TELETYPE

PRINTING TELEGRAPH SYSTEMS

BULLETIN 226B

INSTALLATION
ADJUSTMENTS AND LUBRICATION
MODEL 28 PRINTER SET
(STUNT BOX C.A.A)

CHANGE 1

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LIST OF EFFECTIVE PAGES

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SECTION I
INSTALLATION

1. INSTALLATION

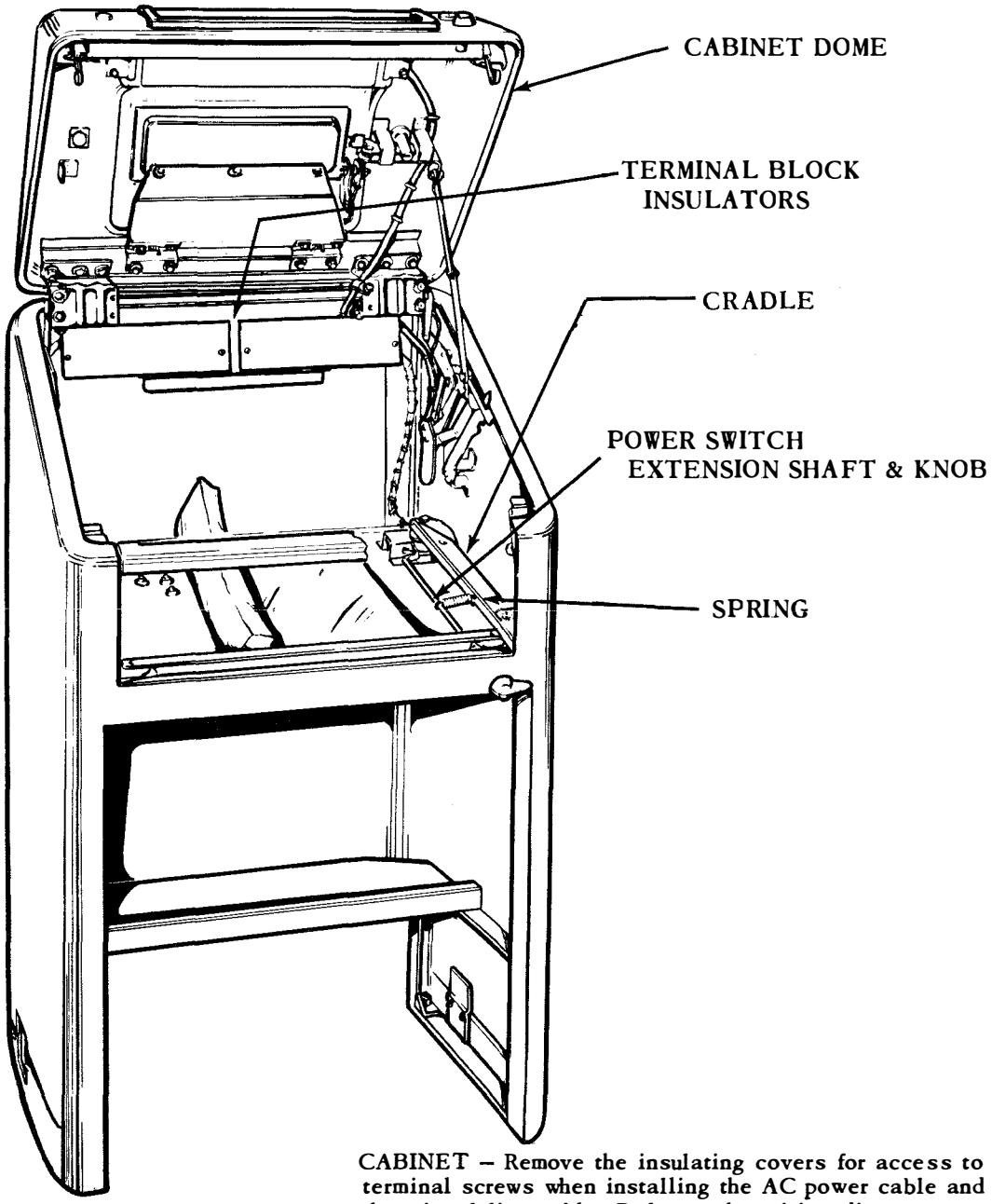
a. GENERAL DESCRIPTION

The Model 28 printer set with Station Selecting Mechanism (Stunt Case) consists of the following basic units: Apparatus Cabinet; Receiving only Base; Motor Unit; Set of Gears; and an Electrical Service Assembly.

The Typing Units may be provided with various accessory groups for different service requirements.

b. PROCEDURE

Unpack all component units and parts with care. Observe all caution labels and instructions. Muslin bags and small parts should be kept with their associated pieces of apparatus until used in the installation.



CABINET – Remove the insulating covers for access to terminal screws when installing the AC power cable and the signal line cable. Refer to the wiring diagram associated with each unit for the terminal connections.

CAUTION

A good ground is important for satisfactory operation of the equipment. The ground screw is located at the extreme right of the cabinet above the terminal board.

ELECTRICAL SERVICE UNIT The unit is wired for 0.060 ampere operation at the factory. If 0.020 ampere operation is desired, change the wiring as shown in the associated wiring diagram. Install the rectifier in accordance with the instructions accompanying the unit.

With the cabinet dome raised, place the Electrical Service Unit in the rear of the cabinet with the legs extending upward and the name plates facing the front. Drop the two studs through the holes located at each end of the panel and fasten the unit to the cabinet shelf. Untie the power switch extension shaft from the hinge bar and remove the knob. Insert the shaft through the hole near the right front corner of the cabinet from the back side. Place the opposite end of the shaft in the hole near the corner and engage the slotted extension with the toggle switch Hook one end of the spring (furnished) around the shaft and attach the other end to the cradle. Replace the knob with the arrow to the right.

AC MOTOR Place the pinion on the motor shaft the gear toward the motor. Mount the intermediate driven gear on the shaft with the flat side of the gear toward the right. Place motor on the base and secure it with the four Mounting screws and lockwashers. See that the gears mesh properly.

Remove the insulating cover from the terminal bloack on the base. Attach the motor leads to terminals 1 and 2. Replace the cover with the No. 1 stamp toward the rear.

TYPING UNIT The Stunt Box may be furnished without certain stunt case and common function bars in order that the assigned code for the Station, Area, or Relay Call may be inserted in the field. DO NOT OPERATE THE TYPER WITHOUT THE FUNCTION BARS FOR WHICH THE FUNCTION PAWLS HAVE BEEN FURNISHED. HOWEVER, THREE SPECIAL SPRINGS MAYBE PLACED UNDER THE LOOSE PAWLS WITH THE ENDS OF THE SPRING CLIPPED TO THE TIE BAR FOR SUPPORT. Refer to the chart (P. 2–51) for the function bars corresponding to the Station Calls to be set up.

Remove the four 1/4 – 32 (hex head) screws with lockwashers from the base. Engage the front feet on the locating studs. Rotate the motor by hand to insure proper meshing of the gears. Secure the Typing Unit with the four screws.

PAPER AND RIBBON

a. To replenish the supply of paper, open the dome of the cabinet, move the paper release lever on the Typing Unit 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 (Figure 61) 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 line feed wheel 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 glass door in the dome, raise the toggles on the ribbon spool shafts (Figure 48) 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 eyelet are between the ribbon spools and the reverse levers. Eliminate any slack in the ribbon.

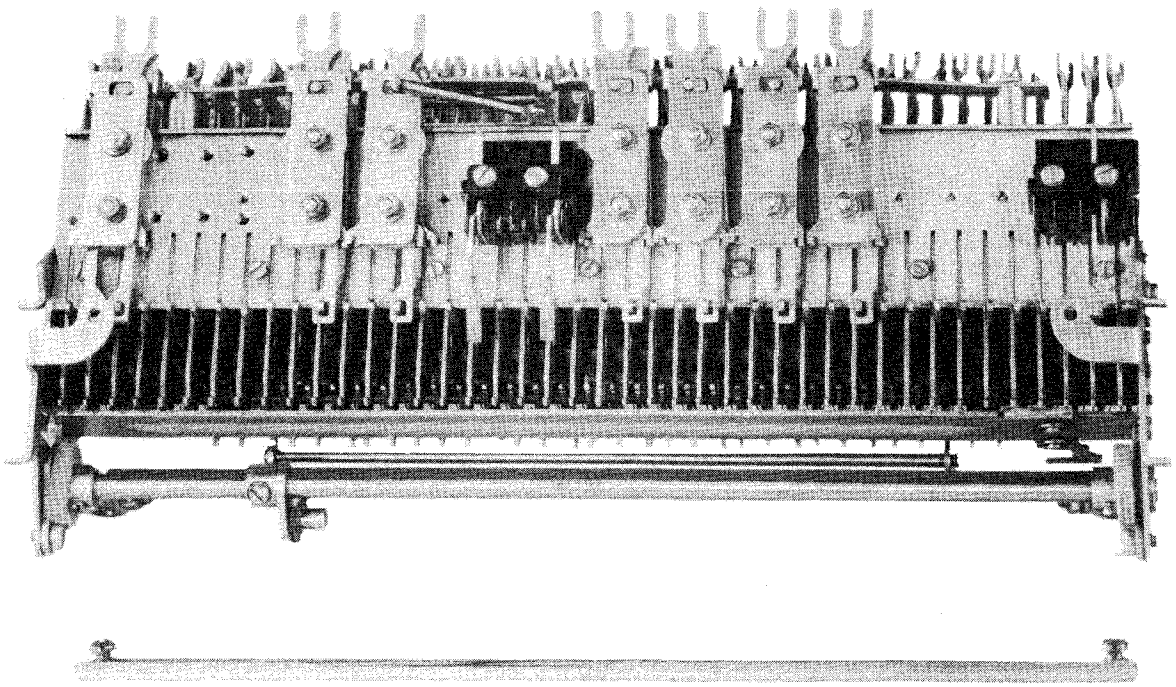
SECTION II
ADJUSTMENTS

1. GENERAL

a. The model 28 receiving only printer with station selection (Stunt Case) feature is arranged for operation in a country wide communication system which is divided into a number of area Networks. The printers in each area are operating in a stand-by condition (Motor Running) with printing suppressed until the assigned call code or codes is received. Printers in one area network may be individually or collectively selected to received a message. The printers in an adjacent area may be selected in a similar manner by routing station calls codes through a relay station where facilities are available for entering the adjacent network.

b. A code sequence composed of functions and character combinations, preceede each message. The sequence (CONDITION CODE CR–CR–LTRS followed by the SELECT CODE consisting of three characters) serves as an address. All printers in the area respond to the condition code which momentarily opens a ''gate''. The call letters following the condition code determines the printer or printers in the group that repond to the call and type the message to follow. Upon the completion of the text the end of message sequence (Consisting of Fig–CR–LTRS) is transmitted to shift the typer out of the printing position

The remote – local feature is provided to manually shift the typer in printing position when desired.



STUNT BOX

2. ADJUSTMENTS

a. GENERAL

The sequence in which the following adjustments are arranged takes into consideration the normal approach to the mechanism and the fact that a change in one adjustment may affect others. Adjustments should not be disturbed unnecessarily. Tools required to perform the adjustments are listed in 1124B but are not supplied as part of the equipment. After performing an adjustment, tighten any screws or nuts that have been loosened and check related adjustments.

In the figures of this bulletin, fixed pivot points are designated by solid black circles and the floating pivot points are crosshatched. The terms right, left, front, rear, upper, and lower, refer to the normal position of the Typing Unit when installed in the cabinet.

NOTES

(1) When rotating the main shaft of the Typing Unit 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 fully, apply pressure on the lug of each clutch disc (Figure 16) with a screwdriver to cause it to engage its latch lever. This procedure should always be followed prior to placing the Typing Unit on the base and switching on the power.

(2) The Typing Units are furnished without certain function bars in the Stunt Box which pertain to the area, Station or Relay Call Codes. CAUTION – – – DO NOT OPERATE THE TYPING UNIT UNTIL ALL FUNCTION BARS HAVE BEEN INSTALLED FOR WHICH THE ASSOCIATED FUNCTION LEVERS AND FUNCTION PAWLS HAVE BEEN FURNISHED. Refer to page-50 and page 51 for the field installation procedure for the assigned call codes.

