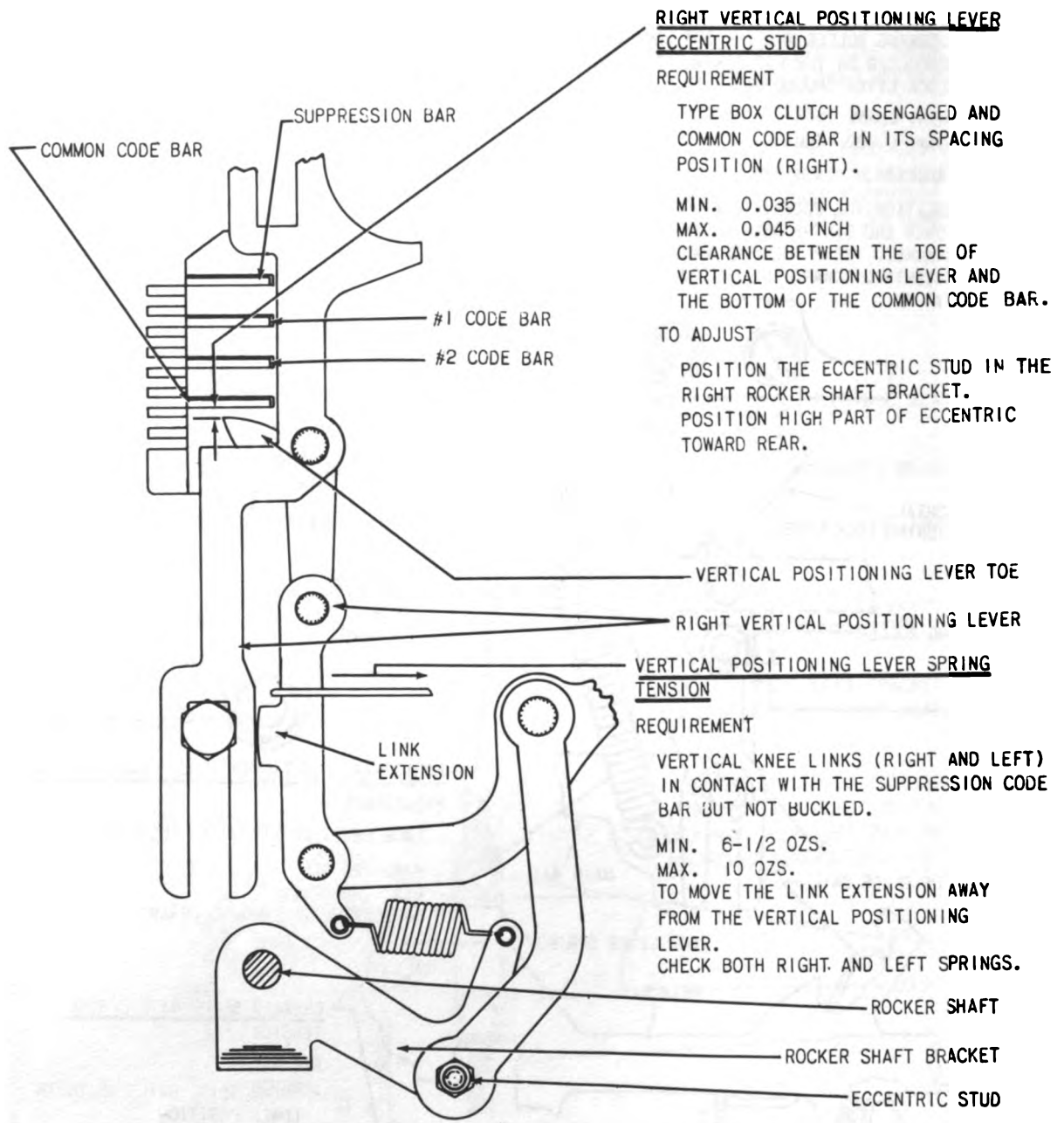


Figure 7-53. Automatic Typewriter, Vertical Positioning Mechanism, Right

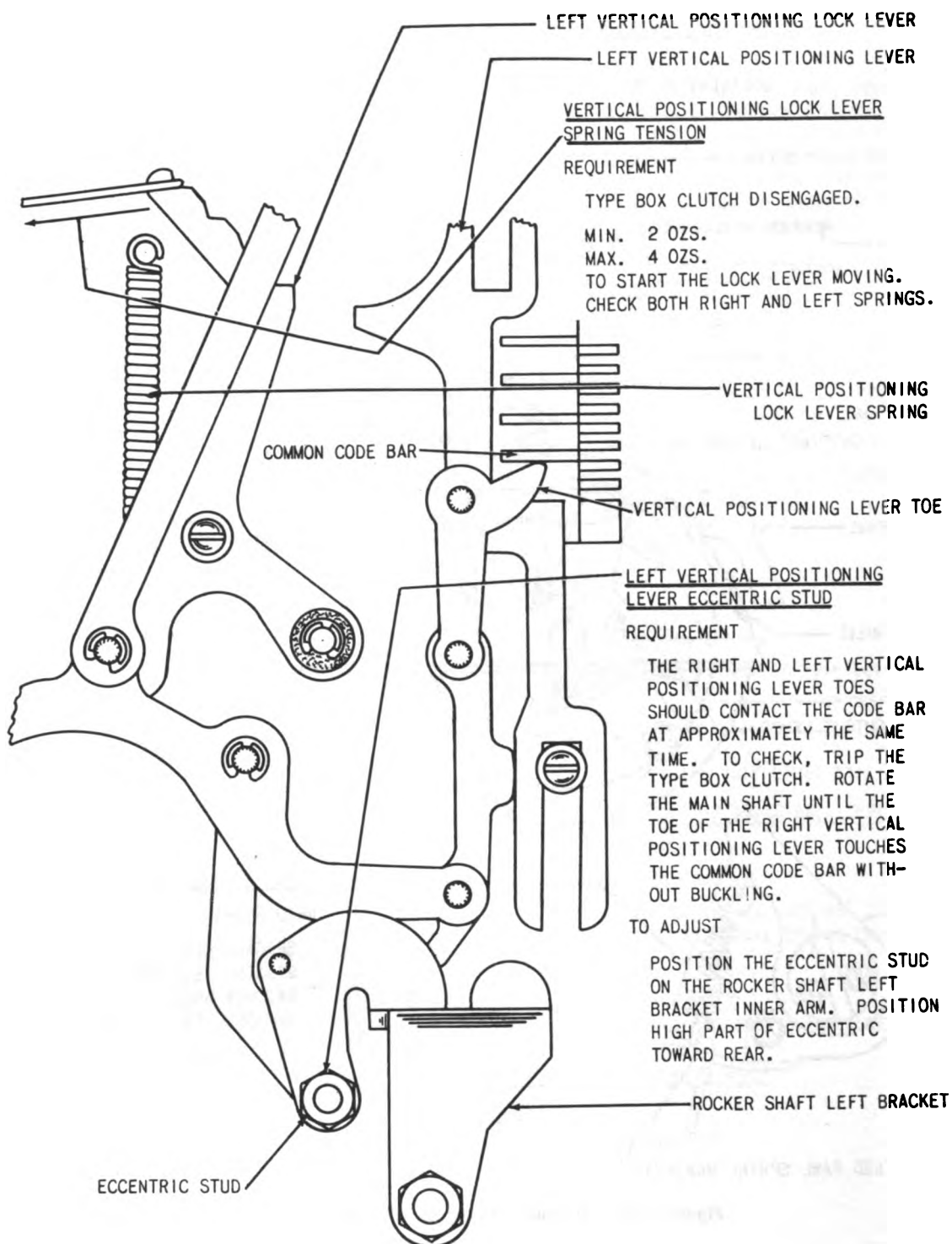


Figure 7-54. Automatic Typewriter, Vertical Positioning Mechanism, Left

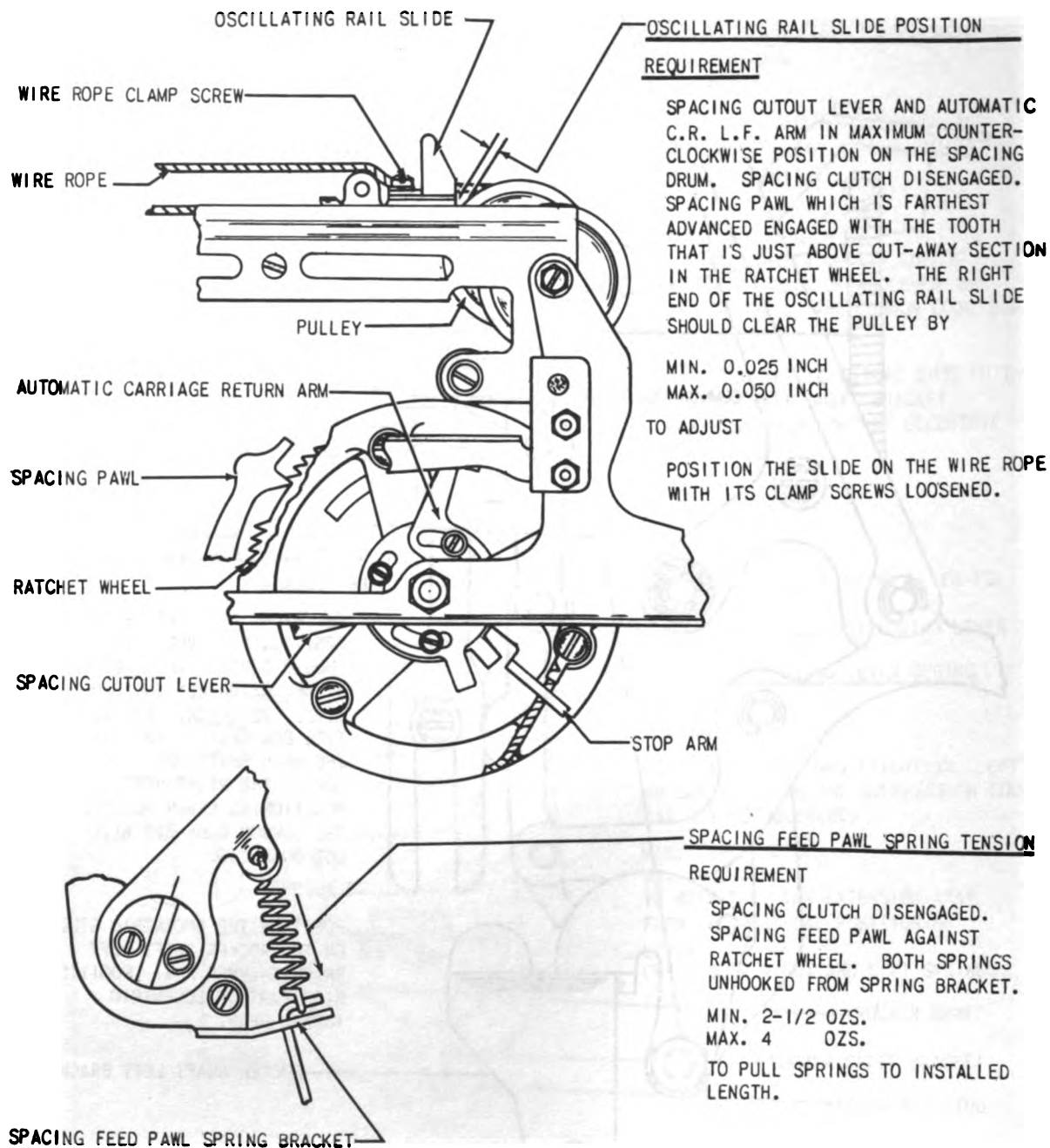


Figure 7-55. Automatic Typewriter, Spacing Mechanism

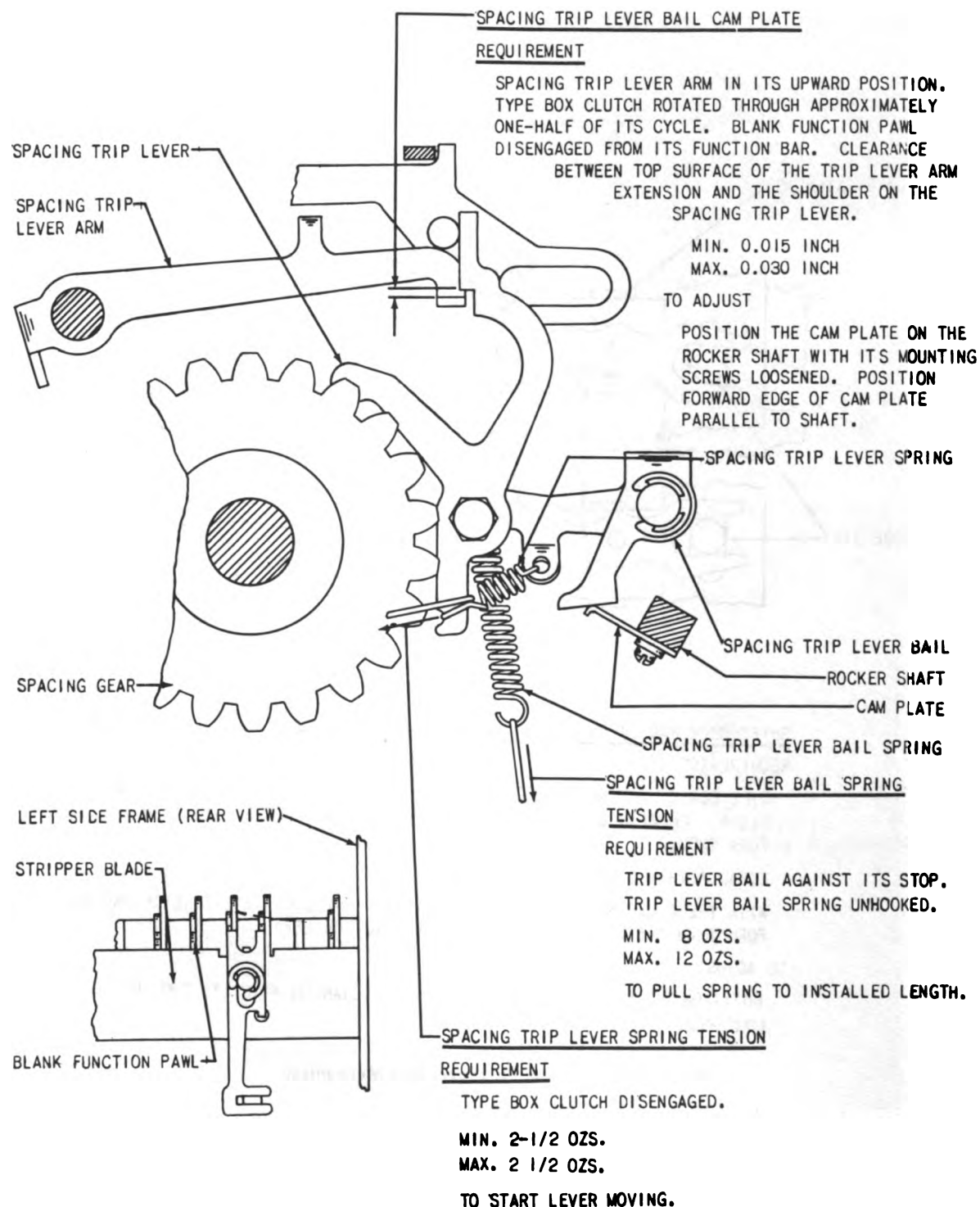
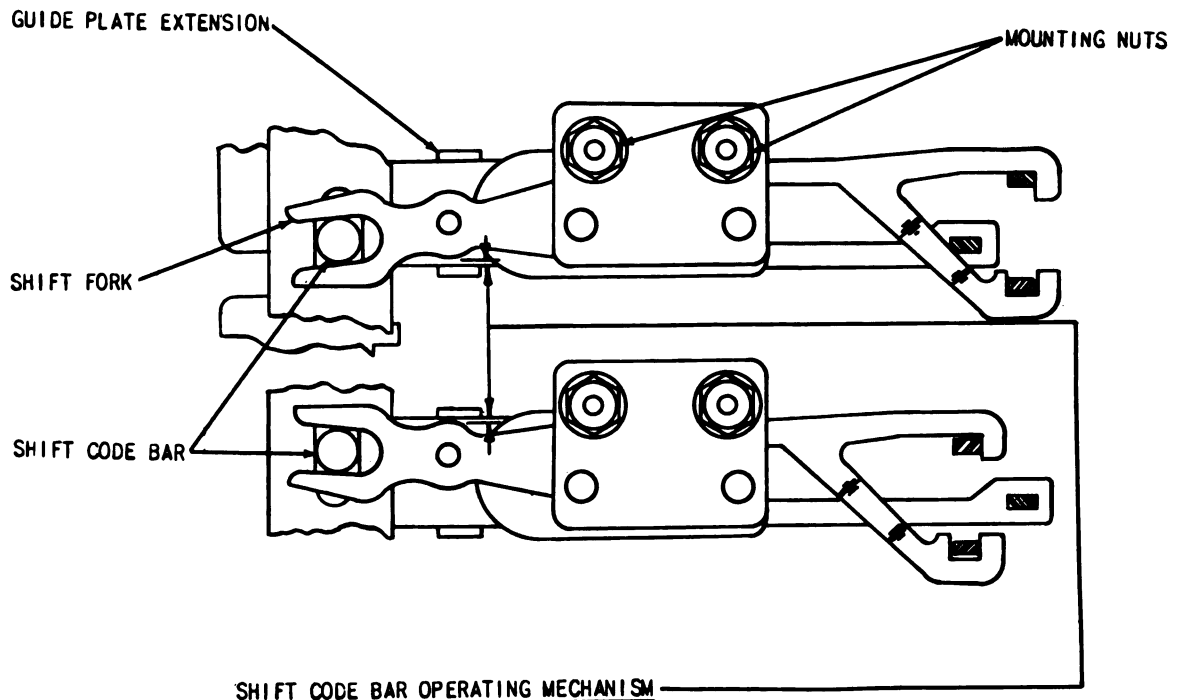


Figure 7-56. Automatic Typewriter, Spacing Mechanism

**SHIFT CODE BAR OPERATING MECHANISM****REQUIREMENT**

TYPE BOX CLUTCH AND FUNCTION CLUTCH DISENGAGED. SHIFT CODE BAR MOVED TO THE RIGHT. CLEARANCE BETWEEN THE RIGHT-HAND GUIDE PLATE EXTENSION AND THE SHIFT FORK SHOULD BE

EQUAL WITHIN 0.005 INCH

WITH THE CLEARANCE BETWEEN THE LEFT-HAND GUIDE PLATE EXTENSION AND THE SHIFT FORK WHEN THE SHIFT CODE BAR IS MOVED TO THE LEFT.

TO ADJUST

POSITION THE SHIFT CODE BAR OPERATING MECHANISM WITH ITS TWO MOUNTING NUTS LOOSENED.

Figure 7-57. Automatic Typewriter, Shift Mechanism

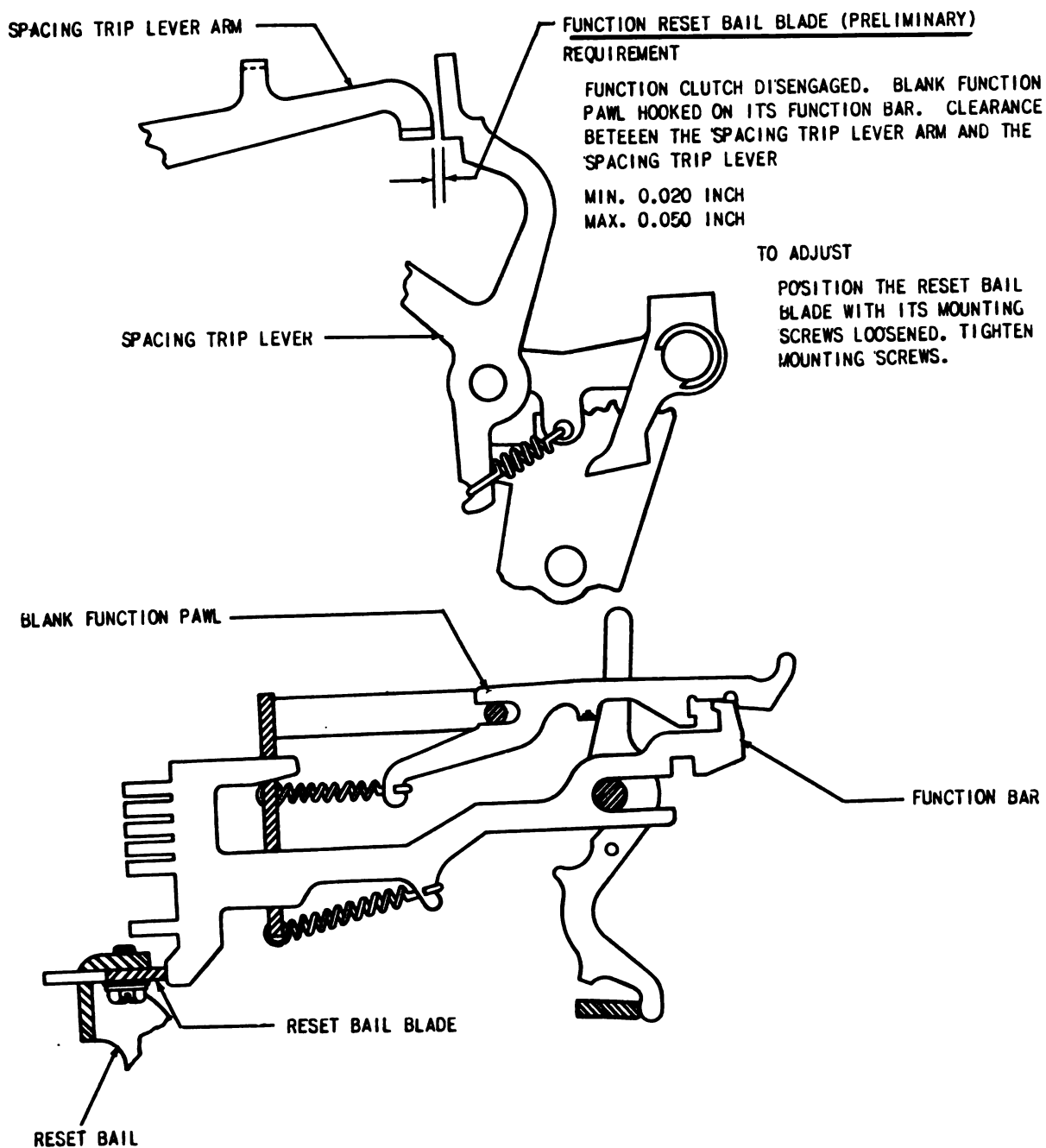
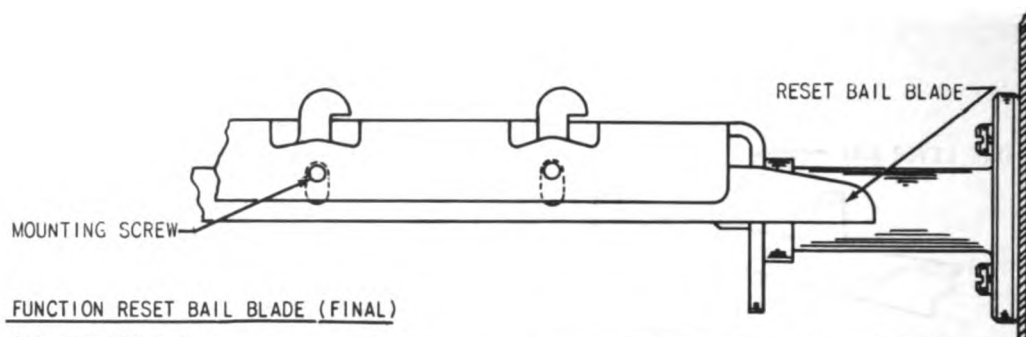


Figure 7-58. Automatic Typewriter, Spacing and Function Mechanism



(1) REQUIREMENT

FUNCTION CLUTCH DISENGAGED. TYPE BOX CLUTCH ROTATED ONE HALF TURN FROM STOP POSITION. ALL FUNCTION PAWLS (EXCEPT FIGURES OR LETTERS AND SPACE) HOOKED OVER THEIR FUNCTION BARS. FIGURES OR LETTERS AND SPACE SHOULD BE HOOKED ALTERNATELY. WHEN EACH PAWL IS PULLED TO ITS EXTREME REAR POSITION, THE PAWL WITH THE LEAST CLEARANCE BETWEEN THE PAWL AND THE REAR END OF ITS FUNCTION BAR SHOULD BE

MAX. 0.010 INCH

(2) REQUIREMENT

FUNCTION BAIL IN FORWARD POSITION, THE OVERLAP BETWEEN THE LATCHING SHOULDER OF THE FUNCTION PAWL AND THE REAR ENGAGING EDGE OF THE FUNCTION BAR SHOULD BE

MIN. 0.025

ON THE BLANK FUNCTION BAR AND THE LINE FEED FUNCTION BAR.

TO ADJUST

POSITION THE RESET BAIL BLADE ON THE RESET BAIL WITH ITS MOUNTING SCREWS LOOSENED.

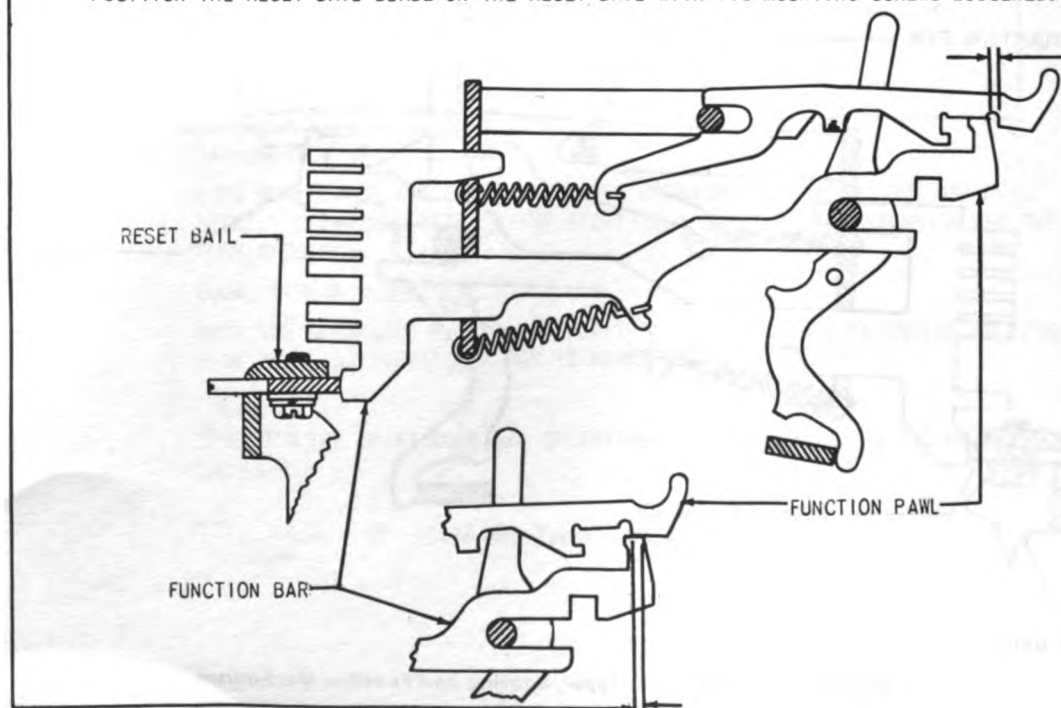
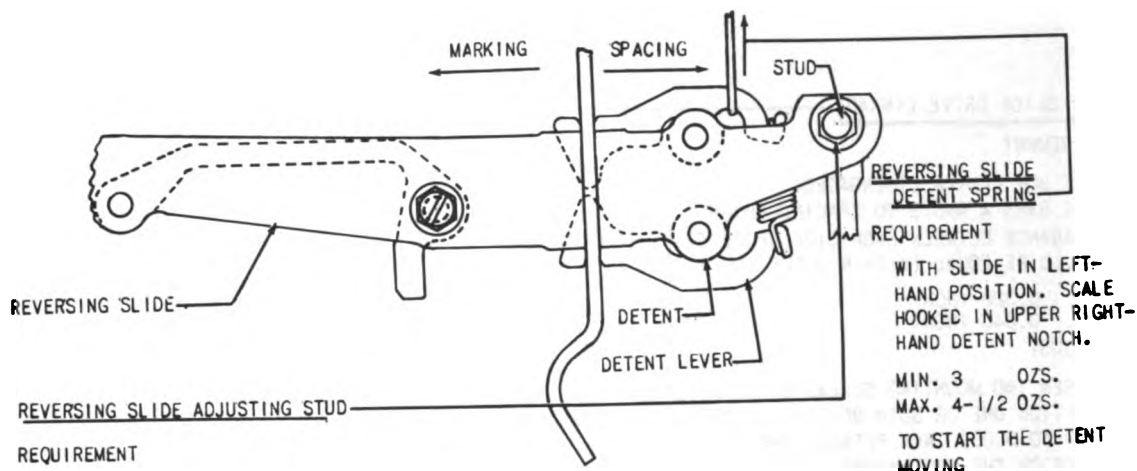
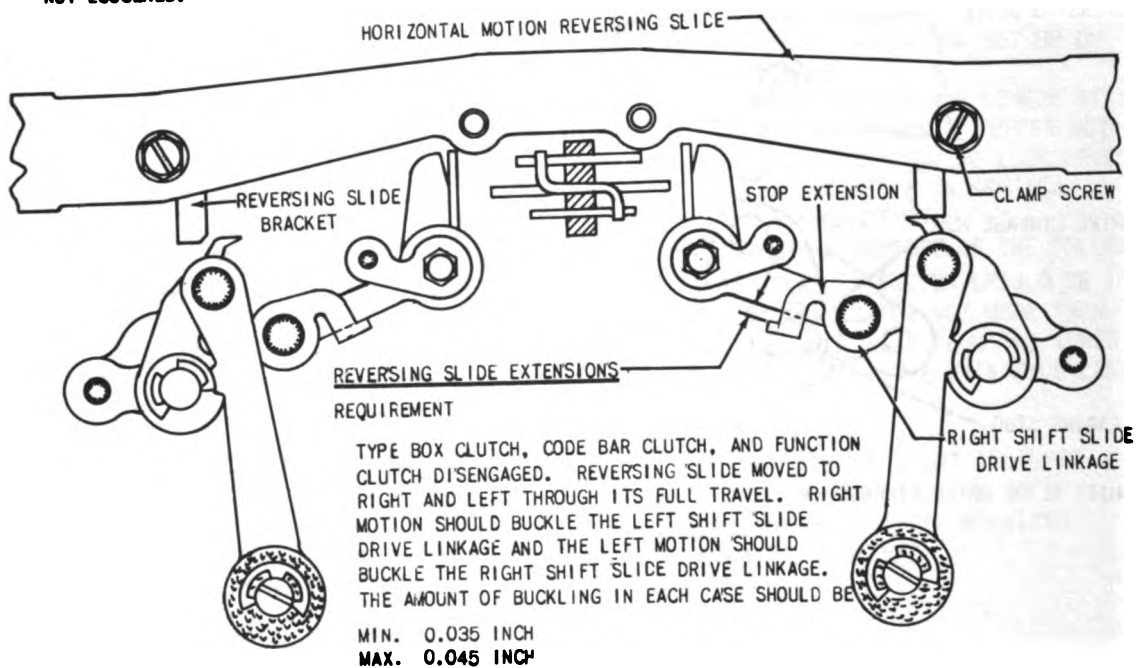


Figure 7-59. Automatic Typewriter, Function Bar Reset Mechanism



TYPE BOX CLUTCH DISENGAGED.
WITH NO. 3 CODE BAR IN SPACING POSITION (RIGHT), THE REVERSING SLIDE DETENT ROLLERS SHOULD BE FULLY SEATED IN THE LEFT-HAND NOTCHES OF THE DETENTS.
WITH NO. 3 CODE BAR IN MARKING POSITION (LEFT), THE REVERSING SLIDE DETENT ROLLERS SHOULD BE FULLY SEATED IN THE RIGHT-HAND NOTCHES OF THE SLIDE.

TO ADJUST
POSITION THE REVERSING SLIDE STUD IN ITS ELONGATED HOLE WITH ITS MOUNTING NUT LOOSENED.



TO ADJUST

POSITION EACH REVERSING SLIDE BRACKET WITH THEIR CLAMP SCREWS LOOSENED.

Figure 7-60. Automatic Typewriter, Horizontal Motion Reversing Mechanism

SHIFT SLIDE DRIVE LINKAGE

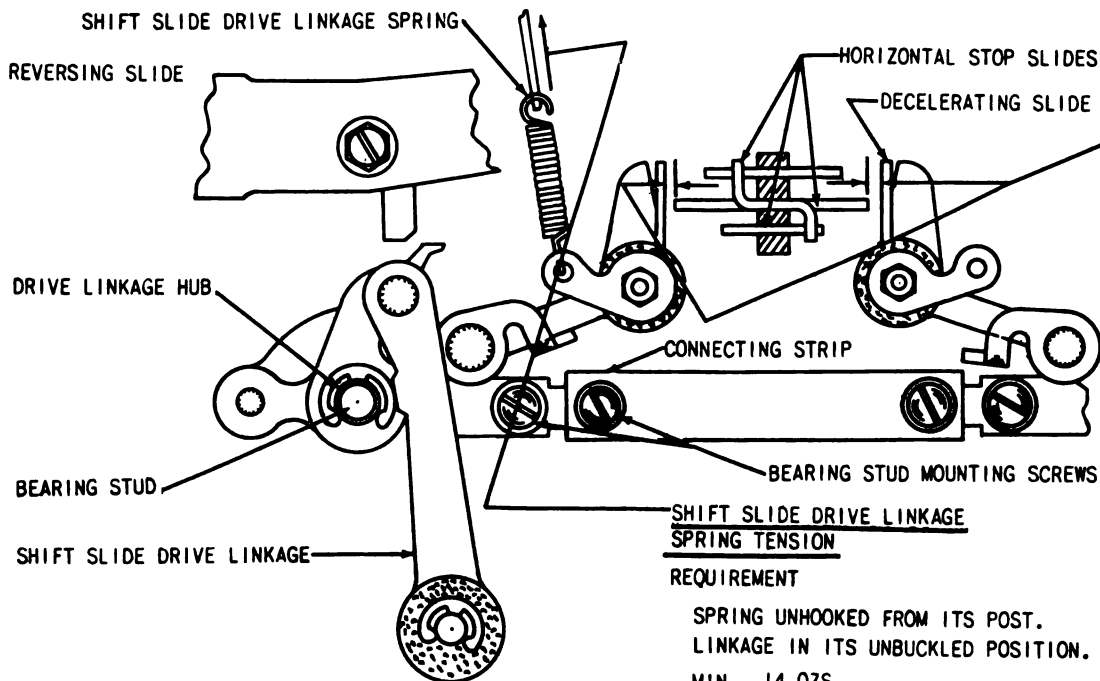
REQUIREMENT

TYPE BOX CLUTCH DISENGAGED.
CODE BARS 4 AND 5 TO SPACING (RIGHT).
CLEARANCE BETWEEN EACH SIDE OF CENTER HORIZONTAL STOP SLIDE AND DECELERATING SLIDES
SHOULD BE EQUAL (WITHIN 0.005 INCH).

MIN. 0.020 INCH
MAX. 0.040 INCH

TO ADJUST

LOOSEN TWO MOUNTING SCREWS OF BOTH BEARING STUDS (INNER TWO FRICTION TIGHT).
POSITION ONE OR BOTH BEARING STUDS ON THE CONNECTING STRIP TO PROVIDE 0.025
INCH TO 0.035 INCH BETWEEN THE CENTER HORIZONTAL SLIDE AND THE DECELERATING
SLIDE ON THE SIDE WHERE THE LINKAGE IS NOT BUCKLED. TIGHTEN THE TWO INNER
MOUNTING SCREWS. CHANGE POSITION OF REVERSING SLIDE AND CHECK OPPOSITE
CLEARANCE. EQUALIZE BY SHIFTING BOTH STUDS AND CONNECTING STRIP AS A UNIT.
HOLD THE DRIVE LINKAGE HUB AGAINST THE LOWER VERTICAL LINK OF THE DRIVE
LINKAGE. TIGHTEN THE TWO OUTER BEARING STUD MOUNTING SCREWS. CHECK THE
LINKAGE FOR FREENESS THROUGHOUT A COMPLETE CYCLE.



REQUIREMENT

SPRING UNHOOKED FROM ITS POST.
LINKAGE IN ITS UNBUCKLED POSITION.
MIN. 14 OZS.
MAX. 18 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

Figure 7-61. Automatic Typewriter, Shift Slide Drive Mechanism

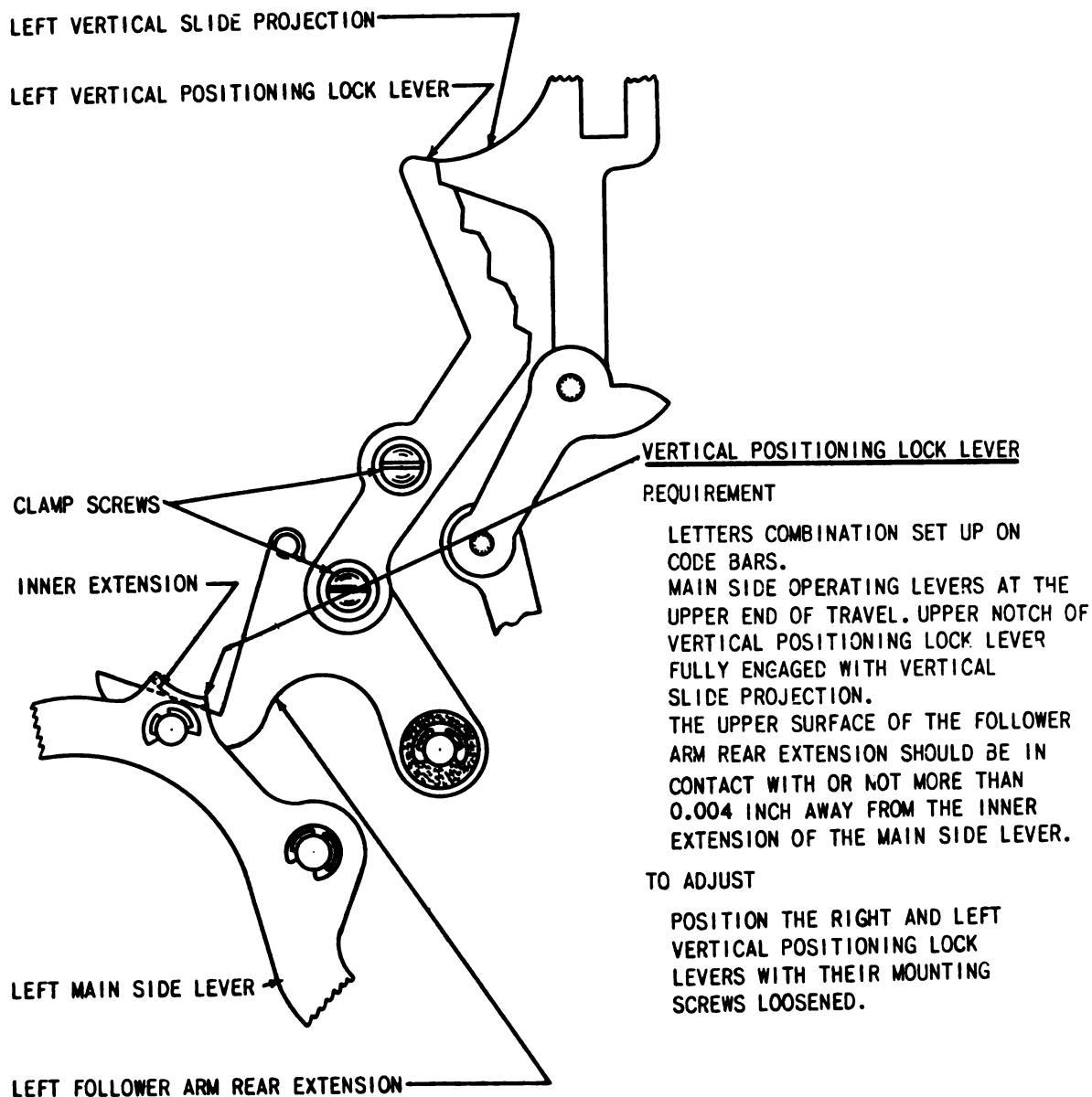


Figure 7-62. Automatic Typewriter, Vertical Positioning Mechanism

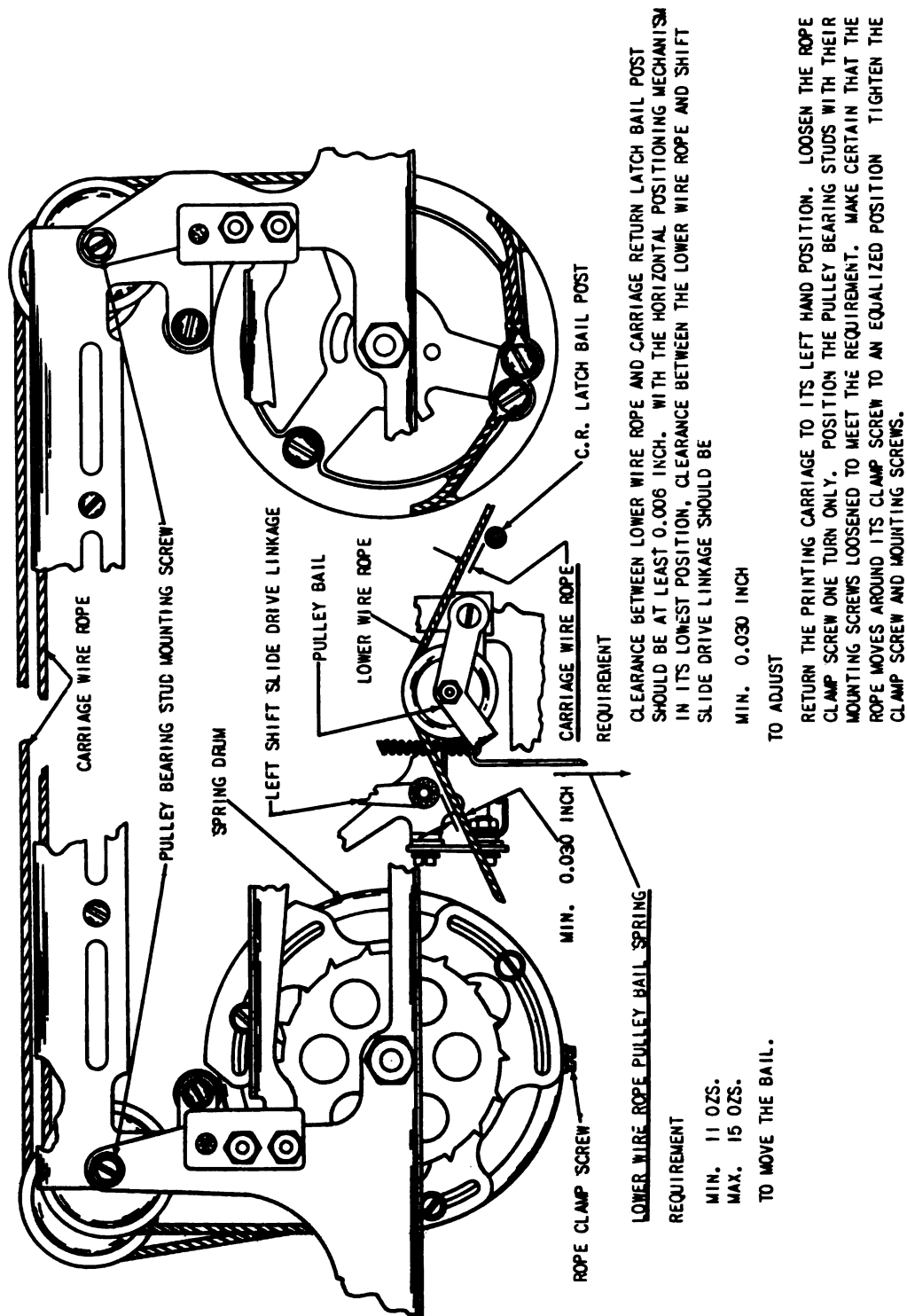


Figure 7-63. Automatic Typewriter, Spacing Mechanism

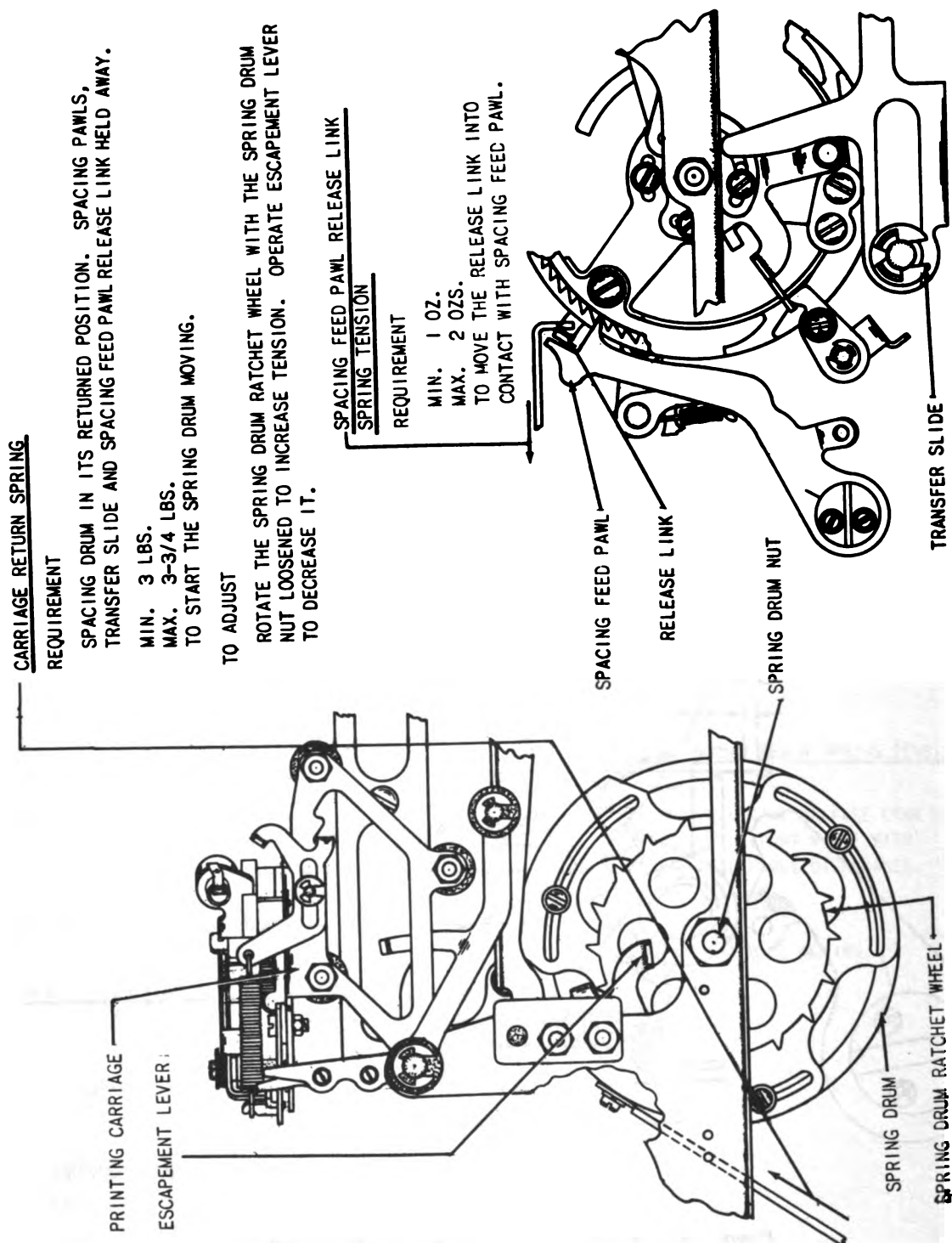


Figure 7-64. Automatic Typewriter, Carriage Return Mechanism

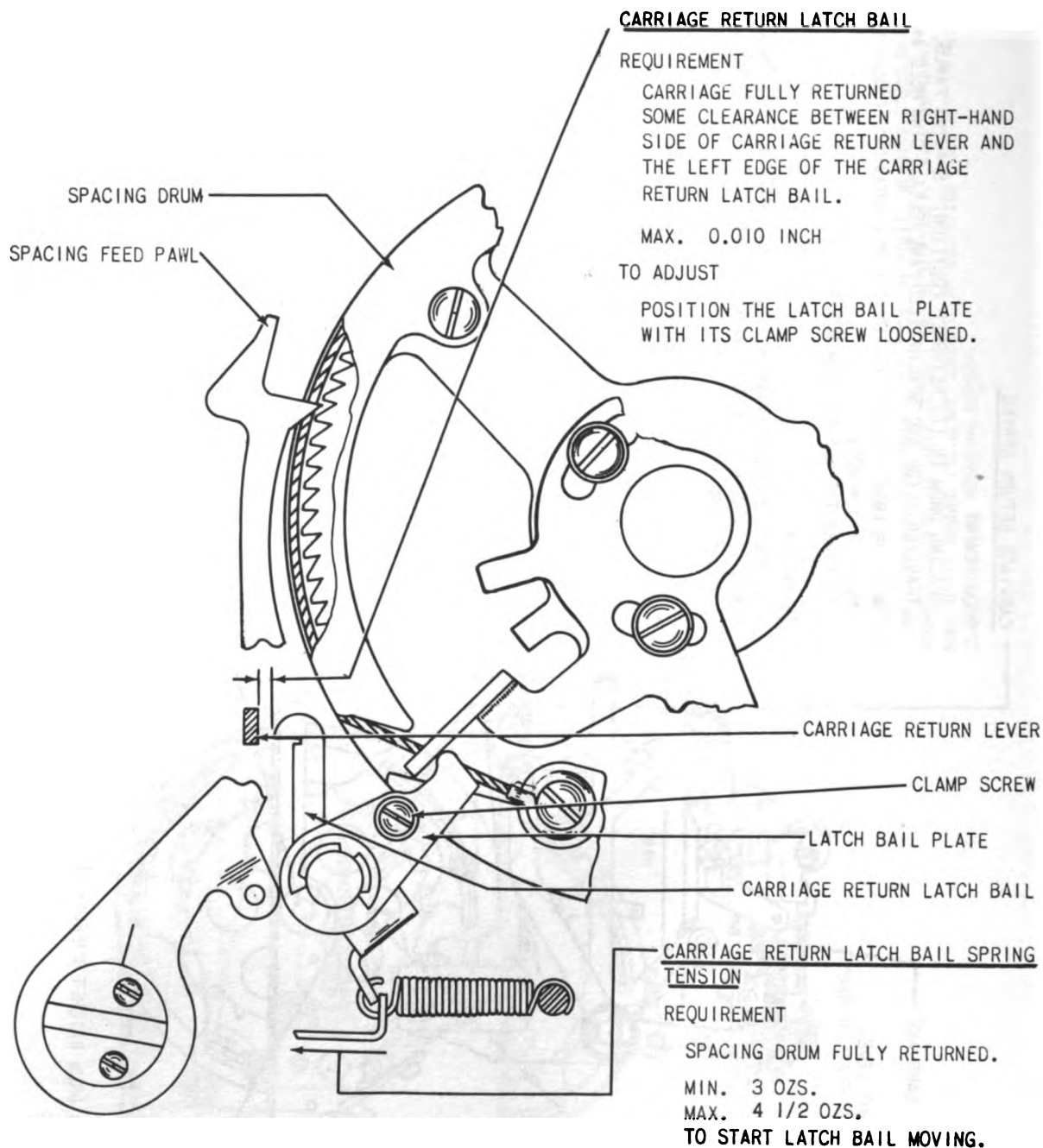


Figure 7-65. Automatic Typewriter, Carriage Return Mechanism

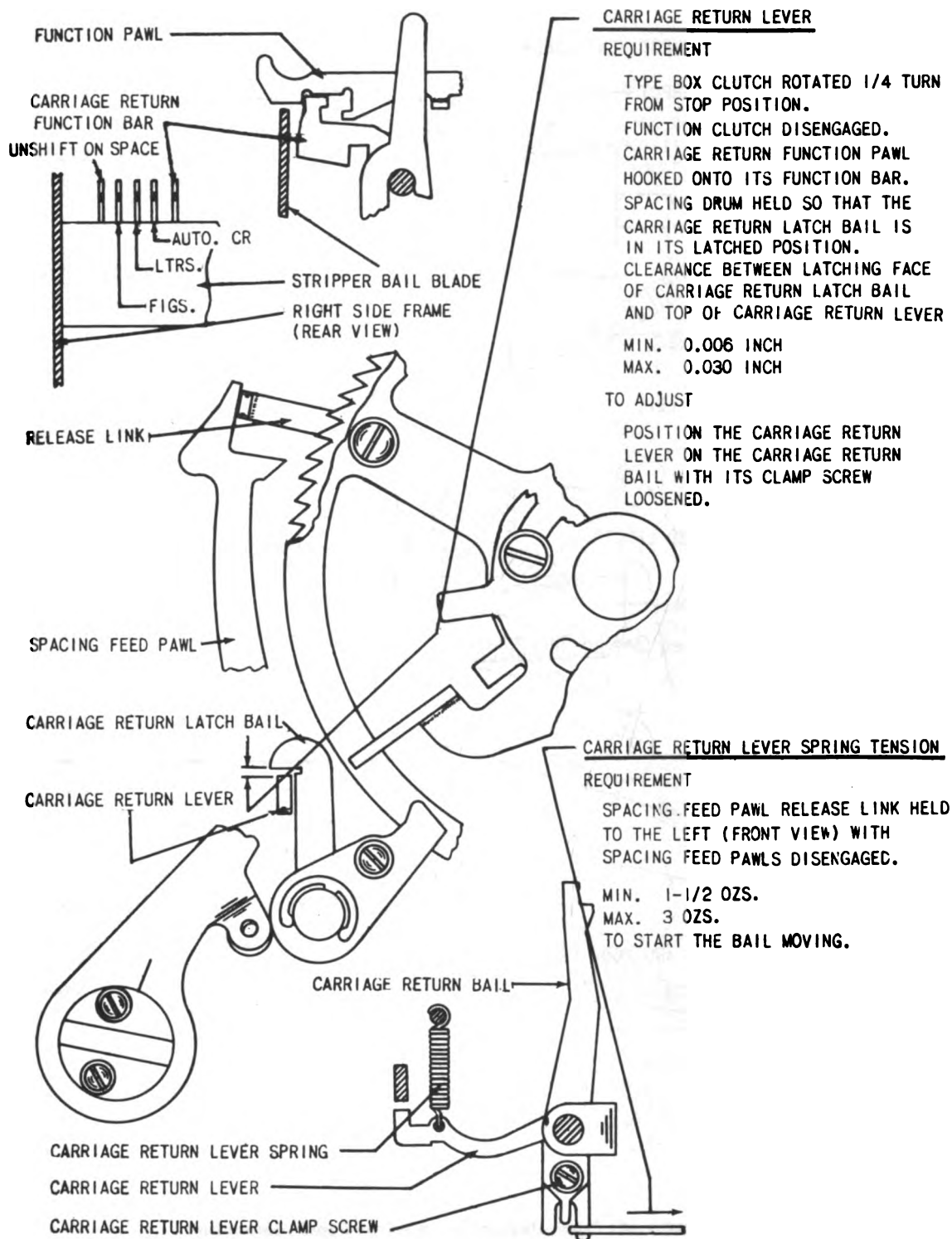


Figure 7-66. Automatic Typewriter, Carriage Return Mechanism

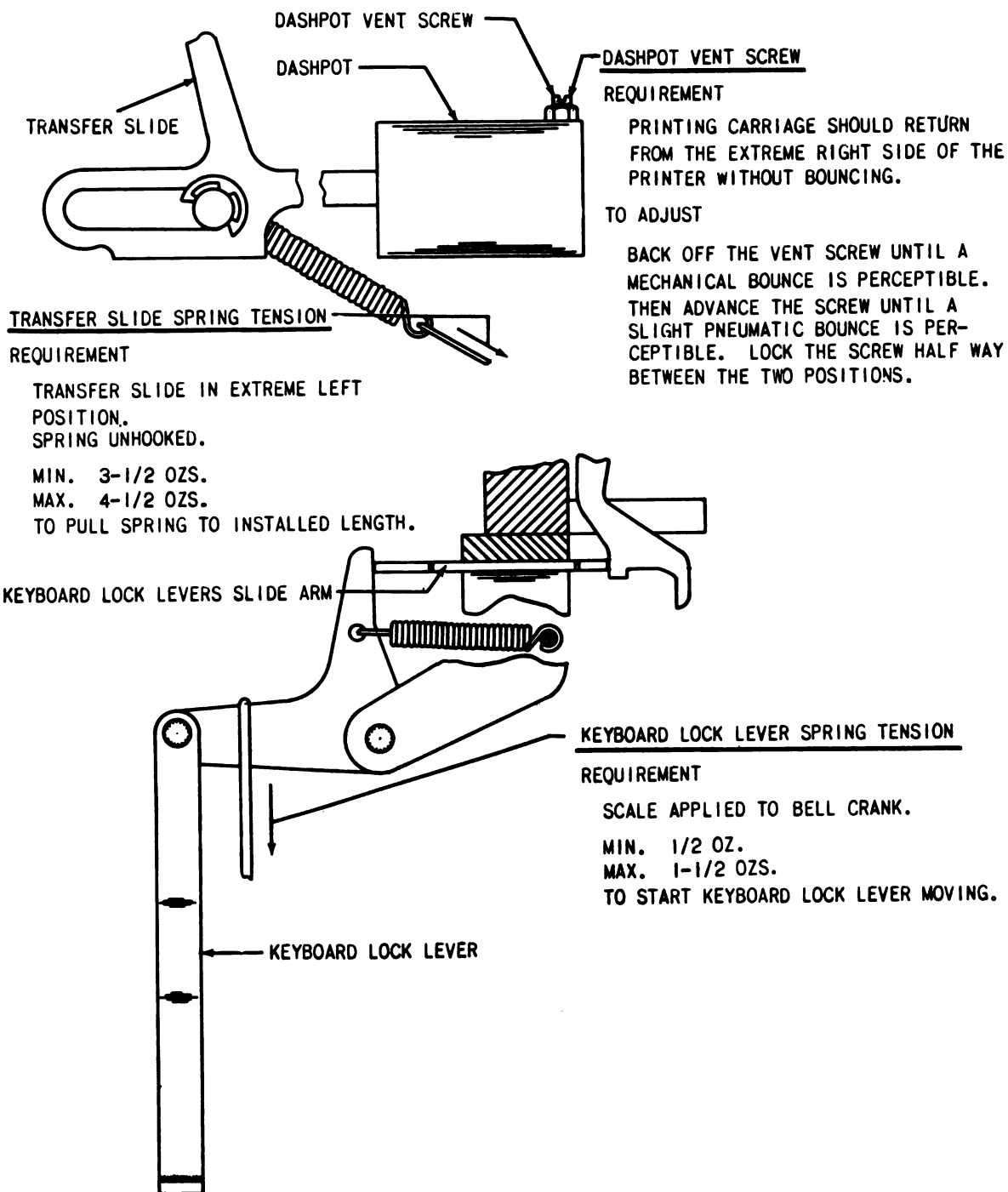


Figure 7-67. Automatic Typewriter, Dashpot and Keyboard Lock Mechanisms

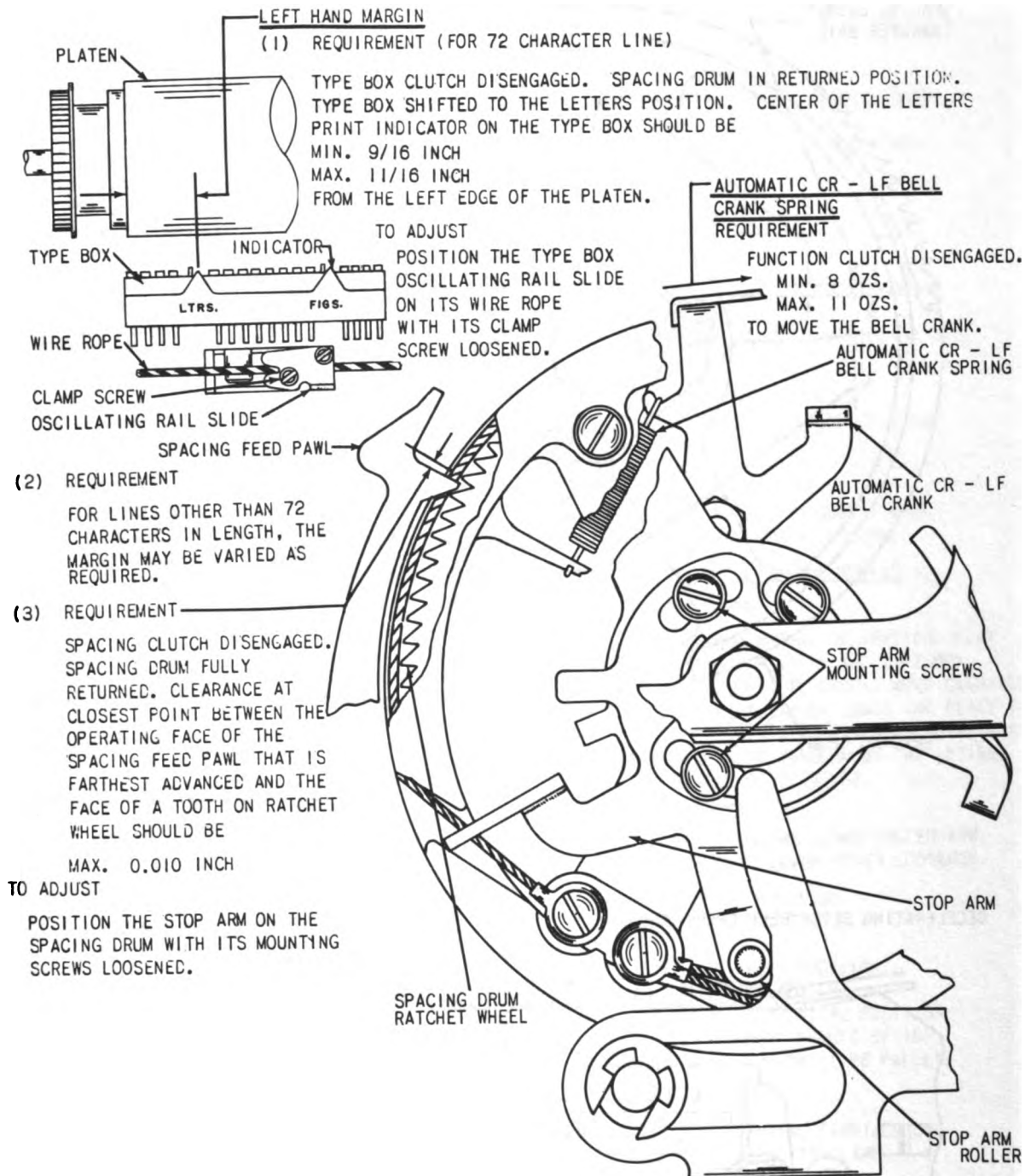


Figure 7-68. Automatic Typewriter, Carriage Return Mechanism

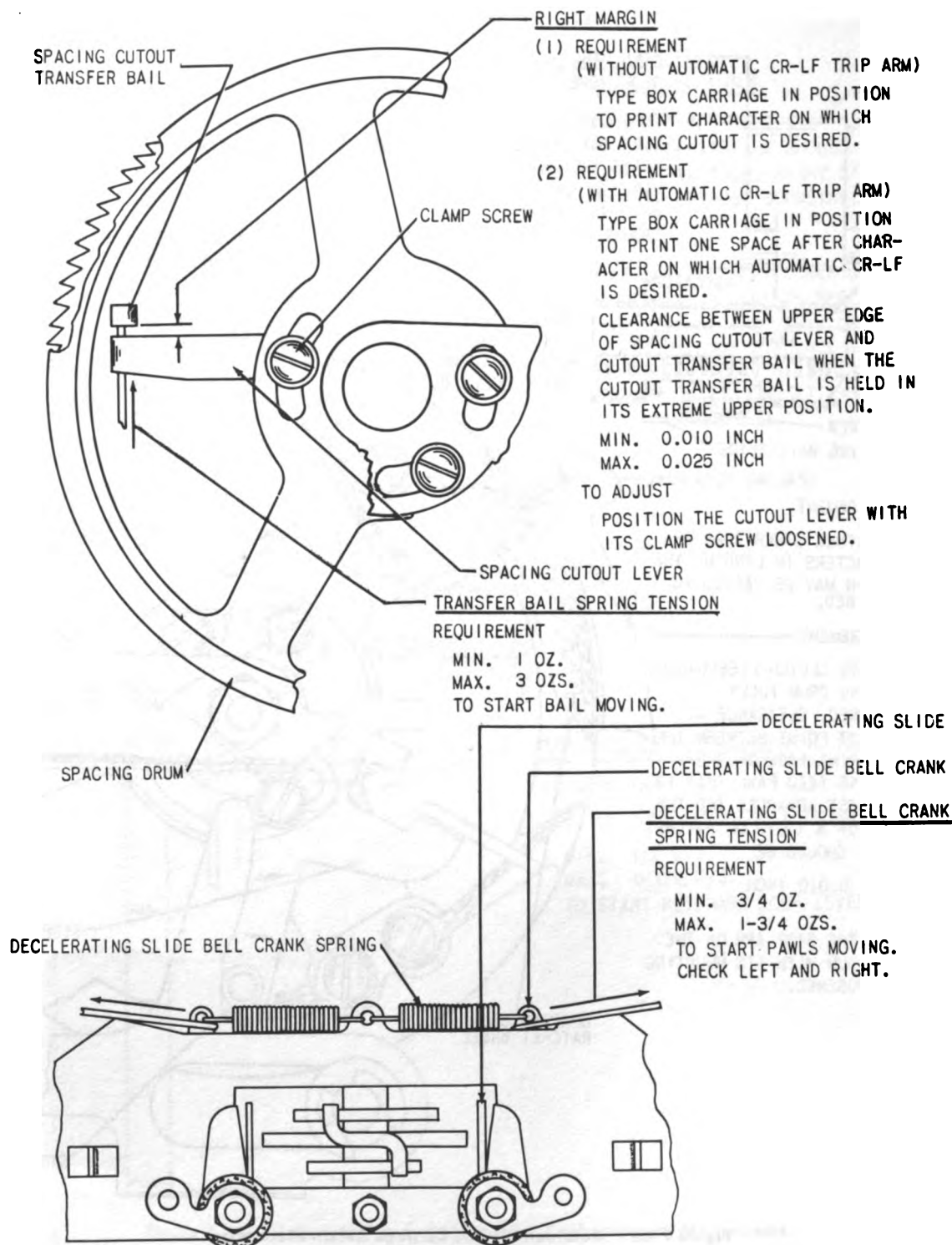


Figure 7-69. Automatic Typewriter, Right Margin and Decelerating Slide Mechanism

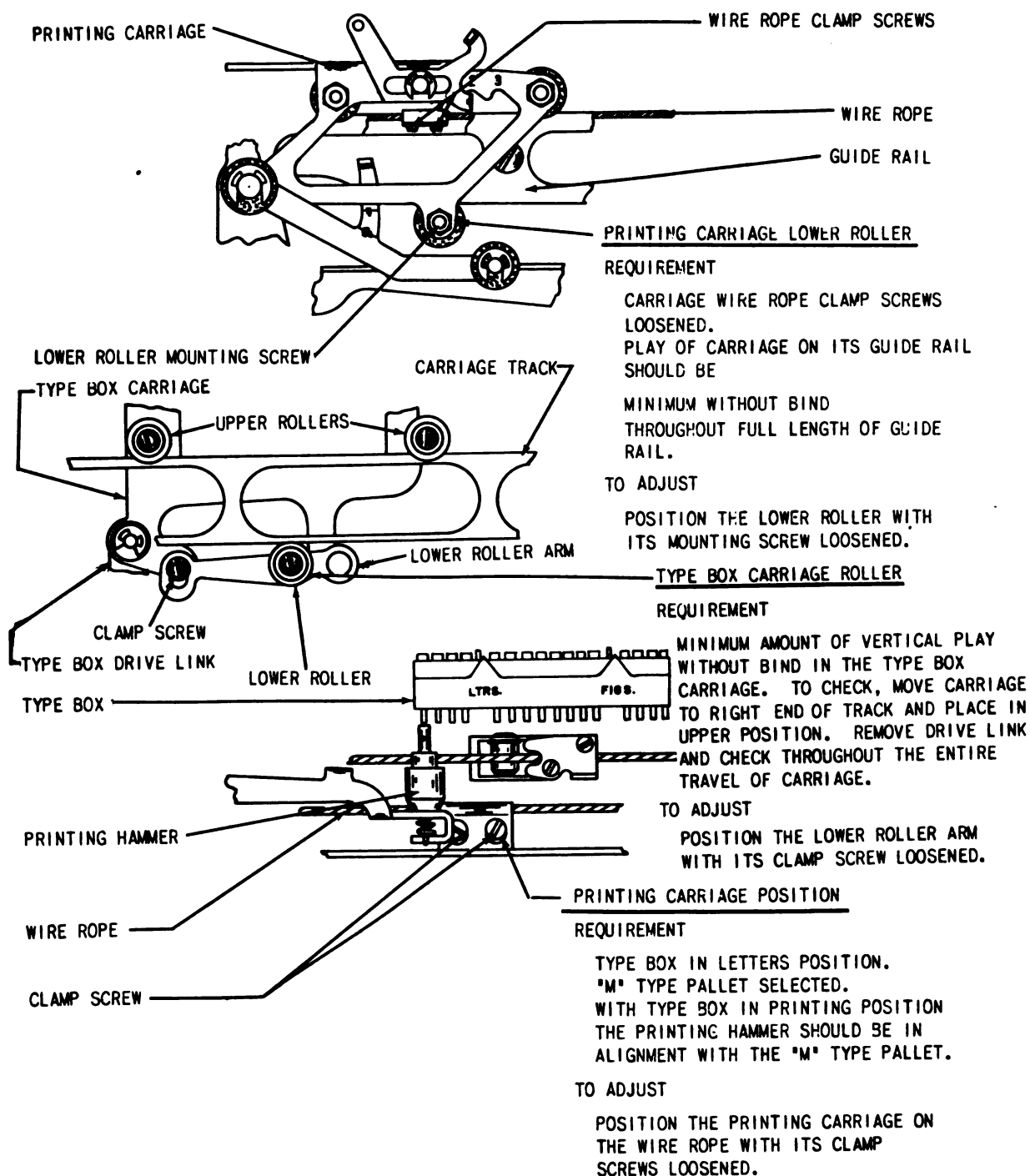


Figure 7-70. Automatic Typewriter, Printing and Type Box Carriage

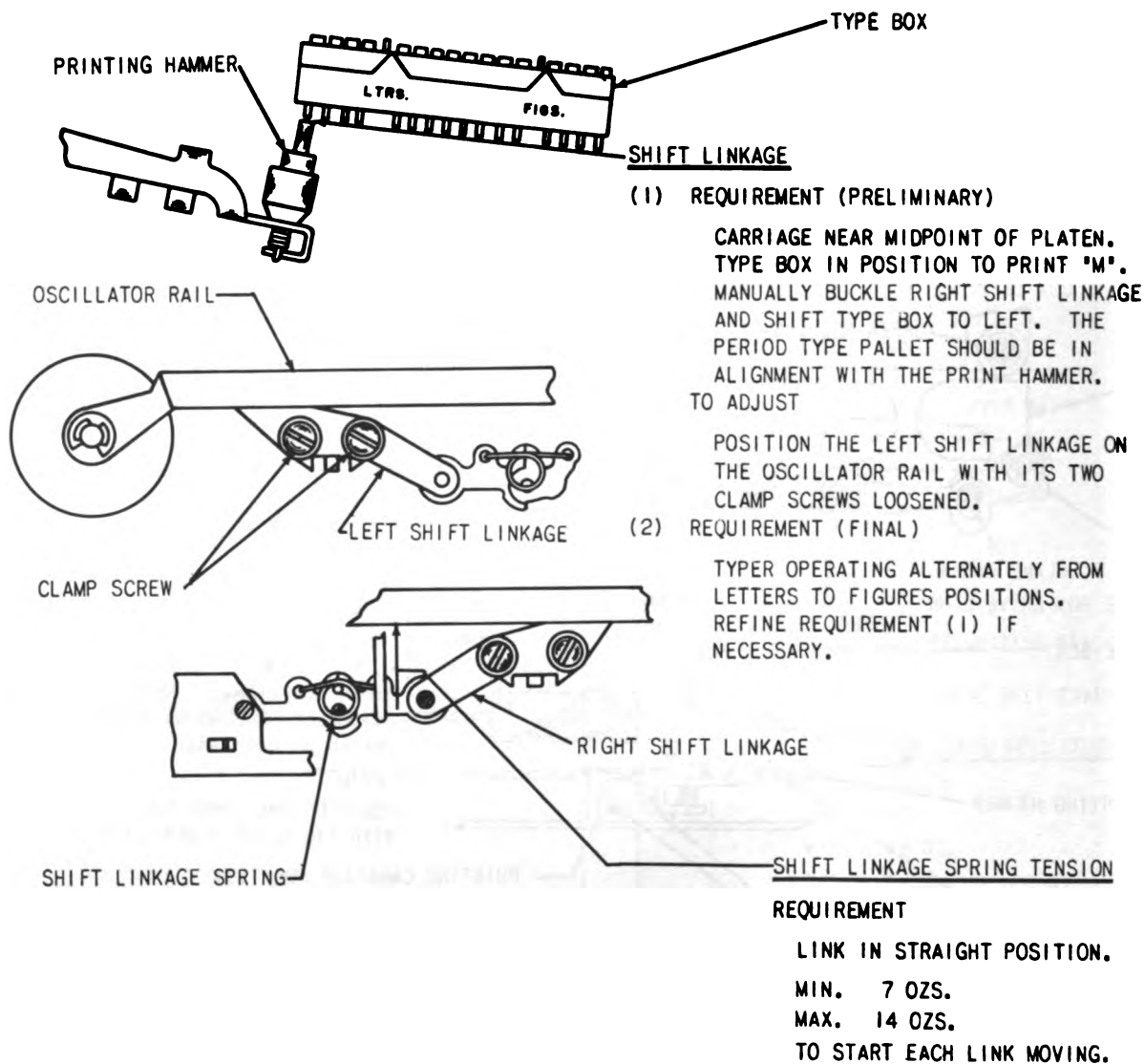


Figure 7-71. Automatic Typewriter, Shift Mechanism

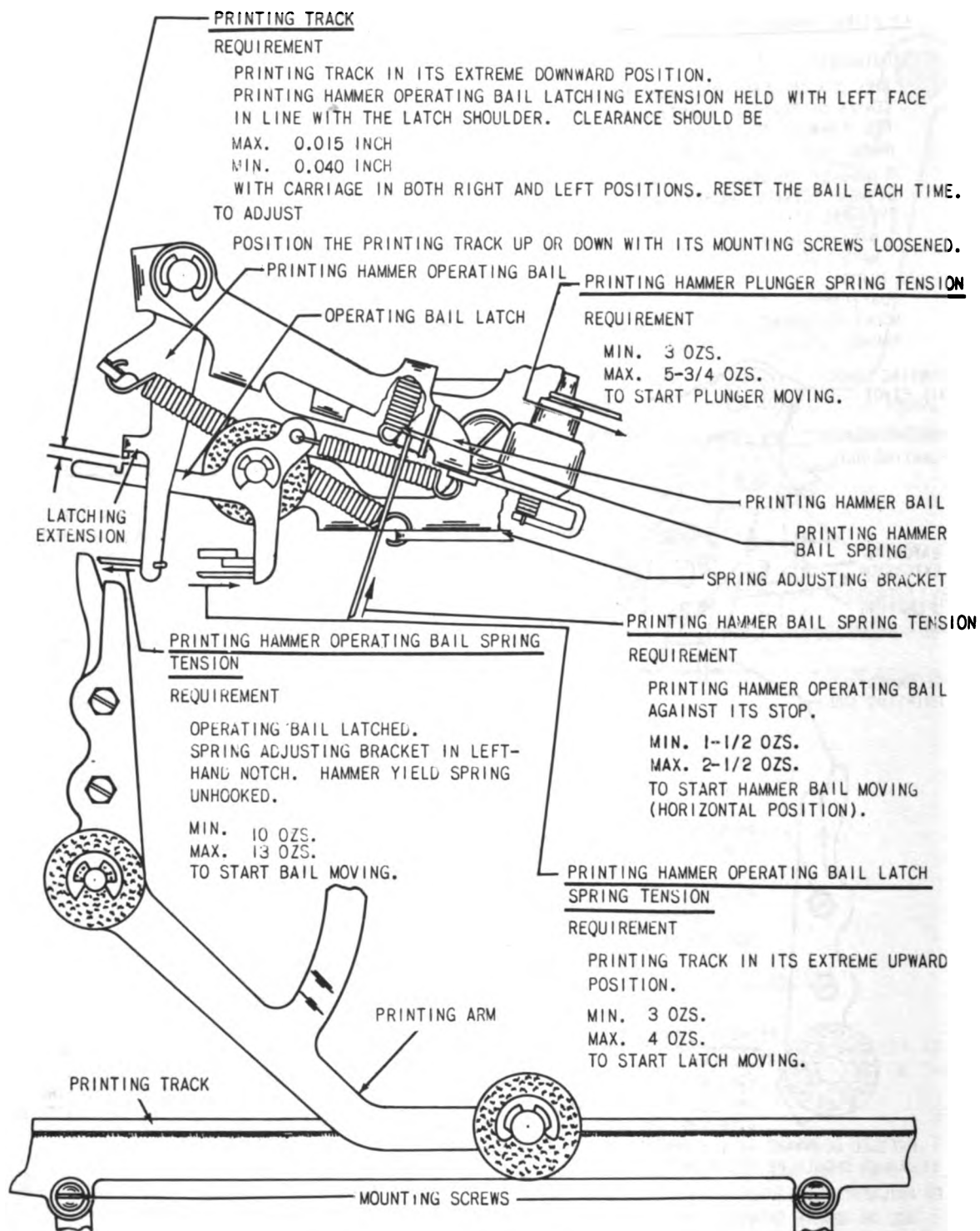


Figure 7-72. Automatic Typewriter, Printing Mechanism

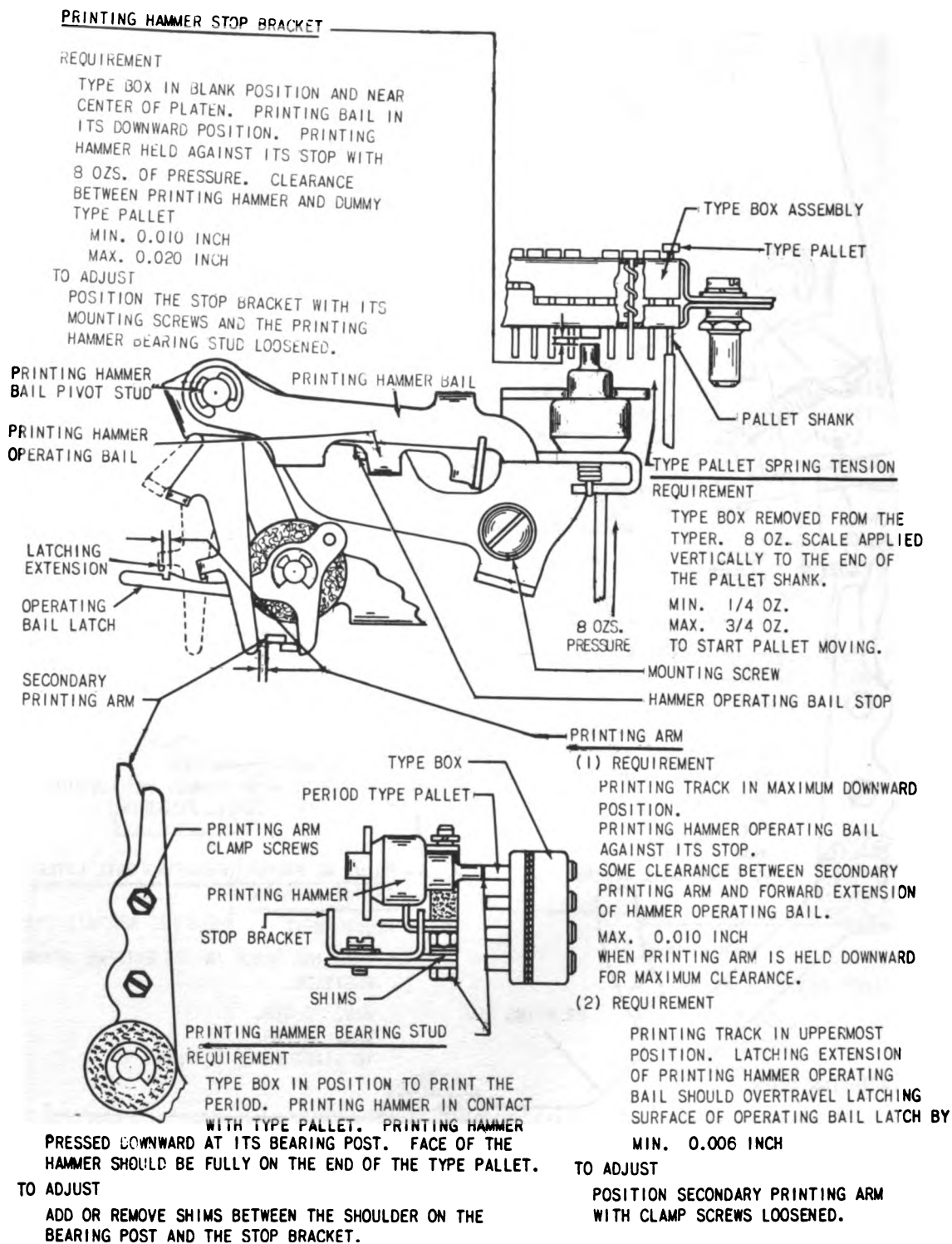


Figure 7-73. Automatic Typewriter, Printing Mechanism

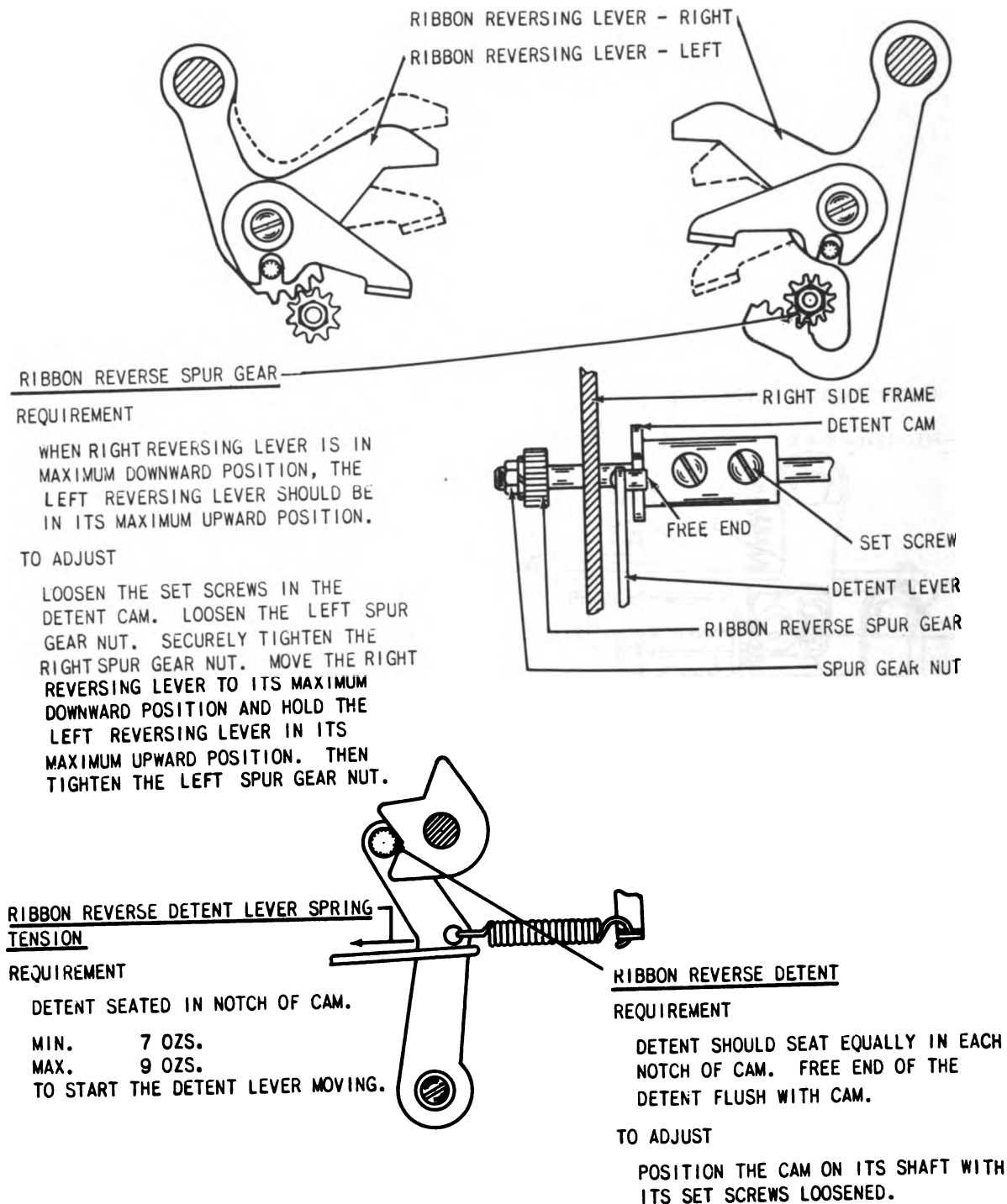


Figure 7-74. Automatic Typewriter, Ribbon Reverse Mechanism

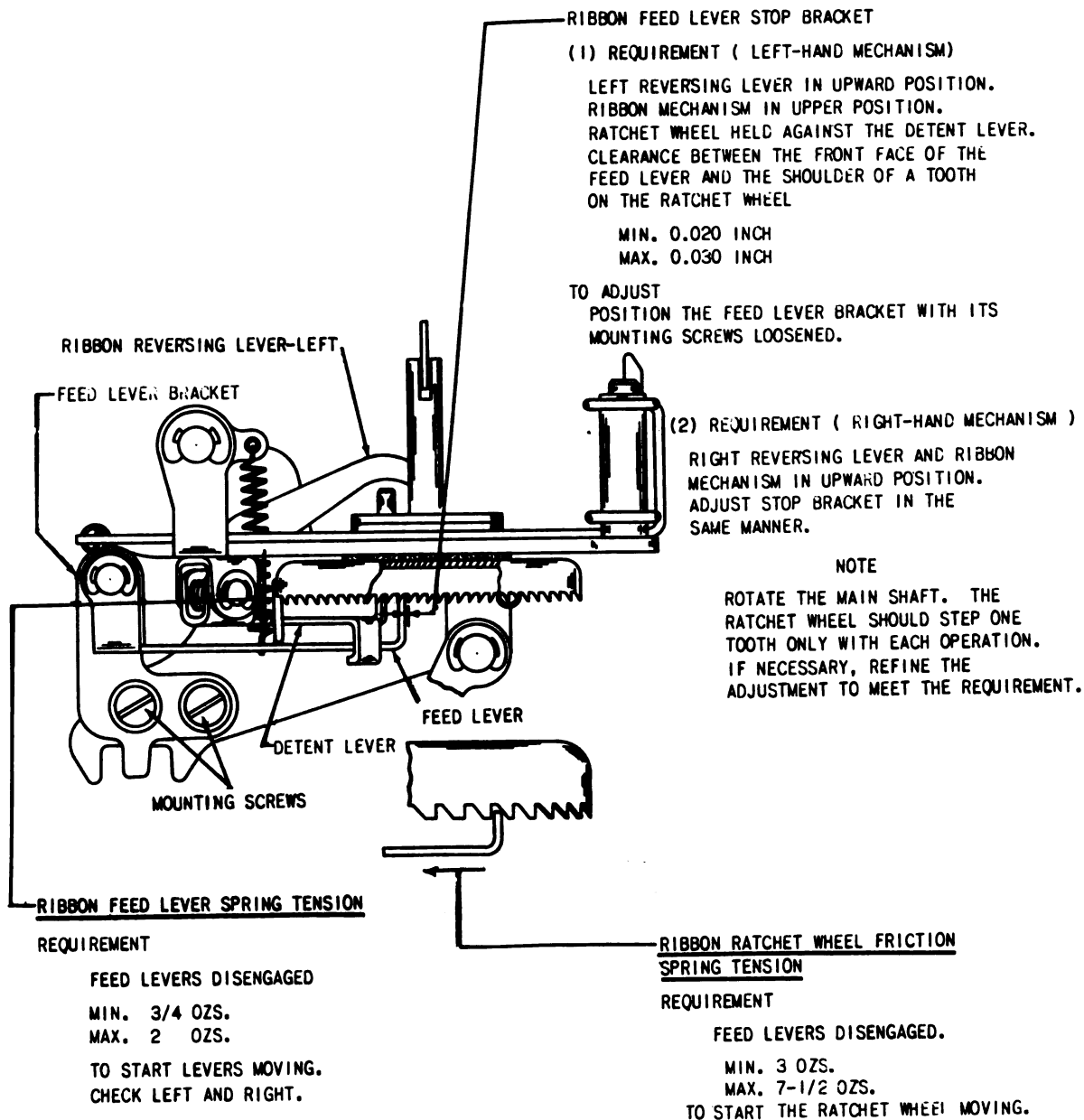


Figure 7-75. Automatic Typewriter, Ribbon Feed Mechanism

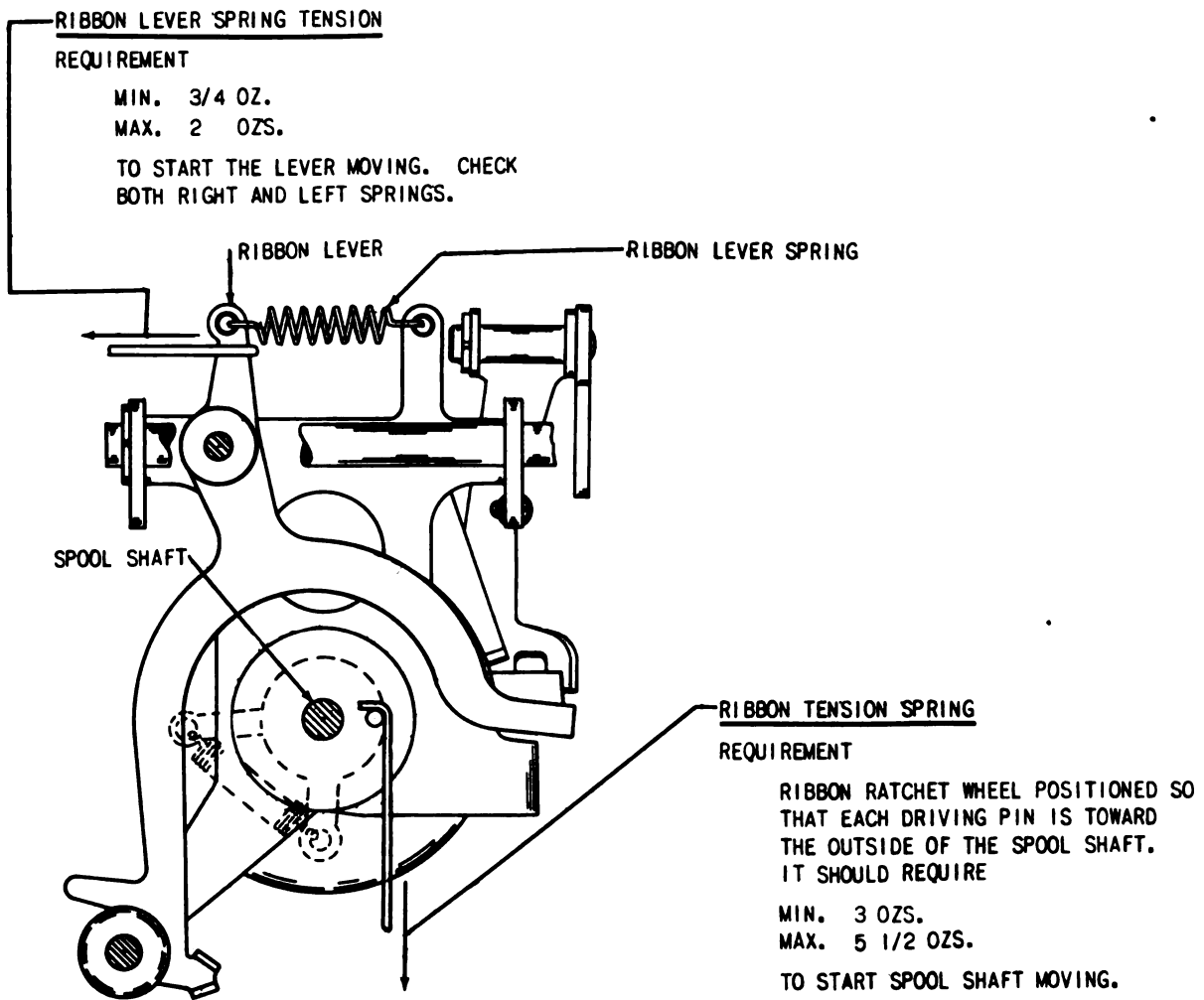


Figure 7-76. Automatic Typewriter, Ribbon Reverse Mechanism

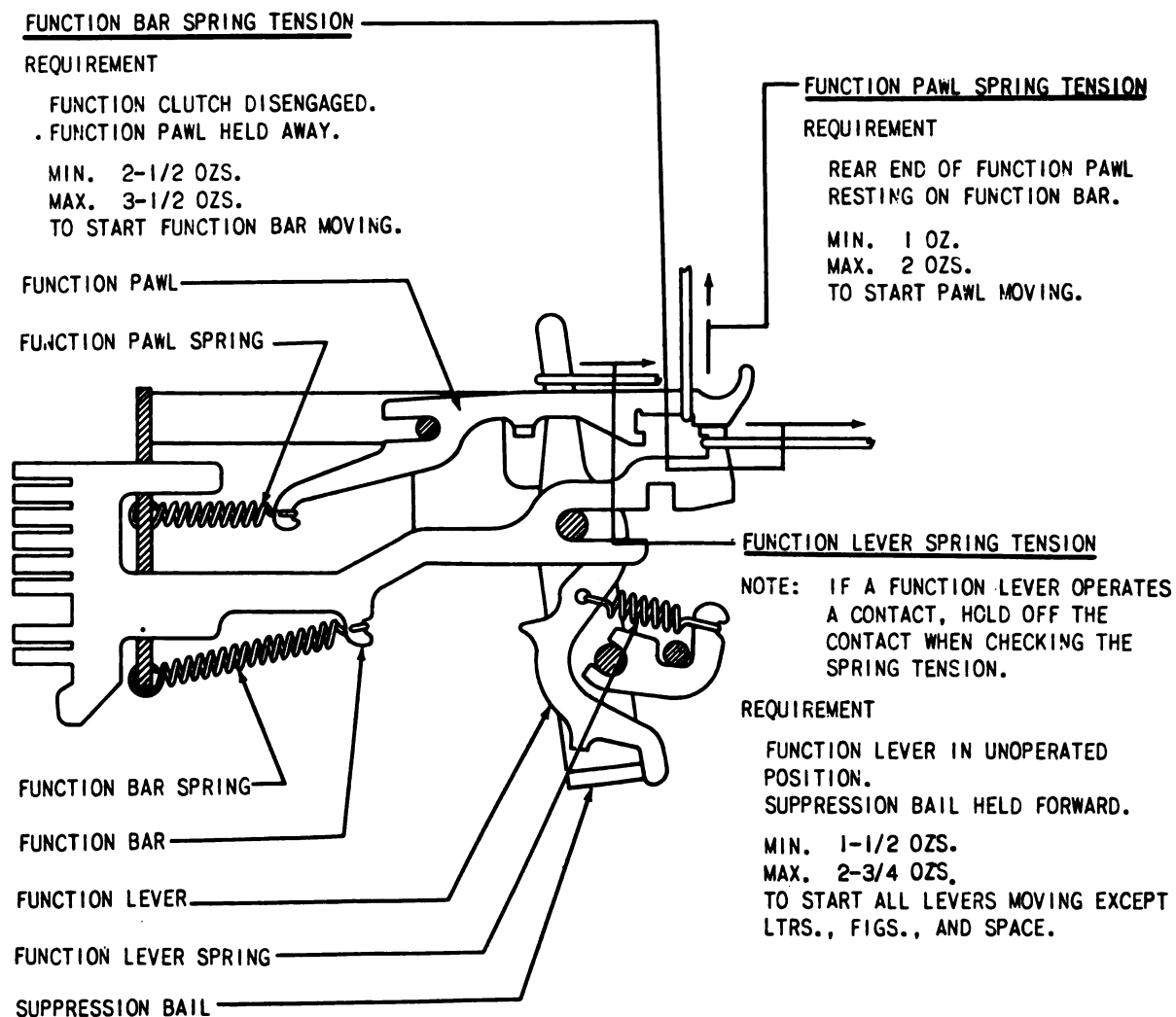


Figure 7-77. Automatic Typewriter, Function Box Mechanism

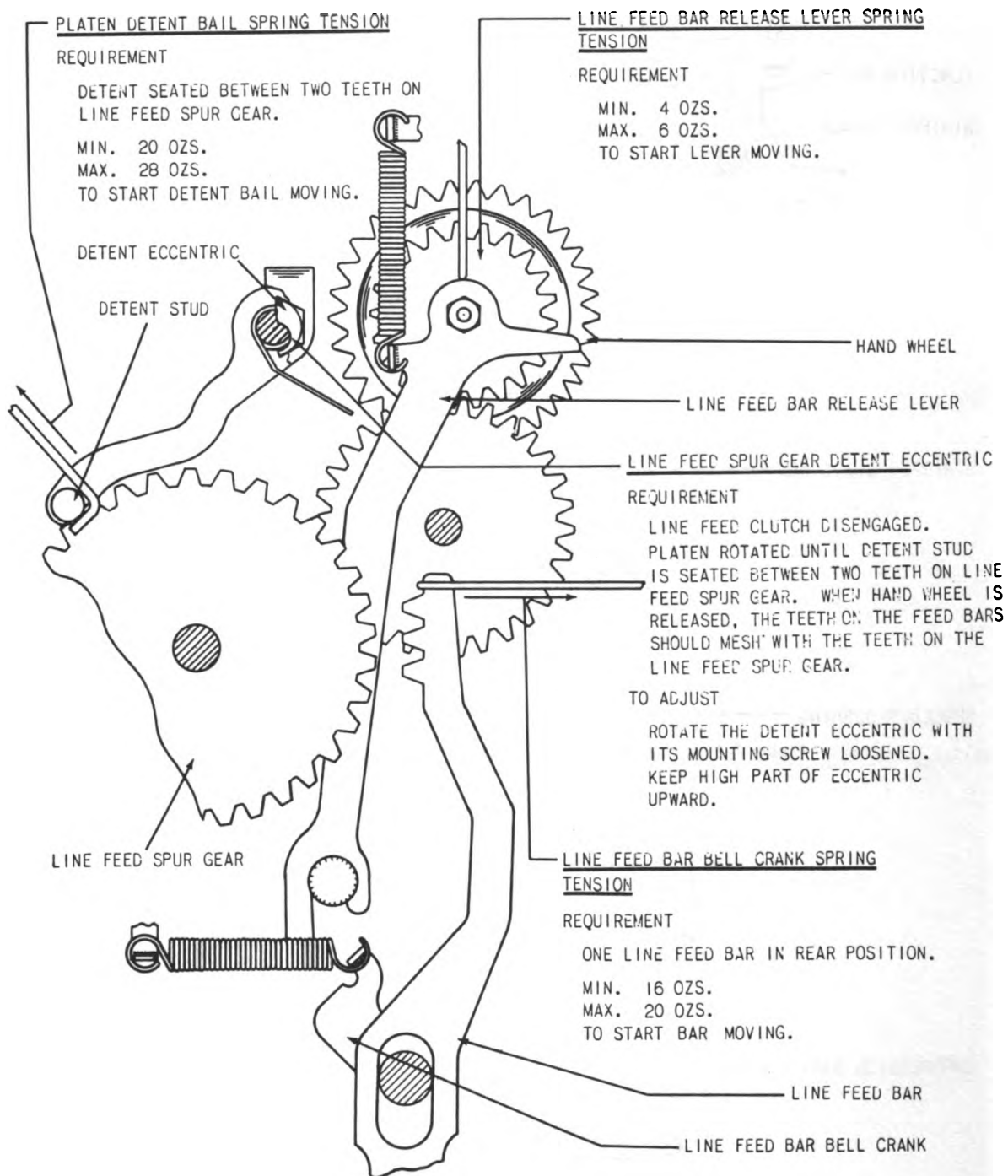


Figure 7-78. Automatic Typewriter, Line Feed Mechanism

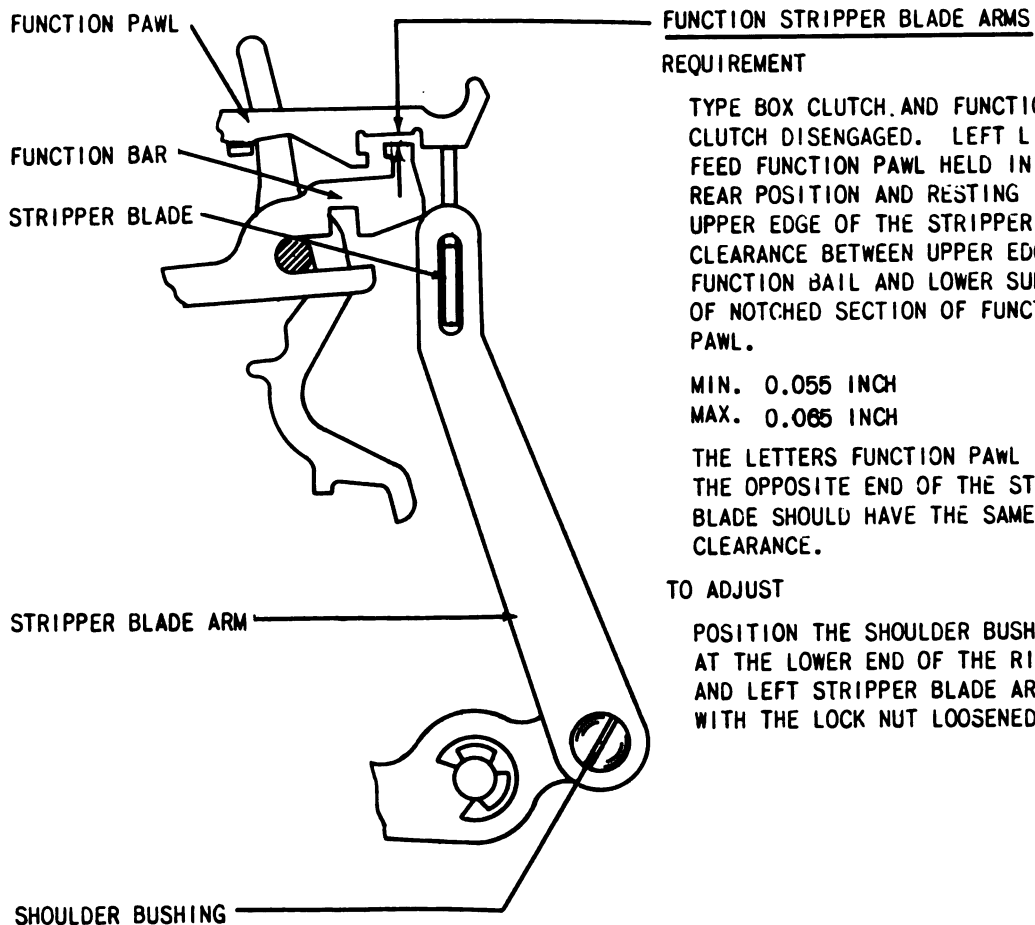


Figure 7-79. Automatic Typewriter, Function Pawl Stripper Mechanism

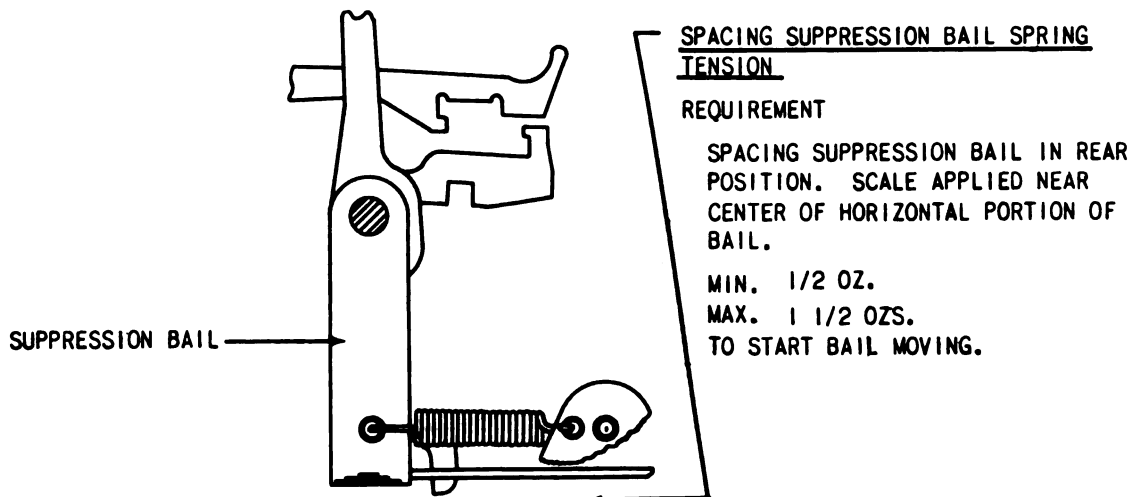


Figure 7-80. Automatic Typewriter, Spacing Suppression Mechanism

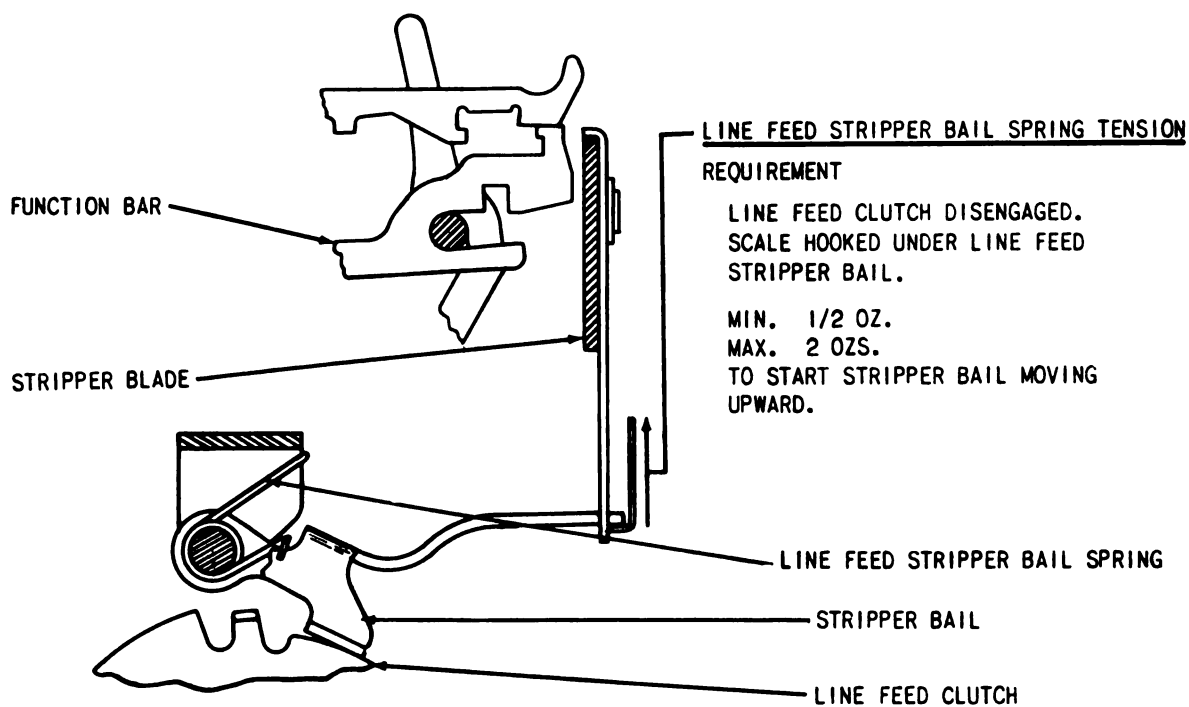


Figure 7-81. Automatic Typewriter, Function Pawl Stripper Mechanism

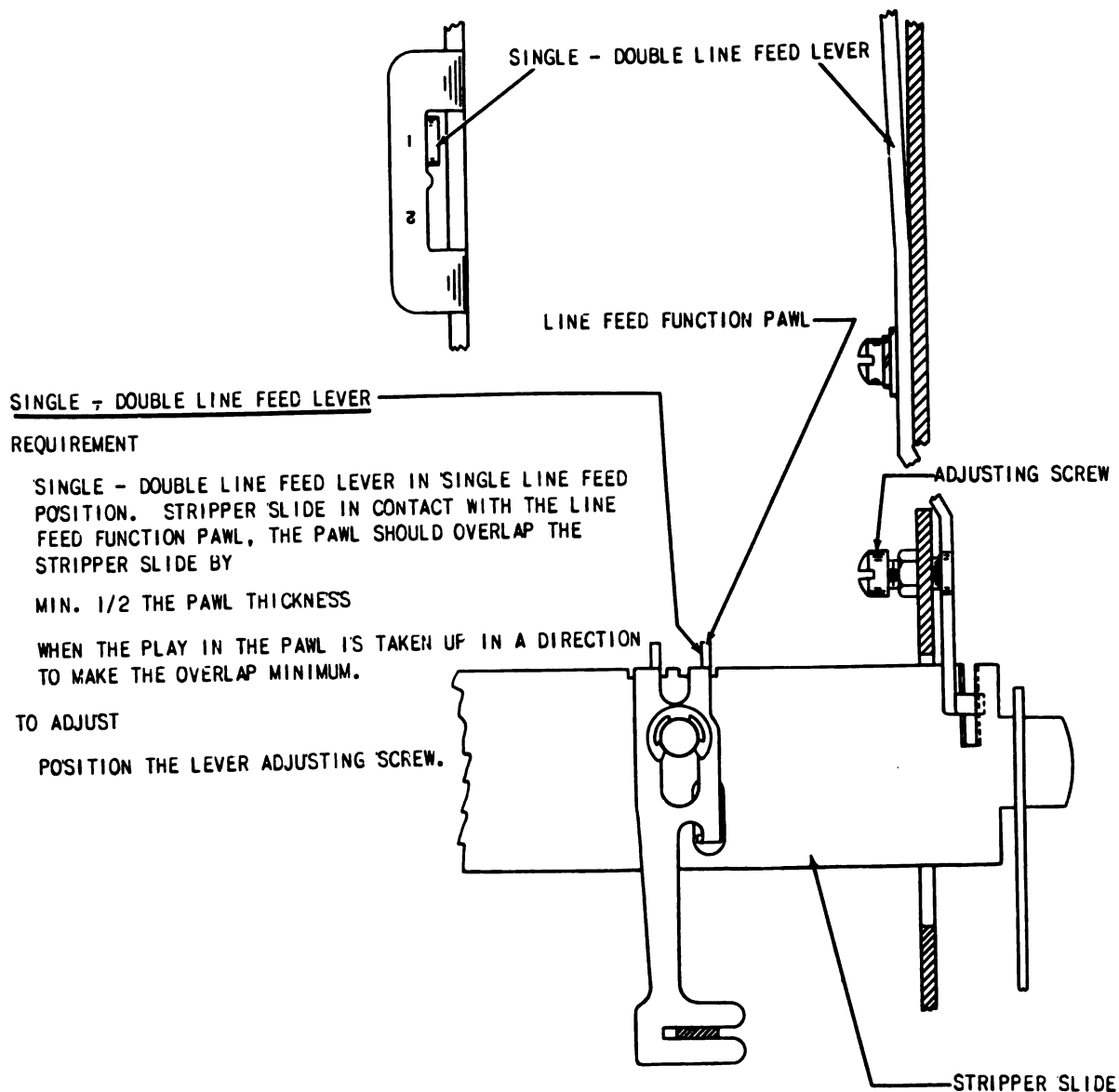
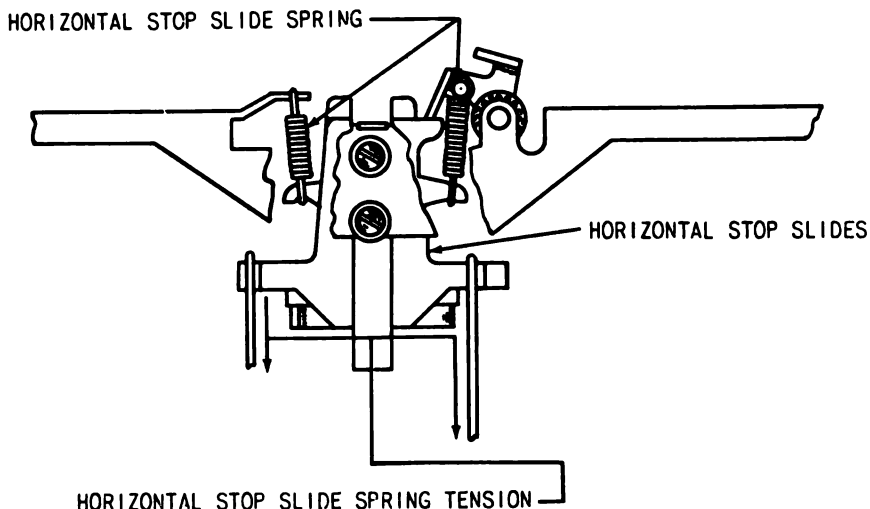


Figure 7-82. Automatic Typewriter, Single-Double Line Feed Mechanism



REQUIREMENT

CODE BARS IN MARKING POSITION (LEFT).
TYPE BOX CLUTCH ROTATED 1/4 TURN FROM ITS STOP POSITION.
HORIZONTAL MOTION DECELERATING SLIDES (FIG. 7-61) HELD AWAY
FROM HORIZONTAL STOP SLIDES.