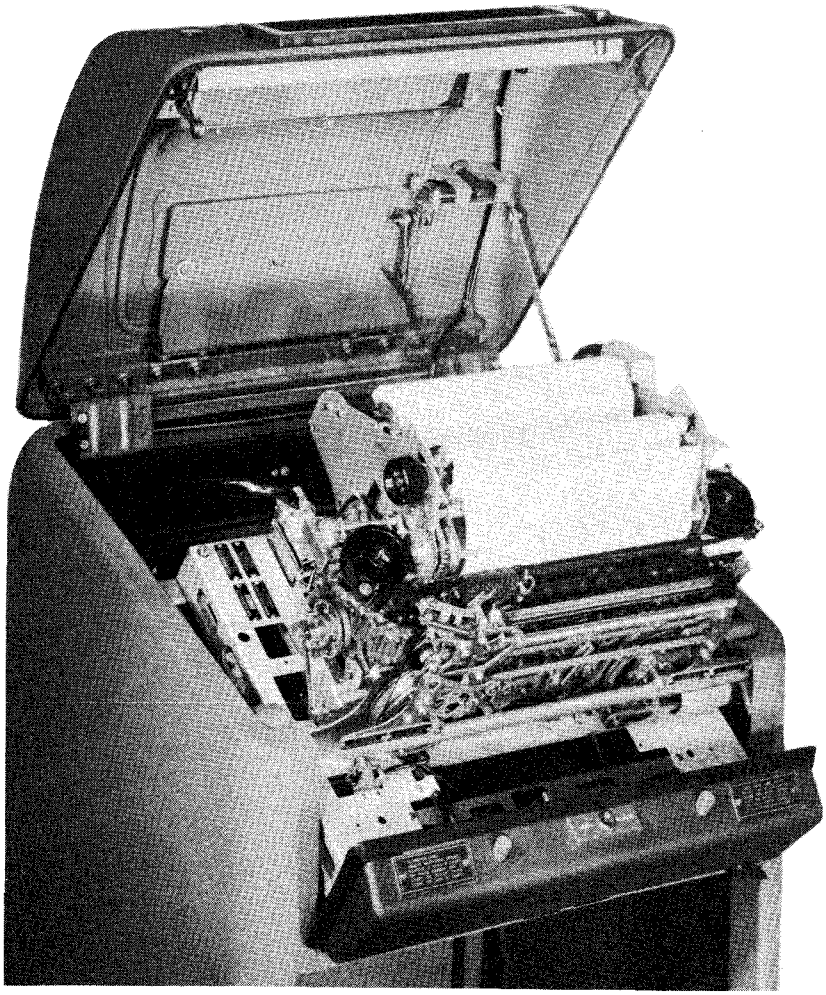
(3) Adjustments that call for rotation of the type box clutch must be made with the unit in a printing case. The Typing Unit may be shifted into a printing case by latching the function lever associated with a Stunt Case Shift mechanism.

(4) When making a complete adjustment of the Typing Unit, the following conditioning operations should be performed to prevent damage to the unit:

(a) Loosen the shift lever drive arm clamp screw (Figure 14)
(b) Move the right and left vertical positioning lever eccentric stud (Figure 28 and 29) and the rocker shaft bracket to their lowest position.
(c) Loosen the two bearing stud mounting screws and the horizontal positioning drive linkage (FIGURE 27)
(d) Loosen the clamp screws and move the reversing slide brackets to their uppermost position (Figure 32)
(e) Loosen the function reset bail blade mounting screws (FIGURE 34)
(f) Disconnect the stripper blade driving link (P. 2–59).
(g) Loosen the carriage return lever clamp screw.

b. MANUAL SELECTION OF CHARACTERS OR FUNCTIONS.

To manually operate the Typing Unit while removed from the base, hold the selector magnet armature (Figure 5) operated by means of a spring clip and rotate the main shaft in counterclockwise direction (by means of the handwheel listed in Table 1124B) to bring all clutches to their 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 until No. 5 selector lever has just moved to the peak of its cam. Strip the push levers from the selector levers which are spacing in the code combination of the character or function that is being selected. It should be noted that the selector levers (Figure 12) move in sucession starting with the inner lever (Number one). Continue to rotate the main shaft until all operations initiated by selector action clears through the unit.



TYPING UNIT

D. BASE

INSTRUCTIONS FOR REMOVING TYPING UNIT FROM CABINET
REFER TO P. 3-2 FOR DISASSEMBLY PROCEDURE

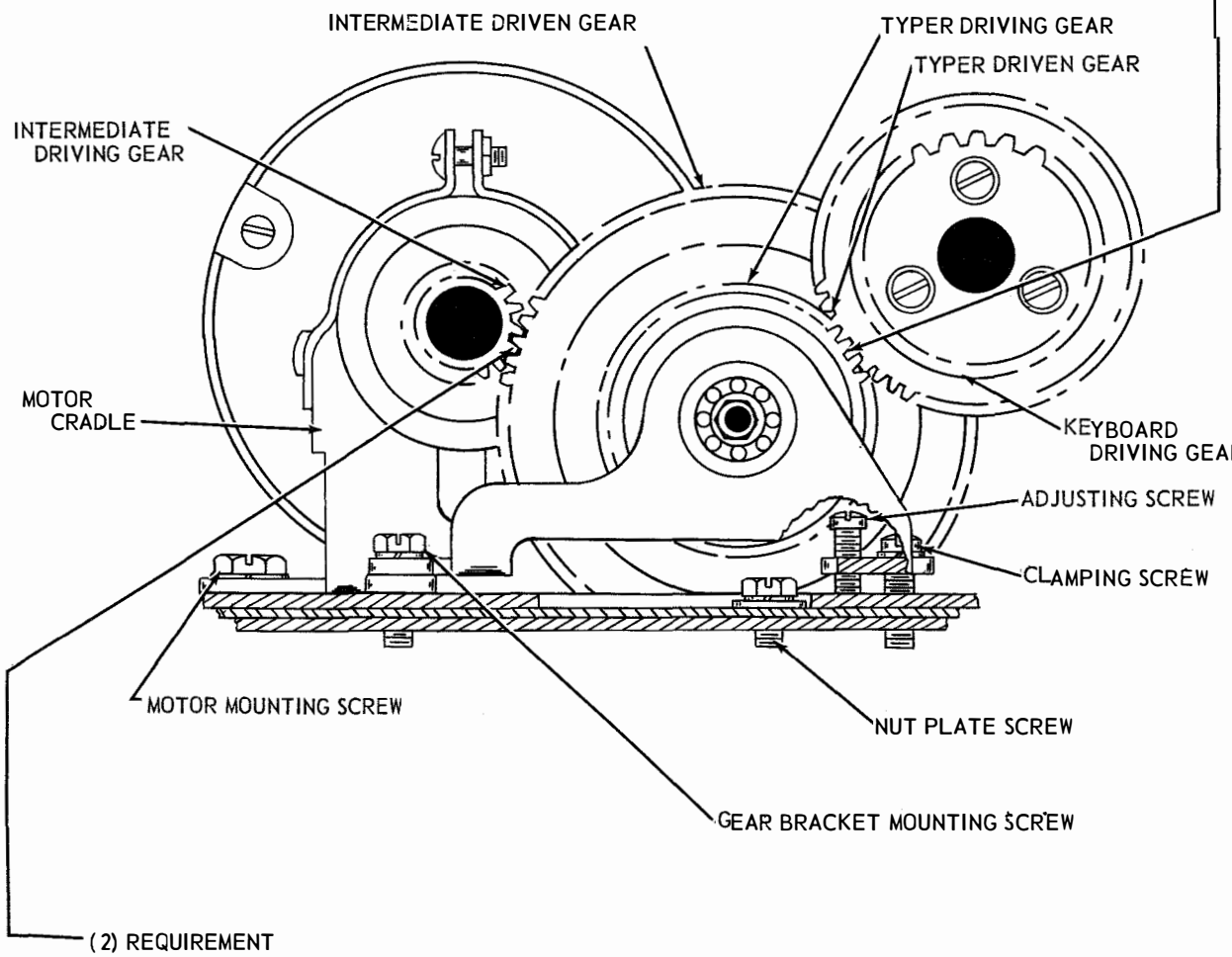
INTERMEDIATE GEAR BRACKET

(1) REQUIREMENT

THERE SHOULD BE A BARELY PERCEPTIBLE AMOUNT OF BACKLASH BETWEEN THE TYPER DRIVEN GEAR AND THE TYPER DRIVING GEAR AT THE POINT WHERE BACKLASH IS THE LEAST.

TO ADJUST

POSITION THE COMPLETE INTERMEDIATE GEAR MECHANISM BRACKET BY UTILIZING THE ADJUSTING SLOTS WITH THE THREE HEXAGON HEAD SCREWS LOSSENED. ALIGN GEARS AT THIS TIME.



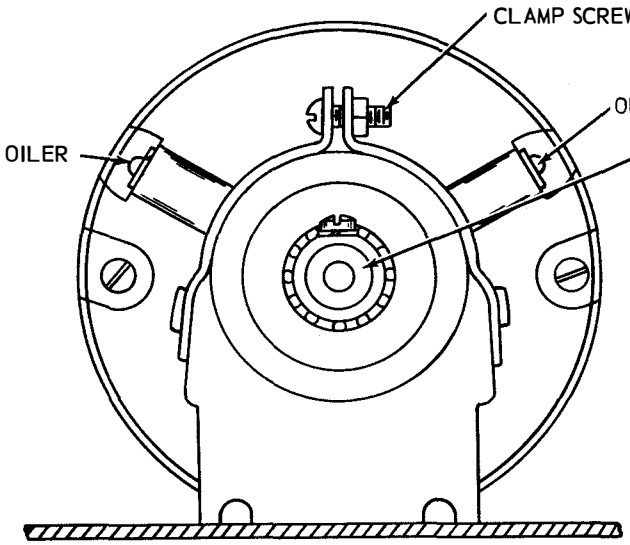
(2) REQUIREMENT

THERE SHOULD BE A BARELY PERCEPTIBLE AMOUNT OF BACKLASH BETWEEN THE INTERMEDIATE DRIVING GEAR AND THE INTERMEDIATE DRIVEN GEAR AT THE POINT WHERE THE BACKLASH IS THE LEAST.

TO ADJUST

RAISE OR LOWER THE FRONT END OF THE INTERMEDIATE GEAR BRACKET BY MEANS OF THE FILISTER HEAD ADJUSTING AND CLAMPING SCREWS LOCATED AT THE FRONT END OF THE BRACKET. REFINE REQUIREMENT (1) IF NECESSARY.

FIGURE 1 BASE AND MOTOR GEARING



SYNCHRONOUS MOTOR POSITIONING

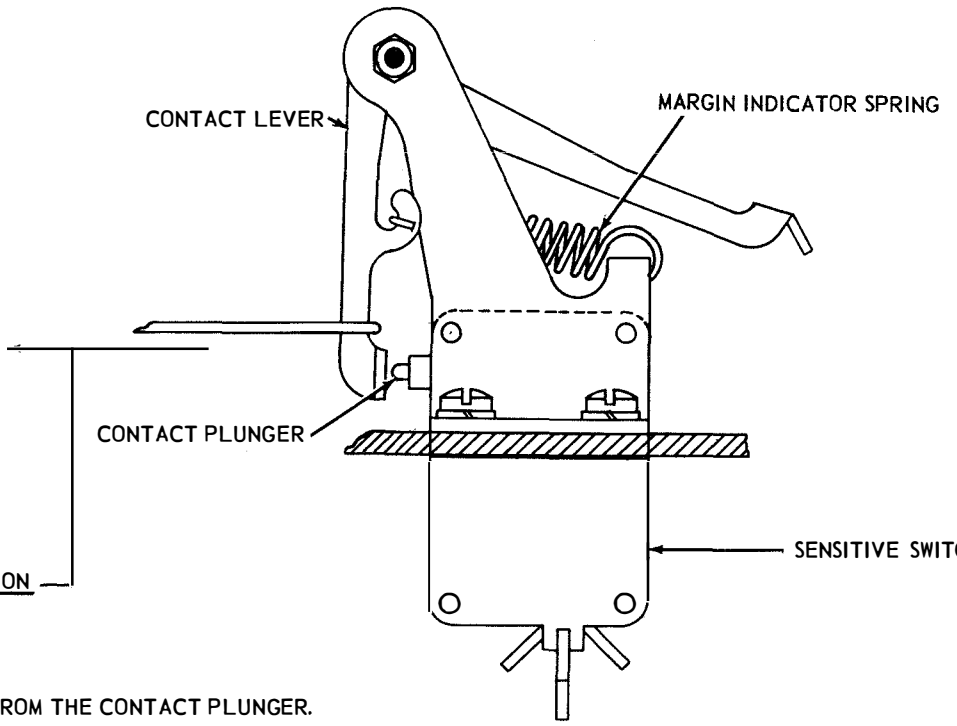
REQUIREMENT

TWO OILERS SHOULD BE UPWARD AND APPROXIMATELY EQUIDISTANT FROM A VERTICAL LINE THROUGH THE MOTOR SHAFT

TO ADJUST

POSITION THE MOTOR WITH THE TWO CLAMP SCREWS LOOSENED.

FIGURE 2 SYNCHRONOUS MOTOR



MARGIN INDICATOR SPRING TENSION

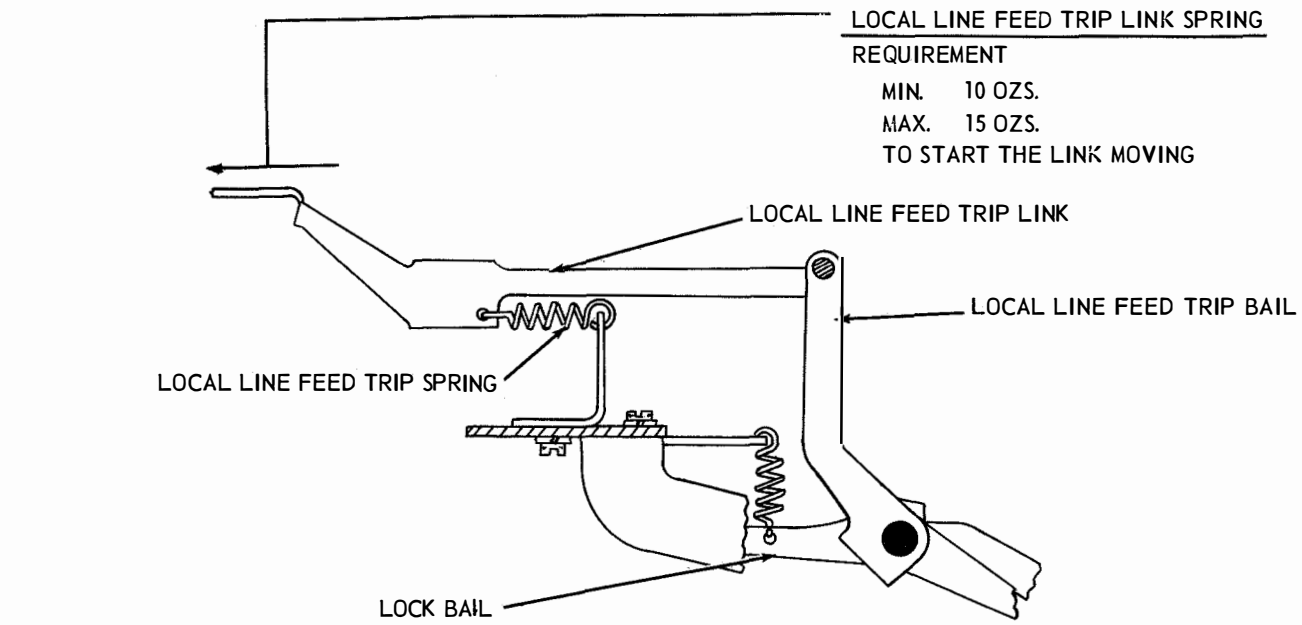
REQUIREMENT

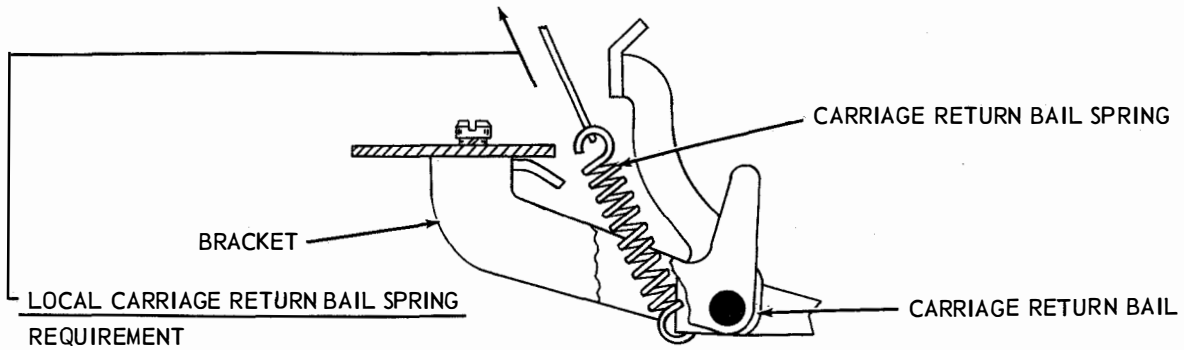
MIN. 9 OZS.

MAX. 14 OZS.

TO MOVE THE CONTACT LEVER FROM THE CONTACT PLUNGER.

FIGURE 3 BASE,. MARGIN INDICATING MECHANISM, FRONT VIEW





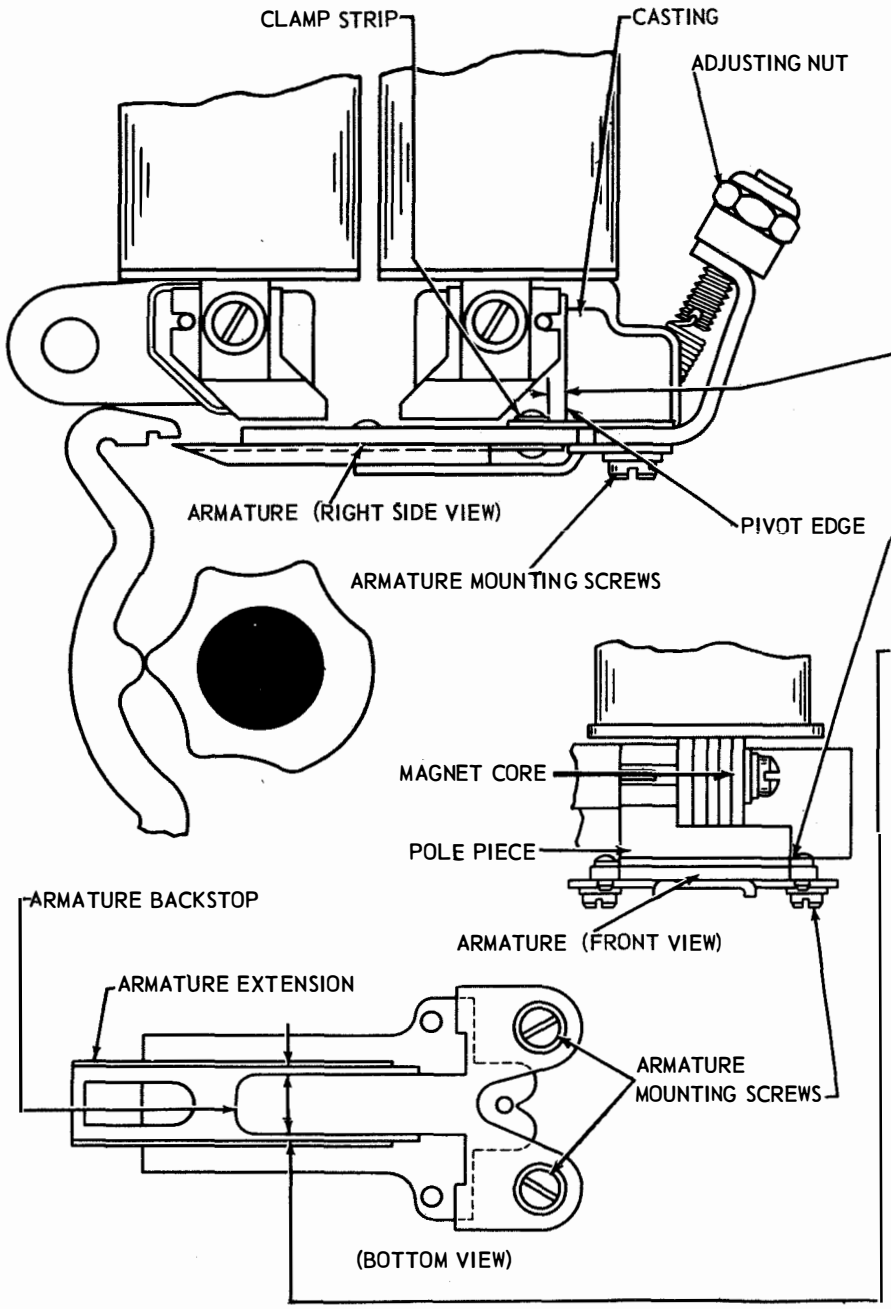
LOCAL CARRIAGE RETURN BAIL SPRING
REQUIREMENT
SPRING UNHOOKED FROM BRACKET
MIN. 10 OZ.
MAX. 15 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

FIGURE 4 BASE, LOCAL LINE FEED MECHANISM

F. TYPING UNIT

NOTE

TO FACILITATE MAKING THE FOLLOWING ADJUSTMENTS, REMOVE THE SELECTOR MAGNET ASSEMBLY AND THE RANGE FINDER ASSEMBLY. TO INSURE BETTER OPERATION, PULL A PIECE OF PAPER BETWEEN THE ARMATURE AND THE POLE PIECES TO REMOVE ANY OIL OR FOREIGN MATTER THAT MAY BE PRESENT. MAKE CERTAIN THAT NO LINT OR PIECES OF PAPER REMAIN BETWEEN THE POLE PIECES AND ARMATURE. BEFORE REMOUNTING THE RANGE FINDER, CHECK AND ADJUST THE RANGE FINDER KNOB PHASING.



A. SELECTOR ARMATURE

NOTE

THIS REQUIREMENT NEED NOT BE MADE NOR CHECKED IF SELECTOR MAGNET BRACKET (FIG. 6) AND RECEIVING MARGIN (TABLE 1) REQUIREMENTS ARE MET.

(1) REQUIREMENT (ARMATURE CLAMP STRIP) CLEARANCE
MIN. - 0.010 INCH
MAX. 0.030 INCH
BETWEEN ARMATURE CLAMP STRIP AND CASTING.

(2) REQUIREMENT (ARMATURE ALIGNMENT)
OUTER EDGE OF ARMATURE SHOULD BE FLUSH (WITHIN 0.015 INCH) WITH OUTER EDGE OF POLE PIECES.

(3) REQUIREMENT
(ARMATURE BACKSTOP ALIGNMENT)
SOME CLEARANCE
MIN. 0.010 INCH
BETWEEN THE SIDES OF THE BACKSTOP AND THE SIDES OF THE ARMATURE EXTENSION

TO ADJUST
FIRST, POSITION ARMATURE SPRING ADJUSTING NUT TO HOLD ARMATURE FIRMLY AGAINST PIVOT EDGE OF CASTING, THEN POSITION ARMATURE AND BACKSTOP WITH MOUNTING SCREWS LOOSENED.

INSTRUCTIONS FOR REMOVING SELECTOR MAGNET ASSEMBLY

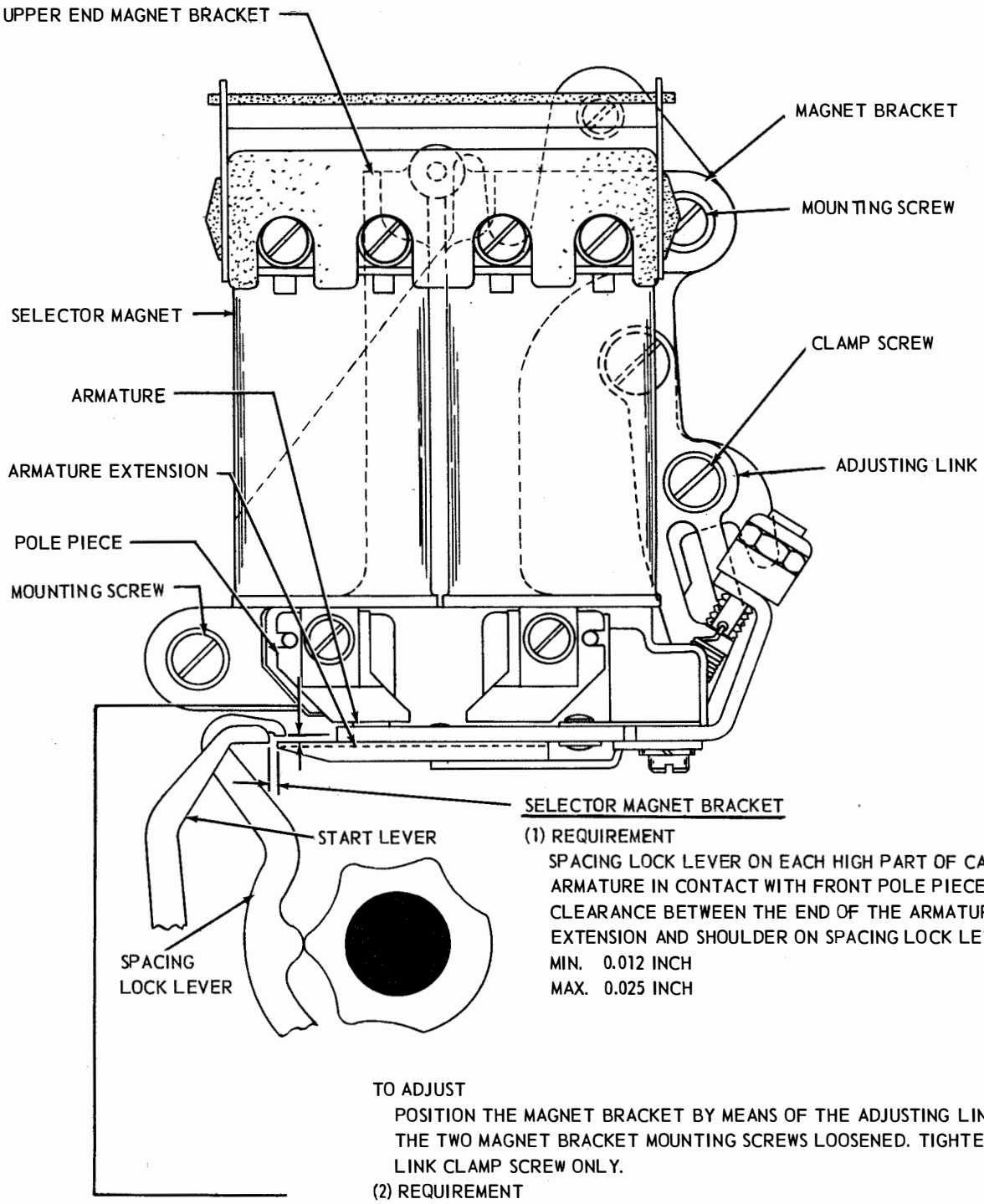
NOTE - - - REMOVE ONLY FOR SERVICING

REMOVE THE RANGE FINDER BY REMOVING THE TWO SCREWS AND THE NUT WHICH MOUNT IT TO THE SELECTOR.