MIN. 1/2 OZ.; MAX. 1 OZ. FOR UPPER AND LOWER SLIDES

MIN. 2 OZS.; MAX. 3 OZS. FOR MIDDLE SLIDE

TO START SLIDE MOVING.

NOTE: WHEN CHECKING UPPER AND LOWER SLIDES, HOLD MIDDLE
SLIDE 1/32 INCH FORWARD.

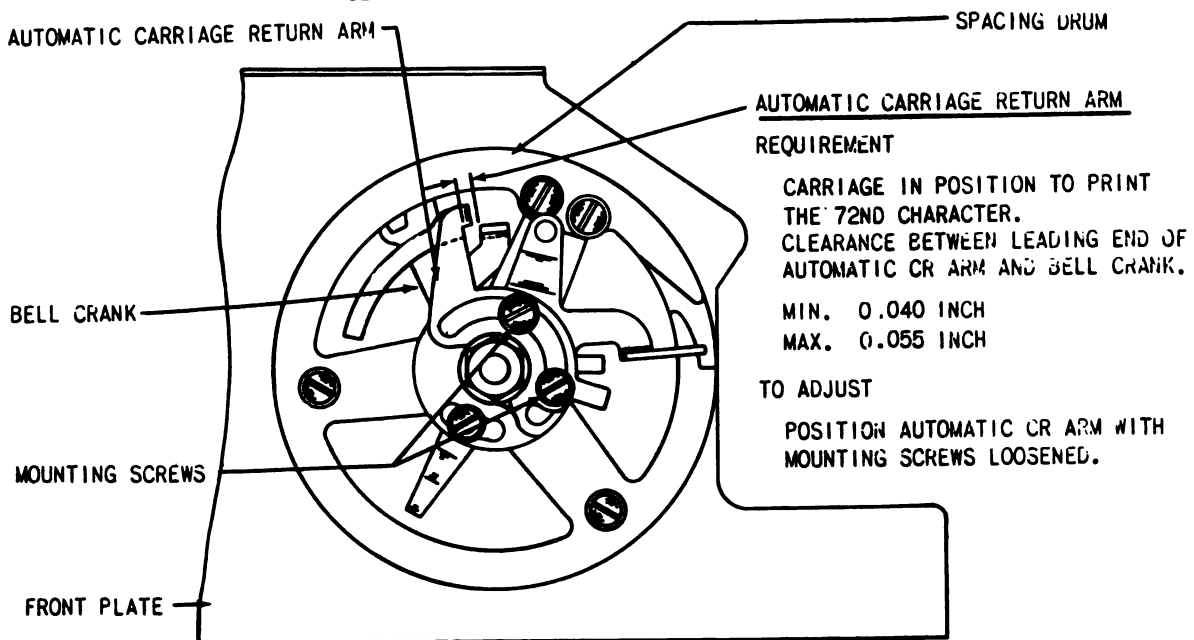


Figure 7-83. Automatic Typewriter, Horizontal Motion Stop and Automatic Carriage Return Mechanism

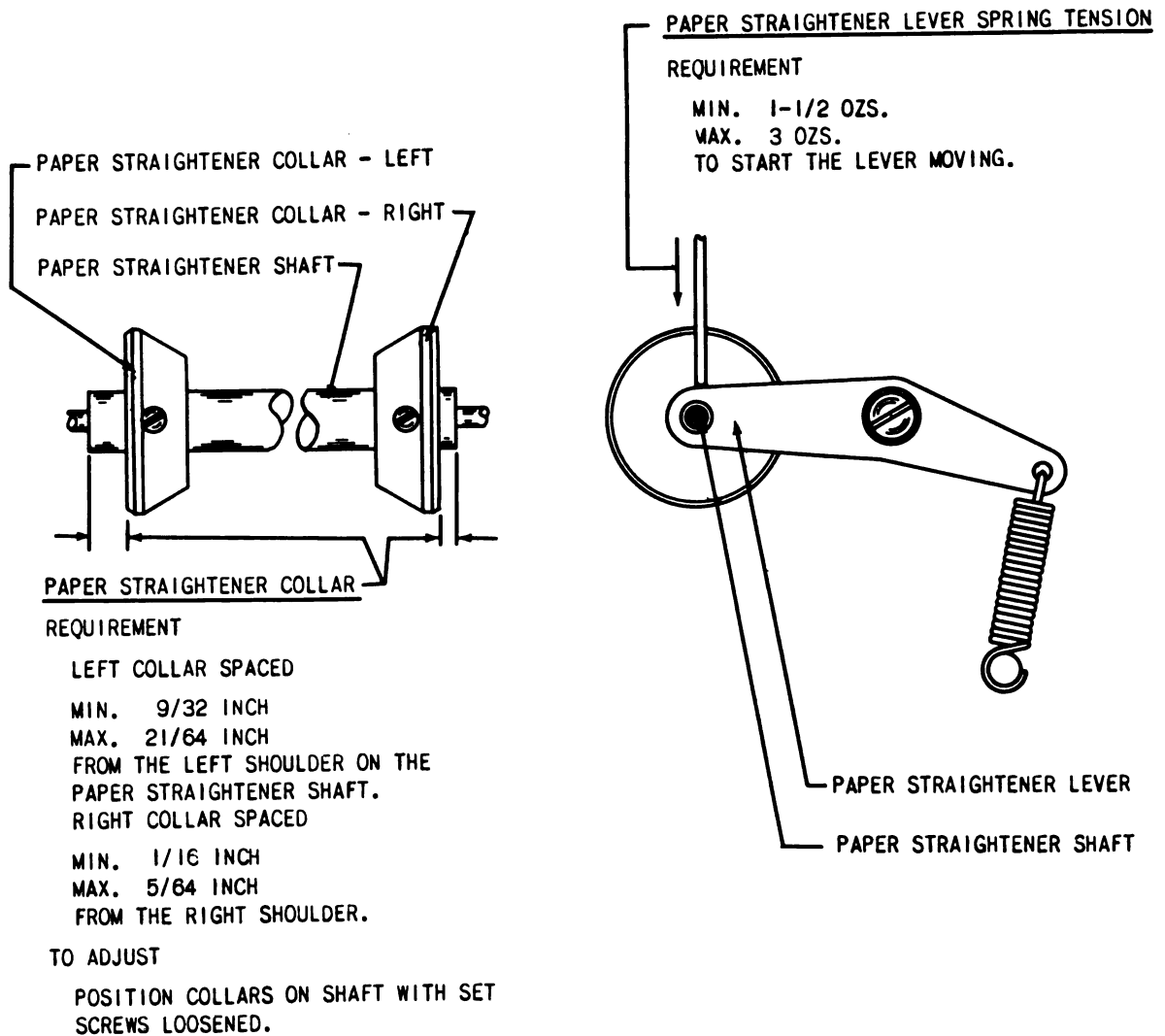


Figure 7-84. Automatic Typewriter, Paper Mechanism

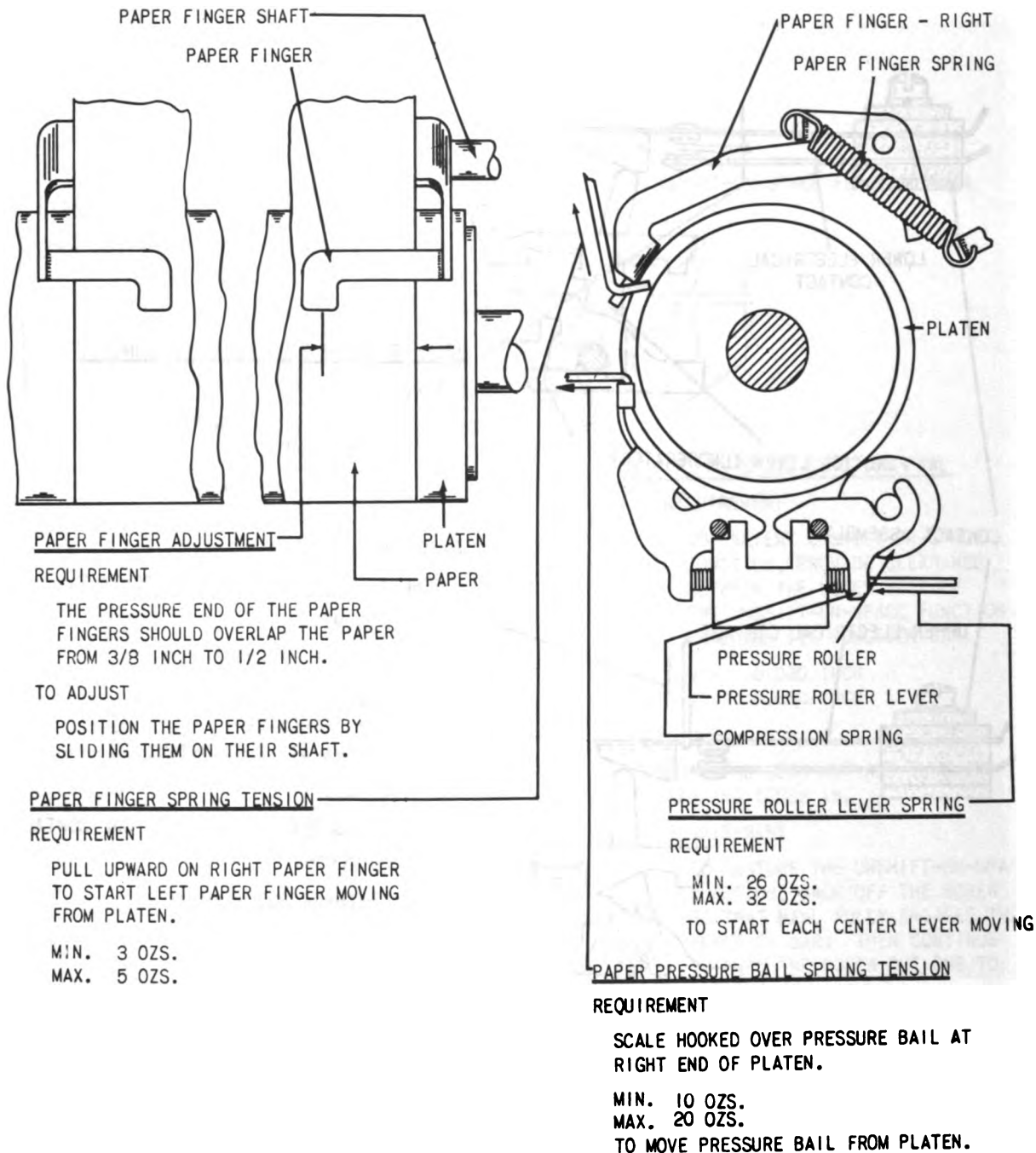


Figure 7-85. Automatic Typewriter, Paper Mechanism

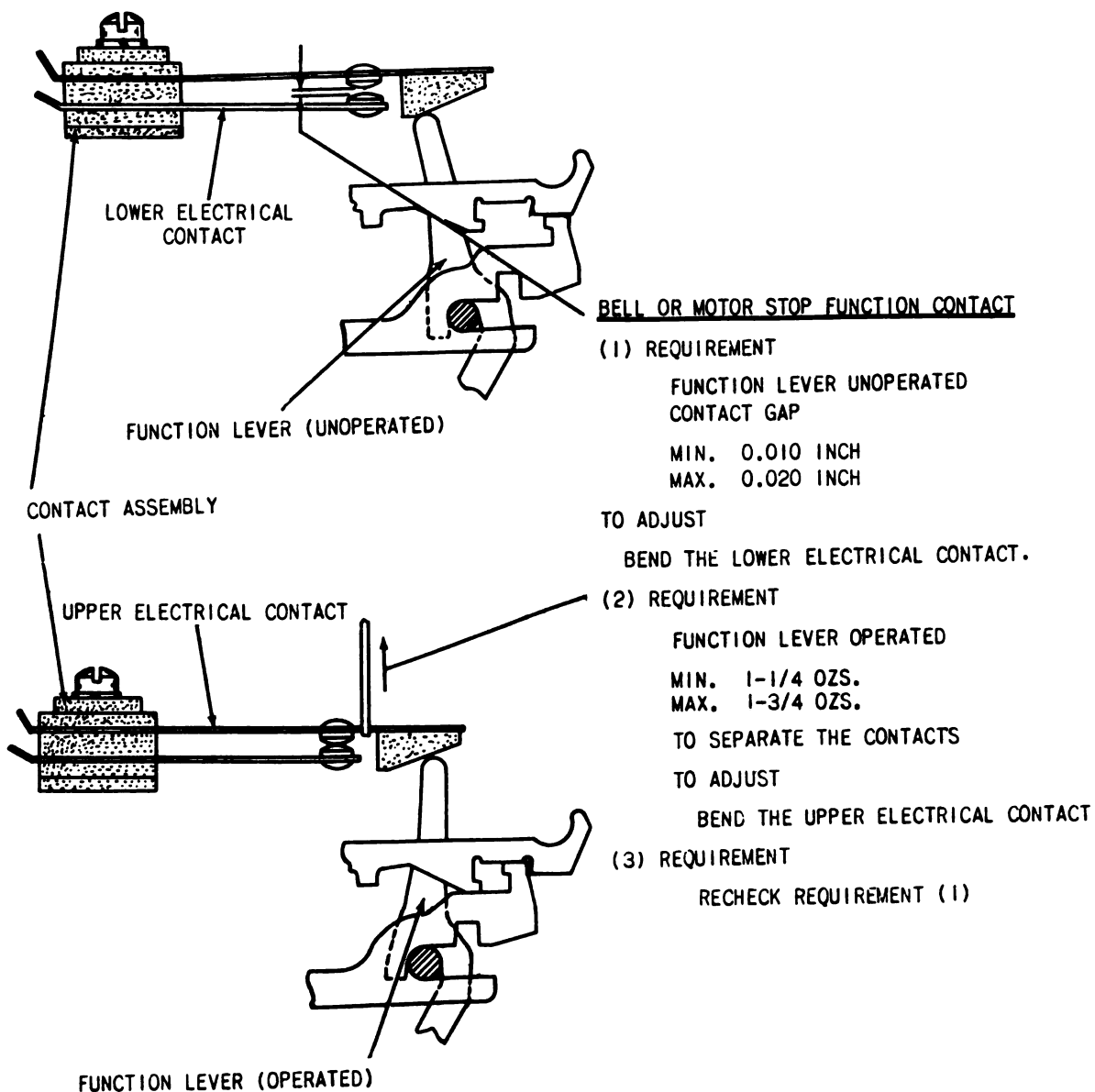


Figure 7-86. Automatic Typewriter, Function Contact

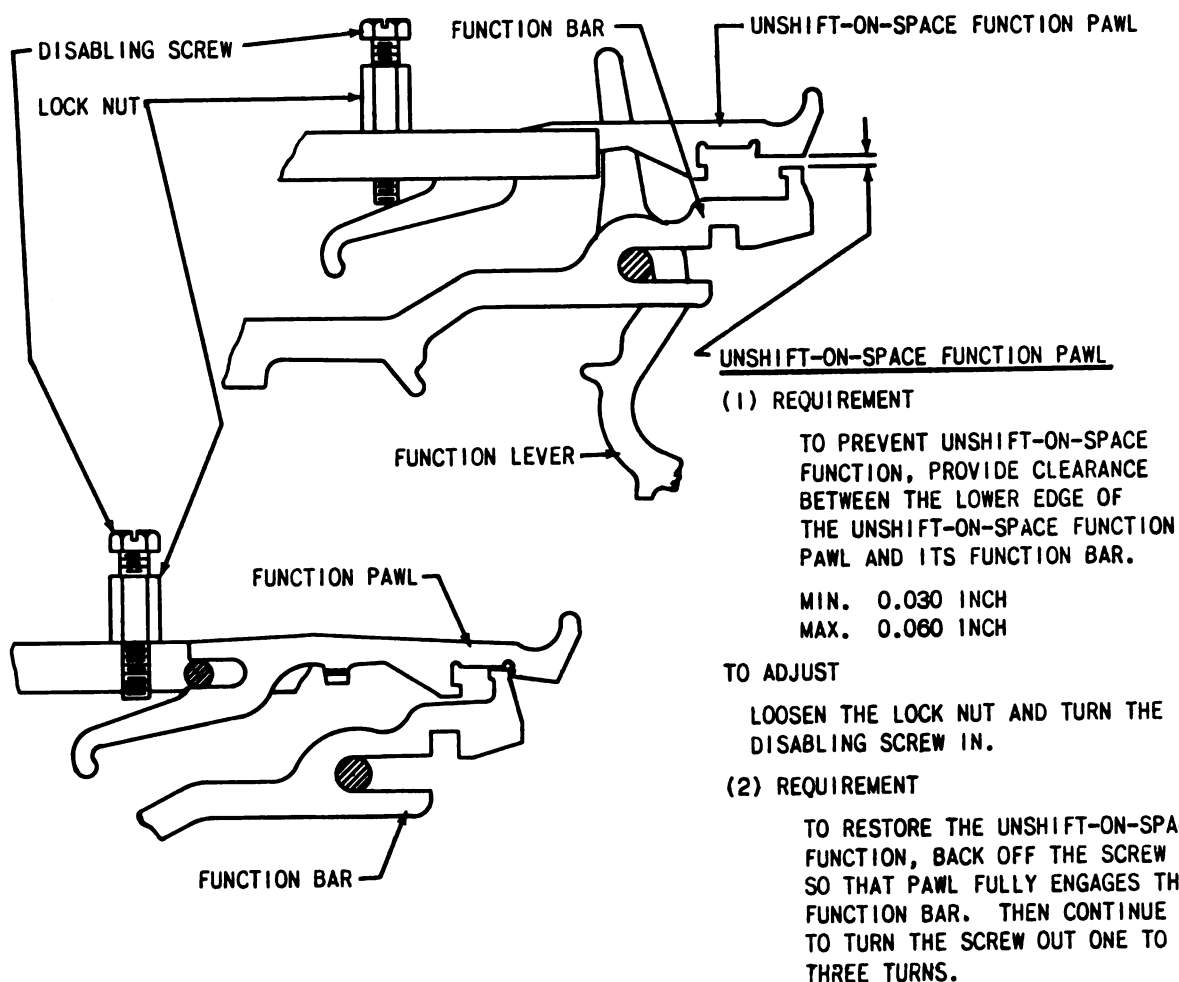


Figure 7-87. Automatic Typewriter, Unshift-On-Space Mechanism

CODE BAR DETENT

REQUIREMENT

ALL CLUTCHES DISENGAGED. CODE BARS IN SPACING POSITION. 8 OZ. PULL AND PUSH SCALE APPLIED ALTERNATELY AT LEFT END.

MIN. 5 OZS.

MAX. 11 OZS.

TO MOVE EACH CODE BAR (EXCEPT NO. 3) FROM ONE POSITION TO THE OTHER.

TO ADJUST

EQUALIZE THE PRESSURE REQUIRED TO MOVE THE CODE BARS FROM ONE POSITION TO THE OTHER BY ADDING OR REMOVING SHIMS BETWEEN THE CASTING AND THE CODE BAR BRACKET.

TO MEASURE NO 3 CODE BAR, REMOVE THE REVERSING SLIDE STUD FROM THE SLIDE. READJUST THE REVERSING SLIDE ADJUSTING STUD FIG. 7-60.

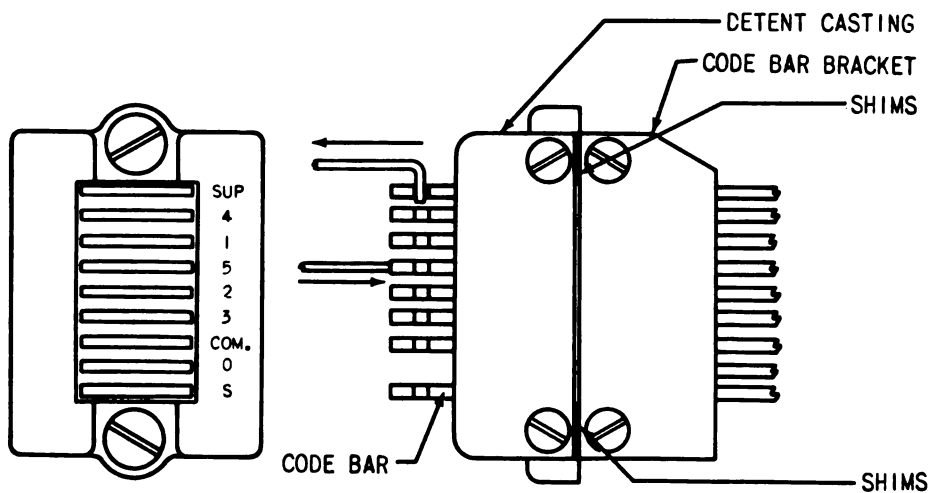
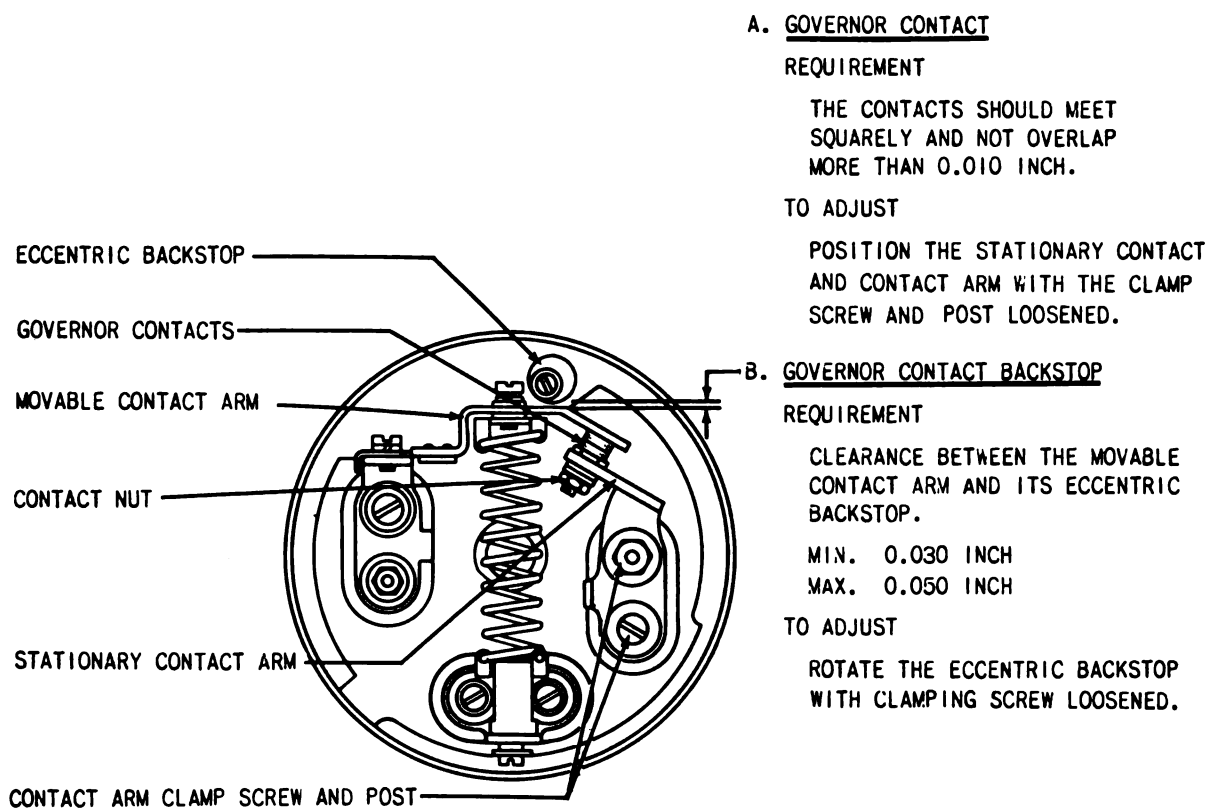


Figure 7-88. Automatic Typewriter, Code Bar Detent Mechanism

e. AC MOTOR PD-18/U



NOTE

IN THE EVENT THE GOVERNED MOTOR IS REMOVED FROM ITS CRADLE, IT SHOULD BE CENTRALLY POSITIONED IN ITS RUBBER MOUNTS SO THAT WHEN IT IS ROCKED FORWARD AND BACKWARD THE MOTOR HOUSING SHOULD NOT STRIKE THE CRADLE AT THE GOVERNOR END. THE CABLE SHOULD ALSO CLEAR THE GROMMET IN THE SCREEN UNDER THE MOTOR.

Figure 7-89. Motor Governor

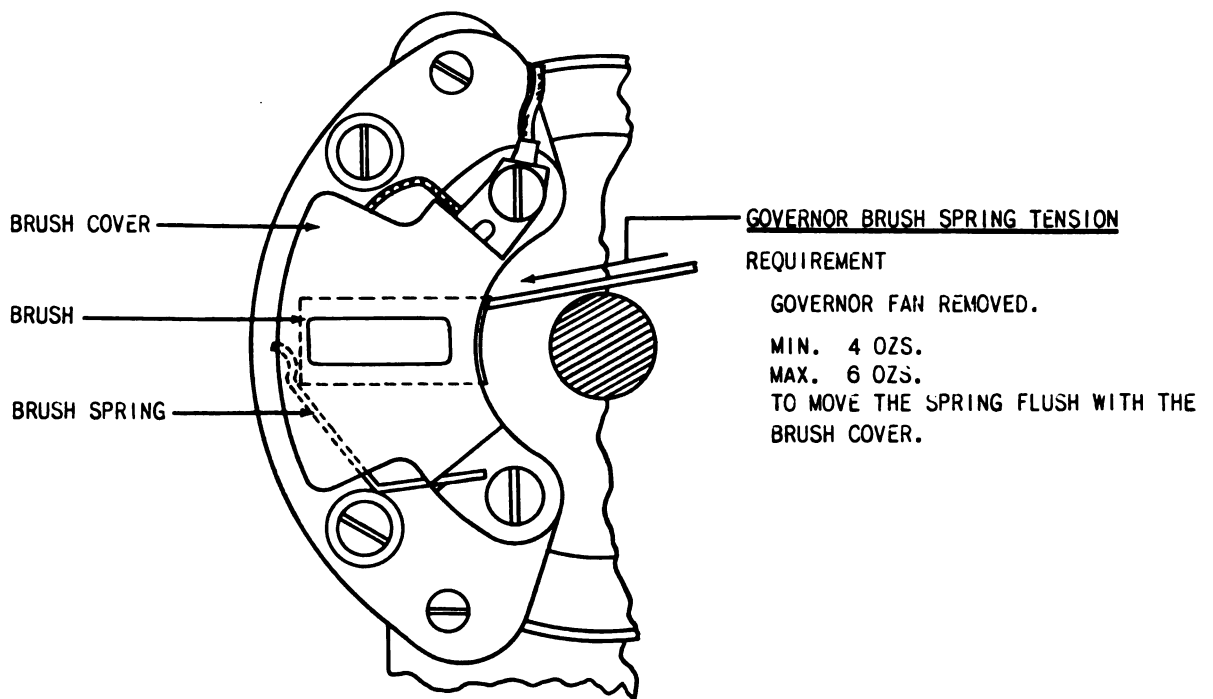


Figure 7-90. Motor Governor Brush

f. POWER DISTRIBUTION PANEL SB-154A/UG

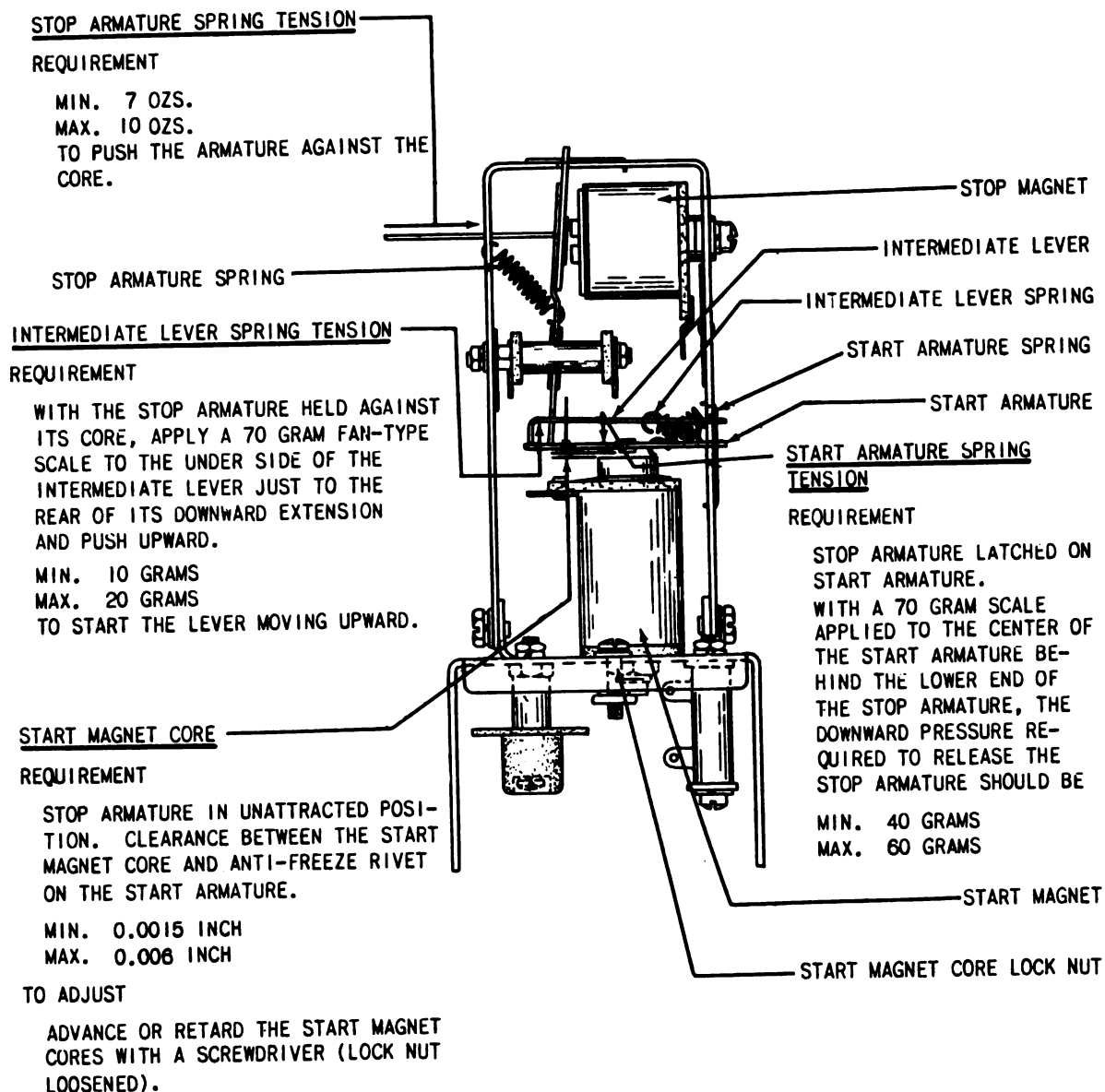


Figure 7-91. Motor Control Assembly

g. CABINETS CY-870/UG AND CY-871/UG

ARMATURE SPRING TENSION

REQUIREMENT

MIN. 1/2 OZ.
MAX. 1 OZ.
TO PUSH THE ARMATURE AGAINST THE
CORE (VERTICALLY).

REMOTE SIGNAL BELL

REQUIREMENT

ARMATURE HELD AGAINST THE MAGNET
CORE.
CLEARANCE BETWEEN THE ARMATURE BALL
AND THE BELL.
MIN. 0.020 INCH
MAX. 0.035 INCH

TO ADJUST

BEND THE ARMATURE EXTENSION JUST
BELOW THE ARMATURE SPRING.

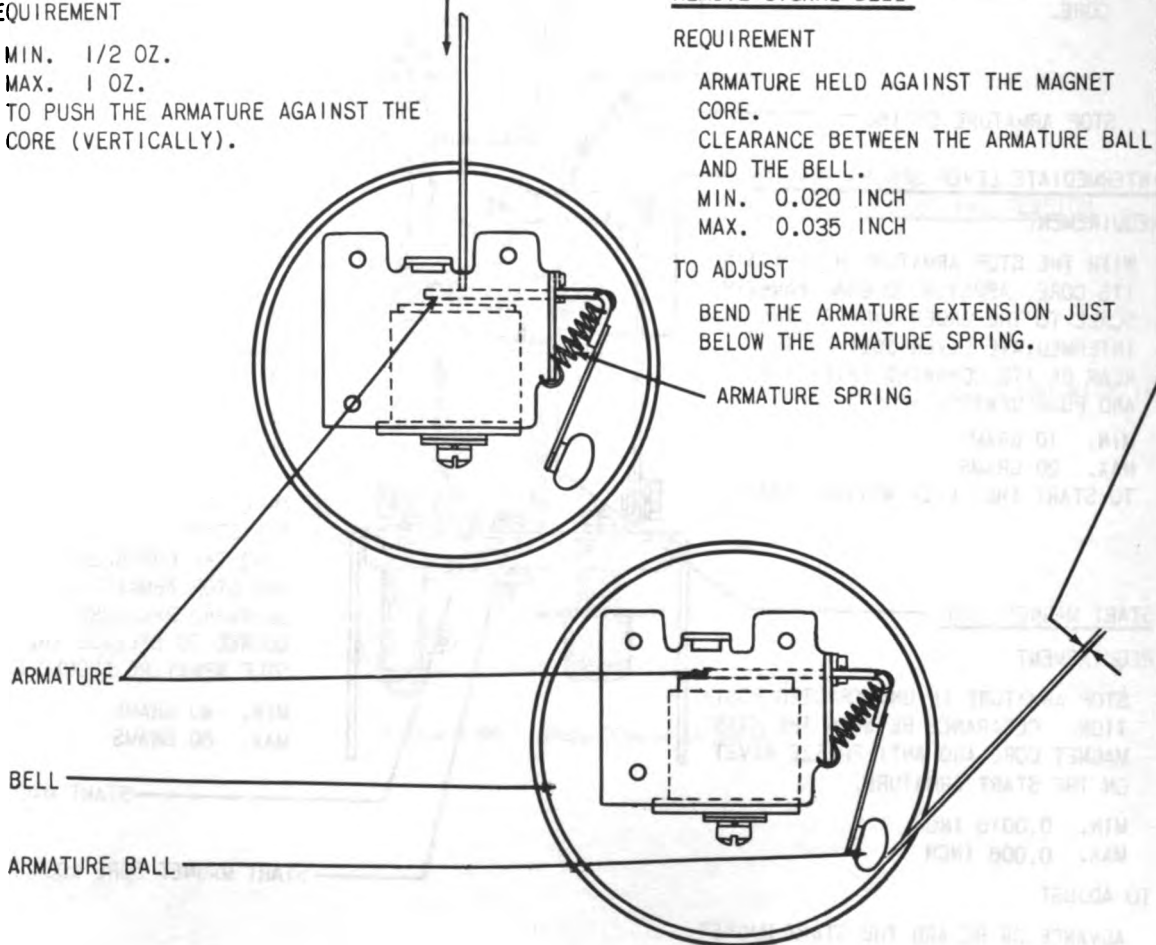
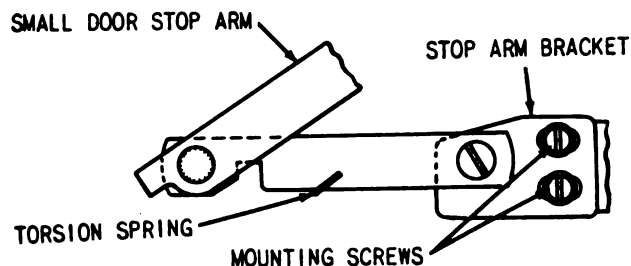


Figure 7-92. Remote Signal Bell



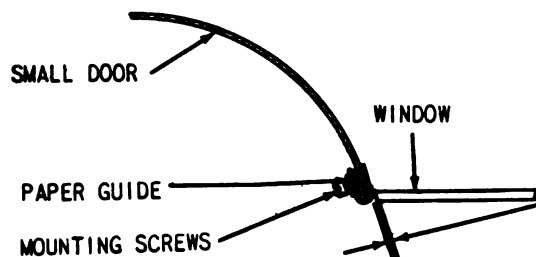
SMALL DOOR STOP ARM

REQUIREMENT

STOP ARM SHOULD BE FREE OF BINDS WHEN DOOR IS OPENED OR CLOSED.

TO ADJUST

LOOSEN THE STOP ARM BRACKET MOUNTING SCREWS. CLOSE THE DOOR. DISCONNECT THE TORSION SPRING. ALIGN STOP ARM FOR FREENESS AND TIGHTEN MOUNTING SCREWS WITH DOOR CLOSED. REPLACE TORSION SPRING.



WINDOW AND PAPER GUIDE

(1) REQUIREMENT

THE BOTTOM EDGE OF THE PAPER GUIDE SHOULD BE FLUSH WITH THE BOTTOM EDGE OF THE WINDOW.

TO ADJUST

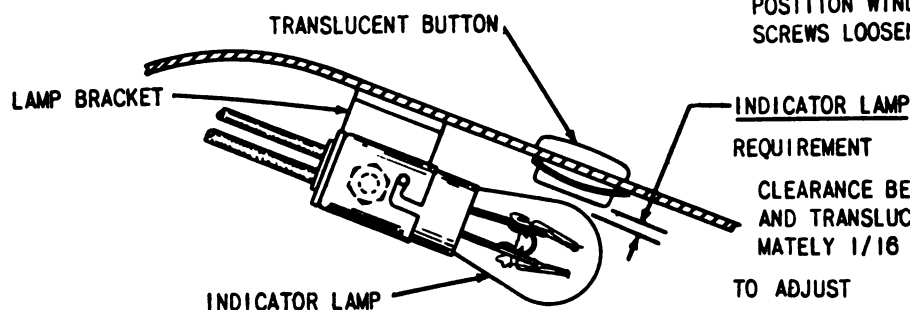
POSITION THE PAPER GUIDE WITH ITS MOUNTING SCREWS LOOSENED.

(2) REQUIREMENT

THE SMALL DOOR SHOULD BARELY CLEAR THE WINDOW WHEN THE DOOR IS OPENED OR CLOSED.

TO ADJUST

POSITION WINDOW WITH ITS RETAINER SCREWS LOOSENED.



INDICATOR LAMP

REQUIREMENT

CLEARANCE BETWEEN INDICATOR LAMP AND TRANSLUCENT BUTTON APPROXIMATELY 1/16 INCH.

TO ADJUST

POSITION LAMP HOLDER ON ITS BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

Figure 7-93. Window and Accessories

b. **FINAL TEST.**—After all adjustments have been made, and the equipment is assembled, apply the operating tests indicated in section 3, paragraph 7. Refer to section 4, paragraph 9 for determining the orientation range. When a signal distortion test set is used for determining the receiving margins of the selector, and where the condition of the components is equivalent to that of new equipment, the range and distortion tolerances tabulated in Table 7-1 should be met.

5. TOOLS.

The tools listed in table 7-2 are required for maintenance of Teletypewriters TT-47A/UG, TT-48A/UG, TT-69A/UG, and TT-70A/UG but are not supplied as part of the equipments.

6. EXPLODED ILLUSTRATIONS.

The following figures illustrate the parts that comprise the various components of the equipment. They are grouped on a functional basis in so far as is practicable and are keyed to the parts list table 8-3, by their symbol designations. See paragraph 1.b. of this section for component numbering system. Figures are arranged as follows:

Component	Figure
Keyboard	7-95 to 7-107
Synchronous Motor	7-108
Governed Motor	7-109 to 7-110
Cabinet	7-111 to 7-112
Power Distribution Panel	7-113 to 7-114
Automatic Typewriter	7-115 to 7-137

TABLE 7-1. SELECTOR MARGINS

CURRENT	SPEED IN W. P. M.	POINTS RANGE WITH ZERO DISTORTION	PERCENTAGE OF MARKING AND SPACING BIAS TOLERATED	END DISTORTION TOLERATED WITH SCALE AT BIAS OPTIMUM SETTING
0.060 amp. (windings parallel)	60	72	40	35
0.060 amp. (windings parallel)	75	72	40	35
0.060 amp. (windings parallel)	100	72	40	35
0.020 amp. (windings series)	60	72	40	35
0.020 amp. (windings series)	75	72	40	35
0.020 amp. (windings series)	100	72	40	35

TABLE 7-2. LIST OF TOOLS

ITEM NO.	TELETYPE PART NO.	DESCRIPTION
1	125779	Wrench, socket
2	104986	Tuning Fork—120 vps
3	82711	Scale, spring—64 oz.
4	110444	Scale, spring—32 oz.
5	110443	Scale, spring—8 oz.
6	Western Electric No. 68C	70-gram Scale
7		Screwdriver, screw-holding
8		Screwdriver
9		Screwdriver
10		Screw Starter
11		Screwdriver, off-set
12		Screwdriver, off-set
13		Tweezers
14		Keylever Remover
15		Wrench, open end— $\frac{3}{16}$ — $\frac{1}{4}$ inch
16	152835	Wrench, open end— $\frac{5}{16}$ — $\frac{3}{8}$ inch
17	73408	Magnifier with case
18	117781	Set of 28 Gauges with case
19	88993	Burnisher, contact
20	125758	File, contact
21	151394	Brush, typewriter—toothbrush style
22	5576	Contact Bender
23	73404	Tommy
24	150988	Handwheel
25	151351	Spring Hook, pull
26	75503	Spring Hook, push
27	75765	Spring Hook, pull
28	151379	Gauge, plug
29	151959	Spring Hook, pull

TABLE 7-3. WINDING DATA

DESIGNATION SYMBOL	TELETYPE PART NO.	MFG. PART NO.	WINDING	WIRE SIZE	TURNS	D-C RES. OHMS	HIPOT A-C VOLTS	REMARKS
E-759 E-1110	247M	CTT 247M	Single	No. 34	4000	190	500	115 V. a-c magnet
E-1114 E-1115	246M	CTT 246M	Single	No. 33	3600	132	500	115 V. d-c magnet
E-1308 E-1309	250M	CTT 250M	Single	No. 33	3600	132	500	115 V. d-c magnet
K-1101	151808	CARE MR11A	Single	No. 39	600	1250	500	115 V. a-c magnet