REMOVE THE CABLE FROM THE COIL TERMINAL SCREWS.

REMOVE THE TWO MAGNET ASSEMBLY MOUNTING SCREWS AND LIFT THE ASSEMBLY OUT OF THE HOLE IN LOCATING PLATE.

FIGURE 5 TYPER, SELECTOR MAGNET



(1) REQUIREMENT

SPACING LOCK LEVER ON EACH HIGH PART OF CAM. ARMATURE IN CONTACT WITH FRONT POLE PIECE. CLEARANCE BETWEEN THE END OF THE ARMATURE EXTENSION AND SHOULDER ON SPACING LOCK LEVER.

MIN. 0.012 INCH

MAX. 0.025 INCH

TO ADJUST

POSITION THE MAGNET BRACKET BY MEANS OF THE ADJUSTING LINK WITH THE TWO MAGNET BRACKET MOUNTING SCREWS LOOSENED. TIGHTEN THE LINK CLAMP SCREW ONLY.

(2) REQUIREMENT

MAGNET ENERGIZED. ARMATURE IN CONTACT WITH FRONT POLE PIECE. SOME CLEARANCE BETWEEN THE UPPER SURFACE OF ARMATURE EXTENSION AND LOWER SURFACE OF THE SPACING LOCK LEVER. WHEN LOCK LEVER IS HELD DOWNWARD.

MAX. 0.003 INCH

TO ADJUST

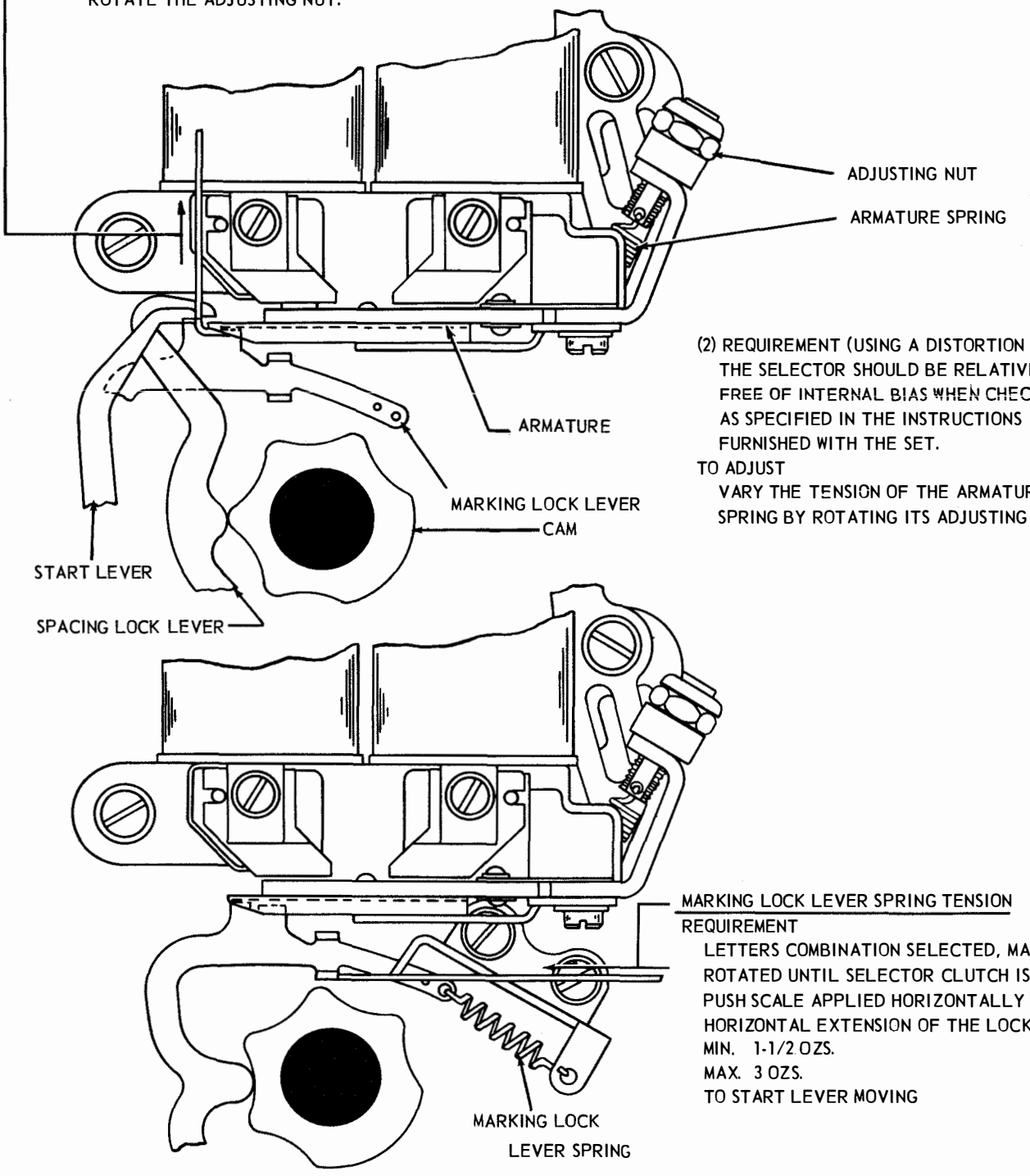
POSITION UPPER END OF MAGNET BRACKET WITH MOUNTING SCREWS LOOSENED. RECHECK REQUIREMENT (1).

FIGURE 6 TYPER, SELECTOR MAGNET, RIGHT SIDE VIEW.

SELECTOR ARMATURE SPRING TENSION

(1) REQUIREMENT (WHEN NO DISTORTION TEST SET IS AVAILABLE)
WITH THE MARKING LOCK LEVER, SPACING LOCK LEVER, AND START LEVER ON HIGH PART OF THEIR CAMS. SCALE APPLIED AS NEARLY VERTICAL AS POSSIBLE AT END OF ARMATURE EXTENSION. IT SHOULD REQUIRE APPROXIMATELY 3 OZS. TO PULL ARMATURE TO MARKING POSITION.

TO ADJUST
ROTATE THE ADJUSTING NUT.



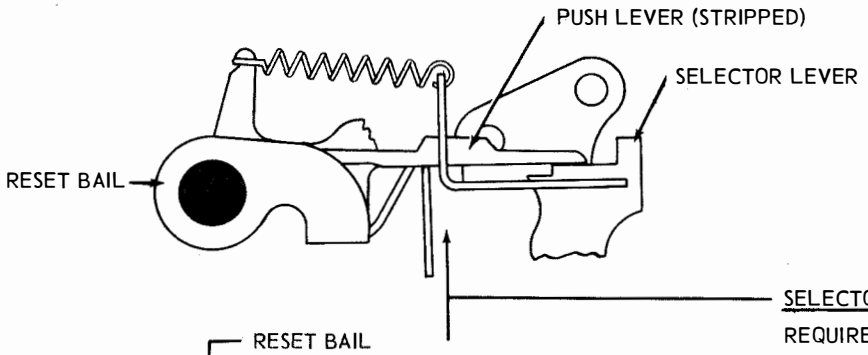
(2) REQUIREMENT (USING A DISTORTION TEST SET)
THE SELECTOR SHOULD BE RELATIVELY FREE OF INTERNAL BIAS WHEN CHECKED AS SPECIFIED IN THE INSTRUCTIONS FURNISHED WITH THE SET.

TO ADJUST
VARY THE TENSION OF THE ARMATURE SPRING BY ROTATING ITS ADJUSTING NUT.

MARKING LOCK LEVER SPRING TENSION

REQUIREMENT
LETTERS COMBINATION SELECTED, MAIN SHAFT ROTATED UNTIL SELECTOR CLUTCH IS DISENGAGED. PUSH SCALE APPLIED HORIZONTALLY TO LOWER HORIZONTAL EXTENSION OF THE LOCK LEVER
MIN. 1-1/2 OZS.
MAX. 3 OZS.
TO START LEVER MOVING

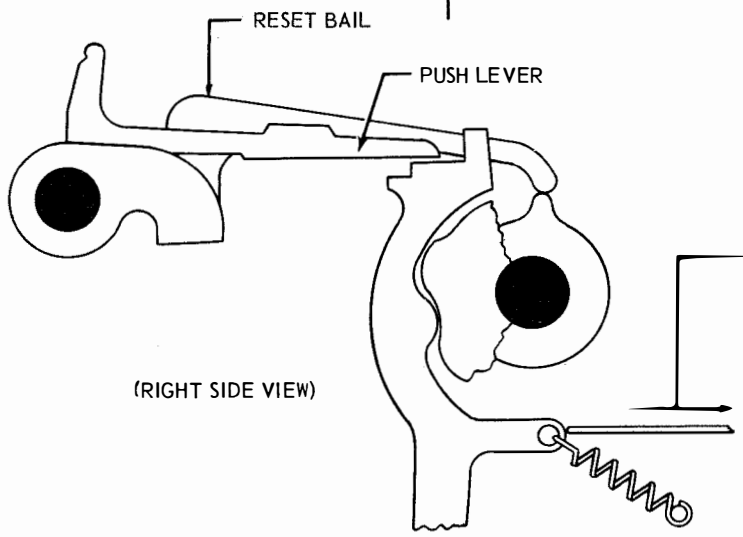
FIGURE 7 TYPER, SELECTOR MECHANISM, RIGHT SIDE VIEW



SELECTOR PUSH LEVER SPRING TENSION

REQUIREMENT

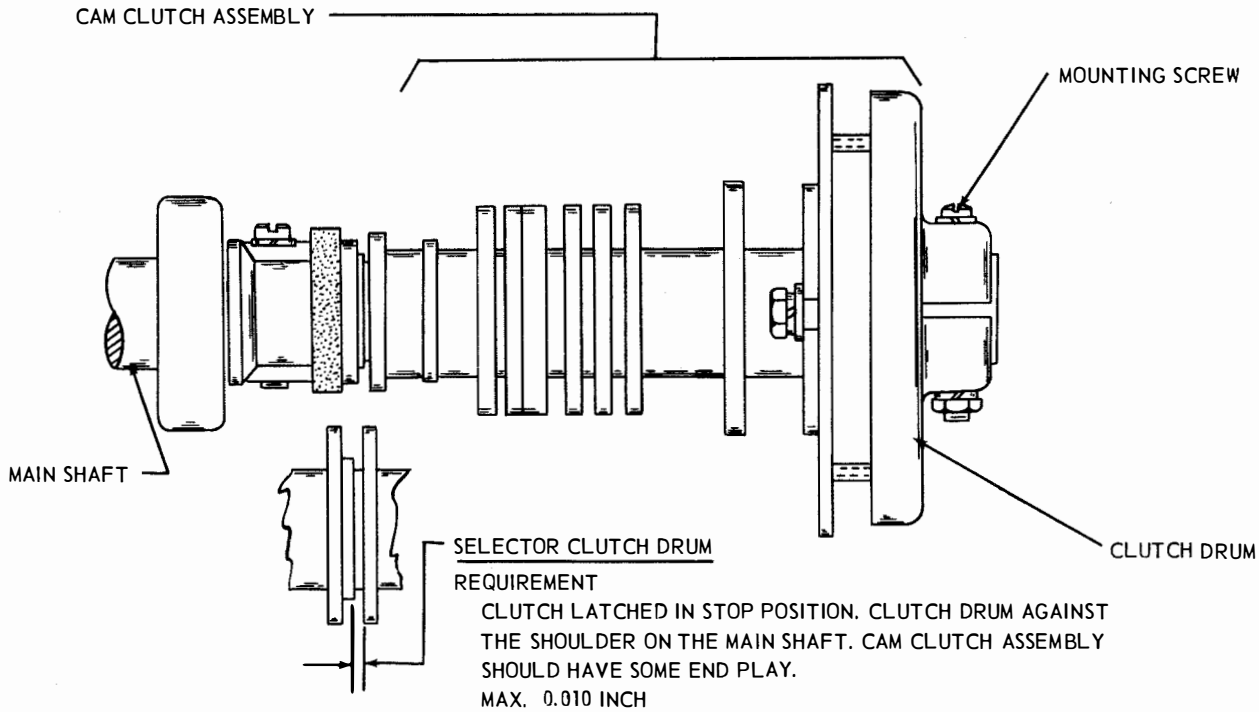
PUSH LEVER IN SPACING POSITION
MIN. 3/4 OZS.
MAX. 1 1/2 OZS.
TO MOVE PUSH LEVER FROM THE SELECTOR LEVER (HORIZONTAL PRESSURE).
CHECK ALL FIVE PUSH LEVER SPRINGS



SELECTOR LEVER SPRING TENSION

REQUIREMENT

RESET BAIL ON PEAK OF ITS CAM.
MIN. 1 1/4 OZS.
MAX. 2 1/2 OZS.
TO START EACH LEVER MOVING.
CHECK ALL FIVE SELECTOR LEVER SPRINGS.



SELECTOR CLUTCH DRUM

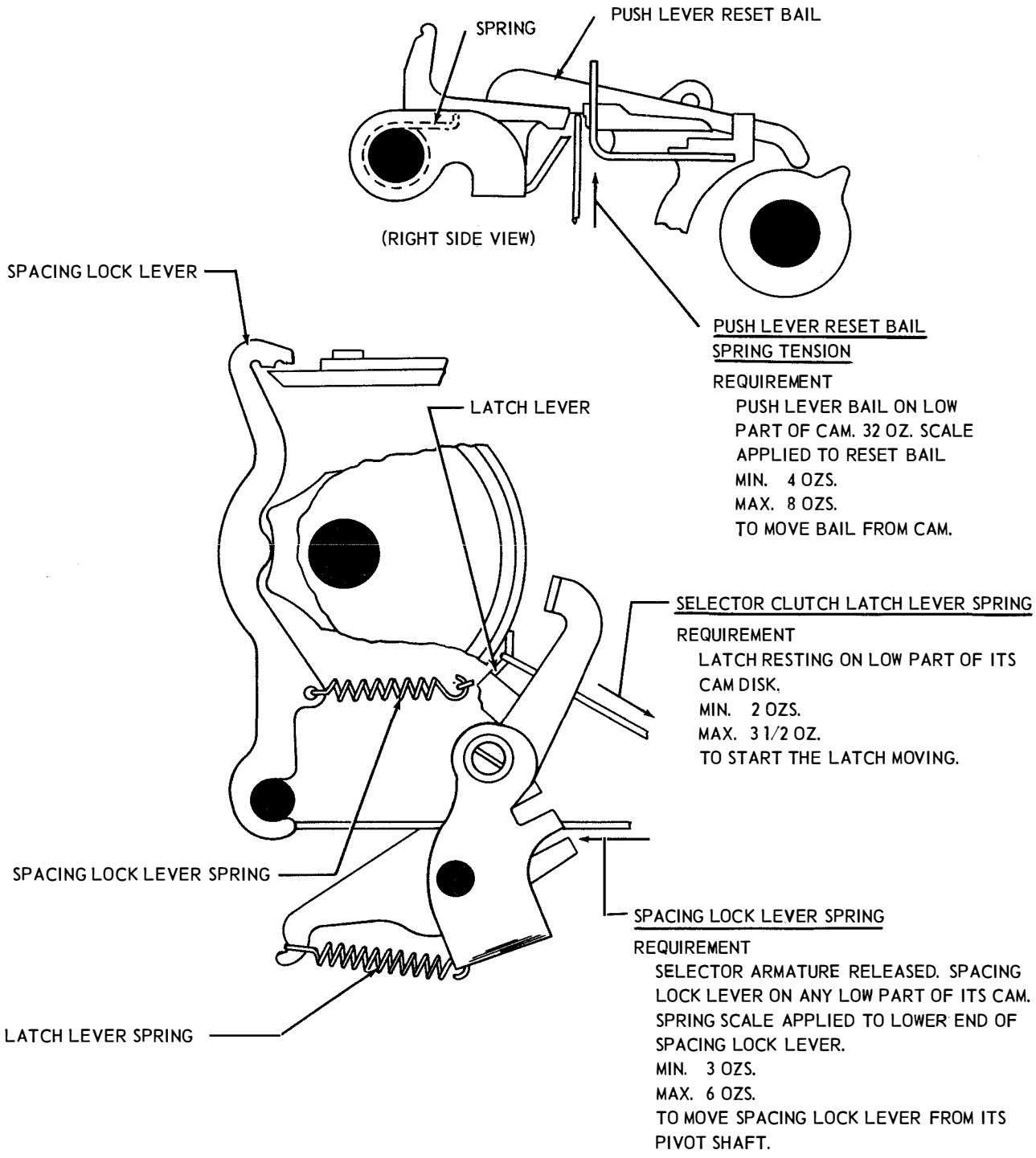
REQUIREMENT

CLUTCH LATCHED IN STOP POSITION. CLUTCH DRUM AGAINST THE SHOULDER ON THE MAIN SHAFT. CAM CLUTCH ASSEMBLY SHOULD HAVE SOME END PLAY.
MAX. 0.010 INCH

TO ADJUST

UTILIZE CLEARANCE IN CLUTCH DRUM MOUNTING HOLE WITH MOUNTING SCREW LOOSENED.

FIGURE 8 TYPER, SELECTOR MECHANISM



PUSH LEVER RESET BAIL SPRING TENSION

REQUIREMENT

PUSH LEVER BAIL ON LOW PART OF CAM. 32 OZ. SCALE APPLIED TO RESET BAIL
MIN. 4 OZS.
MAX. 8 OZS.
TO MOVE BAIL FROM CAM.

SELECTOR CLUTCH LATCH LEVER SPRING

REQUIREMENT

LATCH RESTING ON LOW PART OF ITS CAM DISK.
MIN. 2 OZS.
MAX. 3 1/2 OZ.
TO START THE LATCH MOVING.

SPACING LOCK LEVER SPRING

REQUIREMENT

SELECTOR ARMATURE RELEASED. SPACING LOCK LEVER ON ANY LOW PART OF ITS CAM. SPRING SCALE APPLIED TO LOWER END OF SPACING LOCK LEVER.
MIN. 3 OZS.
MAX. 6 OZS.
TO MOVE SPACING LOCK LEVER FROM ITS PIVOT SHAFT.

INSTRUCTIONS FOR REMOVING THE TYPE BOX

NOTE – – – REMOVE ONLY FOR SERVICING

MOVE TYPE BOX LATCH TOGGLE TO THE RIGHT. LIFT THE RIGHT END IF THE TYPE BOX (APPROX.) 45o AND PULL TO THE RIGHT TO DISENGAGE TYPE BOX FROM ITS LEFT BEARING STUD. REINSTALL IN REVERSE ORDER. MAKE SURE THAT THE TYPE BOX IS FIRMLY SEATED ON ITS BEARING STUDS AND THE POINT OF LATCH TOGGLE IS PLACED IN THE NOTCH OF THE TYPE BOX PLATE BEFORE LATCHING THE TOGGLE.

FIGURE 9 TYPER, SELECTOR CLUTCH MECHANISM, RIGHT SIDE VIEW

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 – 3 POINTS.

TO PHASE

REMOVE PLATE AND POSITION KNOB WITH MOUNTING NUT LOOSENED

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 LOOSENED.