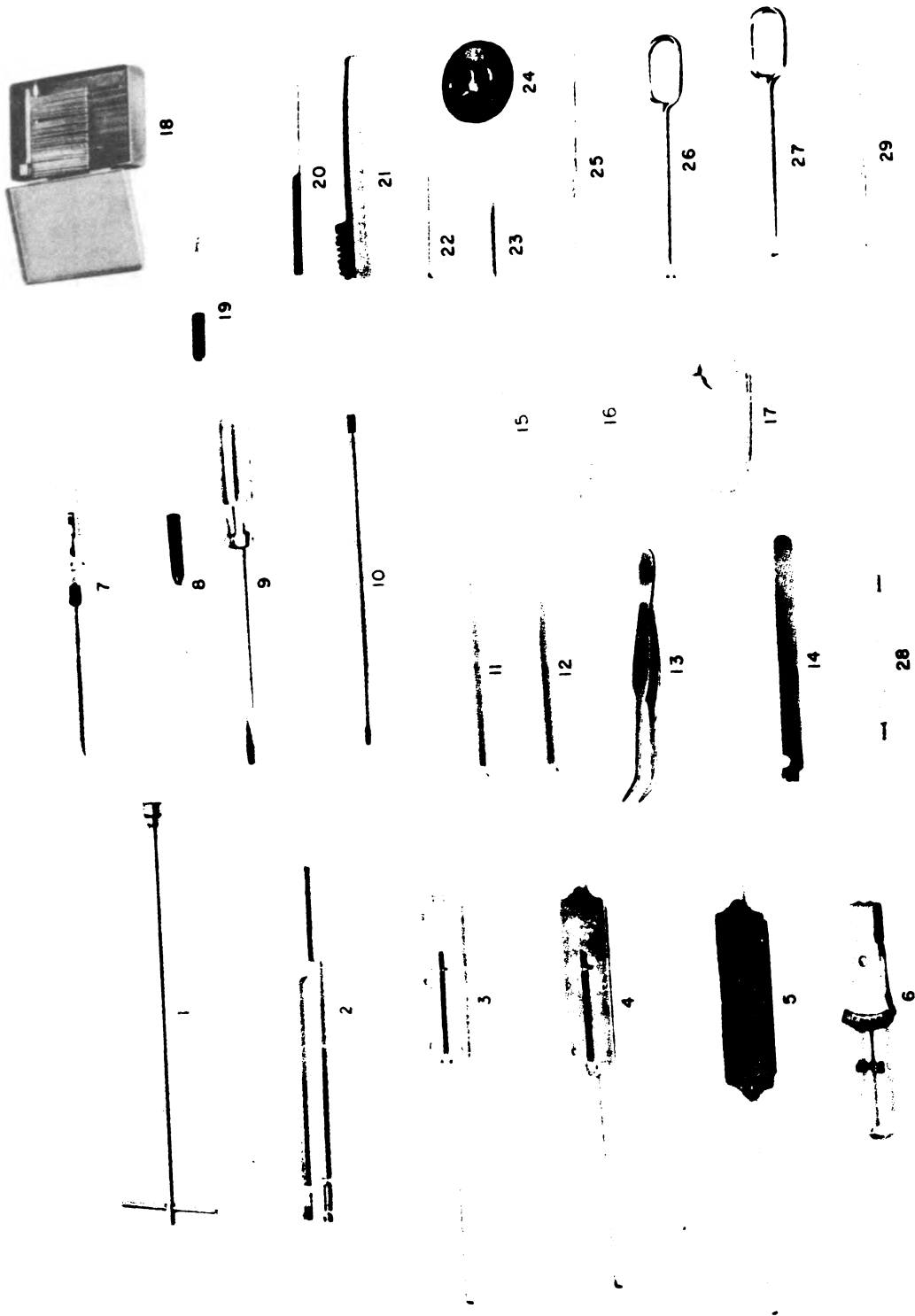


Figure 7-94. Tools

ORIGINAL

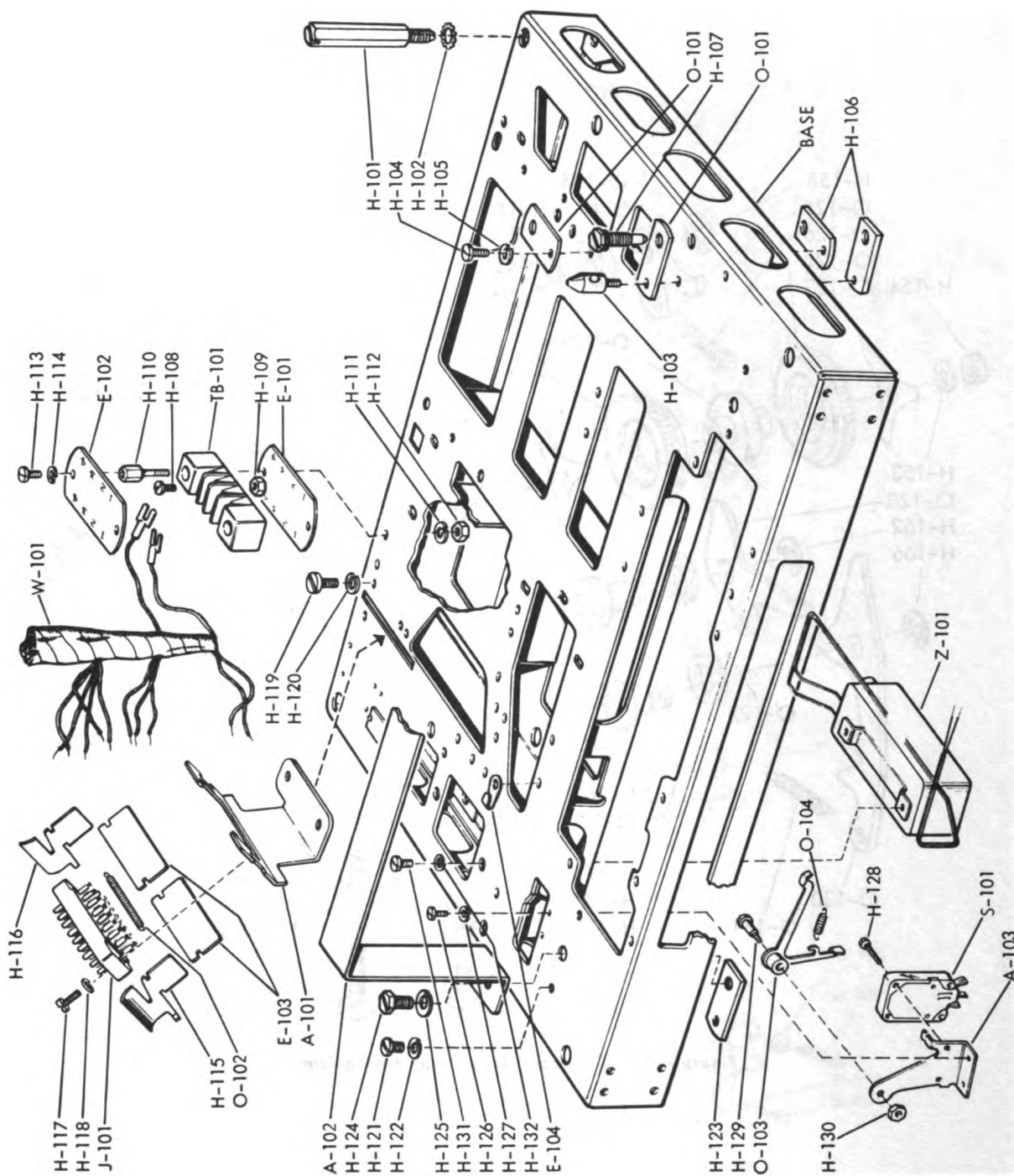


Figure 7-95. Keyboard, Base Mechanism

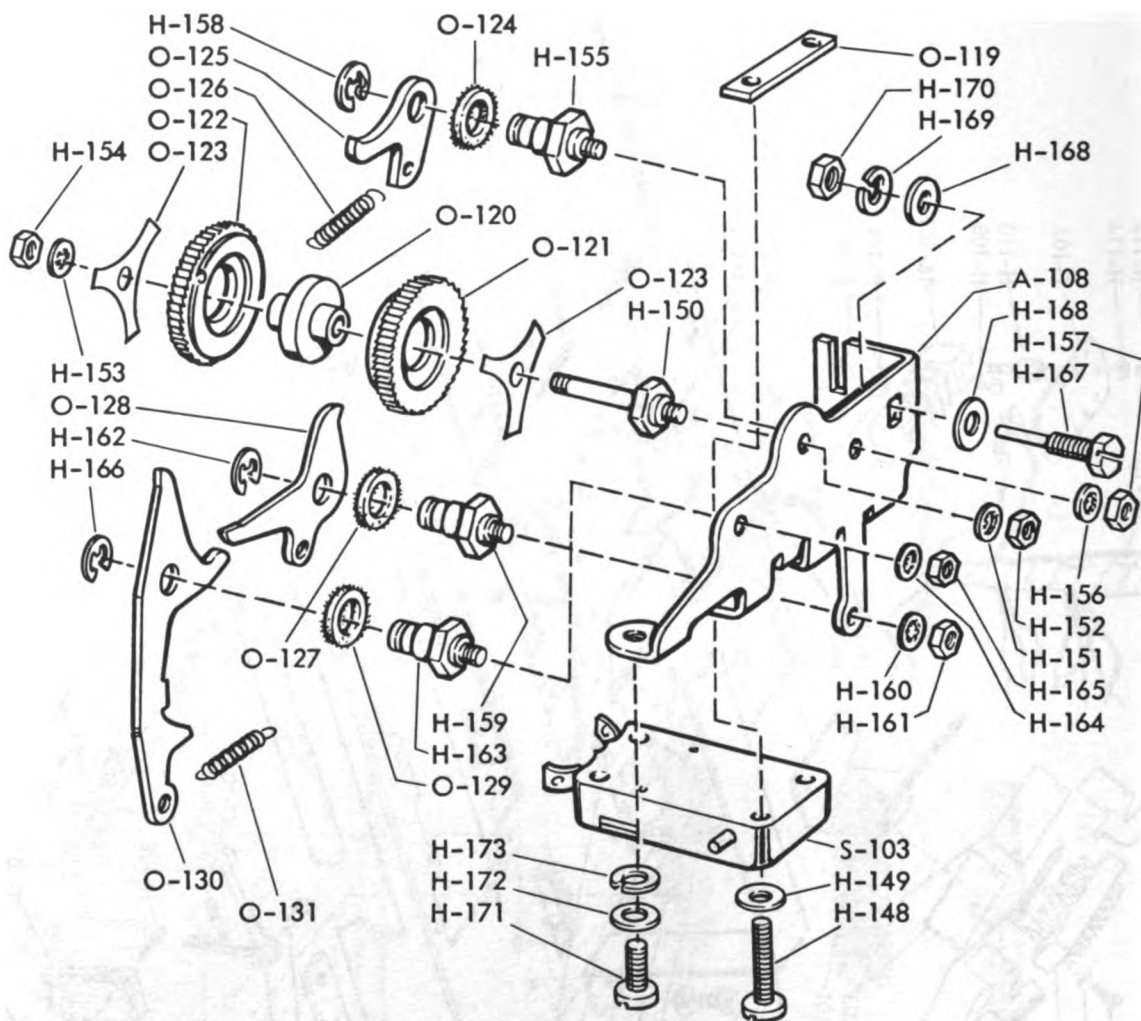


Figure 7-96. Keyboard, Time Delay Mechanism

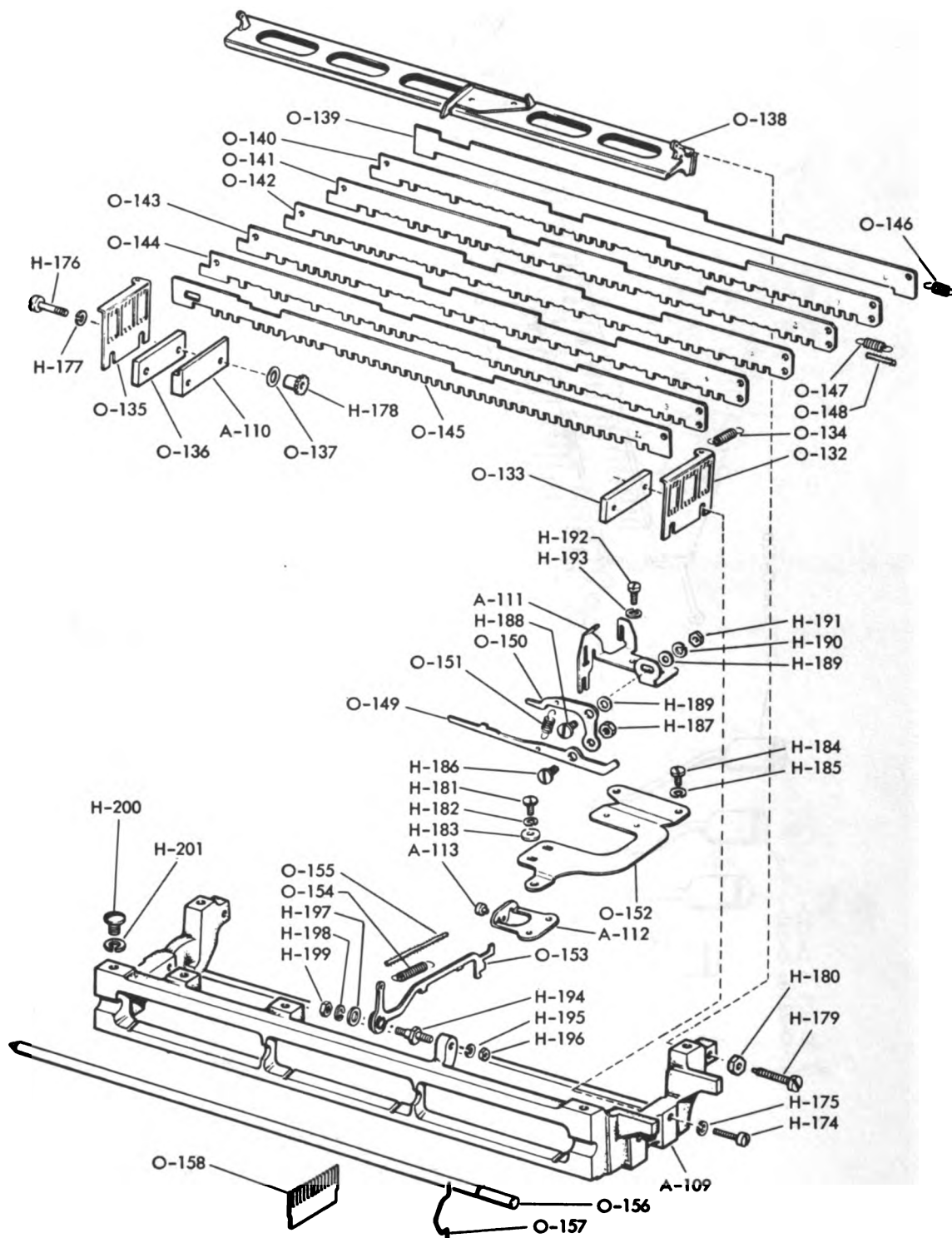


Figure 7-97. Keyboard, Code Bar Mechanism

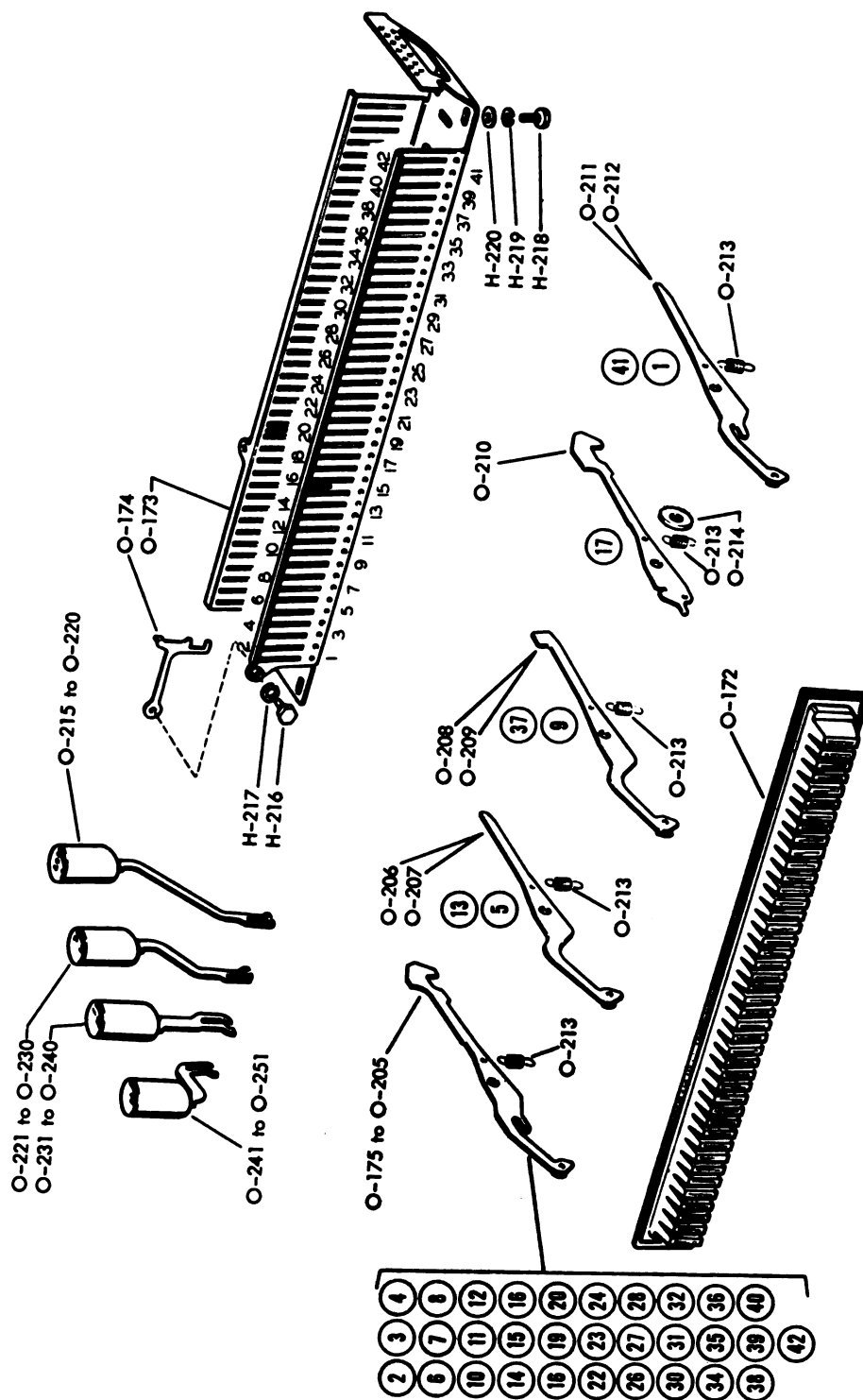


Figure 7-98. Keyboard, Keylevers and Code Levers

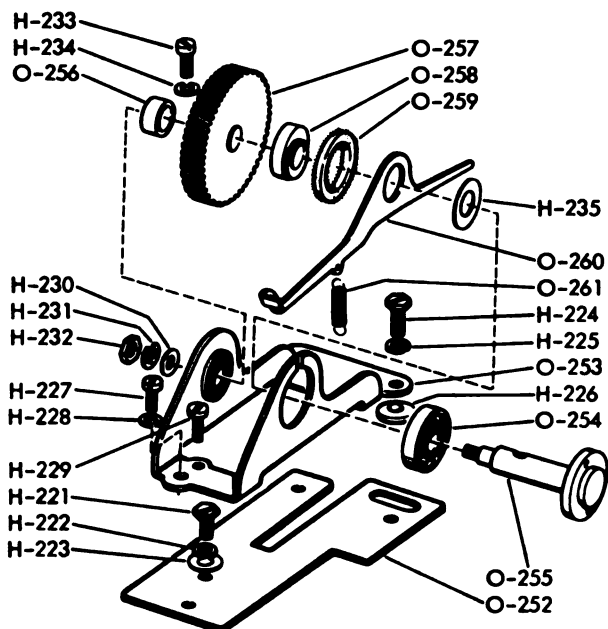


Figure 7-99. Keyboard, Intermediate Gear Mechanism

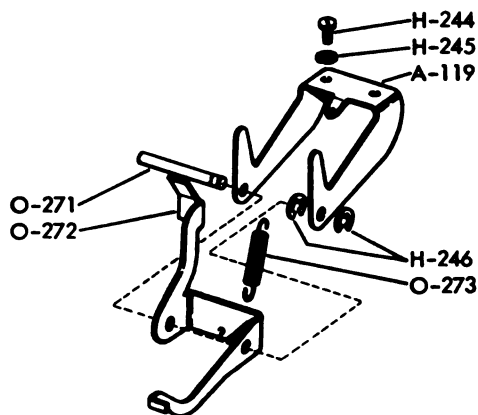


Figure 7-100. Keyboard, Carriage Return Mechanism

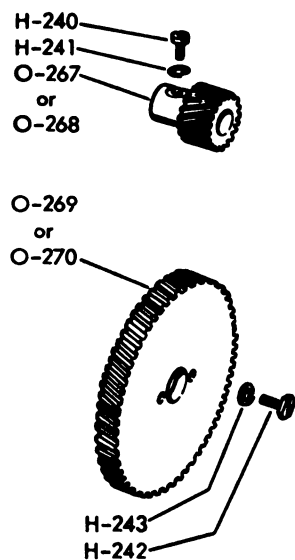


Figure 7-101. Set of Gears

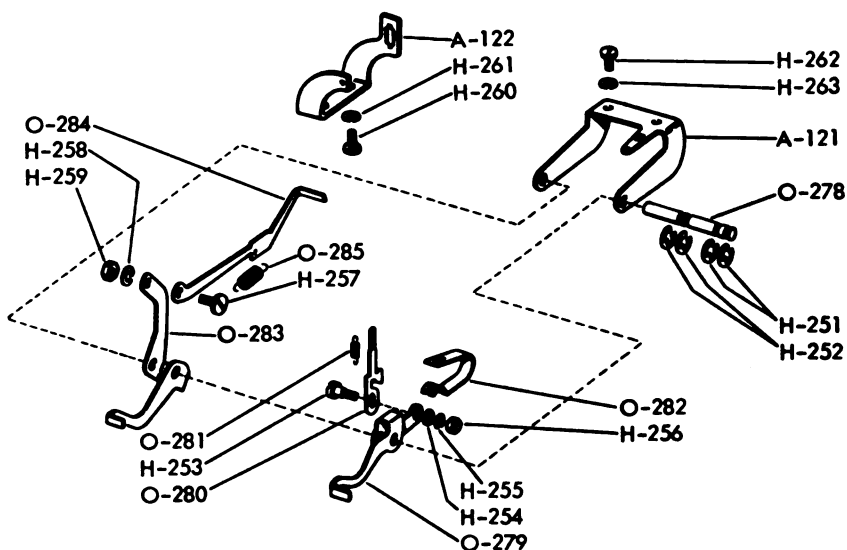


Figure 7-102. Keyboard, Keyboard Lock and Local Line Feed Mechanism

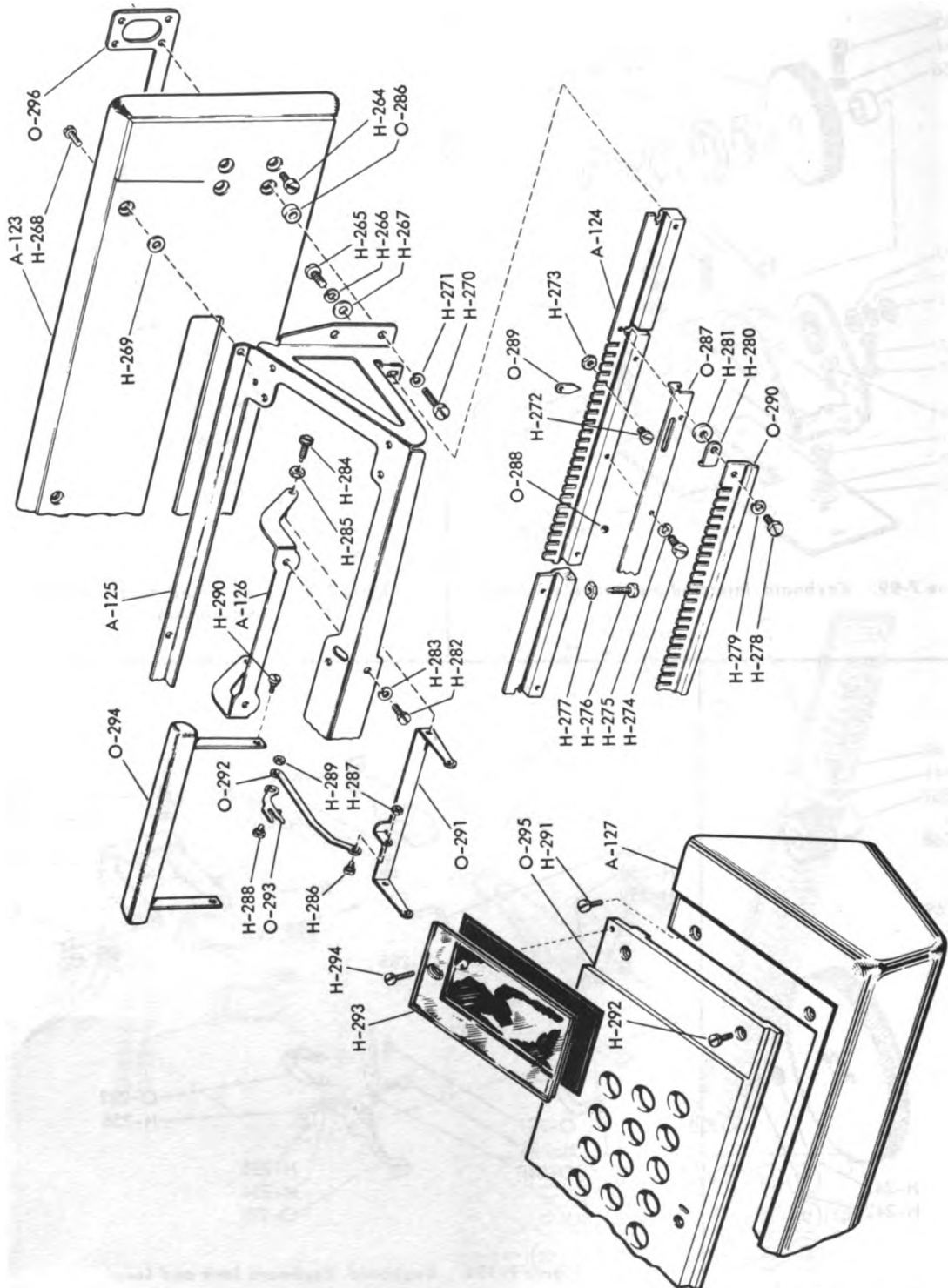


Figure 7-103. Keyboard Mechanism

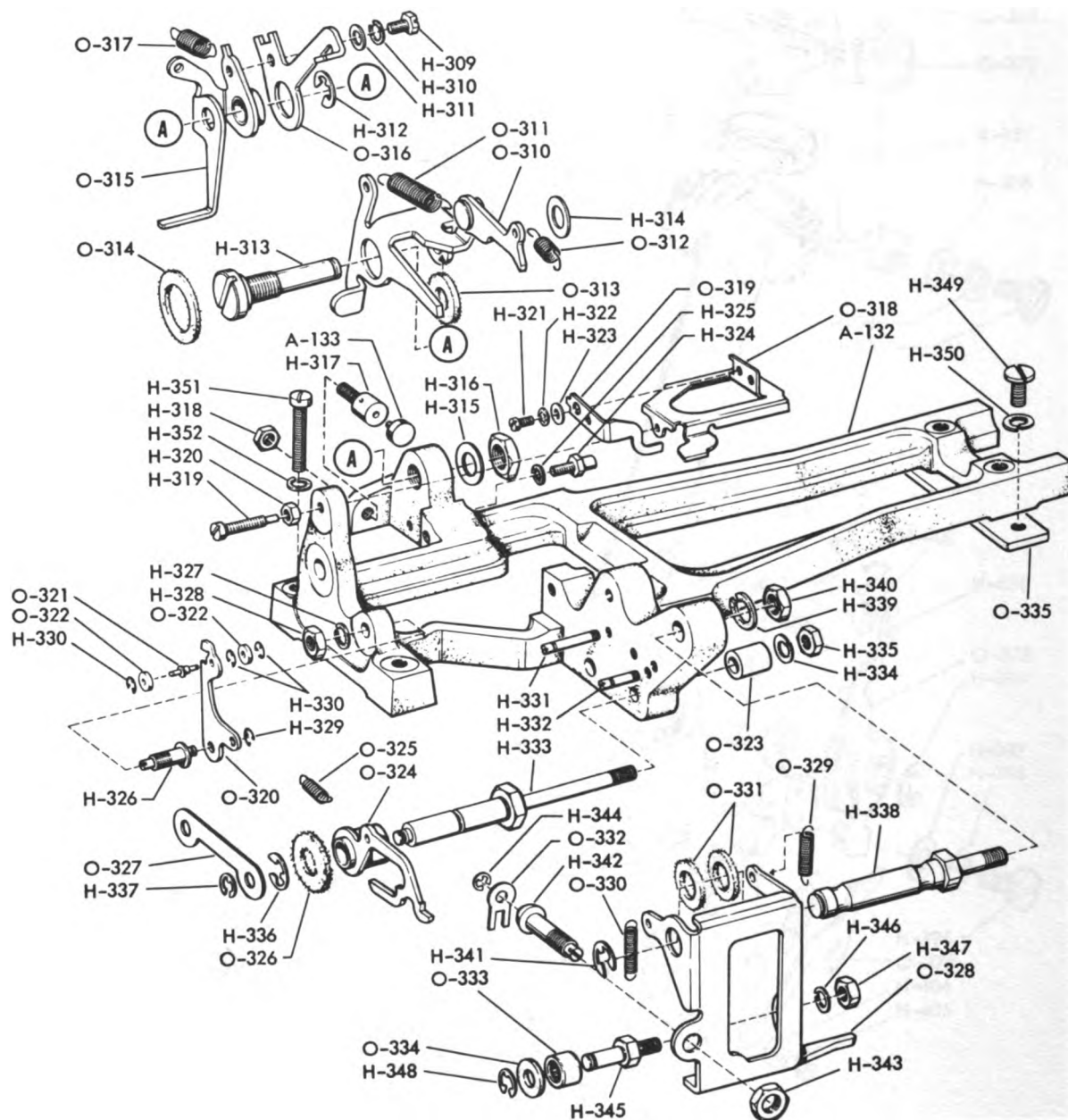


Figure 7-104. Keyboard, Signal Generator Mechanism

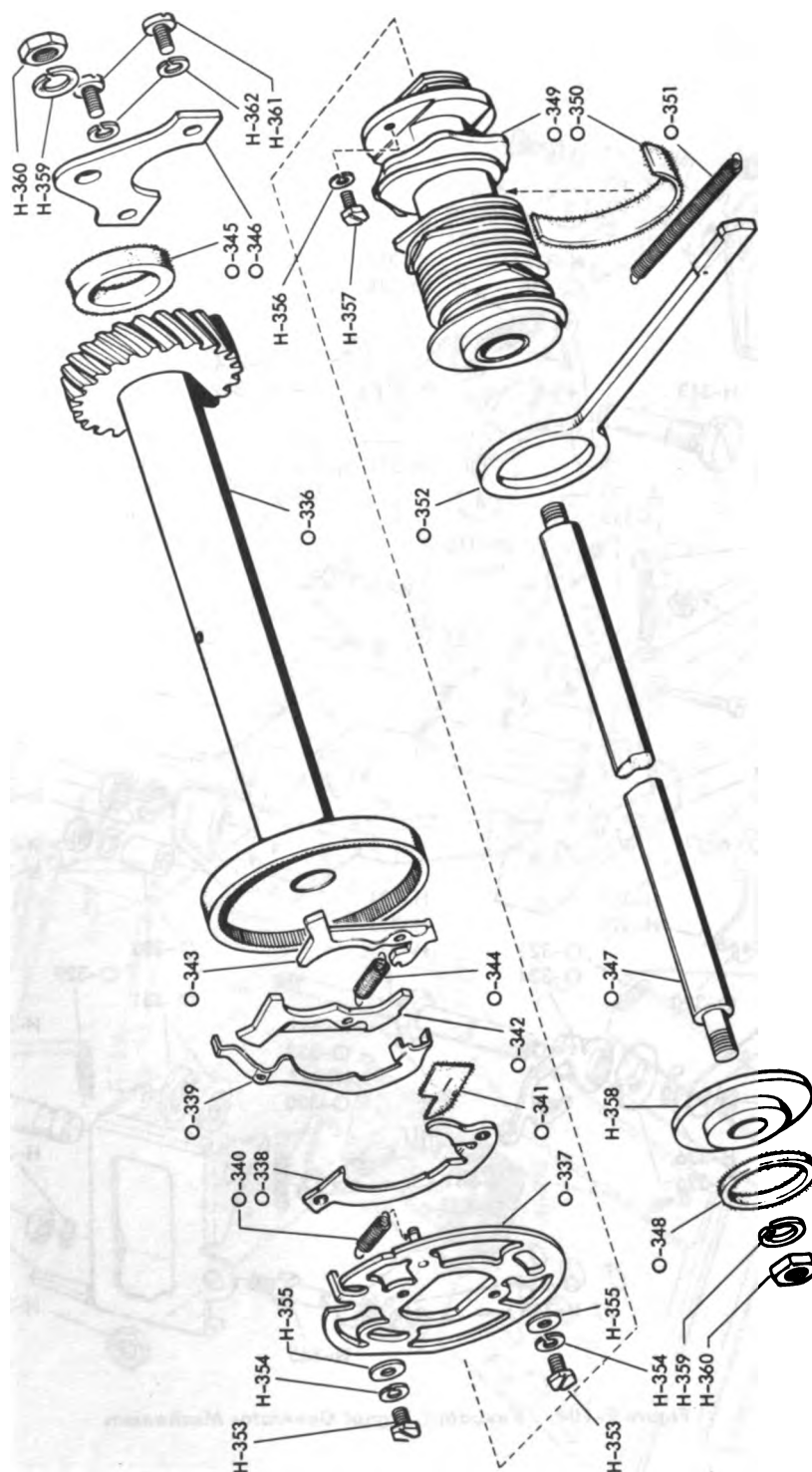


Figure 7-105. Keyboard, Signal Generator Mechanism

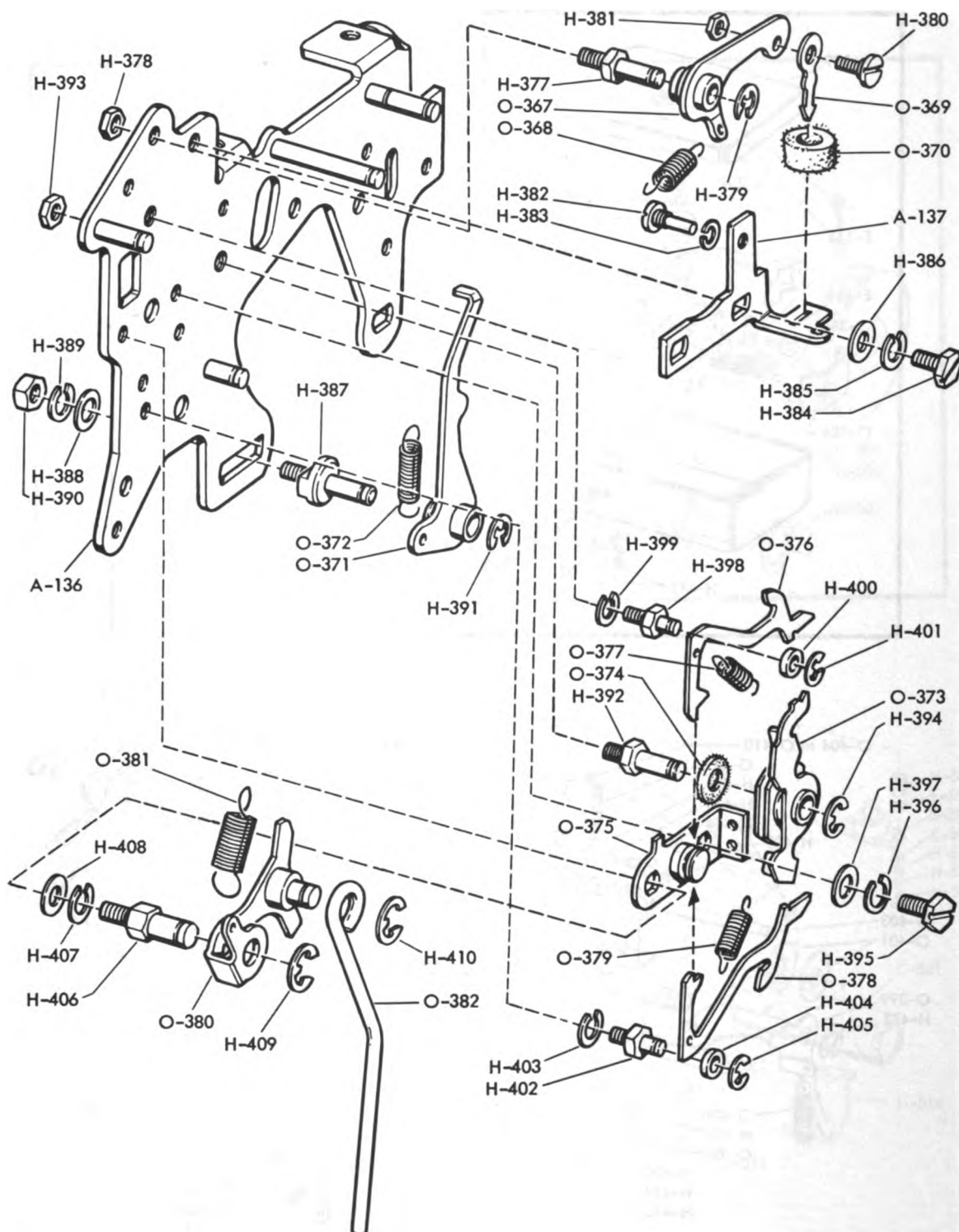


Figure 7-106. Keyboard, Signal Generator Mechanism

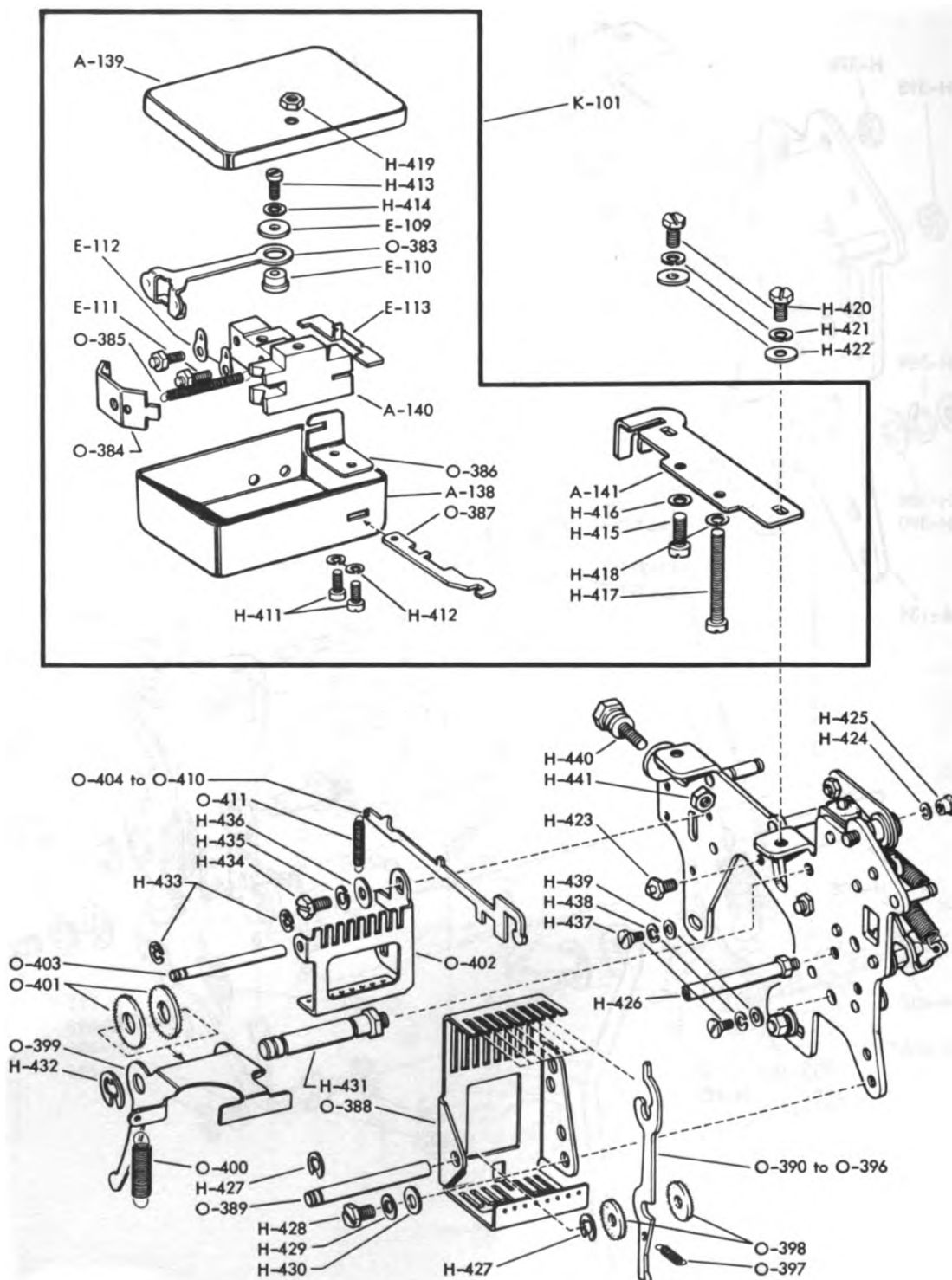


Figure 7-107. Keyboard, Signal Generator Mechanism

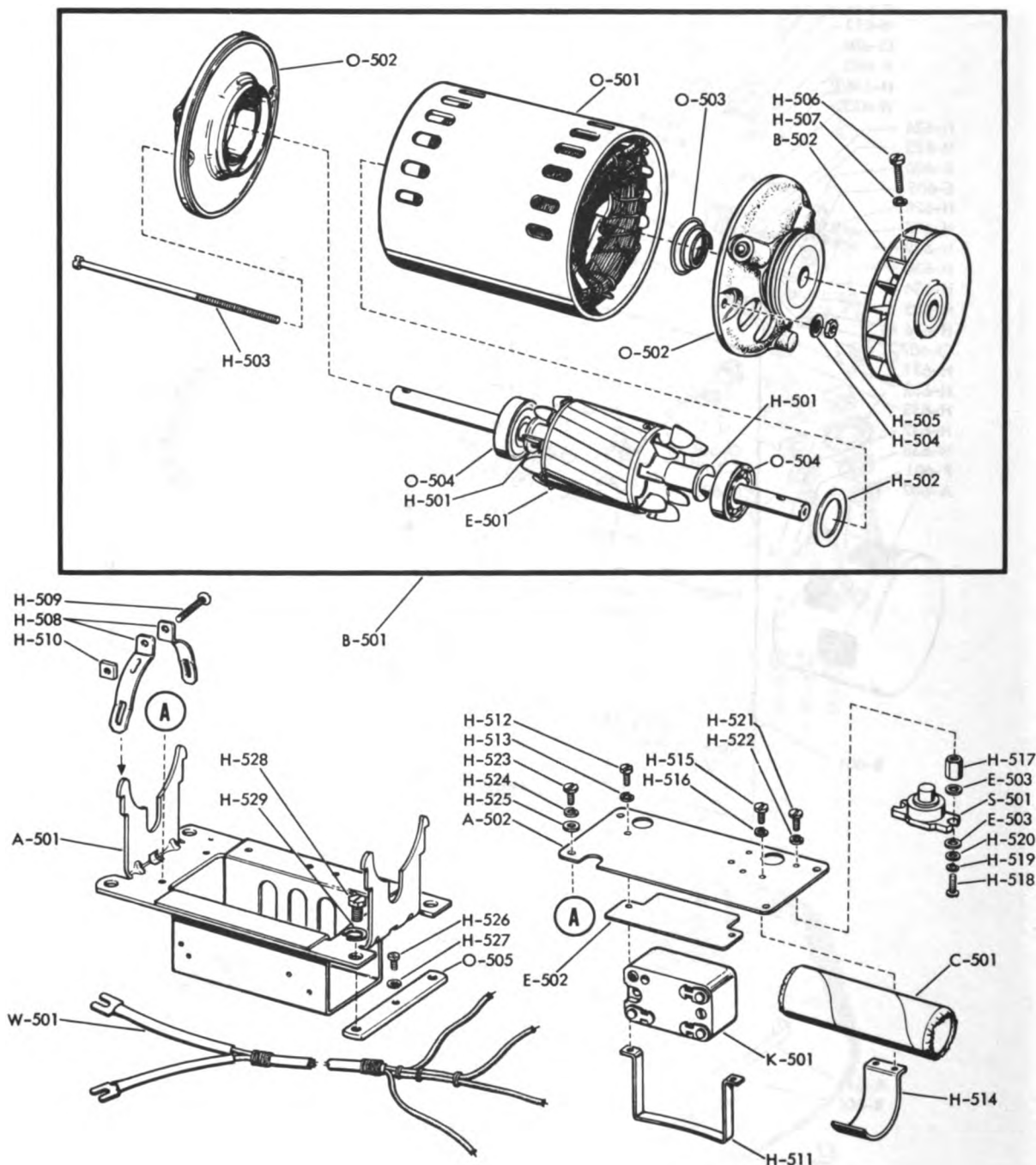


Figure 7-108. Synchronous Motor

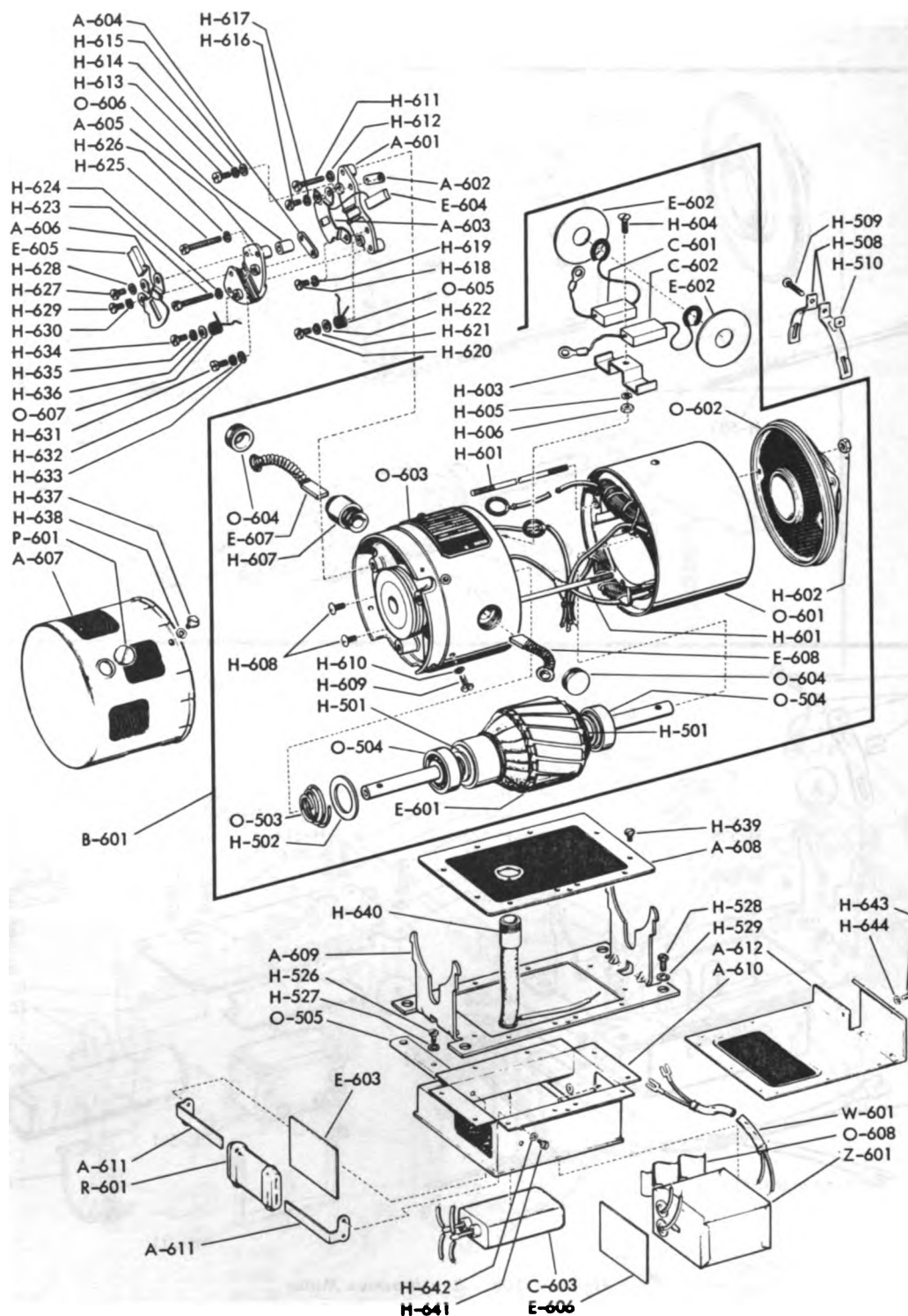


Figure 7-109. Governed Motor

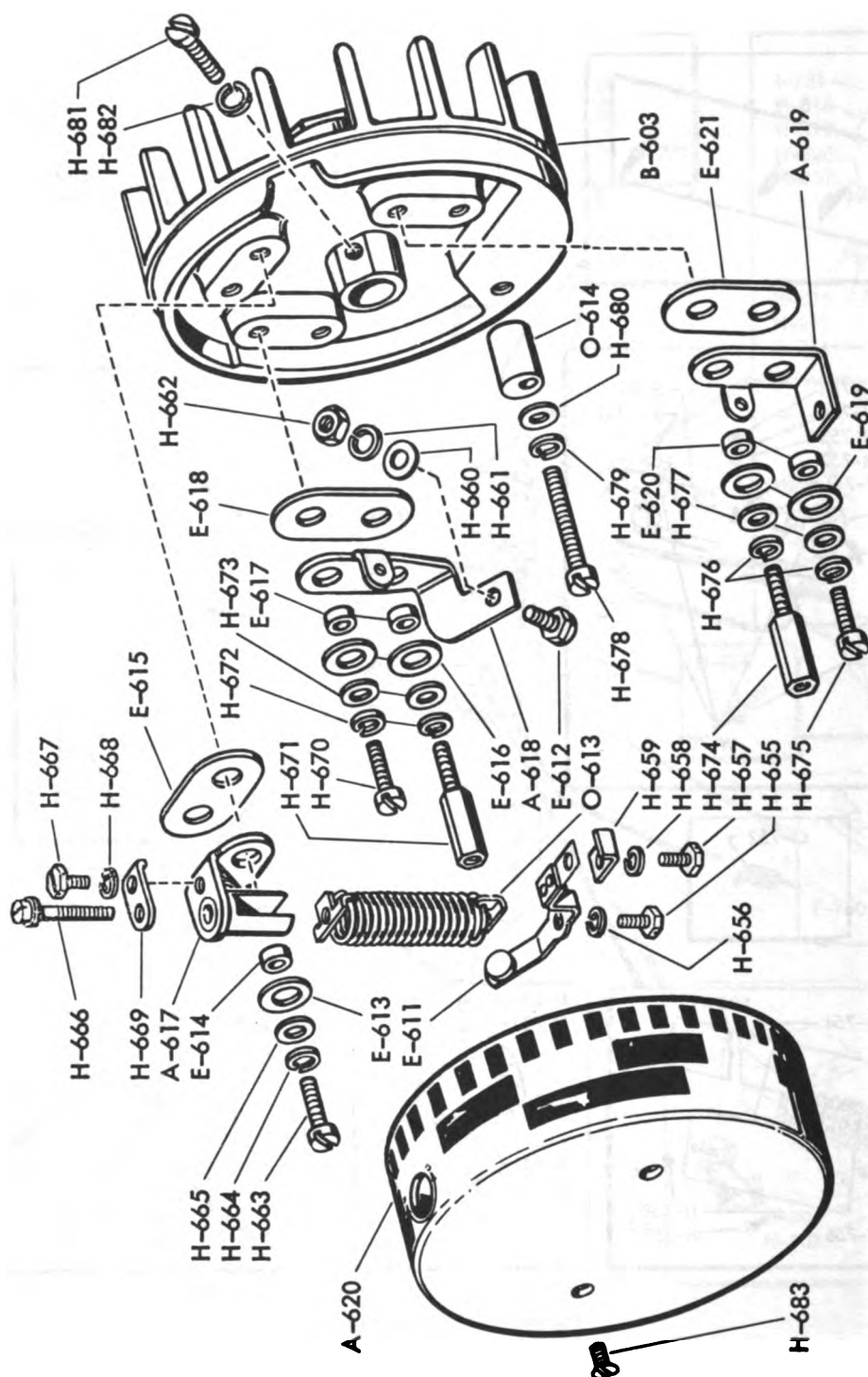


Figure 7-110. Governor Mechanism

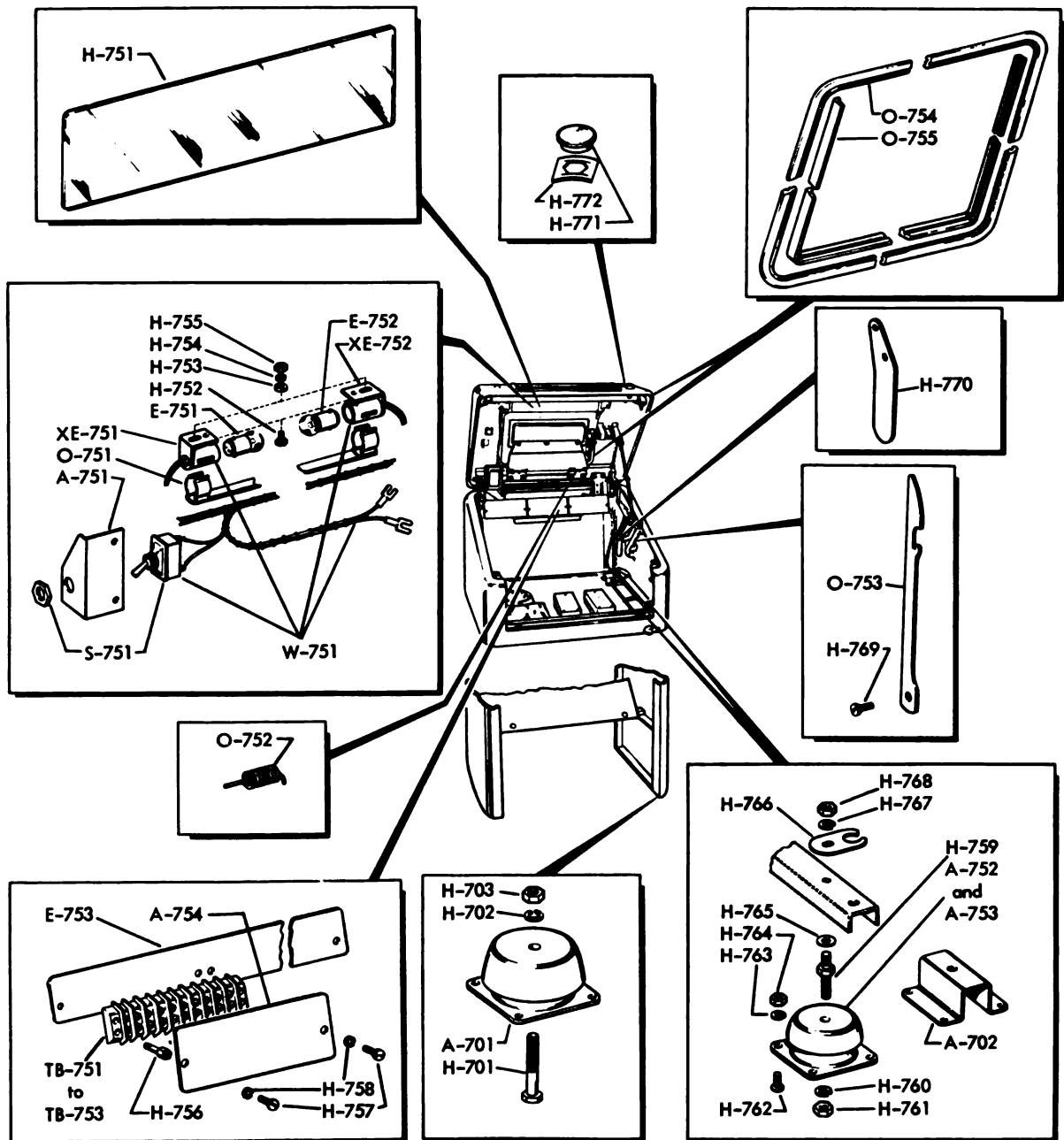


Figure 7-111. Cabinet

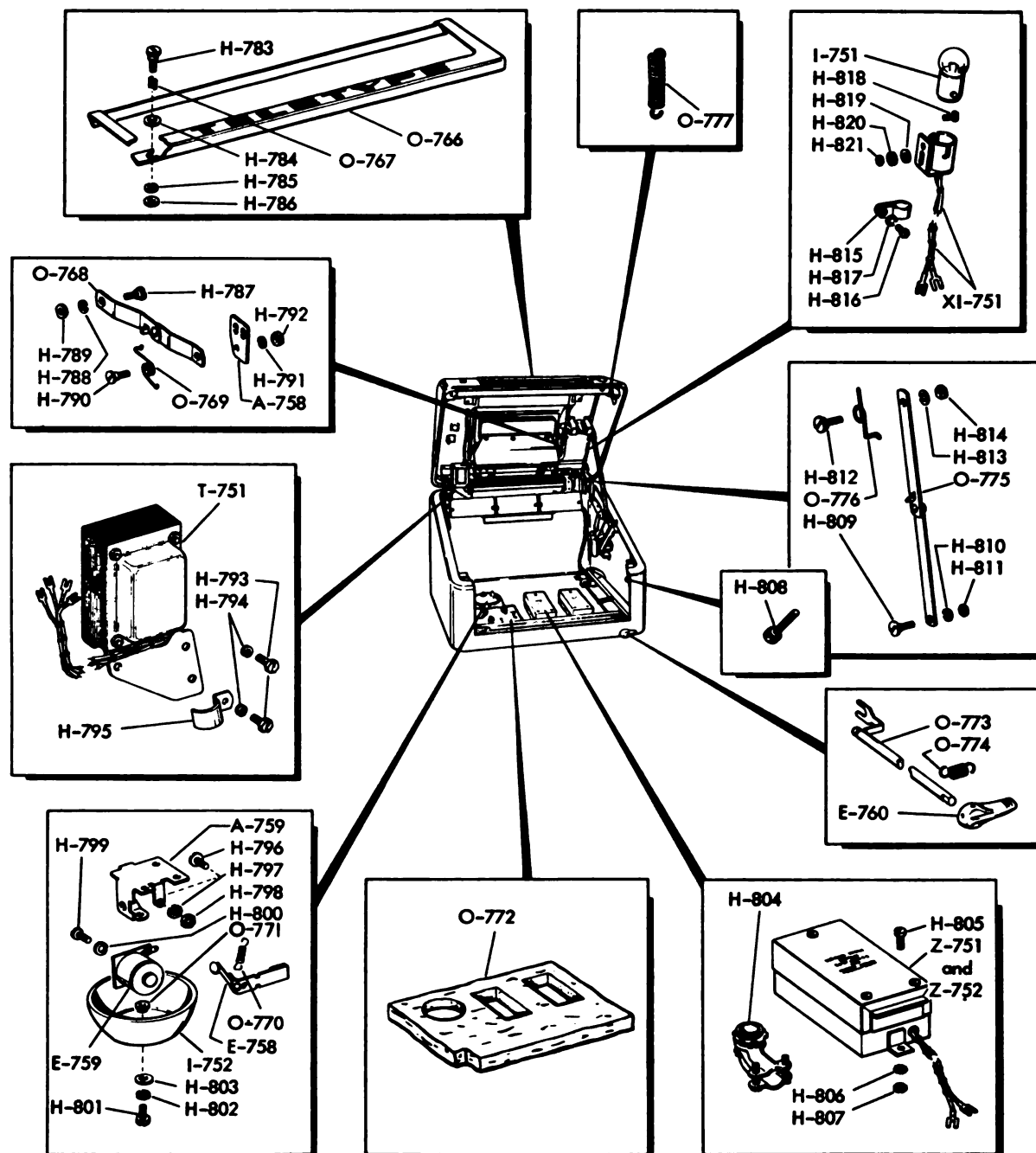


Figure 7-112. Cabinet

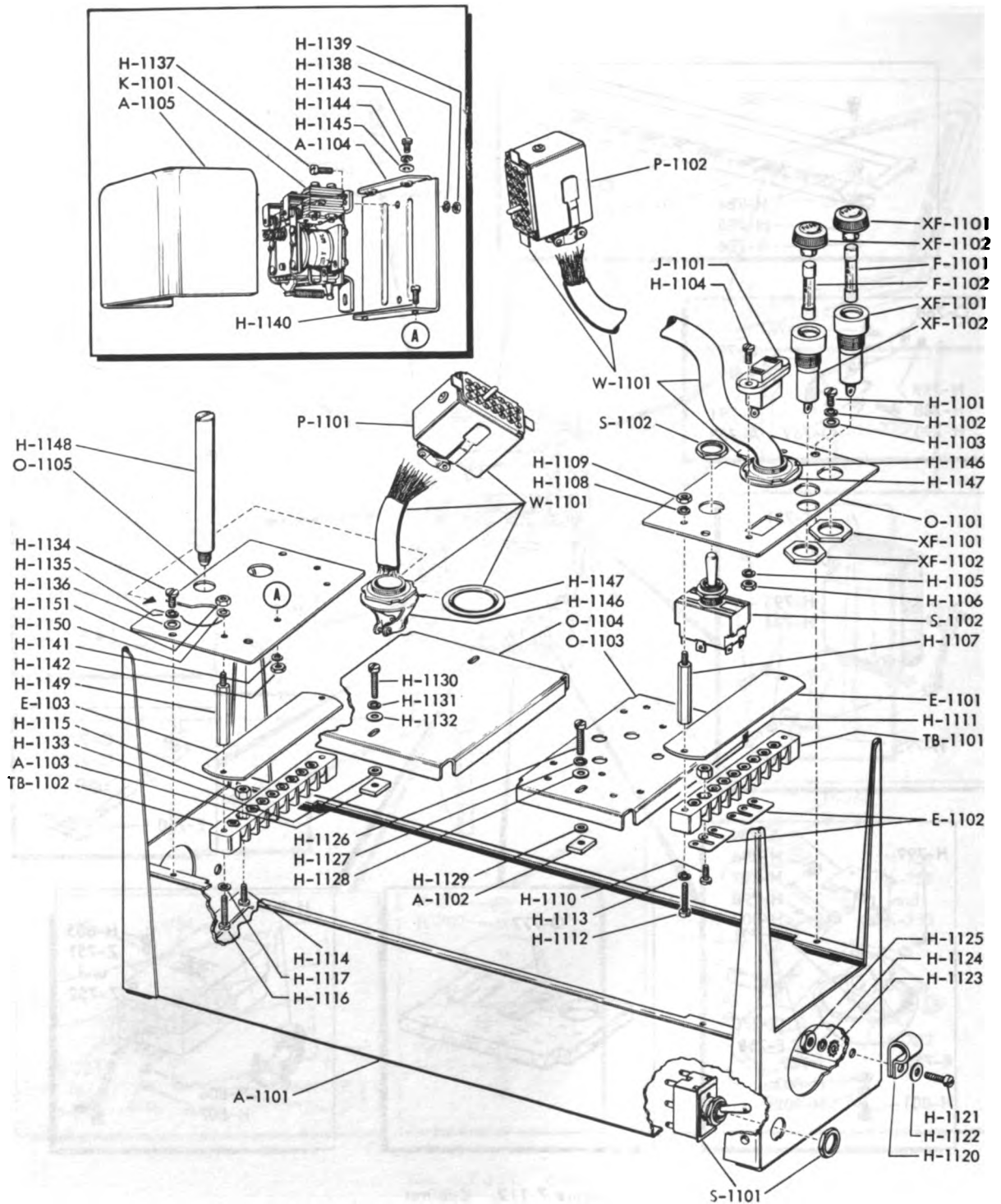


Figure 7-113. Power Distribution Panel

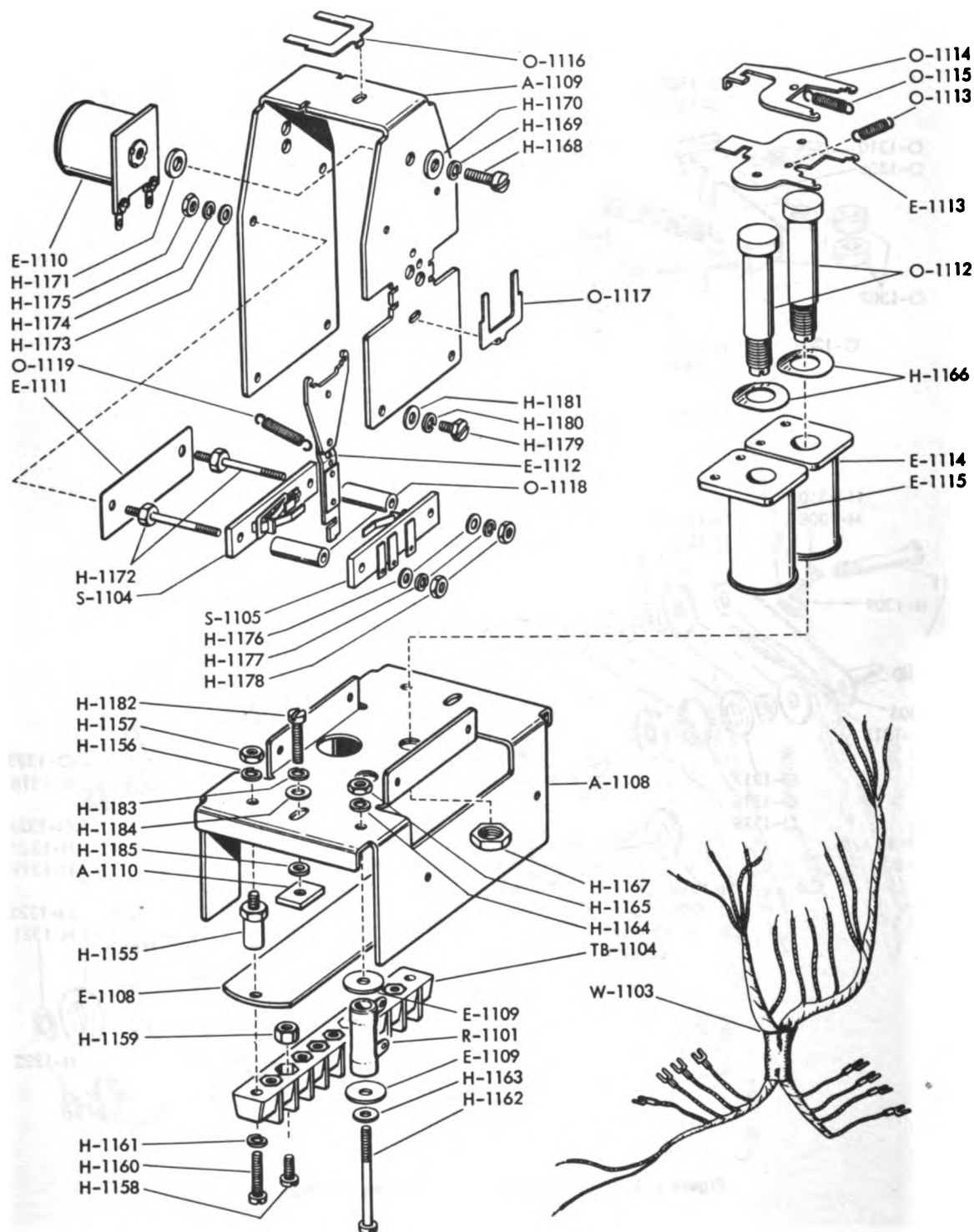


Figure 7-114. Power Distribution Panel, Motor Control Mechanism

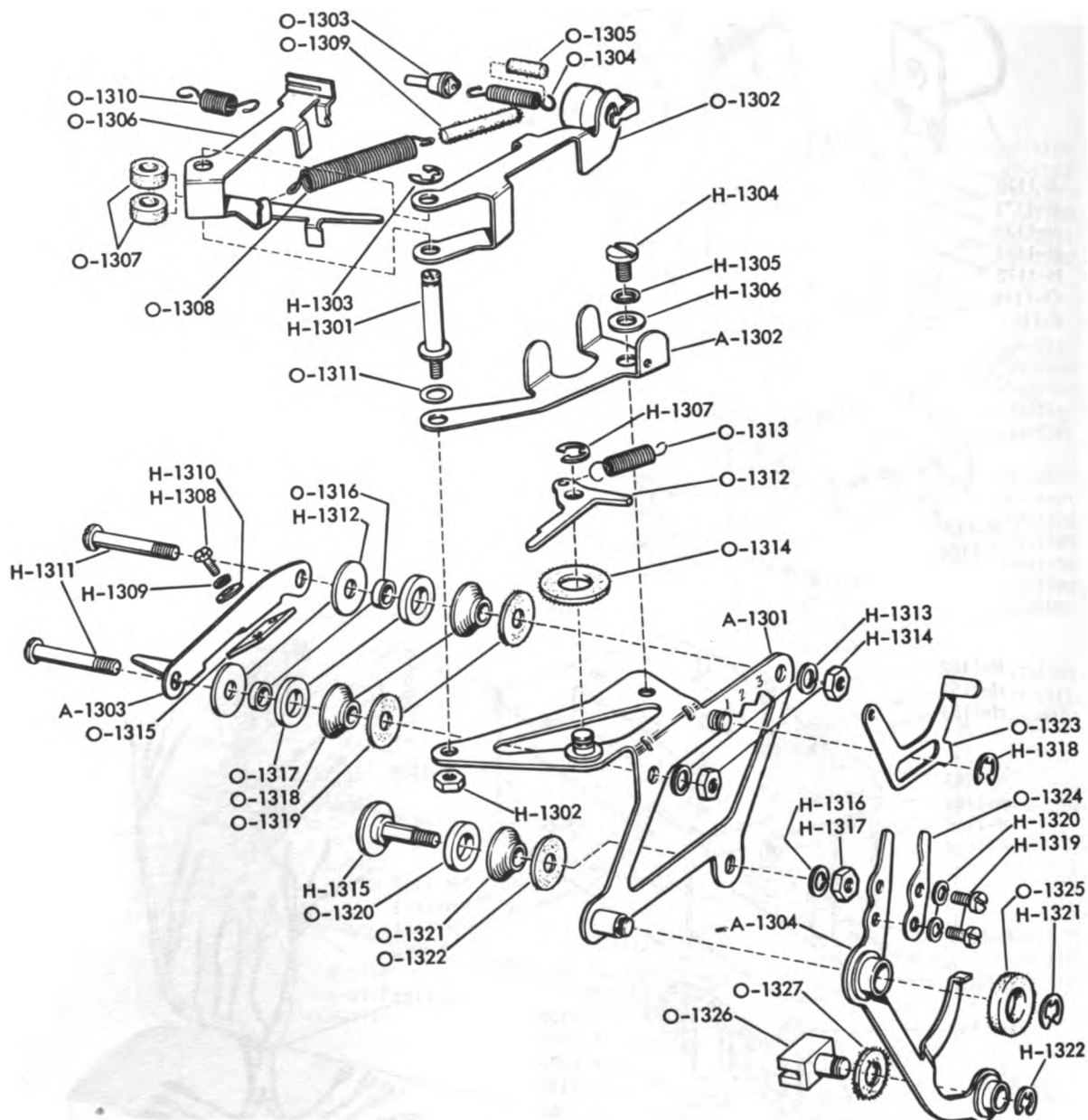


Figure 7-115. Automatic Typewriter, Printing Carriage

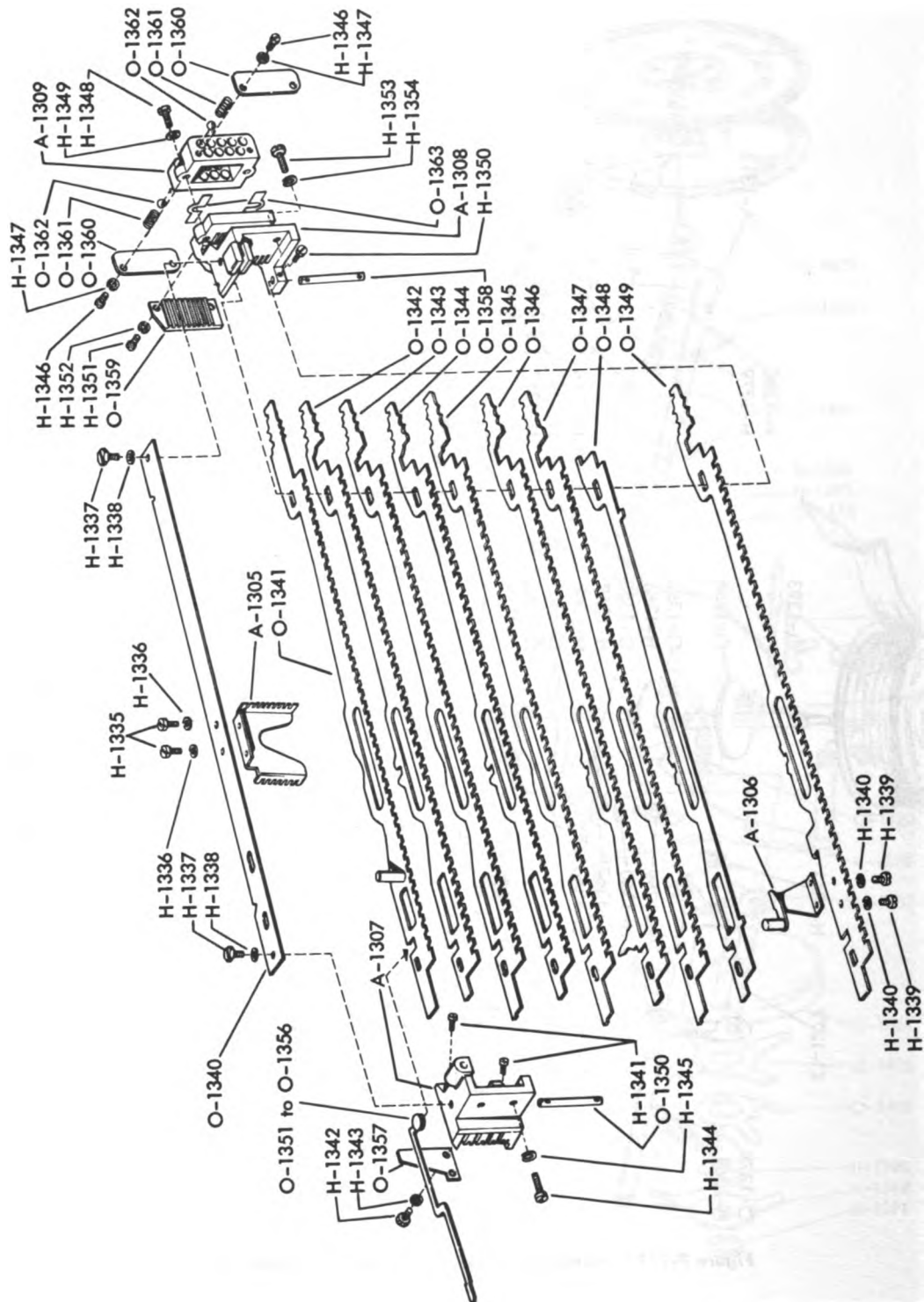


Figure 7-116. Automatic Typewriter, Code Bar Mechanism

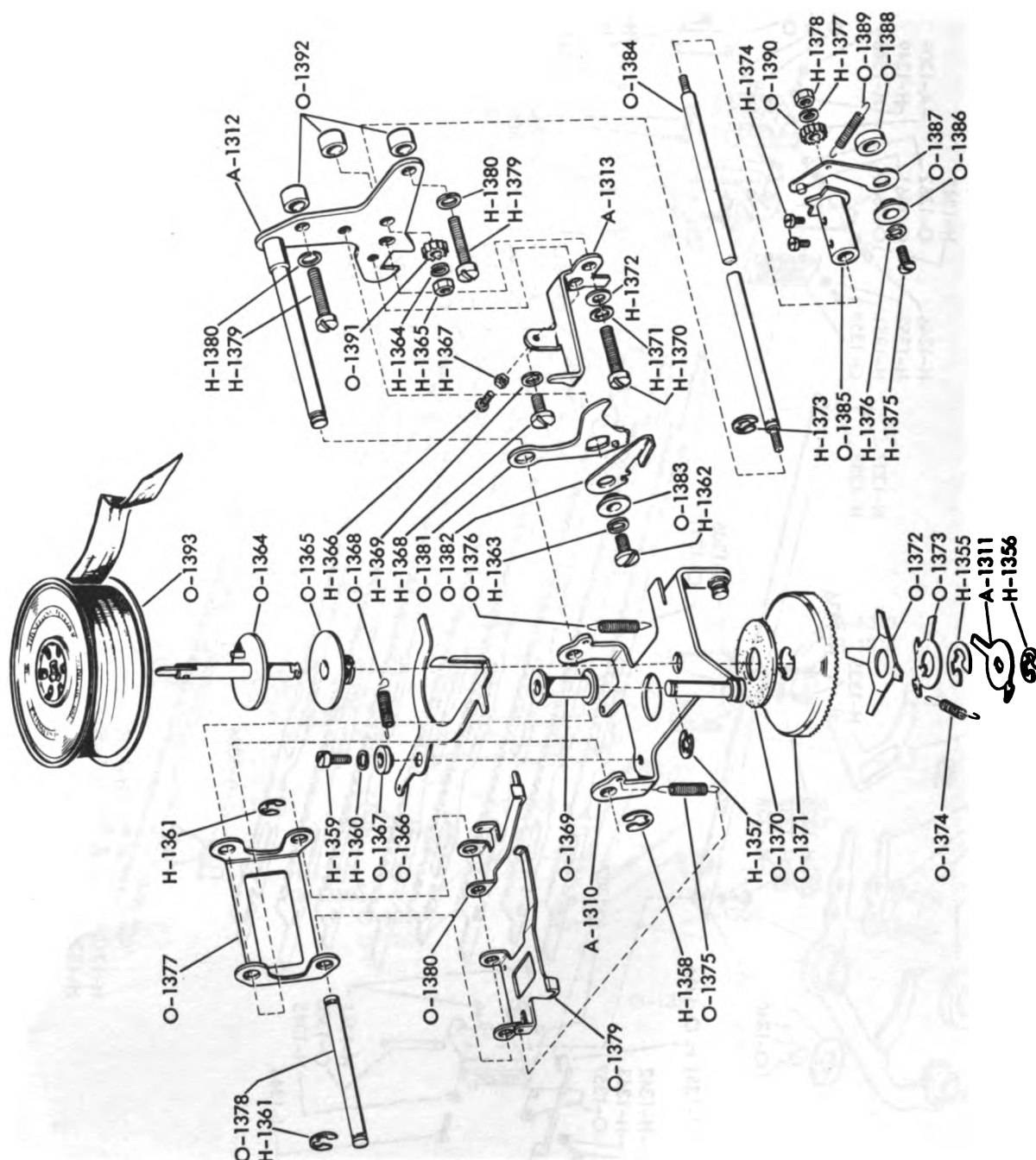


Figure 7-117. Automatic Typewriter, Left Ribbon Feed Mechanism

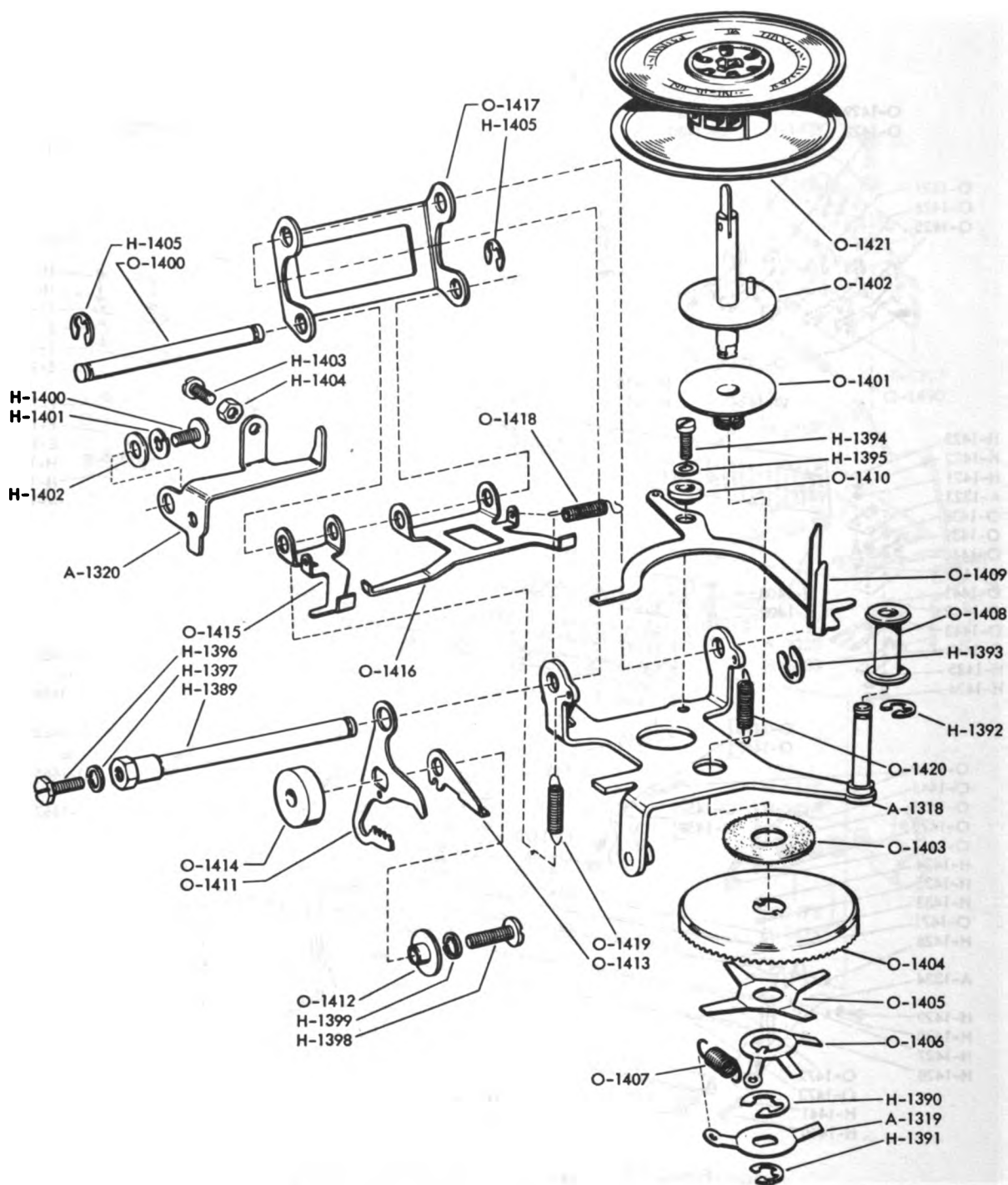


Figure 7-118. Automatic Typewriter, Right Ribbon Feed Mechanism

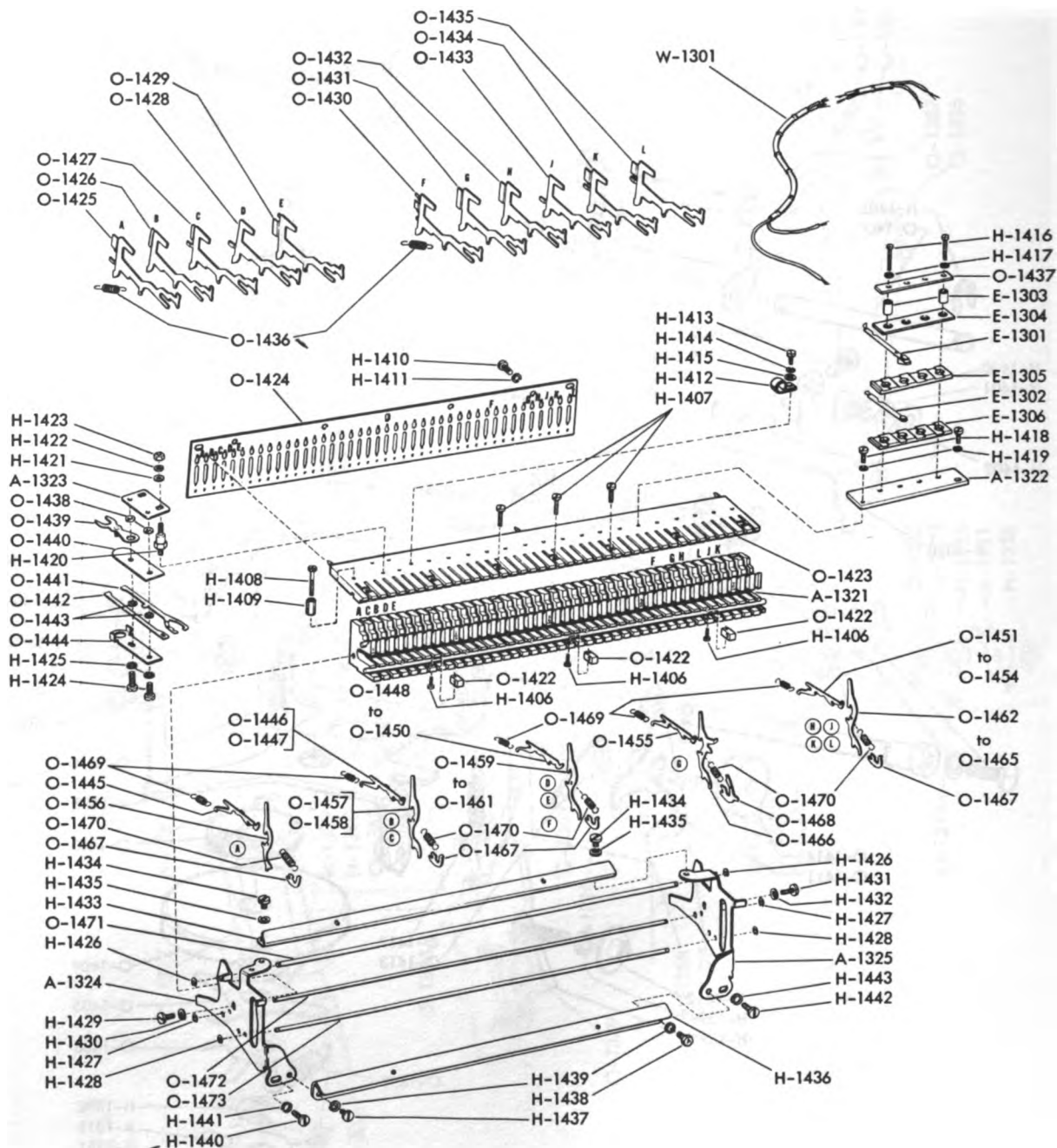


Figure 7-119. Automatic Typewriter, Function Box

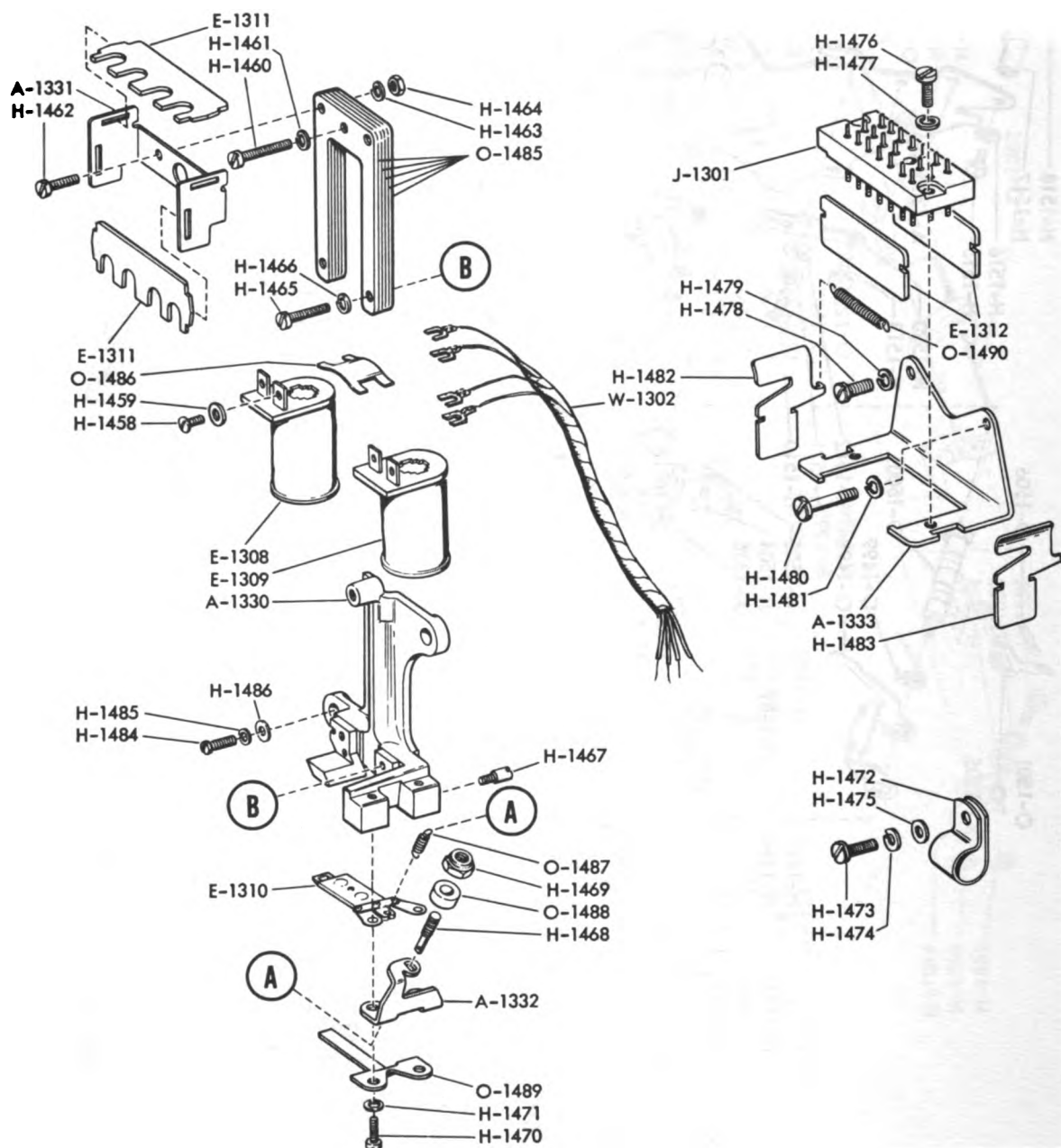


Figure 7-120. Automatic Typewriter, Selector Magnet Assembly

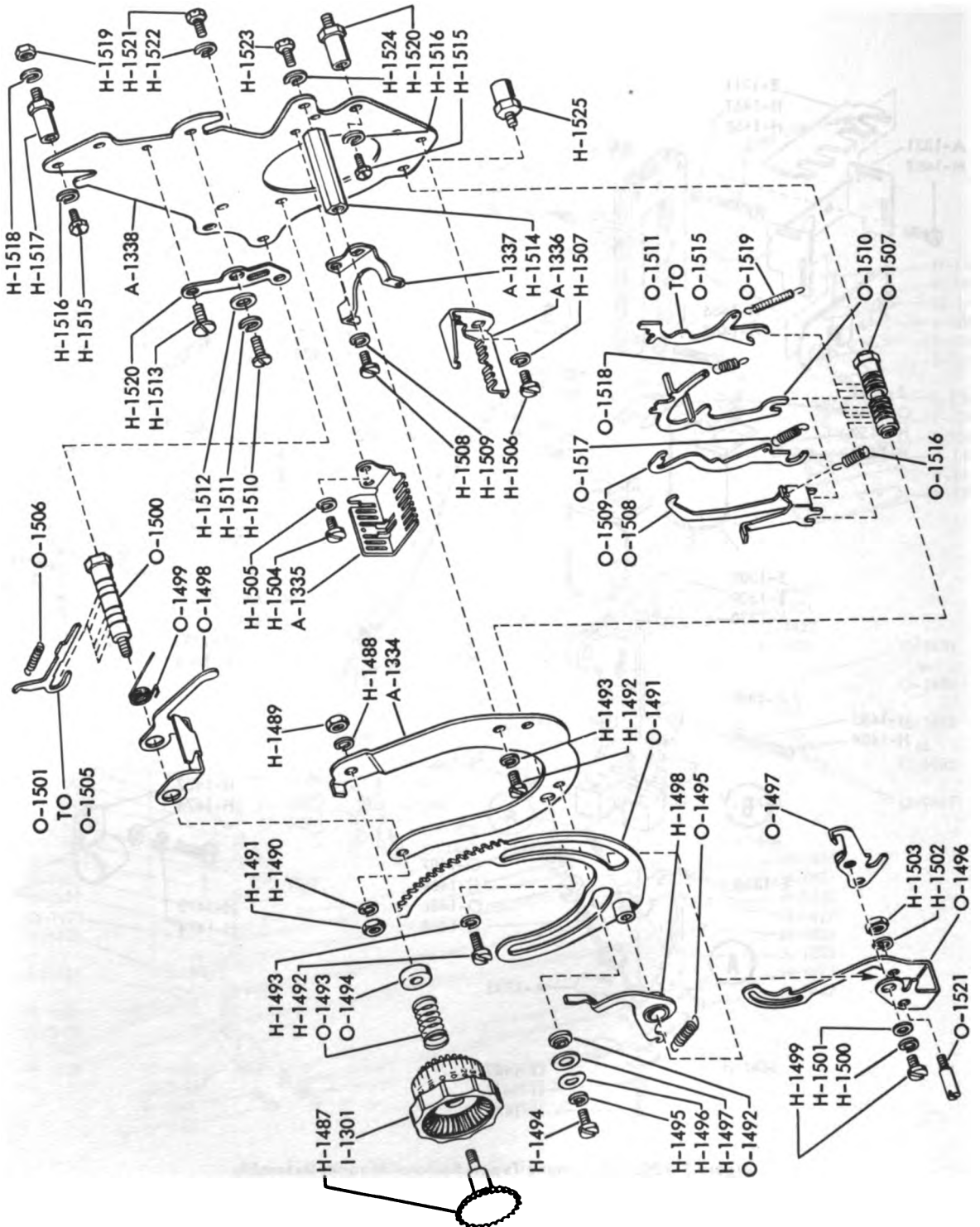


Figure 7-121. Automatic Typewriter, Selector Mechanism

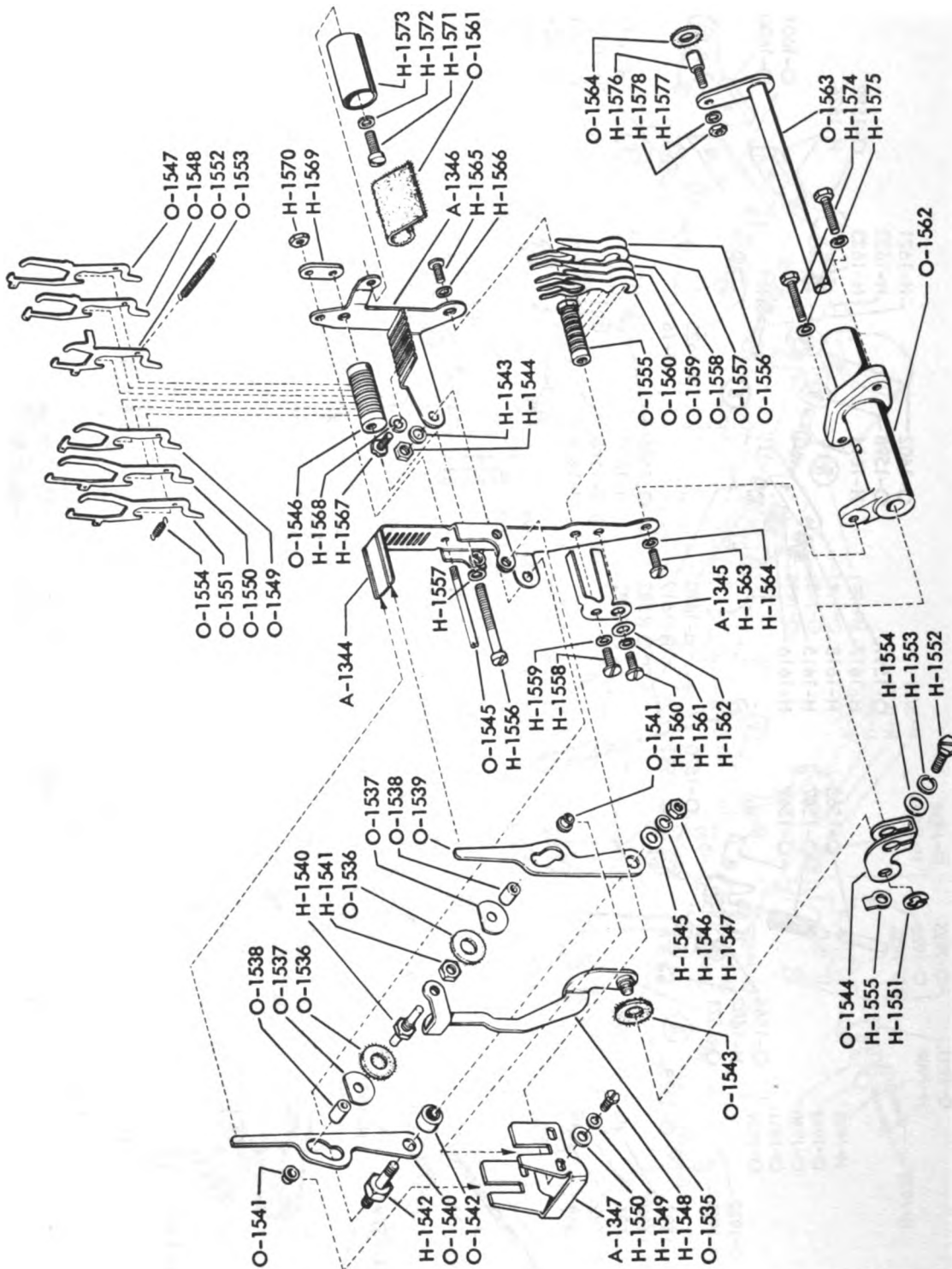


Figure 7-122. Automatic Typewriter, Code Bar Positioning Mechanism



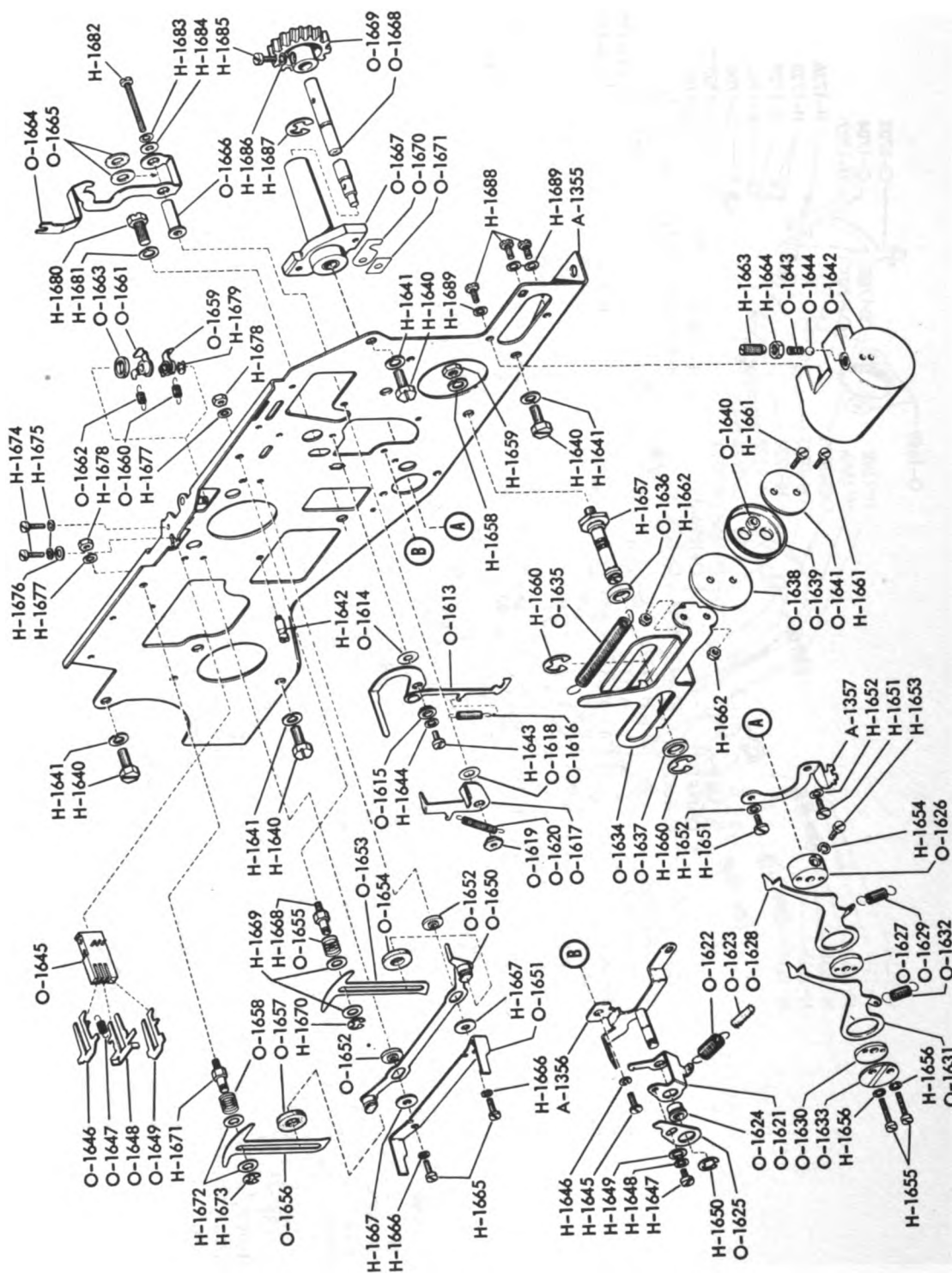


Figure 7-124. Automatic Typewriter, Front Plate Mechanism

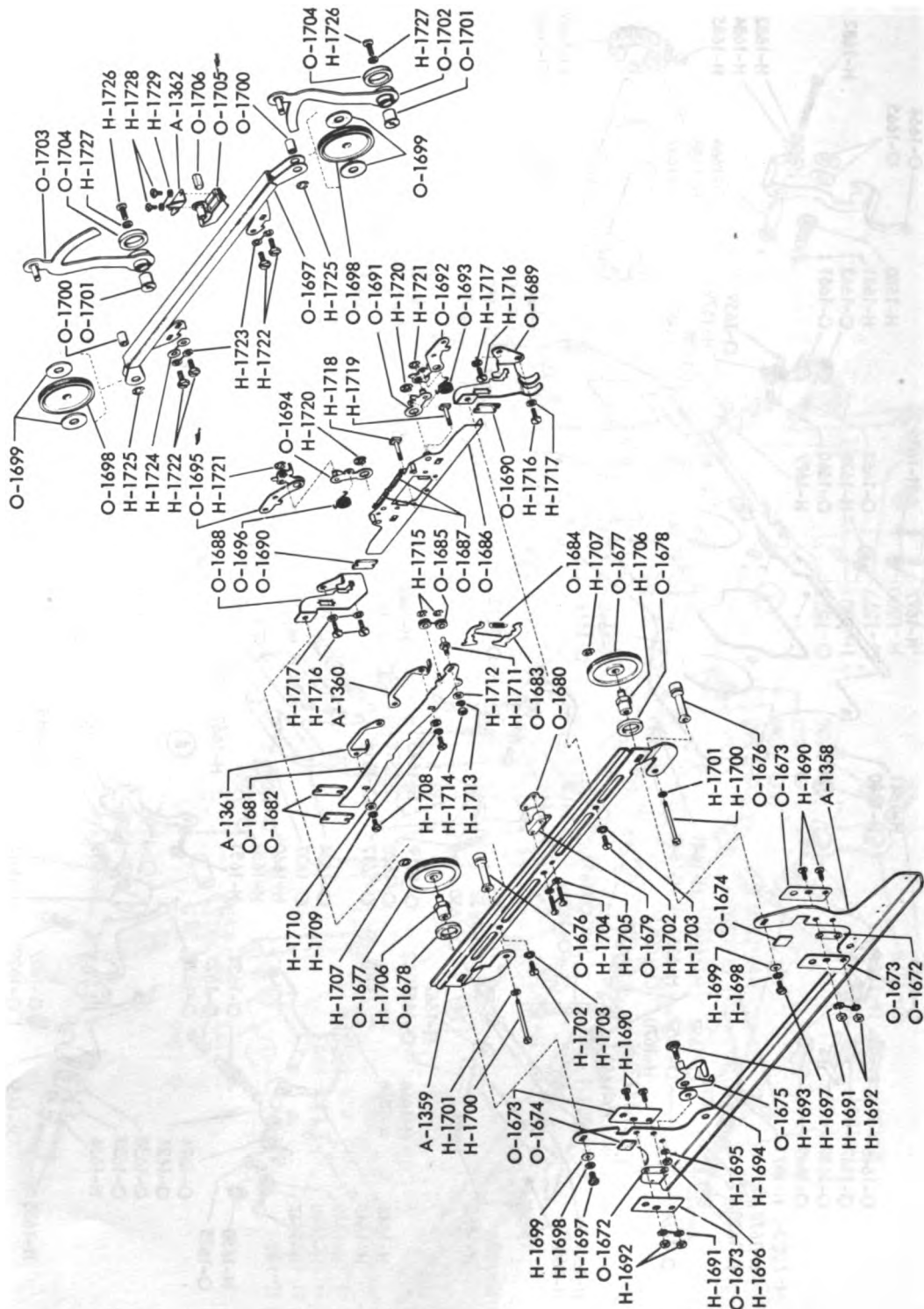


Figure 7-125. Automatic Typewriter, Front Plate Mechanism

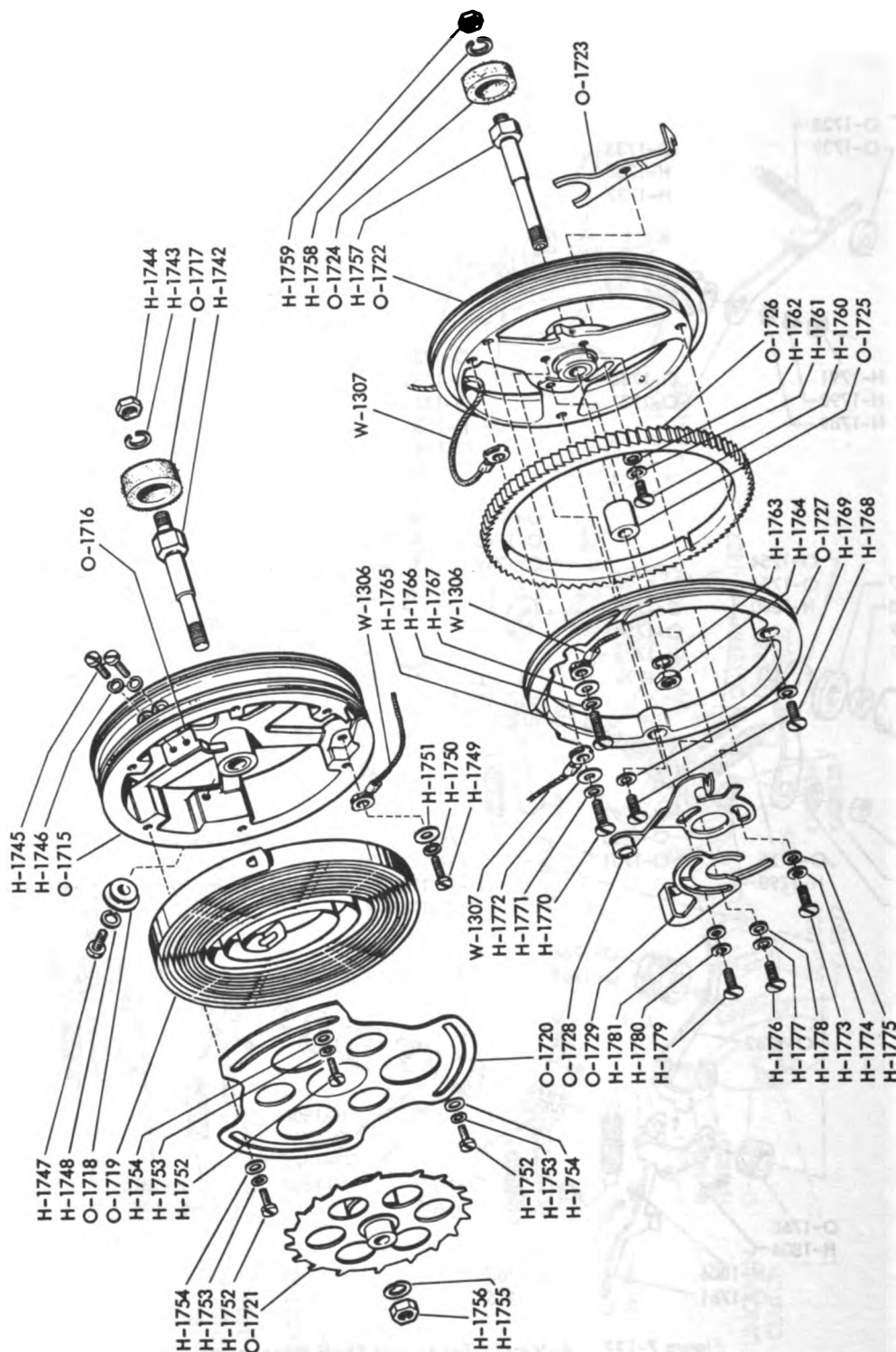


Figure 7-126. Automatic Typewriter, Spring Drum Mechanism

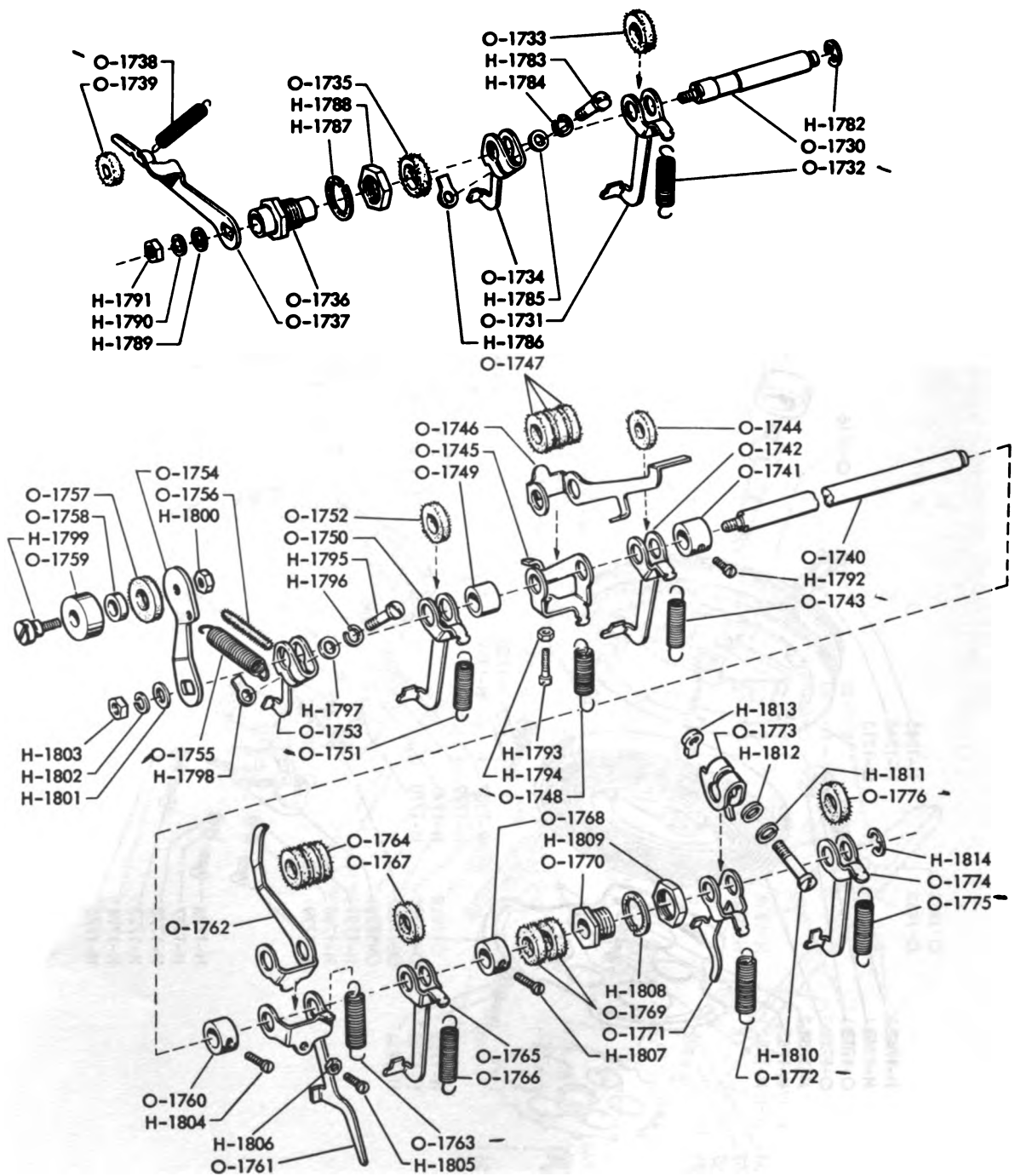


Figure 7-127. Automatic Typewriter Trip Shaft Mechanism

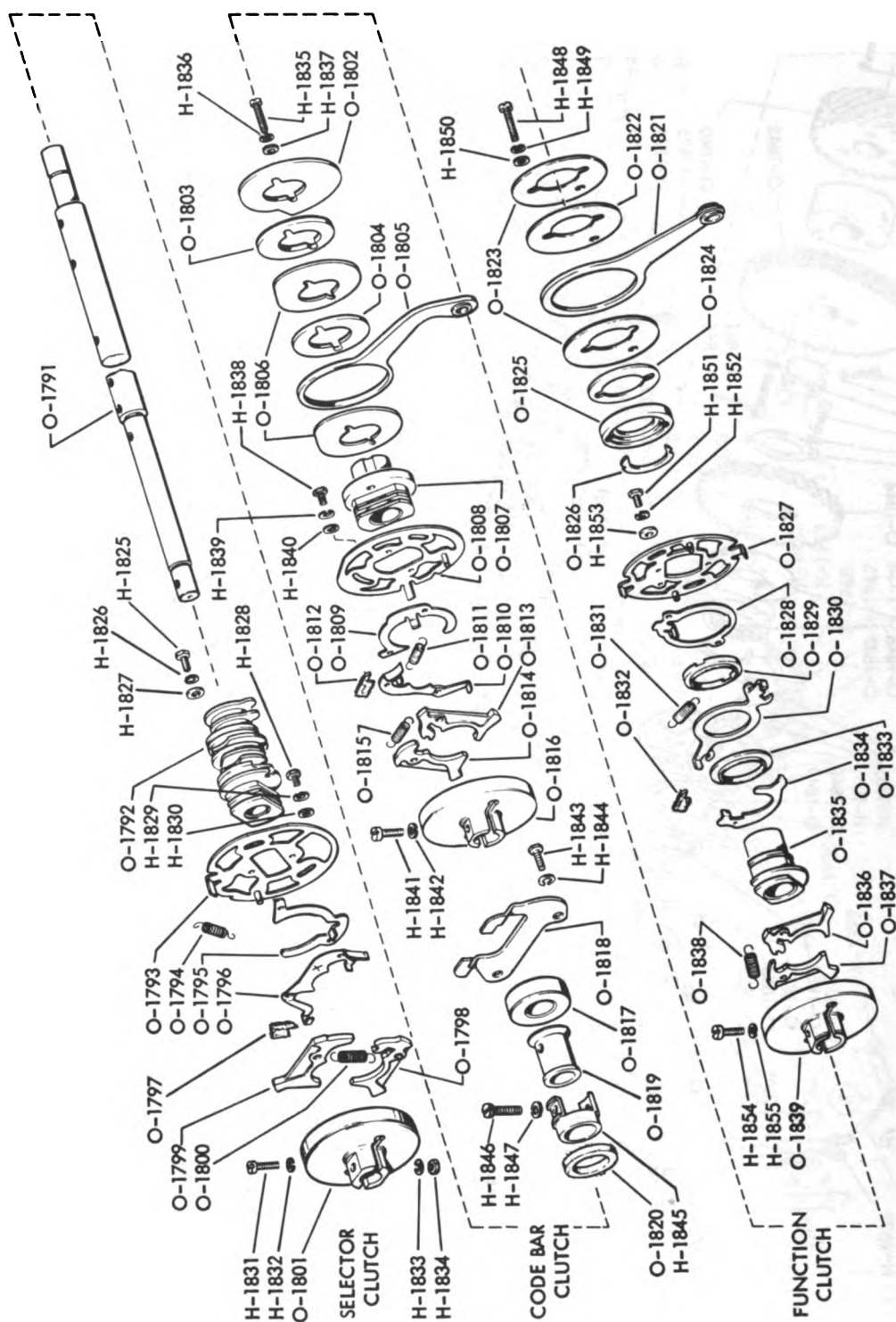


Figure 7-128. Automatic Typewriter, Main Shaft

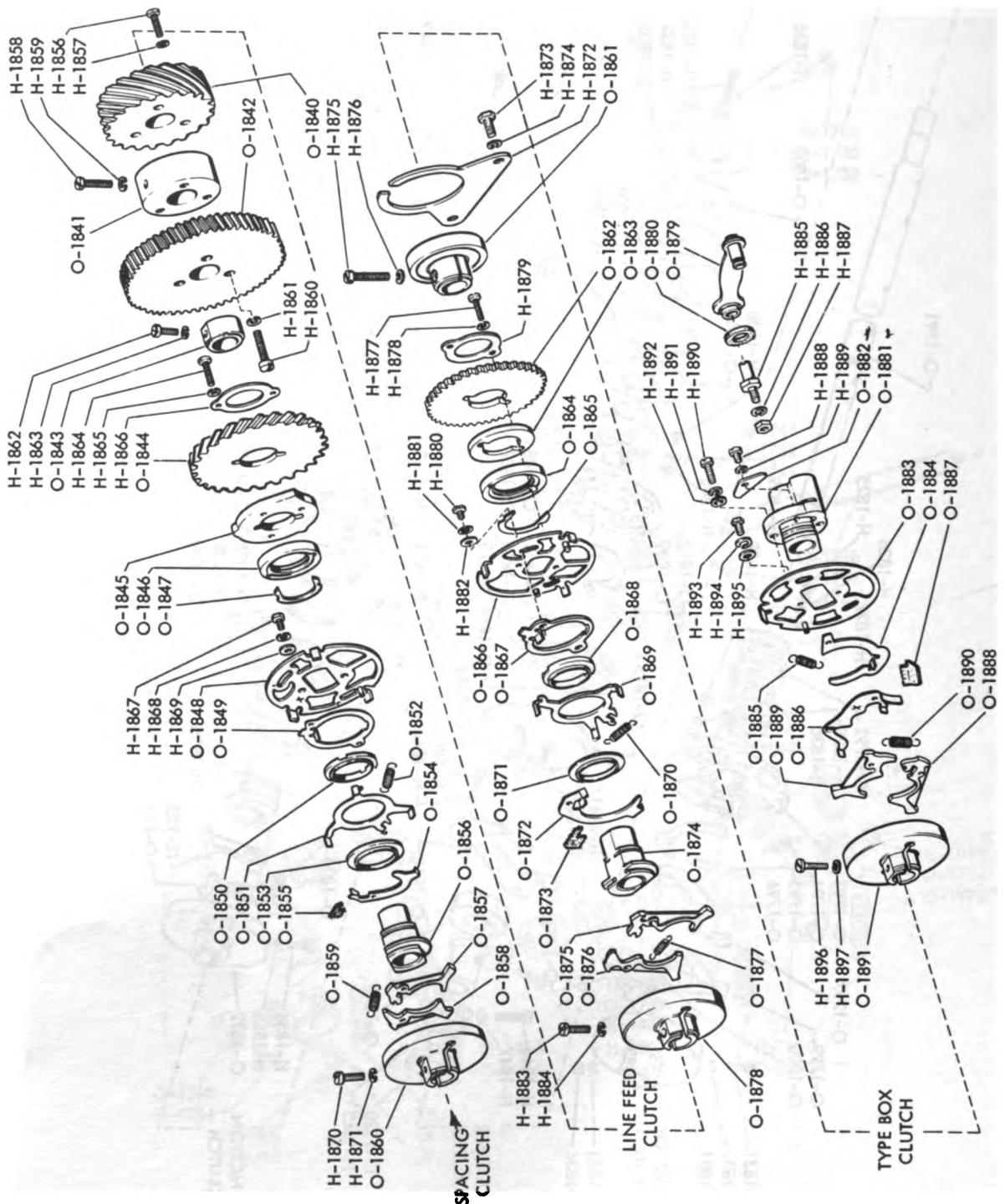


Figure 7-129. Automatic Typewriter, Main Shaft

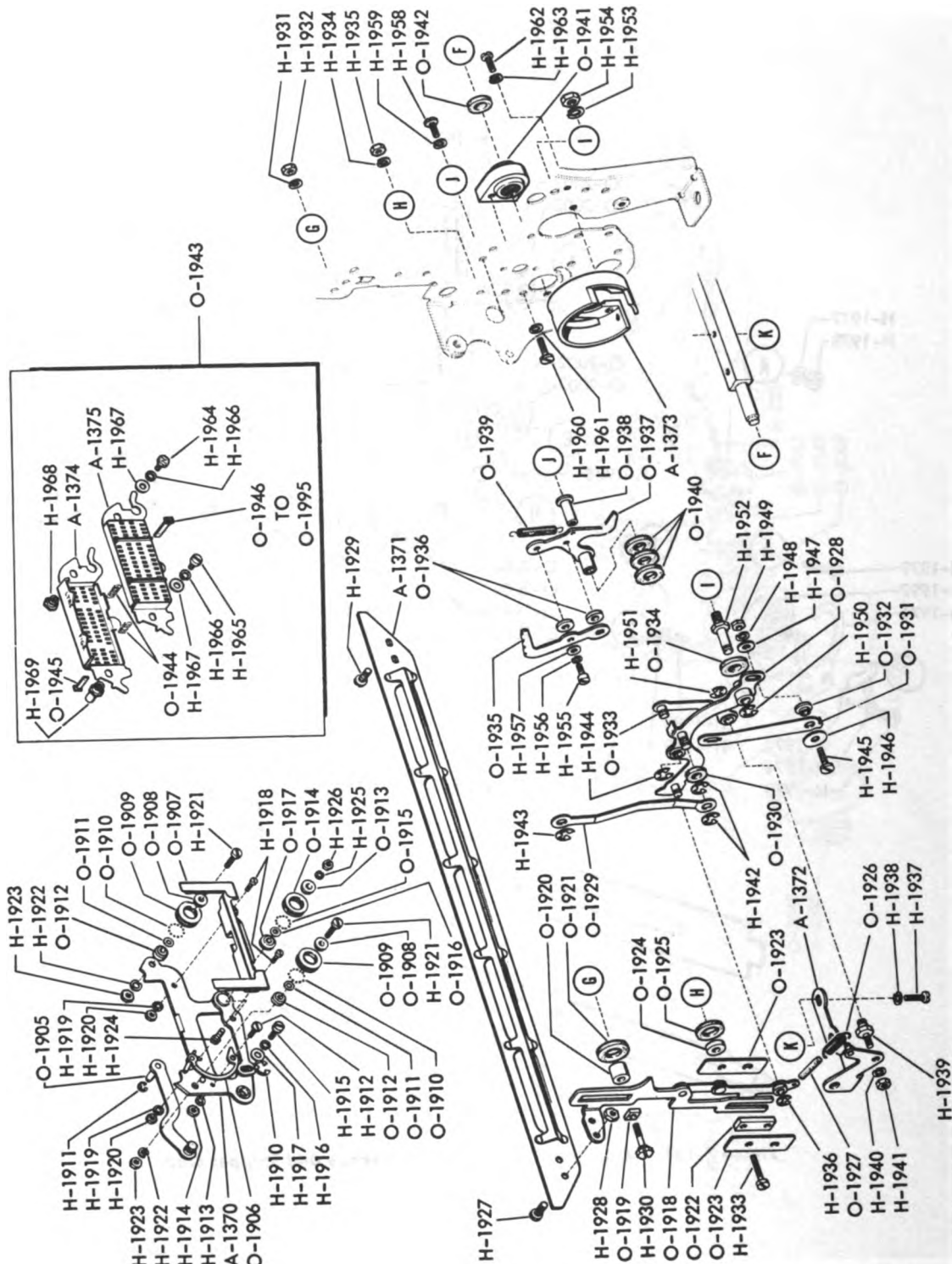


Figure 7-130. Automatic Typewriter, Right Side Linkage and Type Box

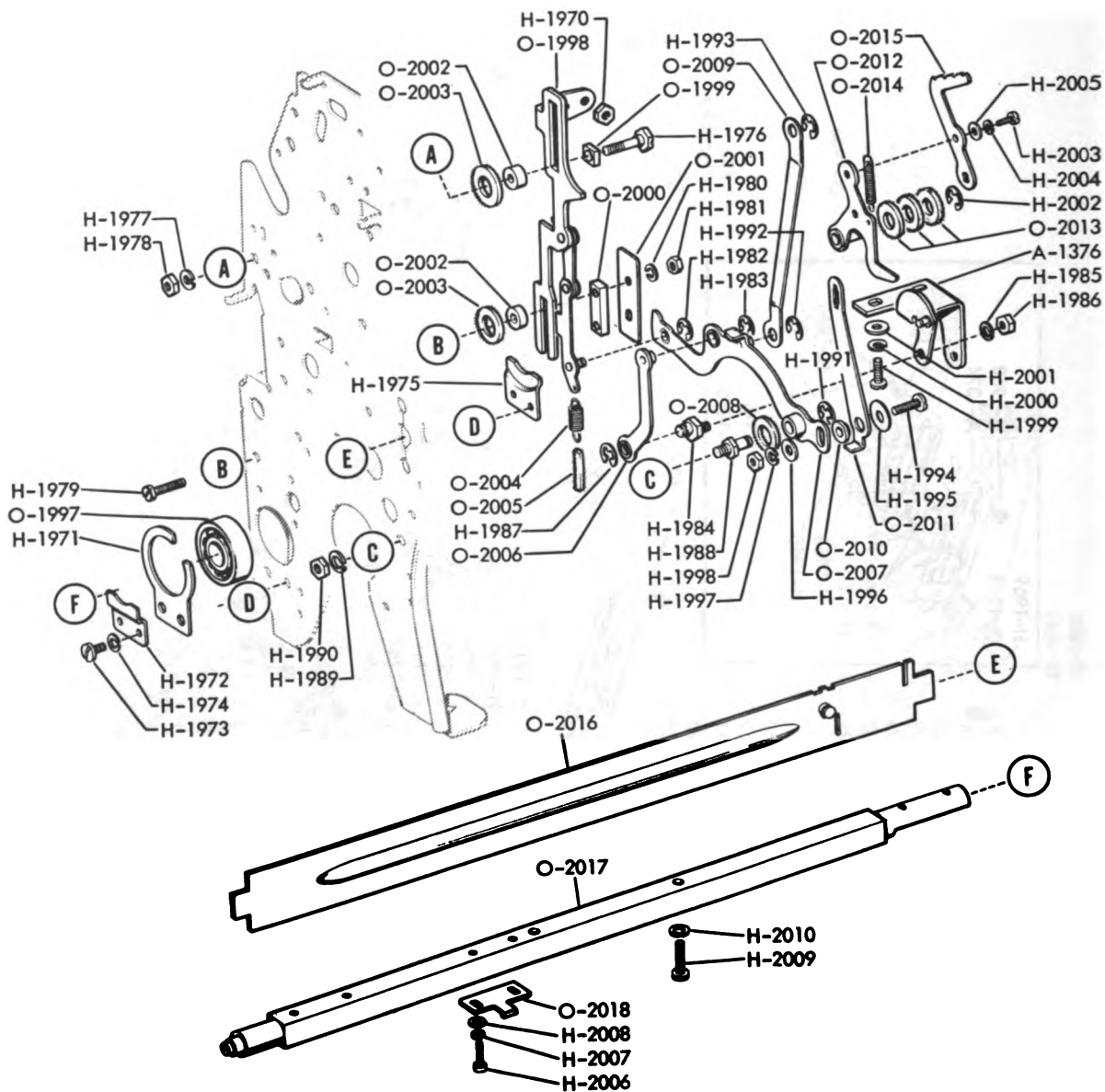
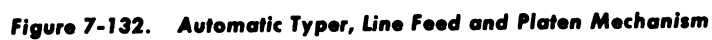


Figure 7-131. Automatic Typewriter, Left Side Linkage and Stripper Blade



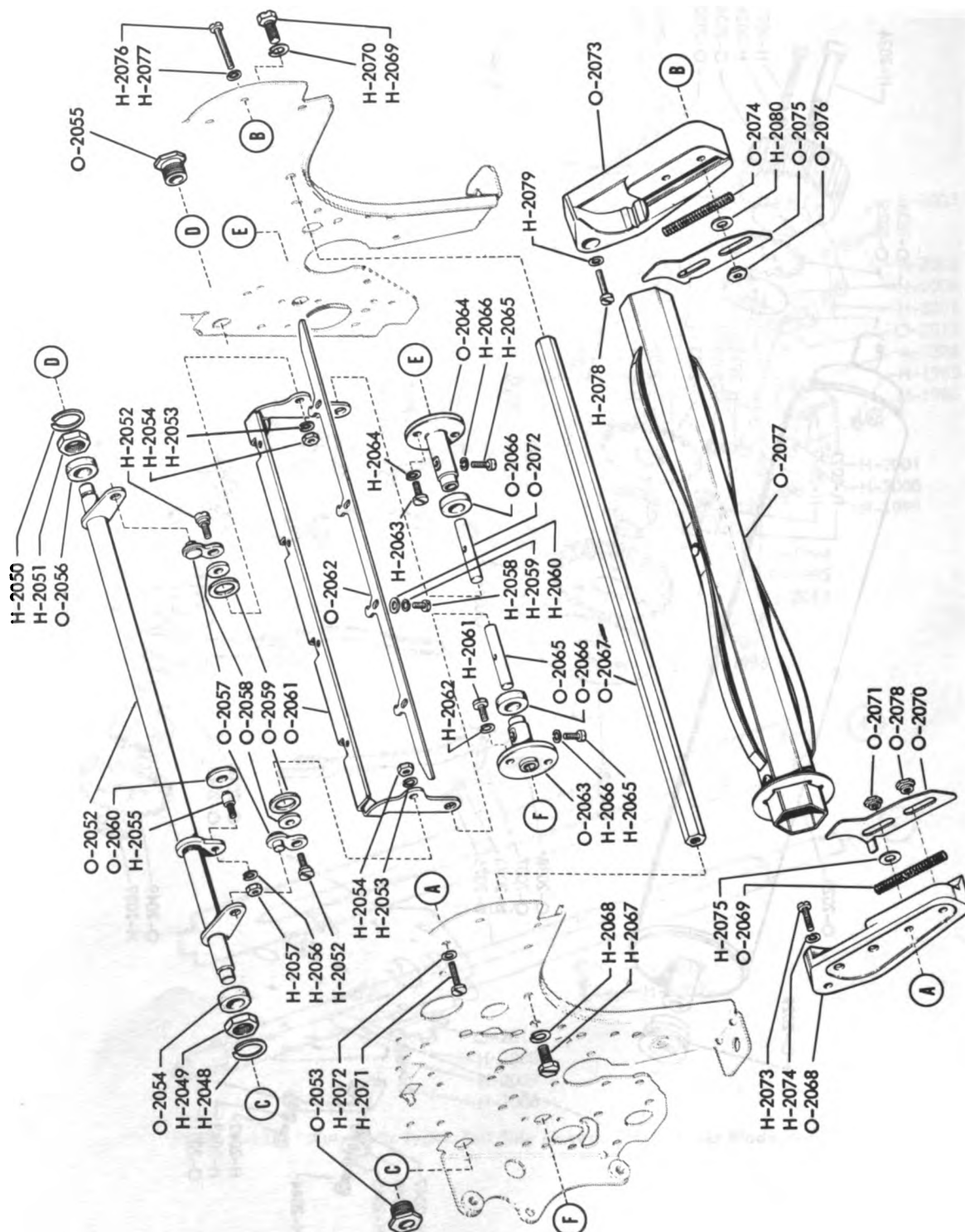


Figure 7-133. Automatic Typewriter, Paper Spindle and Reset Bail

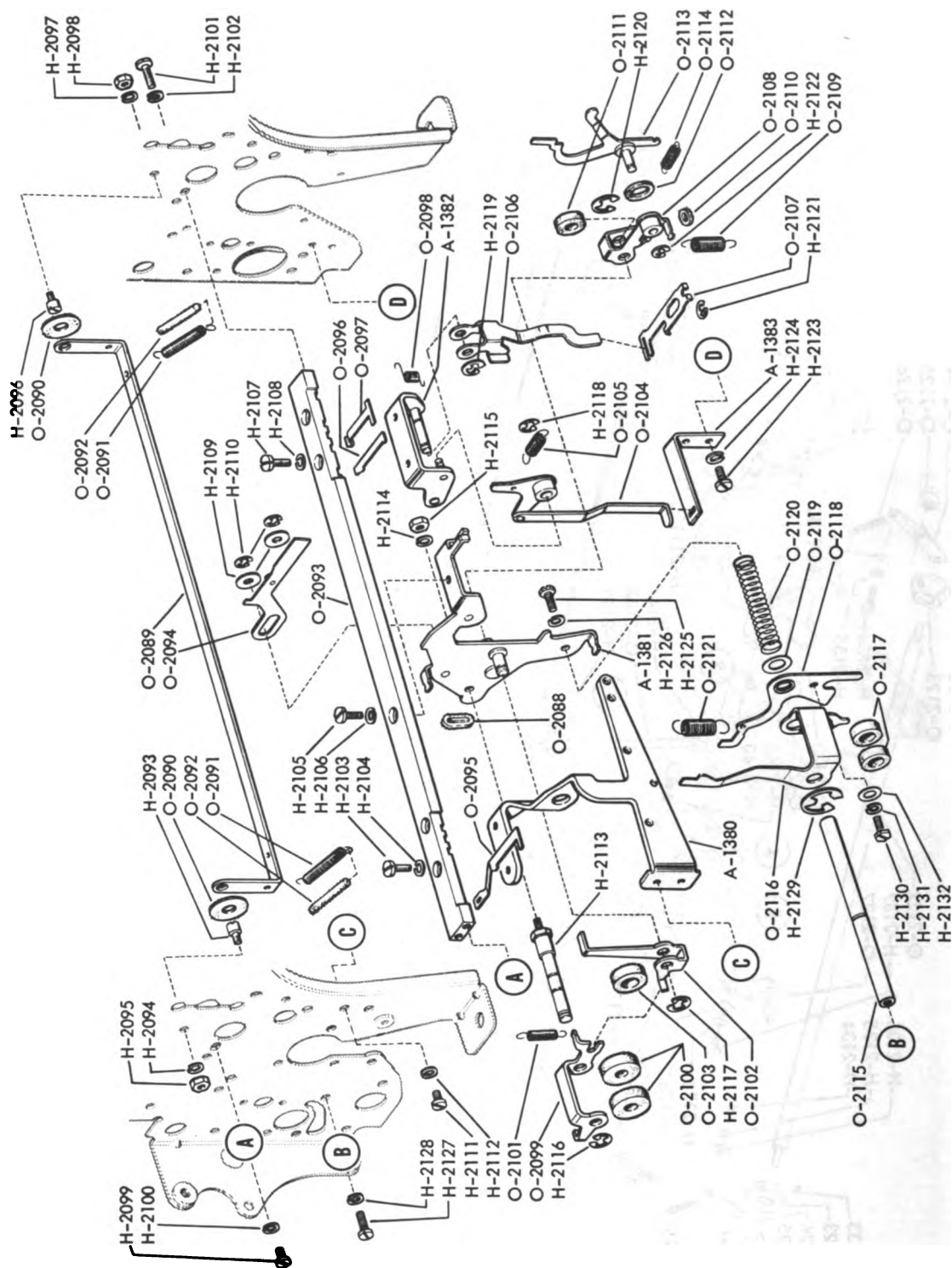


Figure 7-134. Automatic Typewriter, Space Suppression Mechanism

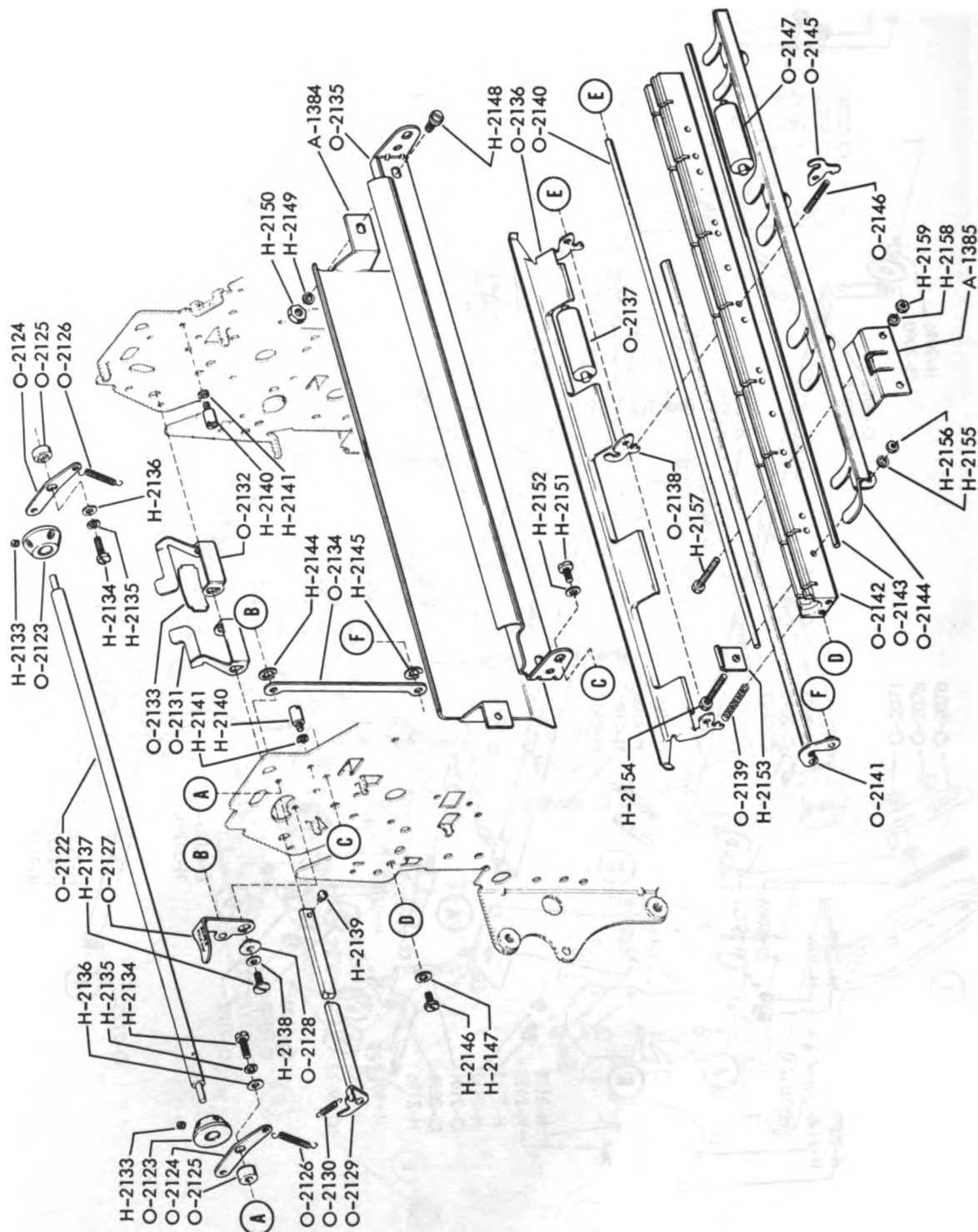


Figure 7-135. Automatic Typewriter, Pressure Roller Mechanism

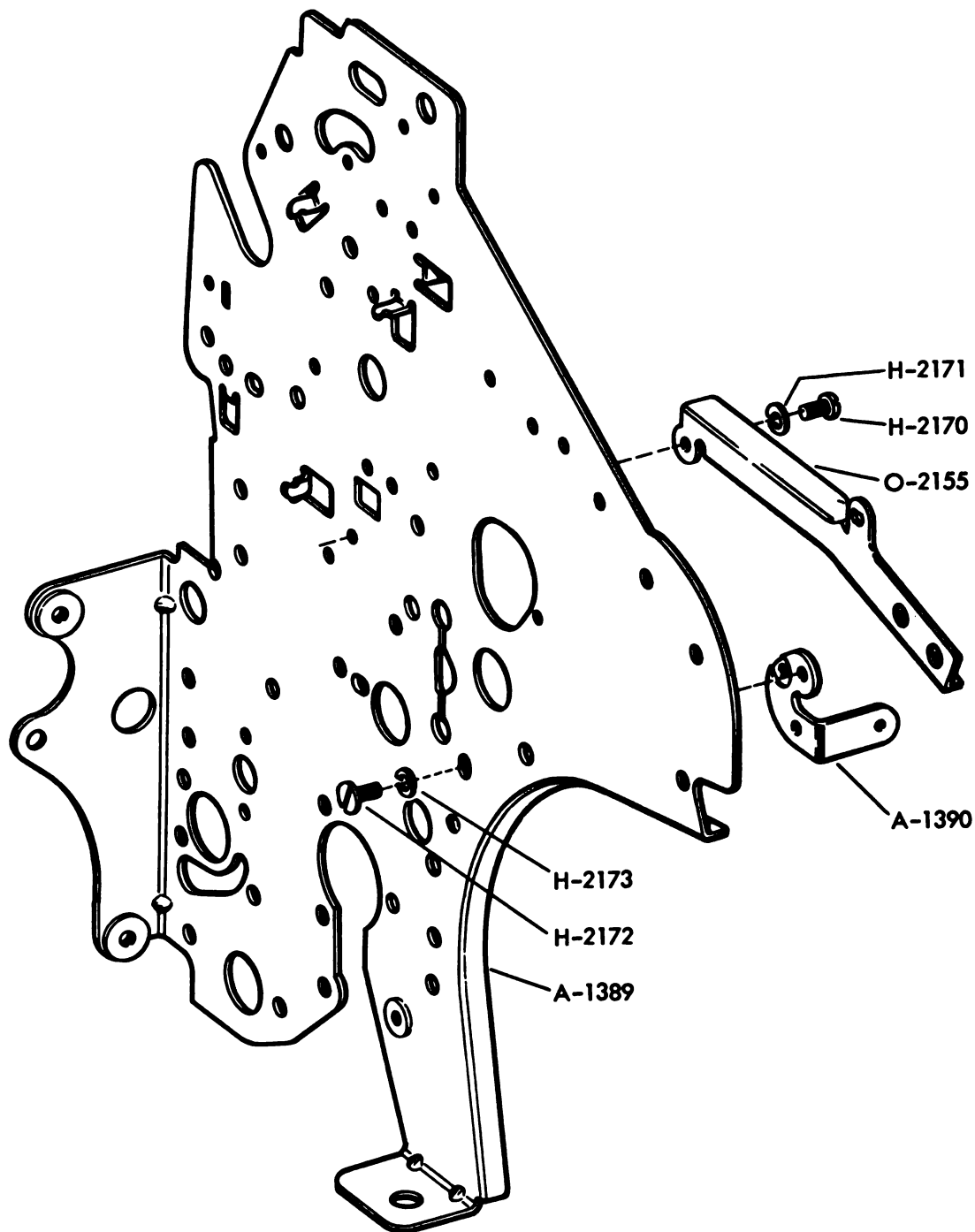


Figure 7-136. Automatic Typewriter, Right Side Frame Mechanism

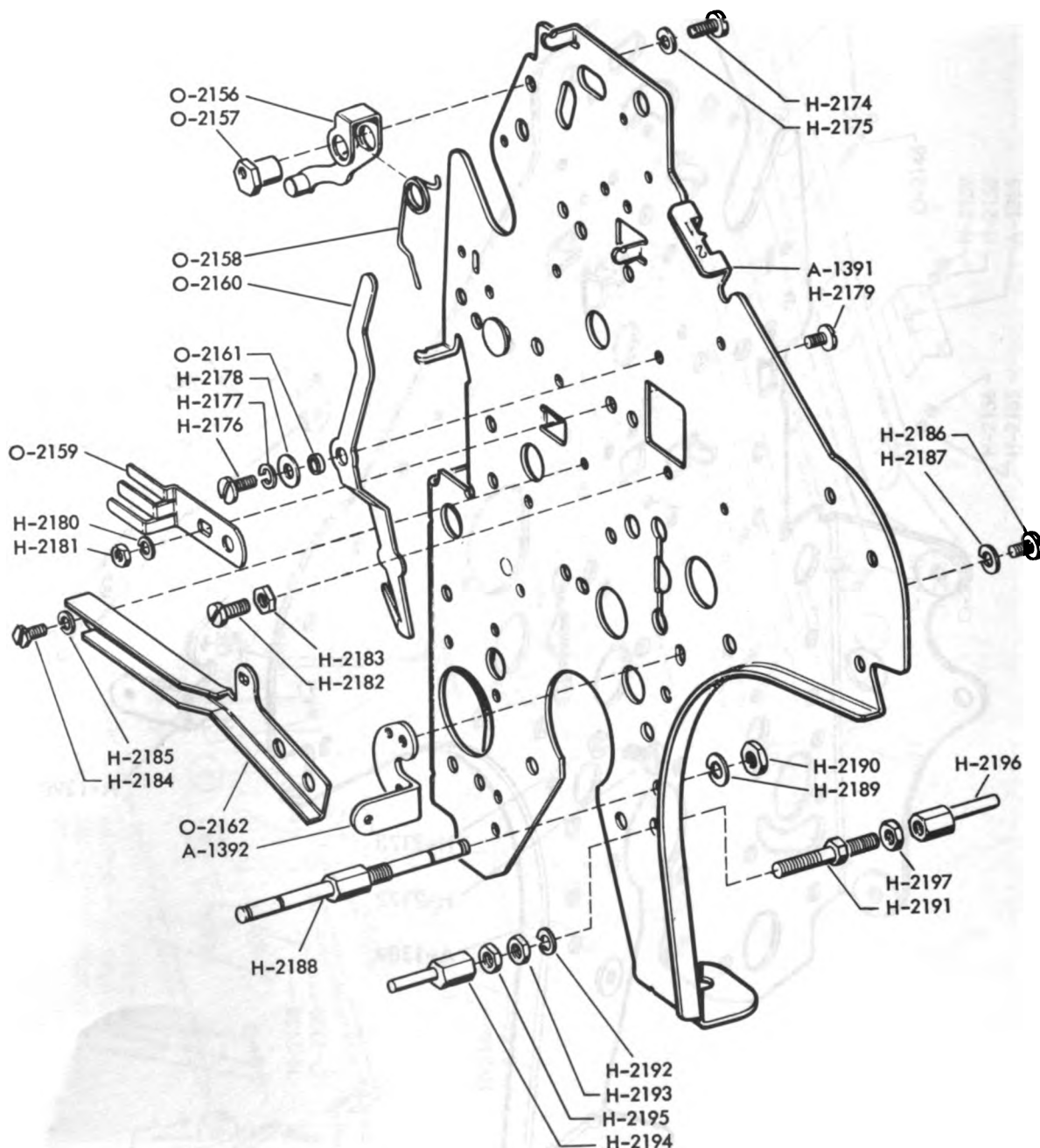


Figure 7-137. Automatic Typewriter, Left Side Frame Mechanism

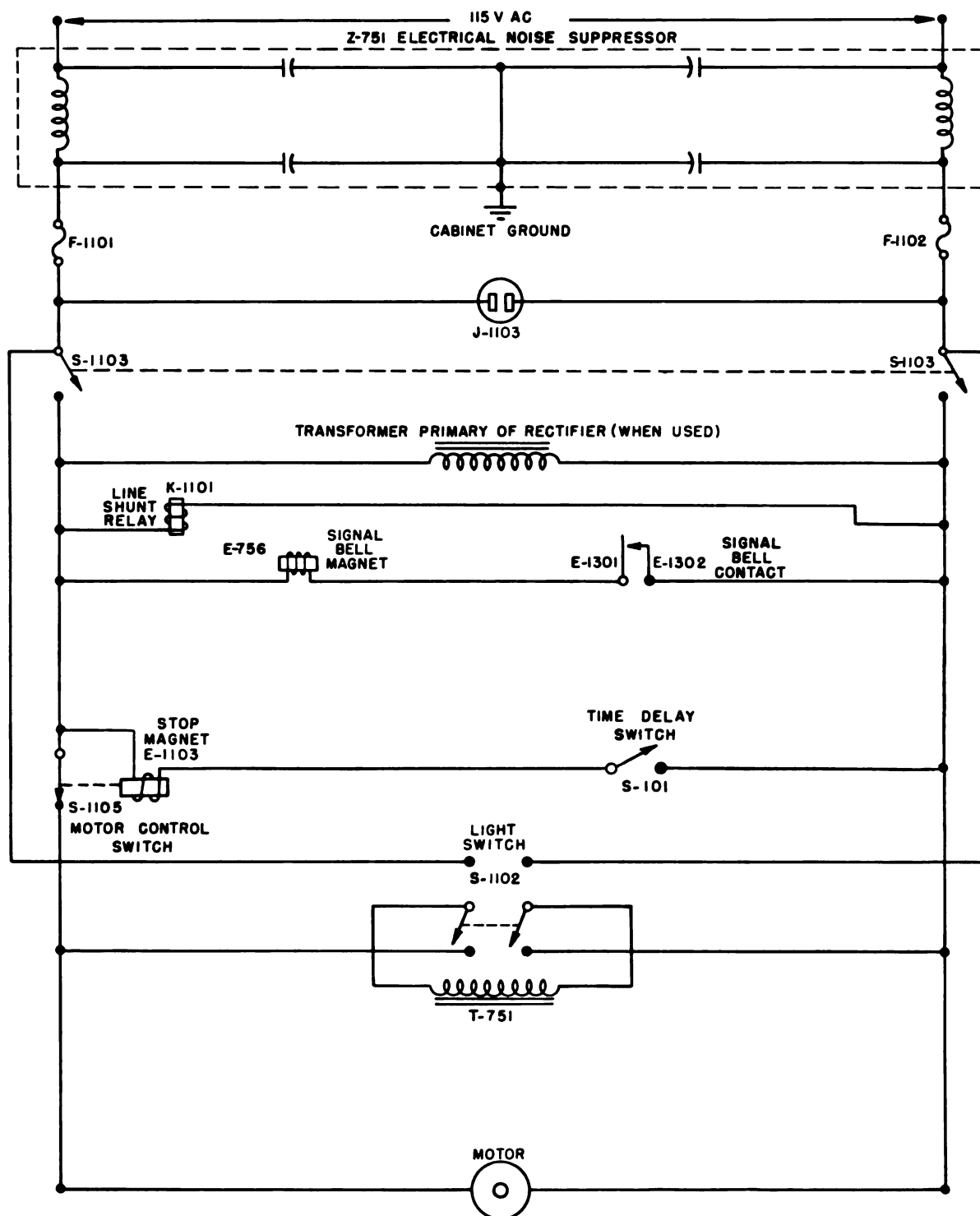


Figure 7-138. Primary Power Distribution Diagram

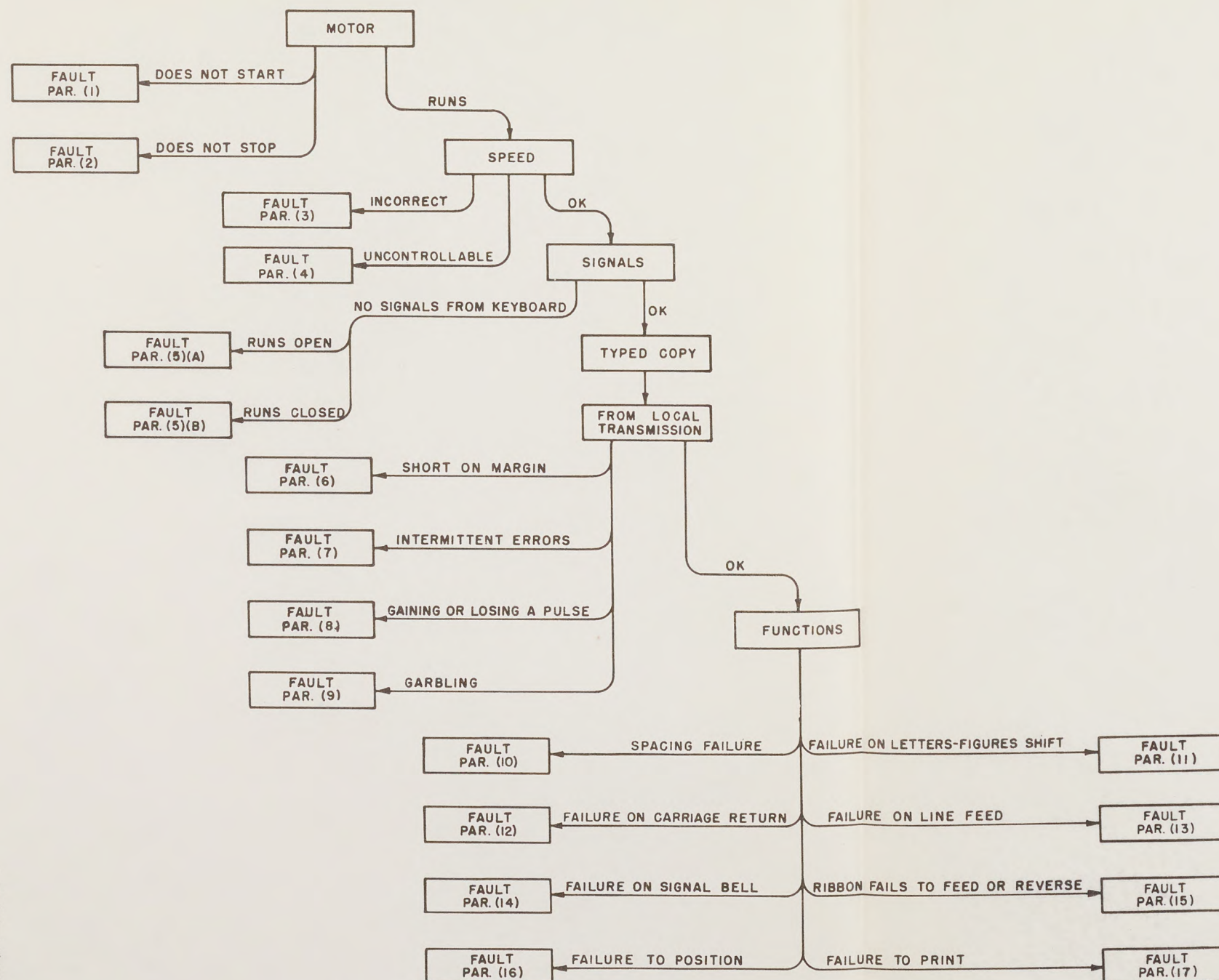


Table 7-4. Trouble Shooting Chart

ORIGINAL

7-145, 7-146

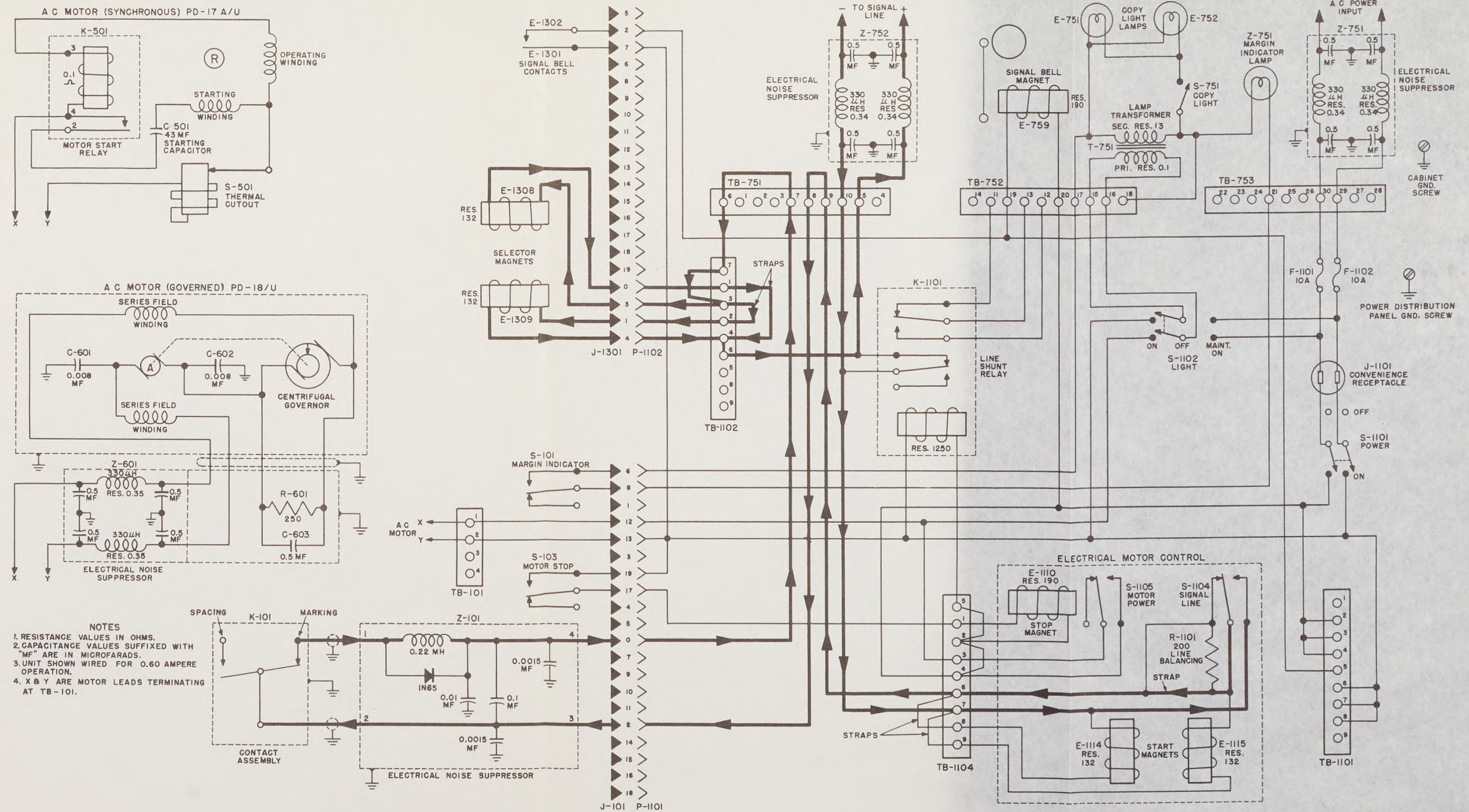


Figure 7-139. Schematic Wiring Diagram, TT-47A/UG, TT-48A/UG, TT-69A/UG and TT-70A/UG