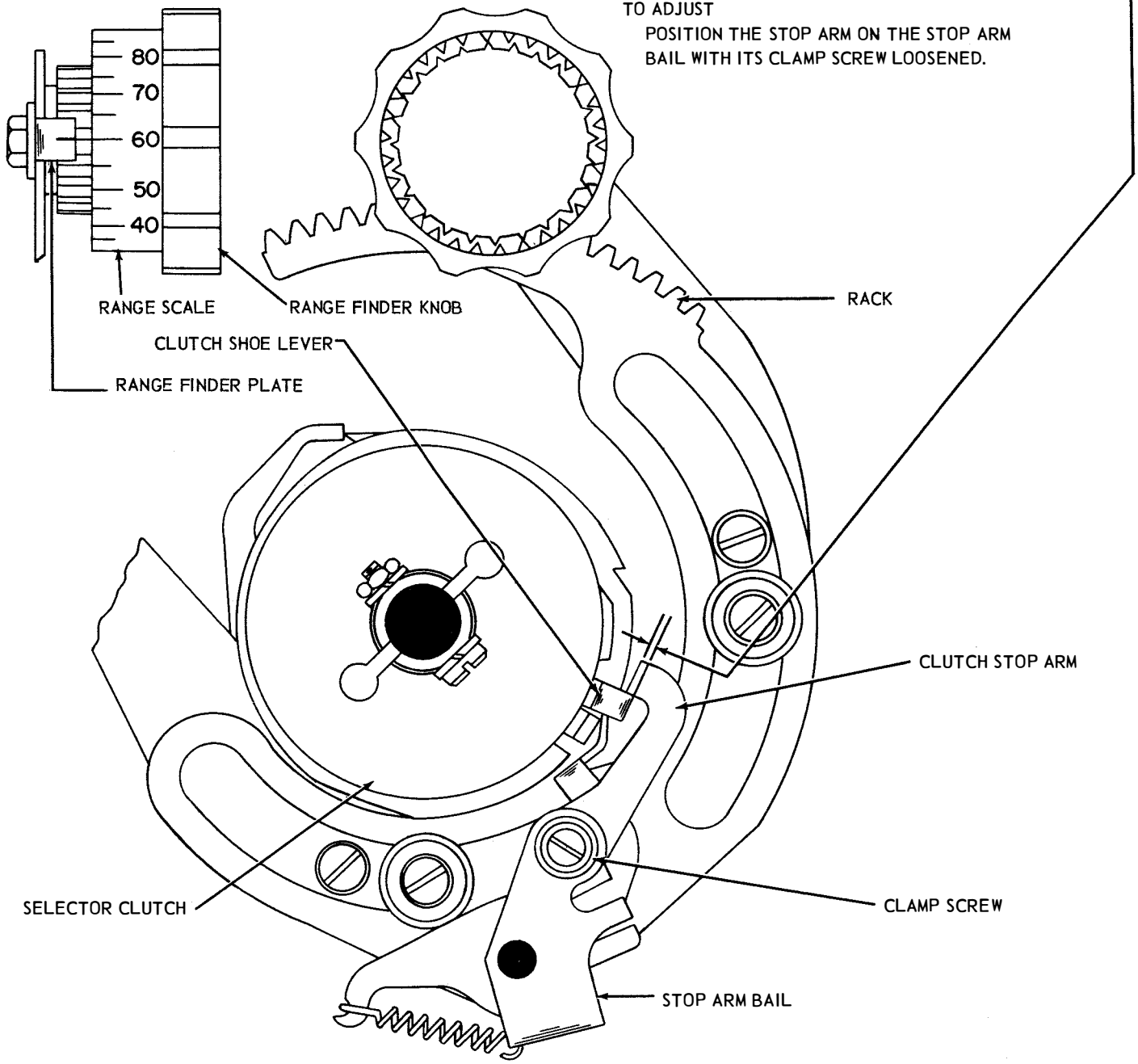


FIGURE 10 TYPER RANGE FINDER MECHANISM. RIGHT SIDE VIEW

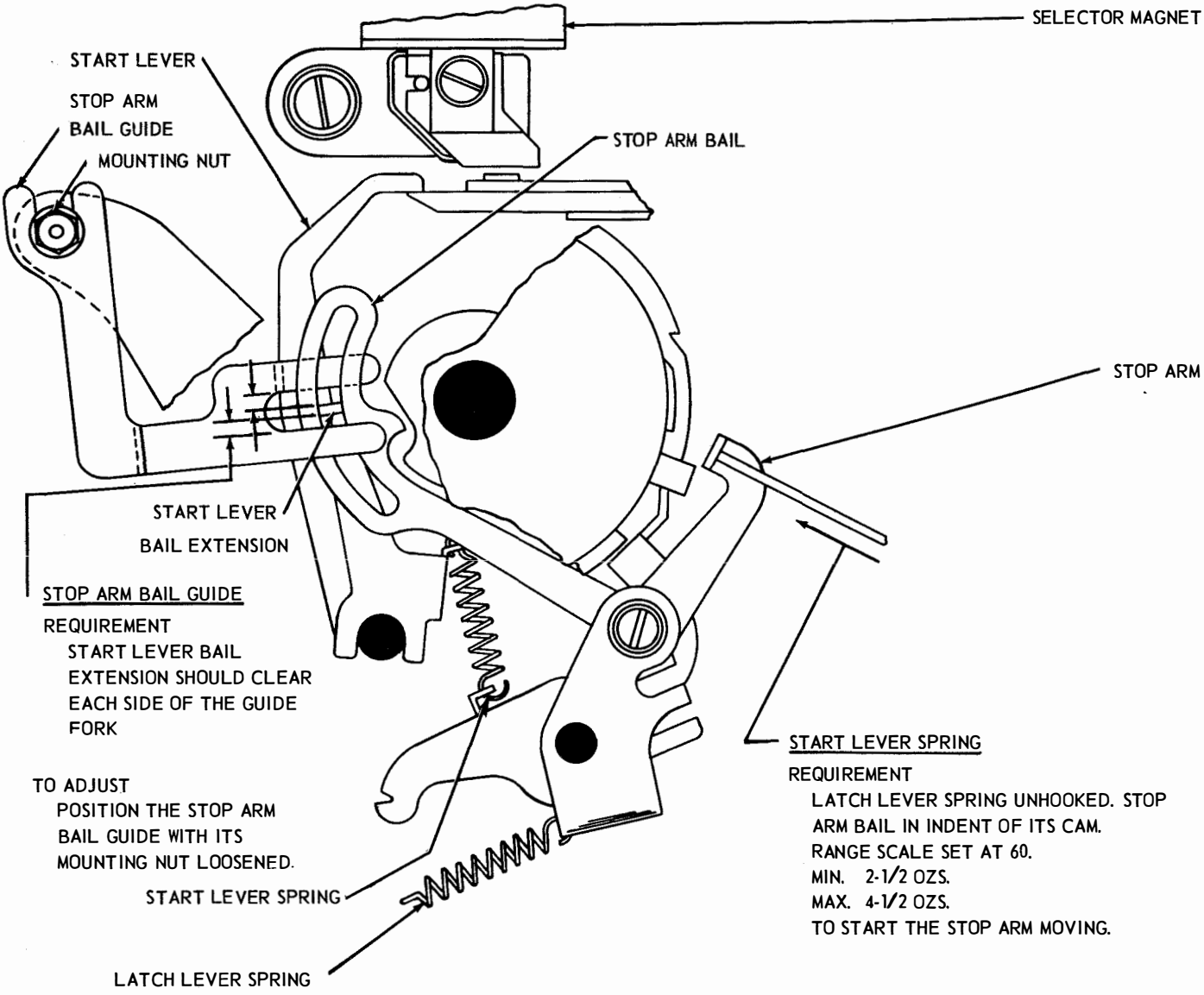


FIGURE 11 TYPER, SELECTOR CLUTCH MECHANISM, RIGHT SIDE VIEW

INSTRUCTIONS FOR REMOVING SELECTOR MECHANISM

NOTE - - - REMOVE ONLY FOR SERVICING

REMOVE SELECTOR MAGNET (SEE P.2-6) REMOVE FELT WICK FROM ITS HOLDER THEN REMOVE HOLDER. UNHOOK COMMON TRANSFER LEVER SPRING FROM PUSH LEVER GUIDE. REMOVE REMAINING THREE SELECTOR MOUNTING SCREWS (ONE IS INSIDE THE SIDE FRAME) AND LIFT SELECTOR FROM SIDE FRAME REPLACE IN REVERSE ORDER.

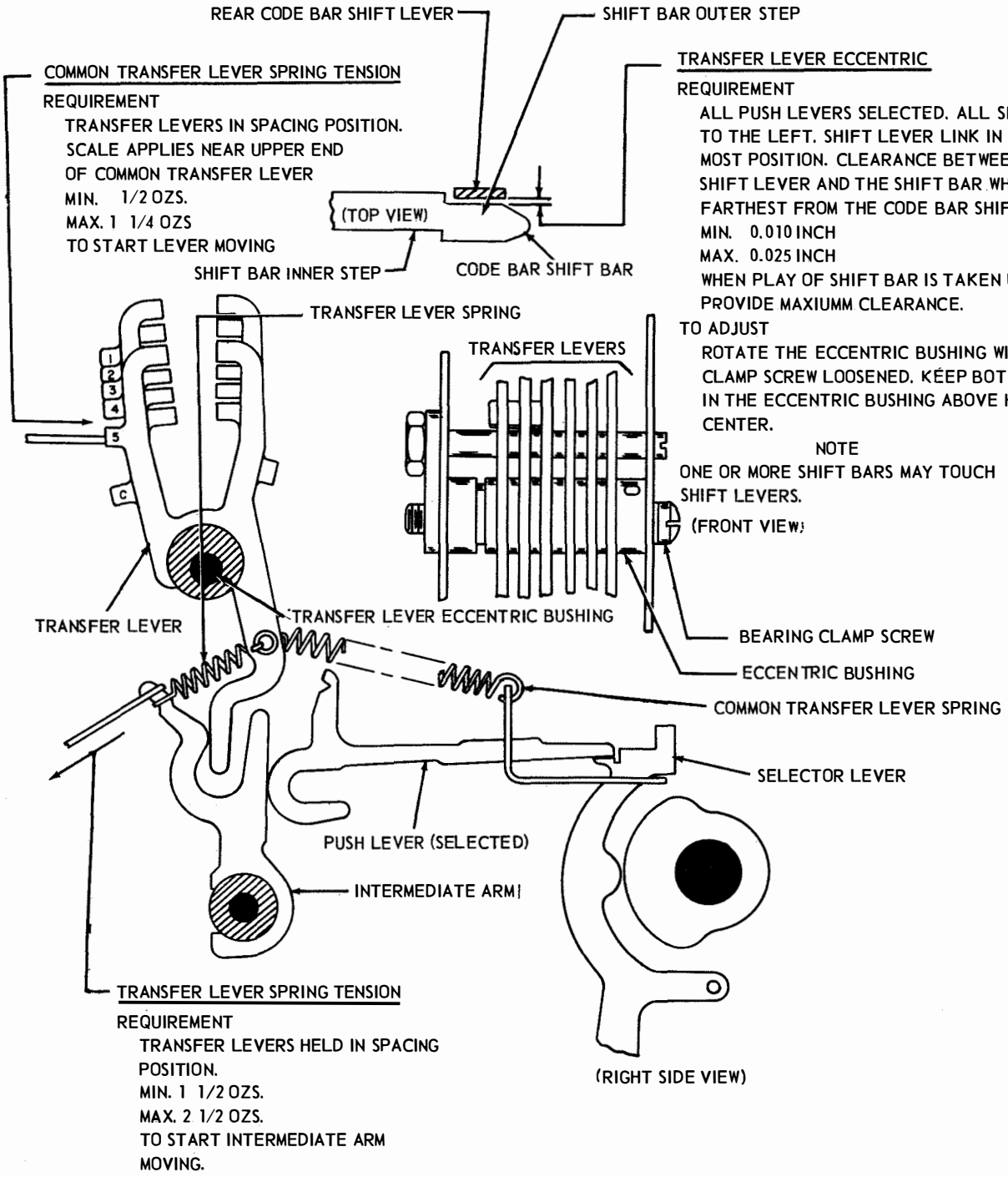
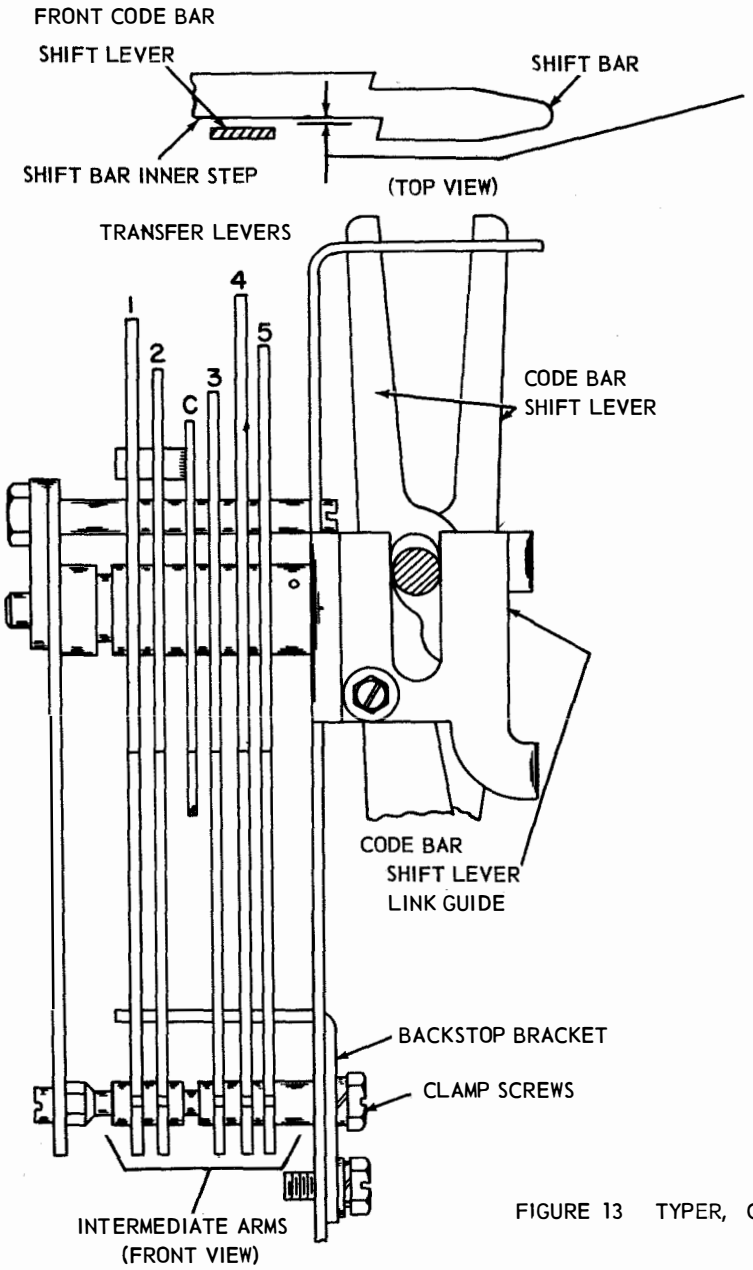


FIGURE 12 TYPER, CODE BAR SHIFT MECHANISM



INTERMEDIATE ARM BACKSTOP BRACKET

REQUIREMENT

SELECTOR PUSH LEVERS STRIPPED. CLEARANCE BETWEEN FRONT EDGE OF INNER STEP OF SHIFT BAR AND THE FRONT CODE BAR SHIFT LEVER WHEN THE PLAY IN THE PARTS IS TAKEN UP TO MAKE THE CLEARANCE MAXIMUM

MIN. 0.010 INCH

MAX. 0.025 INCH

TO ADJUST

POSITION THE BACKSTOP BRACKET WITH ITS TWO CLAMP SCREWS LOOSENED.

INSTRUCTIONS FOR REMOVING PRINT CARRIAGE

NOTE . . . REMOVE ONLY FOR SERVICING

LOOSEN TWO SCREWS IN PRINT CARRIAGE CABLE CLAMP AND DISENGAGE THE CABLE FROM THE CLAMP. MOVE CARRIAGE TO LEFT END OF ITS TRACK AND TILT LOWER PART OF THE CARRIAGE FORWARD TO DISENGAGE ROLLER FROM TRACK. REINSTALL IN REVERSE ORDER, MAKE SURE THAT PRINTING LEVER ARM IS RE-ENGAGED CORRECTLY WITH THE PRINTING BAIL. POSITION CARRIAGE CLAMP ON CABLE FOR CORRECT PRINTING. SEE FIGURE 43

FIGURE 13 TYPER, CODE BAR SHIFT MECHANISM

INSTRUCTION FOR REMOVING SELECTOR CAM ASSEMBLY WITH CLUTCH

NOTE - - - REMOVE ONLY FOR SERVICING

LIFT THE PUSH LEVER BAIL CAM FOLLOWER FROM THE CAM AND LATCH IT IN THE RAISED POSITION ON THE LEDGE OF THE PUSH LEVER GUIDE BY SLIDING IT TO THE LEFT. LIFT SELECTOR LEVERS AND MARKING LOCK LEVER FROM THEIR CAMS BY MOVING THE MARKING LOCK LEVER FORWARD UNTIL THE ARMATURE DROPS BEHIND IT.

REMOVE NUT AND SCREW WHICH MOUNT SELECTOR CLUTCH DRUM AND POSITION THE SELECTOR CLUTCH SO THAT THE STOP LUG IS IN THE UPPERMOST POSITION.

HOLD START LEVER AND SPACING LOCKLEVER AWAY FROM THEIR CAMS WITH FOREFINGER OF LEFT HAND AND WITH DRAW THE CAM ASSEMBLY BY SLIDING IT TO THE RIGHT WHILE ROCKING IT BACK AND FORTH SLIGHTLY.

REPLACE THE ASSEMBLY IN THE REVERSE ORDER EXCEPT FOR THE FOLLOWING. AS THE CAM ASSEMBLY APPROACHES ITS FULLY INSTALLED POSITION, IT WILL BE NECESSARY TO POSITION THE CODE BAR CLUTCH TRIP CAM FOLLOWER AND THE SELECTOR CLUTCH LATCH SO THEY RIDE ON THEIR RESPECTIVE CAM SURFACES.

RESTORE PUSH LEVER BAIL AND THE ARMATURE TO THEIR NORMAL OPERATING POSITIONS.

INSTRUCTIONS FOR REMOVING TYPE BOX CARRIAGE

NOTE – – – REMOVE ONLY FOR SERVICING

MOVE TYPE BOX CARRIAGE TO EXTREME RIGHT. HOLD CODE BARS IN MARKING POSITION AND ROTATE MAIN SHAFT SO THAT TYPE BOX IS IN ITS UPPERMOST POSITION.

REMOVE RETAINER RING FROM STUD AT RIGHT END OF TYPE BOX CARRIAGE LINK AND DISENGAGE LINK FROM CARRIAGE. ROTATE PRINTER SHAFT SO THAT TYPE BOX IS IN ITS LOWEST POSITION. HOLD RIBBON GUIDE FORWARD AND RIBBON REVERSE LEVER BACK AND PULL CARRIAGE TOWARD THE RIGHT TO DISENGAGE IT FROM CARRIAGE RACK.

REINSTALL CARRIAGE IN REVERSE ORDER.

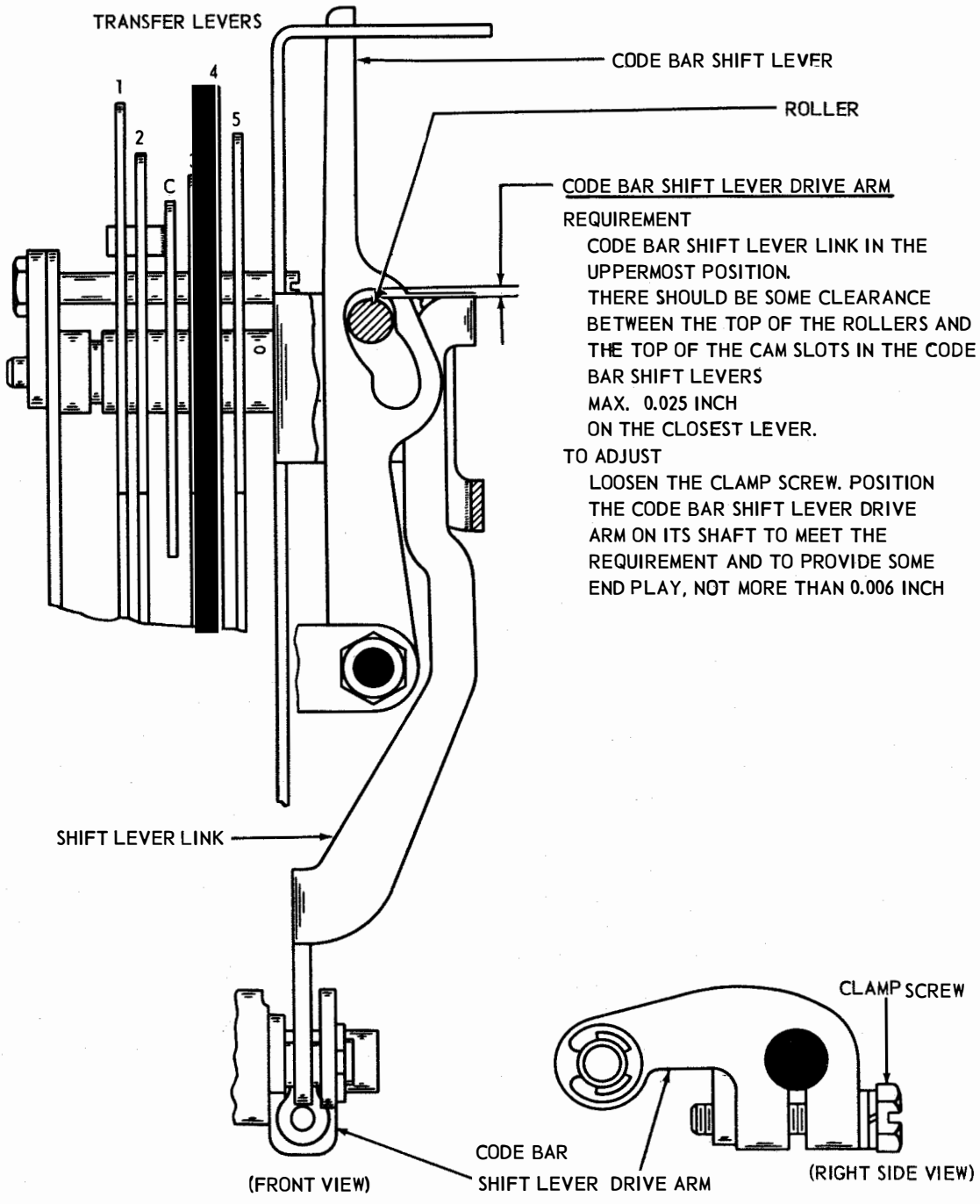


FIGURE 14 TYPER, CODE BAR SHIFT MECHANISM

INSTRUCTIONS FOR REMOVING CODE BAR SHIFT MECHANISM

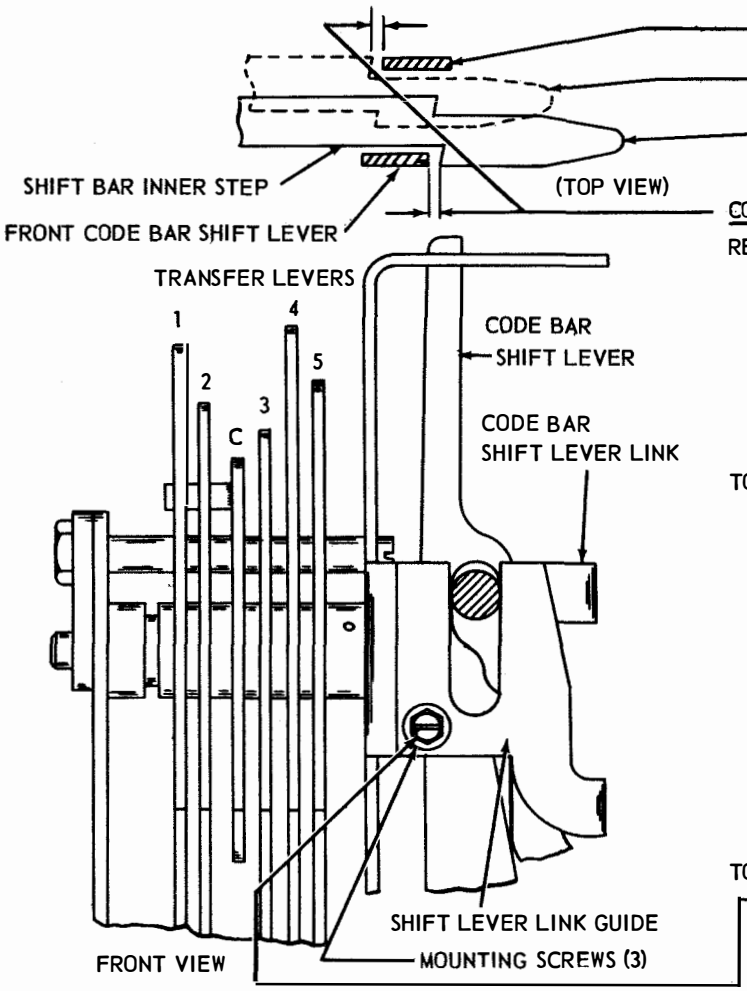
NOTE – – – REMOVE ONLY FOR SERVICING

REMOVE THE SPRING ATTACHED TO COMMON TRANSFER LEVER AND RESTORE ANY OPERATED PUSH BARS TO THE SPACING POSITION BY RAISING THE RESET BAIL.

LOOSEN THE CLAMP SCREW ON THE SHIFT LEVER, AND REMOVE THE TWO SCREWS WHICH MOUNT THE MECHANISM – ONE TO SIDE FRAME, OTHER TO SELECTOR MECHANISM MANIPULATE THE TRANSFER LEVERS AND CODE BAR EXTENSIONS WHILE GENTLY TWISTING THE MECHANISM SO AS TO SLIDE THE MECHANISM OFF THE CODE BAR EXTENSIONS.

TO REPLACE THE MECHANISM ON THE TYPING UNIT, REVERSE THE PROCEDURE USED IN REMOVING IT, EXCEPT FOR THE FOLLOWING:

WITH THE MAIN SHAFT IN THE STOP POSITION, PUSH THE CODE BAR EXTENSIONS TO THE MARKING POSITION (LEFT, OR IN). MANIPULATE THE CODE BAR EXTENSIONS AND TRANSFER LEVERS SO THAT THE EXTENSIONS LINE UP WITH THEIR RESPECTIVE SLOTS, AND SLIDE THE EXTENSIONS THROUGH THE SLOTS, ONE AT A TIME (BOTTOM SLOT VACANT.)



CODE BAR SHIFT LEVER LINK GUIDE

REQUIREMENT

THE MOTION OF THE TWO CODE BAR SHIFT LEVERS SHOULD BE EQUALIZED WITH RESPECT TO THE CODE TRAVEL.

TO CHECK

SELECT BLANK COMBINATION AND ROTATE MAIN SHAFT UNTIL CODE BAR SHIFT LEVER LINK REACHES HIGHEST TRAVEL. TAKE UP PLAY TO MAKE CLEARANCE MAXIMUM. CLEARANCE BETWEEN FRONT SHIFT LEVER AND SHOULDER ON NEAREST SHIFT BAR

MIN. 0.002 INCH
MAX. 0.025 INCH

SELECT LETTERS COMBINATION AND CHECK CLEARANCE BETWEEN REAR CODE BAR SHIFT LEVER AND SHOULDER OF SHIFT BAR IN SAME MANNER

MIN. 0.002 INCH
MAX. 0.025 INCH

TO ADJUST

POSITION THE CODE BAR SHIFT LEVER LINK GUIDE BY MEANS OF ITS THREE MOUNTING SCREWS.