7-147, 7-148



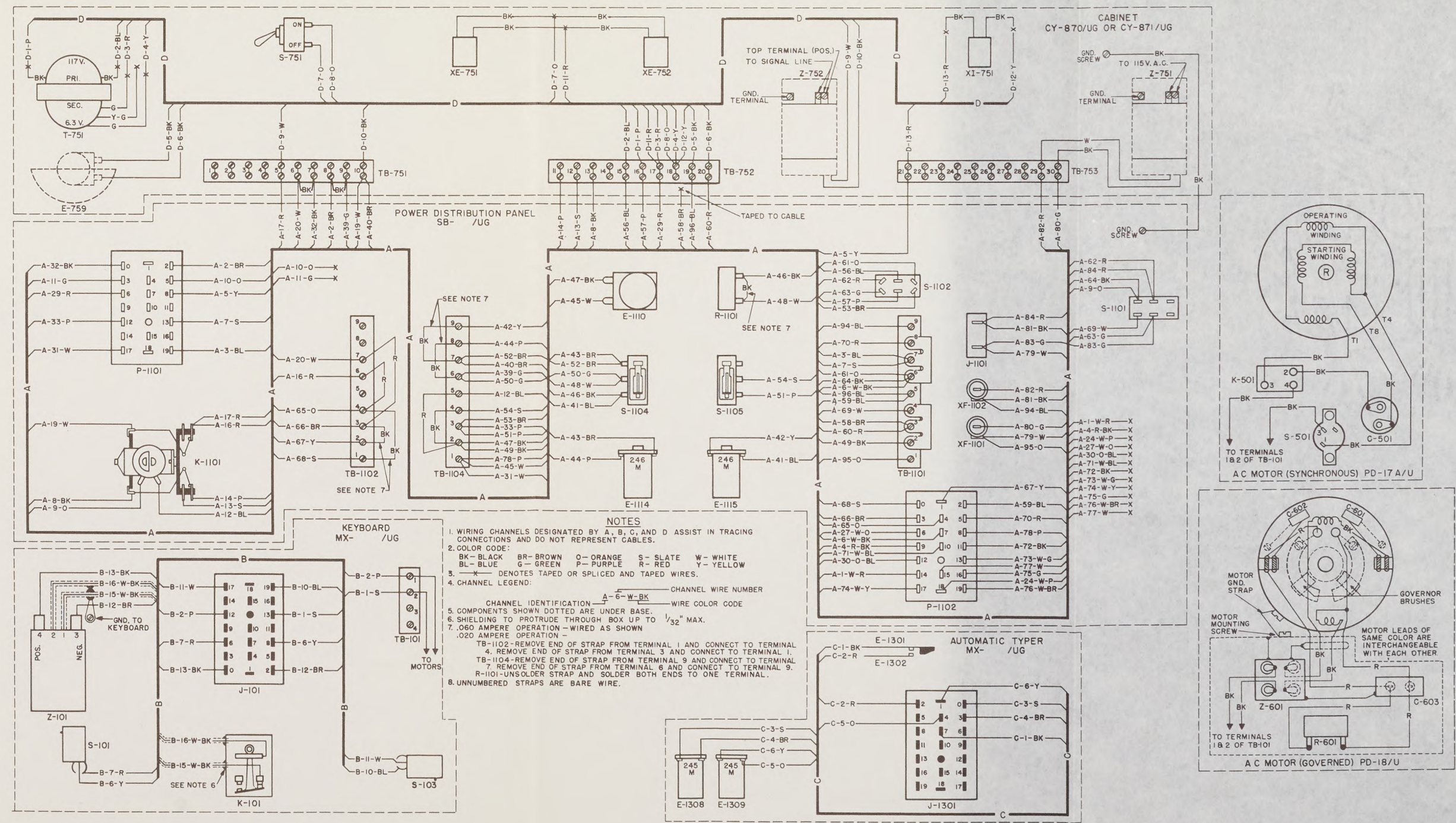
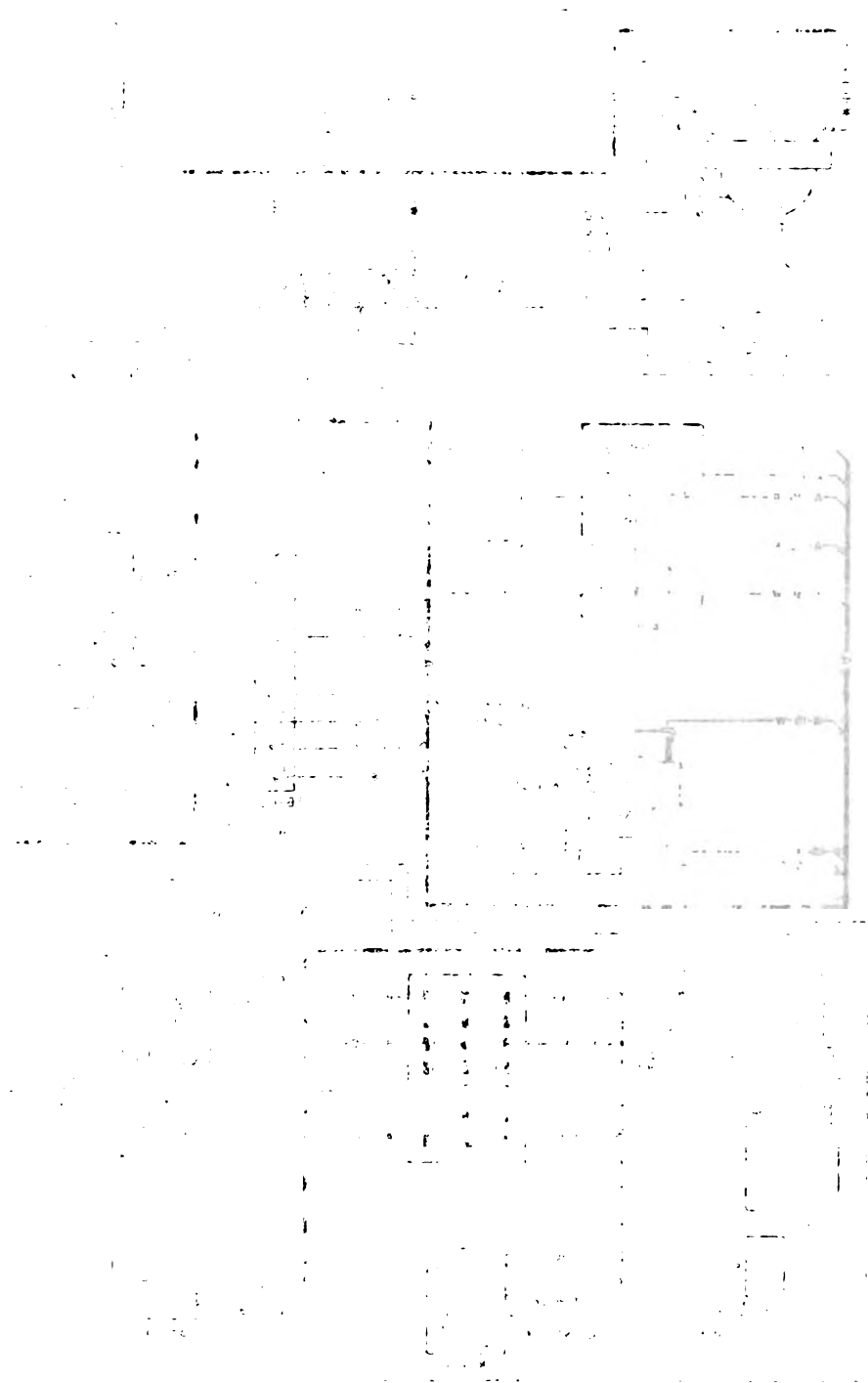


Figure 7-140. Wiring Diagram, TT-47A/UG, TT-48A/UG, TT-69A/UG and TT-70A/UG

431363 O-57 (Face p. 7-144) No. 3

ORIGINAL

7-149, 7-150



SECTION 8
PARTS LISTS

LIST OF TABLES

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TABLE 8-1. WEIGHTS AND DIMENSIONS OF SPARE PARTS BOXES

EQUIPMENT SPARES					
SPARE PARTS BOX	OVERALL DIMENSIONS IN INCHES			VOLUME CU. FT.	WEIGHT POUNDS
	HEIGHT	WIDTH	DEPTH		
1	21½	19½	7⅞	1.91	5

TABLE 8-2. SHIPPING WEIGHTS AND DIMENSIONS OF SPARE PARTS BOXES

NOT APPLICABLE

(Spare Parts Box Included in Unit Pack)

TABLE 8-3. LIST OF MAJOR UNITS

SYMBOL GROUP	QUANTITY	NAME OF MAJOR UNIT	NAVY TYPE DESIGNATION
101-499	1	KEYBOARD	MX-1114A/UG
501-599	1	AC MOTOR	PD-17A/U
601-699	1	AC MOTOR	PD-18/U
701-1099	1	CABINET	CY-870/UG
701-1099	1	CABINET	CY-871/UG
1101-1299	1	POWER DISTRIBUTION PANEL	SB-154A/UG
1301-2299	1	AUTOMATIC TYPER	MX-1115A/UG

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS										SPARE PARTS			
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		STOCK	
					M	O				BOX	QUAN.	BOX	QUAN.
A-101	BRACKET: connector support; irregularly shaped and formed; steel, nickel pl; approx 2 3/8" lg x 1 11/16" h x 1" wd o/a; 0.065" thk material; mts by two #6-40 tapped holes 1 1/2" c to c in one end; large cutout in ctr, small cutout in ea side and 2 tapped holes in large end	Support for J-101		N17-T-350015-718	CTT		152460	A-101	1	0	0		
A-102	BRACKET: "u" shape w/2 ears; steel, nickel pl; approx 12 5/8" lg x 1 1/4" wd x 3 1/8" h o/a, 0.065" thk material; mts by elongated hole in ea ear	Guard for signal generator mechanism		N17-T-350014-585	CTT		151399	A-102		0	0		
A-103	BRACKET: switch support; irregular shape, one end formed, one body ear, one formed ear, one arm and three tapped holes in other end; steel, nickel pl; approx 1 9/16" lg x 1 5/32" h x 13/16" wd o/a, 0.065" thk material; mts by 2 tapped holes in formed end	Support for S-101		N17-T-350013-708	CTT		151342	A-103	1	0	0		
A-108	BRACKET: irregular shape; steel, nickel pl; approx 2 7/32" lg x 1 21/32" h x 11/16" wd o/a, 0.065" thk material; mts by tapped hole in formed ear near ea end; one arm and 3 formed w/slot and body hole, one arm and 3 formed ears on bottom w/body hole in ea, 3 body holes and one elongated slot in body	Support for time delay mechanism		N17-T-350015-259	CTT		151884	A-108	1	0	0		
A-109	FRAME: aluminum, plain anodize; irregularly shaped and notched; approx 9 5/8" lg x 1 5/8" h x 3 3/8" wd o/a; mts by tapped hole in ea corner; large cutout in ctr, 3 cutouts and 3 ears - 2 w/tapped holes and one w/body hole on one side, arm w/squared ear w/tapped hole on ea end of other side, 2 body arms one end, 2 body end 2 tapped holes in ea end	Support for code bar mechanism		N17-T-350014-453	CTT		151092	A-109	1	0	0		
A-110	BRACKET: rectangular shape; steel, nickel pl; approx 1 5/16" lg x 15/32" h x 3/16" thk o/a; mts by 2 tapped holes; cutout along one side;	Stop for O-139 through O-145		N17-T-350014-403	CTT		151029	A-110	1	0	0		
A-111	BRACKET: irregular shape, steel, nickel pl; approx 1 3/8" lg x 1 1/32" wd x 1 5/16" h o/a, 0.050" thk material; mts by 2 body holes; 3 formed ears, largest one has 2 slots and csk hole, one has slot, other has elongated hole	Support for O-150 and guide for O-149, O-150 and O-153		N17-T-350014-487	CTT		151167	A-111	1	0	0		
A-112	BRACKET: irregular shape, one end formed w/rounded ear; steel, nickel pl; approx 2 7/32" lg x 7/8" wd x 1 1/4" h o/a, 0.065" thk material; mts by two #4-40 holes in wd end; body hole in ear	Support for A-113		N17-T-350014-712	CTT		151191	A-112	1	0	0		

* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.

A-113	A-119	A-121	A-122	A-123	A-124	A-125	A-126	A-127	2	1	5
SUPPORT: aluminum; approx 3/16" lg x 1/4" diam o/a; mts by 1/8" diam shank	BRACKET: irregular shape, "u" formed w/2 body holes in line, formed ear w/out hole in ctr; steel, nickel pl; approx 2 1/4" lg x 1 3/16" h x 1 7/32" wd o/a, 0.065" thk material; mts by 2 tapped holes	BRACKET: irregular shape, "u" formed, body ear w/out hole and rectangular shaped slot on base, 2 holes in line at end of both sides; steel, nickel pl; approx 2 5/16" lg x 1 5/16" h x 1 29/32" wd o/a, 0.065" thk material; mts by 2 tapped holes in base	BRACKET: irregular "u" shape, both sides curved, oak hole in short side, irregular shaped slot in lg side; steel, nickel pl; approx 1 1/4" lg x 1 7/32" h x 1 5/16" wd o/a, 0.065" thk material; mts by 2 tapped holes in bottom of "u"	PLATE, sealing: steel plate, silicone covered; rectangular shape, elongated slot near lower edge, 3 oth holes at upper edge, 2 oth holes below slot, front flat, back has irregular contour w/2 recesses; approx 1 7/16" lg x 4 25/32" wd x 7/16" thk o/a; mts by 4 oth holes at ea end of slot; pointed sealing edge around perimeter	CHANNEL, ball: steel, nickel pl; irregular shape, ctr formed throughout lg, 42 equally spaced slots in top, one elongated slot from bottom, cutout ea end, 8 tapped holes; approx 13 3/16" lg x 3 1/32" h x 5/16" wd o/a; mts by tapped hole near ea end	FRAME: steel, nickel pl; irregular shape, formed edge both sides, both ends formed w/formed wing and ear, large cutout in ctr, cutout both ends; approx 1 1/4" lg x 3 1/16" h x 3 27/32" wd o/a, 0.065" thk material; mts by 2 body holes in ea end wing; 15 tapped holes, 2 body holes and 4 elongated holes irregularly located	BRACKET: irregular "u" shape; steel, nickel pl; approx 3 15/16" lg x 1 3/16" h x 7/8" wd o/a, 0.065" thk material; mts by 2 tapped holes in bottom of "u"; tapped hole at ea end	COVER: gray bakelite, dull satin finish on outside contour; irregular shape, cutout in one edge, internally ribbed; approx 16 1/2" lg x 4" h x 4 9/16" wd o/a; mts by 2 oth holes in thin section on ea side of cutout			
Stop for O-228	Support for O-272	Support for O-279 and O-283 and guide for O-281	Guide for O-284	Noise seal and support for A-125	Channel for O-286 and guide for O-289	Support for A-124, A-126, A-127 and O-295	Support for O-291	Cover for keyboard mechanism			
350014-574	350015-657	350015-609	350014-493	350013-700	350015-403	350015-666	350013-687	350015-620			
KT7-T-CTT	KT7-T-CTT	KT7-T-CTT	KT7-T-CTT	KT7-T-CTT	KT7-T-CTT	KT7-T-CTT	KT7-T-CTT	KT7-T-CTT			
151193	151856	151862	151159	151326	151841	151833	151227	151325			
A-113, A-133	A-119	A-121	A-122	A-123	A-124	A-125	A-126	A-127			

* "Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated."

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS		
					CODE	DESIG.				EQUIP.	STOCK	
										QUAN.	BOX	QUAN.
A-132	FRAME, aluminum, plain anodize; irregular shape w/"L" shaped arm, straight arm other side, 2 irregular elongated slots in body; approx 7 5/16" lg x 1 5/8" h x 5 5/8" wd o/a; mts by 4 corner body holes; 13 tapped and 5 body holes	Support for signal generator mechanism		N17-T-CTT 350013-701		151328	151328	A-132	1	0	0	
A-133	Same as A-113	Stop for O-310										
A-136	PLATE, mounting: steel, nickel pl; irregular shape, 3 formed ears one side, 4 spring posts riveted to opposite side, one rectangular, 3 elongated, 4 round and 19 tapped holes irregularly spaced; approx 3 7/8" lg x 2 3/4" h x 1 1/8" wd o/a, 0.065" thk material; mts by one elongated and one round hole	Support for transmitter mechanism		N17-T-CTT 350014-470		151140	151140	A-136	1	0	0	
A-137	BRACKET: irregular shape; steel, nickel pl; approx 1 11/32" lg x 3/4" h x 15/32" wd o/a, 0.035" thk material; mts by 2 elongated slots in body; one end formed w/elongated slot and rounded ear w/body hole, curved cutout and rectangular shaped extension w/ tapped hole on other end	Guide for O-369 and Support for H-382		N17-T-CTT 350014-576		151204	151204	A-137	1	0	0	
A-138	COVER: iron, nickel pl; approx 1 3/4" lg x 1 5/16" wd x 5/8" h o/a, 0.025" thk material; mts by 2 body holes in bottom; 2 body holes one side, rectangular hole opposite side	Container for contact mechanism		N17-T-CTT 350013-714		151359	151359	A-138	1	0	0	
A-139	COVER: iron, nickel pl; approx 1 3/4" lg x 1 3/8" wd x 5/32" h o/a, 0.025" thk material; mts by body hole and edges; 1/8" letters "DO NOT OIL" stamped on top	Cover for contact mechanism		N17-T-CTT 350013-715		151359	151359	A-139	1	0	0	
A-140	BASE: moulded black bakelite; irregular shape w/4 various levels; approx 1 3/16" lg x 9/16" h x 7/8" wd o/a; mts by 2 tapped holes through base; 2 body slots, one "W" shaped groove, 2 tapped holes through sides, elongated curved cutout near one end	Mounting base for contact mechanism		N17-T-CTT 350014-483		151176	151176	A-140	1	0	0	
A-141	BRACKET: "L" shape; steel, nickel pl; approx 2 1/4" lg x 3/4" h x 3/8" wd o/a, 0.050" thk material; mts by 2 elongated slots; elongated cutout in body and formed end, one curved and one rectangular ear, 2 body holes in rectangular ear	Support for A-138		N17-T-CTT 350014-481		151178	151178	A-141	1	0	0	
A-501	BRACKET ASSEMBLY: o/o 2 brackets welded together; steel, nickel pl; irregular shape upper bracket has 2 formed ends w/cutout in ea, 4 body ears, 4 tapped holes, and rectangular hole in ctr, lower bracket "W" shape w/3 elongated holes in one side and 2 body holes in ea side, 4 tapped holes through both brackets; approx 6 3/16" lg x 3 3/8" wd x 3 11/16" h o/a; mts by body hole in ea corner ear	Support for synchronous motor and accessories		* N17-T-CTT 350013-893		150976	150976	A-501	1	0	0	

* "Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated."

A-502	PLATE, mounting; steel, nickel pl; approx 4 3/8" lg x 2 1/4" wd x 0.042" thk o/s; mts by 4 corner holes; curved cutout one side, 2 large and 6 small body holes irregularly spaced	Support for C-501, E-501 and S-501	* N17-T-CTT 350014-980	151920	151920	A-502	1	0	0
A-601	MOUNTING, brush holder; black bakelite; approx 2 1/2" lg x 1 1/4" wd x 1/2" thk o/s; mts by 4 body holes; curved body w/2 round ears on one side, irregularly grooved, 2 body holes	Outlets for E-604	N17-T-CTT 350014-315	150884	150884	A-601, A-605	2	0	0
A-602	PLATE, clamp; steel, nickel pl; round ends; approx 7/8" lg x 1/4" wd x 0.065" thk o/s; mts by 2 tapped holes	Locks mounting hardware of A-603 to A-601	N17-T-CTT 350014-317	150886	150886	A-602, A-604	4	0	0
A-603	PLATE, brush; nickel silver; approx 1 3/4" lg x 1 1/8" wd x 1/8" thk o/s; mts by hole in one formed ear; irregular curved shape w/2 formed ears, elongated slot in ctr of body	Holds E-604 on A-601	N17-T-CTT 350014-316	150885	150885	A-603, A-606	2	0	0
A-604	Same as A-602	Locks mounting hardware of A-606 to A-605							
A-605	Same as A-601	Outlets for E-605							
A-606	Same as A-603	Holds E-605 on A-605							
A-607	COVER; brass, nickel pl; closed one end, one cutout and 10 slots other end, one rectangular hole, 8 sq holes and one tapped hole in circum, #40 mesh screen soldered to ID; approx 3 11/16" diam x 2 3/4" lg o/s; mts by 1lf and 4 oblong holes in circum	Cover and electrostatic shield for governor mechanism	N17-T-CTT 350014-941	152044	152044	A-607	1	0	0
A-608	COVER; nickel pl steel plates and brass screws; two plates, cutout in ctr, sandblasted over #10 screen and welded together, grommet fastened to screws; approx 4 3/16" lg x 3 3/8" wd x 3/32" thk o/s; mts by 11 body holes; 11 depressions one side	Cover for and electrostatic shield for coated parts of A-610	N17-T-CTT 350014-944	152037	152037	A-608	1	0	0
A-609	BRACKET; motor support, "U" shape; steel, nickel pl; approx 6 3/16" lg x 3 3/8" wd x 2 9/32" h o/s, 0.095" thk material; mts by body hole in one corner; rectangular hole, 2 cutouts and 11 tapped holes in base, irregularly cutout on both ends	Support for B-601	* N17-T-CTT 350014-942	152046	152046	A-609	1	0	0
A-610	BASE, motor; steel, nickel pl; irregular shape, partially enclosed on top w/4 formed flaps around opening, completely open on bottom w/3 sides formed to receive slide cover, 3 cutouts, 2 covered w/40C brass screws; approx 4 3/4" lg x 4 5/16" wd x 1 17/32" h o/s, 0.016" thk material; 11 body holes in flaps; one tapped hole in disc welded to front 3 body holes in sides	Container for C-603, B-601 and Z-601	N17-T-CTT 350014-962	152039	152039	A-610	1	0	0

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
					DESIG.	BOX			EQUIP.	STOCK	
						QUAN.			BOX		
						PER EQUIP.					
A-611	BRACKET: resistor support; "L" shape; steel, nickel pl; approx 2 1/16" lg x 1 1/2" wd x 23/32" h o/a, 0.050" thk material; mts by two #4-40 holes 7/16" c to c in irregular shaped short end	Mounts B-601 to A-610		* N17-T-CTT 350014-959	152034	152034	A-611	2	0	0	
A-612	COVER: steel, nickel pl; rectangular shape, cutout and two formations on one side, gray fiber insulator riveted to larger formation, body hole in smaller formation, 9 extrusions along other 3 sides, #40 brass screen soldered over rectangular cutout in body; approx 3 15/16" lg x 3 3/4" wd x 1 3/8" h o/a, 0.016" thk material; slide mts by three sides	Cover for A-610		N17-T-CTT 350014-998	152040	152040	A-612	1	0	0	
A-617	BRACKET: "L" shape w/guide welded to narrow side; steel, nickel pl; approx 1 1/16" lg x 1 1/16" h x 5/8" wd o/a; 0.065" thk material; mts by 2 body holes in wd end; guide has strip w/hole across ID on mid end, lg slot other end, tapped hole below guide	Anchor support for O-613		N17-T-CTT 350014-383	150877	150877	A-617	1	0	0	
A-618	BRACKET: contact screw support; irregular shape, one end formed, formed ear on wd end; steel, nickel pl; approx 1 5/8" lg x 3/4" h x 5/8" wd o/a, 0.065" thk material; mts by two body holes in wd end of body; elongated slot in formed end and body hole in formed ear	Support for E-617		N17-T-CTT 350014-376	150858	150858	A-618	1	0	0	
A-619	BRACKET: contact support; "L" shape w/formed ear on lg side; steel, nickel pl; approx 1 17/32" h x 1 19/32" wd x 1 5/32" lg o/a, 0.065" thk material; mts by two body holes in lg end; tapped hole in short end and body hole in formed ear	Support for E-611		N17-T-CTT 350014-377	150859	150859	A-619	1	0	0	
A-620	COVER: aluminum, plain anodized; approx 3 1/2" OD x 1 1/8" deep o/a, 0.040" thk material; mts by 2 tapped holes; exterior painted white w/4; 6 and 35 black segments, in rows, forming 8, 12 and 70 equal divisions on OD; body hole in OD w/7" and "3" on ea side of a curved arrow stamped around hole	Cover for all mounted parts of B-603		N17-T-CTT 350014-384	150879	150879	A-620	1	0	0	
A-701	MOUNT, vibration: round mts; 30 to 84 lb load rating; approx 3" sq x 1 1/2" h o/a; rubber cushion mts. formed metal plate 3" diam x 1" h; steel ctr sleeve w/3/8" diam bolt hole; 4 mts holes 1/4" diam on 2 1/2" x 2 1/2" mts/c	Vibration mount for CT-670/UG		N17-M-CATU 75297-6751	C-2035	151594	A-701	4	0	0	

SYMBOL DESIGNATIONS A-701 AND A-702 USED ON CT-670/UG CABINET ONLY

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A-702	BRACKET, "U" shape, both ends formed; steel, nickel pl; approx 2 3/8" sq x 1 1/16" h o/a, 0.090" thk material; mts by four body holes in corners of formed ends; body hole in bottom of "U"	Cradle assembly support	SYMBOL DESIGNATIONS A-751 TO A-759 INCL USED ON CT-870/UG AND CT-871/UG CABINETS	* H17-T-350014-782	CTT	151584	151584	A-702	4	0	0
A-751	BRACKET, switch support; "L" shape; steel, nickel pl; approx 2 11/16" lg x 1 5/16" wd x 1 5/16" h o/a, 0.048" thk material; mts by two body holes in one side; outcut on corner and large body hole one side	Support for S-751	Support for S-751	* H17-T-350014-899	CTT	151990	151990	A-751	1	0	0
A-752	Mount, vibration; round mtg; 30 to 72 lb load rating; approx 2 3/8" sq x 1 1/8" h o/a; rubber cushion mtg, formed metal plate 2 1/4" diam x 11/16" h; steel ctr sleeve w/1/4" diam bolt hole; four mtg holes 0.196" diam on 1 15/16" x 1 15/16" mtg/c	Rear vibration mount for CT-871/UG	Rear vibration mount for CT-871/UG	H17-M-75164-2706	CAYU	C-1035	151587	A-752	2	0	0
A-753	Mount, vibration; round mtg; 43 to 100 lb load rating; approx 2 3/8" sq x 1 1/8" h o/a; rubber cushion mtg; formed metal plate 2 1/4" diam x 11/16" h; steel ctr sleeve w/1/4" diam bolt hole; four mtg holes 0.196" diam on 1 15/16" x 1 15/16" mtg/c	Front vibration mount for CT-871/UG	Front vibration mount for CT-871/UG	H17-M-75322-4551	CAYU	C-1050	151588	A-753	2	0	0
A-754	Cover; black bakelite; approx 5 3/16" lg x 2 3/16" wd x 1/16" thk o/a; mts by two body holes	Cover for TB-751, TB-752 and TB-753	Cover for TB-751, TB-752 and TB-753	* H17-T-350014-758	CTT	151436	151436	A-754	3	0	0
A-758	BRACKET, rectangular shape w/half of one side cut off on angle; steel, nickel pl; approx 1 1/4" lg x 3/4" wd x 0.065" thk o/a; mts by two elongated slots one end; body hole near cut off corner	Supports one end of O-768	Supports one end of O-768	* H17-T-350014-763	CTT	151516	151516	A-758	1	0	0
A-759	BRACKET, irregular shape; steel, nickel pl; approx 1 3/4" lg x 1 5/8" h x 1 1/2" wd o/a, 0.065" thk material; mts by three tapped holes in body; three tapped holes, two body holes, one hole and cutout distributed on 3 irregular shaped formed area	Supports E-758, E-759 and I-752	Supports E-758, E-759 and I-752	H17-T-350014-777	CTT	151564	151564	A-759	1	0	0
A-1101	CONTAINER; aluminum, plain anodized; inverted table shape; approx 15 1/8" lg x 8 1/8" h x 4 5/8" wd o/a, 0.064" thk material; mts by hole in one end; four tapped holes, one body hole w/tooth and 11 body holes irregularly spaced	Container for and supports power distribution panel and motor control unit	Container for and supports power distribution panel and motor control unit	* H17-T-350014-247	CTT	151420	151420	A-1101	1	0	0
A-1102	PLATE, clamp; steel, nickel pl; approx 9/16" lg x 3/8" h x 0.095" thk o/a; mts by tapped hole in ctr	Clamps O-1103 to A-1101	Clamps O-1103 to A-1101	H17-T-350013-733	CTT	151427	151427	A-1102, A-1103, A-1110	6	0	0
A-1103	Same as A-1102	Clamps O-1104 to A-1101	Clamps O-1104 to A-1101								

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
									TOTAL NO. PER EQUIP.	EQUIP.	
										BOX	QUAN.
A-1104	BRACKET: relay support; straight shape, both ends formed; aluminum plain anodized; approx 3 1/4" lg x 2 17/32" wd x 5/8" h o/a, 0.064" thk material; sts by two body holes in wider formed end; embossed w/tapped hole in two places on narrow formed end, two body holes and two embossed ribs on straight side	Support for K-1101		N17-T- 350014-957	CTT	151814	151814	A-1104	1	0	0
A-1105	COVER: black bakelite; approx 2 15/16" lg x 2 3/32" h x 2 17/32" wd o/a, 0.093" thk material; sts by two elongated cutouts; open on two sides	Cover for K-1101		N17-T- 350014-856	CTT	151813	151813	A-1105	1	0	0
A-1108	BASE: steel, nickel pl; "U" shape, bridge has four body holes, two tapped holes and formed down ends, welded side has two tapped holes, other side has two cutout legs, both sides have upright ears; approx 4 13/16" wd x 2 11/16" deep x 2 3/8" h o/a, 0.065" thk material; sts by elongated hole at ea end	Support for A-1109 and misc parts of electrical motor control unit		N17-T- 350013-720	CTT	151401	151401	A-1108	1	0	0
A-1109	FRAME: steel, nickel pl; "U" shape, ea side tapers near bridge, one side has two cutouts w/slots, 7 body holes and one elongated hole, other side has six body holes, bridge has small slot ea side and one elongated hole, insulator riveted to inside of one side; approx 4 1/4" h x 2 1/4" wd x 1 15/16" deep o/a, 0.065" thk material; sts by two bottom holes ea side; stamp 1/8" characters "U. S. PATENT - 1964,268"	Support for also parts of electrical motor control unit		N17-T- 350013-722	CTT	151403	151403	A-1109	1	0	0
A-1110	Same as A-1102	Clamps A-1108 To A-1101									
A-1301	FRAME: steel, nickel pl; irregular shape, "L" shaped, tapped hole, body hole, stud and irregular shaped cutout one side, two studs, mtg holes and irregular shaped cutout other side; approx 3 1/4" lg x 2" h x 1 3/4" wd o/a, 0.065" thk material; sts by elongated slot and two body holes in one side; numerals "1 2 3" stamped on mtg side	Support for printing carriage mechanism		N17-T- 350014-128	CTT	150060	150060	A-1301	1	0	0
A-1302	BRACKET: irregular shape w/3 formed ears, steel, nickel pl; approx 2" lg x 1 3/8" h x 7/16" wd o/a; 0.042" thk material; sts by body hole at ea end of body; oak hole in one ear	Stop for O-1302		N17-T- 350014-617	CTT	150065	150065	A-1302	1	0	0

A-1303	BRACKET: irregular shape w/rounded ends; steel, nickel pl; approx 2 5/16" lg x 1 1/2" h x 1 1/16" wd o/a, 0.035" thk material; sts by hole at ea end; formed arm one end; formed wing w/ two holes other end, "C" shaped forming at end of wing	Advances A-1301 through W-1307	N17-T-350013-963	150238	A-1303	1	0	0
A-1304	BRACKET: irregular shape; steel, nickel pl; approx 1 5/16" lg x 1 9/16" wd x 3/8" h o/a, 0.042" thk material; sts by elongated slot in ctr of body; two formed arms and one straight arm w/oak hole	Trips O-1306 by disengaging O-1312 and O-1306 and latching O-1306 with O-1312 through O-1324	N17-T-350014-130	150053	A-1304	1	0	0
A-1305	BRACKET: code bar guide; irregular shape, both ends and one side formed; cutout in other side; steel, nickel pl; approx 1 1/4" lg x 1 3/32" h x 1 7/32" wd o/a, 0.050" thk material; sts by two tapped holes in formed side; 9 slots in one end, 8 slots in other end	Guide for symbols O-1341 through O-1349	N17-T-350014-158	150304	A-1305	1	0	0
A-1306	BRACKET: irregular "U" shape, steel riveted to one side; steel, nickel pl; approx 1 3/16" lg x 1 5/16" h x 1 13/32" h o/a, 0.050" thk material; sts by two 44-40 holes in one side	Shifts O-1349	N17-T-350014-257	150288	A-1306	1	0	0
A-1307	BRACKET: code bar support; irregular shape, 5 shallow and four deep slots one side, rounded body ear on one corner; aluminum, plain anodized; approx 1 17/32" lg x 1 3/32" h x 1 3/8" wd o/a; sts by two tapped holes through bracket; three tapped and two body holes, irregularly located	Right end guide for symbols O-1341 through O-1349 and guide for symbols O-1351 through O-1356	N17-T-350015-375	152576	A-1307	1	0	0
A-1308	BRACKET: code bar support; irregular shape; aluminum, plain anodized; approx 1 9/16" lg x 1 5/16" wd x 1 15/32" h o/a; sts by two tapped holes in base of "U" shaped side; 9 slots broken by cutout in one side; one body hole and 5 tapped holes irregularly located	Left end guide for symbols O-1341 through O-1349	N17-T-350015-374	152575	A-1308	1	0	0
A-1309	BRACKET: rectangular shape, cutout in ctr, body ear ea end, 9 holes in two rows also two tapped holes ea side; steel, nickel pl; approx 1 13/32" lg x 1 5/16" wd x 1 5/32" h o/a; one round and one oval mtg hole in end ears; "SUP 4 1 5 2 3 CDM 0 3" stamped on top on bracket end "M 3" stamped on end	Mounts O-1361 and O-1362	N17-T-350015-995	152572	A-1309	1	0	0
A-1310	BRACKET: irregular shape, 2 formed mtg arms in line w/ear w/oak hole in ea, formed body arm w/short stud welded near end, lg stud welded to straight body arm, "U" formed bracket welded to bottom, 2 body ears, one w/oak hole, 2 body holes and one tapped hole; steel, nickel pl; approx 2 27/32" lg x 1 31/32" wd x 1 1/2" h o/a; sts by 2 holes in line in formed arms, LH mtg	Supports part of left ribbon feed mechanism	CTT	152827	A-1310	1	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. EQUIP.	EQUIP. QUAN.	STOCK BOX	QUAN.	
					CODE	DESIG.			BOX			
A-1311	BRACKET: circular body w/2 opposite formed ears on circum, one rounded at end w/csk hole, other squared at end; steel, nickel pl; approx 1 3/32" lg x 1/2" wd x 1/8" h o/a, 0.032" thk material; mts by elongated body hole in ctr	Turns O-1364 when left ribbon feed mechanism is engaged, slack take up when disengaged		N17-T-350015-354	CTT	152524	A-1311, A-1319	2	0	0		
A-1312	BRACKET: three irregular shaped extensions, cutout in one, stud welded to another, 2 tapped holes and one body hole; steel, nickel pl; approx 2 3/16" lg x 1 27/32" wd x 2 5/32" h o/a, 0.095" thk material; mts by 2 body holes and one oval hole irregularly spaced	Pivot for A-1310 and mounts left ribbon feed mechanism to A-1391		N17-T-350015-400	CTT	152644	A-1312	1	0	0		
A-1313	BRACKET: "I" shape, body ear on bottom, stud riveted to top; steel, nickel pl; approx 1 1/8" h x 25/32" lg x 19/32" wd o/a, 0.065" thk material; mts by 2 body holes in bottom of "I", LH mtg	Pivot and support for O-1380			CTT	152823	A-1313	1	0	0		
A-1318	BRACKET: irregular shape, 2 formed mtg arms in line w/ear w/csk hole in ea, formed body arm w/short stud welded near end, lg stud welded to straight body arm, "up" formed bracket welded to bottom, 2 body ears, one w/csk hole, 2 body holes and one tapped hole; steel, nickel pl; approx 2 27/32" lg x 1 31/32" wd x 1 1/2" h o/a; mts by 2 holes in line in formed arms, RH mtg	Supports part of right ribbon feed mechanism			CTT	152828	A-1318	1	0	0		
A-1319	Same as A-1311	Turns O-1402 when right ribbon feed mechanism is engaged, slack take-up when disengaged										
A-1320	BRACKET: irregular shape, formed at approx ctr, stud riveted to narrow end, body ear on wd end; steel, nickel pl; approx 1 1/8" h x 21/32" wd x 23/32" lg o/a, 0.065" thk material mts by 2 body holes in wd end, RH mtg	Pivot and support for O-1415			CTT	152824	A-1320	1	0	0		
A-1321	BAR, guide: aluminum, plain anodize; irregular shaped cutout along lg of bar, 42 slots in wd, 7 tapped and 3 body holes in top, 2 sharp staked in cutouts; approx 9 9/32" lg x 1 1/16" wd x 1 1/16" h o/a; mts by tapped hole in ea end; slots numbered in 10's w/arrows	Guide for symbols O-1425 through O-1435 and O-1445 through O-1466		N17-T-350015-271	CTT	152652	A-1321	1	0	0		
A-1322	PLATE, mounting: Steel, nickel pl; 4 tapped holes in a row; approx 2 1/2" lg x 5/8" wd x 1/8" thk o/a; mts by elongated hole and body hole near ends.	Support for signal bell contact mechanism		N17-T-350015-393	CTT	152633	A-1322	1	0	0		

A-1323	PLATE, adjusting; steel, nickel pl; rectangular shape w/2 elongated holes; approx 7/8" lg x 1 1/16" wd x 0.065" thk o/a; mts by 2 tapped holes	Support for letters and figures shift mechanism	N17-T-350015-405	CTT	152655	152655	A-1323	1	0	0
A-1324	BRACKET: irregular shape, 4 formed ears and one arm; steel, nickel pl; approx 3" lg x 2 9/16" h x 1" wd o/a, 0.050" thk material; mts by elongated slot in large ear and tapped hole in curved ear, RH mfg; 3 elongated slots, 4 body holes and one elongated cutout irregularly located	Right side mounting bracket for function box mechanism	N17-T-350015-267	CTT	152627	152627	A-1324	1	0	0
A-1325	BRACKET: irregular shape, 4 formed ears and one arm; steel, nickel pl; approx 3" lg x 2 9/16" h x 1" wd o/a, 0.050" thk material; mts by elongated slot in large ear and tapped hole in curved ear, LH mfg; 3 elongated slots, 4 body holes and one elongated cutout irregularly located	Left side mounting bracket for function box mechanism	N17-T-350015-268	CTT	152626	152626	A-1325	1	0	0
A-1330	BRACKET: irregular shape, one arm and rounded ear w/tapped hole one end, 2 arms other end, one "L" formed w/cutout and 2 tapped holes, 2 iron pole pieces positioned by dowel pins and held to bracket by sealed screws, aluminum plain anodize; approx 2 1/2" lg x 2 13/16" wd x 1 5/32" h o/a; mts by body hole in both rounded arms and tapped hole in "L" formed arm	Support for E-1308, E-1309 and E-1310	N17-T-350015-531	CTT	152413	152413	A-1330	1	0	0
A-1331	BRACKET: "U" shape; nickel silver; approx 1 7/8" lg x 7/8" wd x 21/32" h o/a, 0.020" thk material; mts by 2 small body holes in base; large body hole in ctr of base, two elongated slots in ee side	Support for E-1311	N17-T-350015-108	CTT	152421	152421	A-1331	1	0	0
A-1332	BRACKET: irregular shape, both ends formed, elongated hole in end arm; steel, nickel pl; approx 27/32" lg x 7/8" wd x 13/32" h o/a, 0.072" thk material; mts by body hole in both end ears	Support for and spaces H-1469 and O-1488 from O-1487	N17-T-350015-109	CTT	152423	152423	A-1332	1	0	0
A-1333	BRACKET: connector support; "L" formed; steel, nickel pl; approx 2 3/8" lg x 1 3/16" h x 1 3/8" wd o/a, 0.065" thk material; mts by 2 body holes 1 1/2" c to c in one end, w/cutout in mtg end, two tapped holes, one large and two small cutouts in other end	Support for J-1301	N17-T-350015-719	CTT	152461	152461	A-1333	1	0	0
A-1334	PLATE, mounting; steel, nickel pl; irregular "U" shape, formed ear and body hole near one end, two tapped holes near bottom; approx 3 3/8" lg x 3 3/8" wd x 3/16" h o/a, 0.065" thk material; mts by one large and 2 small body holes	Mounting plate for range scale mechanism	N17-T-350015-335	CTT	152434	152434	A-1334	1	0	0
A-1335	BRACKET: irregular shape formed body, formed wing one end; steel, nickel pl; approx 1 1/16" lg x 3/4" wd x 1/2" h o/a, 0.028" thk material; mts by two body holes in formed wing; 7 open slots one side, 4 closed and one open slot and body hole other side, 2 slots through both sides	Anchor for O-1506 and guide for symbols O-1501 through O-1505 and O-1508 through O-1515	N17-T-350015-321	CTT	152403	152403	A-1335	1	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
									EQUIP.	QUAN.	BOX	STOCK
					MO	DESIG.						
A-1336	BRACKET: irregular shape, both ends formed, spring notch one end, other end has formed side w/one formed body ear, six formed body ears on opposite side; steel, nickel pl; approx 1" lg 19/32" wd x 29/32" h o/a, 0.035" thk material; mts by body hole and slot between formed ends	Anchor for O-1516, O-1517 and O-1519		N17-T-350015-322	CTT	152404	152404	A-1336	1	0	0	
A-1337	BRACKET: irregular shape, one side formed, other side has curved cutout and 2 formed ears-one w/cak hole, other slotted at end; steel, nickel pl; approx 31/32" lg x 23/32" wd x 5/8" h o/a, 0.035" thk material; mts by elongated hole and body hole in formed side	Guide O-1510 and anchor for O-1518		N17-T-350015-324	CTT	152406	152406	A-1337	1	0	0	
A-1338	PLATE, mounting: steel, nickel pl; irregular shape w/ears and cutouts irregularly spaced; approx 5 5/32" lg x 3 9/16" wd x 0.065" thk o/a; mts by 3 body holes irregularly spaced; one large and 3 small body holes and 10 tapped holes irregularly spaced	Support for range scale and selector mechanism		N17-T-350015-318	CTT	152400	152400	A-1338	1	0	0	
A-1344	BRACKET: irregular shape; steel, nickel pl; approx 4 1/4" lg x 1" wd x 7/8" h o/a, 0.050" thk material; mts by 3 body holes and one hole in ear; 4 formed arms, one at end w/2 rectangular cutouts, one rounded w/body hole, one "I" shaped w/2 tapped holes and one opposite w/tapped hole, one elongated and 3 curved cutouts in body, 7 body slots, 4 body holes and one tapped hole in body, 3 tapped holes in ears have welded disks	Guide for symbols O-1351 through O-1356, O-1539 and O-1540		N17-T-350013-880	CTT	150525	150525	A-1344	1	0	0	
A-1345	BRACKET: irregular shape w/2 formed arms; steel, nickel pl; approx 7/8" lg x 7/8" h x 1/2" wd o/a, 0.050" thk material; mts by 2 body holes	Back stop for symbols O-1556 through O-1560		N17-T-350014-702	CTT	150475	150475	A-1345	1	0	0	
A-1346	BRACKET: irregular shape, 2 body holes and formed arm near end, one body hole and formed wing w/body hole and 7 slots near other end; steel, nickel pl; approx 2 11/32" lg x 1 21/32" wd x 1 13/16" h o/a; mts by body hole near end of arm and tapped hole in wing	Guide for symbols O-1556 through O-1560		N17-T-350015-592	CTT	152546	152546	A-1346	1	0	0	
A-1347	BRACKET: "U" shape; steel, nickel pl; approx 7/8" h x 1" lg x 7/8" wd o/a, 0.065" thk material; mts by 3 body slots; elongated cutout in both legs	Guide for O-1540		N17-T-350014-240	CTT	151670	151670	A-1347	1	0	0	

A-1348	TRACK: steel, nickel pl; one side formed, two nlg ears other side; approx 10 5/32" lg x 9/16" h x 1/4" wd o/a, 0.050" thk material; nls by elongated hole in ea ear	Operates A-1304 through O-1326	N17-T-350013-589	150598	150598	150598	A-1348	1	0	0
A-1349	BRACKET: irregular shape, formed both ends, cutout one side w/formed ear; steel, nickel pl; approx 2 13/16" lg x 1 1/2" h x 1" wd o/a, 0.077" thk material; nls by tapped hole near ea end; body hole in ea formed end.	Drives O-1365 through O-1378	N17-T-350013-897	150245	150245	150245	A-1349	1	0	0
A-1355	PLATE, front: steel, nickel pl; irregular shape, both sides formed; 5 irregular shaped holes, 27 round holes, 15 tapped holes and 5 elongated holes, stud welded to body ear on upper sides; approx 15 3/8" lg x 4 7/8" h x 1 3/16" wd o/a, 0.065" thk material; nls by three body holes and elongated hole in lower formed side	Support for front plate mechanism	N17-T-350015-724	152538	152538	152538	A-1355	1	0	0
A-1356	BRACKET: irregular shape, both ends formed, formed body ear near wd end, stud welded near narrow end; steel, nickel pl; approx 1 11/16" lg x 1 1/8" h x 7/8" wd o/a, 0.065" thk material; nls by elongated slot in narrow end and body hole in wd end	Back stop for O-1628 and O-1631 and pivot for O-1621 and O-1624	N17-T-350015-264	152540	152540	152540	A-1356	1	0	0
A-1357	BRACKET: irregular shape, one end rounded, other end formed and irregularly contoured; steel, nickel pl; approx 1 13/16" lg x 1 1/8" h x 13/16" wd o/a; nls by 2 body holes	Anchor for O-1629 and O-1632 and locks O-1667 to A-1355	N17-T-350015-111	152586	152586	152586	A-1357	1	0	0
A-1358	PLATE, mounting: steel, nickel pl; irregular shape w/2 arms w/outlet in ea and formed side; approx 15 3/8" lg x 3 1/2" h x 3/8" wd o/a, 0.050" thk material; nls by 2 large body holes; elongated slot in ea arm, 2 holes in one arm and 3 in other, 8 small holes in body	Support for A-1399, H-1742, H-1757 and O-1675 and guide for A-1348	N17-T-350013-578	150554	150554	150554	A-1358	1	0	0
A-1399	TRACK: steel, nickel pl; straight body w/ grooved forming along top, formed arm curved under at ea end, 4 large and 3 small elongated slots, one body hole; approx 11 3/8" lg x 1 13/16" h x 11/32" wd o/a, 0.083" thk material; nls by hole at end of ea arm and 2 holes in body	Track for A-1301	N17-T-350015-376	152579	152579	152579	A-1399	1	0	0
A-1360	BRACKET: irregular shape, both ends rounded, formed ear one end; approx 1 11/16" lg x 3/4" h x 3/8" wd o/a, 0.065" thk material; nls by tapped hole and body hole in ea end, LH nlg	Stop for O-1372	N17-T-350015-347	152508	152508	152508	A-1360	1	0	0
A-1361	BRACKET: irregular shape, both ends rounded, formed ear one end; steel, nickel pl; approx 1 11/16" lg x 3/4" h x 3/8" wd o/a, 0.065" thk material; nls by tapped hole and body hole in ea end, LH nlg	Stop for O-1366	N17-T-350015-348	152509	152509	152509	A-1361	1	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

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PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX	EQUIP.	STOCK BOX	QUAN.
A-1362	PLATE, clamp; steel, nickel pl; irregular shape w/elongated cutout end formed arm; approx 1 1/16" lg x 7/16" h x 7/16" wd o/a, 0.042" thk material; mts by 2 body holes	Clamps W-1307 to O-1705		N17-T-CTT 350014-218	150531	150531	A-1362	1	0	0		
A-1370	PLATE; mounting; aluminum, black anodize; irregular shape, 2 ears on bottom, arm riveted to one ear and fitted over tapped bushing press fitted to other ear, cutout in top, 5 body holes irregularly located; approx 3 5/16" lg x 1 3/4" h x 7/32" thk o/a; mts by body hole at ea end of cutout and ID of bushing staked to same ear as tapped bushing	Support for O-1943 and O-1907		N17-T-CTT 350015-589	152502	152502	A-1370	1	0	0		
A-1371	TRACK; steel, black oxide finish; straight body w/both ends tapered from one side, 5 elongated slots in ctr, "w" formed stiffener strip welded to track by 12 ears; approx 13 5/16" lg x 13/16" h x 1/4" wd o/a; mts by two body holes one end and 2 elongated slots other end	Track for A-1370 and vertically positions O-1943		N17-T-CTT 350014-294	150824	150824	A-1371	1	0	0		
A-1372	BRACKET; irregular shape; steel, nickel pl; approx 2 1/4" lg x 1 7/16" h x 7/8" wd o/a, 0.065" thk material; mts by one elongated and one body hole; formed arm w/spring post riveted at end and body hole in ea of 2 curves	Drives O-1933 through H-1939		N17-T-CTT 350014-643	150367	150367	A-1372	1	0	0		
A-1373	HOUSING; steel, nickel pl; approx 1 1/2" OD x 3/4" ID x 5/8" thk o/a; mts by 3 tapped holes; dish out, cutout to ID, 2 slots and eak hole in circum	Shield for O-1817		N17-T-CTT 350015-999	152593	152593	A-1373	1	0	0		
A-1374	PLATE, front; type box; steel, black oxidize; irregular shaped ends, both sides formed, 2 pointed ears one side, formed ear and body ea other side, 64 rectangular perforations on face; approx 3 3/16" lg x 1" h x 15/32" wd o/a, 0.025" thk material; mts by elongated hole near ea end; "LTHS" and "FIOS" stamped on one side	Front guide plate for type pallets		N17-T-CTT 350015-661	152559	152559	A-1374	1	0	0		
A-1375	PLATE, rear; type box; steel, black oxidize; irregular shaped ends, both sides formed, formed ear and cutout one side, two guard plates and 64 rectangular perforations on face; approx 3 3/16" lg x 1" h x 5/16" wd o/a, 0.025" thk material; mts by elongated hole near ea end	Rear guide plate for type pallets		N17-T-CTT 350015-662	152560	152560	A-1375	1	0	0		

A-1376	BRACKET: irregular shape; steel, nickel pl; approx 1 1/2" lg x 1 5/8" h x 1 7/32" wd o/a, 0.095" thk material; sts by 2 elongated holes; one end formed w/body hole in outcut area; formed arm w/body hole near end and stud riveted at bend	Operates O-2017 and O-2006 through H-1984	M17-T-350014-642	150366	150366	A-1376	1	0	0
A-1380	BRACKET: spring anchor; irregularly curved and formed; steel, nickel pl; approx 3 19/32" lg x 2 1/4" h x 1 13/16" wd o/a, 0.095" thk material; sts by 4 tapped holes; one body hole and 5 oak holes irregularly spaced	Anchor for O-1732, O-1743, O-1748, O-1751 and O-1755, support for O-1740 and retains O-2095 in slot of O-2093	M17-T-350014-635	150357	150357	A-1380	1	0	0
A-1381	BRACKET: irregular shape, one end formed w/2 ears, 2 formed ears, 2 body ears, 4 studs and 2 body holes in body; steel, nickel pl; approx 3 15/16" lg x 2 13/16" h x 1 7/16" wd o/a, 0.065" thk material; sts by 2 tapped holes; one body hole in formed end	Pivot for O-2102 and O-2108, support for H-2113, O-2094 and O-2115, stop for O-2089 and anchor for O-2109	M17-T-350015-110	152563	152563	A-1381	1	0	0
A-1382	BRACKET: "L" shape; steel, nickel pl; approx 1 7/8" lg x 13/16" h x 31/32" wd o/a, 0.065" thk material; sts by 2 tapped holes in bottom of arm; spring post and 2 studs riveted to facing sides	Retains O-2096 and O-2097 in slots of O-2093 and pivot for O-2104 and O-2106	M17-T-350015-665	152711	152711	A-1382	1	0	0
A-1383	BRACKET: "L" shape; steel, nickel pl; approx 1 15/32" lg x 7/8" h x 3/8" wd o/a, 0.065" thk material; sts by 2 body holes in short side; rectangular slot in lg side near end	Guide for O-2104	M17-T-350014-205	150557	150557	A-1383	1	0	0
A-1384	BRACKET: irregular shape; steel, nickel pl; approx 9 1/8" lg x 2 1/4" h x 1 1/2" wd o/a, 0.035" thk material; sts by body hole in short ear and elongated slot in lg ear; body slants down one end and curves up on other end, formed arm on one side w/formed mtg ear at end of one arm	Guides and feeds paper to O-2028	M17-T-350014-368	150840	150840	A-1384	1	0	0
A-1385	BRACKET: "L" formed w/outout and ear at forming, one side formed; steel, nickel pl; approx 1 1/4" lg x 9/16" h x 5/8" wd o/a, 0.035" thk material; sts by 2 holes in straight side of "L"	Clamps O-2143 to O-2142 and guides paper to O-2136	M17-T-350013-977	150274	150274	A-1385	1	0	0
A-1389	FRAME: steel, nickel pl; irregular shape, formed at 3 places, 8 irregular shaped holes-6 w/formed ears, 7 elongated holes-2 curved, one rectangular shaped hole, 44 body holes and 21 tapped holes- one w/weld disc; approx 9 11/16" h x 8 3/8" lg x 1 11/16" wd o/a, 0.065" thk material; sts by 2 tapped holes w/weld discs in large formed wing and body hole in small formed wing, RH mtg	Right side frame for automatic typer	M17-T-350015-663	152580	152580	A-1389	1	0	0
A-1390	BRACKET: "L" shape; steel, nickel pl; approx 7/8" lg x 11/16" wd x 5/9" h o/a, 0.095" thk material; sts by 2 tapped holes in curved end and one tapped hole in squared end; RH mtg	Support for A-1324	M17-T-350014-210	150545	150545	A-1390	1	0	0

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SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
									TOTAL NO. PER EQUIP.	BOX	EQUIP. QUAN.	STOCK BOX
A-1391	FRAME: steel, nickel pl; irregular shape, formed at 4 places, 2 formed ears, 4 irregular shaped holes- 3 w/formed ears- one at upper formed wing, 6 elongated holes, one rectangular hole, 39 body holes and 18 tapped holes, 2 studs riveted to frame; approx 9 11/16" h x 8 3/8" lg x 1 17/32" wd o/a, 0.065" thk material; sts by 2 tapped holes w/weld discs in large formed wing and body hole in lower formed wing, LH mtg; "1" and "2" stamped in upper formed wing	Left side frame for automatic typur		N17-T- 350015-664	CTT	152581	152581	A-1391	1	0	0	
A-1392	BRACKET: "L" shape; steel, nickel pl; approx 7/8" lg x 1 1/16" wd x 5/8" h o/a, 0.095" thk material; sts by 2 tapped holes in curved end and one tapped hole in squared end; LH mtg	Support for A-1325		N17-T- 350014-209	CTT	150546	150546	A-1392	1	0	0	
B-501	MOTOR, AC; synchronous type; 1/20 hp, 3600 rpm; open frame, 2 poles; 40° C max temp rise; thermal overload; #6-40 tapped hole in shaft for pinion; approx 6 13/16" lg x 3 25/32" diam, 3/8" diam shaft protrudes 1 7/16" one end; 115v AC, 60 cyc, single ph, 9 asp starting, 2 asp running 0.4 pf; CTT frame 19; clamp mtg; 2 ball type oilers on ea end cap, combination fan, handwheel, 2 internal ventilating fans; ball bearings, 30 oz inch starting torque, aluminum parts anodized, steel parts cadmium pl	Operates components of TT-47/UG or TT-69/UG		N17-T- 350015-873	CTT	151795	151795	B-501	1	0	0	
B-502	FAN: turbine type; electric motor operated; aluminum blades; approx 3 1/8" OD x 3/8" ID x 2 1/32" wd o/a; direct drive; sts by body hole through hub	Cools synchronous motor		N17-T- 350015-102	CTT	123769	123769	B-502	1	0	0	
B-601	MOTOR, AC; series type; 1/20 hp, 3600 rpm ± 1% governed speed; open frame w/screen in one end, 2 poles; temp rating 40° C; #6-40 tapped hole in ea end of shaft for pinion and governor; approx 6 1/16" lg x 3 27/32" h x 3 31/32" wd, 3/8" diam shaft protrudes 1 7/16" on ea end; 115v AC, 60 cyc, single ph, 2.6 asp starting, 1.6 asp running, 0.8 pf; CTT frame 66H; clamp mtg; 2 ball type oilers on ea end, slip rings, brush holders, internal brush filter capacitors; ball bearing, 28 oz inch starting torque, aluminum parts anodized, steel parts cadmium pl	Operates components of TT-48/UG or TT-70/UG		N17-T- 350015-872	CTT	150701	150701	B-601	1	0	0	

B-603	FAN: 16 fins equally spaced on circum, threaded shank in ctr - one side, insulator, shield, insulator, collector ring, insulator, collector ring, insulating washer and nut std on threaded shank, other side irregularly shaped elongated rises in outport, shank in ctr cut flat one side w/collector ring wires extending through fan on 2 sides, slot around circum; approx 1 1/2" lg x 3 1/2" OD x 3/8" ID; sts by ID; 2 tapped holes in ea rise, body hole tapped one end through shank on flat side	Cools series motor and support for governor mechanism	M17-T-3500L-364	CTT	150997	B-603	1	0	0
C-501	CAPACITOR, fixed: electrolytic; 43 to 48 mfd; 125v AC working voltage; working temp 50° C max; approx 3 3/16" lg x 1 3/32" diam o/a; tubular ins jacket over aluminum can; 2 solder lug terminals 3/8" h on top	Starting capacitor for synchronous motor	M16-C-19925-1001	CSF	TPE AY7	C-501	1	0	0
C-601	CAPACITOR, fixed: mica; 800 mfd; 500 vdc; approx 5/8" wd x 1 1/4" h x 1" lg less terminals; bakelite; two wire lead term; spring on end of one term	Electrical noise suppressor for E-607	M17-T-3500L-806	CTT	122233	C-601, C-602	2	0	0
C-602	Same as C-601	Electrical noise suppressor for E-608							
C-603	CAPACITOR, fixed: paper dielectric w/ aluminum foil; one section; .5 mfd ± 20%; 1000 vdc; metal casing, hermetically sealed; approx 2 1/4" h x 1 5/16" lg x 5/8" wd; mineral oil impregnated; 2 solder lugs located at top; clamp not included	Spark suppressor for E-611 and E-612	M16-C-47325-8532	OMC-1050	150979	C-603	1	0	0
E-101	INSULATOR, plate: rectangular shape w/curved ends; natural color bakelite; approx 2 1/4" lg x 1" wd x 1/16" thk o/a; sts by 2 holes; figures #1 2 3 4" once across top and bottom	Insulates TB-101 from keyboard base	* M17-T-3500L-353	CTT	150966	E-101, E-102	2	0	0
E-102	Same as E-101	Insulates terminals of TB-101							
E-103	INSULATOR, plate: rectangular shape; black bakelite, PS grade; approx 1 11/16" lg o/a; 5/8" wd x 1/16" thk; sts by notch in ea end	Insulator guard for J-101	M17-T-3500L-5-722	CTT	152464	E-103, E-1312	4	0	0
E-109	WASHER, insulating: natural or black bakelite; round, approx 9/32" OD x 3/32" ID x 0.015" thk o/a	Insulates O-383 from H-414	M17-T-3500L-478	CTT	151182	E-109	1	1	1
E-110	INSULATOR, bushing: cylindrical shape; black bakelite, grade xz; 5/32" lg o/a; approx 1/4" OD x 3/32" ID, body 3/16" diam	Insulates O-383 from H-413	M17-T-3500L-477	CTT	151183	E-110	1	1	1
E-111	SCREW, contact: wrench drive; Hex H; steel, nickel pl; #4-40; approx 7/16" lg o/a; 3/16" lg threaded portion; head 5/32" thk x 1/4" across flats; 1/8" diam x 1/32" thk tungsten point brased on head	Sends spacing and marking impulses through mating and breaking with O-383 and holds E-112 to A-140	M17-T-3500L-464	CTT	151173	E-111	2	1	2

* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

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PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX	EQUIP.	STOCK	
					CO DESIG.				QUAN.		QUAN.	
E-112	TERMINAL, lug: nickel silver; approx 7/32" wd x 3/8" lg x 1/8" h o/a, 0.015" thk material; solder connects to wire; rounded end w/concentric hole, other end curved w/formed ear in cutout	Termination for conductor from Z-101		N17-T-CTT 350014-480	151179	151179	E-112	2	0	0		
E-113	TERMINAL, lug: nickel silver approx 1 1/16" lg x 5/16" h x 3/16" wd o/a, 0.032" thk material; solder connects to wire; wye shaped cutout one side, formed ear (tinned dipped) and rectangular cutout other side, small arm same side	Terminal for O-383 and conductor from Z-101		N17-T-CTT 350014-432	151177	151177	E-113	1	1	1		
E-501	ROTOR, motor: c/o shaft w/armature in ctr, bladed shield, pull washer and ball bearing on ea side of armature; steel w/copper bars; 115v, 2 amp; 1/20 hp, 3600 rpm; approx 9 5/8" lg x 2" diam o/a; bearing shoulders diam approx 1/2", bearing centers approx 4 1/4" apart; tapped hole near ea end of shaft	Operates O-265, O-267 or O-268 and B-501		N17-T-CTT 350014-715	122255	122255	E-501	1	0	0		
E-502	INSULATOR, plate: rectangular w/ both corners cutout on one side, FS grade, natural color bakelite; approx 2 9/16" lg o/a; 1 3/8" wd x 1/32" thk, two 1/8" diam mtg holes 2 9/32" c to c	Insulates K-501 from A-504		* N17-T-CTT 350014-952	151924	151924	E-502	1	0	0		
E-503	WASHER, flat: natural color bakelite, FS grade; round, approx 9/32" OD x 1/8" ID x 0.031" thk o/a	Insulates S-501 from mounting hardware		N17-T-CTT 350009-623	87334	87334	E-503	4	0	0		
E-601	ARMATURE, motor: c/o shaft w/armature in approx ctr, pull washer and ball bearing on ea side of armature; steel w/copper wire; 115v, 2 amp; 1/20 hp, 3600 rpm; approx 9" lg x 2 1/4" diam o/a; approx diam of bearing shoulders 3/4" and 1/2", bearing centers 4 7/8" apart; motor number stamped on armature; tapped hole through shaft near ea end	Operates O-265, O-267 or O-268 and B-603		N17-T-CTT 350014-914	122210	122210	E-601	1	0	0		
E-602	WASHER, flat: fiber; round, approx 1 1/2" OD x 17/32" ID x 0.010" thk o/a	Insulates C-601 and C-602 from O-603		N17-T-CTT 350010-170	91837	91837	E-602	2	0	0		
E-603	INSULATOR, plate: rectangular shape; mica; 2 1/8" lg o/a; 1 3/8" wd x 1/32" thk	Insulates R-601 from C-603		N17-T-CTT 350015-426	152058	152058	E-603, E-606	2	0	0		
E-604	BRUSH, electrical contact: carbon, Natl Carbon grade "AT", rectangular shape, approx 3/4" lg x 5/16" wd x 1/8" thk, shunt 1 1/4" lg; mts by hole in term plate soldered to shunt; concave contact; round groove opposite contact end	Electrical contact brush for E-612		N17-T-CTT 350014-314	150882	150882	E-604, E-605	2	1	2		
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E-605	Same as E-604	Electrical contact brush for E-611	E-611	122205	E-607, E-608	2	1	2
E-606	Same as E-603	Insulates terminals of E-601 from H-640	E-601	122205	E-607, E-608	2	1	2
E-607	BRUSH, electrical contact; carbon brush; rectangular shape, approx 11/16" lg x 3/8" wd x 1/8" thk o/a, 1 3/4" lg spring w/term at end, digital connects from brush to terminals by term commutator; end concave	Completes series circuit, electrical contact brush for E-601	E-601	122205	E-607, E-608	2	1	2
E-608	Same as E-607	Completes series circuit, electrical contact brush for E-601	E-601	122205	E-607, E-608	2	1	2
E-611	CONTACT, governor; irregularly formed arm w/flat spring and plate riveted to one end, tungsten point brazed to other end; approx 2" lg x 7/16" h x 1/4" wd o/a; mts by hole in spring; hole in approx ctr of arm	Opens and closes resistance circuit for series motor	E-611	150856	E-611	1	1	1
E-612	SCREW, contact; wrench drive; steel, nickel pl; #6-32; approx 3/8" lg o/a; 3/16" lg threaded portion; head 3/32" thk x 1/4" across flats; 1/4" diam x 1/16" thk contact brazed on head	Contact for resistance circuit of series motor	E-612	6320	E-612	1	1	1
E-613	WASHER, flat; natural color bakelite; round, approx 1/2" OD x 1/4" ID x 1/32" thk o/a;	Insulates A-617 from H-665	E-613	150849	E-613, E-616, E-619	6	0	0
E-614	INSULATOR, bushing; round; natural color grade XX bakelite; approx 1/8" lg o/a; 7/32" OD x 1/8" ID	Insulates A-617 from H-663	E-614	150868	E-614, E-617, E-620	6	0	0
E-615	INSULATOR, plate; oblong shape; natural color bakelite; approx 1 1/4" lg x 11/16" wd x 1/32" thk o/a; mts by 2 holes	Insulates A-617 from B-603	E-615	150850	E-615, E-618, E-621	3	0	0
E-616	Same as E-613	Insulates A-618 from H-673	E-616	150850	E-615, E-618, E-621	3	0	0
E-617	Same as E-614	Insulates A-618 from H-670 and H-671	E-617	150868	E-614, E-617, E-620	6	0	0
E-618	Same as E-615	Insulates A-618 from B-603	E-618	150850	E-615, E-618, E-621	3	0	0
E-619	Same as E-613	Insulates A-619 from H-677	E-619	150850	E-615, E-618, E-621	3	0	0
E-620	Same as E-614	Insulates A-619 from H-674 and H-675	E-620	150850	E-615, E-618, E-621	3	0	0
E-621	Same as E-615	Insulates A-619 from B-603	E-621	150850	E-615, E-618, E-621	3	0	0
E-751	LAMP, incandescent; 6-v, 1.14 amps, 6 of; bulb G-6 clear; 1 7/16" lg o/a; miniature bayonet base; C-28 filament; burn any position	Illuminates copy	E-751	151982	E-751, E-752, I-751	3	1	4
E-752	Same as E-751	Illuminates copy	E-752	151982	E-751, E-752, I-751	3	1	4

STANDARD DESIGNATIONS E-751 TO E-760 INCLUSIVE USED ON CT-870/UG AND CT-871/UG CABINETS

* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated."

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS CO DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	PARTS		
								PER EQUIP.	EQUIP.	STOCK
								BOX	QUAN.	BOX
E-753	INSULATOR, plate; rectangular shape; grade P, natural color bakelite; approx 16" lg x 2 7/16" h x 0.016" thk o/a; sts by six holes irregularly spaced in row; white figures "1" through "50" stamped or stenciled across lg	Insulates TB-751, TB-752 and TB-753 from cabinet shell		* N17-T-350014-757	151435	151435	E-753	1	0	0
E-758	ARMATURE ASSEMBLY: steel, nickel pl; "L" shape, c/o striker ball riveted to clapper, which is welded to arm, plate welded to other end of arm; approx 1/2" wd x 1 3/4" lg x 1 9/16" h o/a; sts by 2 holes one end; arm formed at one end, 2 rectangular cutouts on arm	Rings I-752 when attracted by E-759		N17-T-350014-779	151567	151567	E-758	1	0	0
E-759	MAGNET: 150 ohms $\pm$ 10%, #34 wire, 4,000 turns, 500 vac; approx 1 1/2" lg x 1" wd x 1 3/32" h o/a; sts by tapped hole in bottom	Attracts E-758		N17-T-350013-603	247M	247M	E-759, E-1110	2	0	0
E-760	KNOB: "pear" shape; gray bakelite; for 1/4" diam shaft; two #8-32 slotted type set screws; approx 1 5/8" lg x 19/32" h x 3/4" wd o/a; brass insert	Operates O-770		N17-T-350014-851	HARRY DAVIES WOLD 12110	151556	E-760	1	1	1
E-1101	INSULATOR, plate; rectangular w/curved ends; natural color bakelite; approx 4 1/16" lg x 1" wd x 1/16" thk o/a; sts by hole near ea end; characters "1" through "9" stamped on side, equally spaced	Insulator plate for TB-1101		* N17-T-350013-727	151412	151412	E-1101, E-1103, E-1108	3	0	0
E-1102	STRAP, terminal; nickel silver; two elongated cutouts forming three rounded ears; approx 1" lg x 9/16" h x 0.020" thk o/a; sts by 3 body holes at ends of rounded ears	Connects H-1110 terminals		N17-T-350015-880	152755	152755	E-1102	2	0	0
E-1103	Same as E-1101	Insulator plate for TB-1102								
E-1108	Same as E-1101	Insulator plate for TB-1104								
E-1109	WASHER, flat; gray fibre; round, approx 1/2" OD x 3/16" ID x 1/16" thk o/a	Insulates R-1101 from A-1108, H-1162 and H-1163		N17-T-350005-764	5816	5816	E-1109	2	0	0
E-1110	Same as E-759	Attracts E-1112								
E-1111	INSULATOR, plate; rectangular; natural color bakelite; approx 2 1/4" lg x 3/4" wd x 0.016" thk o/a; sts by hole on end	Insulates S-1104 from A-1109		* N17-T-350013-723	151406	151406	E-1111	1	0	0
E-1112	ARMATURE: steel w/2 bakelite insulators; c/o lg strip irregularly cutout one end w/ elongated slot, formed in approx ctr, insulator riveted on ea side between irregular shaped cutout and forming, armature riveted to other end, 2 body holes near ctr; approx 2 5/8" lg x 1" h x 1/8" wd o/a; sts by slotted ear on ea corner of wd end;	Operates S-1104 and S-1105		N17-T-350013-734	151432	151432	E-1112	1	0	0

* "Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated."

E-1113	ARMATURE: iron, nickel pl irregular shape w/2 rounded ends, 2 irregular shaped arms w/outlet between on one side, arm w/outlet on other side, 2 brass rivets welded near end of body; approx 1 11/16" h x 1 3/4" lg x 0.049" thk o/a; sts by irregular shaped arms; body hole near outlet	Operates E-1112		N17-T-350013-763	151409	151409	E-1113	1	0	0
E-1114	MAGNET: 132 ohm resistance, 500v AC breakdown test; approx 1 1/2" lg x 1 1/4" h x 1 1/16" wd o/a; sts by ID through lg	Attracts E-1113		N17-T-350013-605	246M	246M	E-1114, E-1115	2	0	0
E-1115	Same as E-1114	Attracts E-1113								
E-1301	SPRING, contact; nickel silver; one end formed w/notch on one side, other end has irregular shaped bakelite fitting; approx 2" lg x 3/16" h x 3/8" wd o/a, 0.015" thk material; sts by round outlet near formed end; cent point riveted and soldered near bakelite fitting	Mates with E-1302 and operates E-799		N17-T-350013-588	150588	150588	E-1301	1	0	0
E-1302	SPRING, contact; nickel silver; one end formed w/2 notches; approx 1 5/8" lg x 3/16" h x 1/8" wd o/a, 0.032" thk material; sts by round outlet near formed end; cent point riveted and soldered near straight end	Mates with E-1301 and operates E-799		N17-T-350013-584	150576	150576	E-1302	1	1	1
E-1303	INSULATOR, bushing; tubular shape; natural color, grade xx bakelite; approx 1/4" lg o/a; 3/16" OD x 1/8" ID	Insulates E-1301 and E-1302 from E-1416		N17-T-350013-921	150553	150553	E-1303	2	0	0
E-1304	INSULATOR, plate; rectangular shape; black, PS grade bakelite; 1 25/32" lg o/a; 1/2" wd x 0.062" thk; sts by body hole near end; two body holes in row w/leg holes, all holes 7/16" o to o	Insulates E-1301 from O-137 and retains E-1301 in slot of E-1305		N17-T-350014-199	150571	150571	E-1304	1	0	0
E-1305	RAH, contact mounting; black bakelite; approx 1 3/4" lg x 1/2" wd x 1/8" thk o/a; sts by four holes; four slots across wd	Insulates E-1301 from E-1302 and retains E-1302 in slot of E-1306		N17-T-350014-198	150572	150572	E-1305	1	0	0
E-1306	RAH, contact mounting; molded black bakelite; approx 1 3/4" lg x 1/2" wd x 1/16" thk o/a; sts by four body holes; 4 slots across wd	Insulates E-1302 from A-1322		N17-T-350014-197	150573	150573	E-1306	1	0	0
E-1308	MAGNET: 3600 turns, #33 wire, 132 w + 108 resistance, 500 vacs; approx 1 13/16" lg x 1 1/16" h x 7/8" wd o/a; sts by ID; #250 stamped near term; supplied w/2 CTT #1028 screws and #2138 washers	Attracts E-1310		N17-T-350015-103	250M	250M	E-1308, E-1309	2	1	1
E-1309	Same as E-1308	Attracts E-1310								
E-1310	ARMATURE: o/o are extension w/formed sides and slot, copper spring, clamp plate, and arm w/out hole riveted together; approx 1 15/16" lg x 7/8" wd x 7/32" h o/a; sts by 2 body holes in spring	Attracted to E-1308 and E-1309 on line impulses		N17-T-350015-332	152422	152422	E-1310	1	1	1
E-1311	SHIELD, terminal; natural color bakelite; rectangular shape, 4 cutouts one side; approx 2" lg x 5/8" wd x 0.047" thk o/a; sts by 2 end ears	Insulator guards for terminals of E-1308, E-1309 and E-1302		N17-T-350014-993	152458	152458	E-1311	2	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	CODING	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS		
										EQUIP.	STOCK	
											QUAN.	QUAN.
E-1312	Same as E-103	Insulator guards for J-1301										
F-1101	FUSE, cartridge: 10 amp, 135% load for one hour; 125 volts or less; one time; ceramic body; ferrule terminals; nonindicating; approx 1 1/4" lg x 1/4" diam o/a	Protects one side of power circuit		N17-T-CTT 14327-30		ABC	151418	F-1101, F-1102	2	1	2	
F-1102	Same as F-1101	Protects one side of power circuit										
H-101	SCREW, machine: slot or wrench drive; Hex H; steel, nickel pl; 1/4" - 32; approx 2" lg o/a; 7/16" lg threaded portion; head 1 9/16" lg x 5/16" across flats	Holds keyboard base to cabinet		N17-T-CTT 350014-862		151549	151549	H-101	4	0	0	
H-102	WASHER, lock: stainless steel, round, approx 1 1/32" OD x 3/16" ID x 0.022" thk o/a; shakeproof-type, twisted external teeth	Holds keyboard base to cabinet		N17-T-CTT 350014-929		151572	151572	H-102	4	0	0	
H-103	STUD: steel, nickel pl; approx 7/8" lg x 5/16" OD o/a; shank end thd #6-40 3/16" lg; body has 1/8" diam hole, front end tapers to 3/32" diam.	Holds H-106 to keyboard base and locating guide for right and left side frames		N17-T-CTT 350014-461		151116	151116	H-103	2	0	0	
H-104	SCREW, machine: slot drive; FH; steel, nickel pl; #6-40; approx 7/16" lg o/a; 3/8" lg threaded portion; head 1/16" thk x 7/32" diam	Holds H-106 to keyboard base		N17-T-CTT 350013-709		151346	151346	H-104, H-233, H-240, H-291, H-292, H-1398, H-1773, H-1776, H-1779, H-1862, H-2020, H-2022, H-2073, H-2078, H-2127, H-105, H-111, H-114, H-118, H-120, H-122, H-132, H-169, H-173, H-185, H-201, H-219, H-234, H-241, H-243, H-245, H-261, H-263, H-266, H-271, H-283, H-327, H-334, H-346, H-350, H-352, H-362, H-507, H-524, H-527, H-605, H-610, H-612, H-614, H-617, H-619, H-621, H-624, H-626, H-628, H-630, H-632, H-635, H-638, H-661, H-664, H-672, H-676, H-679, H-682, H-754, H-758, H-797, H-802, H-820, H-1102, H-1105, H-1108, H-1113, H-1117, H-1127, H-1131, H-1135, H-1138, H-1141, H-1144, H-1150, H-1156, H-1161, H-1164, H-1180, H-1183, H-1305, H-1313, H-1316,	27	1	10	
H-105	WASHER, lock: steel; round, approx 1/4" OD x 5/32" ID x 1/32" thk o/a; split ring type	Holds H-106 to keyboard base		N17-T-CTT 350005-561		2191	2191		362	1	35	

H-1320, H-1338, H-1345,
H-1349, H-1354, H-1363,
H-1369, H-1371, H-1376,
H-1380, H-1397, H-1399,
H-1401, H-1430, H-1432,
H-1435, H-1439, H-1441,
H-1443, H-1474, H-1477,
H-1479, H-1481, H-1485,
H-1488, H-1490, H-1493,
H-1495, H-1511, H-1516,
H-1518, H-1522, H-1524,
H-1543, H-1546, H-1553,
H-1557, H-1559, H-1561,
H-1564, H-1566, H-1568,
H-1572, H-1575, H-1577,
H-1580, H-1584, H-1590,
H-1597, H-1608, H-1611,
H-1622, H-1625, H-1644,
H-1646, H-1648, H-1652,
H-1677, H-1683, H-1686,
H-1689, H-1691, H-1695,
H-1698, H-1701, H-1703,
H-1717, H-1723, H-1727,
H-1748, H-1750, H-1761,
H-1766, H-1769, H-1771,
H-1774, H-1777, H-1780,
H-1784, H-1790, H-1796,
H-1802, H-1811, H-1832,
H-1833, H-1842, H-1844,
H-1855, H-1857, H-1859,
H-1861, H-1863, H-1871,
H-1874, H-1884, H-1886,
H-1897, H-1931, H-1934,
H-1938, H-1940, H-1948,
H-1959, H-1961, H-1963,
H-1974, H-1977, H-1980,
H-1985, H-1997, H-2000,
H-2010, H-2021, H-2023,
H-2025, H-2031, H-2036,
H-2053, H-2056, H-2062,
H-2064, H-2072, H-2074,
H-2077, H-2079, H-2094,
H-2097, H-2100, H-2102,
H-2104, H-2106, H-2108,
H-2112, H-2114, H-2124,
H-2126, H-2128, H-2131,
H-2138, H-2147, H-2149,
H-2152, H-2173, H-2175,
H-2177, H-2180, H-2187

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST											
PARTS										SPARE PARTS	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP. QUAN.	STOCK QUAN.
					CO	DESIG.				BOX	BOX
H-106	STRAP, mounting: steel, nickel pl; approx 1 3/16" lg x 5/8" wd x 1/8" thk o/a; sts by small tapped hole at curved end, large tapped hole at other end	Locks right and left side frames to keyboard base		N17-T-CTT 350014-472	CTT	151146	151146	H-106, H-123	4	0	0
H-107	SCREW, pilot: slot or wrench drive; Hex H; steel, nickel pl; 1/4" - 32; approx 1 1/16" lg o/a; 9/32" lg threaded portion; head 3/16" thk x 3/8" across flats; pilot 3/8" lg x 3/16" diam, tapered at end; split ring lock washer held captive between head and threaded portion	Holds right and left side frames to keyboard base		N17-T-CTT 350014-593	CTT	151678	151678	H-107	4	1	2
H-108	SCREW, machine: slot drive; FH; steel, nickel pl; #6-40; approx 3/8" lg o/a; 5/16" lg threaded portion; head 1/16" thk x 7/32" diam	Terminal screw for TB-101		N17-T-CTT 350014-242	CTT	151658	151658	H-108, H-117, H-200, H-361, H-613, H-616, H-620, H-627, H-631, H-634, H-1104, H-1375, H-1473, H-1476, H-1484, H-1571, H-1621, H-1624, H-1651, H-1685, H-1760, H-1937, H-1945, H-1973, H-1994, H-1999, H-2146	47	1	10
H-109	NUT, hexagon: steel, nickel pl; #6-40; approx 5/32" thk o/a; 1/4" across flats	Holds H-108 to TB-101		N17-T-CTT 350005-509	CTT	1036	1036	H-109	4	0	0
H-110	STUD: steel, nickel pl; approx 7/8" lg x 1/4" across flats o/a; shank end threaded 1/4" lg w/ #6-40 thd; head threaded 3/16" deep w/ #6-40 thd; Hex H 5/16" lg	Holds TB-101 to keyboard base and spaces E-102		N17-T-CTT 350013-705	CTT	151335	151335	H-110, H-756	8	0	0
H-111	Same as H-105	Holds TB-101 to keyboard base									
H-112	NUT, hexagon: steel, nickel pl; #6-40; 3/32" thk o/a; approx 1/4" across flats	Holds TB-101 to keyboard base		N17-T-CTT 350012-485	CTT	3598	3598	H-112, H-170, H-180, H-277, H-285, H-318, H-328, H-335, H-347, H-755, H-786, H-821, H-1109, H-1151, H-1157, H-1165, H-1302, H-1314, H-1317, H-1489, H-1491, H-1519, H-1544, H-1547, H-1578, H-1585, H-1591, H-1598, H-1609, H-1612, H-1678, H-1692, H-1696, H-1791, H-1800, H-1803, H-1834, H-1887, H-1928, H-1932, H-1935, H-1941, H-1949, H-1970, H-1978, H-1981, H-1986, H-1998, H-2026, H-2032, H-2054, H-2057, H-2095, H-2098, H-2115, H-2181, H-2183	79	1	20

Part Number	Description	Material	Quantity	Unit	Notes
H-113	SCREEN, machine; slot drive; PH; steel, nickel pl; #6-40; approx 5/16" lg o/a; 1/4" lg threaded portion; head 1/16" thk x 7/32" diam	PH; steel, nickel pl	93	1	15
H-114	Same as H-105	PH; steel, nickel pl			
H-115	LATCH, lever; steel, nickel pl; irregular shape, one end curved, undercut and formed ear below curve; approx 1 1/4" h x 7/8" lg x 3/16" wd o/a; 0.035" thk material; sts by notch in ea side near ctr, LH mtg	PH; steel, nickel pl	2	0	0
H-116	LATCH, lever; steel, nickel pl; irregular shape, one end curved, undercut and formed ear below curve; approx 1 1/4" h x 7/8" lg x 3/16" wd o/a; 0.035" thk material; sts by notch in ea side near ctr; RH mtg	PH; steel, nickel pl	2	0	0
H-117	Same as H-108	PH; steel, nickel pl			
H-118	Same as H-105	PH; steel, nickel pl			
H-119	SCREEN, machine; slot drive; PH; steel, nickel pl; #6-40; approx 1/4" lg o/a; 3/16" lg threaded portion; head 1/16" thk x 7/32" diam	PH; steel, nickel pl	52	1	4
H-120	Same as H-105	PH; steel, nickel pl			
H-121	Same as H-119	PH; steel, nickel pl			
H-122	Same as H-105	PH; steel, nickel pl			
H-123	Same as H-106	PH; steel, nickel pl			
H-124	SCREEN, machine; slot drive; PH; steel, nickel pl; 1/4" - 32; approx 1 1/16" lg o/a; 1/2" lg threaded portion; head 3/16" thk x 3/8" across flats	PH; steel, nickel pl	6	1	2

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS			
									EQUIP.	STOCK	QUAN.	QUAN.
H-125	WASHER, lock: steel; round, approx 1/2" OD x 1/4" ID x 0.047" thk o/a; split-ring type	Holds A-102 to keyboard base		N17-T-35001-169	CTT 2449	2449	H-125, H-529, H-760, H-767	14	1		4	
H-126	SCREW, set: slot drive; F4; steel, nickel pl; #4-40; approx 1/4" lg o/a; 3/16" lg threaded portion; head 1/16" thk x 3/16" diam	Holds A-103 to keyboard base		N17-T-350001-130	CTT 110434	110434	H-126, H-181, H-1335, H-1339, H-1346, H-1351, H-1495, H-1504, H-1506, H-1508, H-1888, H-1965, H-2040, H-2042, H-2058, H-2170, H-2184	34	1	10		
H-127	WASHER, lock: steel; round, approx 3/16" OD x 1/8" ID x 0.020" thk o/a; split-ring type	Holds A-103 to keyboard base		N17-T-35001-388	CTT 110743	110743	H-127, H-175, H-177, H-182, H-190, H-193, H-195, H-198, H-217, H-255, H-258, H-275, H-279, H-310, H-325, H-354, H-357, H-383, H-385, H-389, H-396, H-399, H-403, H-407, H-416, H-418, H-421, H-424, H-429, H-435, H-462, H-464, H-466, H-468, H-468, H-1309, H-1336, H-1340, H-1343, H-1347, H-1352, H-1360, H-1364, H-1377, H-1395, H-1411, H-1414, H-1417, H-1419, H-1422, H-1425, H-1461, H-1463, H-1466, H-1471, H-1500, H-1502, H-1505, H-1507, H-1509, H-1545, H-1615, H-1617, H-1619, H-1634, H-1656, H-1666, H-1675, H-1705, H-1709, H-1713, H-1729, H-1746, H-1753, H-1826, H-1825, H-1836, H-1839, H-1847, H-1849, H-1852, H-1865, H-1868, H-1876, H-1878, H-1881, H-1889, H-1891, H-1894, H-1916, H-1922, H-1925, H-1956, H-1966, H-2004, H-2007, H-2028, H-2038, H-2041, H-2043, H-2045, H-2059, H-2066, H-2135, H-2141, H-2155, H-2158, H-2171, H-2185	196	1	10		
H-128	SCREW, machine: slot drive; F4; steel, nickel pl; #2-56; approx 7/16" lg o/a; 3/8" lg threaded portion; head 1/16" thk x 3/16" diam	Holds S-101 to A-103		N17-T-350013-359	CTT 125181	125181	H-128	2	1	1		

H-129	SCREW, machine; slot drive; FH; steel, nickel pl; #4-40; approx 1/2" lg o/s; 5/32" lg threaded portion incl neck; head 1/16" lg x 5/32" diam; shoulder 5/16" lg x 5/32" diam	Bearing for and holds O-103 to A-103	N17-T-350013-792	102057	102057	H-129	1	1	1
H-130	NUT, hexagon steel, nickel plated; #4-40; 3/32" thk o/s; approx 3/16" across flats	Holds O-123 to A-103	N17-T-350012-486	3599	3599	H-130, H-152, H-154, H-157, H-161, H-165, H-187, H-191, H-196, H-199, H-256, H-259, H-273, H-287, H-289, H-320, H-390, H-419, H-441, H-1365, H-1367, H-1378, H-1404, H-1423, H-1464, H-1503, H-1616, H-1618, H-1620, H-1662, H-1714, H-1794, H-1806, H-2156, H-2159	53	1	10
H-131	Same as H-119	Holds Z-101 to keyboard base							
H-132	Same as H-105	Holds Z-101 to keyboard base							
H-148	SCREW, machine; slot drive; FH; steel, nickel pl; #2-56; approx 1/2" lg o/s; 7/16" lg threaded portion; head 1/16" thk x 1/8" diam	Holds S-104 to A-108	N17-T-350005-535	1178	1178	H-148	2	1	1
H-149	WASHER, flat; steel, nickel pl; round, approx 3/16" OD x 3/32" ID x 0.020" thk o/s	Holds S-104 to A-108	N17-T-350013-188	71073	71073	H-149, H-323	4	1	1
H-150	STUD; steel, nickel pl; 3/4" lg x 5/16" across flats; one end threaded 3/16" lg w/ #4-40 thd, other end threaded 5/32" lg w/ #4-40 thd; small shoulder on both sides of hex portion	Mounting shaft for U-120	N17-T-350015-316	151879	151879	H-150	1	1	1
H-151	WASHER, lock; steel; round, approx 1/4" OD x 1/8" ID x 0.016" thk o/s; shake proof-type, straight internal teeth	Holds H-150 to A-108	N13-4-6808-5540	1204-00	90951	H-151, H-153, H-156, H-160, H-164	5	1	2
H-152	Same as H-130	Holds H-150 to A-108							
H-153	Same as H-151	Holds O-120 on H-150							
H-154	Same as H-130	Holds O-120 on H-150							
H-155	STUD; steel, nickel pl; 17/32" lg x 5/16" across flats o/s; one end threaded 5/32" lg w/ #4-40 thd, blank w/alot at other end; shoulder on ee side of hex portion	Bearing for O-125	N17-T-350015-312	151886	151886	H-155, H-159, H-163	3	1	3
H-156	Same as H-151	Holds H-155 to A-108							
H-157	Same as H-130	Holds H-155 to A-108							

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS C D E	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS			
									EQUIP.		STOCK	
									BOX	QUAN.	BOX	QUAN.
H-158	RING, retainer: steel, nickel pl; "C" shape w/ two int cutouts; approx 9/32" OD x 1/8" ID x 0.025" thk o/a;	Retains O-125 on H-155		N17-T- 350013-301	WALLACE 5133-15	119651	H-158, H-162, H-166, H-348, H-409, H-410, H-1303, H-1307, H-1318, H-1321, H-1355, H-1357, H-1361, H-1373, H-1391, H-1392, H-1603, H-1604, H-1670, H-1673, H-1721, H-1723, H-1936, H-1982, H-2119, H-2121, H-2144, H-2145	31	1	10		
H-159	Same as H-155	Bearing for O-128										
H-160	Same as H-151	Holds H-159 to A-108										
H-161	Same as H-130	Holds H-159 to A-108										
H-162	Same as H-158	Retains O-128 on H-159										
H-163	Same as H-155	Bearing for O-130										
H-164	Same as H-151	Holds H-163 to A-108										
H-165	Same as H-130	Holds H-163 to A-108										
H-166	Same as H-158	Retains O-130 on H-163										
H-167	SCREW, pilot: wrench or slot drive; Hex H; steel, nickel pl; #6-40; approx 27/32" lg o/a; 5/16" lg threaded portion incl slot; head 3/32" thk x 3/16" across flats; 7/16" lg x 3/32" diam pilot	Stop for O-260		N17-T- 350010-628	CTT 95499	95499	H-167	1	0	0		
H-168	WASHER, flat: steel, nickel pl; round, approx 5/16" OD x 5/32" ID x 0.028" thk o/a	Holds H-167 to A-108		N17-T- 350005-776	CTT 7002	7002	H-168, H-172, H-220, H-267, H-525, H-615, H-622, H-633, H-636, H-660, H-665, H-673, H-677, H-686, H-753, H-819, H-1103, H-1128, H-1132, H-1136, H-1145, H-1163, H-1181, H-1184, H-1306, H-1372, H-1402, H-1486, H-1512, H-1562, H-1581, H-1623, H-1626, H-1649, H-1688, H-1699, H-1724, H-1751, H-1767, H-1772, H-1789, H-1801, H-1947, H-1996, H-2001, H-2132, H-2178	76	1	20		

Part Number	Description	Quantity	Part Number	Description	Quantity	Part Number	Description	Quantity	Part Number	Description	Quantity
H-169	Same as H-105		H-174	SCREW, machine: slot drive; PH; steel, nickel pl; #4-40; approx 9/16" lg o/s; 1/2" lg threaded portion; head 3/16" diam x 1/16" thk	5	H-179	Pivot for and mounts O-138 on A-109	1	H-183	H-183, H-189, H-197, H-430, H-520, H-1310, H-1421, H-1501, H-1550, H-1676, H-1710, H-1712, H-1754, H-1917, H-1957, H-1967, H-2005, H-2008, H-2047, H-2060, H-2136	10
H-170	Same as H-112		H-175	Same as H-127		H-180	Locks H-179 to A-109		H-184		
H-171	Same as H-113		H-176	SCREW, machine: slot drive; PH; steel, nickel pl; #4-40; approx 11/16" lg o/s; threaded portion 5/8" lg; head 3/16" diam x 1/16" thk	3	H-181	Holds A-112 to O-152		H-185		
H-172	Same as H-168		H-177	Same as H-127		H-182	Holds A-112 to O-152		H-186		
H-173	Same as H-105		H-178	NUT, cap: round; steel, nickel pl; #4-40; approx 7/32" lg o/s; 3/16" diam body, 5/16" diam knurled cap	0	H-183	Holds A-112 to O-152		H-187		
H-174	SCREW, machine: slot drive; PH; steel, nickel pl; #4-40; approx 9/16" lg o/s; 1/2" lg threaded portion; head 3/16" diam x 1/16" thk	5	H-179	SCREW, pilot: slot drive; PH; steel, nickel pl; #6-40; approx 3/4" lg o/s; 5/8" lg threaded portion; head 1/16" thk x 1/4" diam; pilot at end of threaded portion	1						
H-175	Same as H-127		H-180	Same as H-112							
H-176	SCREW, machine: slot drive; PH; steel, nickel pl; #4-40; approx 11/16" lg o/s; threaded portion 5/8" lg; head 3/16" diam x 1/16" thk	3	H-181	Same as H-126							
H-177	Same as H-127		H-182	Same as H-127							
H-178	NUT, cap: round; steel, nickel pl; #4-40; approx 7/32" lg o/s; 3/16" diam body, 5/16" diam knurled cap	0	H-183	WASHER, flat; steel, nickel pl; round, approx 1/8" ID x 1/4" OD x 1/32" thk	1						
H-179	SCREW, pilot: slot drive; PH; steel, nickel pl; #6-40; approx 3/4" lg o/s; 5/8" lg threaded portion; head 1/16" thk x 1/4" diam; pilot at end of threaded portion	1									
H-180	Same as H-112										
H-181	Same as H-126										
H-182	Same as H-127										
H-183	WASHER, flat; steel, nickel pl; round, approx 1/8" ID x 1/4" OD x 1/32" thk	1									
H-184	Same as H-113										
H-185	Same as H-105										
H-186	SCREW, shoulder: slot drive; PH; steel, nickel pl; #4-40; approx 1 1/4" lg o/s; 7/64" lg threaded portion; head 1/16" thk x 1/4" diam; slot between shoulder and threaded portion	1									
H-187	Same as H-130										

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS		
					CODE	DESIG.				BOX	EQUIP.	STOCK
H-188	SCREW, shoulder: slot drive; FH; steel, nickel pl; #4-40; approx 3/8" lg o/a; 1/4" lg threaded portion; head 1/16" lg x 1/4" diam; shoulder 1/16" lg x 5/32" diam; slot between shoulder and threaded portion	Holds O-150 to A-111		N17-T-350013-710	CTT	151350	151350	H-188	1	1	1	
H-189	Same as H-183	Holds O-150 to A-111										
H-190	Same as H-127	Holds O-150 to A-111										
H-191	Same as H-130	Holds O-150 to A-111										
H-192	SCREW, machine: slot drive; FH; steel, nickel pl; #4-40; approx 5/16" lg o/a; 1/4" lg threaded portion; head 1/16" thk x 3/16" diam	Holds A-111 to O-152		N17-T-350013-756	CTT	151637	151637	H-192, H-274, H-278, H-512, H-515, H-521, H-1359, H-1394, H-1410, H-1418, H-1424, H-1674, H-1752, H-1793, H-1805, H-1915, H-2003, H-2044	37	1	7	
H-193	Same as H-127	Holds A-111 to O-152										
H-194	STUD; steel, nickel pl; approx 11/16" lg x 5/16" across flats o/a; shoulder end threaded 5/32" lg w/#4-40 thd, eccentric end threaded 7/32" lg w/#4-40 thd	Bearing for O-153		N17-T-350015-582	CTT	152250	152250	H-194	1	1	1	
H-195	Same as H-127	Holds H-194 to A-109										
H-196	Same as H-130	Holds H-194 to A-109										
H-197	Same as H-183	Holds O-153 on H-194										
H-198	Same as H-127	Holds O-153 on H-194										
H-199	Same as H-130	Holds O-153 on H-194										
H-200	Same as H-108	Holds A-109 to keyboard base										
H-201	Same as H-105	Holds A-109 to keyboard base										
H-216	SCREW, pilot: wrench drive; Hex H; steel, nickel pl; #4-40; approx 9/32" lg o/a; 3/32" lg threaded portion, incl slot; head 1/16" thk x 3/16" across flats; 1/8" lg x 5/64" diam pilot	Pivot for O-174		N17-T-350014-444	CTT	151082	151082	H-216	1	1	1	
H-217	Same as H-127	Locks H-216 to O-173										
H-218	Same as H-113	Holds O-173 to A-109										
H-219	Same as H-105	Holds O-173 to A-109										
H-220	Same as H-168	Holds O-173 to A-109										

H-221	SCREW, machine: slot or wrench drive; hex H; steel, nickel pl; #10-32; approx 1 1/32" lg o/a; 3/8" lg threaded portion; head 3/32" thk x 5/16" across flats	Holds O-252 to keyboard base	N17-T-3500LU-602	CTT	151723	151723	H-221	1	1	2
H-222	WASHER, lock: steel; round, approx 1 1/32" OD x 3/64" ID x 0.047" thk o/a; split ring type	Holds O-252 to keyboard base	N17-T-3500LU-122	CTT	2669	2669	H-222, H-225, H-228, H-231, H-339, H-359, H-1641, H-1658, H-1681, H-1763, H-1755, H-1758, H-1763, H-1953, H-1989, H-2068, H-2070, H-2189, H-2192	24	1	10
H-223	WASHER, flat: steel, nickel pl; round, approx 7/16" OD x 3/16" ID x 0.050" thk	Holds O-252 to keyboard base	N17-T-3500LU-622	CTT	3438	3438	H-223, H-230	2	1	2
H-224	SCREW, machine: slot or wrench drive; hex H; steel, nickel pl; #10-32; approx 2 1/32" lg o/a; 5/8" lg threaded portion; head 3/32" thk x 5/16" across flats	Holds O-253 to keyboard base	N17-T-3500LU-603	CTT	151724	151724	H-224	2	0	0
H-225	Same as H-222	Holds O-253 to keyboard base								
H-226	BUTTON, pivot: steel, nickel pl; approx 1/2" OD x 3/16" ID x 5/32" thk o/a; mts by ID	Adjustment pivot for O-253	N17-T-3500LU-600	CTT	151712	151712	H-226	2	0	0
H-227	SCREW, machine: slot drive; PH; steel, nickel pl; #10-32; approx 2 1/32" lg o/a; 3/4" lg threaded portion; head approx 3/32" thk x 9/32" diam	Locks O-253 in position	N17-T-3500LU-604	CTT	151725	151725	H-227, H-229	2	0	0
H-228	Same as H-222	Locks O-253 in position								
H-229	Same as H-227	Provides adjustment for mating of O-257 and O-1842 through O-253								
H-230	Same as H-223	Holds O-255 to O-253								
H-231	Same as H-222	Holds O-255 to O-253								
H-232	NUT, hexagon: steel, nickel pl; #10-32; approx 3/32" thk o/a; 5/16" across flats	Holds O-255 to O-253	N17-T-3500LU-694	CTT	112626	112626	H-232, H-340, H-360, H-1659, H-1744, H-1756, H-1759, H-1764, H-1954, H-1990, H-2190, H-2193, H-2199, H-2197	15	1	5
H-233	Same as H-104	Locks O-257 to O-255								
H-234	Same as H-105	Locks O-257 to O-255								
H-235	WASHER, flat: steel, nickel pl; round, approx 1 1/32" thk x 2 1/32" OD x 3/8" ID o/a	Spaces O-260 and O-254	N17-T-3500LU-698	CTT	151246	151246	H-235	1	0	0
H-240	Same as H-104	Locks O-267 or O-268 to E-501 or E-601								
H-241	Same as H-105	Locks O-267 or O-268 to E-501 or E-601								

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS			
										EQUIP.		STOCK	
										BOX	QUAN.	BOX	QUAN.
H-242	SCREW, machine: slot or wrench drive; Hex H; steel, nickel pl; #6-40; approx 3/8" lg o/a; 5/16" lg threaded portion; head 1/16" thk x 1/4" across flats	Holds O-269 or O-270 to O-255		N17-T-350013-754	151631	151631	151631	H-242, H-1396, H-1574	5	1	2		
H-243	Same as H-105	Holds O-269 or O-270 to O-255											
H-244	Same as H-119	Holds A-119 to keyboard base											
H-245	Same as H-105	Holds A-119 to keyboard base											
H-246	RING, retainer: steel, nickel pl; "M" shape w/two int cutouts; approx 11/32" OD x 5/32" ID x 0.025" thk o/a	Retains O-271 to A-119		N17-T-350013-800	5133-18	5133-18	119652	H-246, H-251, H-252, H-312, H-336, H-341, H-432, H-1322, H-1358, H-1353, H-1405, H-1551, H-1586, H-1592, H-1595, H-1600, H-1601, H-1602, H-1606, H-1650, H-1707, H-1720, H-1782, H-1814, H-1910, H-1942, H-1943, H-1944, H-1950, H-1951, H-1983, H-1987, H-1991, H-1992, H-1993, H-2002, H-2116, H-2117, H-2118, H-2120	49	1	20		
H-251	Same as H-246	Retains O-278 to A-121 and O-279 on O-278											
H-252	Same as H-246	Retains O-283 on O-278											
H-253	SCREW, machine: slot drive; FH; steel, nickel pl; #4-40; approx 13/32" lg o/a; 5/32" lg threaded portion; 5/16" diam x 3/32" thk head; 5/32" diam x 1/8" lg shoulder; slot between shoulder and threaded portion	Pivot for and holds O-280 to O-279		N17-T-350013-656	152122	152122	152122	H-253	1	0	0		
H-254	WASHER, flat: steel, nickel pl; round, approx 5/16" OD x 1/8" ID x 0.060" thk o/a	Holds O-280 to O-279		N17-T-350002-674	85957	85957	85957	H-254	1	0	0		
H-255	Same as H-127	Holds O-280 to O-279											
H-256	Same as H-130	Holds O-280 to O-279											
H-257	SCREW, shoulder: slot drive; FH; steel, nickel pl; #4-40; approx 5/16" lg o/a; 3/16" lg threaded portion incl slot; head 1/16" thk x 5/16" diam; shoulder 1/16" lg x 5/32" diam	Pivot for and holds O-284 to O-283		N17-T-350013-789	96717	96717	96717	H-257, H-1513	2	1	2		
H-258	Same as H-127	Holds O-284 to O-283											

[illegible]

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIGN.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS M O C	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS			
									BOX	EQUIP.	BOX	QUAN.
H-282	Same as H-119	Holds A-126 to A-125										
H-283	Same as H-105	Holds A-126 to A-125										
H-284	SCREW, pilot; slot or wrench drive; Hex H; steel, nickel pl; #6-40; approx 1/2" lg o/s; 11/32" lg threaded portion; head 1/16" thk x 1/4" across flats; 3/32" diam x 3/32" lg pilot	Pivot for O-291		N17-T-350013-678	CTT 151224	151224	H-284	2	1	1		
H-285	Same as H-112	Locks H-284 in position										
H-286	Same as H-186	Pivot for and holds O-292 to O-291										
H-287	Same as H-130	Holds O-292 to O-291										
H-288	Same as H-186	Pivot for and holds O-293 to O-292										
H-289	Same as H-130	Holds O-293 to O-292										
H-290	SCREW, shoulder; slot drive; FH; steel, nickel pl; #4-40; approx 1/4" lg o/s; 1/16" lg threaded portion; head 1/16" thk x 7/32" diam; shoulder 1/16" lg x 5/32" diam; slot between shoulder and threaded portion	Pivots and holds O-291 to O-294		N17-T-350013-677	CTT 151223	151223	H-290	2	1	1		
H-291	Same as H-104	Holds A-127 to A-125										
H-292	Same as H-104	Holds O-295 to A-125										
H-293	"WINDOW, plastic; clear lucite, frosted finish one side; beveled one end, over laps sides and other end; approx 2 1/8" wd x 4 7/16" lg x 1/8" thk o/s; mts by elliptical hole near one end and groove along other end	Protects data card		N17-T-350014-848	CTT 151353	151353	H-293	2	0	0		
H-294	SCREW, machine; slot drive; FH; steel, black oxide; #2-56; approx 1/2" lg o/s; 3/16" lg threaded portion; 3/16" diam x 0.043" thk head	Holds H-293 to O-295		N17-T-350013-712	CTT 151354	151354	H-294	2	1	2		
H-309	SCREW, machine; slot or wrench drive; Hex H; steel, nickel pl; #4-40; approx 1/4" lg o/s; 3/16" lg threaded portion; head 1/16" thk x 3/16" across flats	Holds O-316 to O-315		N17-T-350014-476	CTT 151152	151152	H-309, H-384, H-395 H-420, H-428, H-434, H-639, H-641, H-643, H-655, H-657, H-667, H-1308, H-1342, H-1548, H-1708, H-1728	35	1	10		
H-310	Same as H-127	Holds O-316 to O-315										
H-311	WASHER, flat; steel, nickel pl; round, approx 1/4" OD x 1/8" ID x 0.028" thk o/s	Holds O-316 to O-315			2034	2034	H-311, H-386, H-388 H-397, H-408, H-422, H-1173, H-1176	12	1	2		
H-312	Same as H-246	Retains O-315 on H-313										

H-313	SCREW, pilot; slot drive; F11 steel, nickel pl; 1/4"-32; approx 1 1/8" lg o/a; 11/32" dia threaded portion; 3/32" thk x 7/16" dia head; 11/32" dia x 1/16" lg shoulder; slot between shoulder and threaded portion; slot near end of 9/16" lg x 3/16" dia pilot	Pivot for O-310 and O-315	N17-T-350014-421	CTT	151057	151057	H-313	1	1	1
H-314	WASHER, flat; steel, nickel pl; round, approx 1/32" thk x 13/32" OD x 7/32" ID o/a	Spacers O-310 and O-315	N17-T-350014-683	CTT	151229	151229	H-314	1	0	0
H-315	WASHER, flat; steel, nickel pl; round, approx 1/2" OD x 1/4" ID x 0.030" thk o/a	Spacers H-316 from A-132	N17-T-350012-310	CTT	111767	111767	H-315	1	0	0
H-316	NUT, hexagon; steel, nickel pl; 1/4"-32; 3/32" thk o/a; approx 3/8" across flats	Holds H-313 to A-132	N17-T-350005-740	CTT	3995	3995	H-316	1	1	2
H-317	STD; steel, nickel pl; approx 5/8" lg x 1/4" dia o/a; one end threaded 13/32" lg w/6-40 thd; slot across threaded end, oak hole other end w/small body hole in side	Mounts A-117	N17-T-350014-711	CTT	151162	151162	H-317	1	0	0
H-318	Same as H-112	Holds H-317 to A-132								
H-319	SCREW, pilot; slot drive; F11 H; steel, nickel pl; 5/16"-40; approx 5/8" lg o/a; 7/16" lg threaded portion; head 1/16" thk x 5/32" dia; pilot at end of threaded portion	Pivot for O-318	N17-T-350014-411	CTT	151041	151041	H-319	1	1	1
H-320	Same as H-130	Locks H-319 to A-132								
H-321	SCREW, machine; slot drive, F11 H; steel, nickel pl; 1/2"-56; approx 1 1/4" lg o/a; 3/16" lg threaded portion; head 1/16" thk x 1/8" dia	Holds O-319 to O-318	N17-T-350013-155	CTT	1164	1164	H-321, H-411, H-1918	6	1	2
H-322	WASHER, lock; steel; round, approx 3/16" OD x 1/8" ID x 0.010" thk o/a; shake-proof type; straight internal teeth	Holds O-319 to O-318	N17-T-350012-243	CAXO	1202	90791	H-322, H-414, H-1913, H-1919	6	1	3
H-323	Same as H-149	Holds O-319 to O-318								
H-324	STD; steel, nickel pl; approx 7/16" lg x 3/16" across flats o/a; shank end thd 4-40 3/16" lg; o/a head, hex shoulder, slot and shank	Stop for O-315	N17-T-350014-418	CTT	151054	151054	H-324	1	1	1
H-325	Same as H-127	Locks H-324 to A-132								
H-326	STD; steel, nickel pl; approx 9/16" lg x 1/4" dia o/a; pilot end threaded 5/32" lg w/6-40 thd; pilot w/drive slot on threaded end, short eccentric shank w/slot at other end	Pivot for O-328	N17-T-350014-581	CTT	151213	151213	H-326	1	0	0
H-327	Same as H-125	Holds H-326 to A-132								
H-328	Same as H-112	Holds H-326 to A-132								
H-329	RING, retainer; steel, nickel pl; "C" shape w/ two int cutouts; approx 3/16" OD x 1/16" ID x 0.015" thk o/a	Retains O-320 on H-326	N17-T-350013-796	WALDS	119648	119648	H-329, H-344, H-401, H-405, H-433, H-1426, H-1427, H-1428, H-1413	13	1	5

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
								PER EQUIP.	EQUIP.	STOCK
									BOX	QUAN
H-330	RING, retainer: steel, nickel pl; "C" shape w/two int cutouts; approx 5/32" OD x 1/16" ID x 0.010" thk o/a	Retains O-321 to O-320 and O-322 on O-321		N17-T-350013-797	WALDES 5133-6	119647	H-330	3	1	2
H-331	POST, spring: steel, nickel pl; approx 5/8" lg x 1/8" diam o/a; sts by threaded end; groove near slotted end	Anchor for O-325		N17-T-350003-233	CTT 92668	92668	H-331	1	1	1
H-332	POST, spring: steel, nickel pl; approx 3/8" lg x 1/8" diam o/a; sts by approx 3/32" lg threaded shank; o/o slotted head, neck, body, slot and shank	Anchor for O-329		N17-T-350013-421	CTT 86720	86720	H-332	1	1	1
H-333	STUD: steel, nickel pl; approx 2 1/16" lg x 3/8" across flats o/a; one end threaded 1/4" lg w/86-40 thd; shank w/ slot one end, two slots around body	Pivot for O-324		N17-T-350014-979	CTT 151837	151837	H-333	1	1	1
H-334	Same as H-105	Holds O-323 and H-333 to A-132								
H-335	Same as H-112	Holds O-323 and H-333 to A-132								
H-336	Same as H-246	Retains O-324 on H-333								
H-337	RING, retainer: steel, nickel pl; "C" shape w/2 int cutouts; approx 1/4" OD x 3/32" ID x 0.015" thk o/a	Retains O-327 on H-333		N17-T-350013-799	WALDES 5133-12	119649	H-337, H-379, H-391, H-394, H-427, H-1679, H-1715, H-1911, H-2110, H-2122	13	1	5
H-338	STUD: steel, nickel pl; approx 1 7/8" lg o/a; one end threaded 3/16" lg w/10-32 thd; hex head 5/16" across flats, shank on one end, body on other end w/groove near ea end, slot between body and cap	Pivot for O-328		N17-T-350014-579	CTT 151207	151207	H-338	1	0	0
H-339	Same as H-222	Holds H-338 to A-132								
H-340	Same as H-232	Holds H-338 to A-132								
H-341	Same as H-246	Retains O-328 on H-338								
H-342	STUD: steel, nickel pl; approx 15/16" lg x 5/16" diam o/a; pilot end threaded 3/16" lg w/ 3/16"-40 thd; drive slot across pilot, short shank w/slot other end, shoulder tapered toward short shank	Mounts O-332		N17-T-350012-410	CTT 151039	151039	H-342	1	1	1
H-343	NUT, hexagon: steel, nickel pl; 3/16"-40; 3/32" thk o/a; approx 5/16" across flats	Holds H-342 to O-328								
H-344	Same as H-329	Retains O-332 on H-342		N17-T-350012-457	CTT 5475	5475	H-343	1	1	1

H-345	H-346	H-347	H-348	H-349	H-350	H-351	H-352	H-353	H-354	H-355	H-356	H-357	H-358	H-359	H-360	H-361	H-362	H-377	H-378	H-379
STUD, steel, nickel pl; approx 23/32" lg x 1/4" across flats o/a; one end threaded 5/32" lg w/4-40 thd, shank w/slot other end, neck around both ends	Same as H-105	Same as H-112	Same as H-158	Same as H-119	Same as H-105	SCREW, machine; slot drive; FH; steel; nickel pl; #6-40; approx 13/16" lg o/a; 3/16" lg threaded portion; head 7/32" diam x 1/16" thk	Same as H-105	SCREW, machine; slot or wrench drive; Hex H; steel, nickel pl; #4-40; approx 1/4" lg o/a; 3/16" lg threaded portion; head 1/16" thk x 3/16" across flats	Same as H-127	WASHER, flat; steel, nickel pl; round, approx 7/32" OD x 1/8" ID x 1/32" thk o/a	Same as H-353	Same as H-127	WASHER, extruded; steel, nickel pl; round, approx 1" OD x 5/16" ID x 5/32" thk o/a; extruded 3/32" x 5/8" diam	Same as H-222	Same as H-232	Same as H-108	Same as H-105	STUD, steel, nickel pl; approx 1/2" lg x 3/16" across flats o/a; one end threaded 3/16" lg int slot, o/4-40 thd; slot near end of plain shank	NOT, hexagon; steel, nickel pl; #4-40; 3/64" thk o/a; approx 3/16" across flats	Same as H-337
Shaft for O-333	Holds H-345 to O-328	Holds H-345 to O-328	Retains O-333 and O-334 on H-345	Holds O-335 to keyboard base	Holds O-335 to keyboard base	Holds A-132 to keyboard base	Holds A-132 to keyboard base	Holds O-337 to O-338	Holds O-337 to O-338	Holds O-337 to O-338	Holds O-249 to O-337	Holds O-349 to O-337	Spacers and retains O-352 on O-349	Holds cam clutch mechanism on O-347	Holds cam clutch mechanism on O-347	Holds O-346 to A-132	Holds O-346 to A-132	Bearing for O-367	Holds H-377 to A-136	Retains O-367 on H-377
M17-T-350015-418						M17-T-350013-759		M17-T-350014-785		M17-T-350013-176		M17-T-350014-424						M17-T-350014-422		M17-T-350009-576
151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018	151018
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								PER EQUIP.	EQUIP.	STOCK	QUAN.
									BOX	BOX	QUAN.
H-380	SCREW, shoulder: slot drive; FH; steel, nickel pl; #2-56; approx 1/4" lg o/a; 1/8" lg threaded portion; head 1/16" lg x 3/16" diam; shoulder 1/32" lg x 1/8" diam; slot between shoulder and threaded portion	Pivot for and holds O-369 to O-367		N17-T-35001A-471 CTT	151145	151145	H-380	1	1	1	
H-381	NUT, hexagon: steel, nickel pl; #2-56; approx 1/16" thk o/a; 3/16" across flats	Holds H-380 to O-367		N17-T-35000A-695	112627	112627	H-381, H-191A, H-1920	4	1	2	
H-382	SCREW, pilot: slot drive; FH; steel, nickel pl; #4-40; approx 3/8" lg o/a; 3/32" lg threaded portion; 1/16" thk x 3/16" diam head; 3/32" diam x 7/32" lg pilot	Stop for O-367		N17-T-350012-544	6801	6801	H-382	1	0	0	
H-383	Same as H-127	Locks H-382 to A-137									
H-384	Same as H-309	Holds A-137 to A-136									
H-385	Same as H-127	Holds A-137 to A-136									
H-386	Same as H-311	Holds A-137 to A-136									
H-387	STUD: steel, nickel pl; approx 1/2" lg x 1/4" diam o/a, shoulder 1/16" lg x 1/8" diam; shank end #4-40 thd 3/16" lg; body has slot near end, head has 2 cutouts	Bearing for O-371		N17-T-35001A-457	151098	151098	H-387	1	1	1	
H-388	Same as H-311	Holds H-387 to A-136									
H-389	Same as H-127	Holds H-387 to A-136									
H-390	Same as H-130	Holds H-387 to A-136									
H-391	Same as H-337	Retains O-371 on H-387									
H-392	Same as H-377	Bearing for O-373									
H-393	Same as H-378	Holds A-392 to A-136									
H-394	Same as H-337	Retains O-373 on H-392									
H-395	Same as H-309	Holds O-375 to A-136									
H-396	Same as H-127	Holds O-375 to A-136									
H-397	Same as H-311	Holds O-375 to A-136									
H-398	STUD: steel, nickel pl; approx 3/8" lg x 3/16" across flats o/a; one end threaded, 1/8" lg w/#4-40 thd; plain shank has one slot	Bearing for H-400		N17-T-35001A-420	151056	151056	H-398, H-402	2	1	1	
H-399	Same as H-127	Locks H-398 to A-136									
H-400	WASHER, flat; steel; round, approx 3/16" OD x 3/32" ID x 0.042" thk o/a	Roller for O-376									
H-401	Same as H-329	Retains H-400 on H-398									

PARTS LISTS

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGSection 8
H-402—H-424

Part Number	Description	Material	Quantity	Unit	Remarks	Notes
H-402	Bearing for H-404		1	0	0	
H-403	Locks H-402 to A-136		1	0	0	
H-404	Roller for O-378		1	0	0	
H-405	Retains H-404 on H-402		1	0	0	
H-406	Pivot for O-380 and holds O-375 to A-136		1	0	0	
H-407	Holds O-375 to A-136		1	0	0	
H-408	Holds O-375 to A-136		1	0	0	
H-409	Retains O-380 on H-406		1	0	0	
H-410	Retains O-382 on O-380		1	0	0	
H-411	Holds O-386 to A-136		1	0	0	
H-412	Holds O-386 to A-138		1	0	0	
H-413	Holds O-383 to A-140		1	0	0	
H-414	Holds O-383 to A-140		1	0	0	
H-415	Holds A-138 and A-140 to A-141		1	0	0	
H-416	Holds A-138 and A-140 to A-141		1	0	0	
H-417	Holds A-138, A-139 and A-140 to A-141		1	0	0	
H-418	Holds A-138, A-139 and A-140 to A-141		1	0	0	
H-419	Holds A-139 to H-417		1	0	0	
H-420	Holds K-101 to A-136		1	0	0	
H-421	Holds K-101 to A-136		1	0	0	
H-422	Holds K-101 to A-136		1	0	0	
H-423	Pivot for O-318		1	0	0	
H-424	Holds H-423 to A-136		1	0	0	

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST													
PARTS										SPARE PARTS			
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX	QUAN.	BOX	QUAN.
					CO	DESIG.							
H-425	NUT, cap; hex cap, round body; steel, nickel pl; #4-40; approx 1/8" h; 3/16" wd across flats	Holds H-423 to A-136		N17-T-350014-908	CTT	151812	151812	H-425	1	0	0		
H-426	STUD: steel, nickel pl; approx 1 1/8" lg x 3/16" across flats; one end threaded 3/32" lg #4-40 thd; drive slot across end of plain shank	Stop for selector levers O-404 through O-410		N17-T-350014-419	CTT	151055	151055	H-426	1	1	1		
H-427	Same as H-337	Retains O-389 to O-388											
H-428	Same as H-309	Holds O-388 to A-136											
H-429	Same as H-127	Holds O-388 to A-136											
H-430	Same as H-183	Holds O-388 to A-136											
H-431	STUD: steel, nickel pl; approx 1 5/32" lg x 1/4" across flats o/a; shank end threaded 3/32" lg #6-40 thd; body has 2 grooves and one slot	Pivot for O-399		N17-T-350014-423	CTT	151062	151062	H-431	1	1	1		
H-432	Same as H-246	Retains O-399 on H-431											
H-433	Same as H-329	Retains O-403 to O-402											
H-434	Same as H-309	Holds O-402 to A-136											
H-435	Same as H-127	Holds O-402 to A-136											
H-436	WASHER, flat; steel, nickel pl; round, approx 1/4" OD x 1/8" ID x 0.042" thk o/a	Holds O-402 to A-136		N17-T-350005-732	CTT	2597	2597	H-436	2	0	0		
H-437	SCREW, machine; slot drive; FH; steel, nickel pl; #6-40; approx 7/16" lg o/a; 9/32" lg threaded portion incl slot; 1/16" thk x 1/4" diam head; 5/32" diam 1/8" lg shoulder	Holds A-136 to A-132		N17-T-350014-907	CTT	151832	151832	H-437	2	0	0		
H-438	WASHER, lock; steel; round, approx 9/32" OD x 5/32" ID x 1/32" thk o/a; split-ring type	Holds A-136 to A-132		N17-T-350013-124	CTT	3646	3646	H-438, H-800, H-1124 H-1169	6	1	2		
H-439	WASHER, flat; steel, nickel pl; round, approx 5/16" OD x 5/32" ID x 0.035" thk o/a	Holds A-136 to A-132		N17-T-350005-725	CTT	2247	2247	H-439	2	0	0		
H-440	SCREW, adjustment; steel, nickel pl;	Adjusts position of K-101		N17-T-350014-486	CTT	151169	151169	H-440	1	1	1		
H-441	Same as H-130	Locks H-440 to A-136											
H-501	WASHER, extruded; steel; round, approx 13/16" OD x 13/32" ID x 1/16" thk o/a; extruded 0.016" x 1/2" OD	Full washer for O-504		N43-E-99500-57	CTT	122211	122211	H-501	2	0	0		
H-502	WASHER, flat; steel, cadmium pl; round, approx 1 5/32" OD x 3/4" ID x 1/32" thk o/a	Support for O-503		N43-E-7527-801	CTT	122208	122208	H-502	1	0	0		

Part No.	Description	Quantity	Part No.	Description	Quantity	Part No.	Description	Quantity	Part No.	Description	Quantity
H-503	SCREW, machine; slot drive; F11 H; steel, cadmium pl; #6-32; approx 4 3/4" lg o/a; 1 3/8" lg threaded portion; head 3/16" thk x 1/4" diam	2	H-503	68828-1575	122229	H-503	122229	2	H-503	68828-1575	122229
H-504	WASHER, flat; steel, nickel pl; round approx 3/8" OD x 3/16" ID x 0.042" thk o/a	2	H-504	350014-928	117535	H-504	117535	2	H-504	350014-928	117535
H-505	NUT, hexagon; steel, nickel pl; #6-32; 5/32" thk; 5/16" across flats	2	H-505	350005-565	2263	H-505	2263	2	H-505	350005-565	2263
H-506	SCREW, machine; slot drive; F11 H; steel, nickel pl; #6-40; approx 3 1/4" lg o/a; 5/8" lg threaded portion; head 1/8" thk x 7/32" diam	13	H-506	350013-165	1179	H-506	1179	13	H-506	350013-165	1179
H-507	Same as H-105		H-507			H-507			H-507		
H-508	STRAP, mounting; motor sig strap; steel, cadmium pl; approx 1 3/16" lg x 3 1/32" h x 9/32" wd o/a, 0.065" thk material; irregularly curved and formed, body hole at top, elongated slot at bottom extrusion near body hole	4	H-508	350015-621	151620	H-508	151620	4	H-508	350015-621	151620
H-509	SCREW, machine; slot drive; RH; steel, cadmium pl; #6-32; approx 27/32" lg o/a; 3/16" lg threaded portion; 3/32" thk x 1/4" diam head	2	H-509	65725-0408	151621	H-509	151621	2	H-509	65725-0408	151621
H-510	NUT, square; steel, cadmium pl; #6-32; 3/32" thk; 5/16" sq	2	H-510	350013-746	151622	H-510	151622	2	H-510	350013-746	151622
H-511	CLAMP; relay; steel, nickel pl; approx 2 17/32" lg x 1/4" wd x 1 5/16" h o/a, 0.065" thk material; accommodates 1 7/8" lg x 1 11/32" h relay; #4-40 tapped hole in one formed end	1	H-511	350015-225	151925	H-511	151925	1	H-511	350015-225	151925
H-512	Same as H-192		H-512			H-512			H-512		
H-513	WASHER, lock; steel; round, approx 7/32" OD x 1/8" ID x 1/32" thk o/a, split-ring type	12	H-513	350005-754	3640	H-513	3640	12	H-513	350005-754	3640
H-514	CLAMP; capacitor; steel; nickel-pl; approx 1 3/8" h x 3/4" wd x 1 1/16" lg o/a, 0.065" thk material; accommodates 1 1/32" diam capacitor; two #4-40 tapped holes one end	1	H-514	301927-918	151922	H-514	151922	1	H-514	301927-918	151922
H-515	Same as H-192		H-515			H-515			H-515		
H-516	Same as H-513		H-516			H-516			H-516		
H-517	NUT, hexagon; steel, nickel pl; #4-40; 3/8" thk; 1/4" wd across flats	2	H-517	350014-981	151926	H-517	151926	2	H-517	350014-981	151926
H-518	SCREW, machine; slot drive; FH; steel, nickel pl; #4-40; approx 7/16" lg o/a; threaded portion 3/8" lg; head 3/16" diam x 1/16" thk	15	H-518	350014-891	151686	H-518	151686	15	H-518	350014-891	151686
H-519	Same as H-513		H-519			H-519			H-519		
H-520	Same as H-183		H-520			H-520			H-520		
H-521	Same as H-192		H-521			H-521			H-521		

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		
					CODING	DESIG.				BOX	QUAN.	
H-522	Same as H-513	Holds H-517 to A-502										
H-523	Same as H-119	Holds A-502 to A-501										
H-524	Same as H-105	Holds A-502 to A-501										
H-525	Same as H-168	Holds A-502 to A-501										
H-526	Same as H-113	Holds O-505 to keyboard base										
H-527	Same as H-105	Holds O-505 to keyboard base										
H-528	Same as H-124	Holds A-501 or A-609 to keyboard base										
H-529	Same as H-125	Holds A-501 or A-609 to keyboard base										
H-601	RCD; steel, cadmium pl; approx 3 1/2" lg x 3/16" diam o/a; both ends threaded w/ #10-32 thd 1/2" lg	Holds O-602 and O-603 to O-601		N17-T-CTT 350013-802	122202	122202	122202	H-601	2	0	0	
H-602	NUT, hexagon; brass; #10-32; approx 3/16" thk; 5/16" wd across flats	Locks O-602 to O-601		N17-T-CTT 350001-166	125009	125009	125009	H-602	2	0	0	
H-603	CLAMP, electrical; steel; approx 1 15/16" lg x 1/2" wd x 3/8" h o/a, 0.018" thk material; formed at ctr and both ends, body hole in ctr	Clamps O-601 and O-603 to O-603		* N17-C-CTT 781699-410	122203	122203	122203	H-603	1	0	0	
H-604	SCREW, machine; slot drive; FH; iron, nickel pl; #6-32; approx 3/8" lg o/a; 5/16" lg threaded portion; head 1/16" thk x 1/4" diam	Holds H-603 to O-603		N17-T-CTT 350001-128	125143	125143	125143	H-604	1	0	0	
H-605	Same as H-105	Holds H-603 to O-603										
H-606	NUT, hexagon; steel, nickel pl; #6-32; 3/32" thk o/a; approx 1/4" across flats	Holds H-603 to O-603		N17-T-CTT 350005-966	6345	6345	6345	H-606, H-662	2	0	0	
H-607	HOLDER, contact brush; brass body w/ bakelite insulator; two grooves around shank end, wd slot at other end; approx 1 1/4" lg x 11/16" OD x 11/32" ID o/a; mts by body; 2 slots in line through ID	Holder for E-607 or E-608		N17-H-CTT 71773-1911	122206	122206	122206	H-607	2	0	0	
H-608	SCREW, captive; slot drive; RH; steel, cadmium pl; #8-32; approx 3/8" lg o/a; 3/16" lg threaded portion; head 1/8" thk x 5/16" diam	Holds ground terminals of C-601 or C-602 to O-603		N13-S-CTT 68898-1330	122219	122219	122219	H-608	2	0	0	
H-609	SCREW, machine; slot or wrench drive; Hex H; steel, nickel pl; #6-40; approx 5/16" lg o/a; 1/4" lg threaded portion; head 1/16" thk x 1/4" across flats	Ground screw		N17-T-CTT 350013-753	151630	151630	151630	H-609, H-637, H-1179, H-1337, H-1515, H-1521, H-1523, H-1567, H-1688, H-1722, H-1843, H-1873, H-2130	28	1	2	
* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.												

* Not furnished as a maintenance part.
If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.

PARTS LISTS

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

Section 8
H-610—H-636

H-610	Same as H-105		Locks E-609 to O-603			
H-611	Same as H-351		Holds A-601 to O-603			
H-612	Same as H-105		Holds A-601 to O-603			
H-613	Same as H-108		Holds A-602 to A-601			
H-614	Same as H-105		Holds A-602 to A-601			
H-615	Same as H-168		Holds A-602 to A-601			
H-616	Same as H-108		Holds A-603 and terminal of E-604 to A-601			
H-617	Same as H-105		Holds A-603 and terminal of E-604 to A-601			
H-618	Same as H-113		Holds A-603 to A-601			
H-619	Same as H-105		Holds A-603 to A-601			
H-620	Same as H-108		Holds O-605 and A-602 to A-601			
H-621	Same as H-105		Holds O-605 and A-602 to A-601			
H-622	Same as H-168		Holds O-605 and A-602 to A-601			
H-623	SAME; machine: slot drive; FH; steel, nickel pl; #6-10; approx 5/16" lg o/a; 1/4" lg threaded portion; head 1/16" thk x 7/32" dia		Holds A-601 and A-605 to O-603	N17-74 3500L-592	151661	H-623, H-625, H-678, & H-1682
H-624	Same as H-105		Holds A-601 and A-605 to O-603			
H-625	Same as H-623		Holds A-605 to O-603			
H-626	Same as H-105		Holds A-605 to O-603			
H-627	Same as H-108		Holds A-606 and terminal from E-605 to A-605			
H-628	Same as H-105		Holds A-606 and terminal from E-605 to A-605			
H-629	Same as H-113		Holds A-606 to A-605			
H-630	Same as H-105		Holds A-606 to A-605			
H-631	Same as H-108		Holds A-604 to A-605			
H-632	Same as H-105		Holds A-604 to A-605			
H-633	Same as H-168		Holds A-604 to A-605			
H-634	Same as H-108		Holds O-607 and A-604 to A-605			
H-635	Same as H-105		Holds O-607 and A-604 to A-605			
H-636	Same as H-168		Holds O-607 and A-604 to A-605			

ORIGINAL

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESCR.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS MFG CO	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								EQUIP.	STOCK	QUAN	BOX
H-637	Same as H-609	Holds A-607 to O-603									
H-638	Same as H-105	Holds A-607 to O-603									
H-639	Same as H-309	Holds A-608 to A-609									
H-640	SHIELD, cable: 1/4" braided copper shielding w/brass nipple soldered on one end and 4 1/2" strap soldered to other end; approx 3 11/16" lg x 1/2" OD x 3/8" ID o/a; mts by 1/2"-24 threaded nipple	Shields conductors of series motor		H17-F-CTT 350015-261		152067	H-640			1	0
H-641	Same as H-309	Holds A-611 to A-610									
H-642	Same as H-127	Holds A-611 to A-610									
H-643	Same as H-309	Locks A-612 to A-610									
H-644	Same as H-127	Locks A-612 to A-610									
H-655	Same as H-309	Holds B-611 to O-613									
H-656	Same as H-127	Holds B-611 to O-613									
H-657	Same as H-309	Holds B-611 to A-619									
H-658	Same as H-127	Holds B-611 to A-619									
H-659	CLAMP, steel; nickel pl; approx 5/16" lg x 1/4" h x 3/16" wd o/a, 0.035" thk material; formed at one end, mts by hole in lg side	Clamps B-611 to A-619		H17-F-CTT 350014-375		150857	H-659			1	0
H-660	Same as H-168	Holds B-612 to A-618									
H-661	Same as H-105	Holds B-612 to A-618									
H-662	Same as H-606	Holds B-612 to A-618									
H-663	Same as H-270	Holds A-617 to B-603									
H-664	Same as H-105	Holds A-617 to B-603									
H-665	Same as H-168	Holds A-617 to B-603									
H-666	SCREW, machine; slot drive; 7/16" steel, nickel pl; H-40; approx 3/4" lg o/a; threaded portion 1/2" lg; head 1/8" lg x 3/32" diam; shoulder 1/32" lg x 1/4" diam	Adjust tension of and holds O-613 to A-617		H17-F-CTT 350014-378		150865	H-666			1	0
H-667	Same as H-309	Holds H-669 to A-617									
H-668	Same as H-127	Holds H-669 to A-617									

Section 8
H-669—H-752

ORIGINAL

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
									TOTAL NO. OF EQUIP.	EQUIP. PER BOX	STOCK QUANTITY
H-753	Same as H-168	Holds XE-751 and XE-752 to cabinet dome									
H-754	Same as H-105	Holds XE-751 and XE-752 to cabinet dome									
H-755	Same as H-112	Holds XE-751 and XE-752 to cabinet dome									
H-756	Same as H-110	Holds TB-751 through TB-753 to cabinet and mounting post for A-754									
H-757	SCREW, machine: slot drive; Fl H; steel, nickel pl; #6-40; approx 5/16" lg o/a; 1/4" lg threaded portion; head 1/16" thk x 1/4" diam	Holds A-754 to H-756		N17-T-CTT 350006-753	8543	8543		H-757	6	0	0
H-758	Same as H-105	Holds A-754 to H-756									
H-759	STUD: steel, nickel pl; approx 1 1/16" lg x 1/2" across flats o/a; one end threaded 13/16" lg, other end threaded 5/16" lg w/ 1/4"-32 thd	Holds side cradle rail and H-766 to A-752 and A-753 or A-702		N17-T-CTT 350001-765	151521	151521		H-759	4	0	0
H-760	Same as H-125	Holds H-759 to A-752 and A-753 or A-702									
H-761	NUT, hexagon: steel, nickel pl; 1/4"-32 3/32" thk o/a; approx 7/16" across flats	Holds H-759 to A-752 and A-753 or A-702		N17-T-CTT 350001-159	125218	125218		H-761, H-768	8	0	0
H-762	SCREW, machine: slot drive; RH; iron, nickel pl; #10-32; approx 1/2" lg o/a; 3/8" lg threaded portion; head 1/8" thk x 1 1/32" diam	Holds A-752 and A-753 or A-702 to cabinet		N17-T-CTT 350006-703	8333	8333		H-762	16	0	0
H-763	WASHER, lock: steel; round, approx 1 1/32" OD x 3/16" ID x 1/16" thk o/a; split-ring type	Holds A-752 and A-753 or A-702 to cabinet		N17-T-CTT 350005-753	3639	3639		H-763, H-788, H-791, H-794, H-810, H-813, H-817	23	0	0
H-764	NUT, hexagon: iron, nickel pl; #10-32; approx 1/8" thk o/a; 3/8" across flats	Holds A-752 and A-753 or A-702 to cabinet		N17-T-CTT 350001-165	125231	125231		H-764, H-792, H-811, H-814	19	0	0
H-765	WASHER, flat: steel, nickel pl; round, approx 1/2" OD x 1/4" ID x 1/32" thk o/a	Spaces side cradle rail from A-752 and A-753 or A-702		N17-T-CTT 350007-582	71858	71858		H-765	20	0	0
H-766	GUIDE, cable: steel; 9/16" diam cable; approx 1 3/4" lg x 1" wd x 0.065" thk o/a; one elongated mtg hole	Front guide for W-1101		N17-T-CTT 350014-902	151955	151955		H-766	2	0	0
H-767	Same as H-125	Holds W-1101 and side cradle rail to H-759									
H-768	Same as H-761	Holds W-1101 and side cradle rail to H-759									

* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.

Part Number	Description	Material	Quantity	Unit	Remarks
H-769	SCREW, shoulder; slot drive; PH; steel, nickel pl; #10-32; approx 7/16" lg o/a; 3/8" lg threaded portion; head 3/32" thk x 3/8" diam; shoulder 3/32" thk x 1/8" diam	PH; steel, nickel pl; #10-32; approx 7/16" lg o/a; 3/8" lg threaded portion; head 3/32" thk x 3/8" diam; shoulder 3/32" thk x 1/8" diam	1	0	0
H-770	OUTER, cable; steel; 9/16" diam cable; approx 4" lg x 1 1/2" h x 0.065" thk o/a; two mtg holes in curved end	steel; 9/16" diam cable; approx 4" lg x 1 1/2" h x 0.065" thk o/a; two mtg holes in curved end	2	0	0
H-771	BUTTON, tamper; approx 3/4" large diam and 5/8" shoulder diam x 3/8" thk o/a; mte by shoulder; face sand blast finished	steel; 3/4" large diam and 5/8" shoulder diam x 3/8" thk o/a; mte by shoulder; face sand blast finished	3	0	0
H-772	NUT, lock; push on type; steel, nickel pl; 0.016" thk; approx 1" lg x 13/16" wd; hex hole, curved surface	steel, nickel pl; 0.016" thk; approx 1" lg x 13/16" wd; hex hole, curved surface	3	0	0
H-783	SCREW, shoulder; slot drive; PH; steel, nickel pl; #6-40; approx 5/8" lg o/a; threaded portion 7/32" lg; head 1/8" lg x 9/32" diam; shoulder 1/8" lg x 3/16" diam; slot between head and shoulder	PH; steel, nickel pl; #6-40; approx 5/8" lg o/a; threaded portion 7/32" lg; head 1/8" lg x 9/32" diam; shoulder 1/8" lg x 3/16" diam; slot between head and shoulder	2	0	0
H-784	WASHER, flat; steel, nickel pl; round, approx 1 1/32" OD x 3/16" ID x 1/32" thk o/a	steel, nickel pl; round, approx 1 1/32" OD x 3/16" ID x 1/32" thk o/a	2	0	0
H-785	WASHER, lock; steel, nickel pl; round, approx 5/16" OD x 5/32" ID x 0.018" thk o/a; slake proof type, straight external teeth	steel, nickel pl; round, approx 5/16" OD x 5/32" ID x 0.018" thk o/a; slake proof type, straight external teeth	2	0	0
H-786	Same as H-112				
H-787	SCREW, machine; slot drive; PH; stainless steel; #10-32; approx 5/8" lg o/a; threaded portion 9/32" lg; head 3/32" lg x 3/8" diam; shoulder 1/8" lg x 1/4" diam	PH; stainless steel; #10-32; approx 5/8" lg o/a; threaded portion 9/32" lg; head 3/32" lg x 3/8" diam; shoulder 1/8" lg x 1/4" diam	3	0	0
H-788	Same as H-763				
H-789	NUT, hexagon; steel, nickel pl; #10-32; 3/8" thk; 1/2" wd across flats; 5/16" thk round part	steel, nickel pl; #10-32; 3/8" thk; 1/2" wd across flats; 5/16" thk round part	1	0	0
H-790	Same as H-787				
H-791	Same as H-763				
H-792	Same as H-764				
H-793	SCREW, machine; slot or wrench drive; Hex H; steel, nickel pl; #10-32; approx 5/8" lg o/a; 1/2" lg threaded portion; head 1/8" thk x 5/16" across flats	PH; steel, nickel pl; #10-32; approx 5/8" lg o/a; 1/2" lg threaded portion; head 1/8" thk x 5/16" across flats	3	0	0
H-794	Same as H-763				
H-795	CLAMP; cable clamp; steel; nickel pl; approx 1" lg x 1/2" wd x 1 1/32" h o/a; 0.032" thk material; accommodates 5/16" diam cable	steel; nickel pl; approx 1" lg x 1/2" wd x 1 1/32" h o/a; 0.032" thk material; accommodates 5/16" diam cable	1	0	0
H-796	SCREW, machine; slot drive; PH; brass; #6-40; approx 5/16" lg o/a; 7/32" lg threaded portion; head 1/16" thk x 1/8" diam	PH; brass; #6-40; approx 5/16" lg o/a; 7/32" lg threaded portion; head 1/16" thk x 1/8" diam	2	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
									EQUIP.	STOCK	
										QUAN.	BOX
						DESIG.					
H-797	Same as H-105	Holds H-796 to A-759									
H-798	NUT, hexagon; steel, nickel pl; #4-40; approx 1/16" thk o/a; 1/4" across flats	Holds H-796 to A-759		N17-T-CTT 350001-164	110435		110435	H-798, H-1175, H-1178, H-1570, H-1923, H-1926	1	2	
H-799	SCREW, machine; slot drive; Fil H; iron, nickel pl; #8-32; approx 1/2" lg o/a; 3/8" lg threaded portion; head 3/32" thk x 1/4" diam	Holds E-759 to A-759		N17-T-CTT 350001-597	55219		55219	H-799, H-805	0	0	
H-800	Same as H-438	Holds E-759 to A-759									
H-801	SCREW, machine; slot drive; Fil H; steel, nickel pl; #8-40; approx 1/2" lg o/a; 3/8" lg threaded portion; head 1/8" thk x 7/32" diam	Holds I-752 and O-771 to cabinet		N17-T-CTT 350012-638	1026		1026	H-801	1	0	0
H-802	Same as H-105	Holds I-752 and O-771 to cabinet									
H-803	WASHER, flat; steel, nickel pl; round, approx 5/32" ID x 3/8" OD x 1/32" thk	Holds I-752 and O-771 to cabinet		N17-T-CTT 350012-636	125015		125015	H-803, H-1475, H-2075, H-2080, H-2109	1	2	
H-804	CLAMP; cable clamp; steel; cadmium pl; two screws employed; approx 1 15/16" lg x 1 1/4" h x 1 3/8" wd o/a; accommodates 9/16" diam cable; mts by 1/2" pipe thd and bond nut one end, curved 90°	Clamps power and line cables to Z-751 and Z-752		N17-T-APPLICATION 350003-368	73802		94660	H-804	2	0	0
H-805	Same as H-799	Holds Z-751 and Z-752 to cabinet									
H-806	WASHER, lock; steel, nickel pl; round, approx 3/8" OD x 1 1/64" ID x 0.020" thk o/a; shake proof type, straight external teeth	Holds Z-751 and Z-752 to cabinet		N43-W-6798-280	1108-00		92527	H-806, H-1123	5	0	0
H-807	NUT, hexagon; brass, nickel pl; #8-32; approx 1/8" thk o/a; 3/8" across flats	Holds Z-751 and Z-752 to cabinet		N17-T-CTT 350006-929	49514		49514	H-807, H-1125	6	0	0
H-808	SCREW, thumb; knurled thumb head; steel, nickel pl; #10-32; approx 1 11/16" lg o/a; 1 5/16" lg threaded portion; oval end; head 3/16" thk x 1/2" diam, shoulder 3/16" x 5/16" diam	Holds cross bar to cabinet		N17-T-CTT 350014-244	151526		151526	H-808	2	0	0
H-809	Same as H-787	Pivot for and holds O-775 to cabinet									
H-810	Same as H-763	Holds O-775 to cabinet									
H-811	Same as H-764	Holds O-775 to cabinet									
H-812	SCREW, shoulder; slot drive; FH; steel, nickel pl; #10-32; approx 5/8" lg o/a; 1 1/32" lg threaded portion incl slot; head 3/32" thk x 1/2" diam; shoulder 3/16" lg x 1/4" diam	Pivot for and holds O-775 and O-776 to cabinet dome		N17-T-CTT 350015-427	85529		85529	H-812	1	0	0

PARTS LISTS

NAVSHIPS 91713
TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UGSection 8
H-813—H-1116

Part Number	Description	Material	Quantity	Unit	Remarks
H-813	Same as H-763				
H-814	Same as H-764				
H-815	Clamp cable; cellulose plastic; one bolt employed; approx 5/16" h x 1/2" wd x 3/4" lg o/a; seccon 3/16" diam cable; one mtg hole		2	0	
H-816	SCREEN, machine: slot drive; Hex H; steel, nickel pl; #10-32; approx 1 1/2" lg o/a; 3/8" lg threaded portion; head 1/8" thk x 5/16" across flats		1	0	
H-817	Same as H-763				
H-818	Same as H-752				
H-819	Same as H-168				
H-820	Same as H-105				
H-821	Same as H-112				
H-1101	Same as H-113				
H-1102	Same as H-105				
H-1103	Same as H-168				
H-1104	Same as H-108				
H-1105	Same as H-105				
H-1106	MUT, hexagon; steel, nickel pl; #6-40; 1 1/16" thk o/a; approx 1 1/4" across flats		1	1	
H-1107	STUD; steel, nickel pl; approx 1 31/32" lg x 1/4" across flats o/a; one end threaded 1/4" lg w/ #6-40 thd, other end threaded 1/4" deep w/ #6-40 thd		4	0	
H-1108	Same as H-105				
H-1109	Same as H-112				
H-1110	SCREEN machine: slot drive; Fil H; steel, nickel pl; #6-40; approx 3/8" lg o/a; 5/16" lg threaded portion; head 1/16" thk x 1/4" diam		27	0	
H-1111	MUT, hexagon; steel, nickel pl; #6-40; approx 3/16" thk o/a; 1/4" across flats		27	0	
H-1112	Same as H-506				
H-1113	Same as H-105				
H-1114	Same as H-1110				
H-1115	Same as H-1111				
H-1116	Same as H-506				

ORIGINAL

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
					W O Q	DESIG.			TOTAL NO PER EQUIP.	EQUIP. BOX	STOCK QUAN.
H-1117	Same as H-105	Holds E-1103 and T8-1102 to H-1149									
H-1120	CLAMP: cable; cellulose plastic; one bolt employed; approx 15/16" lg x 1/2" wd x 1/2" h o/a; accom 3/8" cable; one mtg hole	Clamps part of W-1101 to both ends of A-1101		N17-C-781108-951 Commercial Plastics Co CIC-7146		121246	H-1120, H-1472		3	0	0
H-1121	SCREW, machine: slot drive; Fil H; iron, nickel pl; #8-32; approx 5/8" lg o/a; 1/2" lg threaded portion; head 1/8" thk x 1/4" diam	Holds H-1120 to A-1101		N17-T-350005-150	CTT	1157	H-1121		2	0	0
H-1122	WASHER, flat: steel, nickel pl; round, approx 3/8" OD x 5/32" ID x 1/16" thk o/a	Holds H-1120 to A-1101		N17-T-350013-181	CTT	44048	H-1122, H-1170		3	0	0
H-1123	Same as H-806	Locks ground lead from W-1101 to A-1101									
H-1124	Same as H-438	Holds lead from W-1101 and H-1120 to A-1101									
H-1125	Same as H-807	Holds lead from W-1101 and H-1120 to A-1101									
H-1126	Same as H-506	Holds O-1103 to A-1101									
H-1127	Same as H-105	Holds O-1103 to A-1101									
H-1128	Same as H-168	Holds O-1103 to A-1101									
H-1129	WASHER, flat: steel, nickel pl; round, approx 1/4" OD x 5/32" ID x 0.050" thk o/a	Holds O-1103 to A-1101		N17-T-350009-897	CTT	90789	H-1129, H-1133, H-1185		6	0	0
H-1130	Same as H-506	Holds O-1104 to A-1101									
H-1131	Same as H-105	Holds O-1104 to A-1101									
H-1132	Same as H-168	Holds O-1104 to A-1101									
H-1133	Same as H-1129	Holds O-1104 to A-1101									
H-1134	Same as H-113	Holds O-1105 to A-1101									
H-1135	Same as H-105	Holds O-1105 to A-1101									
H-1136	Same as H-168	Holds O-1105 to A-1101									
H-1137	Same as H-113	Holds K-1101 to A-1104									
H-1138	Same as H-105	Holds K-1101 to A-1104									
H-1139	Same as H-1106	Holds K-1101 to A-1104									
H-1140	Same as H-113	Holds A-1104 to O-1105									
H-1141	Same as H-105	Holds A-1104 to O-1105									

Part Number	Description	Material	Quantity	Unit	Notes
H-1142	Same as H-1106				Holds A-1104 to O-1105
H-1143	Same as H-1113				Holds A-1105 to A-1104
H-1144	Same as H-1105				Holds A-1105 to A-1104
H-1145	Same as H-1168				Holds A-1105 to A-1104
H-1146	CLAMP: cable; steel; cadmium pl; 2 bolts employed; approx 1 3/16" lg x 1 3/16" wd x 1 1/8" h o/a; holds from 1/4" to 1/2" cable		2	0	0
H-1147	WASHER, extruded; steel, nickel pl; round; approx 1 1/4" OD x 7/8" ID x 3/32" thk o/a; extruded 3/64" h x 1 1/16" OD		2	0	0
H-1148	STUD; steel, nickel pl; approx 3 9/16" lg x 3/8" diam o/a; one end threaded 7/16" lg w/ 1/4"-20 thd; drive slot across other end		2	0	0
H-1149	Same as H-1107				Spaces TB-1102 and O-1105
H-1150	Same as H-1105				Holds H-1149 to O-1105
H-1151	Same as H-1112				Holds H-1149 to O-1105
H-1152	STUD; steel, nickel pl; approx 25/32" lg x 7/32" lg across flats o/a; one end threaded 7/32" lg w/ #6-40 thd, other end threaded 1/4" deep w/ #6-40 thd; 1/4" diam body		5	0	0
H-1156	Same as H-1105				Holds H-1155 to A-1108
H-1157	Same as H-1112				Holds H-1155 to A-1108
H-1158	Same as H-1110				Terminal screw for TB-1104
H-1159	Same as H-1111				Holds H-1158 to TB-1104
H-1160	Same as H-506				Holds TB-1104 to H-1155
H-1161	Same as H-1105				Holds TB-1104 to H-1155
H-1162	SCREEN, machine; slot drive; F11 H; steel, nickel pl; #6-40; approx 1 9/16" lg o/a; 1/2" lg threaded portion; head 1/8" thk x 7/32" diam		1	0	0
H-1163	Same as H-1168				Holds H-1101 to A-1108
H-1164	Same as H-1105				Holds H-1101 to A-1108
H-1165	Same as H-1112				Holds H-1101 to A-1108
H-1166	WASHER, spring; steel, nickel pl; round; approx 3/4" OD x 3/8" ID x 0.010" thk o/a; dialed to 9/64"		2	0	0
H-1167	NUT, hexagon; steel, nickel pl; 5/16"-32; approx 1/8" thk; 7/16" across flats		2	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST											
PARTS										SPARE PARTS	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO PER EQUIP.	EQUIP.	
					CODE	DESIG.				QUAN.	STOCK
H-1168	SCREW, machine; slot drive; Fil H; steel, nickel pl; #8-32; approx 9/16" lg o/a; 7/16" lg threaded portion; head 1/8" thk x 1/4" dia	Holds E-1110 to A-1109		N17-T-350013-144	CTT	1093	1093	H-1168	1	0	0
H-1169	Same as H-438	Holds E-1110 to A-1109									
H-1170	Same as H-1122	Holds E-1110 to A-1109									
H-1171	WASHER, flat; steel, nickel pl; round, approx 5/16" OD x 3/16" ID x 0.058" thk o/a	Spaces E-1110 and A-1109		N17-T-350012-991	CTT	125390	125390	H-1171	1	0	0
H-1172	STUD; steel, nickel pl; approx 1 3/8" lg x 1/4" across flats o/a; body end threaded 1/4" lg w/14-40 thd, shank end threaded 3/8" lg w/14-40 thd	Mounting shaft for S-1104 and S-1105		N17-T-350013-737	CTT	151440	151440	H-1172	2	0	0
H-1173	Same as H-311	Holds H-1172 to A-1109									
H-1174	Same as H-513	Holds H-1172 to A-1109									
H-1175	Same as H-798	Holds H-1172 to A-1109									
H-1176	Same as H-311	Holds S-1104, S-1105 and O-1118 on H-1172									
H-1177	Same as H-513	Holds S-1104, S-1105 and O-1118 on H-1172									
H-1178	Same as H-798	Holds S-1104, S-1105 and O-1118 on H-1172									
H-1179	Same as H-609	Holds A-1109 to A-1108									
H-1180	Same as H-105	Holds A-1109 to A-1108									
H-1181	Same as H-168	Holds A-1109 to A-1108									
H-1182	Same as H-506	Holds A-1108 to A-1101									
H-1183	Same as H-105	Holds A-1108 to A-1101									
H-1184	Same as H-168	Holds A-1108 to A-1101									
H-1185	Same as H-1129	Holds A-1108 to A-1101									
H-1301	STUD; steel, nickel pl; approx 1 5/16" lg x 1/4" diam o/a; one end threaded 7/32" lg w/ #6-40 thd; drive slot and body slot other end, shoulder between body and shank;	Pivot for O-1302 and O-1306, and holds A-1302 to A-1301		N17-T-350014-616	CTT	150064	150064	H-1301	1	1	1
H-1302	Same as H-112	Locks H-1301 to A-1301									
H-1303	Same as H-158	Retains O-1302 and O-1306 on H-1301									

H-1304	Same as H-119	Holds A-1302 to A-1301							
H-1305	Same as H-105	Holds A-1302 to A-1301							
H-1306	Same as H-168	Holds A-1302 to A-1301							
H-1307	Same as H-158	Retains O-1314 and O-1312 on A-1301							
H-1308	Same as H-309	Holds O-1315 to A-1303							
H-1309	Same as H-127	Holds O-1315 to A-1303							
H-1310	Same as H-183	Holds O-1315 to A-1303							
H-1311	SCREEN, machine; slot drive; FH; steel, nickel pl; #6-40; approx 11/16" lg o/a; 1/16" lg threaded portion; head 7/32" diam x 1/16" thk	Holds A-1303, H-1312 and symbols O-1316 through O-1319 to A-1301	N17-F-350014-614	150040	150040		H-1311, H-1480, H-1783 H-1795, H-1810, H-1831 H-1841, H-1854, H-1870 H-1883, H-1896, H-1933	14	1 2
H-1312	WASHER, flat; steel, nickel pl; round, approx 15/32" OD x 1/8" ID x 0.042" thk	Spacer for and guides O-1317 on A-1359	N17-F-350013-744	151610	151610		H-1312	2	1 2
H-1313	Same as H-105	Holds A-1303, H-1312 and symbols O-1316 through O-1319 to A-1301							
H-1314	Same as H-112	Holds A-1303, H-1312 and symbols O-1316 through O-1319 to A-1301							
H-1315	SCREEN, shoulder; slot drive; FH; steel, nickel pl; #6-40; approx 5/8" lg o/a; 9/32" lg threaded portion; head 15/32" diam x 0.047" thk; shoulder 1/16" lg x 3/16" diam; body 3/16" lg x 1/8" diam	Shoulder bearing for O-1320 and mounts O-1321 and O-1322	N17-F-350014-127	150063	150063		H-1315	1	1 1
H-1316	Same as H-105	Holds H-1315 to A-1301							
H-1317	Same as H-112	Holds H-1315 to A-1301							
H-1318	Same as H-158	Retains O-1323 on A-1301							
H-1319	Same as H-119	Holds O-1324 to A-1304							
H-1320	Same as H-105	Holds O-1324 to A-1304							
H-1321	Same as H-158	Retains A-1304 on A-1301							
H-1322	Same as H-246	Retains A-1304 on O-1326							
H-1323	Same as H-126	Holds A-1305 to O-1340							
H-1324	Same as H-127	Holds A-1305 to O-1340							
H-1325	Same as H-409	Holds O-1340 to A-1307 and A-1308							
H-1326	Same as H-105	Holds O-1340 to A-1307 and A-1308							
H-1327	Same as H-126	Holds A-1306 to O-1349							
H-1328	Same as H-127	Holds A-1306 to O-1349							

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS										SPARE PARTS			
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		STOCK	
					CO	DESIG.				QUAN.	BOX	QUAN.	BOX
H-1341	SCREEN, machine: slot drive; FH; steel, nickel pl; #3-48; approx 5/16" lg o/a; 1/4" lg threaded portion; head 1/16" thk x 5/32" dia	Holds O-1350 to A-1307		N17-T-CTT 350006-892	42827	42827	42827	H-1341, H-1350	3	0	0		
H-1342	Same as H-309	Holds O-1357 to A-1307											
H-1343	Same as H-127	Holds O-1357 to A-1307											
H-1344	Same as H-113	Holds A-1307 to A-1389											
H-1345	Same as H-105	Holds A-1307 to A-1389											
H-1346	Same as H-126	Holds O-1360 to A-1309											
H-1347	Same as H-127	Holds O-1360 to A-1309											
H-1348	SCREEN, machine: slot drive; FH; steel, nickel pl; #6-40; approx 1/2" lg o/a; 7/16" lg threaded portion; head 1/16" thk x 7/32" dia	Holds A-1309 to A-1308		N17-T-CTT 350013-747	151618	151618	151618	H-1348, H-1747, H-1749, H-1765, H-1768, H-1770	1	2			
H-1349	Same as H-105	Holds A-1309 to A-1308											
H-1350	Same as H-1341	Holds O-1358 to A-1308											
H-1351	Same as H-126	Holds O-1359 to A-1308											
H-1352	Same as H-127	Holds O-1359 to A-1308											
H-1353	Same as H-113	Holds A-1308 to A-1391											
H-1354	Same as H-105	Holds A-1308 to A-1391											
H-1355	RING, retainers: steel, nickel pl; "C" shape w/2 int cutouts; approx 17/32" OD x 7/32" ID x 0.025" thk o/a	Retains symbols O-1370 through O-1373 on O-1365 and O-1365 on A-1310		N17-T-Walden 350013-801	119653	5133-25	119653	H-1355, H-1390, H-1594, H-1660, H-1687, H-2129	8	1	5		
H-1356	Same as H-158	Retains A-1311 on O-1364 and O-1364 on O-1365											
H-1357	Same as H-158	Retains O-1369 on A-1310											
H-1358	Same as H-246	Retains A-1310 and O-1377 on A-1312											
H-1359	Same as H-192	Holds O-1366 and O-1367 to A-1310											
H-1360	Same as H-127	Holds O-1366 and O-1367 to A-1310											
H-1361	Same as H-158	Retains O-1380 on A-1313											

Part Number	Description	Material	Quantity	Unit	Remarks
H-1362	Same as H-113				Holds O-1381, O-1382 and O-1383 to A-1312
H-1363	Same as H-105				Holds O-1382, O-1382 and O-1383 to A-1312
H-1364	Same as H-127				Holds O-1391 on O-1384
H-1365	Same as H-130				Holds O-1391 on O-1384
H-1368	Same as H-113				Holds A-1313 to A-1312
H-1369	Same as H-105				Holds A-1313 to A-1312
H-1370	SCREEN, machine; slot drive; FH; steel, nickel pl; #6-40; approx 5/8" lg o/a; threaded portion 9/16" lg; head 7/32" diam x 1/16" thk		1	2	Holds A-1313 and A-1312 to A-1391
H-1371	Same as H-105				Holds A-1313 and A-1312 to A-1391
H-1372	Same as H-168				Holds A-1313 and A-1312 to A-1391
H-1373	Same as H-158				Retains O-1384 to A-1312
H-1374	SCREEN, machine; slot drive; FH; steel, nickel pl; #4-40; approx 3/16" lg o/a; 1/8" lg threaded portion; head 1/16" thk x 5/32" diam		2	1	Looks O-1385 on O-1384
H-1375	Same as H-108				Holds O-1386, O-1387 and O-1388 to A-1389
H-1376	Same as H-105				Holds O-1386, O-1387 and O-1388 to A-1389
H-1377	Same as H-127				Holds O-1390 on O-1384
H-1378	Same as H-130				Holds O-1390 on O-1384
H-1379	Same as H-270				Holds A-1312 to A-1391
H-1380	Same as H-105				Holds A-1312 to A-1391
H-1389	STD; steel, nickel pl; approx 2 3/16" lg lg x 5/16" across flats o/a; one end threaded 5/32" deep x 9/16-40 internal thd; shoulder near threaded end, slot near other end		1	0	Pivot for and mounts A-1318 and O-1411
H-1390	Same as H-1355				Retains symbols O-1403 through O-1406 on O-1401 and O-1401 on A-1318

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX	EQUIP.	STOCK BOX	QUAN.
H-1391	Same as H-158	Retains A-1319 on O-1402 and O-1402 on O-1401										
H-1392	Same as H-158	Retains O-1408 on A-1318										
H-1393	Same as H-246	Retains A-1318 on H-1389										
H-1394	Same as H-192	Holds O-1409 and O-1410 to A-1318										
H-1395	Same as H-127	Holds O-1409 and O-1410 to A-1318										
H-1396	Same as H-242	Holds H-1389 to A-1389										
H-1397	Same as H-105	Holds H-1389 to A-1389										
H-1398	Same as H-104	Holds symbols O-1411 through O-1414 to A-1389										
H-1399	Same as H-125	Holds symbols O-1411 through O-1414 to A-1389										
H-1400	Same as H-119	Holds A-1320 to A-1389										
H-1401	Same as H-105	Holds A-1320 to A-1389										
H-1402	Same as H-168	Prevents H-1401 from slipping through large 1/2" hole in A-1320										
H-1405	Same as H-246	Retains O-1415 on A-1320										
H-1406	Same as H-413	Holds O-1422 to A-1321										
H-1407	SCREW, machine: slot drive; FH; steel, nickel pl; #3-48; approx 1 1/2" lg o/a; threaded portion 9/32" lg; head 1/16" thk x 5/32" diam	Holds O-1423 to A-1321		M17-T-350014-213	CTT	150543	H-1407	7	1	2		
H-1408	SCREW, machine: slot drive; Hex H; steel, nickel pl; #4-40; approx 27/32" lg o/a; 1/2" lg threaded portion; head 3/16" across flats x 3/32" thk	Replaces O-1456 inoperative		M17-T-350010-398	CTT	93507	H-1408	1	0	0		
H-1409	NUT, hexagon: steel, nickel pl; #4-40; approx 13/32" lg w/ 3/32" lg threaded portion; 3/16" across flats	Locks H-1408 in position		M17-T-350014-597	CTT	151702	H-1409	1	0	0		

H-1410	Same as H-192	Holds O-1424 to O-1423				
H-1411	Same as H-127	Holds O-1424 to O-1423				
H-1412	Same as H-815	Clamp for H-1301				
H-1413	Same as H-518	Holds H-1412 to O-1423				
H-1414	Same as H-127	Holds H-1412 to O-1423				
H-1415	WASHER, flat; steel; round, approx 3/8" OD x 1/8" ID x 0.046" thick o/a	Holds H-1412 to O-1423	N17-T-00 390013-209	3514997	80530	H-1415 1 0 0
H-1416	SCREW, machine; slot drive; PH; steel; nickel pl; #4-40; approx 1/2" lg o/a; 7/16" lg threaded portion; head 3/16" diam x 1/16" thick	Holds O-1437 to A-1322	N17-T-00 390015-104	151687	151687	H-1416 2 0 0
H-1417	Same as H-127	Holds O-1437 to A-1322				
H-1418	Same as H-192	Holds A-1322 to O-1423				
H-1419	Same as H-127	Holds A-1322 to O-1423				
H-1420	STD; steel, nickel pl; approx 11/16" lg x 1/4" across flats o/a; one end threaded 5/32" lg w/ #6-40 thd, opposite end threaded 3/16" lg w/ #4-40 thd	Spaces A-1323 from O-1423	N17-T-00 390015-808	152656	152656	H-1420 2 0 0
H-1421	Same as H-183	Holds A-1323 on H-1420				
H-1422	Same as H-127	Holds A-1323 on H-1420				
H-1423	Same as H-130	Holds A-1323 on H-1420				
H-1424	Same as H-192	Holds O-1444 to A-1323				
H-1425	Same as H-127	Holds O-1444 to A-1323				
H-1426	Same as H-329	Retains O-1470 to A-1324 and A-1325				
H-1427	Same as H-329	Retains O-1471 to A-1324 and A-1325				
H-1428	Same as H-329	Retains O-1472 to A-1324 and A-1325				
H-1429	Same as H-113	Holds A-1324 to A-1321				
H-1430	Same as H-105	Holds A-1324 to A-1321				
H-1431	Same as H-113	Holds A-1325 to A-1321				
H-1432	Same as H-105	Holds A-1325 to A-1321				
H-1433	HANDLE, steel, nickel pl; w/ formed strip; approx 8 1/2" lg x 1/2" wd x 3/8" h o/a; sts by body hole on end; 2 tapered holes in one side	Handle for Function Box Mechanism	N17-T-00 390014-211	150544	150544	H-1433, H-1436 2 0 0
H-1434	Same as H-119	Holds H-1433 to A-1324 and A-1325				
H-1435	Same as H-105	Holds H-1433 to A-1324 and A-1325				

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS												
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO PER EQUIP.	SPARE PARTS		
					CO	DESIG.				BOX	QUAN.	EQUIP.
H-1436	Same as H-1433	Handle for Function Box Mechanism										
H-1437	Same as H-119	Holds H-1436 to A-1324										
H-1438	SCREW, machine; wrench drive; Hex H; stainless steel; #6-40; approx 1/4" lg o/a; 3/16" lg threaded portion; head 1/16" thk x 1/4" across flats; character "A" stamped on head	Holds H-1436 to A-1325 and identifies Function Box arrangement		N17-T-350014-909	151739A	151739A	151739A	H-1438	1	0	0	
H-1439	Same as H-105	Holds H-1436 to A-1324 and A-1325										
H-1440	Same as H-119	Holds A-1324 to A-1390										
H-1441	Same as H-105	Holds A-1324 to A-1390										
H-1442	Same as H-119	Holds A-1325 to A-1392										
H-1443	Same as H-105	Holds A-1325 to A-1392										
H-1458	Same as H-796	Holds terminals from W-1302 to E-1308 and E-1309										
H-1459	MASHER, flat; brass; round, approx 1/4" OD x 1/8" ID x 1/32" thk o/a	Holds terminals from H-1302 to E-1308 and E-1309		N17-T-350005-731	2438	2438	2438	H-1459	4	0	0	
H-1460	Same as H-176	Holds O-1485 to A-1330										
H-1461	Same as H-127	Holds O-1485 to A-1330										
H-1462	Same as H-518	Holds A-1331 and O-1485 together										
H-1463	Same as H-127	Holds A-1331 and O-1485 together										
H-1464	Same as H-130	Holds A-1331 and O-1485 together										
H-1465	Same as H-174	Holds O-1485 to A-1330										
H-1466	Same as H-127	Holds O-1485 to A-1330										
H-1467	STUD; steel, nickel pl; approx 19/32" lg x 5/32" diam o/a; one end threaded 5/32" lg w/8-40 thd; neck between head and threaded portion, drive slot across head	Anchors O-1520 to A-1330		N17-T-350015-107	152415	152415	152415	H-1467	1	0	0	
H-1468	POST, spring; steel, nickel pl; threaded #6-40 full lg, 2 flats 1/2" lg w/oak hole near end; approx 21/32" lg o/a; mts by threaded portion	Anchor for O-1487		N17-T-350014-995	152425	152425	152425	H-1468	1	0	0	

H-1469	HUT, looki elastic stop nut type; steel, cadmium pl; #6-40, 3/16" thk o/a; 5/16" across flats	Adjust tension of O-1467 by H-1468	ESNA 68010-5230	ESNA 22M-60	152A35	E-1469	1	0	0
H-1470	Same as H-518	Holds O-1489, A-1332 and E-1310 to A-1330							
H-1471	Same as H-127	Holds O-1489, A-1332 and E-1310 to A-1330							
H-1472	Same as H-1120	Clamp for W-1302							
H-1473	Same as H-108	Holds H-1472 to A-1389							
H-1474	Same as H-105	Holds H-1472 to A-1389							
H-1475	Same as H-803	Holds H-1472 to A-1389							
H-1476	Same as H-108	Holds J-1301 to A-1333							
H-1477	Same as H-105	Holds J-1301 to A-1333							
H-1478	Same as H-119	Holds A-1333 to A-1389							
H-1479	Same as H-105	Holds A-1333 to A-1389							
H-1480	Same as H-1311	Holds A-1333, O-2068 and O-2070 to A-1389							
H-1481	Same as H-105	Holds A-1333, O-2068 and O-2070 to A-1389							
H-1482	Same as H-115	Latches P-1102 to J-1301							
H-1483	Same as H-116	Latches P-1102 to J-1301							
H-1484	Same as H-108	Holds A-1330 to A-1338							
H-1485	Same as H-105	Holds A-1330 to A-1338							
H-1486	Same as H-168	Holds A-1330 to A-1338							
H-1487	STUD, steel, nickel pl; approx 15/16" diam x 15/16" lg o/a; 1/4" diam shoulder one end threaded 5/32" lg w/#6-40 tld; 24 equidistant teeth around beveled circum of head	Locks I-1301 in position and holds I-1301, O-1493 and O-1494 to A-1334	N17-T-CTT 350015-587	152A35	152A35	E-1487	1	0	0
H-1488	Same as H-105	Holds I-1301, O-1493 and O-1494 to A-1334							
H-1489	Same as H-112	Holds I-1301, O-1493 and O-1494 to A-1334							
H-1490	Same as H-105	Holds A-1334 to O-1500							
H-1491	Same as H-112	Holds A-1334 to O-1500							
H-1492	Same as H-113	Holds A-1334 to H-1514 and O-1507							
H-1493	Same as H-105	Holds A-1334 to H-1514 and O-1507							
H-1494	Same as H-119	Holds O-1492, H-1496 and H-1497 to A-1334							

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								EQUIP.		STOCK	
								QUAN.	BOX	QUAN.	BOX
H-1495	Same as H-105	Holds O-1492, H-1496 and H-1497 to A-1334									
H-1496	WASHER, spring; steel; round, approx 3/8" OD x 3/16" ID x 1/32" wd o/a; 0.010" thk material	Applies pressure to H-1497		N17-T-350008-110	74283	74283	H-1496			2	0
H-1497	WASHER, flat; steel, nickel pl; round, approx 13/32" OD x 3/16" ID x 0.018" thk o/a	Retains O-1491 on O-1492		N17-T-350015-340	152441	152441	H-1497			2	0
H-1498	LATCH, lever; steel, nickel pl; irregular shape, spring notch one end, other end irregularly formed, hub welded to ctr; approx 1 3/4" lg x 1 7/32" h x 7/32" wd o/a, 0.042" thk material; mts by ID of hub	Prevents selector clutch from reversing by latching O-1793		N17-T-350015-233	152427	152427	H-1498			1	1
H-1499	Same as H-126	Holds O-1497 to O-1496									
H-1500	Same as H-127	Holds O-1497 to O-1496									
H-1501	Same as H-183	Holds O-1497 to O-1496									
H-1502	Same as H-127	Holds O-1521 to O-1496									
H-1503	Same as H-130	Holds O-1521 to O-1496									
H-1504	Same as H-126	Holds A-1335 to A-1338									
H-1505	Same as H-127	Holds A-1335 to A-1338									
H-1506	Same as H-126	Holds A-1336 to A-1338									
H-1507	Same as H-127	Holds A-1336 to A-1338									
H-1508	Same as H-126	Holds A-1337 to A-1338									
H-1509	Same as H-127	Holds A-1337 to A-1338									
H-1510	Same as H-113	Holds O-1520 to A-1338									
H-1511	Same as H-105	Holds O-1520 to A-1338									
H-1512	Same as H-168	Holds O-1520 to A-1338									
H-1513	Same as H-257	Pivot for O-1520									
H-1514	POST, steel, nickel pl; hex shape; approx 1 5/32" lg x 1/2" across flats; mts by tapped hole in end	Spaces A-1334 and A-1338		N17-T-350013-888	150687	150687	H-1514			1	0
H-1515	Same as H-609	Holds A-1338 to H-1517 and H-1520									
H-1516	Same as H-105	Holds A-1338 to H-1517 and H-1520									

	Part Number	Description	Quantity	Unit Cost	Total Cost	Remarks
H-1517	Same as H-1515	Spacers A-1338 from A-1389	1	1	1	
H-1518	Same as H-105	Holds H-1517 to A-1389	1	1	1	
H-1519	Same as H-112	Holds H-1517 to A-1389	1	1	1	
H-1520	Same as H-1155	Spacers A-1338 from A-1389 and holds A-1338 and A-1380 to A-1389	1	1	1	
H-1521	Same as H-609	Holds O-1500 to A-1338	1	1	1	
H-1522	Same as H-105	Holds O-1500 to A-1338	1	1	1	
H-1523	Same as H-609	Holds H-1514 to A-1338	1	1	1	
H-1524	Same as H-105	Holds H-1514 to A-1338	1	1	1	
H-1525	Same as H-1155	Holds O-1507 to A-1338 and spacers A-1338 from A-1389	1	1	1	
H-1540	STUD; steel; nickel pl; approx 7/8" lg x 1/4" across flats o/a; threaded 1/8" lg w/16-40 thd next to hex shoulder, shank at end	N17-T-CTT 35001A-367	151669	151669	H-1540	
H-1541	Same as H-1106	Holds H-1540 to O-1535	1	0	0	
H-1542	STUD; steel; nickel pl; 31/32" lg x 5/16" across flats; short shank threaded 7/32" lg w/16-40 thd, lg shank threaded 3/16" lg w/16-40 thd; slot next to shoulder on lg shank	N17-T-CTT 35001A-538	150471	150471	H-1542	
H-1543	Same as H-105	Holds A-1346 and H-1542 to A-1344	1	0	0	
H-1544	Same as H-112	Holds A-1346 and H-1542 to A-1344	1	0	0	
H-1545	WASHER, flat; steel; nickel pl; round; approx 9/32" OD x 5/32" ID x 0.028" thk o/a	N17-T-CTT 35000B-752	3649	3649	H-1545	
H-1546	Same as H-105	Holds O-1539, O-1540 and O-1542 on H-1542	1	0	0	
H-1547	Same as H-112	Holds O-1539, O-1540 and O-1542 on H-1542	1	0	0	
H-1548	Same as H-309	Holds A-1347 to A-1344	1	0	0	
H-1549	Same as H-127	Holds A-1347 to A-1344	1	0	0	
H-1550	Same as H-183	Holds A-1347 to A-1344	1	0	0	
H-1551	Same as H-246	Retains O-1543 and O-1544 on O-1535	1	0	0	
H-1552	SCREW, machine; slot or wrench drive Hex H; steel; nickel pl; #6-40; approx 13/16" lg o/a; 3/4" lg threaded portion; head 1/16" thk x 1/4" across flats	N17-T-CTT 35001A-611	151721	151721	H-1552	
H-1553	Same as H-105	Locks O-1544 to O-1563	1	1	1	

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIGN.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS CO	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								PER EQUIP.	EQUIP. BOX	QUAN. BOX	STOCK ANAL
H-1554	WASHER, flat; steel, nickel pl; round; approx 1/8" ID x 1/4" OD x 1/32" thick 3/4	Locks O-1544 to O-1563		N17-7- 350013-54	8330	8330	H-1554, H-1762, H-1775, H-1778, H-1781, H-1785, H-1777, H-1812	8	1	4	
H-1555	NUT, lock; nut has arm 1/8" lg x 1/8" wd; steel, nickel pl; #6-40; 3/32" thick; approx 3/8" lg x 1/4" wd	Locks O-1544 to O-1563		N17-7- 350013-754	151620	151620	H-1555, H-1786, H-1793, H-1813, H-2039	5	1	5	
H-1556	SCREW, machine; slot drive; FH; steel, nickel pl; #6-40; approx 1 3/16" lg o/a; 3/4" ID threaded portion; head 1/12" thick x 7/32" diam	Holds A-1346 and O-1546 to A-1344		N17-7- 350014-356	150973	150973	H-1556	1	1	1	
H-1557	Same as H-105	Holds A-1346 and O-1546 to A-1344									
H-1558	Same as H-113	Holds A-1346 and O-1555 to A-1344									
H-1559	Same as H-105	Holds A-1346 and O-1555 to A-1344									
H-1560	Same as H-113	Holds A-1346 to A-1344									
H-1561	Same as H-105	Holds A-1346 to A-1344									
H-1562	Same as H-168	Holds A-1346 to A-1344									
H-1563	Same as H-113	Holds A-1346 to O-1562									
H-1564	Same as H-105	Holds A-1346 to O-1562									
H-1565	Same as H-113	Holds A-1346 to O-1555									
H-1566	Same as H-105	Holds A-1346 to O-1555									
H-1567	Same as H-609	Holds A-1346 to A-1389									
H-1568	Same as H-105	Holds A-1346 to A-1389									
H-1569	PLATE, lock; steel, nickel pl; oblong; 2 1/32" lg x 5/16" wd x 0.095" thick o/a; sta by 2 tapped holes	Nut plate for H-1556 and O-1545		N17-7- 350014-541	150482	150482	H-1569	1	0	0	
H-1570	Same as H-798	Locks O-1545 to H-1569									
H-1571	Same as H-108	Holds H-1573 to A-1338									
H-1572	Same as H-105	Holds H-1573 to A-1338									
H-1573	HOLDER, rick; steel, nickel pl; cylindrical lg; approx 1 1/8" lg x 7/16" OD x 3/8" ID o/a; sta by body hole in formed ear	Holder for O-1561		N17-7- 350015-716	152456	152456	H-1573	1	0	0	
H-1574	Same as H-242	Holds O-1562 to A-1389									

Part Number	Description	Material	Quantity	Notes	Part Number	Description	Material	Quantity	Notes
H-1575	Same as H-105				H-1575	Same as H-105			
H-1576	STD: steel, nickel pl; approx 1/2" lg x 3/16" diam o/a; one end threaded 1/4" lg w/16-40 thd; drive slot across other end				H-1576	Same as H-105			
H-1577	Same as H-105				H-1577	Same as H-105			
H-1578	Same as H-112				H-1578	Same as H-112			
H-1579	Same as H-113				H-1579	Same as H-113			
H-1580	Same as H-105				H-1580	Same as H-105			
H-1581	Same as H-168				H-1581	Same as H-168			
H-1582	STD: steel, piston finish; approx 1/2" lg x 1/4" diam o/a; one end threaded 3/16" lg w/16-40 thd; slot between head and body, drive slot across head				H-1582	Same as H-105			
H-1584	Same as H-105				H-1584	Same as H-105			
H-1585	Same as H-112				H-1585	Same as H-112			
H-1586	Same as H-246				H-1586	Same as H-246			
H-1588	Same as H-1582				H-1588	Same as H-1582			
H-1590	Same as H-105				H-1590	Same as H-105			
H-1591	Same as H-112				H-1591	Same as H-112			
H-1592	Same as H-246				H-1592	Same as H-246			
H-1594	Same as H-1355				H-1594	Same as H-1355			
H-1595	Same as H-1582				H-1595	Same as H-1582			
H-1596	Same as H-1582				H-1596	Same as H-1582			
H-1597	Same as H-105				H-1597	Same as H-105			
H-1598	Same as H-112				H-1598	Same as H-112			
H-1599	Same as H-246				H-1599	Same as H-246			
H-1600	Same as H-246				H-1600	Same as H-246			
H-1601	Same as H-246				H-1601	Same as H-246			
H-1602	Same as H-246				H-1602	Same as H-246			
H-1603	Same as H-159				H-1603	Same as H-159			
H-1604	Same as H-159				H-1604	Same as H-159			

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX	QUAN.	BOX	QUAN.
					CO							
H-1605	STUD; steel, nickel pl; approx 1 5/32" lg x 3/8" diam o/a; one end threaded 1/4" deep w/10-32 thd; slot around approx ctr and drive slot at end of shank	Pivot for O-1588, O-1589 and shaft for O-1590		N17-T-ETT 350014-834	150175	150175	H-1605	1	0	0		
H-1606	Same as H-246	Retains O-1588, O-1589 and O-1590 on H-1605										
H-1607	SCREW, machine; wrench or slot drive; Hex H; steel, nickel pl; #6-40; approx 7/16" lg o/a; 3/16" lg threaded portion, head 1/16" thk x 5/16" across flats; shoulder 5/32" lg x 7/32" diam; neck between shoulder and threaded portion	Shaft for O-1592		N17-T-ETT 350014-595	151700	151700	H-1607	1	0	0		
H-1608	Same as H-105	Holds H-1607 to O-1588										
H-1609	Same as H-112	Holds H-1607 to O-1588										
H-1610	STUD; steel, nickel pl; approx 3/4" lg x 1/4" across flats o/a; one end threaded 3/16" lg w/8-40 thd, shank and pilot w/ slot on other end	Shaft for O-1595		N17-T-ETT 350013-957	150755	150755	H-1610	1	1	1		
H-1611	Same as H-105	Holds A-1610 to O-1589										
H-1612	Same as H-112	Holds H-1610 to O-1589										
H-1613	Same as H-239	Retains O-1595 on H-1610										
H-1614	STUD; steel, nickel pl; approx 1/2" lg x 3/16" across flats; one end threaded 1/8" lg w/8-40 thd, 3/32" diam plain shank other end	Positions O-1589 and shaft for O-1596		N17-T-ETT 350013-955	150752	150752	H-1614	1	1	1		
H-1615	Same as H-127	Holds H-1614 to O-1597										
H-1616	Same as H-130	Holds H-1614 to O-1597										
H-1617	Same as H-127	Holds O-1569, O-1597 and H-1718 to O-1686										
H-1618	Same as H-130	Holds O-1569, O-1597 and H-1718 to O-1686										
H-1619	Same as H-127	Holds O-1575, O-1597 and H-1719 to O-1686										
H-1620	Same as H-130	Holds O-1575, O-1597 and H-1719 to O-1686										
H-1621	Same as H-108	Holds O-1599 and O-1600 to A-1355										
H-1622	Same as H-105	Holds O-1599 and O-1600 to A-1355										

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
					W	O			EQUIP.	STOCK	TOTAL NO PER EQUIP.
									QUAN.	QUAN.	
H-1657	STUD; steel, nickel pl; approx 1 17/32" lg x 1/2" across flats o/a; one end threaded 3/16" lg w/10-32 thd, drive slot across other end; 4 slots and 3 grooves irregularly spaced	Shaft for O-1636 and O-1637		N17-T-350013-935	CTT		150667	H-1657	1	0	0
H-1658	Same as H-222	Holds H-1657 to A-1355									
H-1659	Same as H-232	Holds H-1657 to A-1355									
H-1660	Same as H-1355	Retains O-1636 and O-1637 on H-1657 and O-1634 on O-1636 and O-1637									
H-1661	Same as H-518	Holds symbols O-1638 through O-1641 to O-1634									
H-1662	Same as H-130	Holds symbols O-1638 through O-1641 to O-1634									
H-1663	SCREW, set; slot drive; headless; steel, nickel pl; #10-32; 13/32" lg; cup point	Adjusts air release from O-1642 by applying pressure to O-1643		N17-T-350014-924	CTT		1214	H-1663	1	0	0
H-1664	NUT, hexagon; steel, nickel pl; #10-32; 3/32" thk; 1/4" across flats;	Locks H-1663 in position			CTT		89897	H-1664	1	0	0
H-1665	Same as H-1366	Holds O-1650, O-1651, O-1652 and H-1667 to A-1355									
H-1666	Same as H-127	Holds O-1650, O-1651, O-1652 and H-1667 to A-1355									
H-1667	WASHER, flat; steel, nickel pl; round, approx 1/8" ID x 3/8" OD x 1/32" thk	Spaces O-1651 and O-1652		N17-T-350003-442	CTT		125802	H-1667	2	1	1
H-1668	STUD; steel, nickel pl; approx 9/16" lg x 3/16" across flats o/a; one end threaded 1/8" lg w/ #6-40 thd; other end has slot	Shaft for O-1653, O-1655 and H-1669			CTT		150693	H-1668, H-1671	2	1	1
H-1669	WASHER, flat; steel, nickel pl; round, approx 5/16" OD x 3/16" ID x 0.028" thk o/a	Friction washers for O-1653			CTT		150711	H-1669, H-1672	4	0	0
H-1670	Same as H-158	Retains H-1669, O-1653 and O-1655 on H-1668									
H-1671	Same as H-1668	Shaft for H-1672, O-1656 and O-1658									
H-1672	Same as H-1669	Friction washers for O-1656									
H-1673	Same as H-158	Retains H-1672, O-1656 and O-1658 on H-1671									
H-1674	Same as H-192	Holds O-1645 to A-1355									

H-1675	Same as H-127	Holds O-1645 to A-1395							
H-1676	Same as H-183	Holds O-1645 to A-1395 at elongated slot only							
H-1677	Same as H-105	Holds H-1668 and H-1671 to A-1395							
H-1678	Same as H-112	Holds H-1668 and H-1671 to A-1395							
H-1679	Same as H-377	Retains O-1669, O-1661 and O-1663 on A-1395							
H-1680	Same as H-1640	Holds H-1605 to A-1395							
H-1681	Same as H-222	Holds H-1605 to A-1395							
H-1682	Same as H-623	Holds O-1666 to A-1395							
H-1683	Same as H-105	Holds O-1666 to A-1395							
H-1684	Same as H-168	Holds O-1666 to A-1395 and O-1664 and O-1669 on O-1666							
H-1685	Same as H-106	Locks O-1669 to O-1668							
H-1686	Same as H-105	Locks O-1669 to O-1668							
H-1687	Same as H-1395	Retains O-1668 in position in O-1667							
H-1688	Same as H-609	Holds O-1642 to A-1395							
H-1689	Same as H-105	Holds O-1642 to A-1395							
H-1690	Same as H-113	Holds O-1673 and O-1672 to A-1398							
H-1691	Same as H-105	Holds O-1673 and O-1672 to A-1398							
H-1692	Same as H-112	Holds O-1673 and O-1672 to A-1398							
H-1693	SCREEN, machine; wrench drive; Hex H; steel, nickel pl; #6-40; approx 3/8" lg o/a; threaded portion 7/32" lg; head 3/64" thk x 5/16" across flats; shoulder 1/16" lg x 7/32" dia	Pivot for and holds O-1675 and H-1694 to A-1398	M17-T-CTT 350014-328	150909	76463	H-1693	1	1	1
H-1694	WASHER, flat; steel, nickel pl; round, approx 5/32" ID x 7/16" OD x 1/16" thk o/a	Spacers O-1675 and A-1398	M17-T-CTT 350013-306	76461	76461	H-1694	1	1	1
H-1695	Same as H-105	Holds H-1693 to A-1398							
H-1696	Same as H-112	Holds H-1693 to A-1398							
H-1697	SCREEN, machines; slot or wrench drive; Hex H; steel, nickel pl; #6-40; approx 7/16" lg o/a; 3/8" lg threaded portion; head 1/16" thk x 1/4" across flats	Holds H-1706 and A-1399 to A-1398	M17-T-CTT 350013-755	151632	151632	H-1697	2	1	2
H-1698	Same as H-105	Holds H-1706 and A-1399 to A-1398							

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS C O	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								EQUIP.		STOCK	
								BOX	QUAN.	BOX	QUAN.
H-1699	Same as H-168	Holds H-1706 and A-1359 to A-1358									
H-1700	SCREW, machine; slot drive; FH; steel, nickel pl; #6-40; approx 1 5/16" lg o/a; 1/2" lg threaded portion; head 1/16" lg x 7/32" diam	Holds A-1359 and O-1676 to A-1355		N17-T-CTT 350013-943	150710	150710	H-1700		2	1	2
H-1701	Same as H-105	Holds A-1359 and O-1676 to A-1355									
H-1702	Same as H-113	Holds A-1359 to O-1688 and O-1689									
H-1703	Same as H-105	Holds A-1359 to O-1688 and O-1689									
H-1704	Same as H-518	Holds O-1679 and O-1680 to A-1359									
H-1705	Same as H-127	Holds O-1679 and O-1680 to A-1359									
H-1706	STUD; steel, nickel pl; approx 3/8" across flats x 5/8" lg o/a; one end threaded 1/4" deep w/#6-40 thd; shank w/slot other end	Shaft for O-1677									
H-1707	Same as H-246	Retains O-1677 and O-1678 on H-1706		N17-T-CTT 350014-281	150800	150800	H-1706		2	0	0
H-1708	Same as H-309	Holds A-1360 and A-1361 to O-1681									
H-1709	Same as H-127	Holds A-1360 and A-1361 to O-1681									
H-1710	Same as H-183	Holds A-1360 and A-1361 to O-1681									
H-1711	STUD; steel, nickel pl; approx 15/32" lg x 1/4" diam o/a; one end threaded 5/32" lg w/#4-40 thd, other end unthreaded; 5/32" diam shoulder w/2 flats near threaded portion	Connects O-1681 with O-1664									
H-1712	Same as H-183	Holds H-1711 to O-1681		N17-T-CTT 350015-345	152505	152505	H-1711		1	0	0
H-1713	Same as H-127	Holds H-1711 to O-1681									
H-1714	Same as H-130	Holds H-1711 to O-1681									
H-1715	Same as H-337	Retains O-1685 on O-1681									
H-1716	Same as H-119	Holds O-1688 and O-1689 to A-1355									

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY TYPE STOCK NUMBER	MANUFAC- TURERS MFG CO	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								EQUIP.		STOCK	
								QUAN.	BOX	QUAN.	BOX
H-1756	Same as H-232	Holds A-1358, O-1715 and O-1721 on O-1742									
H-1757	Same as H-1742	Shaft for O-1722									
H-1758	Same as H-222	Holds H-1757 to A-1355									
H-1759	Same as H-232	Holds H-1757 to A-1355									
H-1760	Same as H-108	Holds O-1723 to O-1722									
H-1761	Same as H-105	Holds O-1723 to O-1722									
H-1762	Same as H-1554	Holds O-1723 to O-1722									
H-1763	Same as H-222	Holds A-1358, O-1722 and O-1725 on H-1757									
H-1764	Same as H-232	Holds A-1358, O-1722 and O-1725 on H-1757									
H-1765	Same as H-1348	Holds H-1306 to O-1722									
H-1766	Same as H-105	Holds H-1306 to O-1722									
H-1767	Same as H-168	Holds H-1306 to O-1722									
H-1768	Same as H-1348	Holds O-1727 to O-1722									
H-1769	Same as H-105	Holds O-1727 to O-1722									
H-1770	Same as H-1348	Holds O-1727 to O-1722									
H-1771	Same as H-105	Holds H-1307 to O-1722									
H-1772	Same as H-168	Holds H-1307 to O-1722									
H-1773	Same as H-104	Holds H-1307 to O-1722									
H-1774	Same as H-105	Holds O-1728 to O-1722									
H-1775	Same as H-1554	Holds O-1728 to O-1722									
H-1776	Same as H-104	Holds O-1728 to O-1722									
H-1777	Same as H-105	Holds O-1729 to O-1722									
H-1778	Same as H-1554	Holds O-1729 to O-1722									
H-1779	Same as H-104	Holds O-1728 and O-1729 to O-1722									
H-1780	Same as H-165	Holds O-1728 and O-1729 to O-1722									

Part Number	Description	Quantity	Unit of Measure	Material	Notes	Remarks	Quantity	Unit of Measure	Material	Notes	Remarks
H-1781	Same as H-1354					Holds O-1728 and O-1729 to O-1722					
H-1782	Same as H-246					Retains O-1731 and O-1734 on O-1730					
H-1783	Same as H-1311					Locks O-1734 to O-1730					
H-1784	Same as H-105					Locks O-1734 to O-1730					
H-1785	Same as H-1354					Locks O-1734 to O-1730					
H-1786	Same as H-1355					Locks O-1734 to O-1730					
H-1787	WASHER, lock; steel; round, approx 9/16" OD x 3/8" ID x 1/32" thick o/a; splitering type	4	1	2		Holds O-1736 to A-1389					
H-1788	WUT, hexagon; steel, nickel pl; 3/8"-32; approx 1/8" thick o/a; 1/2" across flats	4	1	1		Holds O-1736 to A-1389					
H-1789	Same as H-168					Holds O-1737 to O-1730					
H-1790	Same as H-105					Holds O-1737 to O-1730					
H-1791	Same as H-112					Holds O-1737 to O-1730					
H-1792	SCREW, machine; slot drive; FH; steel, nickel pl; 6-40; approx 1/4" lg o/a; 5/32" lg threaded portion; head 3/32" thick x 5/32" diam	3	1	2		Locks O-1741 to O-1740					
H-1793	Same as H-192					Positions O-1745 in relation to O-1860					
H-1794	Same as H-130					Locks H-1793 in position					
H-1795	Same as H-1311					Locks O-1743 to O-1740					
H-1796	Same as H-105					Locks O-1743 to O-1740					
H-1797	Same as H-1354					Locks O-1743 to O-1740					
H-1798	Same as H-1555					Locks O-1743 to O-1740					
H-1799	SCREW, shoulder; slot drive; FH; steel, nickel pl; #6-40; approx 15/32" lg o/a; 1/4" lg threaded portion; head 9/32" diam x 3/32" thick shoulder 3/16" diam x 1/2" thick; neck between head and shoulder	1	0	0		Shaft for O-1759 and holds O-1757, O-1758 and O-1759 to O-1754					
H-1800	Same as H-112					Locks H-1799 to O-1754					
H-1801	Same as H-168					Holds O-1754 to O-1740 and O-1740 to A-1380					
H-1802	Same as H-105					Holds O-1754 to O-1740 and O-1740 to A-1380					
H-1803	Same as H-112					Holds O-1754 to O-1740 and O-1740 to A-1380					
H-1804	Same as H-1792					Locks O-1760 to O-1740					
H-1805	Same as H-192					Positions O-1761 in relation to O-1378					

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS										SPARE PARTS			
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		STOCK	
					M	C				BOX	QUAN.	BOX	QUAN.
H-1806	Same as H-130	Locks H-1805 in position											
H-1807	Same as H-1792	Locks O-1768 to O-1740											
H-1808	Same as H-1787	Holds O-1770 to A-1391											
H-1809	Same as H-1788	Holds O-1770 to A-1391											
H-1810	Same as H-1311	Locks O-1773 to O-1740											
H-1811	Same as H-105	Locks O-1773 to O-1740											
H-1812	Same as H-1554	Locks O-1773 to O-1740											
H-1813	Same as H-1555	Locks O-1773 to O-1740											
H-1814	Same as H-246	Locks O-1773 to O-1740											
		Retains O-1774 and O-1776 on O-1740											
H-1825	Same as H-353	Holds O-1793 to O-1792											
H-1826	Same as H-127	Holds O-1793 to O-1792											
H-1827	Same as H-355	Holds O-1793 to O-1792											
H-1828	Same as H-353	Holds O-1793 to O-1793											
H-1829	Same as H-127	Holds O-1793 to O-1793											
H-1830	Same as H-355	Holds O-1793 to O-1793											
H-1831	Same as H-1311	Locks O-1801 to O-1791											
H-1832	Same as H-105	Locks O-1801 to O-1791											
H-1833	Same as H-105	Locks O-1801 to O-1791											
H-1834	Same as H-112	Locks O-1801 to O-1791											
H-1835	Same as H-174	Locks O-1801 to O-1791											
		Holds O-1802, O-1803, O-1804, O-1806, and O-1808 to O-1807											
H-1836	Same as H-127	Holds O-1802, O-1803, O-1804, O-1806, and O-1808 to O-1807											
H-1837	Same as H-355	Holds O-1802, O-1803, O-1804, O-1806, and O-1808 to O-1807											
H-1838	Same as H-353	Holds O-1809 to O-1808											
H-1839	Same as H-127	Holds O-1809 to O-1808											

Section 8
H-1840—H-1864

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.		STOCK
					Q	DESIG.				QUAN	BOX	
H-1865	Same as H-127	Holds symbols O-1844 through O-1847 to O-1848										
H-1866	WASHER, flats; steel, nickel pl; round w/2 ears, approx 1" h x 13/16" wd x 0.035" thk o/a, 9/16" ID; body hole in ea ear	Holds symbols O-1844 through O-1847 to O-1848		N17-T-350015-105	151794	151794	151794	H-1866, H-1879	2	0	0	
H-1867	Same as H-353	Holds O-1849 to O-1848										
H-1868	Same as H-127	Holds O-1849 to O-1848										
H-1869	Same as H-355	Holds O-1849 to O-1848										
H-1870	Same as H-1311	Locks O-1860 to O-1791										
H-1871	Same as H-105	Locks O-1860 to O-1791										
H-1872	CLAMP: ball bearing; steel; nickel pl; 2 screws employed; approx 2 1/16" lg x 1 1/16" wd x 0.095" thk o/a; accom approx 1 1/8" diam material	Clamps O-1861 to A-1391		N17-T-350015-362	152537	152537	152537	H-1872	1	0	0	
H-1873	Same as H-609	Holds H-1872 to A-1391										
H-1874	Same as H-105	Holds H-1872 to A-1391										
H-1875	Same as H-176	Locks O-1861 to O-1791										
H-1876	Same as H-127	Locks O-1861 to O-1791										
H-1877	Same as H-174	Holds symbols O-1862 through O-1865 to O-1866										
H-1878	Same as H-127	Holds symbols O-1862 through O-1865 to O-1866										
H-1879	Same as H-1866	Holds symbols O-1862 through O-1865 to O-1866										
H-1880	Same as H-353	Holds O-1867 to O-1866										
H-1881	Same as H-127	Holds O-1867 to O-1866										
H-1882	Same as H-355	Holds O-1867 to O-1866										
H-1883	Same as H-1311	Locks O-1878 to O-1791										
H-1884	Same as H-105	Locks O-1878 to O-1791										
H-1885	STUD, eccentric; steel, nickel pl; approx 1 1/16" lg x 5/16" across flats o/a; shank end threaded 3/16" lg w/#6-40 thd; slot next to hex shoulder, drive slot across end of body	Pivot for O-1879		N17-T-350014-640	150364	150364	150364	H-1885	1	1	1	

H-1866	Same as H-105		Holds H-1865 to A-1376			
H-1867	Same as H-112		Holds H-1865 to A-1376			
H-1868	Same as H-126		Holds O-1882 to O-1881			
H-1869	Same as H-127		Holds O-1882 to O-1881			
H-1890	Same as H-1346		Holds O-1883 to O-1881			
H-1891	Same as H-127		Holds O-1883 to O-1881			
H-1892	Same as H-355		Holds O-1883 to O-1881			
H-1893	Same as H-353		Holds O-1884 to O-1883			
H-1894	Same as H-127		Holds O-1884 to O-1883			
H-1895	Same as H-355		Holds O-1884 to O-1883			
H-1896	Same as H-1311		Locks O-1891 to O-1791			
H-1897	Same as H-105		Locks O-1891 to O-1791			
H-1910	Same as H-216		Metalins O-1945 to A-1370			
H-1911	Same as H-337		Retains O-1903 to O-1705			
H-1912	SUBM; machine; slot drive; FH; steel, nickel pl; #2-56; approx 1/4" lg o/a; 1/8" lg threaded portion; head 3/16" dia x 1/32" thk; shoulder 1/16" lg x 1/8" diam		Holds O-1906 to A-1370	150080	150080	H-1912
H-1913	Same as H-322		Holds O-1906 to A-1370			
H-1914	Same as H-381		Holds O-1906 to A-1370			
H-1915	Same as H-192		Locks arm of A-1370 in adjusted position			
H-1916	Same as H-127		Locks arm of A-1370 in adjusted position			
H-1917	Same as H-183		Locks arm of A-1370 in adjusted position			
H-1918	Same as H-321		Holds O-1907 to A-1370			
H-1919	Same as H-322		Holds O-1907 to A-1370			
H-1920	Same as H-381		Holds O-1907 to A-1370			
H-1921	Same as H-518		Holds O-1908, O-1911, and O-1912 to A-1370			
H-1922	Same as H-127		Holds O-1908, O-1911, and O-1912 to A-1370			
H-1923	Same as H-798		Holds O-1908, O-1911, and O-1912 to A-1370			

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
								EQUIP.	STOCK	
								BOX	QUAN.	BOX
H-1924	Same as H-1366	Holds O-1913, O-1916, and O-1917 to A-1370								
H-1925	Same as H-127	Holds O-1913, O-1916, and O-1917 to A-1370								
H-1926	Same as H-798	Holds O-1913, O-1916, and O-1917 to A-1370								
H-1927	Same as H-113	Holds A-1371 to O-1918								
H-1928	Same as H-112	Holds A-1371 to O-1918								
H-1929	Same as H-113	Holds A-1371 to O-1998								
H-1930	Std. machine; slot or wrench drive; Hex H; steel, nickel pl; #6-40; approx 19/32" lg o/a; 1/4" lg threaded portion; head 1/16" thk x 5/16" across flats; shoulder 3/32" lg x 5/32" diam	Holds O-1919 and O-1920 to A-1389 and retains O-1918 on O-1919		N17-T-350011-659	150395	150395	H-1930, H-1976	2	1	1
H-1931	Same as H-105	Holds O-1919 and O-1920 to A-1389								
H-1932	Same as H-112	Holds O-1919 and O-1920 to A-1389								
H-1933	Same as H-1311	Holds O-1922, O-1923 and O-1924 to A-1389								
H-1934	Same as H-105	Holds O-1922, O-1923 and O-1924 to A-1389								
H-1935	Same as H-112	Holds O-1922, O-1923 and O-1924 to A-1389								
H-1936	Same as H-158	Retains O-1918 on O-1928								
H-1937	Same as H-108	Holds A-1372 to O-2017								
H-1938	Same as H-105	Holds A-1372 to O-2017								
H-1939	STD: steel, nickel pl; approx 17/32" lg x 5/16" across flats o/a; one end threaded 3/16" lg w/#6-40 thd, eccentric shank w/slot other end	Pivot for O-1933		N17-T-350011-676	150429	150429	H-1939, H-1984	2	1	1
H-1940	Same as H-105	Holds H-1939 to A-1372								
H-1941	Same as H-112	Holds H-1939 to A-1372								
H-1942	Same as H-246	Retains O-1929 and O-1930 on O-1928								

H-1943	Same as H-246		Metaline O-1929 on A-1318					
H-1944	Same as H-246		Retains O-1928 on O-1933					
H-1945	Same as H-208		Holds O-1931 and O-1932 to O-1928					
H-1946	WASHER, flat; steel, nickel pl; round, approx 7/16" OD x 5/32" ID x 1/32" thk o/a		Metaline O-1931 on O-1932					
H-1947	Same as H-168		Holds O-1931 and O-1932 to O-1928					
H-1948	Same as H-105		Holds O-1931 and O-1932 to O-1928					
H-1949	Same as H-112		Holds O-1931 and O-1932 to O-1928					
H-1950	Same as H-246		Retains O-1928 on H-1952					
H-1951	Same as H-246		Retains O-1933 on H-1939					
H-1952	STU; steel, nickel pl; approx 3/4" lg x 5/16" across flats o/a; one end threaded 3/16" lg w/p10-32 thd; neck and slot around other end		Pivot for O-1928					
H-1953	Same as H-222		Holds H-1952 to A-1389					
H-1954	Same as H-232		Holds H-1952 to A-1389					
H-1955	Same as H-1366		Holds O-1935 and O-1936 to O-1937					
H-1956	Same as H-127		Holds O-1935 and O-1936 to O-1937					
H-1957	Same as H-183		Holds O-1935 and O-1936 to O-1937					
H-1958	Same as H-113		Holds O-1938 to A-1389					
H-1959	Same as H-105		Holds O-1938 to A-1389					
H-1960	Same as H-113		Holds O-1941 to A-1389					
H-1961	Same as H-105		Holds O-1941 to A-1389					
H-1962	Same as H-113		Holds A-1373 to A-1389					
H-1963	Same as H-105		Holds A-1373 to A-1389					
H-1964	Screw, machine; wrench drive; Hex H; stainless steel; #4-40; approx 1/4" lg o/a; 3/16" lg threaded portion; head 1/16" thk x 3/10" across flats; character "H" stamped on head		Holds A-1374 to A-1375 and identifies type arrangement					
H-1965	Same as H-126		Holds A-1374 to A-1375					
H-1966	Same as H-127		Holds A-1374 to A-1375					

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS CODE	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
								TOTAL NO. PER EQUIP.	EQUIP.	STOCK
									BOX	QUAN.
H-1967	Same as H-183	Holds A-1374 to A-1375								
H-1968	NUT, shoulder: stainless steel; #4-40; approx 5/32" thk o/a; 1/4" across flats; c/o hex head, shoulder and shank	Locks A-1374 to A-1375		N17-T-CTT 350014-121	150078	150078	H-1968	1	1	1
H-1969	STUD; stainless steel; approx 13/32" lg x 1/4" across flats o/a; short shanked end threaded 3/16" deep w/4-40 thd	Locks A-1374 to A-1375 and handle for removing and guide for positioning type box		N17-T-CTT 350013-910	150079	150079	H-1969	1	1	1
H-1970	Same as H-112	Holds A-1371 to U-1998								
H-1971	CLAMP; bearing; steel; nickel pl; mts by 2 screws; approx 1 15/32" h x 1 1/8" wd x 3/32" thk o/a; accom approx 1" diam bearing	Clamps U-1997 to A-1391		N17-T-CTT 350015-598	152589	152589	H-1971	1	0	0
H-1972	CLAMP; bearing; steel; nickel pl; mts by 2 screws; approx 3/4" lg x 1 1/16" h x 1/8" wd o/a, 0.035" thk material; accom approx 1" diam bearing; irregularly formed, cutout one side	Clamps H-1971 and U-1997 to A-1391		N17-T-CTT 350015-593	152550	152550	H-1972	1	0	0
H-1973	Same as H-108	Holds H-1971, H-1972 and H-1975 to A-1391								
H-1974	Same as H-105	Holds H-1971, H-1972 and H-1975 to A-1391								
H-1975	CLAMP; bearing; steel; nickel pl; approx 3/4" lg x 1 1/16" h x 1/8" wd o/a; accom approx 1" diam bearing; upper half formed w/curved cutout at top, 2 tapped mtg holes in lower half	Clamps O-1997 to A-1391		N17-T-CTT 350014-664	150401	150401	H-1975	1	0	0
H-1976	Same as H-1930	Holds O-1999 and O-2002 to A-1391 and retains O-1998 on O-1999								
H-1977	Same as H-105	Holds O-1999 and O-2002 to A-1391								
H-1978	Same as H-112	Holds O-1999 and O-2002 to A-1391								
H-1979	Same as H-270	Holds O-2000, O-2001 and O-2002 to A-1391								
H-1980	Same as H-105	Holds O-2000, O-2001 and O-2002 to A-1391								
H-1981	Same as H-112	Holds O-2000, O-2001 and O-2002 to A-1391								

[illegible]

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
									EQUIP.		STOCK	
									QUAN.	BOX	QUAN.	BOX
											TOTAL NO. PER EQUIP.	
H-2010	Same as H-105	Holds A-1349 to U-2017										
H-2020	Same as H-104	Holds O-2030 and O-2031 to O-2028										
H-2021	Same as H-105	Holds O-2030 and O-2031 to O-2028										
H-2022	Same as H-104	Locks O-2033 on O-2028										
H-2023	Same as H-105	Locks O-2033 on O-2028										
H-2024	SCREW, machine: slot drive; flat Fil H; steel, nickel pl; #6-40; approx 1 1/4" lg o/a; 9/32" lg threaded portion; 3/16" thk x 9/32" diam head; 3/16" diam x 3/4" lg shoulder	Shaft for O-2034 and holds O-2035, O-2036 and O-2037 to A-1391		N17-T-CTT 350011-150	150912		150912	H-2024	1	0	0	
H-2025	Same as H-105	Holds O-2035, U-2036 and O-2037 to A-1391										
H-2026	Same as H-112	Holds O-2035, O-2036 and O-2037 to A-1391										
H-2027	Same as H-417	Holds U-2034 to U-2035										
H-2028	Same as H-127	Holds O-2034 to O-2035										
H-2029	SCREW, machine: slot or wrench drive; Hex H; steel, nickel pl; #6-40; approx 1 5/32" lg o/a; 5/32" lg threaded portion; head 3/32" thk x 5/16" across flats; shoulder 1/16" lg x 7/32" diam	Shaft for and holds O-2039 and H-2030 to A-1391		N17-T-CTT 350011-626	150342		150342	H-2029	1	1	1	
H-2030	WASHER, flat: steel, nickel pl; round, approx 5/16" OD x 5/32" ID x 0.060" thk o/a	Retains O-2039 on shoulder of H-2029		N17-T-CTT 350013-200	74722		74722	H-2030	1	0	0	
H-2031	Same as H-105	Holds O-2039 and H-2030 to A-1391										
H-2032	Same as H-112	Holds O-2039 and H-2030 to A-1391										
H-2033	SCREW, machine: slot drive; PH; steel, nickel pl; #6-40; approx 1/4" lg o/a; threaded portion 1/8" lg; head 1/16" lg x 5/16" diam; shoulder 1/16" lg x 3/16" diam	Pivot for and holds O-2040 to A-1391		N17-T-CTT 350011-190	150646		150646	H-2033	1	1	1	
H-2034	STUD; steel, nickel pl; approx 13/16 lg x 5/16" diam o/a; shoulder end threaded 1/4" deep w/#6-40 thd, drive slot and body slot other end	Shaft for O-2048		N17-T-CTT 350013-998	150318		150318	H-2034	1	0	0	
H-2035	Same as H-113	Holds H-2034 to A-1391										

[illegible]

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY TYPE STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
									TOTAL NO PER EQUIP.	BOX	EQUIP.	BOX
H-2060	Same as H-183	Holds O-2062 to U-2061										
H-2061	Same as H-119	Holds O-2063 to A-1389										
H-2062	Same as H-105	Holds O-2063 to A-1389										
H-2063	Same as H-119	Holds O-2064 to A-1391										
H-2064	Same as H-105	Holds O-2064 to A-1391										
H-2065	Same as H-1366	Locks O-2065 in U-2063 and O-2064										
H-2066	Same as H-127	Locks O-2065 in O-2063 and O-2064										
H-2067	Same as H-1640	Holds O-2067 to A-1389										
H-2068	Same as H-222	Holds O-2067 to A-1389										
H-2069	Same as H-1540	Holds O-2067 to A-1391										
H-2070	Same as H-222	Holds O-2067 to A-1391										
H-2071	Same as H-1370	Holds H-2075, O-2068, and O-2070 to A-1389										
H-2072	Same as H-105	Holds H-2075, O-2068 and O-2070 to A-1389										
H-2073	Same as H-104	Holds O-2068 to A-1389										
H-2074	Same as H-105	Holds O-2068 to A-1391										
H-2075	Same as H-803	Retains O-2070 on O-2071 and O-2072										
H-2076	Same as H-351	Holds H-2080, O-2073 and O-2075 to A-1391										
H-2077	Same as H-105	Holds H-2080, O-2073 and O-2075 to A-1391										
H-2078	Same as H-104	Holds O-2073 to A-1391										
H-2079	Same as H-105	Holds O-2073 to A-1391										
H-2080	Same as H-803	Retains O-2075 on O-2076										
H-2093	STUB: steel; approx 3/8" lg x 3/16" diam o/s; one end threaded 5/32" lg w/6-40 thd; drive slot across other end	Pivot for O-2089		N17-T- 350014-274	OTT	150781	150781	H-2093, H-2096	2	0	0	0

H-2094	Same as H-105		Holds H-2093 to A-1389						
F-2095	Same as H-112		Holds H-2093 to A-1389						
H-2096	Same as H-2093		Pivot for O-2089						
H-2097	Same as H-105		Holds H-2093 to A-1391						
H-2098	Same as H-112		Holds H-2093 to A-1391						
H-2099	Same as H-113		Holds O-2093 to A-1389						
H-2100	Same as H-105		Holds O-2093 to A-1389						
H-2101	Same as H-113		Holds O-2093 to A-1391						
H-2102	Same as H-105		Holds O-2093 to A-1391						
H-2103	Same as H-113		Holds A-1380 to O-2093						
H-2104	Same as H-105		Holds A-1380 to O-2093						
H-2105	Same as H-113		Holds A-1381 to O-2093						
H-2106	Same as H-105		Holds A-1381 to O-2093						
H-2107	Same as H-113		Holds A-1382 to O-2093						
H-2108	Same as H-105		Holds A-1382 to O-2093						
H-2109	Same as H-803		Nutrunner and guide for O-2094						
H-2110	Same as H-337		Maintains U-2094 and H-2109 on A-1381						
H-2111	Same as H-113		Holds A-1380 to A-1389						
H-2112	Same as H-105		Holds A-1380 to A-1389						
H-2113	JUL; steel, nickel pl; approx 1 3/4" lg x 5/16" across flats o/a; one end threaded 3/16" lg w/ #6-40 thd; shoulder and shank w/ slot and 2 grooves on other end		Pivot for O-2099	h17-f- 500M-134	CIT	1502L4	1502L4	1502L4	H-2113
									1 0 0
H-2114	Same as H-105		Holds H-2113 to A-1381						
H-2115	Same as H-112		Holds H-2113 to A-1381						
H-2116	Same as H-246		Maintains U-2099 and U-2100 on H-2113						
H-2117	Same as H-246		Maintains O-2102 and U-2103 on A-1381						
H-2118	Same as H-246		Maintains O-2104 on A-1382						
H-2119	Same as H-158		Maintains O-2106 on A-1382						
H-2120	Same as H-246		Maintains O-2108 and U-2111 on A-1381						

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX	QUAN.	BOX	QUAN.
H-2121	Same as H-158	Retains O-2107 on O-2016										
H-2122	Same as H-337	Retains O-2112 and O-2113 to O-2108										
H-2123	Same as H-119	Holds A-1383 to A-1391										
H-2124	Same as H-105	Holds A-1383 to A-1391										
H-2125	Same as H-113	Holds O-2115 to A-1381										
H-2126	Same as H-105	Holds O-2115 to A-1381										
H-2127	Same as H-104	Holds O-2115 to A-1389										
H-2128	Same as H-105	Holds O-2115 to A-1389										
H-2129	Same as H-1355	Retains symbols O-2116 through O-2120 on one side of O-2115										
H-2130	Same as H-609	Holds O-2118 to O-2116										
H-2131	Same as H-105	Holds O-2118 to O-2116										
H-2132	Same as H-168	Holds O-2118 to O-2116										
H-2133	SCHW, set: slot drive; headless; steel, nickel pl, special hardness; #6-40; 1/8" lg; cup point	Locks O-2123 on O-2122		N17-T-1 350001-689	CTT	73894	H-2133	4	0	0		
H-2134	Same as H-518	Holds O-2124 and O-2125 to A-1389 and A-1391										
H-2135	Same as H-127	Holds O-2124 and O-2125 to A-1389 and A-1391										
H-2136	Same as H-183	Retains O-2124 on O-2125										
H-2137	Same as H-113	Holds O-2127 and O-2128 to A-1389										
H-2138	Same as H-105	Holds O-2127 and O-2128 to A-1389										
H-2139	FIN: stainless steel; round head and shank; approx 3/16" lg x 1/8" diam o/s; mts by shank	Bearing surface for O-2129 at A-1391		N17-T-1 350014-784	CTT	151703	H-2139	1	0	0		
H-2140	STUD; steel, nickel pl; approx 3/8" lg x 3/16" diam o/s; one end threaded 3/32" lg w/ #4-40 thd, drive slot across other end	Stop for O-2124		N17-T-1 350014-362	CTT	150992	H-2140	2	0	0		
H-2141	Same as H-127	Locks H-2140 to A-1389 and A-1391										

H-2144	Same as H-158		Retains O-2134 on O-2127						
H-2145	Same as H-158		Retains O-2134 on O-2141						
H-2146	Same as H-108		Holds O-2142 to A-1389 and A-1391						
H-2147	Same as H-105		Holds O-2142 to A-1389 and A-1391						
H-2148	Same as H-113		Holds A-1384 to O-2135						
H-2149	Same as H-105		Holds A-1384 to O-2135						
H-2150	Same as H-112		Holds A-1384 to O-2135						
H-2151	Same as H-119		Holds O-2135 to A-1389 and A-1391						
H-2152	Same as H-105		Holds O-2135 to A-1389 and A-1391						
H-2153	CLAMP; steel; nickel pl; one screw employed; approx 9/16" lg x 7/16" h x 1/8" wd o/a, 0.035" thick material; accom 3/16" diam shaft		Clamps O-2140 to O-2142	M17-T- J50013-973	GTT	150267	150267	H-2153	4 0 0
H-2154	Same as H-1653		Holds H-2153 and O-2144 to O-2142						
H-2155	Same as H-127		Holds H-2153 and O-2144 to O-2142						
H-2156	Same as H-130		Holds H-2153 and O-2144 to O-2142						
H-2157	Same as H-1653		Holds A-1385 to O-2142						
H-2158	Same as H-127		Holds A-1385 to O-2142						
H-2159	Same as H-130		Holds A-1385 to O-2142						
H-2170	Same as H-126		Holds O-2155 to A-1389						
H-2171	Same as H-127		Holds O-2155 to A-1389						
H-2172	Same as H-113		Holds A-1390 to A-1389						
H-2173	Same as H-105		Holds A-1390 to A-1389						
H-2174	Same as H-113		Holds O-2157 to A-1391						
H-2175	Same as H-105		Holds O-2157 to A-1391						
H-2176	Same as H-113		Holds O-2160 and O-2161 to A-1391						
H-2177	Same as H-105		Holds O-2160 and O-2161 to A-1391						
H-2178	Same as H-168		Retains O-2160 on O-2161						
H-2179	Same as H-113		Holds O-2159 to A-1391						
H-2180	Same as H-105		Holds O-2159 to A-1391						

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
								EQUIP.	STOCK	QUAN.
								BOX	QUAN.	
H-2181	Same as H-112	Holds O-2159 to A-1391								
H-2182	Same as H-113	Positions O-2107 by O-2160 and O-2016								
H-2183	Same as H-112	Locks H-2182 in position								
H-2184	Same as H-126	Holds O-2162 to A-1391								
H-2185	Same as H-127	Holds O-2162 to A-1391								
H-2186	Same as H-113	Holds A-1392 to A-1391								
H-2187	Same as H-105	Holds A-1392 to A-1391								
H-2188	POST, spring; steel, nickel pl; shank ea end w/2 grooves in ea, hex shoulder and threaded body at ctr; approx 2 5/16" lg x 1/4" across flats o/a; mts by body threaded 7/32" lg w/ #10-32 thd	Anchor for O-1772, O-1775, O-1763 and O-1766		N17-T- 350014-625	150341	150341	H-2188	1	0	0
H-2189	Same as H-222	Holds H-2188 to A-1391								
H-2190	Same as H-232	Holds H-2188 to A-1391								
H-2191	STUD; steel, nickel pl; approx 1" lg x 1/4" across flats o/a; both ends threaded 5/16" lg and 17/32" lg w/#10-32 thd	Mounts H-2194 and H-2196		N17-T- 350014-632	150353	150353	H-2191	1	0	0
H-2192	Same as H-222	Holds H-2191 to A-1391								
H-2193	Same as H-232	Holds H-2191 to A-1391								
H-2194	POST, eccentric; steel, nickel pl; hex body w/off ctr shank one end; approx 1 3/16" lg x 1/4" across flats o/a; mts by #10-32 tapped hole in one end of body	Adjustable stop for O-1761		N17-T- 350014-532	150351	150351	H-2194, H-2196	2	0	0
H-2195	Same as H-232	Locks H-2194 in position								
H-2196	Same as H-2194	Adjustable stop for O-1771								
H-2197	Same as H-232	Locks H-2196 in position								
I-751	Same as E-751	SYMBOL DESIGNATIONS I-751 AND I-752 USED ON CY-870/UG AND CY-871/UG CABINETS Pilot light for end of line indication								
I-752	GONG; steel, nickel pl; curved on one side, dished out on other side; approx 3" diam x 1" lg o/a, 0.072" thk material; mts by body hole w/2 cutouts in ctr of gong	Signal bell for the attendant		N17-T- 350006-899	43954	43954	I-752	1	0	0

I-1301	DIAL: aluminum, plain anodized; irregular shape, 10 equidistant depressions around circum of head, 30 beveled teeth one end, gear w/18 teeth other end, shoulder between gear and head; approx 1 1/4" OD x 1 1/4" ID x 3/4" lg o/a; mts by ID; 12 lg and 12 short equidistant lines stamped on circum of shoulder, figures "0 10 20 30 40 50 60 70 80 90 100 110" stamped opposite lg lines	Dial for selecting range scale	N17-T-350015-538	CTT	152436	152436	I-1301	1	0	0
J-1301	CONNECTOR, receptacle; 20 round male contacts; straight; approx 2 3/32" lg x 3/4" wd x 3/4" h o/a; rectangular, black phenolic body; mts by 2 body holes on 1 27/32" x 7/32" mtg ctrs; guide pin hole in face	Termination for W-1301	N17-T-350015-876	CTT	152467	152467	J-1301	2	0	0
J-1101	CONNECTOR, receptacle: 2 flat parallel blades; straight type; approx 1 1/8" lg x 1 1/2" wd x 9/16" thk o/a; 110 v; mts by 2 body holes in shoulder	Convenience receptacle	N17-C-72137-1375	CMG	12844	151422	J-1101	1	0	0
J-1301	Same as J-1301	Termination for W-1302								
K-101	CONTACT ASSEMBLY: o/o terminals, box, cover, bracket, toggle, guide, toggle extension, spring, toggle link, base and contact screws; base screw across approx ctr of box, guide mtd one end, 2 contact screws mtd one side of base w/terminal connected to ea, toggle link connected by spring to terminal on other side of base, link holds toggle in position over contact, extension toggle assembled to toggle and extends through guide and through slot in side of box, cover screwed to top of box, bracket formed on one end, w/elongated slot, mtg on bottom of box; approx 1 3/4" h x 2 1/2" lg x 1 1/8" wd o/a; mts by two elongated holes in adjusting bracket	Receives incoming signals and sets up selector code on the Automatic Typewriter	N17-T-350014-756	CTT	151170	151170	K-101	1	0	0
K-501	RELAY, motor starting: SFST normally open; single winding, 6.1 amps AC operating current, 5.2 amps AC release current, insulated; solder lug terminals on coil and contacts; approx 1 27/32" lg x 1 1/4" wd x 1 1/16" h o/a; clamp mtd; fast acting; dust proof cover	Starting relay for the synchronous motor	N17-T-350014-953	CTT	151923	151923	K-501	1	0	0
K-1101	RELAY, armature: LFT, one set normally closed, one set normally open; contact rating 8 amps, 115 v AC; palladium clad contacts, approx 3/16" diam; single winding, 115 v AC, 60 cye, insulated coil; solder lug term on coil and contacts; approx 2 9/16" lg x 2 3/16" wd x 1 3/4" h o/a; mts by 2 body holes, approx 1/4" diam on 2 1/4" mtg o/a; fast acting	Shunts signal line when S-1101 is in off position	N17-R-64362-30377	CABE	MR-1301	151808	K-1101	1	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS W O C	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
								TOTAL NO. PER EQUIP.	EQUIP.	
									QUAN.	BOX
O-101	PLATE, spacer: steel, nickel plated; rounded ends; approx 1 5/16" lg x 5/8" wd x 0.065" thk o/a; mts by one large and one small body hole	Spacer for automatic typer		N17-T-350014-463	CTT 161118	161118	O-101	4	0	0
O-102	SPRING; helical extension type; 0.029" diam music wire; approx 1 1/2" lg x 3/16" OD o/a; approx 39 turns; parallel loop terminals; mts by terminals	Applies tension to H-115 and H-116		N17-T-350002-774	CTT 86835	86835	O-102, O-1490, O-1562	3	1	1
O-103	LEVER; steel, nickel plated; irregular "v" shape, both ends formed, curved body ear one side, hub welded at point of "v"; approx 1 23/32" lg x 1 7/16" h x 1/2" wd o/a, 0.086" thk, material; mts by ID of hub	Operates S-101		N17-T-350013-707	CTT 161341	161341	O-103	1	0	0
O-104	SPRING; helical extension type; 0.016" diam music wire; approx 23/32" lg x 5/32" OD x 1/8" ID o/a; approx 26 turns; parallel hook term ea end; mts by terms	Applies tension to O-103		N17-T-350012-711	CTT 49420	49420	O-104, O-329, O-1313	3	1	2
O-119	PLATE, nut; steel, nickel plated; approx 7/8" lg x 5/32" wd x 0.042" thk o/a; mts by two tapped holes	Lock S-104 to A-108		N17-T-350016-260	CTT 151886	151886	O-119	1	0	0
O-120	HUB; steel, nickel plated; approx 9/32" lg x 1/2" OD x 1/8" ID o/a; mts by ID; 5/32" wd shoulder between two 3/32" wd shanks	Bearing for O-121 and O-122		N17-T-350013-686	CTT 151236	151236	O-120	1	1	1
O-121	RATCHET; moulded black bakelite; approx 7/8" OD x 3/8" ID x 1/8" thk o/a; mts by etb ID; 28 teeth around OD w/outout one side	Operates O-125 and O-130		N17-T-350013-686	CTT 151235	151235	O-121	1	1	1
O-122	RATCHET; moulded black bakelite; approx 7/8" OD x 3/8" ID x 1/8" thk o/a; mts by etb ID; 27 teeth around OD w/outout one side	Operates O-125 and O-130		N17-T-350013-687	CTT 151234	151234	O-122	1	1	1
O-123	SPRING; flat type; 0.010" thk nickel silver; approx 3/4" lg x 3/8" h x 1/32" wd o/a; mts by hole in ctr; three equidistant blades	Applies pressure to O-121 and O-122		N17-T-350013-689	CTT 151237	151237	O-123	2	1	1
O-124	WASHER, felt; hard, white felt; round, 7/32" ID x 3/8" OD x 1/16" thk	Lubricates O-125		N17-T-350013-794	CTT 109757	109757	O-124, O-127, O-129, O-1570, O-1571, O-1576, O-1577, O-1663	8	1	5
O-125	PAWLS; steel, nickel plated; irregularly shaped curved body; approx 13/16" lg x 11/16" wd x 0.083" thk o/a; mts by large body hole in rounded p/o body; body hole oak both sides near one end	Operates O-128		N17-T-350013-692	CTT 151240	151240	O-125	1	0	0

Q-126	Q-127	Q-128	Q-129	Q-130	Q-131	Q-132	Q-133	Q-134	Q-135	Q-136	Q-137	Q-138
SPRING; helical extension type; 0.016" diam music wire; approx 1 7/8" lg x 5/32" OD x 1/8" ID o/a; approx 14 turns; parallel hook term on end; mts by terms	Same as Q-126	LEVER; steel, nickel plated; irregular shape w/rounded ear; approx 1 3/16" lg x 15/16" wd x 0.063" thk o/a; mts by large hole in rounded p/o body oak one side; body hole oak both sides in ear	Same as Q-126	PAWL; steel, nickel plated; irregular shape; two arms w/elongated rise between on one side; approx 2 3/16" lg x 3/4" wd x 0.063" thk o/a; mts by large hole, oak one side below largest arm; body hole oak both sides in rounded end	SPRING; helical extension type; 0.014" diam music wire; approx 27/32" lg x 5/32" OD x 1/8" ID o/a; approx 44 turns; parallel hook term on end; mts by terms	GUIDE; code bar; steel, nickel plated; rectangular shape, one side formed, ear w/body hole at one end, elongated outset in body w/two connecting strips across and 10 teeth on one side; approx 1 15/16" lg x 1 3/16" h x 1/4" wd o/a, 0.026" thk material; mts by 2 elongated holes	PLATE; steel, nickel plated; rectangular; approx 1 1/8" lg x 1 1/32" wd x 3/32" thk o/a; mts by two tapped holes	SPRING; helical extension type; 0.013" diam music wire; approx 1 7/8" lg x 5/32" OD o/a; approx 20 turns; parallel hook term on end; mts by terms	Same as Q-133	PLATE; steel, nickel plated; rectangular; approx 1 1/2" lg x 1 1/32" wd x 1/8" thk o/a; mts by hole near on end	SEIN; steel; approx 5/16" OD x 3/16" ID x 0.004" thk o/a	RAIL; steel, nickel plated; irregularly formed, 8 wd slots and extension ball welded to one side, 6 narrow slots in other side, end plate stacked to ear end; approx 8 1/8" lg x 1 1/8" wd x 1 1/16" h o/a; mts by 2 oak holes in line in end plates
Applies tension to Q-135	Lubricates Q-126	Stop for Q-130	Lubricates Q-130	Actuates S-104	Applies tension to Q-128 and Q-130	Right end guide for symbols Q-138 through Q-148	Locks Q-132 to A-109	Applies tension to Q-132	Left end guide for symbols Q-138 through Q-146	Spaces Q-135 and A-110	Cushion for A-110	Locks code bar levers until operation completed
E17-7-350006-407	E17-7-350013-693	E17-7-350013-691	E17-7-350013-691	E17-7-350013-691	E17-7-350013-708	E17-7-350014-400	E17-7-350014-413	E17-7-350008-396	E17-7-350014-432	E17-7-350008-281	E17-7-350015-309	
CTT	CTT	CTT	CTT	CTT	CTT	CTT	CTT	CTT	CTT	CTT	CTT	CTT
45104	151241	151239	151239	151239	31856	151023	151043	7618	151091	7654	151840	
Q-126, Q-812, Q-1113	Q-128	Q-130	Q-130	Q-130	Q-131, Q-2126	Q-132, Q-136	Q-133	Q-134	Q-136	Q-137	Q-138	
3	1	0	0	1	2	2	1	1	0	0	1	0
1	0	0	0	0	1	0	0	0	0	0	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
									TOTAL NO. PER EQUIP.	BOX	EQUIP.	STOCK QUAN.
O-139	BAR, clutch trip; steel, nickel plated; approx 8 7/8" lg x 1/2" wd x 0.035" thk o/a; mts by both ends; "C" stamped near mtg hole; two cuts on upper side, one lg outout along most of the lower side, body hole at one end	Operates O-315		N17-T-350014-446	CTT	151084	151084	O-139	1	0	0	
O-140	CODE BAR; steel, nickel plated; two outouts upper side, 22 teeth irregularly spaced in lg outout lower side, outout and body hole one end, 2 body holes other end; approx 9" lg x 1/2" wd x 0.035" thk o/a; mts by both ends; "1" stamped near straight end	Operates O-390		N17-T-350014-450	CTT	151089	151089	O-140	1	0	0	
O-141	CODE BAR; steel, nickel plated; two outouts upper side, 22 teeth irregularly spaced in lg outout lower side, outout and body hole one end, 2 body holes other end; approx 9" x 1/2" wd x 0.035" thk o/a; mts by both ends; "2" stamped near straight end	Operates O-391		N17-T-350014-449	CTT	151088	151088	O-141	1	0	0	
O-142	CODE BAR; steel, nickel plated; two outouts upper side, 22 teeth irregularly spaced in lg outout lower side, outout and body hole one end, 2 body holes other end; approx 9" lg x 1/2" wd x 0.035" thk o/a; mts by both ends; "3" stamped near straight end	Operates O-393		N17-T-350014-448	CTT	151087	151087	O-142	1	0	0	
O-143	CODE BAR; steel, nickel plated; two outouts upper side, 22 teeth irregularly spaced in lg outout lower side, outout and body hole one end, 2 body holes other end; approx 9" lg x 1/2" wd x 0.035" thk o/a; mts by both ends; "4" stamped near straight end	Operates O-394		N17-T-350014-447	CTT	151086	151086	O-143	1	0	0	
O-144	CODE BAR; steel, nickel plated; two outouts upper side, 22 teeth irregularly spaced in lg outout lower side, outout and body hole one end, 2 body holes other end; approx 9" lg x 1/2" wd x 0.035" thk o/a; mts by both ends; "5" stamped near straight end	Operates O-395		N17-T-350014-446	CTT	151085	151085	O-144	1	0	0	
O-145	BAR, locking; steel, nickel plated; irregular shape outout and wd outout on top, 37 irregularly spaced teeth and pointed ear along inside of outout along most of length on bottom; approx 8 13/16" lg x 9/16" wd x 0.035" thk o/a; mts by elongated hole one end and body hole other end; character "J" stamped near body hole	Locks O-138		N17-T-350013-713	CTT	151355	151355	O-145	1	0	0	

O-146	SPRING: helical extension type; 0.014" diam music wire; approx 15/32" lg x 5/32" OD x 1/8" ID o/a; approx 16 turns; parallel hook turn on end; nts by turn	Applies tension to O-139 and O-145		7603	7603	CTT	350006-393	M17-T-350006-393	O-146, O-213, O-325, O-1664	42	1	5
O-147	SPRING: helical extension type; 0.010" diam music wire; approx 7/16" lg x 1/8" OD x 3/32" ID o/a; approx 20 turns; parallel hook turn on end; nts by turn	Applies tension to symbols O-140 through O-144		42661	42661	CTT	350006-406	M17-T-350006-406	O-147, O-1374, O-1407	7	1	1
O-148	WEEK: hard, white felt; approx 3/32" diam x 11/16" lg o/a	Lubricates O-147		151362	151362	CTT	350013-716	M17-T-350013-716	O-148	5	1	3
O-149	LEVER: steel, nickel pl; irregular shape, one side straight, other side has cutout and 2 body ears, one end curved and rounded, oak hole in ctr; approx 3 3/32" lg x 11/32" h x 0.050" thk o/a; nts by body hole in rounded ear	Operates O-150		151845	151845	CTT	350015-607	M17-T-350015-607	O-149	1	0	0
O-150	BELL CRANK: steel, nickel pl; irregular "L" shape, oak hole near upper end, tapped hole near lower end; approx 1 3/8" lg x 13/16" h x 0.050" thk o/a; nts by body hole at corner	Operates O-153		151032	151032	CTT	350014-405	M17-T-350014-405	O-150	1	0	0
O-151	SPRING: helical extension type; 0.010" diam music wire; approx 1/2" lg x 1/8" OD o/a; approx 28 turns; hook turns indented 90°; nts by turn	Applies tension to O-149 and O-150		112634	112634	CTT	350004-754	M17-T-350004-754	O-151, O-1375, O-1376, O-1419, O-11630	5	1	2
O-152	PLATE: steel, nickel pl; irregular shape, formed near one end, cutout on one side; approx 1 5/8" wd x 3 3/32" lg x 1/8" thk o/a; 0.062" thk material; nts by 2 holes on end, holes on one end tapped; two elongated holes in ear	Supports A-111 and A-112		151367	151367	CTT	350013-718	M17-T-350013-718	O-152	1	0	0
O-153	LEVER: steel, nickel pl; one and irregular shaped, other end round w/elongated arm w/oak body hole, two ears on body; approx 3 5/32" lg x 7/8" h x 5/32" wd o/a, 0.050" thk material; nts by ID of bushing welded to round end	Holds O-138 in lock position until operation completed		151008	151008	CTT	350014-565	M17-T-350014-565	O-153	1	0	0
O-154	SPRING: helical extension; 0.014" music wire 1" lg x 5/32" OD o/a; 47 turns; hook turns; nts by hook ends	Applies tension to O-153		70388	70388	CTT	350007-458	M17-T-350007-458	O-154, O-1738	2	1	1
O-155	WEEK: hard white felt; approx 1 3/4" lg x 3/32" diam o/a	Lubricates O-154		4809	4809	CTT	350014-418	M17-T-350014-418	O-155	1	0	0
O-156	SHAFT: steel, nickel pl; approx 8 3/4" lg x 3/16" OD; nts by ends; one end tapered; shank on other end w/groove near shank	Pivot for symbols O-175 through O-212		151030	151030	CTT	350014-404	M17-T-350014-404	O-156	1	0	0
O-157	CLIP: retaining; steel; approx 1" lg x 3/8" wd o/a, 0.040" diam music wire; approx 9/16" jaw opening	Retains O-156 to A-109		151104	151104	CTT	350014-431	M17-T-350014-431	O-157	2	1	1

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS CODE	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	EQUIP.		STOCK	QUAN.	
								BOX	QUAN.			
O-158	GUIDE, code bars; steel, nickel plated; 13 elongated slots equally spaced one side, 13 x 5/8" h x 0.028" thk o/a; mts by lower part of body	Guide for code bars		N17-T-350014-455	CTT	151101	0-158	1	0		0	
O-172	SEAL, noise; irregular shape, raised outer section w/42 projections; approx 8 5/8" lg x 9 1/16" h x 1" wd o/a; mts by back and rim around raised section	Noise seal for symbols 0-175 through 0-212		N17-T-350014-455	CTT	151094	0-172	1	0		0	
O-173	GUIDE, code lever; steel, nickel plated; irregular shape, both sides formed, 43 slots in ea side in line, 42 body holes in row on one side, one end formed w/outout and 13 body holes, three rectangular shaped outouts and 42 body holes in row in bottom, elongated slot near ea end, two body ears, one w/weld disc and tapped hole, other w/body hole; approx 9 11/16" lg x 1 15/16" wd x 1 3/32" h o/a, 0.035" thk material; mts by 2 oval shaped holes at ea end	Guide for symbols 0-175 through 0-212 and anchor for 0-146 and 0-147		N17-T-350015-310	CTT	151849	0-173	1	0		0	
O-174	PAWLS, steel, nickel plated; irregular shape, round one end, squared outout near other end, rounded ear formed at end on curve of body; approx 1 3/16" lg x 3/4" h x 5/32" wd o/a; 0.028" thk material; mts by hole in round end	Latches 0-145 in lock position		N17-T-350014-429	CTT	151102	0-174	1	0		0	
O-175	LEVER, steel, nickel plated; irregular shape, stud riveted to one end, elongated ear near stud end, oak hole in approx ctr; approx 5 3/4" lg x 5/8" h x 1/8" wd o/a, 0.042" thk material; mts by body hole between ear and oak hole	Sets up code for Figs shift		N17-T-350015-311	CTT	151851	0-175 through 0-205	31	0		0	
O-176	Same as O-175	Sets up code for 1 and Q										
O-177	Same as O-175	Sets up code for - and A										
O-178	Same as O-175	Sets up code for * and Z										
O-179	Same as O-175	Sets up code for 2 and W										
O-180	Same as O-175	Sets up code for BELL and S										
O-181	Same as O-175	Sets up code for / and X										
O-182	Same as O-175	Sets up code for 3 and E										
O-183	Same as O-175	Sets up code for \$ and D										
O-184	Same as O-175	Sets up code for : and C										

Section 8
O-185—O-208

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO.		SPARE PARTS			
											EQUIP.	STOCK	QUAN.	BOX
O-209	Same as O-208	Sets up code for Repeat												
O-210	LEVER: steel, nickel pl; elongated body ear, slot and stud riveted to one end, other end irregular shape, csk hole near ctr; approx 4 21/32" lg x 5/8" h x 1/8" wd o/a, 0.042" thk material; mts by large body hole near csk hole	Sets up code for Space		N17-T-350015-312	CTT	151852	151852	0-210	1	0	0			
O-211	LEVER: steel, nickel pl; one end straight w/corner cutoff, other end irregular shape w/stud and elongated body ear; csk hole near straight end; approx 5 1/16" lg x 11/16" h x 1/8" wd o/a, 0.042" thk material; mts by body hole near ctr	Operates O-283		N17-T-350015-314	CTT	151854	151854	0-211, 0-212	2	0	0			
O-212	Same as O-211	Operates O-272												
O-213	Same as O-146	Applies tension to symbols O-175 through O-212												
O-214	WASHER, felt; hard, white felt; round, 7/32" ID x 7/16" OD x 3/32" thk	Lubricates O-156 and symbols O-175 through O-212		N17-T-350013-791	CTT	101796	101796	0-214, 0-313, 0-1654, 0-1657, 0-1665, 0-1930, 0-2111	14	1	2			
O-215	KEYLEVER: steel, nickel pl lever w/cellulose acetate butyrate (tenite II) top; irregular shape, round keytop, concave on top and tapered to point on bottom, pressed on one end of lever; approx 2 3/4" lg x 2" wd x 0.042" thk material o/a, 1/2" diam keytop; mts by irregular shape elongated slot in lower end of lever; red keytop w/white characters "LOC, LF"	Operates O-211		N17-T-350014-170	CTT	151286	151286	0-215	1	0	0			
O-216	Same as O-215 except characters "LOC, CR"	Operates O-212		N17-T-350014-171	CTT	151287	151287	0-216	1	0	0			
O-217	Same as O-215 except characters "RED, UNLK"	Operates O-208		N17-T-350014-172	CTT	151288	151288	0-217	1	0	0			
O-218	Same as O-215 except characters "RED, LOCK"	Operates O-206		N17-T-350014-173	CTT	151289	151289	0-218	1	0	0			
O-219	Same as O-215 except characters "BREAK"	Operates O-207		N17-T-350014-169	CTT	151290	151290	0-219	1	0	0			
O-220	Same as O-215 except characters "KEY"	Operates O-209		N17-T-350014-174	CTT	151291	151291	0-220	1	0	0			
O-221	KEYLEVER: steel, nickel pl lever w/cellulose acetate butyrate (tenite II) top; irregular shape, round keytop, concave on top and tapered to point on bottom, pressed on one end of lever; approx 2 1/2" lg x 1 1/4" wd x 0.042" thk material o/a, 1/2" diam keytop; mts by irregular shape elongated slot in lower end of lever; green keytop w/white characters "1, Q"	Operates O-176		N17-T-350014-175	CTT	151292	151292	0-221	1	0	0			

O-222	Same as O-221 except characters "S, W";	Operates O-179	W17-2- S60014-176	CTT	151298	151293	O-222	1	0	0
O-223	Same as O-221 except characters "S, E";	Operates O-182	W17-2- S60014-177	CTT	151294	151294	O-223	1	0	0
O-224	Same as O-221 except characters "S, R";	Operates O-185	W17-2- S60014-181	CTT	151295	151295	O-224	1	0	0
O-225	Same as O-221 except characters "S, T";	Operates O-186	W17-2- S60014-178	CTT	151296	151296	O-225	1	0	0
O-226	Same as O-221 except characters "S, Y";	Operates O-191	W17-2- S60014-179	CTT	151297	151297	O-226	1	0	0
O-227	Same as O-221 except characters "T, U";	Operates O-194	W17-2- S60014-180	CTT	151298	151298	O-227	1	0	0
O-228	Same as O-221 except characters "S, I";	Operates O-197	W17-2- S60014-181	CTT	151299	151299	O-228	1	0	0
O-229	Same as O-221 except characters "S, O";	Operates O-200	W17-2- S60014-182	CTT	151300	151300	O-229	1	0	0
O-230	Same as O-221 except characters "S, P";	Operates O-203	W17-2- S60014-183	CTT	151301	151301	O-230	1	0	0
O-231	KEYLEVER: steel, nickel pl. lever w/cellulose acetate butyrate (emite II) top irregular shape, round keytop concave on top & tapered to point on bottom, pressed on one end of lever; approx 2 1/4" lg x 1/2" diam keytop o/a, 0.043" thick material; mts by irregular shape elongated slot in lower end of lever; green keytop w/white characters "., A";	Operates O-177	W17-2- S60014-184	CTT	151302	151302	O-231	1	0	0
O-232	Same as O-231 except characters "BELL, S";	Operates O-180	W17-2- S60014-185	CTT	151303	151303	O-232	1	0	0
O-233	Same as O-231 except characters "S, D";	Operates O-183	W17-2- S60014-186	CTT	151304	151304	O-233	1	0	0
O-234	Same as O-231 except characters "I, P";	Operates O-186	W17-2- S60014-187	CTT	151305	151305	O-234	1	0	0
O-235	Same as O-231 except characters "S, O";	Operates O-189	W17-2- S60014-228	CTT	151306	151306	O-235	1	0	0
O-236	Same as O-231 except characters "blank, H";	Operates O-192	W17-2- S60014-229	CTT	151307	151307	O-236	1	0	0
O-237	Same as O-231 except characters "I, J";	Operates O-195	W17-2- S60014-230	CTT	151308	151308	O-237	1	0	0
O-238	Same as O-231 except characters "(", K";	Operates O-198	W17-2- S60014-111	CTT	151309	151309	O-238	1	0	0
O-239	Same as O-231 except characters "L, L";	Operates O-201	W17-2- S60014-110	CTT	151310	151310	O-239	1	0	0
O-240	Same as O-231 except characters "CAR RET";	Operates O-204	W17-2- S60014-108	CTT	151311	151311	O-240	1	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	PARTS			
								EQUIP.	STOCK	SPARE PARTS	
								BOX	QUAN.	BOX	QUAN.
O-241	KEYLEVER: steel, nickel pl lever w/cellulose acetate butyrate (semite II) top; irregular shape, round keytop concave on top & tapered to point on bottom, pressed on one end of lever; approx 1 5/8" lg x 1 1/4" wd x 0.042" thk material o/a, 1/2" diam keytop; mts by irregular shape elongated slot in lower end of lever; green keytop w/white characters "F103";	Operates O-175		M17-T-350014-108	CTT 151312	151312	O-241	1	0	0	0
O-242	Same as O-241 except characters " , 2";	Operates O-178		M17-T-350014-107	CTT 151313	151313	O-242	1	0	0	0
O-243	Same as O-241 except characters " / , X";	Operates O-181		M17-T-350014-106	CTT 151314	151314	O-243	1	0	0	0
O-244	Same as O-241 except characters " , C";	Operates O-184		M17-T-350014-105	CTT 151315	151315	O-244	1	0	0	0
O-245	Same as O-241 except characters " , V";	Operates O-187		M17-T-350014-104	CTT 151316	151316	O-245	1	0	0	0
O-246	Same as O-241 except characters " , B";	Operates O-190		M17-T-350014-103	CTT 151317	151317	O-246	1	0	0	0
O-247	Same as O-241 except characters " , N";	Operates O-193		M17-T-350014-102	CTT 151318	151318	O-247	1	0	0	0
O-248	Same as O-241 except characters " , M";	Operates O-196		M17-T-350014-101	CTT 151319	151319	O-248	1	0	0	0
O-249	Same as O-241 except characters "LTRS";	Operates O-199		M17-T-350014-250	CTT 151320	151320	O-249	1	0	0	0
O-250	Same as O-241 except characters "LINE FEED"	Operates O-202		M17-T-350014-249	CTT 151321	151321	O-250	1	0	0	0
O-251	Same as O-241 except no characters	Operates O-205		M17-T-350014-248	CTT 151322	151322	O-251	1	0	0	0
O-252	PLATE: steel, nickel pl; cutout one side, elongated slot one end, one elongated body hole & three tapped holes irregularly spaced; approx 4 7/16" lg x 2 1/4" wd x 0.095" thk o/a; mts by one tapped hole	Nut plate for O-253		M17-T-350014-710	CTT 151219	151219	O-252	1	0	0	0
O-253	BEARING, ball; single row radial; light duty; approx 3/4" OD x 5/16" ID x 1/4" thk bearing pressed into approx 4" lg x 1 23/32" h x 1 15/16" wd o/a w/ir shaped bracket; 8 balls, packed w/std slush grease; std fit; A.F.B.N.A. Spectol	Bearing and support for O-255		M17-T-350013-682	CTT 151228	151228	O-253	1	0	0	0
O-254	BEARING, ball; single row radial; plain; medium duty; approx 5/8" bore x 7/8" OD x 7/32" wd; 8 balls; packed w/std slush grease; standard fit; standard tolerance	Bearing for O-256		M17-B-115-00609-0000	NORM-HOFF S-3R	104827	O-254	1	0	0	0

O-255	SHAF: steel, nickel pl; c/o head w/flange in middle, body, shoulder and shank; approx 2 1/8" lg x 1" OD o/a; mts by thd shank; flange has two tapped holes, tapped hole in body	Drives O-257 and O-258	N17-T-350014-465	CTT 151127	151127	O-255	1	0	0
O-256	SPACER: steel, nickel pl; approx 1/2" OD x 3/8" ID x 1/4" lg o/a; mts by ID	Spaces O-257 from O-253	N17-T-350014-464	CTT 151126	151126	O-256	1	0	0
O-257	GEAR: spur; steel, nickel pl; spiral teeth; RH; 16 teeth; 26 pitch; 1.92" PD; approx 2" OD x 3/8" ID x 9/16" thk o/a; straight face; hub 9/16" OD; mts by ID	Drives O-1843	N17-T-350014-466	CTT 151129	151129	O-257	1	0	0
O-258	BUSHING, eccentric; steel, nickel pl; male and female; approx 3/4" OD x 3/8" ID x 1/4" thk o/a, shoulder 9/16" diam x 1/16" thk & offset by 1/16"	Operates O-260	N17-T-350013-696	CTT 151244	151244	O-258	1	0	0
O-259	WASHER, felt; hard, white felt; round, approx 1/8" thk x 1" OD x 3/4" ID o/a	Lubricates O-258 and O-260	N17-T-350013-697	CTT 151245	151245	O-259	1	1	1
O-260	PANEL: steel, nickel pl; irregular shape, one end curved and formed, other end large and rounded w/lg thin arm, rounded ear, w/body hole in approx ctr of body; approx 5 1/2" lg x 1 1/4" h x 7/16" wd o/a, 0.050" thk material; mts by body hole in rounded end	Steps O-121 and O-122	N17-T-350013-695	CTT 151243	151243	O-260	1	0	0
O-261	SPRING: helical extension type; 0.018" diam music wire; approx 5/8" lg x 5/32" OD o/a; approx 21 turns; parallel hook terminals; mts by terminals	Applies tension to O-260	N17-T-350012-235	CTT 110436	110436	O-261, O-1620	2	1	1
O-265	GEAR: spur type; steel; helical teeth; LH; 17 teeth; 30 pitch, 0.62" PD; approx 1 1/16" OD x 3/8" ID x 1 1/16" lg o/a; straight face; hub 17/32" OD x 9/16" lg; mts by ID and ctb hole in hub; "151132" stamped in hub	Drives O-266 at 75 wpm		CTT 151132	151132	O-265	1	0	0
O-266	GEAR: spur type; natural color bakelite; helical teeth; RH; 93 teeth; 30 pitch, 3.39" PD; approx 3 15/32" OD x 1 1/2" ID x 5/16" thk o/a; concave face; mts by ID and 2 body holes; "151133" stamped in face	Drives O-255		CTT 151133	151133	O-266	1	0	0
O-267	GEAR: spur; steel; helical teeth, LH; 14 teeth; 30 pitch, 0.51" PD; approx 9/16" OD x 3/8" ID x 1 1/16" lg o/a; straight face; hub 17/32" diam x 9/16" lg; mts by ID and ctb hole in hub; "151130" stamped on hub	Drives O-269 to 60 wpm	N17-T-350014-467	CTT 151130	151130	O-267	1	0	0
O-268	GEAR: spur; steel; helical teeth; LH; 20 teeth; 28 pitch, 0.77" PD; approx 27/32" OD x 3/8" ID x 1 1/16" lg o/a; straight face; hub 9/16" lg x 17/32" ID; mts by hub and ctb body hole; "151134" stamped on hub	Drives O-270 at 100 wpm	N17-T-350014-439	CTT 151134	151134	O-268	1	0	0
O-269	GEAR: spur; natural color bakelite; helical teeth; RH; 96 teeth; 30 pitch, 3.50" PD; approx 3 9/16" OD x 1 1/2" ID x 5/16" thk o/a; concave face; mts by ID and two body holes; "151131" stamped on face	Drives O-255	N17-T-350014-468	CTT 151131	151131	O-269	1	-	-

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIGN.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURER DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								EQUIP.		STOCK	
								QUANTITY	BOX	QUANTITY	BOX
O-270	GEAR, spur; natural color bakelite; helical teeth; E81, 84 teeth; 2.8 pitch, 3.24" PD; approx 3 5/16" OD x 1 7/8" ID x 5/16" thick o/a; concave faces; mts by ID & two body holes; "151185" stamped on face	Drives O-285		N17-7-350014-489	CTT 151185	151185	O-270	1	0	0	
O-271	SHAFT, steel, nickel pl; approx 1 11/32" lg x 3/16" OD o/a; mts by two slots near one end	Pivot for O-272		N17-7-350014-886	CTT 151112	151112	O-271	1	0	0	
O-272	RAIL, steel, nickel pl; irregular shape, "U" formed, lg side extends horiz, short side extends vert, both ends formed, oak hole in base; approx 3 1/8" lg x 2 13/32" h x 1 15/32" wd o/a, 0.080" thick material; mts by 2 body holes in line	Operates O-2118		N17-7-350015-608	CTT 151857	151857	O-272	1	0	0	
O-273	SPRING, helical extension; 0.022" diam music wire; approx 1 1/32" lg x 7/32" diam o/a; approx 27 turns; hook terminals indented 90°	Applies tension to O-272		N17-7-350014-720	CTT 76299	76299	O-273	1	0	0	
O-279	SHAFT, steel, nickel pl; approx 2 1/32" lg x 3/16" diam o/a; mts by 2 slots one end; 2 slots near ctr	Pivot for O-279 and O-283		N17-7-350015-610	CTT 151863	151863	O-278	1	0	0	
O-278	RAIL, steel, nickel pl; irregular shape, "U" formed, both sides extended in opposite directions, rounded end w/body hole and oak hole in ctr one side, other side has formed end; approx 1 17/32" lg x 2 1/32" h x 7/16" wd o/a, 0.042" thick material; mts by 2 body holes in line	Operates O-208		N17-7-350015-660	CTT 151861	151861	O-279	1	0	0	
O-280	FLUORE, steel, nickel pl; irregular shape w/irregular shaped outlets; approx 1 1/2" lg x 7/16" h x 0.065" thick o/a; mts by elongated slot in round end	Operates O-279		N17-7-350014-428	CTT 151115	151115	O-280	1	0	0	
O-281	SPRING, helical extension type; 0.013" diam music wire; approx 9/16" lg x 5/32" OD x 1/8" ID o/a; approx 26 turns; parallel hook term on end; mts by term	Applies pressure to O-280		N17-7-350006-382	CTT 4703	4703	O-281, O-770, O-1436	13	1	3	
O-282	SPRING, flat; 0.022" thick nickel silver; approx 1 3/8" h x 1" lg x 5/16" wd o/a; mts by open slot curved end & closed slot straight end; "U" shaped w/ formed ear at one end	Applies tension to O-279		N17-7-350013-711	CTT 151352	151352	O-282	1	0	0	
O-283	RAIL, steel, nickel pl; irregular shape, "U" formed, both sides extended in opposite directions, one side formed at end, other side rounded at end w/body hole; approx 3" lg x 2 13/32" h x 2 1/32" wd o/a, 0.080" thick material; mts by 2 body holes in line	Operates O-284		N17-7-350015-658	CTT 151868	151868	O-283	1	0	0	

Q-284	Q-285	Q-286	Q-287	Q-288	Q-289	Q-290	Q-291	Q-292	Q-293
LIME, steel, nickel pl; irregular shape, one end flange up and formed, other end rounded, oak hole in wd p/o body; approx 4 1/8" lg x 2 7/32" h x 1 7/32" wd o/a, 0.043" thk material; mts by body hole in rounded end	SPRING; helical extension type; 0.018" diam inside wire; approx 1 1/16" lg x 5/16" OD x 5/32" ID; approx 24 turns; hook term on end indexed 90°; mts by term	SPACER; steel, nickel pl; approx 1/4" OD x 1/8" ID x 1/16" lg o/a; mts by ID	RETAINEE, ball; steel, nickel pl; elongated thin strip w/formed ear one end; elongated slot near ear end; approx 8 17/32" lg x 15/32" h x 7/32" wd o/a, 0.060" thk material; mts by five equidistant body holes along bottom	Ball, bearing; steel; spherical; approx 3/16" diam	WEDGE LOCK, steel, nickel pl; one end round, other end pointed; approx 1/8" lg x 5/16" wd x 0.050" thk o/a; mts by body hole oak both sides in rounded ends	RETAINEE, wedges steel, nickel pl; formed throughout lg near bottom, 42 slots in top, one corner round; approx 8 3/4" lg x 9/16" h x 5/32" wd o/a, 0.035" thk material; mts by body hole near ear end	Ball; steel, nickel pl; narrow strip, formed both ends w/curved ear, formed at end, extending from side, tapped hole in ear and in both ends of body; approx 8 5/8" lg x 1 1/16" h x 1 1/16" wd o/a, 0.048" thk material; mts by two body holes in line	LIME, steel, nickel pl; irregularly curved w/round ends, tapped hole in one end; approx 3 3/16" lg x 1 1/2" h x 0.060" thk o/a; mts by body hole in one end	LWIRE; steel, nickel pl; irregular shaped elongated outout one end w/formed ear near end, other end rounded; approx 1 7/16" lg x 5/8" h x 1/8" wd o/a, 0.043" thk material; mts by hole in rounded end
Operates O-1761	Applies tension to O-284	Spacers A-123 and A-125	Retains O-288 in channel of A-124	Prevents two keylevers from operating at the same time	Locks O-288 balls until operation completed	Retains O-289 on symbols O-178 through O-205 and O-210 through O-211	Operates O-292	Operates O-293	Operates O-210
H17-7-350015-659	H17-7-360008-801	H17-7-360013-708	H17-7-360015-604	H17-3-999-56012-0200	H17-7-360014-441	H17-7-360014-443	H17-7-360014-397	H17-7-360014-388	H17-2-360014-433
CTT	CTT	CTT	CTT	CTT	CTT	CTT	CTT	CTT	CTT
161859	112650	161336	151842	104710	151076	151091	151013	151014	151106
161859	112650	161336	151842	104710	151076	151091	151013	151014	151106
1	1	4	1	43	34	1	1	1	1
0	1	0	0	6	2	C	0	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS												
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO EQUIP.	SPARE PARTS		
					Q	DESIG.				BOX	EQUIP.	STOCK
										QUAN.	BOX	QUAN.
O-294	BAR, spacers: cellulose acetate butyrate (tenite II) w/aluminum extensions; irregular shape w/one elongated outout in ctr and small outout near ea end, extension mtd in ea end between small and large outouts; approx 4 1/2" lg x 2" h x 1/2" wd o/a; mts by two holes in line at end of extensions	Operates O-291		N17-T-350014-414	CTT	151045	151045	O-294	1	0	0	
O-295	PLATE, guide; gray bakelite; rectangular shape, 57 keytop holes, 2 body holes and 2 slots in plate; approx 12 5/16" lg x 4 1/32" wd x 3/8" thk o/a; mts by 2 ctb holes near ea end & 2 ctb holes at lower side	Guide for symbols O-215 through O-251		N17-T-350015-667	CTT	151834	151834	O-295	1	0	0	
O-296	STRIP: steel, nickel pl; lg narrow body w/side ears at ea end; approx 15 1/16" lg x 1 5/16" h x 0.065" thk o/a; mts by elongated hole in ea end ear; 10 tapped holes	Mnt plate for A-123 and A-125		N17-T-350013-680	CTT	151226	151226	O-296	1	0	0	
O-310	RAIL: steel, nickel pl; "U" shape w/four arms irregularly shaped and formed, pawl bushing riveted to arm extending from bottom of "U"; approx 1 13/16" lg x 1 3/4" h x 1 1/16" wd o/a, 0.065" thk material; mts by two holes in line in sides of "U"; 2 oak holes and one body hole in arms	Completely disengages keyboard clutch		N17-T-350014-571	CTT	151187	151187	O-310	1	0	0	
O-311	SPRING; helical extension type; 0.024" diam music wire; approx 15/16" lg x 7/32" OD x 3/16" ID o/a; approx 25 turns; two hook terminals by term	Applies tension to O-310		N17-T-350006-350	CTT	2416	2416	O-311	1	0	0	
O-312	Same as O-126	Applies tension to pawl of O-310										
O-313	Same as O-214	Lubricates H-313, O-310 and O-315										
O-314	WASHER, felt; hard, white felt; round, approx 1/16" thk x 3/4" OD x 7/16" ID o/a	Lubricates H-313 and O-310		N17-T-350013-679	CTT	151225	151225	O-314	1	1	1	
O-315	RAIL: steel, nickel pl; "U" shape one end w/one arm extending from bottom and one from side w/ear at end, other end formed; approx 1 9/16" lg x 1" h x 9/16" wd o/a, 0.050" thk material; mts by ID of bushing welded to side of "U" and hole in line on other side; oak hole in narrow arm, tapped hole in wd arm w/ear	Operates O-316		N17-T-350014-572	CTT	151189	151189	O-315	1	1	1	

O-316	LEVER, steel, nickel pl; irregular shape w/one formed end and two square ears on other end; approx 1 9/16" lg x 7/8" h x 1/4" wd o/a, 0.060" thk material; mts by large hole in rounded p/o body; small body hole below ears	Replaces and disassembles O-339	N17-7-360014-680	CTT	151211	151211	O-316	1	0	0
O-317	SPRING; helical extension type; 0.014" diam music wire; approx 9/16" lg x 3/16" OD x 5/32" ID o/a; approx 21 turns; parallel hook term at end; mts by term	Applies tension to O-315	N17-7-360013-529	CTT	2856	2856	O-317	1	1	1
O-318	RAILS steel, nickel pl; irregular shape, formed all four sides, curved formed arm one side, two rounded ears in line, irregular shaped hole in otr w/formed wing w/squared cutout one side, 2 tapped holes in wing; approx 1 7/16" lg x 1 7/32" wd x 1/2" h o/a, 0.035" thk material; mts by 2 body holes in line in rounded ears	Operates O-319	N17-7-360014-436	CTT	151066	151066	O-318	1	0	0
O-319	EXTENSION, rocker; steel, nickel pl; "I" formed, one side irregularly curved, other side has body ear at end; approx 3/4" lg x 9/16" h x 7/16" wd o/a, 0.035" thk material mts by one large and one small body hole on straight side of "I"	Disassembles O-376 and O-378 from O-371	N17-7-360014-458	CTT	151099	151099	O-319	1	1	1
O-320	DETENT; steel, nickel pl; irregular shape, rounded arm w/oak hole near rounded end, other end irregular shape w/outout and body hole; approx 1 5/16" lg x 5/8" wd x 0.060" thk o/a; mts by body hole in rounded end	Mounts O-321 and stop for O-318	N17-7-360013-896	CTT	151216	151216	O-320	1	0	0
O-321	SHAFT; steel; approx 1/4" lg x 3/32" diam o/a; o/o Shank w/slot near end, narrow head, shoulder and body w/two slots	Bearing shaft for O-322	N17-7-360014-582	CTT	151215	151215	O-321	1	0	0
O-322	ROLLER, bail; steel; approx 3/16" OD x 1/16" ID x 1/16" thk o/a; mts by ID	Detent rollers for O-318	N17-7-360013-897	CTT	151217	151217	O-322	2	0	0
O-323	SPACER; aluminum; approx 7/16" OD x 5/32" ID x 9/16" lg o/a; mts by ID	Spacer for shaft of H-333	N17-7-360010-159	CTT	91765	91765	O-323	1	0	0
O-324	LEVER; steel, nickel pl; irregular shape, rounded one end, split in two arms other end, hub welded to rounded end, oak hole in round ear; approx 1 5/8" lg x 21/32" h x 13/32" wd o/a, 0.066" thk material; mts by ID of hub	Detent and latch for O-328	N17-7-360014-978	CTT	151855	151855	O-324	1	0	0
O-325	Same as O-146	Applies tension to O-324								
O-326	WASHER, felt; hard, white felt; round, 7/32" ID x 1/2" OD x 3/64" thk	Lubricates O-324	N17-7-360013-626	CTT	90879	90879	O-326, O-1327, O-1536	4	1	1

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
					U	Q			TOTAL NO. PER EQUIP.	EQUIP. BOX	STOCK BOX
O-327	LINK, steel, nickel pl; outout one side, rounded ends; approx 1 5/32" lg x 5/16" wd x 0.042" thk o/a; mts by body hole in ea end	Support link for O-328		* M17-T-350014-901	CTT	151831	151831	O-327	1	0	
O-328	BAIls, steel, nickel pl; irregular shape, formed all four sides w/two rounded arms extending up, one arm extending past side and rounded ear; approx 1 11/16" lg x 1 15/16" h x 7/8" wd o/a, 0.068" thk material; mts by two body holes in line and tapped hole in ear; body hole oak both sides in ea rounded arm and body hole opposite side of mtg ear, large rectangular hole in ctr of bail	Resets symbols O-139 through O-146 and operates O-149		M17-T-350014-437	CTT	151067	151067	O-328	1	0	0
O-329	Same as O-104	Applies tension to O-328									
O-330	SPRING; helical extension type; 0.012" diam music wire; approx 3/4" lg x 5/32" OD x 1/8" ID o/a; approx 37 turns; hook term ea end index 90°; mts by terms	Applies tension to O-328 and O-332		M17-T-350013-622	CTT	86283	86283	O-330	1	1	1
O-331	WASHER, felt; hard, white felt; round, approx 7/16" OD x 1/4" ID x 1/8" thk o/a	Lubricates O-328 and H-338		M17-T-350003-322	CTT	93356	93356	O-331, O-1319, O-1322, O-1602, O-1603, O-1733, O-1744, O-1747, O-1752, O-1764, O-1767, O-1769, O-1776, O-1860, O-1821, O-1926, O-1934, O-1942, O-2094, O-2096, O-2098, O-2103, O-2117	31	1	6
O-332	PLATE, guides; steel, nickel pl; one end round, elongated slot in other end; approx 7/16" lg x 1/4" wd x 0.035" thk o/a; mts by hole in rounded end	Guides O-332		M17-T-350014-409	CTT	151038	151038	O-332	1	0	0
O-333	BEARING, needle; single row radial; light duty needle type; cylindrical rollers; 5/32" bore, 9/32" OD, 1/4" wd; packed w/stud slush grease; std fit; open end	Detent bearing for O-324		M17-B-993-54005-0000	Torrington B-2 1/2 AX	151016	151016	O-333	1	0	0
O-334	WASHER, felt; hard, white felt; round, 5/32" ID x 3/8" OD x 1/16" thk	Lubricates O-333 and O-334		M17-T-350013-795	CTT	109762	109762	O-334	1	1	1
O-335	PLATE; steel, nickel pl; approx 1 3/4" lg x 3/8" h x 0.063" thk o/a; mts by three tapped holes	Locks back end of A-132 to keyboard base		M17-T-350014-433	CTT	151106	151106	O-335	1	0	0
O-336	SLEEVE, gears; sleeve, oiling wick enclosed, with drum on one end and gear on other end; gear is super oilite, sleeve is steel nickel pl, and drum is cast iron; approx 4 13/16" lg x 1 5/8" OD x 5/16" ID o/a; mts by ID	Operates keyboard clutch when O-342 and O-343 are in engaged position		M17-T-350014-366	CTT	151154	151154	O-336	1	0	0

* "Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated."

Part Number	Description	Material	Quantity	Notes	Part Number	Description	Material	Quantity	Notes
O-337	DIKE; steel, nickel pl; irregular circular shape; approx 1 13/16" largest diam x 5/16" wd o/s, 0.065" thk material; mts by elongated hole and 2 tapped holes in approx str; three outouts and one formed ear on circum; five irregular shaped holes and two elongated slots in disk, one spring post riveted to disk	Drives O-349	4	1	1	1	1	1	1
O-338	ARMS steel, nickel pl; irregular "C" shaped; approx 1 1/4" lg x 1 3/16" wd x 1/4" h o/s, 0.065" thk material; mts by two tapped holes; two outouts and formed ear inside of "u", body ear one end of "c"	Drives O-337	4	1	1	1	1	1	1
O-339	LEVER; steel, nickel pl; irregular shape, two ears "u" formed one end, other end formed; approx 1 11/16" lg x 13/16" h x 7/32" wd o/s, 0.043" thk material; mts by "u" formed end; ear hole in rise on lever, body hole near "u" formed end	Engage and disengage O-342 and O-343	3	1	2	1	2	1	2
O-340	SPRING; helical extension type; 0.017" diam music wire; approx 13/16" lg x 1/8" OD o/s; approx 34 turns; hook terms, indented 90°; mts by terms	Applies tension to O-339	1	4	1	4	1	4	1
O-341	WICK; lubrication wick, hard, white felt; approx 5/8" lg x 5/32" wd x 1/32" thk o/s; slit in str, elongated arm tapered on end on one side of body	Lubricates keyboard clutch mechanism	1	2	1	2	1	2	1
O-342	ENDS, clutch; steel; irregularly outout on one edge, other edge straight w/heel near one end, irregularly dished out on both sides; approx 1 1/4" lg x 5/8" wd x 1/16" thk o/s; mts by outout edge; one body hole each both sides, primary shoe	Permits O-343 to drive O-338 when in engaged position	1	1	1	1	1	1	1
O-343	ENDS, clutch; steel; irregularly outout and notched on one edge, other edge straight w/heel at one end, irregularly dished out on both sides; approx 1 5/16" lg x 5/8" wd x 1/16" thk o/s; mts by outout edge; one body hole each both sides, secondary shoe	Drives O-338 when in engaged position	1	1	1	1	1	1	1
O-344	SPRING; helical extension type; 0.018" diam music wire; approx 8/16" lg x 1/8" OD x 3/32" ID o/s; approx 17 turns; parallel hook term on end	Applies tension to O-342 and O-343	1	4	1	4	1	4	1
O-345	WASHER, felt; hard, white felt; round, approx 3/4" OD x 3/16" ID x 5/32" thk o/s	Lubricates O-336 and O-347	1	1	1	1	1	1	1
O-346	PLATE; steel, nickel pl; irregular shape w/round outout on bottom; approx 1 19/32" lg x 1 3/16" h x 0.065" thk o/s; mts by two body holes in two lower corners; large body hole in rounded upper part	Mounts back end of O-347 and retains O-336 on O-347	1	0	1	0	1	0	1

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST											
PARTS										SPARE PARTS	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO OF COMP.	EQUIP. QUAN.	STOCK QUAN.
					M	C				BOX	BOX
O-347	SHAFT, steel; approx 7 5/8" lg x 5/16" diam o/a; mts by #10-32 threaded shank ea end	Mounting shaft for O-336 and O-349		N17-T-350014-493	CTT		151157	O-347	1	0	0
O-348	WASHER, felt; hard, white felt; round, 1/2" ID x 1 1/16" OD x 1/16" thk	Lubricates H-358 and O-347		N17-T-350012-719	CTT		72563	O-348	1	1	1
O-349	CAM ASSEMBLY; steel; eccentric cam and shield one end, other end out flat on two sides w/two slots and shield, 11 cams irregularly spaced and shaped between shields, bushing pressed in place ea end of ID; approx 2 1/4" lg x 1 1/16" OD x 5/16" ID o/a; mts by ID; two body holes in thicker shield	Drives O-352 and operates O-310, O-371 and symbols O-404 through O-410		N17-T-350014-475	CTT		151151	O-349	1	0	0
O-350	WICK; oil wick; hard, white felt; approx 2 1/8" lg x 5/16" wd x 1/16" thk o/a	Lubricates O-349		N17-T-350013-704	CTT		151333	O-350	1	0	0
O-351	SPRING; helical extension type; 0.014" diam music wire; approx 1 7/8" lg x 1/8" OD x 3/32" ID; approx 118 turns; parallel hook term ea end; mts by term	Retains O-350 on O-349		N17-S-46762-1032	CTT		109631	O-351	1	1	1
O-352	FOLLOWER, eccentric; steel, nickel pl; irregular shape one end, other end large and rounded; approx 3 3/4" lg x 1" wd x 0.095" thk o/a; mts by large hole in rounded end; body hole oak both sides in irregular shaped end	Resets O-328 through O-332		N17-T-350014-438	CTT		151068	O-352	1	0	0
O-357	LEVER; steel, nickel pl; irregular shape w/rounded ends, elongated formed ear extends down from large end; approx 1" lg x 1/2" h x 1/4" wd o/a, 0.035" thk material; mts by ID of hub welded to large end; tapped hole in small end, body hole oak both sides in ear	Mounts and applies pressure to O-369		N17-T-350014-401	CTT		151025	O-357	1	0	0
O-368	SPRING; helical extension type; 0.018" diam music wire; approx 1/2" lg x 5/32" OD x 1/8" ID; approx 15 turns; parallel hook term ea end; mts by term	Applies tension to O-367		N17-T-350003-986	CTT		101386	O-368	1	1	1
O-369	TOGGLE, detent; steel, nickel pl; irregular shape w/round end and pointed end; approx 1 1/2" lg x 3/16" h x 0.032" thk o/a; mts by hole in rounded end	Operates O-367		N17-T-350014-402	CTT		151026	O-369	1	0	0

Part Number	Description	Material	Quantity	Part Number	Description	Material	Quantity
O-370	WASHER, felt; hard, white felt; round, approx 5/16" OD x 1/8" ID x 1/8" thk o/a	H17-7-350006-822	5	O-370	Lubricates O-369, O-373 and O-387	93768	5
O-371	LEVER, steel, nickel pl; irregular shape, formed one end, arm extending up rounded end, rounded ear in approx str; approx 1 17/32" lg x 5/8" h x 7/32" wd o/a, 0.042" thk material; mts by ID of hub welded to rounded end, hole oak both sides at end of arm	H17-7-350014-408	1	O-371	Operates O-376 and O-378	151037	1
O-372	SPRING, helical extension type; 0.014" diam music wire; approx 21/32" lg x 5/32" OD o/a; approx 24 turns; parallel hook terminals; mts by terms	H17-7-350006-330	1	O-372	Applies tension to O-371	126268	1
O-373	LEVER, steel, nickel pl; irregular shape, formed ear on one side of rounded wing w/outlet below, "v" notched arm at one end; approx 1 1/8" lg x 7/16" h x 3/16" wd o/a, 0.035" thk material; mts by ID of hub welded to wing	H17-7-350014-573	1	O-373	Operates O-369 and guide for O-376 and O-378	151190	1
O-374	WASHER, felt; hard white felt; round approx 1/16" thk x 7/16" OD x 3/16" ID o/a	H17-7-350013-676	5	O-374	Lubricates O-373 and H-392	151222	5
O-375	PLATE, steel, nickel pl; one end formed, other end rounded, one body ear, stud riveted to plate; approx 15/16" lg x 3/16" h x 3/8" wd o/a, 0.035" thk material; mts by two elongated holes; two holes oak one side in formed end, stud has slot w/outlet	H17-7-350014-577	1	O-375	Pivot for O-376 and O-378 and anchor for O-377 and O-379	151206	1
O-376	LEVER, steel, nickel pl; irregular shape w/two outlets and two ears; approx 1 3/8" lg x 9/16" h x 0.031" thk o/a; mts by body hole oak both sides	H17-7-350014-418	2	O-376	Operates O-373	151061	2
O-377	SPRING, helical extension type; 0.012" diam music wire; approx 1/8" diam x 1/2" lg o/a; approx 19 turns; hook terms indexed 90°; mts by terms	H17-7-350015-426	2	O-377	Applies tension to O-376	151365	2
O-378	Same as O-376			O-378	Operates O-373		
O-379	Same as O-377			O-379	Applies tension to O-376		
O-380	BALL, steel, nickel pl; "U" formed one end w/one arm, other end irregular shape w/two ears and hub riveted between ears; approx 1" lg x 1" h x 1/4" wd o/a, 0.042" thk material; mts by two holes in line in sides of "U"; oak hole in end of arm	H17-7-350014-486	1	O-380	Operates O-373 on "BREAK"	151164	1
O-381	SPRING, helical extension type; 0.014" diam music wire; approx 21/32" lg x 5/32" OD x 1/8" ID o/a; approx 24 turns; parallel hook term on end; mts by terms	H17-7-350006-523	3	O-381	Applies tension to O-360	80681	3

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS												
SYMBOL REQD.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL PER EQUIP.	SPARE PARTS		
					Q	DESIG.				EQUIP.	STOCK	QUAN
O-382	ROD, breaks steel, nickel pl; bent in approx str; eye loop one end; approx 2 3/16" lg x 9/16" wd x 0.078" diam o/a; mts by straight end	Operates O-380		N17-7-350014-583	CTT	161218	161218	O-382	1	0	0	
O-383	TOOL: steel, nickel pl; irregular shape, one end rounded, other end formed to hook; approx 2 9/16" lg x 5/8" wd x 3/8" h o/a, 0.060" thk material; mts by hole in rounded end; "u" shaped outcut on end of rectangular outcut and 2 tungsten points brazed on 2 ears at formed end	Secds spacing and marking impulses by setting end breaking with E-111 contact screws		N17-7-350014-485	CTT	161171	161171	O-383	1	0	0	
O-384	LINK, toggle: steel, nickel pl; irregular shape w/ear on one end; approx 1 1/16" lg x 8/16" h x 5/16" wd o/a, 0.042" thk material; mts by ears; formed both ends, 2 body holes	Holds O-385 in position to mate and break with E-111		N17-7-350014-479	CTT	161180	161180	O-384	1	1	1	
O-385	SPRING, helical extension type; 0.020" diam music wire; approx 3/4" lg x 1/8" OD o/a; approx 25 turns; hook terms, indexed 90°; mts by terms	Applies tension to O-384		N17-7-350014-885	CTT	161820	161820	O-385	1	1	1	
O-386	GUIDE: steel, nickel pl; "L" shaped; approx 9/16" lg x 11/32" h x 11/32" wd o/a, 0.048" thk material; mts by 2 tapped holes; rectangular outcut on side	Guide for O-387		N17-7-350014-589	CTT	161186	161186	O-386	1	0	0	
O-387	EXTENSION, toggle: steel, nickel pl; irregular shape w/one curved and one hook shaped end; approx 1 7/16" lg x 9/32" h x 0.048" thk o/a; mts by tapped hole in one end and hook section on other end; 2 elongated outcuts on one side	Operates O-385		N17-7-350014-588	CTT	161184	161184	O-387	1	0	0	
O-388	GUIDE, lever: steel, nickel pl; both ends formed, wing on both sides, 8 body holes and three outcuts w/8 slots one end, 8 slots in other end, 8 slots and one rectangular shaped hole in body, three body holes in larger wing; approx 1 11/16" lg x 1 1/32" wd x 7/8" h o/a, 0.035" thk material; mts by two holes in line in formed wings	Guide for symbols O-380 through O-386 and O-404 through O-410 and spring anchor for O-387		N17-7-350014-168	CTT	161188	161188	O-388	1	0	0	
O-389	SWAY: steel, nickel pl; approx 1/8" diam x 1 1/8" lg o/a; mts by 2 grooves near one end	Pivot and stop for symbols O-390 through O-396		N17-7-350014-489	CTT	161161	161161	O-389	1	0	0	

Part Number	Description	Material	Quantity	Part Number	Description	Material	Quantity
O-390	LWZM; steel, nickel pl; irregular shape w/two outlets, pointed ear one end, thickened section other end; approx 2 1/16" lg x 7/16" h x 5/64" wd o/a, 0.043" thk material; mts by irregular shaped outlet near pointed ear; body hole oak both sides near thk end		7	0	0	O-390 through O-396	7
O-391	Same as O-390					151055	151055
O-392	Same as O-390					151055	151055
O-393	Same as O-390					151055	151055
O-394	Same as O-390					151055	151055
O-395	Same as O-390					151055	151055
O-396	Same as O-390					151055	151055
O-397	SPRING; helical extension type; 0.009" diam music wire; approx 5/16" lg x 5/32" diam o/a; approx 14 turns; hook terms indexed 90°; mts by terms		7	1	7	O-397	O-397
O-398	WASHER; felt; hard, white felt; round, approx 5/16" OD x 1/8" ID x 1/16" thk o/a		3	1	3	O-398, O-399	O-398, O-399
O-399	RATL; steel, nickel pl; irregular shape, three formed sides, one straight and one formed arm; approx 1 5/8" lg x 1 5/16" h x 1 1/32" wd o/a, 0.035" thk material; mts by two body holes in line; small body hole in formed arm		1	0	0	O-399	O-399
O-400	SPRING; helical extension type; 0.018" diam music wire; approx 11/16" lg x 5/32" OD x 1/8" ID o/a; approx 27 turns; parallel hook term o/a; mts by terms		1	1	1	O-400	O-400
O-401	Same as O-374						
O-402	GUIDE, selector; steel, nickel pl; side has 2 elongated and one round hole, body has 8 slots, one large outlet, and 8 small holes oak both sides; formed ear has body hole at end; approx 1 1/16" lg x 5/8" wd x 1" h o/a, 0.035" thk material; mts by 2 elongated holes		1	0	0	O-402	O-402
O-403	SHAWT; steel, nickel pl; approx 1 1/16" lg x 1/8" OD o/a; mts by 2 slots 1/64" dp x 1/64" wd, 5/64" apart and 1/32" from one end, 1/64" chamfer both ends		1	0	0	O-403	O-403
O-404	LWZM; steel, nickel pl; irregular shape w/3 body ears; approx 2 5/8" lg x 7/16" h x 0.043" thk o/a; mts by irregular shaped hook end and body hole; oak both sides on other end		7	0	0	O-404 through O-410	O-404 through O-410

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST													
PARTS													
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. EQUIP.	SPARE PARTS			
					W O	C				EQUIP.	STOCK	BOX	QUAN.
O-405	Same as O-404	Operates O-318											
O-406	Same as O-404	Operates O-318											
O-407	Same as O-404	Operates O-318											
O-408	Same as O-404	Operates O-318											
O-409	Same as O-404	Operates O-318											
O-410	Same as O-404	Operates O-318											
O-411	SPRING; helical extension type; 0.009" diam music wire; approx 23/32" lg x 3/32" diam o/a; 60 turns; hook terminals indexed 90°, mts by terms	Applies tension to symbols O-404 through O-410		N17-S-46761-6791	CTT 151397	151397	O-411		7	1	7		
O-501	STATOR, motor; steel, cadmium pl shell; approx 4 1/8" lg x 3 3/4" OD x 2" ID o/a; mts by rims at both ends and two body holes through stator core; twelve elongated slots and body hole w/ raised rim one end, 13 elongated slots other end	Operates E-501		N17-T-350013-808	CTT 122251	122251	O-501		1	0	0		
O-502	END-BELLS; aluminum; irregular shape, front has four irregular shaped holes and boss on lower half, two rounded rises w/ ball oiler at end in upper half, vibration mount extends in front, back irregular shape w/ baffles; approx 3 7/8" OD x 7/16" ID x 1 3/8" lg o/a; mts by body hole in ea of two depressions	End bells for O-501		N17-E-39047-4401	CTT 122252	122252	O-502		2	0	0		
O-503	SPRING; motor type; 0.068" diam steel wire; approx 1 1/2" lg x 1 1/8" OD x 5/8" ID o/a; three turns; square ends; coil diam increases from first to last turn	Applies pressure to E-501 or E-601		N17-T-350007-593	CTT 71999	71999	O-503		1	0	0		
O-504	BEARING, ball; single row radial; single shield; light duty; 0.3937" bore, 1.1811" OD, 0.5643" wd; 7 balls; packed w/ beacon 325 grease; std fit; ABEC-1 std tol	Rotor bearings for O-502 or armature bearing for O-602 and O-603		N17-B-111-01002-1000	CTT 122201	122201	O-504		2	0	0		
O-505	STRIP; steel, nickel pl; tapped hole near ea end; approx 3 1/4" lg x 1/2" wd x 1/8" thk o/a; mts by tapped hole in ctr	Nut plate for A-505 or A-609		N17-T-350014-427	CTT 151113	151113	O-505		2	0	0		
O-601	STATOR, motor; steel, cadmium pl shell; two windings in ID; approx 3 1/8" lg x 3 7/8" OD x 2 5/8" ID o/a; mts by rims and two body holes through core	Operates E-601		N17-T-350014-515	CTT 122221	122221	O-601		1	0	0		

O-602	END-BELLS irregular shape, front has four irregular shaped holes and boss on lower half, two rounded extrusions w/bell oillers in ea on upper half, vibration mount extends in front, electrostatic shield w/440 brass screws on back; approx 3 15/16" OD x 7 1/8" ID x 1 3/16" lg o/a; mts by elongated hole in ea of two opposite extenct; body hole near ID	End bell for O-601	W17-2-360016-287	CTT	122255	122255	O-602	1	0	0
O-603	END-BELLS aluminum; irregular shape, three irregular shape holes, three bosses, vibration mount, two outlets and two grommets in front end, two internal rises on rear end, two bell oillers on side; approx 2 9/16" lg x 5 7/8" OD x 3/8" ID o/a; mts by two tapped holes in rear end; 12 tapped holes and 3 body holes irregularly located	End bell for O-601 and mounts A-601, A-606, E-607 and part of series circuit	W17-2-360016-1001	CTT	122200	122200	O-603	1	0	0
O-604	CAP; brass w/bakelite insulator; 3/4" - 24 internal thread one-half length, knurled other half, slot in ctr, approx 5/16" lg x 3/4" OD x 5/8" ID in threaded end only; mts by threaded portion; bakelite disc inserted inside cap	Retains E-607 and E-608 in E-607	W17-2-360013-608	CTT	122204	122204	O-604	2	0	0
O-606	SPRING; torsion type; 0.022" diam music wire; approx 1" lg x 1/8" h x 5/8" wd o/a; 4 turns; right hand turns; ends extend, one curved; mts by ends	Applies pressure to E-604	W17-2-360014-385	CTT	150880	150880	O-606	1	1	1
O-606	SPACER; steel, nickel pl; approx 3/8" lg x 5/16" OD x 1/8" ID o/a; mts by ID	Spaces one end of A-605 from O-603	W17-2-360014-382	CTT	160873	160873	O-606	1	0	0
O-607	SPRING; torsion type; 0.022" diam music wire; approx 1" lg x 1/8" h x 5/8" wd o/a; 4 turns; left hand turns, ends extended, one curved; mts by ends	Applies pressure to E-606	W17-2-360014-318	CTT	150861	160881	O-607	1	1	1
O-608	SPRING; flat type; 0.010" thk nickel silver; approx 1 3/4" lg x 5/8" wd x 1/4" h o/a; 5 equally spaced ripples	Applies pressure to and spaces O-603 and E-601	W17-2-360014-983	CTT	162078	162078	O-608	1	0	0
O-613	SPRING; helical extension type; 0.031" diam music wire; approx 1 1/4" lg x 1/2" OD x 3/8" ID o/a; approx 23 turns; mts by tapped hole in anchor soldered to an end	Applies tension to E-611	W17-2-360014-380	CTT	160869	160869	O-613	1	1	1
O-614	BUSHING; adjustment setting for contacts; bakelite; male and female; approx 5/8" lg x 3/8" OD x 1/8" ID 1/16" off ctr	Adjustable stop for E-611	W17-2-360014-378	CTT	160863	160863	O-614	1	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST													
SYMBOL DESCR.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS				
					Q	U			BOX	EQUIP.	STOCK	BOX	QUAN.
SYMBOL DESIGNATIONS O-751 THROUGH O-777 USED ON CT-570/UG AND CT-571/UG CABINETS													
O-751	SHIELD, light; nickel silver; "U" formed spring clamp welded on an end of a narrow slightly curved strip; approx 6 1/4" lg x 1 1/8" wd x 7/8" ht; mts by spring clamps	Shield for E-751 and E-752		M17-2-350014-598	CTT	151583	151583	O-751	2	0	0		
O-752	SPRING; torsion type; 0.007" diam music wire; approx 1 1/8" lg x 1 1/8" wd x 7/16" h o/a; approx 9 turns; 18 turns; one hook and one straight term; straight ends; mts by term	Applies pressure to dome lid		M17-2-350014-587	CTT	151585	151585	O-752	2	1	2		
O-753	ARM steel, nickel pl; irregular shape, one end curved, irregular shaped end; other end, approx 8" lg x 5/8" wd x 0.002" thk o/a; mts by hole near curved end	Supports back end of keyboard base when raised		M17-2-350014-764	CTT	151519	151519	O-753	2	0	0		
O-754	GASKET; cabinet dome; black neoprene sponge rubber; approx 65" lg (spliced to form circle) x 7/16" h x 3/16" thk	Noise seal for dome		M17-2-350014-760	CTT	151505	151505	O-754	1	0	0		
O-755	GASKET; black neoprene sponge rubber; irregular shape; approx 55" lg w/5/16" base, one side 9/32" h, other side 1/8" ht slot in center entire length	Noise seal for dome lid		M17-2-350014-759	CTT	151504	151504	O-755	1	0	0		
O-756	CORROSION; stainless steel; approx 12" lg x 2 3/4" h x 7/16" wd o/a, material 0.006" thk; mts by slots in formed up ears at each end of base; "WELTING" etched in 1/4" characters on base and filled with grey lacquer; top formed over, center end 2 1/4" h x 1 1/8" lg	Holds copy to cabinet dome		M17-2-350014-771	CTT	151587	151587	O-756	1	0	0		
O-757	SPRING; helical compression type; 0.006" diam music wire; approx 3/8" lg x 1/4" OD x 5/16" ID o/a; 4 turns; flat ends; mts on ID	Applies pressure to O-755		M17-2-350014-774	CTT	151548	151548	O-757	2	0	0		
O-758	ARM steel, nickel pl; o/o two irregularly formed arms riveted together; approx 6" lg x 7/16" wd x 5/8" h o/a; mts by body hole on one end	Holds dome lid open		M17-2-350014-781	CTT	151576	151576	O-758	1	0	0		
O-759	SPRING; torsion type; 0.045" diam music wire; approx 2 1/8" lg x 1/2" h x 1 1/8" wd o/a; 5 turns; 18 turns; 2 hook term; straight ends; mts by term	Applies pressure to O-755		M17-2-350014-585	CTT	151547	151547	O-759	1	1	1		
O-770	Same as O-581	Applies tension to E-755											
O-771	SUBMITTER, steel, nickel pl; male end female; approx 1/8" lg x 3/8" OD x 5/16" ID o/a, 5/16" diam shoulder	Bushing for I-752		M17-2-350014-778	CTT	151565	151565	O-771	1	0	0		
* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.													

* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.*

O-772	PAD, silencing; fiber glass; rectangular shape, cutout in one corner, one round and two rectangular cutouts in center; approx 1 1/2" lg x 1 1/2" wd x 1" thk o/a	Silencing pad	N17-T-360014-769	CTT 151533	151533	O-772	1	0	0
O-773	SHAFT: steel, nickel pl; o/o shaft w/two pronged formed arms welded to cutout near head end; cutout on other end; approx 1 1/2" lg x 1 1/2" wd x 1" h o/a; mts by slot and cutout at ends	Operates S-1101	N17-T-360014-772	CTT 151541	151541	O-773	1	0	0
O-774	SPRING: helical extension type; 0.040" diam music wire; approx 1" lg x 3/8" OD x 9/32" ID o/a; approx 10 turns; hook term on ea end; mts by terms	Applies tension to O-773	N17-T-46710-9634	CTT 151569	151569	O-774	1	1	1
O-775	ARM: steel, nickel pl; o/o two arms riveted together, formed end of one fits in cutout of other, other ends curved; approx 10 1/8" lg x 7/16" wd x 3/8" h o/a; 0.095" thk material; mts by hole at ea end	Holds cabinet dome open	N17-T-360014-780	CTT 151575	151575	O-775	1	0	0
O-776	SPRING: torsion type; 0.045" diam music wire; approx 2 1/16" lg x 3/4" h x 7/32" wd o/a; 1 turn; 60 turn; one hook end and one straight term; straight ends; mts by terms	Applies pressure to O-775	N17-T-360014-686	CTT 151528	151528	O-776	1	1	1
O-777	SPRING: helical extension type; 0.024" diam music wire; approx 7/32" OD x 1 7/32" lg o/a; 34 turns; hook terminals; straight ends; mts by terms	Applies tension to dome latch	N17-T-360006-455	CTT 74712	74712	O-777, O-1755	3	1	3
O-1101	PLATE: aluminum, plain anodized; approx 4 9/16" lg x 2 3/8" wd x 0.064" thk o/a; mts by body hole near ea end; 1/8" h characters "OH, MAINT. OH, OFF LIGHT", eight round body holes, one w/tooth and two w/flat section, one rectangular body hole and one cutout rounded at end	Support for J-1101, S-1102 XP-1101, XP-1102 and TB-1101	N17-T-360013-731	CTT 151421	151421	O-1101	1	0	0
O-1103	PLATE: aluminum, plain anodized; formed on four sides, small cutout ea corner, 1 1/2" irregular spaced body holes; approx 4 1 1/2" lg x 2 3/4" wd x 3/8" h o/a, 0.064" thk material	Cover for A-1101 and spaces A-1108 and O-1101	N17-T-360014-245	CTT 151441	151441	O-1103	1	0	0
O-1104	PLATE: aluminum, plain anodized; formed on four sides, small cutout on ea corner; approx 4 13/16" lg x 3 3/8" wd x 3/8" h o/a, 0.064" thk material; mts by two elongated slots near ends	Cover for A-1101 and spaces A-1108 and O-1105	N17-T-360014-246	CTT 151426	151426	O-1104	1	0	0
O-1105	PLATE: aluminum, plain anodized; rectangular shape; approx 4 19/32" lg x 2 7/8" wd x 0.064" thk o/a; mts by body hole at both ends; seven body holes and one elongated cutout w/rounded end	Support for K-1101 and TB-1102	N17-T-360013-732	CTT 151423	151423	O-1105	1	0	0
O-1112	COIL: iron, nickel pl; o/o head, body, threaded shank w/slotted end; approx 2 1/16" lg x 1/2" diam o/a; mts by 5/16" - 32 threaded shank	Core for and holds E-1114 and E-1115 to A-1108	N17-T-360013-721	CTT 151402	151402	O-1112	2	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER		MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
									EQUIP.		STOCK	
									BOX	QUAN.	BOX	QUAN.
O-1113	Same as O-126	Applies tension to E-1113										
O-1114	LEVER: steel, nickel pl; irregular shaped w/three wings, 2 wings w/outouts, 3rd wing irregular "v" shaped w/formed ear on end; approx 1 11/16" lg x 1" h x 1/4" wd, o/a 0.060" thk material; mts by two wings w/outouts; body hole between two wings	Guide for E-1112		N17-T-350013-764	CTT 151408	151408	151408	O-1114	1	0	0	
O-1115	Same as O-146	Applies tension to O-1114										
O-1116	CLIP; retainer; nickel silver; approx 1" lg x 15/16" h x 5/32" wd o/a, 0.063" thk material; approx 5/8" max. jaw opening; "u" shaped w/formed ear on bottom and outout on each side	Retains E-1112 to A-1109		N17-T-350013-726	CTT 151410	151410	151410	O-1116, O-1117	2	0	0	
O-1117	Same as O-1116	Retains E-1113 and O-1114 to A-1109										
O-1118	SEACER; brass tubing; approx. 1/4" OD x 1/8" ID x 11/16" lg o/a; mts by ID	Spaces S-1104 and S-1105		N17-T-350013-724	CTT 151407	151407	151407	O-1118	2	0	0	
O-1119	SPRING; helical extension type; 0.014" diam music wire; approx 11/16" lg x 5/32" OD x 1/8" ID o/a; approx 28 turns; hook term ea end indexed 90°; mts by terms	Applies tension to E-1112		N17-T-350006-388	CTT 3870	3870	3870	O-1119	1	0	0	
O-1302	BALL; steel, nickel pl; irregularly shaped and formed, "u" shaped one end, hammer welded to other end, two spring notched formed ears; approx 2 7/16" lg x 3/4" h x 7/8" wd o/a, 0.042" thk material; mts by two holes in line in sides of "u"	Supports O-1303		N17-T-350014-527	CTT 150069	150069	150069	O-1302	1	0	0	
O-1303	HEAD; hammer; steel, nickel pl; irregular shape, blunt in front, body partly tapered toward shank, curved, flat ear at back; approx 1/2" lg x 7/32" diam o/a; mts by oak hole in ear	Strikes symbols O-1346 through O-1396		N17-T-350014-867	CTT 150061	150061	150061	O-1303	1	1	2	
O-1304	SPRING; helical extension type; 0.016" diam music wire; approx 3/8" lg x 1/8" OD o/a; approx 10 turns; parallel hook terminals; mts by terminals	Applies tension to O-1303		N17-T-350006-313	CTT 112633	112633	112633	O-1304	1	1	1	
O-1305	WICK; lubricating wick; hard white felt w/o spring; approx 9/32" lg x 5/32" diam o/a	Lubricates O-1304		N17-T-350008-326	CTT 98729	98729	98729	O-1305	1	0	0	
O-1306	BALL; steel, nickel pl; "v" shaped w/irregular formed ears, three spring notches, "v" formed at point of "v"; approx 1 11/16" lg x 1 9/16" wd x 11/16" h o/a, 0.050" thk material; mts by two holes in line	Operates O-1303 by O-1302		N17-T-350014-833	CTT 150064	150064	150064	O-1306	1	0	0	

Part Number	Description	Material	Quantity	Unit	Notes
O-1307	Same as O-1370		1	0	
O-1308	SPRING, helical extension type; 0.084" diam music wire; approx 1-1/4" lg x 3/16" OD o/a; approx 30 turns; parallel hook terminals	W17-2-350013-488	1	0	
O-1309	WIRE, hard white felt; approx 1" lg x 1/8" diam	W17-2-350013-907	1	1	
O-1310	SPRING, helical extension type; 0.010" diam music wire; approx 11/32" lg x 1/8" OD x 3/32" ID o/a; approx 15 turns; parallel hook terminals; mts by terms	W17-2-350013-615	4	1	
O-1311	SHIMS, steel; approx 5/16" OD x 5/32" ID x 0.008" thk o/a; mts by ID	W17-2-350014-815	4	0	
O-1312	LATCH, steel, nickel pl; irregular shape w/three arms, longest arm has small cutout w/riso on side; approx 1 7/32" lg x 25/32" h x 8/64" thk o/a; mts by hole in str of body; seek hole in rounded arm	W17-2-350014-615	1	1	
O-1313	Same as O-1304				
O-1314	WASHER, felt; hard, white felt; round, approx 1/4" OD x 1/4" ID x 1/16" thk o/a	W17-2-350014-332	2	1	
O-1315	PLATE, steel, nickel pl; rectangular w/rounded corners; approx 5/8" lg x 3/8" wd x 1/16" thk o/a; mts by two tapped holes	W17-2-350013-915	1	0	
O-1316	ROSKING, steel, piston finish; males; approx 1/16" thk x 3/16" OD x 1/8" ID o/a	W17-2-350013-745	3	0	
O-1317	ROLLER, bearing; steel; approx 5/8" OD x 3/16" ID x 1/16" thk o/a; mts by ID	W17-2-350015-207	3	1	
O-1318	SPACER, steel, nickel pl; approx 1/4" thk o/a, w/ 15/32" OD and 1/8" ID; mts by ID; rounded from approx 9/32" diam shoulder to 0.031" thk head	W17-2-350015-794	3	0	
O-1319	Same as O-1331				
O-1320	Same as O-1317				
O-1321	Same as O-1316				
O-1322	Same as O-1331				

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST											
PARTS											
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
					ID	DESIG.			BOX	QUAN.	EQUIP.
O-1323	ARM: steel, nickel pl; irregular shape w/two arms, one arm curved and formed at end, other arm has two rounded ears on one side w/body hole near ea ear, hub butt welded to ea end; approx 2 15/16" lg x 2 13/16" h x 7/16" wd o/a, 0.060" thk material; mts by ID of hubs	Anchor for and adjusts tension of O-1308		M17-T- 350014- 750	CTT	150068	150068	O-1323	1	O	O
O-1324	ARM: steel, nickel pl; irregularly shaped, one end rounded, two tapped body holes, two curved outouts one side; approx 1 11/32" lg x 5/16" wd x 0.065" thk o/a; mts by tapped body holes	Latches O-1306 with O-1312		M17-T- 350014- 853	CTT	151709	151709	O-1324	1	O	O
O-1325	WASHER, felt; hard, white felt; round, 1/4" ID x 1/2" OD x 3/32" thk	Lubricates A-1304		M17-T- 350015- 629	CTT	90361	90361	O-1325, O-1757, O-1940, O-2003, O-2008, O-2013	6	1	3
O-1326	SLIDE: steel, nickel pl; cylindrical body w/rectangular head; approx 1/2" lg x 3/8" wd x 3/16" h o/a; mts by body diam; neck groove at one end of body slot in head	Pivot for and operates A-1304 by A-1346		M17-T- 350015- 816	CTT	150039	150039	O-1326	1	1	1
O-1327	Same as O-326	Lubricates A-1304 and O-1326									
O-1340	BAR, tie: steel, nickel pl; approx 9 15/16" lg x 1/2" h x 3/16" wd o/a, 0.060" thk material; mts by elongated hole one end and body hole at other end; formed lip one side w/outout on ea end in body, two elongated holes and two body holes	Tie bar for A-1307 and A-1308 and supports A-1306		M17-T- 350014- 235	CTT	150285	150285	O-1340	1	O	O
O-1341	CODE BAR: steel, nickel pl; irregular shape, 43 sq edged teeth one side, one outout and 4 pointed teeth at one end, rectangular shaped outout, stud and rectangular shaped hole at other end, large elongated slot in approx otr; approx 11 27/32" lg x 29/32" h x 19/32" wd o/a, 0.042" thk material; mts by small elongated slot near ea end	Vertically positions type box by O-1318 and blocks and permits function bars to be selected; suppression code bar		M17-T- 350015- 600	CTT	152721	152721	O-1341	1	O	O
O-1342	CODE BAR: steel, nickel pl; irregular shape, 43 sq edged teeth one side, 2 ears and outout other side, 2 outouts and 4 pointed ears one end, large body ear on other end, 2 large elongated slots in body; approx 11 7/16" lg x 29/32" h x 0.042" thk o/a; mts by small elongated slot near ea end	Operates O-1617 which determines the selection of one row from four vertical rows in type box and blocks and permits function bars to be selected; #4 code bar		M17-T- 350015- 366	CTT	152561	152561	O-1342, O-1344	2	O	O

O-1343	CODE BAR: steel, nickel pl; irregular shape 43 sq edge teeth one side, 2 outouts and 4 pointed teeth one end, body ear and outout other end, 2 large elongated slots in body; approx 11 19/32" lg x 29/32" h x 0.043" thk o/a; mts by small elongated slot near ea end	Vertically positions type box by O-1918 and blocks and permits function bars to be selected; #1 code bar	N17-T-350015-566	CTT 182549	182549	O-1343, O-1346, O-1347	5	0	0
O-1344	Same as O-1343	Operates O-1619, determines the selection of one row from 4 vertical rows in type box and blocks and permits function bars to be selected; #6 code bar							
O-1345	Same as O-1343	Vertically positions type box by O-1918 and blocks and permits function bars to be selected; #2 code bar							
O-1346	CODE BAR: steel, nickel pl; irregular shape, 43 sq edged teeth one side, outout and pointed ear other side near one end, 2 outouts and 4 pointed teeth one end, large body ear other end, 2 large elongated slots in body; approx 11 7/16" lg x 1 3/16" h x 0.042" thk o/a; mts by small elongated slot near ea end	Operates O-1664, determines whether selection is made from left 4 vertical rows or right 4 vertical rows in letters or figures end of type box and blocks and permits function bars to be selected; #5 code bar	N17-T-350015-567	CTT 182552	182552	O-1346	1	0	0
O-1347	Same as O-1345	Vertically positions type box by O-1918 and blocks and permits function bars to be selected; common code bar							
O-1348	CODE BAR: steel, nickel pl; irregular shape, 2 teeth one side, outout and formed ear w/ outout in end on other side, elongated body ear ea end, 2 large elongated outouts in body; approx 10 21/32" lg x 29/32" h x 9/32" wd o/a, 0.042" thk material; mts by small elongated slot near each end	Operates automatic carriage return and line feed and blocks and permits function bars to be selected	N17-T-350015-569	CTT 182554	182554	O-1348	1	0	0
O-1349	CODE BAR: steel, nickel pl; irregular shape, 43 sq edged teeth one side, outout and formed body ear w/outout in end on other side, 4 pointed teeth and 2 outouts one end, large body ear other end, large elongated slot, elongated body hole and body hole in bar; approx 11 7/16" lg x 1" h x 9/32" wd o/a, 0.042" thk material; mts by small elongated slot near ea end	Operates O-1650, letters and figures shift and blocks and permits function bars to be selected	N17-T-350015-568	CTT 182555	182555	O-1349	1	0	0
O-1350	PQ37, code bar; steel; approx 1 3/16" lg x 5/32" diam o/a; mts by tapped hole near ea end; one end slotted	Retains symbols O-1341 through O-1349 to A-1307	N17-T-350014-233	CTT 150289	150289	O-1350, O-1358	2	1	2
O-1351	BAR: steel, nickel pl; irregular shape, one end pointed, other end has circular disk welded to both sides; approx 3 17/32" lg x 1/2" h x 3/32" wd o/a, 0.050" thk material; mts by half of body from disk end	Shifts O-1342 by O-1839 and O-1540 when positioned	N17-T-350015-725	CTT 182548	182548	O-1351 through O-1356	6	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST											
PARTS										SPARE PARTS	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP. STOCK	
					C	D				BOX	QUAN.
O-1352	Same as O-1351	Shifts O-1343 by O-1539 and O-1540 when positioned									
O-1353	Same as O-1351	Shifts O-1344 by O-1539 and O-1540 when positioned									
O-1354	Same as O-1351	Shifts O-1345 by O-1539 and O-1540 when positioned									
O-1355	Same as O-1351	Shifts O-1346 by O-1539 and O-1540 when positioned									
O-1356	Same as O-1351	Shifts O-1346 by O-1539 and O-1540 when positioned									
O-1357	PLATE, retainer: steel, nickel pl; approx 1" lg x 5/8" wd x 0.035" thk o/a; mts by body slot and hole; angular cut away one side	Retains symbols O-1351 through O-1356 in guide slots of A-1307		N17-T-350014-161	CTT	150301	150301	O-1357	1	0	0
O-1358	Same as O-1350	Retains symbols O-1341 through O-1349 to A-1308									
O-1359	PLATE, guide: aluminum, plain anodized; one side straight, other side stepped w/7 slots across ctr, one corner cut off; approx 1 7/32" lg x 1/2" wd x 1/4" h o/a; mts by body hole in thin section each end	Retains symbols O-1341 through O-1349 in guide slots of A-1308		N17-T-350015-877	CTT	152574	152574	O-1359	1	0	0
O-1360	PLATE, retainer: steel, nickel pl, approx 1 3/16" lg x 7/16" wd x 0.025" thk o/a; mts by body hole at each end	Retains O-1361 and O-1362 in A-1309		N17-T-350014-252	CTT	150293	150293	O-1360	2	0	0
O-1361	SPRING: helical compression type; 0.012" diam music wire; approx 9/32" lg x 5/32" OD o/a; 7 turns; closed ends	Applies pressure to O-1362		N17-T-350014-216	CTT	150535	150535	O-1361	16	1	3
O-1362	BALL, bearing: carbon steel; spherical; approx 5/32" diam o/a	Detents for symbols O-1341 through O-1347 and O-1349		N17-T-350014-214	CTT	150537	150537	O-1362, O-1644	17	1	6
O-1363	SHIM: steel, approx 7/8" lg x 1/4" h x 0.005" thk o/a; mts by slot in ctr of one side; rounded ear opposite side of mtg slot	Spaces A-1308 and A-1309		N17-T-350014-160	CTT	150302	150302	O-1363	4	1	4
O-1364	SHIRT: steel, nickel pl; slot and 2 flats near one end, spring, plunger and toggle held in place by staked pin on other end, shield w/stud near ctr of body; approx 1 9/16" lg x 3/4" diam o/a; mts by slot	Turns O-1393 when left ribbon feed mechanism is engaged		N17-T-350015-390	CTT	152630	152630	O-1364, O-1402	2	0	0
O-1365	HUB: steel, nickel pl; round, irregularly slotted near end of shank, slot across end of shank; approx 3/4" OD x 5/32" ID x 5/16" lg o/a; mts by ID	Sleeve bearing for O-1364 and turns O-1373 when left ribbon feed mechanism is engaged		N17-T-350015-355	CTT	152525	152525	O-1365, O-1401	2	0	0
O-1366	LEVER: steel, nickel pl, irregular "w" shape, one body and two formed ears one end, other end curved, notch near end of base; approx 2 7/8" lg x 2" h x 5/8" wd o/a, 0.035" thk material; mts by body hole in base, LH mtg	Left end ribbon guide and reverses ribbon feed by O-1381		N17-T-350014-154	CTT	150310	150310	O-1366	1	0	0

Part Number	Description	Material	Quantity	Part Number	Description	Material	Quantity	Part Number	Description	Material	Quantity
O-1367	BUSHING: steel, nickel pl; male; approx 5/16" OD x 1/8" ID x 3/32" lg o/a, 5/32" diam body		4	O-1367	BUSHING: steel, nickel pl; male; approx 5/16" OD x 1/8" ID x 3/32" lg o/a, 5/32" diam body		4	O-1367	BUSHING: steel, nickel pl; male; approx 5/16" OD x 1/8" ID x 3/32" lg o/a, 5/32" diam body		4
O-1368	SPRING: helical extension type; 0.010" diam music wire; approx 11/32" lg x 1/8" OD o/a; approx 27 turns; parallel hook terminals; mts by toms		6	O-1368	SPRING: helical extension type; 0.010" diam music wire; approx 11/32" lg x 1/8" OD o/a; approx 27 turns; parallel hook terminals; mts by toms		6	O-1368	SPRING: helical extension type; 0.010" diam music wire; approx 11/32" lg x 1/8" OD o/a; approx 27 turns; parallel hook terminals; mts by toms		6
O-1369	ROLLER: aluminum, plain anodized; approx 5/8" lg x 3/8" OD x 3/16" ID o/a; mts by ID; flanged ends		2	O-1369	ROLLER: aluminum, plain anodized; approx 5/8" lg x 3/8" OD x 3/16" ID o/a; mts by ID; flanged ends		2	O-1369	ROLLER: aluminum, plain anodized; approx 5/8" lg x 3/8" OD x 3/16" ID o/a; mts by ID; flanged ends		2
O-1370	WASHER: felt; hard, white felt; round, approx 15/16" OD x 9/32" ID x 0.035" thk o/a		2	O-1370	WASHER: felt; hard, white felt; round, approx 15/16" OD x 9/32" ID x 0.035" thk o/a		2	O-1370	WASHER: felt; hard, white felt; round, approx 15/16" OD x 9/32" ID x 0.035" thk o/a		2
O-1371	PLATE: ribbon; steel, nickel pl; round, formed circum w/70 teeth, 2 teeth in ID; approx 1 1/2" OD x 9/32" ID x 3/16" lg o/a, 0.035" thk material; mts by ID, LH mtg		1	O-1371	PLATE: ribbon; steel, nickel pl; round, formed circum w/70 teeth, 2 teeth in ID; approx 1 1/2" OD x 9/32" ID x 3/16" lg o/a, 0.035" thk material; mts by ID, LH mtg		1	O-1371	PLATE: ribbon; steel, nickel pl; round, formed circum w/70 teeth, 2 teeth in ID; approx 1 1/2" OD x 9/32" ID x 3/16" lg o/a, 0.035" thk material; mts by ID, LH mtg		1
O-1372	SPRING: flat type; 0.010" thk steel; approx 1 1/4" sq x 3/32" h o/a; mts by 9/32" diam hole in ctr; 4 equidistant formed arms		2	O-1372	SPRING: flat type; 0.010" thk steel; approx 1 1/4" sq x 3/32" h o/a; mts by 9/32" diam hole in ctr; 4 equidistant formed arms		2	O-1372	SPRING: flat type; 0.010" thk steel; approx 1 1/4" sq x 3/32" h o/a; mts by 9/32" diam hole in ctr; 4 equidistant formed arms		2
O-1373	PLATE: steel, nickel pl; round w/s arms on circum, one rounded at end w/sak hole, body ear in ID w/notch on ea side; approx 1 1/2" lg x 25/32" wd x 3/32" h o/a, 0.032" thk material; mts by ID, LH mtg		1	O-1373	PLATE: steel, nickel pl; round w/s arms on circum, one rounded at end w/sak hole, body ear in ID w/notch on ea side; approx 1 1/2" lg x 25/32" wd x 3/32" h o/a, 0.032" thk material; mts by ID, LH mtg		1	O-1373	PLATE: steel, nickel pl; round w/s arms on circum, one rounded at end w/sak hole, body ear in ID w/notch on ea side; approx 1 1/2" lg x 25/32" wd x 3/32" h o/a, 0.032" thk material; mts by ID, LH mtg		1
O-1374	Same as O-147			O-1374	Same as O-147			O-1374	Same as O-147		
O-1375	SPRING: torsion type; 0.020" diam music wire; approx 1 1/4" lg x 9/32" h x 9/32" wd o/a; 12 1/4 turns; RH turns; hooked ends, indexed 90°; mts by ID		2	O-1375	SPRING: torsion type; 0.020" diam music wire; approx 1 1/4" lg x 9/32" h x 9/32" wd o/a; 12 1/4 turns; RH turns; hooked ends, indexed 90°; mts by ID		2	O-1375	SPRING: torsion type; 0.020" diam music wire; approx 1 1/4" lg x 9/32" h x 9/32" wd o/a; 12 1/4 turns; RH turns; hooked ends, indexed 90°; mts by ID		2
O-1376	Same as O-2101			O-1376	Same as O-2101			O-1376	Same as O-2101		
O-1378	PIVOT: steel, nickel pl; approx 5/16" lg x 1/8" diam o/a; mts by ends and slot near ea end		2	O-1378	PIVOT: steel, nickel pl; approx 5/16" lg x 1/8" diam o/a; mts by ends and slot near ea end		2	O-1378	PIVOT: steel, nickel pl; approx 5/16" lg x 1/8" diam o/a; mts by ends and slot near ea end		2
O-1379	LINE: steel, nickel pl; 2 formed ears in line at wd end, other end formed w/1/4" formed arm on one side; approx 1" lg x 7/16" wd x 7/16" h o/a, 0.042" thk material; mts by 2 holes in line in end ears, LH mtg		1	O-1379	LINE: steel, nickel pl; 2 formed ears in line at wd end, other end formed w/1/4" formed arm on one side; approx 1" lg x 7/16" wd x 7/16" h o/a, 0.042" thk material; mts by 2 holes in line in end ears, LH mtg		1	O-1379	LINE: steel, nickel pl; 2 formed ears in line at wd end, other end formed w/1/4" formed arm on one side; approx 1" lg x 7/16" wd x 7/16" h o/a, 0.042" thk material; mts by 2 holes in line in end ears, LH mtg		1
O-1380	LINE: steel, nickel pl; irregular shape, 2 formed ears in line at wd end, other end formed w/curved arm formed at end on one side, eak hole in approx ctr of body; approx 1 5/8" lg x 7/16" wd x 15/32" h o/a, 0.050" thk material; mts by 2 holes in line in end ears, LH mtg		1	O-1380	LINE: steel, nickel pl; irregular shape, 2 formed ears in line at wd end, other end formed w/curved arm formed at end on one side, eak hole in approx ctr of body; approx 1 5/8" lg x 7/16" wd x 15/32" h o/a, 0.050" thk material; mts by 2 holes in line in end ears, LH mtg		1	O-1380	LINE: steel, nickel pl; irregular shape, 2 formed ears in line at wd end, other end formed w/curved arm formed at end on one side, eak hole in approx ctr of body; approx 1 5/8" lg x 7/16" wd x 15/32" h o/a, 0.050" thk material; mts by 2 holes in line in end ears, LH mtg		1

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
									EQUIP.		STOCK	
									BOX	QUAN.	BOX	QUAN.
O-1381	LEVER: steel, nickel pl; irregular "L" shape, one end rounded, elongated hole, stud and four teeth at corner; approx 1 1/8" h x 3/32" wd o/a, 0.060" thk material; mts by body hole rounded end	Reverses ribbon feed by O-1391 and O-1382		N17-T-350015-401	CTT	152646	152646	O-1381	1	0	0	0
O-1382	LEVER: steel, nickel pl; irregular shape, outout in rounded end, other end formed, approx 1 1/16" lg x 3/8" h x 5/32" wd o/a, 0.035" thk material; mts by body hole in rounded end	Disengages O-1380 from O-1371 when ribbon feed is reversed		N17-T-350014-627	CTT	150343	150343	O-1382	1	0	0	0
O-1383	BUSHING: steel, nickel pl; male; approx 3/8" OD x 1/8" ID x 1/8" lg o/a, body 3/16" diam	Pivot for O-1381 and O-1382		N17-T-350014-340	CTT	150932	150932	O-1383, O-1412	2	0	0	0
O-1384	SHAFT: steel; approx 1 1/32" lg x 5/32" diam o/a; mts by #4-40 threaded shank ea end; slot near one end	Reverses ribbon feed by O-1390 or O-1391		N17-T-350016-697	CTT	152682	152682	O-1384	1	0	0	0
O-1385	CAM: steel, nickel pl; hub welded to ID of cam, three, rises on one side of cam; approx 5/8" OD x 1/8" ID x 1 1/16" lg o/a; mts by ID; two tapped holes in hub, full diam approx 3/8"	Detent for O-1387		N17-T-350014-341	CTT	150934	150934	O-1385	1	0	0	0
O-1386	BUSHING: steel, nickel pl; male; approx 3/8" OD x 1/8" ID x 3/32" lg o/a, o/o head, slot 47/32" diam body	Pivot for O-1387		N17-T-350014-636	CTT	150436	150436	O-1386, O-1615, O-2128	3	0	0	0
O-1387	LEVER: steel, nickel pl; rounded ends, bend near ctn, pin riveted to small end; approx 1 9/16" lg x 9/16" h x 3/16" wd o/a, 0.060" thk material; mts by hole in large end; hole oak on both sides at bend	Positions O-1384 for left or right ribbon feed through O-1376		N17-T-350014-343	CTT	150937	150937	O-1387	1	0	0	0
O-1388	SPACER: steel, nickel pl; approx 5/16" OD x 1/8" ID x 3/32" thk o/a; mts by ID	Spaces O-1387 from A-1389		N17-T-350006-711	CTT	8449	8449	O-1388, O-1768	1	1	1	1
O-1389	SPRING: helical extension type; 0.016" diam music wire; approx 15/16" lg x 5/32" OD x 1/8" ID o/a; approx 39 turns; hook term ea end indexed 90°; mts by term	Applies tension to O-1387		N17-T-350006-446	CTT	74701	74701	O-1389, O-1732, O-1743, O-1748, O-1751, O-1763, O-1766, O-1772, O-1775	9	1	3	3
O-1390	GEAR: spur; steel; straight teeth; 12 teeth; 48 pitch, 0.25" PD; approx 5/16" OD x 1/8" ID x 3/32" thk o/a; straight faces; mts by ID	Reverses ribbon feed by O-1384 or O-1411		N17-T-350014-628	CTT	150336	150336	O-1390, O-1391	2	0	0	0
O-1391	Same as O-1390	Reverses ribbon feed by O-1384 or O-1381										
O-1392	SPACER: steel, nickel pl; approx 9/32" OD x 1/8" ID x 3/8" lg o/a; mts by ID	Spaces A-1312 from A-1301		N17-T-350016-594	CTT	152671	152671	O-1392	3	0	0	0

Part Number	Description	Material	Quantity	Unit	Notes	Part Number	Description	Material	Quantity	Unit	Notes
O-1393	SPPOOL, printing ribbon: 11 yds lg x 0.005" thick; black record ribbon, extra heavy inked, Underwood spool, 17 thds per 1/8" base, ink blue		1	O		O-1393	Ink supply and operates ribbon feed mechanism by O-1366 and O-1409		1	O	
O-1400	Same as O-1378					Pivot for O-1416 and mounts O-1420					
O-1401	Same as O-1365					Sleeve bearing for O-1402 and turns O-1405 when right ribbon feed mechanism is engaged					
O-1402	Same as O-1364					Turns O-1421 when right ribbon feed mechanism is engaged					
O-1403	Same as O-1370					Lubricates O-1401, O-1402 and O-1404					
O-1404	REATCHET, ribbon: steel, nickel pl; round, formed circum w/70 teeth, 2 teeth in ID; approx lg 1.00 x 9/32" ID x 3/16" lg o/a, 0.035" thk material; mts by ID, RH mtg		1	O		Turns O-1401 when right ribbon feed mechanism is engaged					
O-1405	Same as O-1372					Applies pressure to O-1404					
O-1406	PLATE; steel, nickel pl; round w/5 arms on circum, one rounded at end w/oak hole, body ear in ID w/notch on ea side; approx 13/16" lg x 23/32" wd x 3/32" h o/a, 0.032" thk material; mts by ID, RH mtg		1	O		Turns A-1319 when right ribbon feed mechanism is engaged					
O-1407	Same as O-147					Slack take-up yield spring, applies tension to A-1319					
O-1408	Same as O-1369					Right end roller guide for ribbon					
O-1409	LEVER; steel, nickel pl; irregular "Y" shape, one body and 2 formed ears one end, other end curved, body hole near end of base; approx 2 7/8" lg x 2 1/32" h x 29/32" wd o/a, 0.035" thk material; mts by body hole in otr of base, RH mtg		1	O		Right end ribbon guide and reverses ribbon feed by O-1411					
O-1410	Same as O-1367					Pivot for O-1409					
O-1411	LEVER; steel, nickel pl; irregular shape, rounded one end, outcut w/4 teeth near other end, elongated hole, stud and arm located in central p/o body; approx 1 11/16" lg x 1 5/16" h x 3/32" wd o/a, 0.060" thk material; mts by body hole in rounded end		1	O		Reverses ribbon feed by O-1390 and O-1413					
O-1412	Same as O-1363					Pivot for O-1411 and O-1413					
O-1413	LEVER; steel, nickel pl; irregular shape, one end rounded w/outcut on side, other end formed; approx 1 1/16" lg x 5/8" h x 5/32" wd o/a, 0.035" thk material; mts by body hole in rounded end		1	O		Disengages O-1415 from O-1404 when ribbon feed is reversed					

ORIGINAL

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
					DESIG.	DESIG.			PER EQUIP.	EQUIP.	STOCK
									BOX	QUAN.	BOX
O-1414	SPACER: aluminum, plain anodized; approx 1 1/8" OD x 1/8" ID x 1/8" thk o/a; mts by ID	Spaces O-1411 from A-1389		N17-T-350014-292	CTT	150821	150821	O-1414	1	0	0
O-1415	LEVER: steel, nickel pl; irregular shape, 2 formed ears in line at wd end, other end formed w/curved arm formed at end on one side; ask hole in approx ctr of body; approx 1 5/8" lg x 7/16" wd x 15/32" h o/a, 0.050" thk material; mts by 2 body holes in line in end ears, RH mtg	Prevents O-1404 from reversing when right ribbon feed mechanism is engaged and prevents O-1416 from turning O-1404 when disengaged			CTT	152621	152621	O-1415	1	1	1
O-1416	LEVER: steel, nickel pl; 2 formed ears in line at wd end, other end formed w/curved arm on one side; approx 1 1/8" lg x 7/16" wd x 7/16" h o/a, 0.042" thk material; mts by 2 holes in line in end ears, RH mtg	Turns O-1404 when right ribbon feed mechanism is engaged			CTT	152619	152619	O-1416	1	1	1
O-1418	Same as O-1368	Applies tension to O-1409									
O-1419	Same as O-2101	Applies tension to O-1409									
O-1420	Same as O-1375	Applies pressure to O-1416									
O-1421	SPool, printing ribbon; sheet metal, black high gloss finished; 2" OD x 5/8" wd x 3/16" ID o/a; mtg hole 5/16" diam, 5/8" diam ribbon mtg drum	Takes up ribbon from O-1393 when right ribbon feed mechanism is engaged		N17-T-350007-565	CTT	71681	71681	O-1421	1	0	0
O-1422	BLOCK, guide; steel, nickel pl; approx 5/16" lg x 3/16" h x 5/32" wd o/a; mts by tapped hole on opposite side of mtg hole	Support for O-1473		N17-T-350013-595	CTT	150689	150689	O-1422	3	0	0
O-1423	GUIDE, aluminum, plain anodized; 42 equally spaced slots one side crossed by 2 lg slots, 3 studs and 4 tapped holes in other side, 23 tapped holes in top; approx 9 9/32" lg x 1 31/32" wd x 3/16" thk o/a; mts by 7 ctb holes between 2 lg slots	Guide for symbols O-1445 through O-1455		N17-T-350015-270	CTT	152643	152643	O-1423	1	0	0
O-1424	PLATE, guide; steel, nickel pl; approx 9 9/32" lg x 1 1/4" wd x 0.042" thk o/a; mts by 4 body holes near upper edge; 42 body holes, 42 large and 42 small irregular shaped elongated slots in three rows, three elongated holes near upper edge	Guide for symbols O-1425 through O-1435 and anchor for O-1436		N17-T-350016-419	CTT	152651	152651	O-1424	1	0	0

* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.

O-1425	BAR, function: steel, nickel pl; irregular shape, arm, 2 formed ears and formed wing on wd end; notched ear at otr; approx 2 15/16" lg x 1 1/4" h x 5/32" wd o/a, 0.048" thk material; mts by outcut in narrow end; "sp" stamped in wd end	Operates O-1445 when O-1445 is in operating position	W17-T-350015-416	CTT	152670	152670	O-1425	1	0	0
O-1426	BAR, function: steel, nickel pl; irregular shape, arm and formed wing on wd end, notched ear at otr; approx 2 16/16" lg x 1 1/4" h x 1/8" wd o/a, 0.048" thk material; mts by outcut in narrow end; "LIT" stamped in wd end	Operates O-1446	W17-T-350015-411	CTT	152665	152665	O-1426	1	0	0
O-1427	BAR, function: steel, nickel pl; irregular shape, arm, formed ear and formed wing on wd end; notched ear at otr; approx 2 16/16" lg x 1 1/4" h x 5/32" wd o/a, 0.048" thk material; mts by outcut in narrow end; "P20" stamped in wd end	Operates O-1447	W17-T-350015-412	CTT	152666	152666	O-1427	1	0	0
O-1428	BAR, function: steel, nickel pl; irregular shape, arm and formed ear on wd end, notched ear at otr; approx 2 16/16" lg x 1 1/4" h x 1/8" wd o/a, 0.048" thk material; mts by - 1/8" wd o/a, 0.048" thk material; mts by outcut in narrow end; "CR LP" stamped in wd end	Operates O-1448	W17-T-350015-417	CTT	152671	152671	O-1428, O-1433	2	0	0
O-1429	BAR, function: steel, nickel pl; irregular shape, arm, formed ear and formed wing on wd end; notched ear at otr; approx 2 16/16" lg x 1 1/4" h x 5/32" wd o/a, 0.048" thk material; mts by outcut in narrow end; "CR" stamped in wd end	Operates O-1449	W17-T-350015-418	CTT	152667	152667	O-1429	1	0	0
O-1430	BAR, function: steel, nickel pl; irregular shape, arm, 4 formed ears and formed wing on wd end; notched ear at otr; approx 2 16/16" lg x 1 1/4" h x 5/32" wd o/a, 0.048" thk material; mts by outcut in narrow end "UC3" stamped in wd end	Operates O-1450	W17-T-350015-416	CTT	152672	152672	O-1430	1	0	0
O-1431	BAR, function: steel, nickel pl; irregular shape, arm and formed wing on wd end, notched ear at otr; approx 2 15/16" lg x 1 1/4" h x 1/8" wd o/a, 0.048" thk material; mts by outcut in narrow end; "BL" stamped in wd end	Operates O-1455	W17-T-350015-415	CTT	152669	152669	O-1431, O-1432	2	0	0
O-1432	Same as O-1431	Operates O-1451								
O-1433	Same as O-1426	Operates O-1452								
O-1434	BAR, function: steel, nickel pl; irregular shape, arm, formed wing and 2 formed ears on wd end, notched ear at otr; approx 2 15/16" lg x 1 1/4" h x 5/32" wd o/a, 0.048" thk material; mts by outcut in narrow end; "LP" stamped in wd end	Operates O-1453	W17-T-350015-416	CTT	152668	152668	O-1434, O-1435	2	0	0
O-1435	Same as O-1434	Operates O-1454								
O-1436	Same as O-21	Applies tension to symbols O-1425 through O-1435								

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								EQUIP.	STOCK	EQUIP.	STOCK
								BOX	QUANTITY	BOX	QUANTITY
O-1437	PLATE, retaining; steel, nickel pl; approx 1 3/4" lg x 3/8" wd x 0.065" thk o/a; mts by four body holes	Retains symbols E-1303 through E-1306 on A-1322		N17-T-350014-350	CTT 150963	150963	O-1437	1	0	0	0
O-1438	BUSHING; stainless steel; male and female; approx 3/16" OD x 1/8" ID x 0.049" thk o/a	Pivot for O-1439 and spaces A-1323 and O-1440		N17-T-350013-916	CTT 150298	150298	O-1438, O-1443	2	1	2	2
O-1439	POKE; steel, nickel pl; rounded one end, two prongs other end, pin welded to otr; approx 1 3/8" lg x 5/16" h x 5/32" wd o/a, 0.042" thk material; mts by hole in rounded end	Shifts O-1439 by A-1308		N17-T-350014-164	CTT 150296	150296	O-1439	1	1	1	1
O-1440	PLATE; steel, nickel pl; rounded one end, straight other end; approx 1 3/16" lg x 13/32" wd x 0.028" thk o/a; mts by two body holes	Spaces O-1439 from O-1441 and O-1442		N17-T-350015-407	CTT 152658	152658	O-1440	1	0	0	0
O-1441	SLIDE; steel, nickel pl; irregular shape w/one ear and irregular shaped outout one end, one side of outout formed; approx 2 1/2" lg x 1 1/16" h x 3/32" wd o/a, 0.042" thk material; mts by body between ear and small end	Shifts O-1439 for letters function		N17-T-350014-646	CTT 150371	150371	O-1441	1	1	1	1
O-1442	SLIDE; steel, nickel pl; lg narrow body, elongated outout one side; approx 2 1/2" lg x 3/16" h x 0.042" thk o/a; mts by elongated slot one end	Shifts O-1439 for figures function		N17-T-350014-232	CTT 150291	150291	O-1442	1	1	1	1
O-1443	Same as O-1438	Spaces O-1440 and O-1444 and guides O-1441 and O-1442									
O-1444	PLATE, guide; steel, nickel pl; two ears, two outouts and large body hole at rounded end; approx 1 1/2" lg x 15/32" wd x 3/16" h o/a, 0.032" thk material; mts by oval shaped hole and body hole	Holds symbols O-1438 through O-1443 to A-1323		N17-T-350015-404	CTT 152654	152654	O-1444	1	0	0	0
O-1445	PAL; steel, nickel pl; irregular shape, one end hooked, irregular shaped outout near other end, formed ear in approx ctr; approx 1 21/32" lg x 19/32" h x 1/8" wd o/a, 0.038" thk material; mts by body and elongated outout near hooked end	Operates O-1456 when in operating position		N17-T-350015-272	CTT 152653	152653	O-1445 to O-1455	11	1	5	5
O-1446	Same as O-1445	Operates O-1457									
O-1447	Same as O-1445	Operates O-1458									
O-1448	Same as O-1445	Operates O-1459									
O-1449	Same as O-1445	Operates O-1460									
O-1450	Same as O-1445	Operates O-1461									
O-1451	Same as O-1445	Operates O-1462									
O-1452	Same as O-1445	Operates O-1463									

[illegible]

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
					BO	DESIG.			EQUIP.	STOCK	
									QUAN.	QUAN.	
									BOX	BOX	
									PER EQUIP.	TOTAL NO.	
O-1470	SPRING; helical extension type; 0.014" diam music wire; approx 7/16" lg x 5/32" OD x 1/8" ID o/a; 12 turns; parallel hook term ea end; mts by terms	Applies tension to symbols O-1456 through O-1466		M17-T-350006-634	CTT	90517	90517	O-1470	11	0	0
O-1471	SHAFT; steel; approx 9 1/2" lg x 3/32" diam o/a; mts by slot near ea end	Stop and guide for symbols O-1445 through O-1455		M17-T-350015-364	CTT	152547	152547	O-1471	1	0	0
O-1472	SHAFT; steel; approx 9 7/16" lg x 5/32" diam o/a; mts by slot near ea end	Stop for symbols O-1458 through O-1466		M17-T-350014-208	CTT	150547	150547	O-1472, O-1473	2	0	0
O-1473	Same as O-1472	Support for O-1467 and O-1468									
O-1485	LAMINATION; steel, nickel pl; "U" shape, body hole in ea lower corner; approx 2 5/8" h x 1 3/16" wd x 0.050" thk o/a; mts by 3 body holes	Core for E-1308 and E-1309		M17-T-350015-715	CTT	152420	152420	O-1485	5	0	0
O-1486	SPRING; flat type; nickel silver; approx 1 1/16" lg x 17/32" h x 1/8" wd o/a, 0.020" thk material; mts by cutout in both ends; ctr curved	Applies pressure to E-1308 and E-1309		M17-T-350013-741	CTT	151607	151607	O-1486	1	0	0
O-1487	SPRING; helical extension type; 0.020" diam music wire; approx 9/16" lg x 5/32" OD o/a; approx 16 turns; hook terms indexed 90°; mts by terms	Applies tension to E-1310		M17-T-350014-900	CTT	151715	151715	O-1487	1	1	1
O-1488	SPACER; steel, nickel pl; approx 5/16" OD x 1/8" ID x 5/32" thk o/a; mts by ID	Spaces E-1469 and A-1332		M17-T-350013-738	CTT	151603	151603	O-1488, O-1924	2	0	0
O-1489	PLATE; stop; stainless steel; irregular shape, cutout one side, lg narrow formed arm other side in ctr of cutout; approx 1 5/32" lg x 7/8" wd x 1/8" h o/a, 0.028" thk material; mts by 2 body holes	Stop plate for E-1310		M17-T-350014-996	CTT	152424	152424	O-1489	1	0	0
O-1490	Same as O-102	Applies tension to E-1482 and E-1483									
O-1491	SECTOR; steel, nickel pl; irregular semi-circular shape, 18 teeth one end, hub welded to rise near other end; approx 3 13/16" lg x 3 3/16" h x 3/8" wd o/a, 0.050" thk material; mts by 2 elongated curved slots	Positions E-1498 and O-1497		M17-T-350015-586	CTT	152429	152429	O-1491	1	0	0
O-1492	BUSHING; steel, nickel pl; male and female; approx 9/32" OD x 5/32" ID x 5/32" lg o/a, 3/16" diam shoulder	Guide for O-1491		M17-T-350015-339	CTT	152440	152440	O-1492	2	0	0

Q-1493	SPRING; helical compression type; 0.028" diam made wire; approx 5/8" lg x 11/32" OD o/a; 5 turns; closed ends	Applies pressure to L-1501	W17-7-350015-841	CTT	152446	152446	Q-1493	1	0	0
Q-1494	SPACER; steel, nickel pl; approx 7/16" OD x 5/32" ID x 1/8" thk o/a; sts by ID	Base for end spaces Q-1498 from A-1534	W17-7-350015-386	CTT	152437	152437	Q-1494	1	0	0
Q-1495	SPRING; helical extension type; 0.018" diam music wire; approx 5/8" lg x 5/32" OD x 1/8" ID o/a; approx 21 turns; parallel hook term on end; sts by turns	Applies tension to E-1499	W17-7-350008-864	CTT	41382	41382	Q-1495	1	1	1
Q-1496	BALL; steel, nickel pl; irregular shape, stg end "u" formed w/body hole and rectangular body ear; oak hole in base of "u", other end curved w/elongated curved slot and body ear; approx 2 9/16" lg x 1 5/16" h x 1/2" wd o/a, 0.045" thk material; sts by 2 holes in line	Operates Q-1497 by Q-1508	W17-7-350015-387	CTT	152438	152438	Q-1496	1	1	1
Q-1497	ARM; steel, nickel pl; irregular shape, one end formed, outout near other end, hub w/40 threaded ID welded to approx otr; approx 1 5/8" lg x 19/32" h x 5/16" wd o/a, 0.043" thk material; sts by body hole near rounded end	Latch for Q-1796	W17-7-350015-384	CTT	152432	152432	Q-1497	1	1	1
Q-1498	BALL; steel, nickel pl; irregular "u" formed, elongated narrow arm extends from one side, wing formed from base; approx 2 5/32" lg x 1 1/32" h x 29/32" wd o/a, 0.043" thk material; sts by 2 holes in line in sides of "u"	Resets symbols Q-1501 through Q-1505	W17-7-350015-328	CTT	152410	152410	Q-1498	1	1	1
Q-1499	SPRING; torsion type; 0.025" diam music wire; approx 1 1/4" lg x 5/16" wd x 3/16" h o/a; 2 1/8 turns; right hand; one straight and one "u" shaped end; sts by ends	Applies pressure to Q-1498	W17-7-350015-596	CTT	151701	151701	Q-1499	1	1	1
Q-1500	GUIDE; lever; steel, nickel pl; shank on end, hex shoulder near end w/tapped hole, six slots in body; approx 1 15/32" lg x 5/16" across flats o/a; sts by 40 threaded shank	Guide for symbols Q-1501 through Q-1506 and spaces A-1534 from A-1538	W17-7-350015-319	CTT	152401	152401	Q-1500	1	0	0
Q-1501	LEVER; steel, nickel pl; one end "u" shaped w/notched arm on side, wd ear near other end; approx 1 19/32" lg x 3/4" h x 0.042" thk o/a; sts by slot formed by "u"	Operates Q-1556	W17-7-350015-329	CTT	152411	152411	Q-1501 to Q-1506	5	1	2
Q-1502	Same as Q-1501	Operates Q-1557								
Q-1503	Same as Q-1501	Operates Q-1558								
Q-1504	Same as Q-1501	Operates Q-1559								
Q-1505	Same as Q-1501	Operates Q-1560								
Q-1506	SPRING; helical extension type; 0.008" diam music wire; approx 17/32" lg x 3/32" OD x 1/16" ID o/a; approx 40 turns; parallel hook term on end; sts by turns	Applies tension to symbols Q-1501 through Q-1505	W17-7-350014-494	CTT	150048	150048	Q-1506	5	1	2

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO EQUIP.	EQUIP.		
					MFG NO.	DESIG.				BOX	QUAN.	
O-1507	GUIDE, levers steel, nickel pl; short shank ea end, hex shoulder near one end, 8 slots in body; approx 1 1/4" lg x 5/16" across flats o/a; mts by #6-40 tapped hole in ea end	Guide for symbols O-1508 through O-1515 and spaces A-1334 from A-1338		N17-T-350015-320	CTT	152402	152402	O-1507	1	0		
O-1508	LEVER: steel, nickel pl; irregular shape, one end "U" formed w/arm, formed at end and formed ear w/oak hole; approx 2 3/32" lg x 7/8" h x 1/2" wd o/a, 0.042" thk material; mts by 2 rounded outcuts in line in "U" formed end	Operates O-1497 through O-1496, feels for E-1310 on stop impulses		N17-T-350015-326	CTT	152408	152408	O-1508	1	0		
O-1509	LEVER: steel, nickel pl; irregularly shaped and curved, oak hole in rounded projection; approx 2 1/4" lg x 7/16" wd x 0.042" thk o/a; mts by rounded outcut in wd end	Looks E-1310 in unattracted position		N17-T-350015-326	CTT	152407	152407	O-1509	1	1	1	
O-1510	LEVER: steel, nickel pl; irregular shape, curved in approx ctr, 2 oak holes, 2 formed arms and wing w/notch near narrow end, body ear between curve and wd end; approx 2 1/32" lg x 1 3/8" h x 11/16" wd o/a; 0.042" thk material; mts by rounded outcut in wd end	Looks E-1310 in attracted position and stop for symbols O-1511 through O-1515		N17-T-350015-323	CTT	152405	152405	O-1510	1	1	1	
O-1511	LEVER: steel, nickel pl; irregular shape, one end irregularly outcut, rounded outcut in other end, rounded ear and elongated arm w/oak hole one side; approx 2" lg x 23/32" wd x 0.042" thk o/a; mts by rounded outcut	Operates O-1501		N17-T-350015-327	CTT	152409	152409	O-1511 to O-1515	5	1	2	
O-1512	Same as O-1511	Operates O-1502										
O-1513	Same as O-1511	Operates O-1503										
O-1514	Same as O-1511	Operates O-1504										
O-1515	Same as O-1511	Operates O-1505										
O-1516	SPRING: helical extension type; 0.013" diam music wire; approx 15/32" lg x 1/8" OD x 3/32" ID o/a; approx 20 turns; parallel hook term ea end; mts by terms	Applies tension to O-1508		N17-T-350012-706	CTT	2605	2605	O-1516	1	0	0	
O-1517	SPRING: helical extension type; 0.012" diam music wire; approx 5/8" lg x 3/32" OD o/a; approx 32 turns; hook terms, indexed 90°; mts by terms	Applies tension O-1509		N17-T-350014-888	CTT	151714	151714	O-1517	1	1	1	
O-1518	SPRING: helical extension type; 0.012" diam music wire; approx 15/32" lg x 5/32" OD x 1/8" ID o/a; approx 17 turns; parallel hook term ea end; mts by terms	Applies tension to O-1510		N17-T-350006-500	CTT	76533	76533	O-1518	1	1	1	

Part Number	Description	Material	Quantity	Unit	Notes	Part Number	Description	Material	Quantity	Unit	Notes
O-1519	SPRINGS; helical extension type; 0.009" diam steel wire; approx 9/16" lg x 3/32" OD o/a; approx 48 turns; parallel hook term at end; mts by term		5	1	2	O-1519	Applies tension to symbols O-1511 through O-1515		1	0	0
O-1520	LINKS; steel, nickel pl; irregular shape, both ends rounded, rounded ear w/body hole near ctr, elongated slot in body; approx 1 3/4" lg x 9/16" h x 0.048" thk o/a; mts by body hole near ee end		1	0	0	O-1520	Provides adjustment for A-1350 by E-1467		1	0	0
O-1521	SHAFT; steel, nickel pl; 44-40 threaded shank one end, drive slot across other end; approx 11/16" lg x 5/32" diam o/a		1	0	0	O-1521	Shaft and pivot for O-1506		1	0	0
O-1535	LINKS; steel, nickel pl; irregular shape, one end "U" formed, other end formed 90°; approx 1 1/2" h x 3 1/2" lg x 7/8" wd o/a, 0.073" thk material; mts by tapped hole one end and stud welded to other end		1	0	0	O-1535	Operates O-1539 and O-1540 by E-1540		1	0	0
O-1536	Same as O-1535						Lubricates E-1540, O-1539, O-1539, O-1540 and O-1541				
O-1537	SPACER; steel; approx 1/2" OD x 3/32" ID x 0.010" thk o/a; mts by ID; circum has flat side		2	1	2	O-1537	Spaces O-1539 from O-1539 and O-1540		2	1	2
O-1538	ROLLER; steel; approx 7/16" lg x 3/16" OD x 3/32" ID o/a; mts by ID		2	1	2	O-1538	Roller guide for O-1539 and O-1540		2	1	2
O-1539	LEVER; steel, nickel pl; irregular shape, irregularly curved slot in ctr; approx 2 15/16" lg x 11/32" wd x 0.060" thk o/a; mts by body hole near rounded end		1	0	0	O-1539	Shifts selected symbols O-1531 through O-1566		1	0	0
O-1540	LEVER; steel, nickel pl; one side straight, other side irregular shape, irregularly curved slot in ctr; approx 2 15/16" lg x 15/32" wd x 0.060" thk o/a; mts by body hole near rounded end		1	0	0	O-1540	Resets shifted symbols O-1531 through O-1566		1	0	0
O-1541	ROLLER; steel, nickel pl; o/o band and shoulder; approx 1/4" OD x 1/8" lg x 3/32" ID o/a; mts by ID		2	1	2	O-1541	Bearing rollers for guide slots in A-1547		2	1	2
O-1542	BEARING; sleeves steel; approx 5/16" OD x 1/8" ID x 11/32" lg o/a, 0.065" lg x 7/32" diam shank on side of body		1	0	0	O-1542	Bearing for O-1539 and O-1540		1	0	0
O-1543	WASHER; felt; hard, white felt; round, approx 1/8" OD x 5/16" ID x 0.068" thk o/a		1	1	1	O-1543	Lubricates O-1535 and O-1545		1	1	1
O-1544	SPRING; steel, nickel pl; "U" shape, one side curved over w/body hole in end, other side rounded at end; approx 1 1/4" lg x 11/16" h x 9/32" wd o/a, 0.068" thk material; mts by 2 holes in line in sides of "U", slot through bottom of "U" to mtg holes		1	0	0	O-1544	Operates O-1535		1	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS			
									EQUIP.	STOCK		
									BOX	QUAN.	BOX	QUAN.
O-1545	SHAFT: steel, nickel pl; 1 7/32" lg x 1/8" diam; mts by #4-40 thd one end; drive slot other end	Stop for symbols O-1547 through O-1552		N17-T-350014-540	CTT 150481	150481	O-1545	1	0	0		
O-1546	GUIDE, lever: steel, nickel pl; round, 7 slots around circum, 2 body holes near one end; approx 7/8" lg x 11/32" OD x 1/8" ID o/a; mts by off-ctr ID	Guide for symbols O-1547 through O-1552		N17-T-350015-410	CTT 152663	152663	O-1546	1	0	0		
O-1547	LEVER: steel, nickel pl; irregular "Y" shape, body ear on ea upper arm, oak hole in stem; approx 2 1/8" lg x 13/16" wd x 0.042" thk o/a; mts by rounded outout near ctr; numeral "1" stamped in upper ear	Positions O-1351 and operates O-1552		N17-T-350015-394	CTT 152635	152635	O-1547	1	0	0		
O-1548	LEVER: steel, nickel pl; irregular "Y" shape, body ear on ea upper arm, oak hole in stem; approx 1 15/16" lg x 13/16" wd x 0.042" thk o/a; mts by rounded outout near ctr; numeral "2" stamped in upper ear	Positions O-1352 and operates O-1552		N17-T-350015-396	CTT 152636	152636	O-1548	1	0	0		
O-1549	LEVER: steel, nickel pl; irregular "Y" shape, oak hole in stem; approx 1 27/32" lg x 13/16" wd x 0.042" thk o/a; mts by rounded outout near ctr; numeral "3" stamped in body ear at end of one arm	Positions O-1353		N17-T-350015-396	CTT 152637	152637	O-1549	1	0	0		
O-1550	LEVER: steel, nickel pl; irregular "Y" shape, oak hole in stem; approx 2 7/32" lg x 13/16" wd x 0.042" thk o/a; mts by rounded outout near ctr; numeral "4" stamped in body ear at ctr of one arm	Positions O-1354		N17-T-350015-397	CTT 152638	152638	O-1550	1	0	0		
O-1551	LEVER: steel, nickel pl; irregular "Y" shape, oak hole in stem; approx 2" lg x 13/16" wd x 0.042" thk o/a; mts by rounded outout near ctr; numeral "5" stamped in body ear at ctr of one arm	Positions O-1355		N17-T-350015-398	CTT 152639	152639	O-1551	1	0	0		
O-1552	LEVER: steel, nickel pl; irregular "Y" shape, formed ear on one arm, body ear on other arm, oak hole in stem; approx 1 3/4" lg x 3/4" wd x 1/4" h o/a, 0.042" thk material; mts by rounded outout near ctr; character "C" stamped in body ear	Positions O-1356		N17-T-350015-399	CTT 152640	152640	O-1552	1	0	0		

O-1553	SPRING; helical extension type; 0.009" diam music wire; approx 14/16" lg x 3/32" OD x 1/16" ID o/a; approx 70 turns; hook term on end; mts by term	Applies tension to O-1552	H17-T-360014-201	CTT 150563	150563	O-1553	1	1	1
O-1564	SPRING; helical extension type; 0.009" diam music wire; approx 3/8" lg x 3/32" OD x 1/16" ID o/a; approx 25 turns; hook term on end; mts by term	Applies tension to symbols O-1547 through O-1561	H17-T-360013-980	CTT 150507	150507	O-1564	5	1	1
O-1556	SHAP; steel; nickel pl; hex head one end, 7 slots in round body; approx 7/8" lg x 5/16" across flats o/a; mts by #6-40 tapped hole in one end	Guide end pivot for symbols O-1556 through O-1560	H17-T-360015-409	CTT 152663	152663	O-1556	1	0	0
O-1558	ARM; steel; nickel pl; irregular shape, 2 arms one end w/slot between, slot on side other end; approx 1 9/32" lg x 11/16" h x 0.043" thk o/a; mts by slot in rounded end	Operates O-1547	H17-T-360014-690	CTT 150450	150450	O-1558 to O-1560	5	1	2
O-1557	Same as O-1556	Operates O-1548							
O-1558	Same as O-1556	Operates O-1549							
O-1559	Same as O-1556	Operates O-1550							
O-1560	Same as O-1556	Operates O-1551							
O-1561	WICK; lubrication wick; hard white felt w/o spring; approx 1 1/4" lg x 15/16" wd x 3/32" thk o/a	Lubricates selector mechanism	H17-T-350015-809	CTT 152457	152457	O-1561	1	1	1
O-1562	BEARING; sleeve; aluminum; plain unadorned; approx 2 3/4" lg x 1 11/16" wd x 1 1/16" h o/a, 9/32" ID w/bushing pressed in one end, arm w/tapped hole near one end, shoulder w/tapped hole on one side near ctr	Bearing sleeve for O-1545	H17-T-360014-691	CTT 150452	150452	O-1562	1	0	0
O-1563	SHAFT; stainless steel; "I" shape; approx 3 5/16" lg x 1 1/8" h x 1/2" wd o/a; mts by tapped hole; link welded to shaft	Operates O-1555 by O-1544	H17-T-360014-692	CTT 150453	150453	O-1563	1	1	1
O-1564	Same as O-374	Lubricates E-1576 and O-1506							
O-1565	RAIL; steel; nickel pl; irregular shape, formed arm w/tapped hole at one end, 2 arms on ctr of one side w/outlet between, 2 body ears w/stud welded to ea, 2 formed ears w/tapped hole in ea, 2 studs welded to body; approx 4 23/32" lg x 2 15/16" h x 1 3/32" wd o/a, 0.008" thk material; mts by body hole near one end arm	Operates A-1548, O-1549, and O-1572) mounts O-1594 and O-1566 end guide for O-1561	H17-T-360014-528	CTT 150268	150268	O-1565	1	0	0
O-1566	LINK; drive; steel; irregular shape, o/o lever, bellcrank and 2 links welded end riveted together, 2 ears and 2 wings irregularly located, body hole in end of lever; approx 4 3/16" lg x 25/32" h x 7/16" wd o/a; mts by ID of 3 bushings; 12 mts	Operates O-1566	H17-T-360015-372	CTT 152669	152669	O-1566	1	1	1

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESC.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
									EQUIP.		STOCK	
									BOX	QUAN	BOX	QUAN
O-1567	SPRING: helical extension type; 0.024" diam music wire; approx 13 1/16" lg x 7/32" diam o/s; approx 17 turns; parallel hook terminals	Applies tension to O-1568			CTT	152724	152724	O-1567, O-1575	2	1	1	1
O-1568	WHEEL: lubricating disk; hard white felt; 5/8" lg x 1/8" diam o/a	Lubricates O-1566 and O-1567		M17-2-360011-966	CTT	75226	75226	O-1568, O-1574, O-1577, O-1506	4	1	2	2
O-1569	BUSHING, steel; male; approx 3/16" OD x 1/8" ID x 9/16" lg o/a	Bearing roller for O-1566		M17-2-360014-136	CTT	160218	160218	O-1569, O-1575	2	0	0	0
O-1570	Same as O-1574	Lubricates O-1566 and O-1569										
O-1571	Same as O-1574	Lubricates H-1569 and O-1566										
O-1572	LINK, drive; steel; irregular shape, o/o lever, ballcrank and 2 links welded and riveted together, 2 ears and 2 wings irregularly located, body hole in end of lever; approx 4 3/16" lg x 28/32" h x 7/16" wd o/a; mts by ID of 3 bushings, RH mtg	Operates O-1566		M17-2-360016-375	CTT	162570	162570	O-1572	1	1	1	1
O-1573	Same as O-1567	Applies tension to O-1572										
O-1574	Same as O-1568	Lubricates O-1572 and O-1573										
O-1575	Same as O-1569	Bearing roller for O-1572										
O-1576	Same as O-1574	Lubricates O-1572 and O-1575										
O-1577	Same as O-1574	Lubricates H-1569 and O-1572										
O-1578	LINK, steel; nickel pl; narrow str w/3 rounded ends, one end flat on sides; approx 1 3/16" lg x 1/2" wd x 3/16" h o/a, 0.065" thick material; mts by ID of hub welded at one end	Makes A-1549 with O-1566 and O-1572		M17-2-360013-967	CTT	160247	160247	O-1578	2	0	0	0
O-1580	Same as O-1574	Lubricates O-1568 and O-1561										
O-1581	LEVER, steel; nickel pl; irregular shape, formed ear w/3 notch one side; approx 3 7/32" lg x 1 1/4" h x 7/32" wd o/a, 0.060" thick material; mts by elongated extent in one end	Locks O-1568 in position through H-1610 until operation completed		M17-2-360014-271	CTT	150776	150776	O-1581	1	0	0	0
O-1582	Same as O-1572	Applies tension to O-1581										

O-1583	WIRE, lubricating wick; soft white felt, w/o springs; approx 1 1/8" lg x 1/8" sq o/a	Lubricates O-1582	H17-7-350013-908	CTT	150628	150628	O-1583	1	1	1
O-1584	RAIL, steel, nickel pl; irregularly curved and formed, 2 rounded ears formed in line at ctr; approx 25/32" h x 3/4" lg x 9/16" wd o/a, 0.085" thk material; mts by 2 body holes in line in formed ears, LH mtg	Operates O-1585	H17-7-350014-149	CTT	150208	150208	O-1584	1	C	O
O-1585	SPRING, torsion type; 0.016" diam music wire; approx 3/8" lg x 1/32" OD x 5/16" ID o/a; 12 turns; RH turns; one straight and one hook end; mts by ends	Applies pressure to O-1584	H17-7-350014-204	CTT	150658	150658	O-1585	1	1	1
O-1586	RAIL, steel, nickel pl; irregularly curved and formed, 2 rounded ears formed in line at ctr; approx 25/32" h x 3/4" lg x 9/16" wd o/a, 0.085" thk material; mts by 2 body holes in line in formed ears, RH mtg	Operates O-1585	H17-7-350014-272	CTT	150777	150777	O-1586	1	O	O
O-1587	SPRING, torsion type; 0.016" diam music wire; approx 3/8" lg x 1/32" OD x 5/16" ID o/a; 12 turns; LH turns; one hook and one straight end; mts by ends	Applies pressure to O-1586	H17-7-350014-228	CTT	150658	150658	O-1587	1	1	1
O-1588	RAIL, steel, nickel pl; irregularly "up" formed, ask hole in bottom, body hole one side, formed ear other side; approx 1 1/2" lg x 3/4" h x 1 5/32" wd o/a; 0.085" thk material; mts by 2 body holes in line	Support for O-1582	H17-7-350015-361	CTT	152536	152536	O-1588	1	O	O
O-1589	ARM, steel, nickel pl; irregular shape w/alongated outout in one end; approx 3 5/16" lg x 1 1/4" wd x 1/4" h o/a, 0.065" thk material; mts by ID of hub welded to round end; body hole near outout	Support for M-1610	H17-7-350014-564	CTT	150787	150787	O-1589	1	O	O
O-1590	BLADE, guides oilite; approx 3/8" lg x 5/16" wd x 7/32" h o/a; mts by hole through ctr; slot across 2 sides	Guide for O-1585	H17-7-350014-254	CTT	150215	150215	O-1590	1	O	O
O-1591	MECHANISM, oil; hard, white felt; approx 9/16" sq x 1/16" thk o/a; mts by squared outout	Lubricates O-1585 and O-1591	H17-7-350014-146	CTT	150232	150232	O-1591	1	1	1
O-1592	PULLER, molded styrene w/bronze hub; one side flat w/outlet in ctr, other side extruded in ctr; approx 1" OD x 7/32" ID x 5/16" wd o/a; mts by ID, groove in wd around circum	Black take-up guide for M-1506	H17-7-350014-839	CTT	150758	150758	O-1592	1	1	1
O-1593	SPRING, helical extension type; 0.020" diam music wire; approx 1 3/16" lg x 3/16" OD o/a; approx 45 turns; hook terminals, indexed 90°, mts by terminals	Applies tension to O-1588	H17-7-350006-637	CTT	35828	35828	O-1593	1	1	1

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESC.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURER'S DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	PARTS			
								EQUIP.		STOCK	
								BOX	QTY	BOX	QTY
O-1594	Same as O-1309	Lubricates O-1595									
O-1595	ROLLER, steel, approx 1/8" lg x 5/32" OD x 3/32" ID o/a; mts by ID	Roller for O-1591		H17-T-350014-146	CTT 150764	150764	O-1595	1	1		
O-1596	ROLLER, steel, str separated from larger diam ends by 2 slots; approx 3/16" lg x 7/32" OD x 3/32" ID o/a; mts by ID	Roller guide for O-1599		H17-T-350013-956	CTT 150753	150753	O-1596	1	1		
O-1597	PLATE, retainer; steel, nickel pl; both ends rounded; approx 1 5/8" lg x 9/32" wd x 0.045" thk o/a; mts by 3 body holes	Retains O-1596 and O-1599 on E-1718, O-1572 and O-1575 on E-1719 and support for E-1614		H17-T-350013-961	CTT 150740	150740	O-1597	1	0	0	
O-1598	Same as O-398	Lubricates E-1614, O-1599 and O-1596									
O-1599	STUD, bearing; steel, nickel pl; stud w/ outcut welded to base w/notch in approx str of ea side; approx 1 1/8" lg x 15/16" h x 1/8" wd o/a, 1/8" thk base; mts by tapped hole and elongated hole in base, LH mtg	Pivot for and mounts O-1596		H17-T-350015-387	CTT 152598	152598	O-1599	1	0	0	
O-1600	STUD, bearing; steel, nickel pl; stud w/outcut welded to base w/notch in approx str of ea side; approx 1 7/8" lg x 15/16" h x 1/8" wd o/a, 1/8" thk base; mts by tapped hole and elongated hole in base; RH mtg	Pivot for and mounts O-1572		H17-T-350015-388	CTT 152599	152599	O-1600	1	0	0	
O-1601	STRIP, steel, nickel pl; both sides formed; approx 1 13/16" lg x 3/8" wd x 1/8" h o/a, 0.035" thk material; mts by 2 elongated holes	File strip for O-1599 and O-1600		H17-T-350013-750	CTT 151625	151625	O-1601	1	0	0	
O-1602	Same as O-331	Lubricates O-1596 and O-1599									
O-1603	Same as O-331	Lubricates O-1572 and O-1600									
O-1613	LINK, steel, o/o irregular shaped link w/formed ear riveted to "c" shaped bell crank formed at one end; approx 2 13/16" lg x 1 1/16" h x 1 1/16" wd o/a; mts by body hole in bell crank	Disengages O-1628 and O-1631 from O-1726		H17-T-350014-135	CTT 150184	150184	O-1613	1	0	0	
O-1614	SHIM, nickel silver; approx 3/8" OD x 5/16" ID x 0.010" thk o/a	Spaces O-1615 from A-1565		H17-T-350001-310	CTT 125789	125789	O-1614, O-1615	2	0	0	
O-1615	Same as O-1596	Pivot for O-1613									

O-1616	SPEIRING; helical extension type; 0.012" diam music wire; approx 5/8" lg x 5/32" OD x 1/8" ID o/a; approx 26 turns; parallel look term on end; mts by term	Applies tension to O-1615	N17-7-380006-829	CTT	81751	81751	O-1616	1	1	1
O-1617	BELL CRANK; steel, nickel pl; one end formed and painted, other end rounded w/curved arm formed at end; ear on side of body; approx 1 1/4" lg x 1" h x 7/8" wd o/a, 0.068" thk material; mts by hole in rounded end	Shifts O-1648	N17-7-380014-681	CTT	150438	150438	O-1617	1	0	0
O-1618	Same as O-1616	Spaces O-1619 from A-1856								
O-1619	SPEIRING; steel, nickel pl; male and female; approx 5/16" across flats x 46-40 tapped ID x 1/8" lg o/a, 3/16" diam body	Pivot for O-1617	N17-7-380015-908	CTT	96827	96827	O-1619	1	1	1
O-1620	Same as O-1611	Applies tension to O-1617								
O-1621	BAILEY; steel, nickel pl; irregular "u" shape w/2 arms on sides and formed ear on base; approx 1 3/8" lg x 5/8" h x 3/4" wd o/a; mts by 2 holes in line in sides; tapped hole in short arm, oak hole in ear	Latches O-2118 until carriage return is completed	N17-7-380014-137	CTT	150196	150196	O-1621	1	0	0
O-1622	SPEIRING; helical extension type; 0.018" diam music wire; approx 13/16" lg x 1/4" OD x 7/32" ID; approx 26 turns; parallel look term on end; mts by term	Applies tension to O-1621	N17-7-380012-702	CTT	125236	125236	O-1622	1	1	1
O-1623	WICK; lubricating wick; felt, w/o spring; approx 1 1/8" lg x 3/16" diam o/a	Lubricates O-1622	N17-7-228001-101	CTT	75520	75520	O-1623	1	1	1
O-1624	END; steel, nickel pl; slot between shoulder and shank; approx 5/16" OD x 3/16" ID x 1/8" lg o/a; mts by ID	Pivot for O-1621 and O-1625	N17-7-380013-911	CTT	150193	150193	O-1624	1	0	0
O-1625	PLATE; steel, nickel pl; wd end rounded, notch near narrow end; approx 1 1/2" lg x 1 1/2" wd x 0.050" thk o/a; mts by body hole in rounded end, elongated slot near ctr;	Unlatches O-1621 from O-2118 on completion of carriage return	N17-7-380014-136	CTT	150194	150194	O-1625	1	0	0
O-1626	COLLAR; steel, nickel pl; approx 3/8" lg x 5/8" OD x 1/4" ID o/a; mts by ID; 2 tapped holes through lg end one o/b hole in side	Ties O-1627 and O-1630 to O-1648 and allows O-1668 to drive O-1627 and O-1630	N17-7-380013-936	CTT	150668	150668	O-1626	1	0	0
O-1627	ROCKERS; super oilites curved extension around 1/2" stream; approx 19/32" OD x 5/32" ID x 3/32" thk o/a; mts by off ctr ID; body hole above and below mtg hole	Drives O-1628	N17-7-380014-146	CTT	150204	150204	O-1627, O-1630	2	1	2
O-1628	PAUL; steel, nickel pl; irregular shape w/formed ear; approx 5 13/16" lg x 1 1/16" h x 1/8" wd o/a, 0.072" thk material; mts by large hole in wd end, LH mtg, oak hole in formed ear	Steps O-1726 and latches O-1726 while O-1631 is stepping	N17-7-380014-585	CTT	150877	150877	O-1628	1	0	0
O-1629	SPEIRING; helical extension type; 0.014" diam music wire; approx 5/8" lg x 3/16" OD o/a; approx 19 turns; parallel look term; mts by term	Applies tension to O-1628	N17-7-380006-476	CTT	75229	75229	O-1629, O-1632	2	1	1

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS CODE DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								PER EQUIP.	BOX	EQUIP.	STOCK
								QUAN.	QUAN.	QUAN.	QUAN.
O-1630	Same as O-1627	Drives O-1631									
O-1631	PAWLS, steel, nickel pl; irregular shape w/formed ear; approx 3 13/16" lg x 1 1/16" h x 1/8" wd o/a; 0.072" thk material; mts by large hole in round end; RH mtg; ask hole in formed ear	Steps O-1726 and latches O-1726 while O-1628 is stepping		N17-T-350014-865	CTT 150679	150678	O-1631	1	0	0	
O-1632	Same as O-1629	Applies tension to O-1631									
O-1633	RETAINER: steel, nickel pl; approx 21/32" diam x 0.035" thk o/a; mts by 2 body holes; 2 lines scribed between body holes on one side	Retains O-1628 on O-1627 and O-1631 on O-1630		N17-T-350014-143	CTT 150203	150203	O-1633	1	0	0	
O-1634	SLIDE, transfer; steel, nickel pl; irregular "u" shape w/2 arms on one side, one arm irregularly shaped and formed at end; circular cutout one end of base; approx 4 1/16" lg x 2 1/8" h x 1 1/16" wd o/a, 0.065" thk material; mts by 2 elongated slots in line in side of "u"; 2 tapped holes in formed end of arm	Operates O-1639		N17-T-350014-836	CTT 150235	150235	O-1634	1	0	0	
O-1635	SPRING: helical extension type; 0.018" diam music wire; approx 1 15/16" lg x 7/32" OD x 3/16" ID o/a; approx 85 turns; hook terminals at end; mts by terminals	Applies tension to O-1634		N17-T-350014-215	CTT 150536	150536	O-1635	1	1	1	
O-1636	ROLLER, bearing; steel; approx 1/8" thk x 3/8" OD x 1/4" ID; mts by ID	Bearing roller for O-1634		N17-T-350014-141	CTT 150233	150233	O-1636	1	0	0	
O-1637	ROLLER, bearing; steel; approx 3/8" OD x 1/4" ID x 1/16" thk o/a; mts by ID	Bearing roller for O-1634		N17-T-350014-147	CTT 150234	150234	O-1637	1	0	0	
O-1638	RETAINER, super oilite; approx 1 1/8" diam x 1/8" thk o/a; mts by 2 body holes; dished out one side	Back retainer for O-1639		N17-T-350014-255	CTT 150229	150229	O-1638	1	0	0	
O-1639	CUP, dashpot; molded silicone; slanted o/crum; approx 1 1/8" diam x 3/16" thk o/a; mts by 2 holes.	Valve for O-1642		N17-T-350014-355	CTT 150975	150975	O-1639	1	1	1	
O-1640	SPACER; aluminum, plain anodize; approx 1/4" OD x 1/8" ID x 0.067" thk o/a; mts by ID	Spaces O-1638 and O-1641 from O-1639		N17-T-350014-359	CTT 150987	150987	O-1640	2	0	0	
O-1641	RETAINER: steel, nickel pl; approx 7/8" diam x 1/32" thk o/a; mts by 2 body holes	Front retainer for O-1639		N17-T-350014-914	CTT 150228	150228	O-1641	1	0	0	

O-1642	CYLINDER, dash pot; aluminum, plain unadorned; 1 1/8" ID through most of cylinder; approx 1 1/4" h x 1 3/8" wd x 1 13/16" lg o/a; mts by tapped hole in ea of 3 feet; body hole through closed end tapped on one side, one body hole in inner wall and 8 body holes in outer wall of closed end	Slows carriage return to stop	W17-T-3500M-549	CTT	180638	180638	O-1642	1	0	0
O-1643	SPRING; helical compression type; 0.014" diam music wire; approx 7/32" lg x 5/32" OD o/a; approx 6 turns; straight ends	Applies pressure to O-1644	W17-T-3500M-608	CTT	110872	110872	O-1643	1	0	0
O-1644	Same as O-1643	Valve for air release from O-1642								
O-1646	GUIDE: steel, nickel pl; irregular shape, 3 slots in one end; approx 1" lg x 7/16" h x 5/16" wd o/a; mts by 2 tapped holes; 3 pins pressed into body	Guide for O-1646, O-1648 and O-1649	W17-T-3500M-601	CTT	160738	160738	O-1646	1	0	0
O-1646	SLIDE: steel, nickel pl; body ear and open slot one end, ear on ea side other end, formed ear one side; approx 7/8" lg x 7/8" wd x 1/16" h o/a, 0.047" thk material; mts by slot	Positioning stop for O-1686	W17-T-3500M-980	CTT	160738	160738	O-1646	1	0	0
O-1647	Same as O-1646	Applies tension to O-1648								
O-1648	SLIDE: steel, nickel pl; open slot one end, formed ear and straight ear on ea side other end, notched ear one side; approx 1 1/8" lg x 7/8" wd x 1/4" h o/a, 0.047" thk material; mts by slot	Positioning stop for O-1686 and resets O-1646 and O-1649	W17-T-3500M-948	CTT	160731	160731	O-1648	1	0	0
O-1649	SLIDE: steel, nickel pl; body ear and open slot one end, body ear on ea side of other end, formed ear one side; approx 7/8" lg x 5/8" wd x 1/16" h o/a, 0.047" thk material; mts by slot	Positioning stop for O-1686	W17-T-3500M-949	CTT	160732	160732	O-1649	1	0	0
O-1650	SLIDE, shift; steel, nickel pl; irregular shape, one end rounded, other end formed and pointed, stud riveted near ea end; approx 4 21/32" lg x 11/16" h x 5/8" wd o/a, 0.035" thk material; mts by 2 elongated slots	Positions O-1653 and O-1656	W17-T-3500M-386	CTT	162596	162596	O-1650	1	0	0
O-1651	RAILS: steel, nickel pl; body straight, both ends curved and formed, 2 notches in one side; approx 8 9/16" lg x 13/32" wd o/a, 0.055" thk material; mts by body hole near ea end	Stop for O-1656 and O-1672 to prevent jamming of printer due to improperly adjusted or badly worn parts	W17-T-3500M-386	CTT	162597	162597	O-1651	1	0	0
O-1652	Same as O-1647	Guide for O-1650								
O-1653	SLIDE: steel, nickel pl; "r" shape; approx 1 29/32" lg x 1 1/8" wd x 0.045" thk o/a; mts by elongated slot	Operates O-1652	W17-T-3500M-596	CTT	150694	150694	O-1653, O-1656	2	0	0
O-1654	Same as O-216	Lubricates O-1650 and O-1653								

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
					W	Q			TOTAL NO. OF EQUIP.	EQUIP. BOX	STOCK BOX
O-1655	SPRING; helical compression type; 0.020" diam music wire; approx 5/16" lg x 9/32" OD x 1/4" ID; 5 turns; closed ends	Applies pressure to O-1653		N17-T- 4667- 8041	CTT	150771	150771	O-1655, O-1658	2	1	1
O-1656	Same as O-1655	Operates O-1695									
O-1657	Same as O-214	Lubricates O-1650 and O-1656									
O-1658	Same as O-1655	Applies pressure to O-1656									
O-1659	BELL CRANK; steel, nickel pl; circular shape w/2 irregular shaped arms formed at ends, oak hole in longer arm; approx 9/16" lg x 1/2" wd x 1/8" h o/a, 0.028" thk material; mts by ID of hub welded to body; EH mtg	Shifts O-1649		N17-T- 350014- 841	CTT	150771	150771	O-1659	1	1	1
O-1660	Same as O-1310	Applies tension to O-1659									
O-1661	BELL CRANK; steel, nickel pl; circular shape w/2 irregular shaped arms formed at ends, oak hole in longer arm; approx 9/16" lg x 1/2" wd x 1/8" h o/a, 0.028" thk material; mts by ID of hub welded to body; LH mtg	Shifts O-1646		N17-T- 350014- 840	CTT	150770	150770	O-1661	1	1	1
O-1662	Same as O-1310	Applies tension to O-1661									
O-1663	Same as O-124	Lubricates O-1659 and O-1661									
O-1664	LEVER; steel, nickel pl; irregular shape, one end "u" formed, other end irregularly formed w/2 outouts; approx 2 19/32" lg x 13/16" wd x 1 1/2" h o/a, 0.080" thk material; mts by 2 holes in line in "u" formed end	Shifts O-1681 through H-1711		N17-T- 350015- 283	CTT	152522	152522	O-1664	1	0	0
O-1665	Same as O-214	Lubricates O-1664 and O-1666									
O-1666	BUSHING; steel; male and female; approx 5/16" OD x 5/32" ID x 11/16" lg o/a, 7/32" body diam, 1/32" thk flange	Pivot for O-1664		N17-T- 350013- 924	CTT	150746	150746	O-1666	1	0	0
O-1667	BEARING; aluminum, plain anodized, 2 wings w/round head and body; approx 2 1/4" lg x 1 3/8" wd x 1" h o/a; mts by tapped hole in ea wing; bushing press fitted at ea end of ID, hole through side of body	Bearing sleeve for O-1668		N17-T- 350013- 591	CTT	150672	150672	O-1667	1	0	0
O-1668	SHAFT; steel; slot, shank and shoulder one end, groove near other end, tapped hole near ea end; approx 3 5/8" lg x 1/8" diam o/a; mts by body	Drives O-1627 and O-1630 through O-1626		N17-T- 350013- 888	CTT	150673	150673	O-1668	1	0	0

Part Number	Description	Material	Quantity	Part Number	Description	Material	Quantity
O-1669	GEAR, spur; steel, nickel pl; helical teeth; RH; 18 teeth; 22 pitch, 1.04" PD; approx 1 1/8" OD x 9/16" thk o/a; straight face; approx 7/16" diam hub; mts by otb hole in hub side; "150202" stamped on face	Drives O-1668	1	0-1669	Adjustment shim for spacing O-1667 and A-1355	350013-912	1
O-1670	SHIM; steel; one end rounded; approx 7/8" lg x 3/8" h x 0.002" thk o/a; mts by body hole; cutout one side	Adjustment shim for spacing O-1667 and A-1355	4	0-1670	Adjustment shim for spacing O-1667 and A-1355	350013-987	4
O-1671	SHIM; steel; approx 5/16" wd x 1/2" lg x 0.004" thk; mts by body hole in otr	Adjustment shim for spacing O-1667 and A-1355	4	0-1671	Adjustment shim for spacing O-1667 and A-1355	350014-150	4
O-1672	SHIM; nickel silver; oblong shape; approx 13/16" lg x 5/16" wd x 0.012" thk o/a; mts by hole and elongated slot	Adjustment shim for spacing O-1673 from A-1358	2	0-1672	Adjustment shim for spacing O-1673 from A-1358	350014-285	2
O-1673	PLATE, retainers; steel, nickel pl; approx 1 1/4" lg x 9/16" wd x 0.035" thk o/a; mts by body hole and elongated hole 15/32" o to o; body hole near top	Retains A-1348 to A-1358	4	0-1673	Retains A-1348 to A-1358	350014-286	4
O-1674	RETAINER, oil; hard, white felt; approx 3/8" sq x 1/16" wd o/a	Lubricates A-1348 and O-1673	2	0-1674	Lubricates A-1348 and O-1673	350014-287	2
O-1675	LEVER; steel, nickel pl; irregular shape w/s arms, formed at ends; approx 1 3/8" h x 1 3/16" lg x 3/4" wd o/a, 0.050" thk material; mts by body hole near rounded p/o body	Latch for O-1721	1	0-1675	Latch for O-1721	350013-962	1
O-1676	SLEW; steel, nickel pl; body grooved out, slot between head and body; approx 1 1/32" lg x 11/32" OD x 1/8" ID o/a; mts by ID	Spaces A-1359 from A-1355 and guide for O-1702 and O-1703	2	0-1676	Spaces A-1359 from A-1355 and guide for O-1702 and O-1703	350013-962	2
O-1677	PULLEY; grooved; black bakelite; approx 1 3/8" OD x 7/32" ID x 3/16" thk o/a; one groove, 5/64" wd x 0.071" deep; mts by ID	Roller guide for W-1308	4	0-1677	Roller guide for W-1308	350014-139	4
O-1678	WASHER, felt; hard, white felt; round, 3/8" ID x 9/16" OD x 3/32" thk	Lubricates H-1706 and O-1677	2	0-1678	Lubricates H-1706 and O-1677	350013-628	2
O-1679	BLOCK, guide; super oilite; approx 3/4" lg x 1/2" wd x 1/4" thk o/a; mts by 2 body holes; slot across wd on bottom side	Guide for O-1681	1	0-1679	Guide for O-1681	350013-984	1
O-1680	PLATE; steel, nickel pl; irregular shape; approx 3/4" lg x 1/2" h x 0.058" thk o/a; mts by 2 tapped holes	Retains O-1581 against O-1679	1	0-1680	Retains O-1581 against O-1679	350013-988	1
O-1681	SLIDE; steel, nickel pl; irregular shape, 3 body ears one side, one body ear other side, 2 studs and 2 pins welded and riveted to ears; elongated slot near ea end; approx 6 3/4" lg x 1 1/16" h x 7/32" wd o/a, 0.035" thk material; mts by body	Mounts and positions A-1360 and A-1361	1	0-1681	Mounts and positions A-1360 and A-1361	350016-265	1
O-1682	OILER, felt; hard, white felt; approx 5/8" lg x 1 1/4" wd x 1/16" thk o/a; mts by elongated notch in ea end	Lubricates O-1681 and O-1688	2	0-1682	Lubricates O-1681 and O-1688	350014-336	2

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO EQUIP.	EQUIP.		
					Q	Q				BOX	QUAN.	
O-1683	LEVER: steel, nickel pl; irregular shape, notch in wd end, other end curved w/small rounded tip; approx 1" lg x 7/16" wd x 0.035" thk o/a; mts by irregularly curved cutout in body	Positioning detents for O-1681		N17-T-350015-349	CTT	152510	152510	O-1683	2	0	0	
O-1684	Same as O-146	Applies tension to O-1683										
O-1685	ROLLER, detent; steel, nickel pl; approx 9/32" OD x 1/8" ID x 3/32" wd o/a; mts by ID; groove around circum	Roller guide for positioning O-1681 with O-1683		N17-T-350015-346	CTT	152507	152507	O-1685	2	0	0	
O-1686	SLIDE: steel, nickel pl; irregular shape w/ identical ends and formed bottom, slide mtd on ea end of large otr cutout by guide w/ formed ends hooked in large cutout and small slot on ea end, bell crank riveted above ea slide w/ springs connected to otr ear on top of body, pin riveted next to ea bell crank, 2 studs near ea pin; approx 6 1/4" lg x 1 1/4" h x 1/2" wd o/a; mts by identical elongated ends; 5 body holes	Letters and figures positioning slide; operates O-1681 and O-1684		N17-T-350014-846	CTT	150953	150953	O-1686	1	0	0	
O-1687	Same as O-1368	Applies tension to slides on O-1686										
O-1688	GUIDE: steel, nickel pl; irregular shape, both ends formed, weld disc and tapped hole in smaller formed end, irregular shaped cutout and slot in body; approx 1 7/8" lg x 1 7/32" wd x 15/16" h o/a, 0.065" thk material; mts by elongated slot and body hole in larger formed end, LH mtg.	Left end guide for O-1681 and O-1686		N17-T-350015-384	CTT	152592	152592	O-1688	1	0	0	
O-1689	GUIDE: steel, nickel pl; irregular shape, both ends formed, weld disc w/tapped hole in smaller end, elongated slot in other end, irregular shape slot and cutout in body; approx 2 13/32" lg x 1 7/32" wd x 1" h o/a, 0.065" thk material; mts by body hole and elongated hole in formed wing, RH mtg	Right end guide for O-1681 and O-1686		N17-T-350015-590	CTT	152511	152511	O-1689	1	0	0	
O-1690	WIPER, felt; hard, white felt; approx 1/2" lg x 1/4" wd x 1/16" thk o/a; mts by elongated notch in ea end	Lubricates O-1686		N17-T-350014-337	CTT	150929	150929	O-1690	2	1	1	
O-1691	LINK: steel, nickel pl; irregular shape w/ round ear and formed ear, stud riveted to smaller end; approx 1 1/16" lg 9/16" h x 3/16" wd o/a, 0.042" thk material; mts by hole in large end; LH mtg	Operates O-1692		N17-T-350014-262	CTT	150691	150691	O-1691	1	0	0	

O-1692	LINK; steel; irregular shape, 2 body ears and 2 formed ears; approx 2 1/8" lg x 3/4" h x 1/2" wd o/a; mts by 2 tapped holes and ID of hub welded to link; spring post riveted to body ear of link, link and bushing riveted to plate, RH mtg	Positions O-1697		N17-7-350013-599	CTT	150727	150727	150727	O-1692	1	0	0
O-1693	SPRING; torsion type; 0.022" dia music wire; approx 3/8" OD x 7/16" wd x 1/8" lg o/a; 3 turns; hook ends; mts by ends	Applies pressure to O-1692 and O-1695		N17-7-350016-424	CTT	151698	151698	151698	O-1693, O-1696	2	1	1
O-1694	LINK; steel, nickel pl; irregular shape w/round ear and formed curved ear, stud riveted to small end of link; approx 1 1/16" lg x 1/2" h x 3/8" wd o/a, 0.042" thk material; mts by hole in large end; RH mtg	Operates O-1695		N17-7-350014-266	CTT	150892	150892	150892	O-1694	1	0	0
O-1695	LINK; steel; irregular shape, 2 body ears and 2 formed ears; approx 2 1/4" lg x 3/4" h x 1/2" wd o/a; mts by 2 tapped holes and ID of hub welded to link; spring post riveted to body ear of link, link and bushing riveted to plate, LH mtg	Positions O-1697		N17-7-350013-598	CTT	150726	150726	150726	O-1695	1	0	0
O-1696	Same as O-1695	Applies pressure to O-1694 and O-1696										
O-1697	BAILE steel, nickel pl; irregular "up" shape, 2 wings on ea end and 2 wings, w/outlet in ea, rear str; approx 1 1/8" lg x 3/4" h x 3/8" wd o/a; mts by 2 holes in line ea end; bracket welded on ea end of body, elongated slot and hole in ea str wing	Bail for O-1705 and horizontally positions O-1943 through O-1708		N17-7-350013-600	CTT	150728	150728	150728	O-1697	1	0	0
O-1698	Same as O-1677	Roller guide for W-1307										
O-1699	WASHER, felt; hard, white felt; round, approx 5/8" OD x 6/16" ID x 1/32" thk o/a	Lubricates O-1698 and O-1700		N17-7-350014-335	CTT	150926	150926	150926	O-1699	4	1	1

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST											
PARTS										SPARE PARTS	
SYMBOL REQD.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL REQD.	EQUIP. QUAN.	STOCK BOX
					M G O	DESIG.				QUAN.	BOX
O-1700	BUSHING; steel; male and female; approx 7/32" OD x 5/32" ID x 9/32" lg o/a	Bearing roller for O-1696		E17-7-350013-922	CTT	150706	150706	O-1700	2	0	0
O-1701	BUSHING; steel, nickel pl; male and female; approx 3/8" OD x 46-40 tapped ID x 11/32" lg o/a, drive slot across head	Pivot for O-1702 and O-1703		E17-7-350013-916	CTT	150265	150265	O-1701	2	0	0
O-1702	ARM; steel, nickel pl; irregular shape w/one arm; approx 3 1/2" lg x 2" h x 1/2" wd o/a, 0.072" thick material; sts by ID of bushing welded to end, RH mtg; stud welded to end w/arm	Guides and allows O-1697 to be positioned		E17-7-350014-237	CTT	150721	150721	O-1702	1	0	0
O-1703	ARM; steel, nickel pl; irregular shape w/one arm; approx 3 1/2" lg x 2" h x 1/2" wd o/a, 0.072" thick material; sts by ID of bushing welded to end, LH mtg; stud welded to end w/arm	Guides and allows O-1697 to be positioned		E17-7-350014-236	CTT	150722	150722	O-1703	1	0	0
O-1704	WASHER, felt; hard, white felt; round, approx 1 1/16" OD x 17/32" ID x 1/8" thick o/a	Lubricates O-1701, O-1702 and O-1703		E17-7-350013-680	CTT	89096	89096	O-1704, O-1820	3	1	1
O-1705	SLIDE; steel, nickel pl; irregular "u" shape w/ends formed in, plate w/2 tapped holes welded to bottom, hub welded to body ear, and extend on bottom; approx 1 1/4" lg x 5/8" h x 15/32" wd o/a; sts by inside of "u"	Type spaces O-1943 and horizontally positions O-1943 through O-1905		E17-7-350015-352	CTT	152521	152521	O-1705	1	0	0
O-1706	WICK; lubrication wick; hard, white felt; approx 9/32" lg x 3/16" diam o/a	Lubricates O-1697, O-1705 and O-1905		E17-7-350002-671	CTT	88616	88616	O-1706	1	1	1

Q-1715	IRON, spring; aluminum alloy, plain acodize; approx 3 1/2" OD x 1/4" ID x 11/16" wd o/a; mts by ID of bushing pressed in ID of drum; 3 slots around circum, six equidistant spokes; dished out on both sides, 7 tapped holes inside, one tapped hole oth 2 different diams and 2 body holes in OD	Mounts O-1719 and O-1721 and operates W-1306 on carriage return	N17-T- 350014- 297	CTT 150827	150827	150827	O-1715	1	0	0
Q-1716	PLATE; steel, nickel pl; irregularly formed arm extending from one side; approx 3/8" lg x 3/8" h x 1/4" wd o/a, 0.065" thk material; mts by 2 tapped holes	Anchors O-1685 to O-1715	N17-T- 350013- 927	CTT 150843	150843	150843	O-1716	1	0	0
Q-1717	WASHER, felt; hard, white felt; round, approx 5/8" OD x 3/8" ID x 1/8" thk o/a	Lubricates H-1742 and O-1715	N17-T- 350001- 890	CTT 74755	74755	74755	O-1717, O-1724	2	1	2
Q-1718	BUSHING, steel, nickel pl; male and female; approx 16/32" OD x 1/8" ID x 1/8" thk o/a, 5/8" diam x 1/32" thk shoulder, slot around ctr	Guide for W-1307	N17-T- 350013- 749	CTT 151619	151619	151619	O-1718	1	0	0
Q-1719	SPRING; motor type; blue tempered clock spring steel 3/8" wd x 1/64" thk; approx 3/8" thk x 12" diam o/a; mts by slot on inside end	Applies tension to O-1715	N17-T- 350008- 103	CTT 74272	74272	74272	O-1719	1	1	1
Q-1720	DISK; steel, nickel pl; circular shape, 3 equidistant outcuts in circum, 3 large and 3 small body holes around ID; approx 3 1/2" OD x 3/4" ID x 0.035" thk o/a; mts by 3 elongated curved slots near circum	Retains O-1719 in outout side of O-1715	N17-T- 350014- 279	CTT 150796	150796	150796	O-1720	1	0	0
Q-1721	RATCHET; steel, nickel pl; 16 teeth on circum, hub w/slotted out strip on side welded to ctr; approx 2 3/8" diam x 3/4" wd o/a; mts by ID of hub; 6 equidistant holes in ratchet	Anchor for and adjusts tension of O-1719	N17-T- 350013- 968	CTT 150261	150261	150261	O-1721	1	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								PER EQUIP.	BOX	EQUIP.	STOCK
O-1722	DRUM, spacing; aluminum, plain anodized; circular shape, 3 spokes to hub, body ear, rise, 8 tapped holes and elongated curved slot at hub, 4 tapped holes in 3 rises at circum and of spokes, pin inserted inside circum, slot through side of rim, slot and groove around circum, bushing pressed in ID of drum; approx 3 1/2" OD x 1/4" ID x 5/8" lg o/a; mts by ID	Anchor for W-1306 and W-1307 and mounts O-1726, O-1727, O-1728 and O-1729		N17-T-350016-360	CTT 152587	152587	Q-1722	1	0	0	QUAN
O-1723	LEVER, steel, nickel pl; one end irregularly formed, other end wd w/large curved outout; approx 1 15/32" lg x 23/32" wd x 3/8" h o/a, 0.065" thk material; mts by tapped hole near ctr	End of line stop for O-1722		N17-T-350016-382	CTT 152590	152590	Q-1723	1	0	0	
O-1724	Same as O-1717	Lubricates H-1767 and O-1722									
O-1725	SPACER, steel, nickel pl; approx 3/8" OD x 3/16" ID x 13/32" lg o/a; mts by ID	Spaces O-1722 and A-1358		N17-T-350014-145	CTT 150206	150206	Q-1725	1	0	0	
O-1726	RATCHET, steel, nickel pl; approx 3 7/16" OD x 3 1/16" ID x 3/16" wd o/a; mts by ID; 103 teeth around circum, notch in ID	Advances O-1722 on type space		N17-T-350014-842	CTT 150798	150798	Q-1726	1	0	0	
O-1727	RING, retainer; aluminum alloy, plain anodized; approx 3 1/2" OD x 3" ID x 1/4" thk o/a; mts by body holes in 2 round ears on ID; ID has 2 outouts, slot around circum	Guide for W-1306 and W-1307 and clamps O-1726 to O-1722		N17-T-350014-299	CTT 150838	150838	Q-1727	1	0	0	
O-1728	ARM, steel, nickel pl; irregular shape, 2 formed arms, one w/ bearing roller held near end by stud, one body ear and one large body hole; approx 2 1/16" lg x 1 7/8" h x 15/32" wd o/a, 0.065" thk material; mts by 2 elongated curved slots	Operates O-1634 and disengages O-1621 from O-1613 through O-1625		N17-T-350016-381	CTT 152588	152588	Q-1728	1	0	0	
O-1729	ARM, steel, nickel pl; irregular shape, short arm one end, lg "u" formed arm other end; approx 1 11/16" lg x 1 11/16" h x 15/32" wd o/a, 0.065" thk material; mts by elongated curved slot in body	Operates O-1617 on automatic carriage return		N17-T-350016-383	CTT 152591	152591	Q-1729	1	0	0	
O-1730	SHAFT, steel; threaded shank and 2 flats one end, plain shank w/slot other end, wd slot in body; approx 1 25/32" lg x 1/4" diam o/a, mts by 3/16" lg #40 threaded shank	Shaft for selector and code bar clutch trip mechanism		N17-T-350014-630	CTT 150348	150348	Q-1730	1	0	0	
O-1731	LEVER, steel, nickel pl; one end "u" shape w/formed spring notched ear, other end curved and formed; approx 1 19/32" lg x 3/8" h x 15/16" wd o/a, 0.061" thk material; mts by 2 holes in line in sides of "u"	Prevents code bar clutch from reversing by latching O-1808		N17-T-350014-762	CTT 150355	150355	Q-1731, O-1742, O-1750, O-1765, O-1774	5	1	2	
O-1732	Same as O-1369	Applies tension to O-1731									
O-1733	Same as O-381	Lubricates O-1731									

Part Number	Description	Material	Quantity	Notes	Part Number	Description	Material	Quantity	Notes
O-1734	LWTR; steel, nickel pl; one end "u" formed w/flat through bottom to stg holes, other end formed; approx 1 1/8" lg x 9/16" h x 1/4" wd o/a, 0.060" thk material; mts by 2 holes in line in sides of "u"	M17-7-360014-634	2	1	2	O-1734, O-1753	150366	150366	CTT
O-1736	WALRER; felt; hard, white felt; round, approx 1/8" OD x 9/32" ID x 1/8" thk o/a	M17-7-360013-628	2	1	2	O-1736	90819	90819	CTT
O-1738	BUMRING; steel, nickel pl; male and female; approx 7/8" lg x 1/8" across flats x 1/4" ID o/a, 5/8" hex shoulder, 3/8"-48 threaded body and shank on ea end	M17-7-360013-917	1	0	0	O-1738	150382	150382	CTT
O-1737	LWTR; steel, nickel pl; irregular shape, formed ear notched on ea side w/hooked end, "u" notch near narrow end of body; approx 2 3/4" lg x 3/4" wd x 7/16" h o/a, 0.060" thk material; mts by elongated slot in round end	M17-7-360014-686	1	0	0	O-1737	150444	150444	CTT
O-1738	Same as O-1734								
O-1739	Same as O-370								
O-1740	SHAFT; steel; threaded shank and 2 flats one end, short slotted shank other end; approx 9 3/4" lg x 1/4" diam o/a; mts by 3/16" lg #6-40 threaded shank	M17-7-360014-631	1	0	0	O-1740	150360	150360	CTT
O-1741	COLLAR; steel, nickel pl; approx 1/4" lg x 7/16" OD x 1/4" ID o/a; mts by ID; tapped hole to ID	M17-7-360001-800	3	1	1	O-1741, O-1760, O-1766	74647	74647	CTT
O-1742	Same as O-1731								
O-1743	Same as O-1809								
O-1744	Same as O-331								
O-1745	LWTR; steel, nickel pl; one end "u" formed w/body ear w/knagd hole and formed ear w/2 notches; other end formed; approx 1 3/8" lg x 7/8" h x 5/8" wd o/a; mts by 2 holes in line in sides of "u"	M17-7-360014-318	1	1	1	O-1745	150889	150889	CTT
O-1746	AMS clutch trip lever; steel, nickel pl; "u" formed w/body ear one end, other end curved and formed, formed ear on body; approx 2 5/16" lg x 1" h x 1" wd o/a, 0.060" thk material; mts by 2 body holes in line in "u" formed end	M17-7-350015-723	1	0	0	O-1746	152317	152317	CTT
O-1747	Same as O-331								
O-1748	Same as O-1809								

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS		
					CODE	DESIG.			EQUIP.	STOCK	QUAN.
O-1749	SPACER; aluminum, plain anodized; approx 3/8" OD x 1/4" ID x 1/4" lg o/a; mts by ID	Spaces O-1745 and O-1750		N17-T-350014-638	CTT	150361	150361	O-1749	1	0	0
O-1750	Same as O-1731	Prevents function clutch from reversing by latching O-1827									
O-1751	Same as O-1389	Applies tension to O-1750									
O-1752	Same as O-331	Lubricates O-1750									
O-1753	Same as O-1734	Engages and disengages O-1830									
O-1754	ARM, follower; steel, nickel pl; irregular shape, formed at ctr, tapped hole and oak hole in wd end; approx 1 5/8" lg x 3/16" h x 1/2" wd o/a, 0.065" thk material; mts by slot in smaller end	Disengages O-1753 from O-1830 by O-1740 and O-1771 from O-1886 by O-1740 and O-1773		M17-T-350014-531	CTT	150349	150349	O-1754	1	0	0
O-1755	Same as O-777	Applies tension to O-1754									
O-1756	Same as O-1309	Lubricates O-1755									
O-1757	Same as O-1325	Lubricates O-1758 and O-1759									
O-1758	Same as O-1388	Bearing roller for O-1759									
O-1759	DETENT, cam roller; steel; approx 7/32" thk x 1/2" OD x 3/16" ID o/a; mts by ID; etb ID to 5/16" diam x 3/32" deep	Cam roller guide for O-1754		M17-T-350001-186	CTT	74785	74785	O-1759	1	0	0
O-1760	Same as O-1741	Retains line feed clutch trip mechanism in position									
O-1761	LEVER, steel, nickel pl; irregular shape, one end "u" formed w/spring notched formed ear and rounded ear w/tapped hole, formed ear on body at curve; approx 2 5/32" lg x 1 5/32" h x 21/32" wd o/a, 0.061" thk material; mts by 2 holes in line in sides of "u"	Engages and disengages O-1869		N17-T-350014-677	CTT	150431	150431	O-1761	1	1	1
O-1762	ARM, steel, nickel pl; one end "u" formed w/rounded ear, body formed near other end; approx 2 1/8" lg x 3/4" h x 1/2" wd o/a, 0.060" thk material; mts by 2 holes in line in sides of "u"	Disengages O-1761 from O-1869									
O-1763	Same as O-1389	Applies tension to O-1761									
O-1764	Same as O-331	Lubricates O-1761 and O-1762									
O-1765	Same as O-1731	Prevents line feed clutch from reversing by latching O-1866									
O-1766	Same as O-1389	Applies tension to O-1765									

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.		SPARE PARTS	
											EQUIP.	STOCK
											BOX	QUAN.
O-1799	Same as O-342	Permits O-1798 to drive O-1795 when in engaged position										
O-1800	Same as O-344	Applies tension to O-1798 and O-1799										
O-1801	DRUM, clutch: steel, nickel pl; dished out one side w/90 teeth around inner circum, hub on other side w/slot through lg to body hole on ea side in face of drum, body hole through 2 flats on hub; approx 1 5/8" OD x 5/16" ID x 1/2" lg o/a; mts by ID	Drives O-1798 and O-1799 when they are engaged		N17-T-350013-810	CTT 150001		150001	O-1801	1	1	1	1
O-1802	CAM, steel, nickel pl; one half round, other half has 2 rises; approx 1 9/16" OD x 9/16" ID x 3/32" thk o/a; mts by ID w/2 elongated cutouts; circle scribed on one side	Drives O-1754 through O-1759		N17-T-350014-832	CTT 150004		150004	O-1802	1	0	0	0
O-1803	WASHER, flat: steel, nickel pl; round, approx 1 1/16" OD x 9/16" ID x 0.065" thk o/a; 2 elongated cutouts in ID	Spaces O-1802 and O-1806		N17-T-350013-812	CTT 150016		150016	O-1803	1	0	0	0
O-1804	CAM, super oilite; approx 1 3/16" OD x 9/16" ID x 0.064" thk o/a; mts by off-ctr ID w/2 elongated slots; circle scribed on one side	Drives O-1805		N17-T-350013-820	CTT 150061		150061	O-1804	1	1	1	1
O-1805	ARM, steel, nickel pl; both ends rounded, hub welded to small end; approx 3 1/8" lg x 1 7/16" w x 5/32" h o/a, 0.065" thk material; mts by large body hole in large end	Drives O-1563 by H-1576		N17-T-350014-253	CTT 150066		150066	O-1805	1	1	1	1
O-1806	SPACER, clutch: stainless steel; irregular curved shape; approx 1 5/16" OD x 1 1/32" ID x 0.028" thk o/a; mts by off-ctr ID w/2 elongated slots; circle scribed on one side; straight outout on circum	Retains O-1805 on O-1804		N17-T-350014-131	CTT 150060		150060	O-1806	2	0	0	0
O-1807	BEARING, sleeves; super oilite; approx 2 7/32" lg x 31/32" OD x 7/16" ID o/a, 2 slots and 2 flats one end, 2 grooves in other end, 2 body holes in shoulder	Bearing sleeve for code bar clutch		N17-T-350013-818	CTT 150047		150047	O-1807	1	1	1	1
O-1808	Same as O-337	Drives O-1802, O-1804 and O-1807										
O-1809	Same as O-338	Drives O-1808										
O-1810	Same as O-339	Engages and disengages O-1813 and O-1814										
O-1811	Same as O-340	Applies tension to O-1810										
O-1812	Same as O-341	Lubricates code bar clutch mechanism										

Part Number	Description	Material	Quantity	Part Number	Description	Material	Quantity
O-1813	Same as O-343			KT7-7-350004-764	Drives O-1809 when in engaged position	CTT 180000	1
O-1814	Same as O-343				Permits O-1813 to drive O-1809 when in engaged position		
O-1815	Same as O-344				Applies tension to O-1813 and O-1814		
O-1816	SPACER, elutech; steel, nickel pl; dished out one side w/60 teeth around inner circumference on other side w/slot through lg to body hole on one side in face of drum, body hole through flat of hub and tapped at other end; approx 1 1/8" OD x 7/16" ID x 1/2" lg o/a; mts by ID				Drives O-1813 and O-1814 when they are engaged		
O-1817	BEARING, balls; single row radial; 2 shields; light duty; approx 7/8" OD x 3/8" ID x 9/32" lg o/a; 7 balls; packed w/beacon 325 grease; std fit; ABEC - 1 std tol			KT7-7-350018-696	Right side frame bearing for O-1791	CTT 182573	1
O-1818	RETAINER, bearing; steel, nickel pl; irregular shape, top irregularly formed w/outlet in ctr; approx 1 15/16" lg x 1 13/32" h x 9/32" wd o/a, 0.060" thick material; mts by body hole in one of 2 rounded projections on bottom				Retains O-1817 to A-1289		
O-1819	COLLAR, steel, nickel pl; shoulder at one end, hole through body; approx 19/32" OD x 3/8" ID x 9/16" lg o/a; mts by ID			KT7-7-350018-343	Retains O-1817 to A-1289	CTT 182454	1
O-1820	Same as O-1704				Lubricates O-1817		
O-1821	ARM, steel, nickel pl; both ends rounded, hub welded to small end; approx 3 9/16" lg x 1 3/8" wd x 5/32" h o/a, 0.065" thick material; mts by large body hole in large end			KT7-7-350018-680	Drives O-3052 by A-3055	CTT 182717	1
O-1822	CLAMP super oilite; approx 1 1/8" OD x 9/16" ID x 0.064" thick o/a; mts by off-ctr ID w/2 elongated slots; circle scribed on one side; small body hole near circum			KT7-7-350018-821	Drives O-1821	CTT 180082	1
O-1823	SPACER, elutech; stainless steel; approx 1 1/4" OD x 9/16" ID x 0.038" thick o/a; mts by off-ctr ID w/2 elongated outlets; circle scribed on one side; small body hole near circum				Retains O-1821 on O-1822		
O-1824	SPACER, aluminum, plain anodize; approx 3 1/2" OD x 9/16" ID x 0.040" thick o/a; mts by ID; 2 elongated outlets in ID			KT7-7-350014-339	Spaces O-1823 and O-1825	CTT 180931	1
O-1825	RING, retainer; steel, nickel pl; ID dished out by 2 different diam; approx 1" OD x 1/8" ID x 1/8" thick o/a; mts by ID; 2 small body holes			KT7-7-350014-869	Retains O-1826 in slot of O-1835	CTT 180831	3

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURER DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
								EQUIP.	STOCK	QUAN.	
								BOX		BOX	QUAN.
O-1826	KEY: steel, nickel pl; "C" shape; approx 3/4" diam x 0.031" thk o/a; mts by 2 small cutouts on ciroum	Retains O-1827 on O-1835		N17-T-350014-286	CTT 150832	150832	O-1826, O-1847, O-1866	0	0		
O-1827	DISK: steel, nickel pl; irregular circular shape; approx 1 7/8" lg x 1 11/16" h x 5/8" wd o/a, 0.085" thk material; mts by elongated hole in approx ctr; 4 cutouts and 2 formed ears on edge, 5 irregular shaped holes, 2 elongated slots and 2 tapped holes in disk, 2 spring posts and one pin riveted to disk	Drives O-1822 and O-1835		N17-T-350014-609	CTT 150032	150032	O-1827	1	1		
O-1828	DISK: steel, nickel pl; irregular circular shape; approx 1 3/8" lg x 1 1/16" h x 5/16" wd o/a, 0.085" thk material; mts by 2 tapped holes in rounded ears on ciroum; 3 cutouts and formed ear in irregular shaped ID, squared ear on ciroum	Drives O-1827		N17-T-350014-606	CTT 150014	150014	O-1828, O-1849, O-1867	1	1		
O-1829	BEARING, sleeve; stainless steel; approx 1/8" lg x 3/4" OD x 5/8" ID o/a, shoulder 1/16" lg x 11/16" diam, slot across face	Sleeve bearing for O-1828 and O-1830		N17-T-350014-369	CTT 150841	150841	O-1829, O-1868	2	0		
O-1830	DISK: steel, nickel pl; approx 1 13/16" lg x 1 5/16" h x 3/16" wd o/a, 0.035" thk material; mts by body hole in ctr; 2 arms formed at ends w/curved ear on ea, rectangular shaped cutout in irregular shaped arm	Operates O-1834		N17-T-350014-611	CTT 150034	150034	O-1830	1	1		
O-1831	SPRING; helical extension type; 0.016" diam music wire; approx 9/16" lg x 1/8" OD o/a; approx 22 turns; hook term, indexed 90°; mts by term	Applies tension to O-1830		N17-T-350014-927	CTT 151756	151756	O-1831, O-1852, O-1870	6	0		
O-1832	Same as O-341	Lubricates function clutch mechanism									
O-1833	BUSHING; stainless steel; male and female; 7/8" OD x 5/8" ID x 3/32" thk	Bearing for and retains O-1834 in position on O-1835		N17-T-350014-558	CTT 150830	150830	O-1833, O-1853, O-1871	3	0		
O-1834	LEVER; steel, nickel pl; irregular "C" shape approx 1 7/16" lg x 1" h x 9/32" wd o/a, 0.042" thk material; mts by "U" formed end; formed ear near one end, body hole near "U" formed end	Engages and disengages O-1836 and O-1837		N17-T-350014-747	CTT 150027	150027	O-1834, O-1854, O-1872	3	1		
O-1835	BEARING, sleeve; super alloy; approx 7/8" lg x 7/16" ID x 7/8" OD o/a, two straight cutouts, second flange cutout on one side only, three grooves around shank	Sleeve bearing for function clutch		N17-T-350013-816	CTT 150046	150046	O-1835, O-1866, O-1874	3	1		
O-1836	Same as O-343	Drives O-1828 when in engaged position									
O-1837	Same as O-342	Permits O-1836 to drive O-1828 when in engaged position									

Part Number	Description	Material	Quantity	Notes	Part Number	Description	Material	Quantity	Notes
O-1836	Same as O-1844			Applies tension to O-1856 and O-1857	17-7-350014-684	CTT	150441	1	O-1840
O-1839	Same as O-1816			Drives O-1846 and O-1857 when they are engaged	17-7-350014-683	CTT	150440	1	O-1841
O-1840	GRK; spur, natural color bakelite; helical teeth; 21 teeth; 24 pitch, 1.87" PD; 1 21/32" OD x 1/2" thk o/s; straight face; mts by ctr hole and 3 body holes			Drives O-336	17-7-350014-682	CTT	150439	1	O-1842
O-1841	HB; alumina, plain anodize finish; approx 1 1/8" OD x 7/16" ID x 1/2" wd o/s; mts by 3 tapped holes; body hole in circum			Spaces O-1840 and O-1843 and mounts them to O-1791	17-7-350014-207	CTT	150649	1	O-1843
O-1842	GE; spur; natural color bakelite; helical teeth; 14; 60 teeth; 24 pitch, 2.40" PD; approx 2 15/32" OD x 7/16" ID x 5/16" thk o/s; straight face; mts by ID and 3 body holes			Drives O-1791	17-7-350014-115	CTT	150091	1	O-1844
O-1843	COLL; steel, nickel plated; short shank on end; approx 5/8" OD x 7/16" ID x 11/32" lg; mts by ID, flat outout on one side w/hole			Retains spacing clutch in position	17-7-350013-811	CTT	150003	1	O-1845
O-1844	GRK; spur; natural color bakelite; helical teeth; 21 teeth; 22 pitch, 1.98" PD; approx 2 3/32" OD x 5/16" ID; straight face; mts by bore w/2 elongated slots			Drives O-1869					
O-1845	CAM; black bakelite; three equidistant rises; approx 1 7/16" OD x 9/16" ID x 1/8" thk o/s; mts by ID, circle scribed on one side below a rise; two elongated notches in ID			Drives O-2113					
O-1846	Same as O-1825			Retains O-1847 in slot of O-1856					
O-1847	Same as O-1826			Retains O-1848 on O-1856					
O-1848	DIE; steel, nickel pl; irregular circular shape; approx 1 13/16" largest diam x 5/16" wd o/s; 0.008" thk material; mts by elongated hole in approx ctr; six outouts and three formed ears on circum; five irregular shaped holes, two elongated slots and two tapped holes in disk, two spring posts riveted to disk			Drives O-1844, O-1845 and O-1856					
O-1849	Same as O-1825			Drives O-1848					
O-1850	Same as O-1829			Sleeve bearing for O-1849 and 1851					
O-1851	DIE; steel, nickel pl; approx 1 3/4" lg x 1 5/8" h x 3/16" wd o/s, 0.008" thk material; mts by body hole in ctr; four arms, three formed at end, two w/curved ear and one w/outout at end			Operates O-1854					

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS											SPARE PARTS			
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL EQUIP.	BOX	QUAN.	BOX	QUAN.		
O-1852	Same as O-1851	Applies tension to O-1851												
O-1853	Same as O-1853	Bearing for and retains O-1854 in position on O-1856												
O-1854	Same as O-1854	Engages and disengages O-1857 and O-1858												
O-1855	Same as O-341	Lubricates spacing clutch mechanism												
O-1856	Same as O-1855	Sleeve bearing for spacing clutch												
O-1857	Same as O-343	Drives O-1849 when in engaged position												
O-1858	Same as O-342	Permits O-1857 to drive O-1849 when in engaged position												
O-1859	Same as O-344	Applies tension to O-1857 and O-1858												
O-1860	Same as O-1816	Drives O-1857 and O-1858 when they are engaged												
O-1861	BEARING, sleeve: steel, nickel pl; male bushing mtd in ID of bearing; approx 1 1/8" OD x 5/8" wd x 7/16" ID o/a; hole through shank, oth one side, threaded other side, elongated slot through shank	Left side frame bearing for O-1791		N17-7- 350014- 187	CTT	150970	O-1861	1	0	0				
O-1862	GEAR, spur; natural color bakelite; straight teeth; 42 teeth; 24 pitch, 1.75" PD; approx 1 27/32" OD x 9/16" ID x 3/16" thk o/a; straight face; ctr hole 9/16" diam w/2 elongated slots, one slot off center; mts by ID and slot	Drives O-2049		N17-7- 350013- 935	CTT	150665	O-1862	1	0	0				
O-1863	SPACER; steel, nickel pl; approx 1" OD x 9/16" ID x 0.095" thk o/a; mts by ID; 2 slots on ID	Spaces O-1862 and O-1864												
O-1864	Same as O-1825	Retains O-1865 in slot of O-1874		N17-7- 350014- 657	CTT	150391	O-1863	1	0	0				
O-1865	Same as O-1826	Retains O-1866 on O-1874												
O-1866	Same as O-1848	Drives O-1862 and O-1874												

O-1867	Same as O-1828	Drives O-1866								
O-1868	Same as O-1829	Sleeve bearing for O-1867 and O-1869								
O-1869	Same as O-1851	Operates O-1872								
O-1870	Same as O-1881	Applies tension to O-1869								
O-1871	Same as O-1835	Bearing for and retains O-1872 in position on O-1874								
O-1872	Same as O-1854	Engages and disengages O-1875 and O-1876								
O-1873	Same as O-341	Lubricates line feed clutch mechanism								
O-1874	Same as O-1835	Sleeve bearing for line feed clutch								
O-1875	Same as O-343	Drives O-1867 when in engaged position								
O-1876	Same as O-342	Permits O-1876 to drive O-1867 when in engaged position								
O-1877	Same as O-344	Applies tension to O-1875 and O-1876								
O-1878	Same as O-1816	Drives O-1875 and O-1876 when they are engaged								
O-1879	LIKE steel, nickel pl; irregular shape w/rounded ends; approx 2 3/8" lg x 13/16" h x 1/2" wd o/a; 0.065" thk material; mts by ID of hub welded to large end; stud butt welded through small end	Drives A-1876 by E-1865	M17-T-350013-966	CTT 150244	150244	150244	O-1879	1	1	1
O-1880	Same as O-331	Lubricates E-1885 and O-1879								
O-1881	BEARING, sleeve; super oilite; approx 1" lg x 1" OD x 3/8" ID o/a, 2 grooves and 2 cutouts on one end, partial groove on other end, offset mtg hole, 3 body holes, one tapped hole	Sleeve bearing for type box clutch and drives O-1879	M17-T-350013-817	CTT 150046	150046	150046	O-1881	1	1	1
O-1882	PLATE, retainers: steel,nickel pl; triangular shape w/rounded corners; approx 5/8" lg x 5/16" wd x 0.038" thk o/a; mts by single body hole	Retains one end of O-1879 in O-1881	M17-T-350004-785	CTT 150010	150010	150010	O-1882	1	1	1
O-1883	Same as O-337	Drives O-1881								
O-1884	Same as O-338	Drives O-1883								
O-1885	Same as O-340	Applies tension to O-1886								

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO OF EQUIP.	BOX	QUAN.	BOX	QUAN.
O-1886	Same as O-339	Engages and disengages O-1888 and O-1889										
O-1887	Same as O-341	Lubricates type box clutch mechanism										
O-1888	Same as O-343	Drives O-1884 when in engaged position										
O-1889	Same as O-342	Permits O-1888 to drive O-1884 when in engaged position										
O-1890	Same as O-344	Applies tension to O-1888 and O-1889										
O-1891	Same as O-1816	Drives O-1888 and O-1889 when they are engaged										
O-1905	LINK, lever: steel, nickel pl; both ends rounded, irregularly curved near one end, stud riveted at ea end; approx 2 5/32" lg x 7/16" h x 23/32" wd o/a, 0.050" thk material; mts by studs	Type spaces and horizontally positions O-1943 through O-1370		N17-T- 350015- 613	CTT	152503	O-1905	1	0	0		
O-1906	LATCH: steel, nickel pl; "C" shaped latch w/ear one end and lever riveted by outout to formed end; approx 1 1/4" lg x 3/4" wd x 1/8" thk o/a; mts by hole in end w/ear	Latches O-1943 in position on O-1912 and A-1370		N17-T- 350014- 123	CTT	150075	O-1906	1	0	0		
O-1907	GUIDE, ribbon: nickel silver; irregular shape folded arm ea end, body "U" formed w/2 out- cuts in bottom and one in otr w/formed ear; approx 2 17/32" lg x 1 1/4" h x 3/8" wd o/a, 0.020" thk material; mts by body hole near ea bottom outout	Guide for ribbon from O-1393		N17-T- 350015- 262	CTT	152501	O-1907	1	0	0		
O-1908	CONV, bearing: chrome vanadium steel; approx 1/4" OD x 1/8" ID x 1/16" thk o/a; mts by ID; OD tapered on one side	Retains O-1910 in O-1909		N17-T- 350014- 124	CTT	150073	O-1908, O-1913, O-1917	4	1	2		
O-1909	ROLLER: steel; approx 1/8" wd x 15/32" OD x 1/4" ID o/a; mts by ID; "V" shaped slot on ID, rectangular slot on OD	Upper roller guides for A-1370 and retains A-1370 on A-1371		N17-T- 350014- 122	CTT	150076	O-1909, O-1914	3	1	1		
O-1910	BALL, bearing: steel; spherical; approx 1/16" diam o/a	Bearing balls for O-1909		N17-T- 350006- 401	CTT	3637	O-1910, O-1915	36	1	6		
O-1911	SHIM: steel; approx 3/16" OD x 1/8" ID x 0.002" thk o/a; mts by ID	Spaces O-1908 and O-1912		N17-T- 350014- 653	CTT	150381	O-1911, O-1916	12	1	3		

Part Number	Description	Material	Quantity	Notes	Part Number	Description	Material	Quantity	Notes
O-1912	COVER, bearing: chrome vanadium steel; approx 1/4" OD x 1/8" ID x 1/8" wd o/a; mts by ID; OD tapered on one side	W17-7-350014-125	1	Retains O-1910 in O-1909	CTT	150072	150072	1	O-1912
O-1913	Same as O-1908			Retains O-1915 in O-1914					
O-1914	Same as O-1909			Lower roller guide for A-1370 and retains A-1370 on A-1371					
O-1915	Same as O-1910			Bearing balls for O-1914					
O-1916	Same as O-1911			Spacers O-1913 and O-1917					
O-1917	Same as O-1908			Retains O-1915 in O-1914					
O-1918	LOWER: steel; irregular shape, o/o arm w/formed ear and body ear, lever w/fin on end, link w/ear on end and middle, all parts riveted together, hub welded to link; approx 4 1/2" lg x 1 1/4" h x 1 1/16" wd o/a; mts by two elongated slots in arm, one slot open at one end; RH mtg, two tapped holes in formed ear, one ask hole in ear at end of link	W17-7-350014-661	1	Positions A-1371	CTT	150397	150397	1	O-1918
O-1919	BLCKE, guides: steel; approx 7/32" sq x 3/32" thk o/a; mts by hole through otr	W17-7-350014-664	2	Bearing Guide for O-1918	CTT	150382	150382	2	O-1919, O-1999
O-1920	SPACER, steel; nickel pl; approx 1/4" lg x 5/16" OD x 1/8" ID o/a; mts by ID	W17-7-350014-666	1	Spacers O-1918 and A-1389	CTT	150384	150384	1	O-1920
O-1921	Same as O-931			Lubricates O-1918 and O-1919					
O-1922	BLCKE, guides: steel; approx 23/32" lg x 7/32" wd x 1/8" thk o/a; mts by body hole near ea end	W17-7-350013-739	2	Bearing Guide for O-1918	CTT	151604	151604	2	O-1922, O-2000
O-1923	PLATE, retainers: steel; nickel pl; approx 1 7/32" lg x 15/32" wd x 0.036" thk o/a; mts by slot and hole	W17-7-350013-899	3	Retains O-1918 on O-1922	CTT	151602	151602	3	O-1923, O-2001
O-1924	Same as O-1486			Spacers O-1918 and A-1389					
O-1925	Same as O-331			Lubricates O-1918 and O-1922					
O-1926	SPRING, helical extension type; 0.026" diam music wire; approx 5/8" lg x 7/32" OD x 3/16" ID o/a; 11 turns; hook term ea end, indexed 90°; mts by term	W17-8-48712-8201	2	Applies tension to O-1918	CTT	151644	151644	2	O-1926, O-2004
O-1927	Same as O-1568			Lubricates O-1926					

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURING		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
									EQUIP.		STOCK	
									BOX	QUAN.	BOX	QUAN.
					DESIG.							TOTAL NO. PER EQUIP.
O-1928	LEVER: steel, nickel pl; irregular shape w/1/8" shaped ctr, curved formed ear back of "C", three hubs and stud welded to body; approx 4 3/16" lg x 1 1/16" h x 5/16" wd o/a, 0.042" thk material; mts by ID of hub near elongated hole; elongated hole one end and two body holes (ID of hubs) in other half of body, RH mtg	Operates O-1918, O-1929 and O-1931 and allows O-1937 to position O-1935		N17-T-350014-672	CTT 150420	150420	O-1928		1	0	0	1
O-1929	LINK: steel, nickel pl; bent rear ctr w/rounded ends; approx 3 13/32" lg x 9/16" h x 5/32" wd o/a, 0.042" thk material; mts by body hole at ea end	Drives A-1318		N17-T-350014-650	CTT 150387	150387	O-1929		1	0	0	1
O-1930	Same as O-214	Lubricates O-1928 and O-1929										
O-1931	ARM: steel, nickel pl; formed ear at mtg end, irregular shaped slot at bent end; approx 2 13/32" lg x 23/32" h x 3/16" wd o/a, 0.042" thk material; mts by body hole, RH mtg	Operates O-2016		N17-T-350015-601	CTT 162642	162642	O-1931		1	0	0	1
O-1932	BUSHING: steel, nickel pl; male and female; approx 5/16" OD x 1/8" ID x 3/32" lg o/a, 7/32" diam body	Pivot for O-1931		N17-T-350014-533	CTT 150390	150390	O-1932, O-2013		2	0	0	2
O-1933	LINK: steel, nickel pl; rounded ends, body curved near ctr, stud welded to one end, hub welded to other end; approx 2 1/16" lg x 3/4" h x 1/4" wd o/a, 0.042" thk material; mts by ID of hub; LH mtg	Operates O-1928		N17-T-350014-645	CTT 150370	150370	O-1933		1	0	0	1
O-1934	Same as O-331	Lubricates H-1952 and O-1928										
O-1935	LEVER: steel, nickel pl; irregular shape, four "v" shaped notches on bent side; rounded ear on other side near rounded end; approx 1 7/8" lg x 1" h x 0.065" thk o/a; mtg slot in rounded end and hole in rounded ear	Stops O-1918 in one of four vertical positions		N17-T-350014-673	CTT 150425	150425	O-1935, O-2015		2	0	0	2
O-1936	WASHER: flat; steel, nickel pl; round, approx 5/16" OD x 1/8" ID x 0.065" thk o/a	Spaces O-1935 and O-1937		N17-T-350014-667	CTT 150411	150411	O-1936		1	0	0	1
O-1937	ARM: steel, nickel pl; irregular shape w/two rounded and one "L" shaped projections; approx 1 5/8" lg x 1 1/2" h x 1/2" wd o/a; 0.065" thk material; mts by ID of hub welded to a rounded projection; one body end two tapped holes irregularly placed, RH mtg	Mounts and pivots O-1935		N17-T-350014-669	CTT 150413	150413	O-1937		1	0	0	1

Part Number	Description	Material	Quantity	Unit	Notes
O-1938	STUD, steel, nickel pl, approx 9/16" lg x 1/4" across flats o/s; #6-40 thd through ID		1	C	O-1938
O-1939	SPEWING: helical extension type; 0.016" diam music wire; approx 15/16" lg x 5/32" OD o/s; approx 30 turns; hook terms; indexed 90°; mts by term		2	O	O-1939, O-2014
O-1940	Same as O-1938				
O-1941	BLOCK, bearing; steel, nickel pl; squared one end, round on other w/roller bearing press fitted near end; approx 7/8" lg x 3/4" h x 3/8" wd o/s; mts by two tapped holes in block		1	O	O-1941
O-1942	Same as O-331				
O-1943	PALLET 2BT, type; o/o 64 pallets, 64 springs, front plate, rear plate, cover, 2 screws, 2 lock washers, 2 flat washers, stud and shoulder nut; approx 3 7/16" lg x 1" h x 3/4" wd o/a diam of assembled set; "B" stamped in head of one screw for identification of pallet arrangement		1	O	O-1943
O-1944	SPEWING: torsion type; 0.008" diam music wire; approx 3/8" lg x 5/16" h x 3/16" wd o/s; 9 turns; RH or LH spiral permissible; mts by straight term one end		2	1	O-1944
O-1945	PALLET, type; dummy pallet; steel, nickel pl; approx 15/16" lg x 3/16" h x 3/32" wd o/s; mts by shaft w/3/32" wd x 1/16" lg spring mtg hole		14	O	O-1945
O-1946	PALLET, type; character (A); steel, nickel pl; Murray style type; approx 5/8" lg x 3/16" wd x 3/16" h o/s; mts by shaft w/spring mtg hole near shoulder; curved type on 7/8" rd		1	O	O-1946
O-1947	Same as O-1946 except for character (B)		1	C	O-1947
O-1948	Same as O-1946 except for character (C)		1	O	O-1948
O-1949	Same as O-1946 except for character (D)		1	O	O-1949
O-1950	Same as O-1946 except for character (E)		1	O	O-1950

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. EQUIP.	EQUIP.		STOCK
					W	O				BOX	QUAN.	
O-1951	Same as O-1946 except for character (F)	Prints impression of character "p"		N17-T-350013-889	CTT	150105	150105	O-1951	1	0	0	
O-1952	Same as O-1946 except for character (G)	Prints impression of character "q"		N17-T-350013-860	CTT	150106	150106	O-1952	1	0	0	
O-1953	Same as O-1946 except for character (H)	Prints impression of character "r"		N17-T-350013-861	CTT	150107	150107	O-1953	1	0	0	
O-1954	Same as O-1946 except for character (I)	Prints impression of character "s"		N17-T-350013-862	CTT	150108	150108	O-1954	1	0	0	
O-1955	Same as O-1946 except for character (J)	Prints impression of character "t"		N17-T-350013-863	CTT	150109	150109	O-1955	1	0	0	
O-1956	Same as O-1946 except for character (K)	Prints impression of character "u"		N17-T-350013-864	CTT	150110	150110	O-1956	1	0	0	
O-1957	Same as O-1946 except for character (L)	Prints impression of character "v"		N17-T-350013-865	CTT	150111	150111	O-1957	1	0	0	
O-1958	Same as O-1946 except for character (M)	Prints impression of character "w"		N17-T-350013-866	CTT	150112	150112	O-1958	1	0	0	
O-1959	Same as O-1946 except for character (N)	Prints impression of character "x"		N17-T-350013-867	CTT	150113	150113	O-1959	1	0	0	
O-1960	Same as O-1946 except for character (O)	Prints impression of character "y"		N17-T-350013-868	CTT	150114	150114	O-1960	1	0	0	
O-1961	Same as O-1946 except for character (P)	Prints impression of character "z"		N17-T-350013-869	CTT	150115	150115	O-1961	1	0	0	
O-1962	Same as O-1946 except for character (Q)	Prints impression of character "a"		N17-T-350013-870	CTT	150116	150116	O-1962	1	0	0	
O-1963	Same as O-1946 except for character (R)	Prints impression of character "b"		N17-T-350013-871	CTT	150117	150117	O-1963	1	0	0	
O-1964	Same as O-1946 except for character (S)	Prints impression of character "c"		N17-T-350013-872	CTT	150118	150118	O-1964	1	0	0	
O-1965	Same as O-1946 except for character (T)	Prints impression of character "d"		N17-T-350013-873	CTT	150119	150119	O-1965	1	0	0	
O-1966	Same as O-1946 except for character (U)	Prints impression of character "e"		N17-T-350013-826	CTT	150120	150120	O-1966	1	0	0	
O-1967	Same as O-1946 except for character (V)	Prints impression of character "f"		N17-T-350013-827	CTT	150121	150121	O-1967	1	0	0	

O-1968	Same as O-1946 except for character (W)	Prints impression of character "w"	150122	CTT	150122	150122	O-1968
O-1969	Same as O-1946 except for character (X)	Prints impression of character "x"	150123	CTT	150123	150123	O-1969
O-1970	Same as O-1946 except for character (Y)	Prints impression of character "y"	150124	CTT	150124	150124	O-1970
O-1971	Same as O-1946 except for character (Z)	Prints impression of character "z"	150125	CTT	150125	150125	O-1971
O-1972	Same as O-1946 except for character (1)	Prints impression of character "1"	150126	CTT	150126	150126	O-1972
O-1973	Same as O-1946 except for character (2)	Prints impression of character "2"	150127	CTT	150127	150127	O-1973
O-1974	Same as O-1946 except for character (3)	Prints impression of character "3"	150128	CTT	150128	150128	O-1974
O-1975	Same as O-1946 except for character (4)	Prints impression of character "4"	150129	CTT	150129	150129	O-1975
O-1976	Same as O-1946 except for character (5)	Prints impression of character "5"	150130	CTT	150130	150130	O-1976
O-1977	Same as O-1946 except for character (6)	Prints impression of character "6"	150131	CTT	150131	150131	O-1977
O-1978	Same as O-1946 except for character (7)	Prints impression of character "7"	150132	CTT	150132	150132	O-1978
O-1979	Same as O-1946 except for character (8)	Prints impression of character "8"	150133	CTT	150133	150133	O-1979
O-1980	Same as O-1946 except for character (9)	Prints impression of character "9"	150134	CTT	150134	150134	O-1980
O-1981	Same as O-1946 except for character (.)	Prints impression of character "."	150135	CTT	150135	150135	O-1981
O-1982	Same as O-1946 except for character (,)	Prints impression of character ","	150136	CTT	150136	150136	O-1982
O-1983	Same as O-1946 except for character (")	Prints impression of character "\""	150137	CTT	150137	150137	O-1983
O-1984	Same as O-1946 except for character (l)	Prints impression of character "l"	150138	CTT	150138	150138	O-1984
O-1985	Same as O-1946 except for character (t)	Prints impression of character "t"	150139	CTT	150139	150139	O-1985
O-1986	Same as O-1946 except for character (f)	Prints impression of character "f"	150140	CTT	150140	150140	O-1986
O-1987	Same as O-1946 except for character (i)	Prints impression of character "i"	150141	CTT	150141	150141	O-1987

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS NO.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS			
									EQUIP.	STOCK	QUAN.	BOX
O-1988	Same as O-1946 except for character (-)	Prints impression of character "a"		N17-T-350013-849	CTT 150143	150143	O-1988	1		O		
O-1989	Same as O-1946 except for character (#)	Prints impression of character "g"		N17-T-350013-850	CTT 150144	150144	O-1989	1		O		
O-1990	Same as O-1946 except for character (i)	Prints impression of character "i"		N17-T-350013-851	CTT 150145	150145	O-1990	1		O		
O-1991	Same as O-1946 except for character (t)	Prints impression of character "j"		N17-T-350013-852	CTT 150146	150146	O-1991	1		O		
O-1992	Same as O-1946 except for character (s)	Prints impression of character "k"		N17-T-350013-853	CTT 150147	150147	O-1992	1		O		
O-1993	Same as O-1946 except for character (r)	Prints impression of character "l"		N17-T-350013-854	CTT 150148	150148	O-1993	1		O		
O-1994	Same as O-1946 except for character (/)	Prints impression of character "n"		N17-T-350013-855	CTT 150149	150149	O-1994	1		O		
O-1995	Same as O-1946 except for character (')	Prints impression of character "n"		N17-T-350013-856	CTT 150150	150150	O-1995	1		O		
O-1997	Same as O-1817	Left side frame bearing for O-2017										
O-1998	LEVER: steel, irregular shape, o/o arm w/formed ear & body can lever w/fin on end and link w/ear on end & middle, all parts riveted together, hub welded to link; approx 4 1/2" lg x 1 1/2" h x 1 1/16" wd o/s; mts by two elongated slots in arm, one slot open at one end; LH mtg, two tapped holes in formed ear, one o/s hole in ear at end of link	Positions A-1371										
O-1999	Same as O-1919	Bearing guide for O-1998										
O-2000	Same as O-1922	Bearing guide for O-1998										
O-2001	Same as O-1923	Retains O-1998 on O-2000										
O-2002	SPACER: steel, nobel pl; approx 5/32" lg x 5/16" OD x 1/8" ID o/s; mts by ID	Spaces O-1998 and A-1391										
O-2003	Same as O-1325	Lubricates O-1998, O-1999 and O-2000										
O-2004	Same as O-1926	Applies tension to O-1998										
O-2005	Same as O-1568	Lubricates O-2004										
				N17-T-350014-656	CTT 150383	150383	O-2002	2		O		

O-2006	LHX; steel, nickel pl; rounded ends, body curved near ctr, stud welded to one end, hub welded to other end; approx 2 1/16" lg x 3/4" h x 1/4" wd o/a, 0.043" thk material; mls by ID of hub; LH mfg	Operator O-2007	KT-7-360014-444	CTT	150369	150369	O-2006	1	0	0
O-2007	LWFR; steel, nickel pl; irregular shape, rounded ear and curved forward ear on body curve, one stud and 8 hubs welded to body, elongated hole one end; approx 4 7/16" lg x 1 1/16" h x 5/16" wd o/a, 0.043" thk material; mls by ID of hub near elongated hole, LH mfg	Operator O-1998, O-2009 and O-2011 and allows O-2012 to position O-2015	KT-7-360014-475	CTT	150428	150428	O-2007	1	0	0
O-2008	Same as O-1355	Lubricator B-1998 and O-2007	KT-7-360014-449	CTT	150386	150386	O-2009	1	0	0
O-2009	LHX; steel, nickel pl; straight one side, obtuse other side, both ends rounded, body formed at two places; approx 3 11/16" lg x 11/16" wd x 13/32" h o/a, 0.043" thk material; mls by hole at ea end	Drives A-1310	KT-7-360014-461	CTT	152541	152541	O-2011	1	0	0
O-2010	Same as O-1353	Pivot for O-2011	KT-7-360014-468	CTT	150412	150412	O-2012	1	0	0
O-2011	AM; steel, nickel pl; formed ear at mfg end, irregular shaped slot at bent end; approx 2 11/16" lg x 25/16" h x 3/16" wd o/a, 0.043" thk material; mls by body hole, LH mfg	Operator O-2016	KT-7-360014-485	CTT	150434	150434	O-2016	1	0	0
O-2012	AM; steel, nickel pl; irregular shape w/one rounded and one "i" shaped projections; approx 1 5/8" lg x 1 1/8" h x 1/8" wd o/a, 0.068" thk material; mls by ID of hub welded to a rounded projection; one body and two tapped holes irregularly placed, LH mfg	Mounts and pivots O-2015	KT-7-360014-443	CTT	150345	150345	O-2017	1	0	0
O-2013	Same as O-1355	Lubricator O-2013								
O-2014	Same as O-1359	Applies tension to O-2012								
O-2015	Same as O-1355	Stops O-1998 in one of four vertical positions								
O-2016	BLADE, bd; steel, nickel pl; approx 11 3/16" lg x 7/8" wd x 3/16" h o/a, 0.067" thk material; mls by ear at ea end; elongated obtuse & two small notches one side, stud riveted below notches, elongated slot below stud, indented lengthwise along ctr	Stripe symbols O-1456 through O-1466 from symbols O-1425 through O-1455								
O-2017	SHUTT; steel, nickel pl; sq body w/rounded ends, obtuse one end, banking pressed on other end; approx 11 3/4" lg x 3/8" sq o/a; mls by two tapped holes in obtuse & two tapped holes in body near other end; two body holes & two tapped holes	Drives A-1349, A-1372 and O-2015								

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS			
										EQUIP.		STOCK	
										BOX	QUAN.	BOX	QUAN.
O-2018	PLATE: oas; steel, nickel pl; rectangular shape w/formed ear one side; approx 7/8" lg x 2 1/32" h x 5/32" wd o/a, 0.042" thk material; mts by 2 elongated slots	Operates O-2108		N17-T-350014-639	CTT	150363	150363	O-2018	1	0	0		
O-2028	PLATEN, teletypewriter; aluminum, rubber coated; rubber coated aluminum tube w/hub pressed into ea end; approx 10 5/8" lg x 1 3/4" OD o/a; mts by shanks; longer hub has 3 tapped holes in body and one tapped hole in shank	Supports and advances copy		N17-T-350013-946	CTT	150718	150718	O-2028	1	0	0		
O-2029	BUSHING; bronze; male & female; approx 5/8" OD x 3/8" ID x 3/8" lg o/a, groove in head, 1/2" diam body	Right side frame sleeve bearing for O-2028		N17-T-350014-708	CTT	150714	150714	O-2028, O-2032	2	0	0		
O-2030	DISK, spacing; steel, nickel pl; approx 1 3/4" OD x 1/2" ID x 0.020" thk o/a; mts by ID; three equidistant body holes	Spaces O-2028 and O-2031		N17-T-350014-565	CTT	150998	150998	O-2030	1	0	0		
O-2031	GEAR: spur; steel, nickel pl; straight teeth; 32 teeth; 20 pitch, 1.60" PD; approx 1 11/16" OD x 1/2" ID x 9/32" thk o/a; straight face, dished out in back; mts by ID, 3 body holes	Drives O-2028 automatically		N17-T-350014-288	CTT	150809	150809	O-2031	1	0	0		
O-2032	Same as O-2029	Left side frame sleeve bearing for O-2028											
O-2033	GEAR: spur; steel, nickel pl; o/c hub & gear; straight teeth; 32 teeth; 24 pitch, 1.35" PD; approx 1 13/32" OD x 3/8" ID x 5/16" wd o/a, 0.065" thk material; straight face; hub 1/2" OD x 3/8" ID x 1/4" wd o/a w/9/64" hole one side; mts by ID	Drives O-2028 manually		N17-T-350013-845	CTT	150715	150715	O-2033	1	0	0		
O-2034	HANDWHEEL; molded black bakelite; 30 grooves equally spaced along OD, dished in on one side; approx 1 3/8" OD x 3/16" ID x 1" lg o/a; mts by ID etb on dished side; two body holes through length	Operates O-2028 manually through O-2035, O-2039 and O-2033		N17-T-350013-830	CTT	150656	150656	O-2034	1	0	0		
O-2035	GEAR: spur; steel, nickel pl; straight teeth; 21 teeth; 24 pitch, 0.87" PD; approx 1" OD x 3/16" ID x 0.065" thk o/a; straight face; two #4-40 tapped holes	Drives O-2039		N17-T-350013-931	CTT	150658	150658	O-2035	1	0	0		
O-2036	BUSHING; bearing for platen handwheel; steel; male & female; approx 3/4" OD x 1/8" ID x 5/32" lg o/a, 1/4" diam shank one side of shield, 3/8" diam shoulder on other side	Spaces O-2037 and O-2035 and side frame bearing for O-2034		N17-T-350013-961	CTT	150911	150911	O-2036	1	0	0		

O-2037	LEVER: steel, nickel pl; irregular shape, elongated extent one end, other end tapered to point, body ear and formed ear w/ spring notch, tapered end; approx 5 7/8" lg x 1 9/32" h x 5/16" wd o/a, 0.065" thk material; mts by body hole near pointed end	Disengages O-2043 and O-2046 from O-2031 by O-2040 on manual operation	M17-7-380014-196	CTT	150586	180886	O-2037	1	0	0
O-2038	Same as O-2037.	Applies tension to O-2037						1	0	0
O-2039	GEAR: spur, steel, nickel pl; straight teeth; 28 teeth; 24 pitch, 1.16" PD; approx 1 1/4" OD x 7/32" ID x 1/16" thk o/a; straight face; mts by ID	Drives O-2043	M17-7-380013-234	CTT	150666	180886	O-2039	1	0	0
O-2040	BELL CRANK: steel, nickel pl; irregular shape w/ one end formed w/ 1/4" notch, roller mid by pin riveted near round end; approx 1 1/2" lg x 5/8" h x 5/16" wd o/a, 0.088" thk material; mts by hole in round end	Positions O-2043 and O-2046 on automatic operation and disengages them on manual operation	M17-7-380014-191	CTT	180842	180842	O-2040	1	0	0
O-2041	SPRING: helical extension type; 0.018" diam music wire; approx 1" lg x 5/32" ID x 1/8" ID o/a; approx 36 turns; parallel hook term on end; mts by turns	Applies tension to O-2040	M17-7-380013-608	CTT	22015	22015	O-2041	1	1	1
O-2042	RECEPT: steel, nickel pl; approx 7/8" OD x 5/16" ID x 0.087" thk o/a; mts by large hole off ctr; two body holes off ctr	Retains O-2043 on O-2044	M17-7-380014-188	CTT	180847	180847	O-2042	1	0	0
O-2043	BAR, line feed: steel, nickel pl; irregular shape w/ 3 teeth; approx 4 5/8" lg x 1" wd x 0.087" thk o/a; mts by hole in round end; elongated slot in body	Operates O-2038 on line feed by O-2031 and operates O-2040	M17-7-380013-697	CTT	180885	180885	O-2043, O-2046	2	0	0
O-2044	RECEPT: oilite; approx 3/4" OD x 5/16" ID x 0.064" thk o/a; mts by large hole off ctr; two body holes off ctr	Drives O-2043	M17-7-380014-188	CTT	180848	180848	O-2044, O-2047	2	0	0
O-2045	SPACER: steel, nickel pl; oblong shape, body hole on side of ID; approx 1" h x 2 7/32" wd x 0.087" thk o/a; mts by 5/16" ID	Retains O-2043 on O-2044 and O-2046 on O-2047	M17-7-380014-217	CTT	180849	180849	O-2045	1	0	0
O-2046	Same as O-2043	Operates O-2038 on line feed by O-2031 and operates O-2040								
O-2047	Same as O-2044	Drives O-2046								
O-2048	BEARING: phosphor bronze; approx 5/8" lg x 7/8" OD x 1/4" ID o/a, 5/16" diam and 11/32" diam shafts on ends	Sleeve bearing for O-2044 and O-2047	M17-7-380014-223	CTT	180850	180850	O-2048	1	0	0
O-2049	GEAR: spur; steel, nickel pl; straight teeth; 28 teeth; 24 pitch, 1.16" PD; approx 1 1/4" OD x 5/8" ID x 1/8" thk o/a; straight face; two #4-40 tapped holes	Drives O-2044 and O-2047 through O-2046	M17-7-380014-228	CTT	180851	180851	O-2049	1	0	0

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TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	SPARE PARTS			
									EQUIP.		STOCK	
									BOX	QUAN.	BOX	QUAN.
O-2060	RETAINER: steel, nickel pl; irregular shape w/two formed ears; approx 1 9/16" lg x 1 1/8" h x 1/16" wd o/a, 0.032" thk material; mts by hole in ea end; RH mtg	Retains O-2052 in A-1351		M17-T-350014-238	CTT 150720	150720	O-2050	1	0	0		
O-2061	RETAINER: steel, nickel pl; irregular shape w/2 formed ears; approx 1 9/16" lg x 1 1/8" h x 1/16" wd o/a, 0.032" thk material; mts by hole in ea end; LH mtg	Retains O-2059 in A-1359		M17-T-350015-647	CTT 150719	150719	O-2061	1	0	0		
O-2062	SHAFT: steel, nickel pl; irregular shape, shank and slot at ea end, 3 arms press fitted and soldered to body, tapped hole in one arm; approx 9 15/16" lg x 1 5/16" h x 7/8" wd o/a; mts by 2 body holes in line in end arms	Drives O-2067		M17-T-350016-611	CTT 152555	152555	O-2052	1	0	0		
O-2063	BUSHING: steel, nickel pl; males; approx 11/32" lg x 1/2" across; flats o/a, o/o hex head and body threaded w/3/8" - 32 thd	Left side frame sleeve bearing for O-2052		M17-T-350014-670	CTT 150414	150414	O-2053, O-2065	2	0	0		
O-2064	Same as O-331	Lubricates O-2062 and O-2063										
O-2065	Same as O-2063	Right side frame sleeve bearing for O-2052										
O-2066	Same as O-331	Lubricates O-2062 and O-2065										
O-2067	LINK, lever: steel, nickel pl; rounded ends, radial outout on both sides at otr, stud welded at one end; approx 3/4" lg x 5/8" h x 1/4" wd o/a, 0.065" thk material; mts by stud and body hole	Operates O-2061		M17-T-350016-612	CTT 152543	152543	O-2067	1	0	0		
O-2068	SPACER: steel, black nickel pl; approx 5/16" OD x 5/32" ID x 1/16" thk o/a; mts by ID	Spaces O-2067 and O-2061		M17-T-350015-608	CTT 2481	2481	O-2068	1	1	1		
O-2069	WASHER, felt: hard, white felt; round, approx 7/16" OD x 5/16" ID x 1/32" thk o/a	Lubricates O-2067 and O-2061		M17-T-350014-338	CTT 150930	150930	O-2069, O-2112	2	1	2		
O-2060	Same as O-374	Lubricates H-2055 and O-1821										
O-2061	BALL: steel, nickel pl; formed arm ea end w/body hole in ea, body formed throughout length w/4 equidistant outouts at forming; tapped hole near ea outout; approx 8 1/16" lg x 1 25/32" h x 13/16" wd o/a, 0.065" thk material; mts by 2 body holes in line in end ears	Releases and resets symbols O-1425 through O-1435 by O-2062		M17-T-350015-681	CTT 152716	152716	O-2061	1	0	0		

O-2062	BLADE, ball: steel, nickel pl; lg narrow body w/4 equidistant hooked ears on bottom, ea end tapered to rounded edge from bottom, top straight; approx 9 3/16" lg x 9/16" h x 0.060" thk o/a; mts by elongated hole above ea ear	Adjustable resetting blade for O-2061	N17-T-350015-693	CTT	152715	152715	O-2062	1	0	0
O-2063	POST, pivot: aluminum, plain anodized; o/o head, shoulder, body and shank; approx 1" OD x 3/16" ID x 7/8" lg o/a; mts by ID; two holes in shoulder and oth hole through side of body	Mounts O-2065	N17-T-350014-739	CTT	150423	150423	O-2063	1	0	0
O-2064	POST, pivot: aluminum, plain anodized; o/o head, shield, body and shank; approx 1" OD x 3/16" ID x 1 5/32" lg o/a; mts by ID; two holes in shield and oth hole through side of body	Mounts O-2078	N17-T-350014-682	CTT	150398	150398	O-2064	1	0	0
O-2065	SHATT: steel; approx 1 5/16" lg x 3/16" diam o/a; mts by tapped hole in ctr	Right end pivot for O-2061	N17-T-350014-634	CTT	150419	150419	O-2065, O-2072	2	0	0
O-2066	Same as O-331	Lubricates O-2061, O-2065 and O-2078								
O-2067	ROD, aluminum, plain anodized; approx 10" lg x 5/16" across flats o/a; mts by tapped hole ea end	Tie bar for A-1389 and A-1391	N17-T-350015-761	CTT	151627	151627	O-2067	1	0	0
O-2068	BLOCK, guides: black bakelite; oth body hole, outout and irregular shaped groove in front, outout and two body holes in back; approx 3 1/4" lg x 1 5/32" h x 19/32" wd o/a; mts by two body holes near groove, RH mtg	Mounts O-2077 to A-1389	N17-T-350014-326	CTT	150904	150904	O-2068	1	0	0
O-2069	SPRING, helical compression type; 0.020" diam music wire; approx 1 1/2" lg x 5/32" OD x 1/8" ID o/a; approx 26 turns; right hand; closed ends; mts by ID	Applies pressure to O-2070	N17-T-350013-617	CTT	85407	85407	O-2069, O-2074	2	1	1
O-2070	PLATE: steel, nickel pl; irregular shape w/wing and formed ear; approx 2 1/8" lg x 7/8" h x 1/4" wd o/a, 0.065" thk material; mts by 2 elongated slots, one w/rounded outout at one end; RH mtg	Retains O-2077 in outout of O-2068	N17-T-350014-329	CTT	150910	150910	O-2070	1	0	0
O-2071	BUSHING, steel, nickel pl; male and female; approx 1/4" across flats x #4-40 tapped ID x 1/8" lg o/a, 3/16" diam body	Guide for O-2070 and holds O-2068 and O-2070 to A-1389	N17-T-350003-388	CTT	95030	95030	O-2071, O-2076, O-2078	4	0	0
O-2072	Same as O-2065	Left end pivot for O-2061								
O-2073	BLOCK, guides: black bakelite; oth body hole, outout and irregular shaped groove in front, outout in back; approx 5 1/4" lg x 1 5/32" h x 27/32" wd o/a; mts by two body holes near groove, LH mtg	Mounts O-2077 to A-1391	N17-T-350014-326	CTT	150903	150903	O-2073	1	0	0

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	PARTS		
								PER EQUIP.	EQUIP.	STOCK
								BOX	QUAN.	BOX
O-2074	Same as O-2069	Applies pressure to O-2075								
O-2075	PLATE: steel, nickel pl; irregular shape w/wing and formed ear; approx 2 1/8" lg x 7/8" h x 1/4" wd o/a, 0.065" thk material; mts by two elongated slots, one w/rounded outout at one end; LH mtc	Retains O-2077 in outout of O-2073		N17-T-350013-892	CTT 150935	150935	O-2075	1	0	0
O-2076	Same as O-2071	Guide for O-2075 and holds O-2073 and O-2075 to A-1391								
O-2077	SPINDLE: paper; steel, nickel pl; hex tubing w/flat spring riveted on two sides w/ends inserted in body holes, bracket welded on by three ears on one end, approx 9 7/16" lg x 1 7/16" diam o/a, hex tubing 27/32" across flats; mts by ends	Spindle for roll paper		N17-T-350013-891	CTT 150907	150907	O-2077	1	0	0
O-2078	Same as O-2071	Guide for O-2070 and holds A-1333, O-2068 and O-2070 to A-1389								
O-2088	WICK: lubricating wick; hard, white felt, w/o spring; approx 1/2" lg x 1/4" wd x 1/16" thk o/a; elongated slot in ctr	Lubricates A-1355		N17-T-350005-830	CTT 93879	93879	O-2088	1	1	1
O-2089	BALL: steel, nickel pl; "u" formed strip, 2 body holes in base and 2 body holes in line in sides; approx 9 29/32" lg x 1 7/32" h x 5/16" wd o/a, 0.065" thk material; mts by two body holes in line at end of sides	Operates O-2094		N17-T-350014-277	CTT 150792	150792	O-2089	1	0	0
O-2090	WASHER, felt; hard, white felt; round 3/16" ID x 9/16" OD x 1/32" thk	Lubricates H-2083, H-2096 and O-2089		N17-T-350005-817	CTT 90752	90752	O-2090	2	1	1
O-2091	Same as O-1368	Applies tension to O-2089								
O-2092	WICK: lubricating wick; hard white felt, w/o spring; 1/2" lg x 3/32" diam o/a	Lubricates O-2091		N17-T-350001-801	CTT 74553	74553	O-2092	2	0	0
O-2093	BAR, guide: steel, nickel pl; approx 10" lg x 1/2" wd x 3/16" thk o/a; mts by 2 tapped holes in ea end; outout near ea end on one side, 3 slots across width on bottom at one outout, 5 slots at other outout, 5 stb holes through top	Guide for O-2095, O-2096 and O-2097		N17-T-350014-320	CTT 150894	150894	O-2093	1	0	0
O-2094	SLIDER: steel, nickel pl; one end rounded, other end squared, body ear at bend, pin riveted below outout; approx 2 7/8" lg x 15/16" h x 13/16" wd o/a, 0.060" thk material; mts by elongated slot in rounded end	Suppresses spacing by preventing O-2113 from latching O-1746		N17-T-350014-892	CTT 152516	152516	O-2094	1	1	1

O-2096	ARM steel, nickel pl; irregularly shaped and formed body, ear at narrow end; approx 2 1/16" lg x 5/8" wd x 5/16" h o/a, 0.045" thk material; mts by rectangular slot at wd end of body	Operates O-2116	N17-T-360014-661	CTT	150377	150377	O-2096	1	O	C
O-2096	ARM steel, nickel pl; approx 1 1/16" lg x 3/16" wd x 0.042" thk o/a; mts by lg outout along one side of body; ear one end of mtg outout	Operates O-2104	N17-T-360014-579	CTT	150661	150661	O-2096	1	O	C
O-2097	ARM steel, nickel pl; strip across one end, outout one side, other hook formed; approx 3 1/32" lg x 1/16" h x 1/8" wd o/a, 0.042" thk material; mts by outout portion of body	Operates O-1762	N17-T-360014-562	CTT	150919	150919	O-2097	1	O	C
O-2098	SPRING, torsion type, 0.042" diam music wire; approx 1 1/16" h x 3/8" lg x 7/32" wd o/a; 12 turns; RH; hooked ends; mts by ends	Applies pressure to O-2106	N17-T-360014-861	CTT	161713	161713	O-2098	1	1	1
O-2099	BAIL steel, nickel pl; irregular "U" shape, both sides extend in different directions, one formed at end, elongated outout and formed ear on end of other side; approx 1 5/16" lg x 1/2" h x 1 1/4" wd o/a, 0.046" thk material; mts by two holes in sides of "U"	Operates O-2102	N17-T-360014-679	CTT	180434	180434	O-2099	1	O	C
O-2100	WASHER, felt; hard, white felt; round, approx 9/16" OD x 5/16" ID x 1/8" thk o/a	Lubricates H-2115 and O-2099	N17-T-360013-607	CTT	4586	4586	O-2100	2	1	1
O-2101	SPRING, helical extension type; 0.012" diam music wire; approx 5/8" lg x 5/32" OD x 1/8" ID o/a; approx 28 turns; parallel hook term on end; mts by term	Applies tension to O-2099	N17-T-360006-542	CTT	82463	82463	O-2101	1	1	1
O-2102	BAIL steel, nickel pl; one end "U" formed w/formed arm, other end 90° formed; approx 1 9/16" lg x 5/8" h x 3/4" wd o/a, 0.060" thk material; mts by two holes in line in sides of "U"	Suppresses spacing when carriage is at extreme right by positioning O-2094	N17-T-360014-991	CTT	162618	162618	O-2102	1	O	C
O-2103	Same as O-331	Lubricates O-2102								
O-2104	LEVER, steel, nickel pl; "L" shaped lever w/hub welded to corner and push bar riveted to one end; approx 3 13/32" lg x 1 7/32" h x 25/32" wd o/a; mts by ID of hub; oak hole in narrow p/o "L"	Operates O-280	N17-T-360015-678	CTT	162708	162708	O-2104	1	C	O
O-2105	SPRING, helical extension type; 0.014" diam music wire; approx 5/8" lg x 3/16" OD x 5/32" ID o/a; approx 26 turns; hook term on end indexed 90°; mts by term	Applies tension to O-2104	N17-T-360006-401	CTT	7965	7965	O-2105	1	O	O

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO EQUIP.	EQUIP. STOCK		
					C	O				QUAN.	BOX	QUAN.
O-2106	BALL, steel, nickel pl; irregularly curved and formed, one end "u" formed; approx 1 27/32" lg x 19/32" h x 5/8" wd o/a, 0.042" thk material; mts by 2 body holes in line in "u" formed end	Operates O-2107		N17-T-350014-843	CTT	150913	160913	O-2106	1	0	0	
O-2107	STRIPPER; steel, chrome nickel; irregular shape, elongated outout at end, two formed ears at end; approx 1 5/8" lg x 1/8" h x 7/16" wd o/a, 0.042" thk material; mts by elongated slot in larger end; tapped hole near smaller end	Strips O-1462 and O-1453 from O-1453 and O-1454		N17-T-350014-844	CTT	150915	160915	O-2107	1	0	0	
O-2108	BALL, steel, nickel pl; irregular shape, one end "u" formed w/formed ear w/one spring notch, other end has body hole and formed spring notched ear; approx 1 5/16" lg x 27/32" h x 21/32" wd o/a, 0.065" thk material; mts by ID of hub welded to side of "u" and body hole in line	Operates O-2113		N17-T-350015-350	CTT	152514	152514	O-2108	1	0	0	
O-2109	SPRING; helical extension type; 0.022" diam music wire; approx 7/8" lg x 1/4" OD x 5/16" ID o/a; approx 18 turns; parallel hook term at end; mts by term	Applies tension to O-2108		N17-T-350006-540	CTT	82442	82442	O-2109	1	1	1	
O-2110	Same as O-370	Lubricates O-2018 and O-2108										
O-2111	Same as O-214	Lubricates O-2108 and riveted stud on A-1381										
O-2112	Same as O-2059	Lubricates O-2108 and O-2113										
O-2113	LEVER; steel, nickel pl; irregular shape, 3 arms extending from body, one rounded and formed, one spring notched and one w/rectangular extension at end and squared outout in corner; approx 2 5/32" lg x 1 1/8" h x 7/16" wd o/a, 0.050" thk material; mts by stud welded to body	Operates spacing clutch by engaging O-1746		N17-T-350015-351	CTT	152515	152515	O-2113	1	0	0	
O-2114	Same as O-381	Applies tension to O-2113										
O-2115	SHAFT; stainless steel; approx 3 3/8" lg x 1/4" diam o/a; mts by tapped hole in ea end; body slot	Pivot for O-2116 and O-2118		N17-T-350014-683	CTT	150399	150399	O-2115	1	0	0	
O-2116	BALL; steel, nickel pl; irregular shape, "u" formed near one end, ear at end; approx 3 5/16" lg x 3/4" h x 1 3/16" wd o/a, 0.050" thk material; mts by two holes in line in sides of "u"; body hole near ear	Operates O-2118		N17-T-350014-688	CTT	150392	150392	O-2116	1	0	0	

Part Number	Description	Material	Quantity	Part Number	Description	Material	Quantity
O-2117	Same as O-2111		1	O-2118	Lubricates O-2115, O-2116 and O-2118		1
O-2118	LWFR: steel, nickel pl; two ears one end w/rounded outout between, other end rounded w/lq irregular shaped arm; approx 2 1/32" lg x 1 9/16" h x 0.078" wd o/a, 0.087" thk material; mts by body hole w/smaller opening on extruded side; tapered hole near outcut, o/dk hole in arm		1	O-2119	Pressure plate for O-2120		1
O-2119	SEHS: steel, approx 1/4" ID x 7/16" OD x 0.008" thk o/a; mts by ID		1	O-2120	Applies pressure to O-2118		1
O-2120	SPRING: helical compression type; 0.020" diam music wire; approx 5/16" lg x 5/16" OD o/a; 15 turns; elosed ends		1	O-2121	Applies tension to O-2118		1
O-2121	SPRING: helical extension type; 0.014" diam music wire; approx 3/4" lg x 3/16" OD o/a; approx 32 turns; hook terms indexed 90°		1	O-2122	Pressure roller guide for copy paper		1
O-2122	SHAFT: steel, nickel pl; approx 10" lg x 7/32" diam o/a; mts by short shank on end		1	O-2123	Guide for keeping copy paper centered		1
O-2123	COLLAR: aluminum, plain unpolished; approx 1/4" lg x 5/8" OD x 7/32" ID o/a; mts by ID; 2 tapped holes to ID in circum, circum tapered to one side		1	O-2124	Pressure arm and bearing for O-2122		1
O-2124	LWFR: steel, nickel pl; flat elongated shape w/bend in middle having small hole at ea end, one skt on both sides; approx 1 1/2" lg x 1/2" wd x 0.087" thk o/a; mts by large ctr hole		1	O-2125	Spacers O-2124 from A-1389 and A-1391		1
O-2125	BUSHING: steel, nickel pl; male and female; approx 5/16" OD x 1/8" ID x 1/4" lg o/a, 3/16" diam shoulder		1	O-2126	Applies tension to O-2124		1
O-2126	Same as O-2121		1	O-2127	Manually operates O-2134		1
O-2127	LWFR: stainless steel; one end formed, round ear near round end, stud riveted to ear; approx 1 1/8" lg x 5/8" h x 1" wd o/a; 0.050" thk material; mts by hole in rounded end; formed end marked "PAPER RELEASE"		1	O-2128	Pivot for O-2127		1
O-2128	Same as O-2126		1	O-2129	Positions O-2131 and O-2132		1
O-2129	PLATE: steel; irregular shape w/formed ear w/"v" notch; approx 5/8" lg x 5/8" h x 10 1/2" wd o/a, 0.060" thk material; mts by shaft riveted to body		1				

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS										SPARE PARTS		
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	PER EQUIP.	BOX	QUAN.	BOX	QUAN.
O-2130	SPRING; helical extension type; 0.024" diam music wire; approx 11 1/16" lg x 3/16" OD x 1/8" ID o/a; approx 15 turns; parallel hook term ea end; mts by terms	Applies tension to O-2129		N17-T-350012-717	CTT 72468	72468	O-2130	1	1	1	1	
O-2131	FINGER, paper; steel; nickel pl; "u" shaped on one end w/one side extending forward w/end formed; approx 1 3/4" lg x 7/8" h x 1/2" wd o/a; 0.050" thk material; mts by two flat sided holes in line in sides of "u"; RH mtg, formed end has cross hatched area	Clamps right side of paper to O-2028		N17-T-350014-284	CTT 150804	150804	O-2131	1	0	0	0	
O-2132	FINGER, paper; steel; nickel pl; "u" shaped on one end w/one side extending forward w/end formed; approx 1 3/4" lg x 7/8" h x 1/2" wd o/a; 0.050" thk material; mts by two flat sided holes in line in sides of "u"; LH mtg, formed end has cross hatched area	Clamps left side of paper to O-2028		N17-T-350014-286	CTT 150826	150826	O-2132	1	0	0	0	
O-2133	SPRING; flat type; 0.015" thk nickel silver; approx 7/8" lg x 5/16" wd x 1/8" formed curve o/a; mts by ear on ea end	Friction spring for O-2131 and O-2132		N17-T-350014-283	CTT 150803	150803	O-2133	1	0	0	0	
O-2134	LINK; steel nickel pl; approx 3 1/16" lg x 5/16" wd x 0.042" thk o/a; mts by body hole at ea end	Operates O-2141		N17-T-350013-976	CTT 150270	150270	O-2134	1	0	0	0	
O-2135	GUIDE, paper; steel; nickel pl; one side irregularly formed, both ends formed w/2 ribs in ea corner, body slot near one end, body hole near other end; approx 10" lg x 7/8" wd x 1 1/8" h o/a, 0.035" thk material; mts by two slots and 2 body holes in line in formed ends	Guides paper to O-2122		N17-T-350014-990	CTT 152559	152559	O-2135	1	0	0	0	
O-2136	BALL; steel; nickel pl, irregular formed w/three outcuts one side, irregular shaped formed ear on ea end in line; approx 10 3/16" lg x 1 1/8" h x 5/8" wd o/a, 0.035" thk material; mts by two holes in line in formed ears	Guides and clamps paper to O-2028 and disengages O-2137 from paper when released		N17-T-350014-115	CTT 150098	150098	O-2136	1	0	0	0	
O-2137	ROLLER, pressure; black bakelite; approx 1 5/8" lg x 7/16" diam o/a; mts by shank ea end	Roller for and advances paper around O-2028		N17-T-350013-974	CTT 150269	150269	O-2137, O-2147	9	0	0	0	
O-2138	GUIDE, lever; steel nickel pl; irregular shape, one arm w/ear on side, outcut near one end; approx 3/4" lg x 1 1/16" h x 0.065" thk o/a; mts by hole near pointed end	Pivot for and applies pressure to O-2137		N17-T-350013-972	CTT 150266	150266	O-2138, O-2145	12	0	0	0	

Part Number	Description	Material	Quantity	Notes	Part Number	Description	Material	Quantity	Notes
O-2139	SPIRING, helical compression type; 0.030" diam music wire; approx 1 1/16" lg x 1/8" diam o/a; approx 26 turns; closed ends	N17-7-350015-584	2	0	0	CTT	158725	158725	0-2139
O-2140	SHAFT; steel; approx 9 7/8" lg x 3/32" diam o/a; mts by amc	N17-7-350013-971	2	0	0	CTT	158245	160245	0-2140, O-2143
O-2141	ARM; steel, nickel pl; curved near otr w/rounded ends, stud riveted one end, detent shaft riveted to other end; approx 9 5/8" lg x 5/8" h x 13/16" wd o/a, 0.035" thk material; mts by detent shaft	N17-7-350013-976	1	0	0	CTT	158271	160271	0-2141
O-2142	BAR, cross, aluminum, plain endmilled; approx 10" lg x 9/16" h x 1/2" h o/a; mts by 2 tapped holes on ea end; slot through entire length, 16 body slots, 16 body holes	N17-7-350014-114	1	0	0	CTT	158097	160097	0-2142
O-2143	Same as O-2140								
O-2144	GUIDE, paper; steel, nickel pl; irregularly formed and shaped body w/three outcuts, three fingers on ea side of outcuts, all middle fingers formed; approx 8 15/16" lg x 1" h x 1 5/16" wd o/a; mts by hole in ea formed finger	N17-7-350014-112	1	0	0	CTT	158089	160089	0-2144
O-2145	Same as O-2139								
O-2146	SPIRING, helical compression type; 0.030" diam music wire; approx 1 7/32" lg x 1/8" diam o/a; approx 30 turns; closed ends	N17-7-350015-585	1	1	1	CTT	158723	158723	0-2146
O-2147	Same as O-2137								
O-2155	GUIDE; steel, nickel pl; irregular shape, both sides formed, 2 body holes in wd end, 2 mtg ears on body; approx 3 25/32" lg x 1 1/16" h x 9/32" wd o/a, 0.042" thk material; mts by elongated slot and body hole in mtg ears	N17-7-350013-586	1	0	0	CTT	158579	160579	0-2155
O-2156	ROLL, steel, nickel pl; irregular shape, "U" shaped one end, stud riveted and welded to other end; approx 1 3/16" h x 1 5/8" lg x 1/4" wd o/a, 0.042" thk material; mts by two holes in line in sides of "U"	N17-7-350014-323	1	0	0	CTT	158900	160900	0-2156
O-2157	SUBEND; steel, nickel pl; male and female; approx 5/16" across flats x #40 off otr ID x 11/32" lg o/a, 1/4" diam body	N17-7-350014-704	1	0	0	CTT	158941	160941	0-2157

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST											
PARTS										SPARE PARTS	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFAC- TURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. OF EQUIP.	EQUIP.	
					C	O				BOX	QUAN.
O-2158	SPRING; torsion type; 0.040" diam music wire; approx 1 7/8" lg x 3/16" h x 3/8" wd o/a; 2 1/4 turns; left hand turns	Applies Pressure to O-2156		N17-T-350014-554	CTT	150969	150969	O-2158	1	0	0
O-2159	GUIDES; steel; nickel pl; approx 1 3/4" lg x 3/8" h x 1/4" wd o/a, 0.028" thk material; mts by hole and elongated slot in body; three formed prongs on one end of body	Guide for O-2043 and O-2046		N17-T-350013-590	CTT	150664	150664	O-2159	1	0	0
O-2160	LEVERS; steel; nickel pl; irregularly shaped and formed, two rounded projections near "L" shaped end, other end rounded; approx 3 13/16" lg x 1 7/8" h x 3/8" wd o/a; 0.065" thk material; mts by hole in bend near otr of body	Positions O-2107 in stripping or disengaged position by shifting O-2016		N17-T-350014-324	CTT	150902	150902	O-2160	1	0	0
O-2161	Same as O-2160	Bearing roller for O-2160									
O-2162	GUIDES; steel; nickel pl; irregular shape w/sides 1/4" formed and two ears; approx 5 7/8" lg x 1 1/8" h x 1/4" wd o/a; 0.042" thk material; mts by hole and elongated slot in ears; LH mtg	Guide for A-1325		N17-T-350013-582	CTT	150569	150569	O-2162	1	0	0
P-601	PLUG, machine thread; steel, nickel pl; approx 5/32" lg x 13/32" diam o/a; mts by 3/32" lg 3/8" x 32 threaded shank; slot drive across head	Plug for A-607		N17-T-350014-940	CTT	152035	152035	P-601	1	0	0
P-1101	CONNECTOR, plug; 20 round female contacts; straight; approx 2 7/32" h x 2 7/32" lg x 1 23/32" wd o/a; rectangular shaped aluminum body, molded black phenolic insert; includes cable clamp, one guide pin on face and formed ear at both ends of face, and opening	Termination for and connects W-1101 to J-101		N17-T-350015-874	CTT	152465	152465	P-1101	1	0	0
P-1102	CONNECTOR, plug; 20 round female contacts; straight; approx 2 13/32" lg x 1 23/32" h x 1 3/32" wd o/a; rectangular shaped aluminum body; molded black phenolic insert; includes cable clamp, one guide pin on face and formed ear at both ends of face, side opening	Termination for and connects W-1101 to J-1301		N17-T-350015-875	CTT	152466	152466	P-1102	1	0	0
R-601	RESISTOR, fixed; 250 ohms; 40w at 300°C max continuous oper temp; approx 2" lg x 1 7/16" h incl terms x 3/8" wd o/a; vitreous enamel coating; 2 radial tab term; mts by 2 slots through lg of body	Offers resistance to series motor		N17-T-350015-113	CTT	152054	152054	R-601	1	0	0
R-1101	RESISTOR, fixed; 250 ohm ± 10%; 5w; 340°C; approx 1" lg x 5/16" OD x 3/16" ID; vitreous enamel, humidity resistant; 2 tabs 7/16" lg x 3/16" wd w/2 #16 wire leads 1 1/2" lg	Line balancing resistance for use in 20 mil operation		N16-R-70827-6664	CAO	5P-225-Vitrohm	161439	R-1101	1	0	0

Part Number	Description	Part Number	Description	Part Number	Description	Part Number	Description	Part Number	Description	Part Number	Description
8-101	SWITCH, sensitive; DPDT; rated 15 amp 115v AC; bakelite case; approx 1 5/8" lg x 1 1/8" wd x 5/16" thk o/a; actuation by stainless steel plunger; 6 on operating pressure; actuating mechanism travel differential 0.075"; pressure 1/32" max; overtravel 0.085" min; momentary action; beryllium copper terminals; mts by 4 body holes	8-101, 8-103	151359	8-101, 8-103	2	0	0				
8-103	Same as 8-101										
8-101	SWITCH, thermostatic; SPDT; operated on current operated device; 11 amp; bakelite; approx 1 1/2" lg x 5/8" wd x 7/8" h o/a; wire lead term; mts by cutout on end	8-101	151359	8-101	1	0	0				
8-101	SWITCH, toggle; DPDT	8-101	151359	8-101	1	0	0				
8-1101	SWITCH, toggle; DPDT	8-1101	151359	8-1101	1	0	0				
8-1102	SWITCH, toggle; DPDT, 3 position (center position - OFF); 4 amp, 115v AC, 20 amp, 24v DC; bakelite body; approx 1 5/16" lg x 3/4" wd x 25/32" h o/a body diam; 25/32" lg bat type handle; locking action; solder lug term; single hole mfg bushing 15/32" - 23 thd, 16/32" lg	8-1102	151359	8-1102	1	0	0				
8-1104	SWITCH, sensitive; DPDT, 2 position; 125 v AC, 60 cps, 10 amp non inductive load; phenolic body; approx 2 1/8" lg x 9/16" wd x 7/16" h o/a; snap-action actuated; 3 to 8 psi oper pressure; 1/32" to 1/16" overtravel; one coat normally closed; solder lug term; mts by hole at end	8-1104, 8-1105	151359	8-1104, 8-1105	2	0	0				
8-1105	Same as 8-1104										
7-751	TRANSFORMER, power; filament type; 117v, 50-40 cps, single phi; one output winding; need 6.3v, 6 amp, otr tapped; 1600 v insulation; varnish impregnated; metal cover one side; approx 5 1/16" lg x 2 29/32" wd x 2 5/8" h o/a, insul bracket and cover; 4 CTT 30105 term at end of 15" lg four conductor cables; mts by three 7/32" diam holes in bracket	7-751	151359	7-751	1	0	0				

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

PARTS										SPARE PARTS			
SYMBOL DESIGN.	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS MFG DESIG.	TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP.	STOCK			
									BOX	QUAN.	BOX	QUAN.	
TB-101	BOARD, terminal; 4 nickel pl steel terminals; term 3/8" between otrs, w/barriers; black bakelite; approx 2 5/16" lg x 1 1/2" wd x 1/2" h o/a; mtg hole ea end	Terminal board for W-101		N17-T-350013-729	CTT 151415	151415	TB-101	1	0	0			
SYMBOL DESIGNATION TB-751 USED ON CY-870/UG AND CY-871/UG CABINETS													
TB-751	BOARD, terminal; general purpose; 10 brass nickel pl #6-32 thd screw terminals; term 7/16" between otrs, w/barriers; molded phenolic board; 5 1/8" lg x 1 1/8" wd x 1/2" thk o/a; four 0.178" diam mtg holes on 27/64" x 4 1/2" mtg/c	Terminal board for W-1101		N17-B-77957-4697	CJC 10-141	118759	TB-751, TB-752, TB-753	3	0	0			
TB-752	Same as TB-751	Terminal board for W-1101, XI-751 and W-751											
TB-753	Same as TB-751	Terminal board for W-1101											
TB-1101	BOARD, terminal; 9 nickel pl steel screw terminals; term 5/8" between otrs, w/barriers; black bakelite; approx 4 3/16" lg x 1 1/2" wd x 1/2" h o/a; 5/16" mtg hole ea end	Terminal board for W-1101		N17-T-350013-728	CTT 151411	151411	TB-1101, TB-1102, TB-1104	3	0	0			
TB-1102	Same as TB-1101	Terminal board for W-1101											
TB-1104	Same as TB-1101	Terminal board for W-1101 and W-1103											
W-101	CABLE ASSEMBLY, special purpose; laqueered cotton braid covering; 10 conductors, #18 and #22 AWG stranded copper wire; look stitch covered w/vinylite tape; approx 11 1/2" o/a; color coded; 17 breakouts w/tinned ends, two breakouts w/teletype #151626 terms soldered on ends, two breakouts folded and taped back on one end	Connects J-101 with TB-101, S-101, S-102 and Z-101		N17-T-350014-864	CTT 151348	151348	W-101	1	0	0			
W-501	CABLE ASSEMBLY, special purpose; laqueered cotton braid covering; 3 conductors, #18 AWG stranded copper wire; bound w/#6 lacing twine; approx 12" lg o/a; 2 conductors w/CTT 151626 terms and covered w/2" lg vinyl plastic flexible tubing one end, 4 conductors skinned and tinned other end, vinyl plastic flexible tubing in otr, tied at ends w/#6 lacing twine	Connects synchronous motor with TB-101		* N17-T-350015-112	CTT 151927	151927	W-501	1	0	0			

* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.

"Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated."

W-601	CABLE ASSEMBLY, special purpose; lacquered cotton braid covering; 2 conductors, #16 AWG stranded copper; covered w/12" lg tubing and tied w/#6 lacing twine; approx 14 3/4" lg o/a; color coded; both conductors timed one end, CTT #151826 terms soldered on other end	Connects series motor with Z-601	W-601	1	C	O
W-751	CABLE ASSEMBLY, special purpose; lacquered cotton braid covering; two conductors, #18 AWG copper stranded wire; laced w/#6 lacing twine; approx 34 1/4" lg o/a; color coded; 2 CTT #151826 terms one end, one breakout w/CR #12501 MS switch, 2 CATZ #12-71 sockets spliced to cable	Connects S-751, ZE-751 and ZE-752 with TB-752	W-751	1	O	O
W-1101	CABLE ASSEMBLY, special purpose; lacquered cotton braid insulation; 65 conductor cable w/#18 and #6 AWG stranded copper wire; cable is laced w/#6 lacing twine, except where covered w/tubing or tape; approx 99" lg o/a; color coded; CTT #151826 term soldered to 47 leads, CTT #107398 term soldered to 2 leads, 10 leads soldered to CTT #152465 connector, 20 leads soldered to CTT #152466 connector, 31 leads skinned, twisted and timed and 14 spare leads taped in 2 groups, cable clamped to power distribution panel at 2 places by 2 CTT #118508 washers and 2 CRU #112 clamps	Main power supply cable, connects power distribution panel with motor unit, cabinet, keyboard and autum-tile typer	W-1101	1	C	O
W-1103	CABLE ASSEMBLY, special purpose; lacquered cotton braid covering; 12 conductors, #18 and #60 AWG copper stranded wire; look stitch covered w/vinylite tape; approx 10" lg o/a; color coded; o/o short body w/4 arms w/24 leads irregularly spaced, 8 conductors have CTT #151826 terminals soldered on, remaining conductors skinned, twisted and timed	Connects W-1101 with motor control mechanism through TB-1104	W-1103	1	O	O
W-1301	CABLE ASSEMBLY, special purpose; lacquered cotton braid covering; 2 conductors, #22 AWG stranded copper wire; look stitched, covered w/vinylite tape, heat seal; approx 13 1/2" lg; color coded; both conductors timed both ends	Connects E-1301 and E-1302 with J-1301	W-1301	1	O	O
W-1302	CABLE ASSEMBLY, special purpose; lacquered cotton braid covering; four conductors, #26 AWG stranded copper wire; look stitched w/#6 lacing twine and covered w/black vinyl plastic flexible tubing; approx 8" lg o/a; color coded; four CTT #151826 terms soldered to conductors one end, conductors skinned, twisted and timed other end	Connects E-608 and E-609 with J-1301	W-1302	1	O	O

* Not furnished as a maintenance part. If failure occurs, do not request replacement unless the item cannot be repaired or fabricated.

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST

TABLE 8-4. COMBINED PARTS AND SPARE PARTS LIST												
PARTS												
STANDARD SYMBOL	NAME OF PART AND DESCRIPTION	FUNCTION	JAN OR NAVY TYPE DESIGNATION	STANDARD NAVY STOCK NUMBER	MANUFACTURERS		TELETYPE PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	SPARE PARTS			
					DESIG.	QTY			BOX	EQUIP.	STOCK	TOTAL REQUIRED
W-1306	WIRE POPS, 3/64" diam; braided; approx 20 11/16" lg o/a; 1/4" diam eye term at one end	Advances printing carriage mechanism by A-1306 and advances type box by O-1708		W17-2-380014-888	CTT	160825	160825	W-1306	1	1	1	
W-1307	WIRE POPS, 3/64" diam; braided; approx 60 8/9" lg o/a; 1/4" diam eye term at one end	Tension cable between O-1713 and O-1722		W17-2-380014-888	CTT	160712	160712	W-1307	1	1	1	
SYMBOL DESIGNATION XL-751 USED ON CT-570/UG AND CT-571/UG CABINETS												
XL-751	LAMPHOLDER, candleabra bayonet type; steel shell body; 110°; approx 15/16" h x 5/8" wd x 1" lg o/a; 5/8" diam socket; mts by elongated slot in bracket; mfg bracket w/body hole and mfg slot located parallel to socket; 2 wire leads 3 3/4" lg	Socket for E-751		W17-1-51706-8801	CAVZ	12-71	161840	XL-751, XL-757	2	0	0	
XL-752	Same as XL-751	Socket for E-752										
XP-1101	HOLDER, base; extractor post type; for single 1/4" diam x 1 1/4" lg cartridge fuse; bakelite body; 18 mps; 2 1/8" lg x 5/8" diam o/a; mts by 1/2" x 20 threaded shoulder w/mnt and rubber washer; 2 solder lug term	Holder for P-1101		W17-2-74357-5075	CFA	KIP	116765	XP-1101, XP-1102	2	0	0	
XP-1102	Same as XP-1101	Holder for P-1102										
SYMBOL DESIGNATION XL-751 USED ON CT-570/UG AND CT-571/UG CABINETS												
XL-751	LAMPHOLDER, candleabra bayonet; steel shell body; 110°; approx 18/16" h x 5/8" wd x 1" lg o/a; 5/8" diam socket; mts by elongated slot in bracket; mfg bracket located parallel to socket; CAVZ #13-71 socket w/3 3/4" lg conductors applied to approx 29 1/4" lg 2 conductor cable w/ CTT #131256 term soldered on end	Holder for and connects I-751 with Th-752		W17-2-380014-770	CTT	161855	161855	XL-751	1	0	0	
Z-101	SUPPRESSOR, electrical noise; choke coil and capacitor; approx 3 7/8" lg x 1 1/2" wd x 1 1/8" h o/a; dim of case incl capacitor, 1 1/4" mps; 600v DC; rectangular metal case; mts by 2 #6-40 tapped holes 2 5/8" o to o in bracket soldered to case; 3 solder lug terms inside case; 2 conductor cable enclosed in copper tubing, irregularly formed, soldered together five places and to one end of case near figures "1" and "2" stamped in case, cable 7 5/8" lg o/a, two Erio #682 feed through capacitors covered w/bakelite caps on one end of case as cable	Signal line radio interference suppressor		W17-2-380014-911	CTT	161869	161869	Z-101	1	0	0	

Part Number	Description	Material	Quantity	Unit	Notes
2-601	SUPPRESSOR, electrical noise; coil and capacitor; approx 2 3/16" lg x 2 3/16" wd incl term x 1 1/4" h o/a; 1 1/4 amp, 160v AC; rectangular metal case; five solder lug term; hermetically sealed	151985	1	O	
2-761	SUPPRESSOR, electrical noise; capacitor and coil; approx 5 13/16" lg x 2 1/4" wd x 1 5/8" h o/a diam of case incl mcg brackets; 2.5 amp, 160v AC; rectangular metal case; two 3/16" diam mcg holes in mcg brackets 5 1/4" o to o; 2 screw term; 7/8" diam hole in bottom of case, 2 conductor cable 34" lg w/CTT #151266 term on end, "ELECTRICAL NOISE SUPPRESSOR 2.5 AMP 160 V.A.C. 1478 INDUSTRIAL COND. CORP., CHICAGO, ILL. USA" printed on top of case	151985	2	O	
2-782	Same as 2-761	151985	2	O	

ORIGINAL

8-177

TABLE 8-5. CROSS REFERENCE PARTS LISTS

JAN DENOMINATION	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL
ST13A	S-751	N17-T-350006-300	H-1554	N17-T-350013-589	A-1348	N17-T-350013-795	O-334
ST23N	S-1101	N17-T-350006-301	O-285	N17-T-350013-590	O-2159	N17-T-350013-797	H-330
Federal Stock Number	Key Symbol	N17-T-350006-313	O-1304	N17-T-350013-591	O-1667	N17-T-350013-798	H-329
	C-501	N17-T-350006-330	O-372	N17-T-350013-595	O-2129	N17-T-350013-799	H-337
N16-C-19925-1001		N17-T-350006-358	O-1119	N17-T-350013-596	O-1422	N17-T-350013-800	H-246
N16-C-301927-918		N17-T-350006-362	O-281	N17-T-350013-598	O-1653	N17-T-350013-801	H-1355
N16-C-47329-8332		N17-T-350006-393	O-146	N17-T-350013-599	O-1695	N17-T-350013-802	H-601
N16-R-70327-6664		N17-T-350006-396	O-134	N17-T-350013-600	O-1697	N17-T-350013-806	O-604
N17-B-77937-4697		N17-T-350006-401	O-2105	N17-T-350013-601	O-1645	N17-T-350013-808	C-601
N17-B-86234-3601		N17-T-350006-406	O-147	N17-T-350013-603	E-759	N17-T-350013-810	O-501
N17-C-73137-1875		N17-T-350006-407	O-126	N17-T-350013-605	E-1114	N17-T-350013-811	O-1801
N17-C-780767-838		N17-T-350006-446	O-1389	N17-T-350013-606	O-2041	N17-T-350013-812	O-1845
N17-C-781108-951		N17-T-350006-455	O-777	N17-T-350013-607	O-2100	N17-T-350013-813	O-1803
N17-C-781534-216		N17-T-350006-458	O-1308	N17-T-350013-614	O-2058	N17-T-350013-815	O-341
N17-C-781697-410		N17-T-350006-478	O-1629	N17-T-350013-616	H-412	N17-T-350013-816	O-1326
N17-E-39047-4401		N17-T-350006-485	O-1939	N17-T-350013-617	O-1310	N17-T-350013-817	O-1835
N17-E-39048-1001		N17-T-350006-500	O-1518	N17-T-350013-617	O-2069	N17-T-350013-818	O-1807
N17-F-14327-30		N17-T-350006-523	O-381	N17-T-350013-620	O-1567	N17-T-350013-819	O-1823
N17-F-74267-5075		N17-T-350006-529	O-1616	N17-T-350013-621	H-332	N17-T-350013-820	O-1804
N17-H-71773-1911		N17-T-350006-540	O-2109	N17-T-350013-622	O-330	N17-T-350013-821	O-1822
N17-L-5280		N17-T-350006-542	O-2101	N17-T-350013-624	H-269	N17-T-350013-822	O-1946
N17-L-51706-8201		N17-T-350006-578	O-1368	N17-T-350013-625	O-1735	N17-T-350013-823	O-1947
N17-M-75164-2706		N17-T-350006-634	O-1470	N17-T-350013-626	O-326	N17-T-350013-824	O-1948
N17-M-75297-6751		N17-T-350006-703	H-762	N17-T-350013-627	O-400	N17-T-350013-825	O-1949
N17-M-75322-4551		N17-T-350006-711	O-1388	N17-T-350013-628	O-1678	N17-T-350013-826	O-1966
N17-R-64362-8037		N17-T-350006-753	H-757	N17-T-350013-629	O-1325	N17-T-350013-827	O-1967
N17-S-46657-8041		N17-T-350006-837	O-1593	N17-T-350013-630	O-1704	N17-T-350013-828	O-1968
N17-S-46712-8201		N17-T-350006-840	H-784	N17-T-350013-677	O-374	N17-T-350013-829	O-1969
N17-S-46718-7051		N17-T-350006-892	H-1341	N17-T-350013-678	H-290	N17-T-350013-830	O-1970
N17-S-46761-6791		N17-T-350006-899	I-752	N17-T-350013-679	H-284	N17-T-350013-831	O-1971
N17-S-46762-1032		N17-T-350006-929	O-154	N17-T-350013-680	O-314	N17-T-350013-832	O-1972
N17-S-69146-1843		N17-T-350007-458	H-807	N17-T-350013-681	O-296	N17-T-350013-833	O-1973
N17-S-69452-7985		N17-T-350007-565	O-1421	N17-T-350013-682	A-126	N17-T-350013-834	O-1974
N17-S-70777-8601		N17-T-350007-582	H-765	N17-T-350013-683	O-253	N17-T-350013-835	O-1975
N17-S-73877-4921		N17-T-350007-593	O-503	N17-T-350013-686	H-314	N17-T-350013-836	O-1976
N17-T-350001-128		N17-T-350007-862	H-783	N17-T-350013-687	O-121	N17-T-350013-837	O-1977
N17-T-350001-130		N17-T-350008-103	O-1719	N17-T-350013-688	O-122	N17-T-350013-838	O-1978
N17-T-350001-130		N17-T-350008-110	H-1496	N17-T-350013-689	O-120	N17-T-350013-839	O-1979
N17-T-350001-159		N17-T-350008-718	H-1162	N17-T-350013-691	O-123	N17-T-350013-840	O-1980
N17-T-350001-164		N17-T-350009-524	H-1642	N17-T-350013-692	O-130	N17-T-350013-841	O-1981
N17-T-350001-165		N17-T-350009-576	H-378	N17-T-350013-693	O-125	N17-T-350013-842	O-1982
N17-T-350001-166		N17-T-350009-623	E-503	N17-T-350013-695	O-260	N17-T-350013-844	O-1984
N17-T-350001-195		N17-T-350009-838	O-2119	N17-T-350013-696	O-258	N17-T-350013-845	O-1985
N17-T-350001-310		N17-T-350009-897	H-1129	N17-T-350013-697	O-259	N17-T-350013-846	O-1986
N17-T-350001-357		N17-T-350010-159	O-323	N17-T-350013-698	H-235	N17-T-350013-847	O-1987
N17-T-350001-418		N17-T-350010-170	E-602	N17-T-350013-700	A-123	N17-T-350013-849	O-1988
N17-T-350001-535		N17-T-350010-399	H-1408	N17-T-350013-701	A-132	N17-T-350013-850	O-1989
N17-T-350001-597		N17-T-350010-628	H-167	N17-T-350013-704	O-350	N17-T-350013-851	O-1990

N17-T-350001-689	H-2133	N17-T-350012-235	O-261	N17-T-350013-705	H-110	N17-T-350013-852	O-1991
N17-T-350001-795	H-1792	N17-T-350012-310	H-315	N17-T-350013-706	O-286	N17-T-350013-853	O-1992
N17-T-350001-800	O-1741	N17-T-350012-331	O-1469	N17-T-350013-707	O-103	N17-T-350013-854	O-1993
N17-T-350001-801	O-2092	N17-T-350012-484	H-1167	N17-T-350013-708	A-103	N17-T-350013-855	O-1994
N17-T-350001-890	O-1717	N17-T-350012-485	H-112	N17-T-350013-709	H-104	N17-T-350013-856	O-1995
N17-T-350001-968	O-1568	N17-T-350012-486	H-130	N17-T-350013-710	H-188	N17-T-350013-857	A-1349
N17-T-350002-237	H-752	N17-T-350012-487	H-343	N17-T-350013-711	O-282	N17-T-350013-858	O-1950
N17-T-350002-671	O-1706	N17-T-350012-507	H-1664	N17-T-350013-712	H-294	N17-T-350013-859	O-1951
N17-T-350002-674	H-254	N17-T-350012-544	H-382	N17-T-350013-713	O-145	N17-T-350013-860	O-1952
N17-T-350002-774	O-102	N17-T-350012-623	E-612	N17-T-350013-714	A-138	N17-T-350013-861	O-1953
N17-T-350003-233	H-331	N17-T-350012-634	H-183	N17-T-350013-715	A-139	N17-T-350013-862	O-1954
N17-T-350003-322	O-331	N17-T-350012-636	H-803	N17-T-350013-716	O-148	N17-T-350013-863	O-1955
N17-T-350003-326	O-1305	N17-T-350012-638	H-801	N17-T-350013-718	O-152	N17-T-350013-864	O-1956
N17-T-350003-368	H-804	N17-T-350012-644	H-793	N17-T-350013-720	A-1108	N17-T-350013-865	O-1957
N17-T-350003-388	O-2071	N17-T-350012-646	H-816	N17-T-350013-721	O-1112	N17-T-350013-866	O-1958
N17-T-350003-956	O-368	N17-T-350012-655	H-400	N17-T-350013-722	A-1109	N17-T-350013-867	O-1959
N17-T-350004-117	H-415	N17-T-350012-693	H-703	N17-T-350013-723	E-1111	N17-T-350013-868	O-1960
N17-T-350004-448	H-124	N17-T-350012-702	O-1622	N17-T-350013-724	O-1118	N17-T-350013-869	O-1961
N17-T-350004-603	O-1643	N17-T-350012-705	O-1516	N17-T-350013-725	O-1116	N17-T-350013-870	O-1962
N17-T-350004-640	H-1110	N17-T-350012-708	O-131	N17-T-350013-726	TB-1101	N17-T-350013-871	O-1963
N17-T-350004-695	H-381	N17-T-350012-711	O-104	N17-T-350013-727	E-1101	N17-T-350013-872	O-1964
N17-T-350004-754	O-151	N17-T-350012-717	O-2130	N17-T-350013-729	TB-101	N17-T-350013-873	O-1965
N17-T-350004-784	O-1816	N17-T-350012-719	O-348	N17-T-350013-730	H-1111	N17-T-350013-880	A-1344
N17-T-350004-785	O-1882	N17-T-350012-728	O-398	N17-T-350013-731	O-1101	N17-T-350013-888	H-1514
N17-T-350004-927	O-2121	N17-T-350013-106	H-2052	N17-T-350013-733	A-1102	N17-T-350013-891	E-614
N17-T-350005-150	H-1121	N17-T-350013-120	H-1374	N17-T-350013-734	E-1112	N17-T-350013-892	O-2077
N17-T-350005-401	O-1910	N17-T-350013-122	H-222	N17-T-350013-735	H-1148	N17-T-350013-893	O-2075
N17-T-350005-442	H-1667	N17-T-350013-124	H-438	N17-T-350013-737	H-1172	N17-T-350013-896	A-501
N17-T-350005-509	H-109	N17-T-350013-133	H-796	N17-T-350013-738	O-1488	N17-T-350013-897	O-320
N17-T-350005-535	H-148	N17-T-350013-144	H-1168	N17-T-350013-739	O-1922	N17-T-350013-898	W-1103
N17-T-350005-561	H-105	N17-T-350013-155	H-321	N17-T-350013-740	H-1640	N17-T-350013-899	O-1923
N17-T-350005-565	H-505	N17-T-350013-165	H-506	N17-T-350013-741	O-1486	N17-T-350013-902	S-501
N17-T-350005-622	H-223	N17-T-350013-169	H-125	N17-T-350013-744	H-1312	N17-T-350013-905	O-1619
N17-T-350005-722	H-311	N17-T-350013-176	H-355	N17-T-350013-745	O-1316	N17-T-350013-906	O-1583
N17-T-350005-725	H-439	N17-T-350013-181	H-1122	N17-T-350013-746	H-510	N17-T-350013-907	O-1309
N17-T-350005-732	H-1459	N17-T-350013-188	H-149	N17-T-350013-747	H-1348	N17-T-350013-910	H-1969
N17-T-350005-735	H-436	N17-T-350013-195	H-1787	N17-T-350013-750	O-1718	N17-T-350013-911	O-1624
N17-T-350005-740	H-702	N17-T-350013-200	H-2030	N17-T-350013-751	O-1601	N17-T-350013-912	O-1669
N17-T-350005-747	H-316	N17-T-350013-202	H-1946	N17-T-350013-752	O-2067	N17-T-350013-913	O-1315
N17-T-350005-753	H-1106	N17-T-350013-206	H-1694	N17-T-350013-753	H-1555	N17-T-350013-914	O-1641
N17-T-350005-754	H-763	N17-T-350013-209	H-1415	N17-T-350013-754	H-609	N17-T-350013-915	O-1701
N17-T-350005-755	H-513	N17-T-350013-243	H-322	N17-T-350013-755	H-242	N17-T-350013-916	O-1438
N17-T-350005-755	H-1545	N17-T-350013-301	H-158	N17-T-350013-756	H-1697	N17-T-350013-917	O-1736
N17-T-350005-764	H-413	N17-T-350013-359	H-128	N17-T-350013-756	H-192	N17-T-350013-921	E-1303
N17-T-350005-764	E-1109	N17-T-350013-388	H-127	N17-T-350013-759	H-351	N17-T-350013-922	O-1700
N17-T-350005-771	H-1799	N17-T-350013-429	O-317	N17-T-350013-761	O-1541	N17-T-350013-924	O-1666
N17-T-350005-776	H-168	N17-T-350013-478	A-1358	N17-T-350013-762	O-1537	N17-T-350013-926	O-1938
N17-T-350005-817	O-2090	N17-T-350013-579	O-2096	N17-T-350013-763	E-1113	N17-T-350013-927	O-1716
N17-T-350005-822	O-370	N17-T-350013-582	O-2162	N17-T-350013-764	O-1114	N17-T-350013-929	H-2037
N17-T-350005-830	O-2088	N17-T-350013-584	E-1302	N17-T-350013-789	H-257	N17-T-350013-930	O-2034
N17-T-350005-966	H-606	N17-T-350013-585	O-2155	N17-T-350013-791	O-214	N17-T-350013-931	O-2035
N17-T-350006-251	O-137	N17-T-350013-587	O-2043	N17-T-350013-792	H-129	N17-T-350013-933	O-1862
N17-T-350006-297	H-795	N17-T-350013-588	E-1301	N17-T-350013-794	O-124	N17-T-350013-934	O-2039

TABLE 8-5. CROSS REFERENCE PARTS LISTS

FEDERAL STOCK NUMBER	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL
N17-T-350013-935	H-1657	N17-T-350014-173	O-218	N17-T-350014-337	O-1690	N17-T-350014-471	H-380
N17-T-350013-936	O-1626	N17-T-350014-174	O-220	N17-T-350014-338	O-2059	N17-T-350014-472	H-106
N17-T-350013-937	O-1670	N17-T-350014-175	O-221	N17-T-350014-339	O-1824	N17-T-350014-475	O-349
N17-T-350013-938	O-1668	N17-T-350014-176	O-222	N17-T-350014-340	O-1383	N17-T-350014-476	H-309
N17-T-350013-939	O-2122	N17-T-350014-177	O-223	N17-T-350014-341	N17-T-350014-341	N17-T-350014-477	E-110
N17-T-350013-940	O-2123	N17-T-350014-178	O-225	N17-T-350014-343	N17-T-350014-343	N17-T-350014-478	E-109
N17-T-350013-941	H-1668	N17-T-350014-179	O-226	N17-T-350014-350	O-1437	N17-T-350014-479	O-384
N17-T-350013-942	O-1676	N17-T-350014-180	O-227	N17-T-350014-353	E-101	N17-T-350014-480	E-112
N17-T-350013-943	H-1700	N17-T-350014-181	O-228	N17-T-350014-354	O-2158	N17-T-350014-481	A-141
N17-T-350013-944	H-1669	N17-T-350014-182	O-229	N17-T-350014-355	O-1639	N17-T-350014-482	E-113
N17-T-350013-945	O-2033	N17-T-350014-183	O-230	N17-T-350014-356	H-1556	N17-T-350014-483	A-140
N17-T-350013-946	O-2028	N17-T-350014-184	O-231	N17-T-350014-358	H-1848	N17-T-350014-484	E-111
N17-T-350013-947	O-2051	N17-T-350014-185	O-232	N17-T-350014-359	O-1640	N17-T-350014-485	O-383
N17-T-350013-948	O-1648	N17-T-350014-186	O-233	N17-T-350014-360	O-1543	N17-T-350014-486	H-440
N17-T-350013-949	O-1649	N17-T-350014-187	O-234	N17-T-350014-362	H-2140	N17-T-350014-487	A-111
N17-T-350013-950	O-1646	N17-T-350014-188	O-2044	N17-T-350014-364	B-603	N17-T-350014-488	O-380
N17-T-350013-951	O-1597	N17-T-350014-189	O-2042	N17-T-350014-365	O-2030	N17-T-350014-489	O-389
N17-T-350013-952	H-1582	N17-T-350014-190	H-2033	N17-T-350014-366	O-336	N17-T-350014-491	A-122
N17-T-350013-953	O-1680	N17-T-350014-191	O-2040	N17-T-350014-367	H-1540	N17-T-350014-492	O-402
N17-T-350013-954	O-1679	N17-T-350014-195	O-2037	N17-T-350014-368	A-1384	N17-T-350014-493	O-347
N17-T-350013-955	H-1614	N17-T-350014-197	E-1306	N17-T-350014-369	O-1829	N17-T-350014-494	O-1506
N17-T-350013-956	O-1596	N17-T-350014-198	E-1305	N17-T-350014-371	E-613	N17-T-350014-513	O-1311
N17-T-350013-957	H-1610	N17-T-350014-199	E-1304	N17-T-350014-372	E-615	N17-T-350014-514	H-1147
N17-T-350013-958	O-2036	N17-T-350014-201	O-1533	N17-T-350014-373	O-614	N17-T-350014-515	O-601
N17-T-350013-962	O-1675	N17-T-350014-203	O-1587	N17-T-350014-374	E-611	N17-T-350014-527	O-1302
N17-T-350013-963	A-1303	N17-T-350014-204	O-1585	N17-T-350014-375	H-659	N17-T-350014-528	O-1565
N17-T-350013-966	O-1879	N17-T-350014-205	A-1383	N17-T-350014-376	A-618	N17-T-350014-530	O-1367
N17-T-350013-967	O-1578	N17-T-350014-207	O-1843	N17-T-350014-377	A-619	N17-T-350014-531	O-1754
N17-T-350013-968	O-1721	N17-T-350014-208	O-1472	N17-T-350014-378	H-666	N17-T-350014-532	H-2194
N17-T-350013-971	O-2140	N17-T-350014-209	A-1392	N17-T-350014-379	H-669	N17-T-350014-533	O-1932
N17-T-350013-972	O-2138	N17-T-350014-210	A-1390	N17-T-350014-380	O-613	N17-T-350014-534	O-2065
N17-T-350013-973	H-2153	N17-T-350014-211	H-1435	N17-T-350014-381	H-671	N17-T-350014-535	O-1386
N17-T-350013-974	O-2137	N17-T-350014-213	H-1407	N17-T-350014-382	O-606	N17-T-350014-536	H-1542
N17-T-350013-975	O-2134	N17-T-350014-214	O-1362	N17-T-350014-383	A-617	N17-T-350014-539	H-1155
N17-T-350013-976	O-2141	N17-T-350014-215	O-1635	N17-T-350014-384	A-620	N17-T-350014-540	O-1545
N17-T-350013-977	A-1385	N17-T-350014-216	O-1361	N17-T-350014-394	O-605	N17-T-350014-541	H-1569
N17-T-350013-978	O-2127	N17-T-350014-218	A-1362	N17-T-350014-395	H-701	N17-T-350014-549	O-1642
N17-T-350013-980	O-1554	N17-T-350014-227	O-2045	N17-T-350014-397	H-789	N17-T-350014-552	O-2049
N17-T-350013-984	O-1535	N17-T-350014-228	O-235	N17-T-350014-399	O-291	N17-T-350014-553	O-1628
N17-T-350013-985	O-1377	N17-T-350014-229	O-236	N17-T-350014-398	O-292	N17-T-350014-554	O-1589
N17-T-350013-986	O-1378	N17-T-350014-230	O-237	N17-T-350014-400	O-132	N17-T-350014-557	O-2125
N17-T-350013-987	O-1380	N17-T-350014-232	O-1442	N17-T-350014-401	O-367	N17-T-350014-558	O-1833
N17-T-350013-988	O-1415	N17-T-350014-233	O-1350	N17-T-350014-402	O-369	N17-T-350014-559	O-1825
N17-T-350013-989	O-1369	N17-T-350014-235	O-1703	N17-T-350014-403	A-110	N17-T-350014-560	O-1762
N17-T-350013-996	H-2034	N17-T-350014-236	O-1703	N17-T-350014-404	O-156	N17-T-350014-562	O-2097
N17-T-350013-998	O-1379	N17-T-350014-237	O-1702	N17-T-350014-405	O-150	N17-T-350014-565	O-153
N17-T-350013-999	O-1416	N17-T-350014-238	O-2050	N17-T-350014-407	H-186	N17-T-350014-568	O-387
N17-T-350014-101	O-248	N17-T-350014-240	A-1347	N17-T-350014-408	O-371	N17-T-350014-569	O-386
N17-T-350014-102	O-247	N17-T-350014-241	O-1538	N17-T-350014-409	O-332	N17-T-350014-571	O-310
N17-T-350014-103	O-246	N17-T-350014-242	H-108	N17-T-350014-410	H-342	N17-T-350014-572	O-315

TT-47A/UG, TT-48A/UG, TT-69A/UG, TT-70A/UG

N17-T-350014-104	O-245	N17-T-350014-244	H-808	N17-T-350014-411	H-319	N17-T-350014-573	O-373
N17-T-350014-105	O-244	N17-T-350014-245	O-1103	N17-T-350014-412	H-423	N17-T-350014-574	A-113
N17-T-350014-106	O-243	N17-T-350014-246	O-1104	N17-T-350014-413	O-133	N17-T-350014-575	H-406
N17-T-350014-107	O-242	N17-T-350014-247	A-1101	N17-T-350014-414	O-294	N17-T-350014-576	A-137
N17-T-350014-108	O-241	N17-T-350014-248	O-231	N17-T-350014-415	O-376	N17-T-350014-577	O-375
N17-T-350014-109	O-240	N17-T-350014-249	O-250	N17-T-350014-416	O-404	N17-T-350014-579	H-338
N17-T-350014-110	O-239	N17-T-350014-250	O-249	N17-T-350014-417	O-390	N17-T-350014-580	O-316
N17-T-350014-111	O-238	N17-T-350014-251	O-224	N17-T-350014-418	H-324	N17-T-350014-581	H-326
N17-T-350014-112	O-2144	N17-T-350014-252	O-1360	N17-T-350014-419	H-426	N17-T-350014-582	O-321
N17-T-350014-113	O-2136	N17-T-350014-253	O-1805	N17-T-350014-420	H-398	N17-T-350014-583	O-382
N17-T-350014-114	O-2142	N17-T-350014-254	O-1590	N17-T-350014-421	H-313	N17-T-350014-585	A-102
N17-T-350014-115	O-1844	N17-T-350014-255	O-1638	N17-T-350014-422	H-377	N17-T-350014-586	O-776
N17-T-350014-116	H-174	N17-T-350014-257	A-1306	N17-T-350014-423	H-431	N17-T-350014-587	O-752
N17-T-350014-120	H-1912	N17-T-350014-261	O-2048	N17-T-350014-424	H-358	N17-T-350014-590	H-1113
N17-T-350014-121	H-1908	N17-T-350014-262	O-1691	N17-T-350014-425	O-346	N17-T-350014-591	H-270
N17-T-350014-122	O-1909	N17-T-350014-266	O-1694	N17-T-350014-427	O-505	N17-T-350014-592	H-623
N17-T-350014-123	O-1906	N17-T-350014-271	O-1581	N17-T-350014-428	O-280	N17-T-350014-593	H-107
N17-T-350014-124	O-1908	N17-T-350014-272	O-1586	N17-T-350014-429	O-174	N17-T-350014-594	H-119
N17-T-350014-125	O-1912	N17-T-350014-274	H-2093	N17-T-350014-430	O-1519	N17-T-350014-595	H-1607
N17-T-350014-127	H-1315	N17-T-350014-277	O-2089	N17-T-350014-431	O-157	N17-T-350014-596	O-1499
N17-T-350014-128	A-1301	N17-T-350014-279	O-1720	N17-T-350014-432	O-293	N17-T-350014-597	H-1409
N17-T-350014-129	H-1576	N17-T-350014-281	H-1706	N17-T-350014-433	O-335	N17-T-350014-600	H-226
N17-T-350014-130	A-1304	N17-T-350014-283	O-2133	N17-T-350014-435	O-399	N17-T-350014-601	H-1552
N17-T-350014-131	O-1806	N17-T-350014-284	O-2131	N17-T-350014-436	O-318	N17-T-350014-602	H-221
N17-T-350014-133	O-1613	N17-T-350014-285	O-1672	N17-T-350014-437	O-328	N17-T-350014-603	H-224
N17-T-350014-134	H-2113	N17-T-350014-286	O-1673	N17-T-350014-438	O-352	N17-T-350014-604	H-227
N17-T-350014-136	O-1625	N17-T-350014-287	O-1674	N17-T-350014-439	O-268	N17-T-350014-605	O-338
N17-T-350014-137	O-1621	N17-T-350014-288	O-2031	N17-T-350014-441	H-281	N17-T-350014-607	O-339
N17-T-350014-138	O-1569	N17-T-350014-289	O-2124	N17-T-350014-442	O-290	N17-T-350014-608	O-337
N17-T-350014-139	O-1677	N17-T-350014-292	O-1414	N17-T-350014-443	H-216	N17-T-350014-610	O-1827
N17-T-350014-140	H-1718	N17-T-350014-294	A-1371	N17-T-350014-444	O-139	N17-T-350014-611	O-1848
N17-T-350014-141	O-1636	N17-T-350014-296	O-2132	N17-T-350014-445	O-144	N17-T-350014-612	O-1830
N17-T-350014-142	H-1742	N17-T-350014-297	O-1715	N17-T-350014-446	O-143	N17-T-350014-613	O-1851
N17-T-350014-143	O-1633	N17-T-350014-298	O-1826	N17-T-350014-447	O-142	N17-T-350014-614	O-1312
N17-T-350014-144	O-1627	N17-T-350014-299	O-1727	N17-T-350014-448	O-141	N17-T-350014-616	H-1311
N17-T-350014-145	O-1725	N17-T-350014-313	O-607	N17-T-350014-449	O-140	N17-T-350014-617	H-1301
N17-T-350014-146	O-1991	N17-T-350014-314	E-604	N17-T-350014-450	O-179	N17-T-350014-618	A-1302
N17-T-350014-147	O-1637	N17-T-350014-315	A-601	N17-T-350014-451	O-136	N17-T-350014-619	O-344
N17-T-350014-148	O-1595	N17-T-350014-316	A-603	N17-T-350014-452	A-109	N17-T-350014-623	O-1390
N17-T-350014-149	O-1584	N17-T-350014-317	A-602	N17-T-350014-453	O-172	N17-T-350014-625	H-2188
N17-T-350014-150	O-1671	N17-T-350014-318	O-1745	N17-T-350014-455	O-172	N17-T-350014-626	H-2029
N17-T-350014-153	O-1409	N17-T-350014-319	O-1941	N17-T-350014-457	H-387	N17-T-350014-627	O-1382
N17-T-350014-154	O-1366	N17-T-350014-320	O-2093	N17-T-350014-458	O-319	N17-T-350014-628	O-1413
N17-T-350014-158	A-1305	N17-T-350014-323	O-2156	N17-T-350014-459	O-158	N17-T-350014-630	O-1730
N17-T-350014-160	O-1363	N17-T-350014-324	O-2160	N17-T-350014-461	H-103	N17-T-350014-631	O-1740
N17-T-350014-161	O-1357	N17-T-350014-325	O-2073	N17-T-350014-463	O-101	N17-T-350014-632	H-2191
N17-T-350014-164	O-1439	N17-T-350014-326	O-2068	N17-T-350014-464	O-256	N17-T-350014-633	O-1773
N17-T-350014-167	O-1861	N17-T-350014-328	H-1693	N17-T-350014-465	O-255	N17-T-350014-634	O-1734
N17-T-350014-168	O-388	N17-T-350014-329	O-2070	N17-T-350014-466	O-237	N17-T-350014-635	A-1380
N17-T-350014-169	O-219	N17-T-350014-330	H-2024	N17-T-350014-467	O-267	N17-T-350014-636	O-1771
N17-T-350014-170	O-215	N17-T-350014-332	O-1314	N17-T-350014-468	O-269	N17-T-350014-638	O-1749
N17-T-350014-171	O-216	N17-T-350014-335	O-1699	N17-T-350014-469	O-270	N17-T-350014-639	O-2018
N17-T-350014-172	O-217	N17-T-350014-336	O-1682	N17-T-350014-470	A-136		

TABLE 8-5. CROSS REFERENCE PARTS LISTS

FEDERAL STOCK NUMBER	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL	FEDERAL STOCK NUMBER	KEY SYMBOL
N17-T-350014-640	H-1885	N17-T-350014-856	A-1105	N17-T-350015-317	H-155	N17-T-350015-425	O-377	N17-T-350015-318	H-1338
N17-T-350014-641	O-2017	N17-T-350014-857	A-1104	N17-T-350015-318	O-1338	N17-T-350015-426	E-603	N17-T-350015-319	O-1500
N17-T-350014-642	A-1376	N17-T-350014-858	O-271	N17-T-350015-319	O-1500	N17-T-350015-427	H-812	N17-T-350015-320	O-1507
N17-T-350014-643	A-1372	N17-T-350014-861	O-2098	N17-T-350015-321	H-101	N17-T-350015-428	A-1313	N17-T-350015-322	O-1535
N17-T-350014-644	O-2006	N17-T-350014-862	H-101	N17-T-350015-322	O-769	N17-T-350015-429	O-1821	N17-T-350015-323	A-1336
N17-T-350014-645	O-1933	N17-T-350014-863	O-769	N17-T-350015-323	W-101	N17-T-350015-430	O-2061	N17-T-350015-324	O-1510
N17-T-350014-646	O-1441	N17-T-350014-864	O-1631	N17-T-350015-324	O-1631	N17-T-350015-431	H-194	N17-T-350015-325	A-1337
N17-T-350014-649	O-2009	N17-T-350014-865	O-1303	N17-T-350015-325	O-1303	N17-T-350015-432	O-2062	N17-T-350015-326	O-1509
N17-T-350014-650	O-1929	N17-T-350014-867	O-403	N17-T-350015-326	H-178	N17-T-350015-433	O-2139	N17-T-350015-327	O-1511
N17-T-350014-651	O-2095	N17-T-350014-868	O-403	N17-T-350015-327	H-178	N17-T-350015-434	O-2146	N17-T-350015-328	O-1498
N17-T-350014-652	H-1952	N17-T-350014-869	H-417	N17-T-350015-328	O-385	N17-T-350015-435	O-1491	N17-T-350015-329	O-1501
N17-T-350014-653	O-1911	N17-T-350014-871	H-417	N17-T-350015-329	O-1517	N17-T-350015-436	H-1487	N17-T-350015-330	I-1301
N17-T-350014-654	O-1919	N17-T-350014-887	H-1653	N17-T-350015-330	H-176	N17-T-350015-437	A-1370	N17-T-350015-331	O-1689
N17-T-350014-655	O-2002	N17-T-350014-888	H-518	N17-T-350015-332	H-770	N17-T-350015-438	O-2011	N17-T-350015-332	A-1346
N17-T-350014-656	O-1920	N17-T-350014-889	H-1653	N17-T-350015-333	O-751	N17-T-350015-439	H-1972	N17-T-350015-333	O-1392
N17-T-350014-657	O-1863	N17-T-350014-890	H-176	N17-T-350015-334	O-751	N17-T-350015-440	A-1309	N17-T-350015-334	O-1818
N17-T-350014-658	O-2116	N17-T-350014-891	H-518	N17-T-350015-335	O-751	N17-T-350015-441	O-1384	N17-T-350015-335	H-1971
N17-T-350014-659	H-1930	N17-T-350014-896	H-770	N17-T-350015-336	O-751	N17-T-350015-442	O-287	N17-T-350015-336	H-276
N17-T-350014-660	O-1998	N17-T-350014-897	O-751	N17-T-350015-337	O-1487	N17-T-350015-443	H-280	N17-T-350015-337	O-149
N17-T-350014-661	O-1918	N17-T-350014-898	O-751	N17-T-350015-338	O-327	N17-T-350015-444	O-272	N17-T-350015-338	A-121
N17-T-350014-662	O-2064	N17-T-350014-899	O-751	N17-T-350015-339	H-766	N17-T-350015-445	O-252	N17-T-350015-339	O-278
N17-T-350014-663	O-2115	N17-T-350014-900	O-1487	N17-T-350015-340	Z-751	N17-T-350015-446	O-1905	N17-T-350015-340	H-272
N17-T-350014-664	H-1975	N17-T-350014-901	O-327	N17-T-350015-341	H-437	N17-T-350015-447	H-345	N17-T-350015-341	A-127
N17-T-350014-666	H-1988	N17-T-350014-902	H-766	N17-T-350015-342	H-425	N17-T-350015-448	H-508	N17-T-350015-342	O-1943
N17-T-350014-667	O-1936	N17-T-350014-905	Z-751	N17-T-350015-343	H-1438	N17-T-350015-449	A-119	N17-T-350015-343	O-283
N17-T-350014-668	O-2012	N17-T-350014-906	H-437	N17-T-350015-344	H-1964	N17-T-350015-450	O-284	N17-T-350015-344	O-279
N17-T-350014-669	O-1937	N17-T-350014-907	H-425	N17-T-350015-345	Z-101	N17-T-350015-451	A-1374	N17-T-350015-345	A-1375
N17-T-350014-670	O-2053	N17-T-350014-908	H-1438	N17-T-350015-346	H-1964	N17-T-350015-452	O-1342	N17-T-350015-346	
N17-T-350014-672	O-1928	N17-T-350014-910	H-1964	N17-T-350015-347	Z-101	N17-T-350015-453		N17-T-350015-347	
N17-T-350014-673	O-1935	N17-T-350014-911	Z-101	N17-T-350015-348	O-1944	N17-T-350015-454		N17-T-350015-348	
N17-T-350014-676	O-2007	N17-T-350014-913	E-601	N17-T-350015-349	H-785	N17-T-350015-455		N17-T-350015-349	
N17-T-350014-677	H-1939	N17-T-350014-914	E-601	N17-T-350015-350	H-1663	N17-T-350015-456		N17-T-350015-350	
N17-T-350014-679	O-1761	N17-T-350014-922	H-785	N17-T-350015-351	H-1370	N17-T-350015-457		N17-T-350015-351	
N17-T-350014-681	O-1617	N17-T-350014-924	H-1663	N17-T-350015-352	O-340	N17-T-350015-458		N17-T-350015-352	
N17-T-350014-682	O-1842	N17-T-350014-925	O-340	N17-T-350015-353	O-1831	N17-T-350015-459		N17-T-350015-353	
N17-T-350014-683	O-1841	N17-T-350014-926	H-504	N17-T-350015-354	H-102	N17-T-350015-460		N17-T-350015-354	
N17-T-350014-684	O-1840	N17-T-350014-927	H-504	N17-T-350015-355	H-102	N17-T-350015-461		N17-T-350015-355	
N17-T-350014-686	O-1757	N17-T-350014-928	H-102	N17-T-350015-356	A-611	N17-T-350015-462		N17-T-350015-356	
N17-T-350014-689	O-1544	N17-T-350014-929	H-102	N17-T-350015-357	P-601	N17-T-350015-463		N17-T-350015-357	
N17-T-350014-690	O-1562	N17-T-350014-930	A-611	N17-T-350015-358	A-607	N17-T-350015-464		N17-T-350015-358	
N17-T-350014-691	O-1563	N17-T-350014-941	A-607	N17-T-350015-359	A-609	N17-T-350015-465		N17-T-350015-359	
N17-T-350014-692	A-1345	N17-T-350014-942	A-609	N17-T-350015-360	Z-601	N17-T-350015-466		N17-T-350015-360	
N17-T-350014-702	O-2029	N17-T-350014-943	Z-601	N17-T-350015-361	A-608	N17-T-350015-467		N17-T-350015-361	
N17-T-350014-703	O-2157	N17-T-350014-944	A-608	N17-T-350015-362	E-502	N17-T-350015-468		N17-T-350015-362	
N17-T-350014-704	O-252	N17-T-350014-945	E-502	N17-T-350015-363	K-501	N17-T-350015-469		N17-T-350015-363	
N17-T-350014-710	H-317	N17-T-350014-952	K-501	N17-T-350015-364	O-324	N17-T-350015-470		N17-T-350015-364	
N17-T-350014-711	A-112	N17-T-350014-953	O-324	N17-T-350015-365		N17-T-350015-471		N17-T-350015-365	
N17-T-350014-712		N17-T-350014-978		N17-T-350015-366		N17-T-350015-472		N17-T-350015-366	

N17-T-350014-715	E-501	N17-T-350014-979	H-333	N17-T-350015-367	O-1346	N17-T-350015-663	A-1389
N17-T-350014-720	O-273	N17-T-350014-980	A-502	N17-T-350015-368	O-1349	N17-T-350015-664	A-1391
N17-T-350014-739	O-2063	N17-T-350014-981	H-517	N17-T-350015-369	O-1348	N17-T-350015-665	A-1382
N17-T-350014-746	O-345	N17-T-350014-982	A-610	N17-T-350015-372	O-1566	N17-T-350015-666	A-125
N17-T-350014-747	O-1834	N17-T-350014-983	O-608	N17-T-350015-373	O-1572	N17-T-350015-667	O-295
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TABLE 8-6. LIST OF MANUFACTURERS

PREFIX	NAME	ADDRESS
OG	General Electric Company	1 River Road, Schenectady 5, New York
CAE	Cutler Hammer Inc.	1333 W. St. Paul Avenue, Milwaukee, Wisconsin
CAO	Ward Leonard Company	6 South Street, Mount Vernon, New York
CFA	Bussman Manufacturing Company	2538 W. University Street, St. Louis, Missouri
CGM	General Motors Company	Detroit, Michigan
CHH	Arrow-Hart & Hegemen Electric Company	102 Hawthorn Street, Hartford, Connecticut
CHU	Harvey Hubbell Incorporated	447 Concord Avenue, Bridgeport, Connecticut
CJC	Howard B. Jones	2300 W. Wabansia Avenue, Chicago, Illinois
CMG	Cinch Manufacturing Company	2339 W. Van Buren Street, Chicago, Illinois
CSF	Sprague Electric Co.	N. Adams, Massachusetts
CTD	Tobe-Deutschmann Corporation	921 Providence Highway, Norwood, Massachusetts
CTT	Teletype Corporation	1400 W. Wrightwood Avenue, Chicago 14, Illinois
CARE	Potter & Brumfield Manufacturing Company, Inc.	Princeton, Indiana
CATK	Acro Electric Company	1305 Superior Avenue, Cleveland, Ohio
CAXO	Shakeproof Incorporated	2573 N. Keeler Avenue, Chicago, Illinois
CAYU	Barry Corporation	179 Sidney Street, Cambridge 39, Massachusetts
CAYZ	Dial Light Corporation	900 Broadway, New York, New York
	Appleton Electric Company	1713 W. Wellington Avenue, Chicago, Illinois
	Codo Manufacturing Company	509 S. Franklin Street, Chicago, Illinois
	Commercial Plastic Company	Room 1198, Merchandise Mart Plaza, Chicago, Illinois
	Davies Molding Company	1428 N. Wells Street, Chicago 10, Illinois
	Elastic Stop Nut Co.	Union, New Jersey
	First Industrial Corporation	Freeport, Illinois
	Norma-Hoffman	64 E. Jackson Boulevard, Chicago, Illinois
	Owens-Corning Fibreglass Corporation	35 E. Wacker Drive, Chicago, Illinois
	Tinnerman Products	Box 6688, Cleveland, Ohio
	Waldes Kohinoor Incorporated	Long Island City 1, New York

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By Order of *Wilber M. Brucker*, Secretary of the Army :

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Major General, United States Army,
The Adjutant General.

MAXWELL D. TAYLOR,
General, United States Army,
Chief of Staff.

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USCONARC
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Gen Depots
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Sig Depots
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Engr Maint Cen
Army Cml Cen
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Port of Emb (OS)
Trans Terminal Comd
Army Terminals
OS Sup Agencies
USA Sig Pub Agency

USA Sig Comm Engr Agency
USA Comm Agency
TASSA
USA White Sands Sig Agency
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Sig Fld Maint Shops
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11-16 11-557
11-57 11-587
11-127 11-592
11-128 11-597

NG: State AG; units—same as Active Army.

USAR: None.

For explanation of abbreviations used see, AR 320-50.

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