FIGURE 15 TYPER, CODE BAR SHIFT MECHANISM

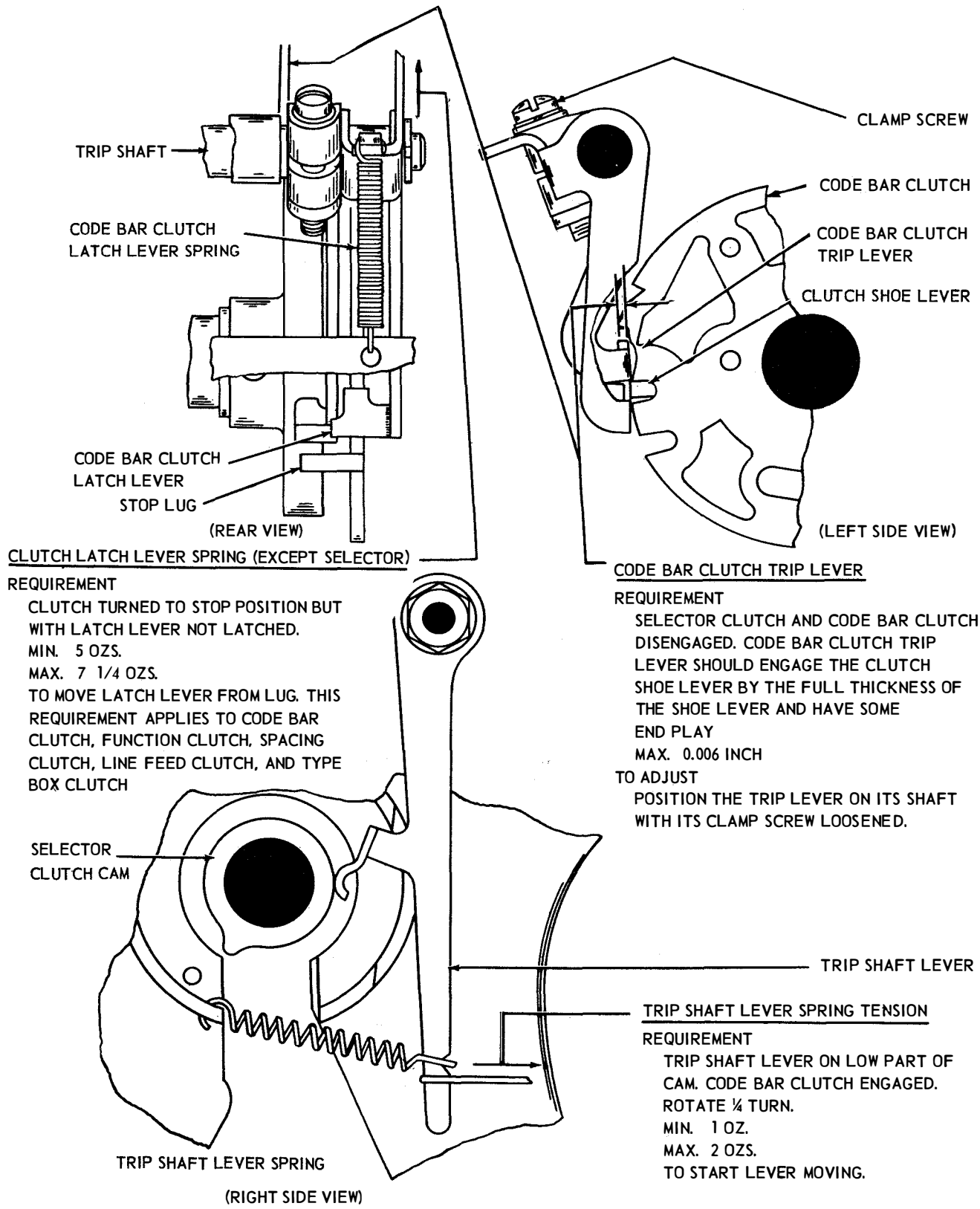
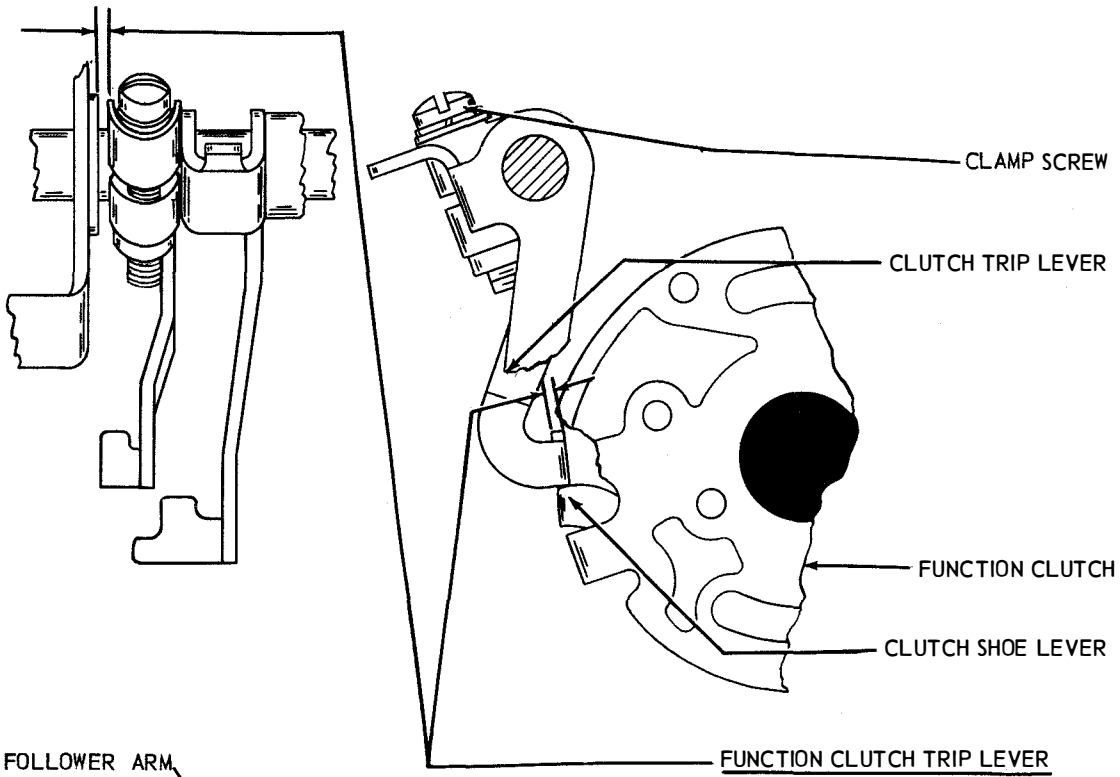


FIGURE 16 TYPER, CODE BAR CLUTCH TRIP SHAFT MECHANISM



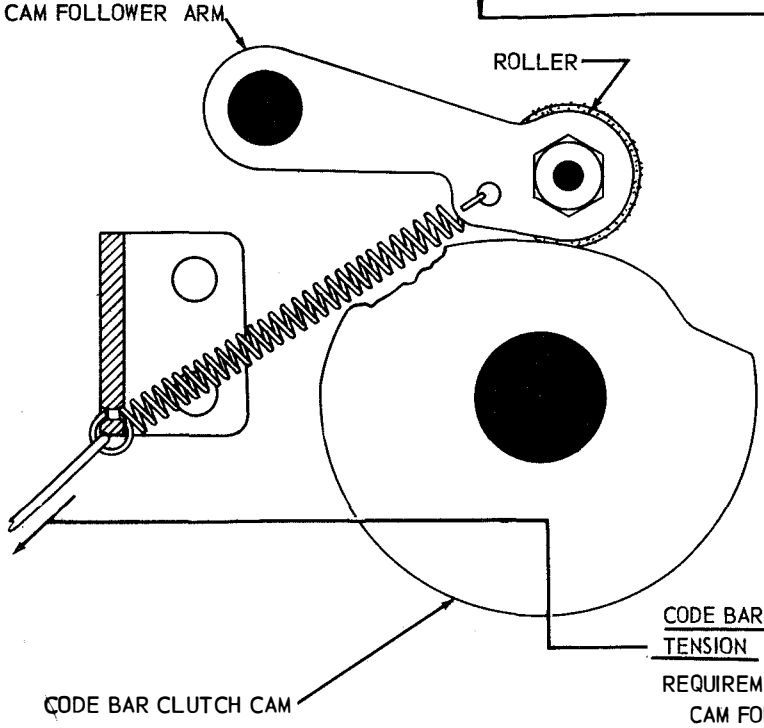
FUNCTION CLUTCH TRIP LEVER

REQUIREMENT

CODE BAR CLUTCH AND FUNCTION CLUTCH DISENGAGED.
FUNCTION CLUTCH TRIP LEVER SHOULD ENGAGE THE CLUTCH SHOE LEVER BY THE FULL THICKNESS OF THE SHOE LEVER. CHECK AT LUG WITH LEAST ENGAGEMENT

TO ADJUST

POSITION THE TRIP LEVER ON ITS SHAFT WITH ITS CLAMP SCREWS LOOSENED. WHEN POSITIONING THE TRIP LEVER PROVIDE THE SHAFT WITH SOME END PLAY.
MAX. 0.006 INCH

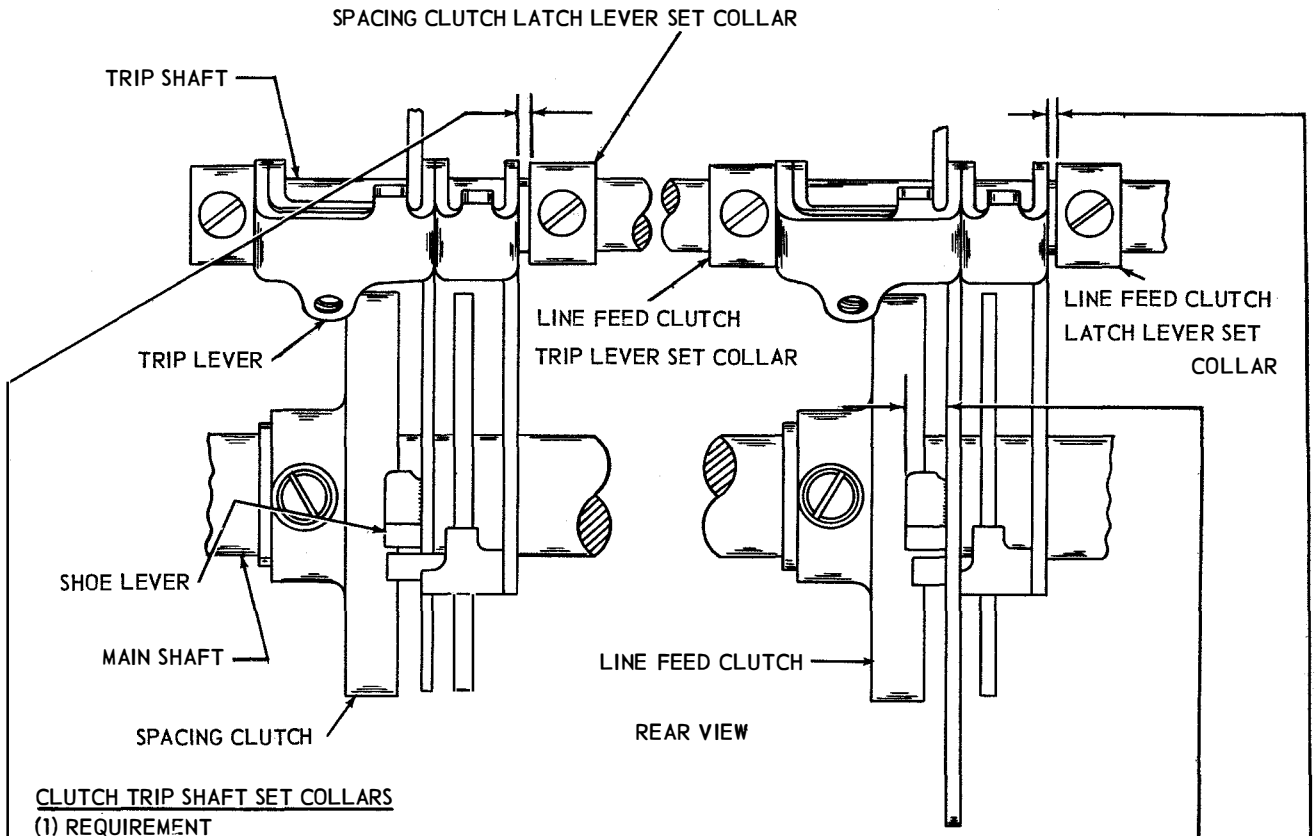


CODE BAR CLUTCH CAM FOLLOWER SPRING TENSION

REQUIREMENT

CAM FOLLOWER ROLLER ON THE LOW PART OF CAM.
THE SPRING UNHOOKED FROM SPRING BRACKET.
MIN. 20 OZS.
MAX. 24 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

FIGURE 17 TYPER, FUNCTION CLUTCH MECHANISM



CLUTCH TRIP SHAFT SET COLLARS

(1) REQUIREMENT

THE SPACING CLUTCH LATCH LEVER SHOULD HAVE SOME SIDE PLAY.
MAX. 0.008 INCH

TO ADJUST

POSITION THE SPACING CLUTCH LATCH LEVER SET COLLAR.

(2) REQUIREMENT

APPROXIMATE ALIGNMENT OF RIGHT END OF STOP EXTENSIONS
ON TRIP LEVER AND SHOE LEVER

TO ADJUST

POSITION THE LINE FEED CLUTCH TRIP LEVER SET COLLAR

(3) REQUIREMENT

THE LINE FEED CLUTCH LATCH LEVER SHOULD
HAVE SOME SIDE PLAY
MAX. 0.008 INCH

TO ADJUST

POSITION THE LINE FEED CLUTCH LATCH LEVER
SET COLLAR.

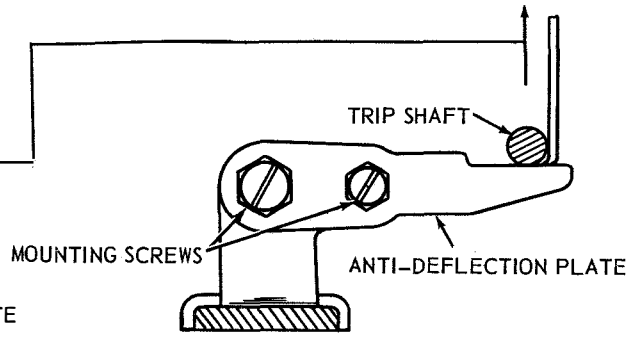
ANTI-DEFLECTION PLATE

REQUIREMENT

WITH THE TYPING UNIT UPSIDE DOWN
MIN. 1 LB.
MAX. 5 LBS.
TO PULL TRIP SHAFT AWAY FROM ANTI-DEFLECTION PLATE

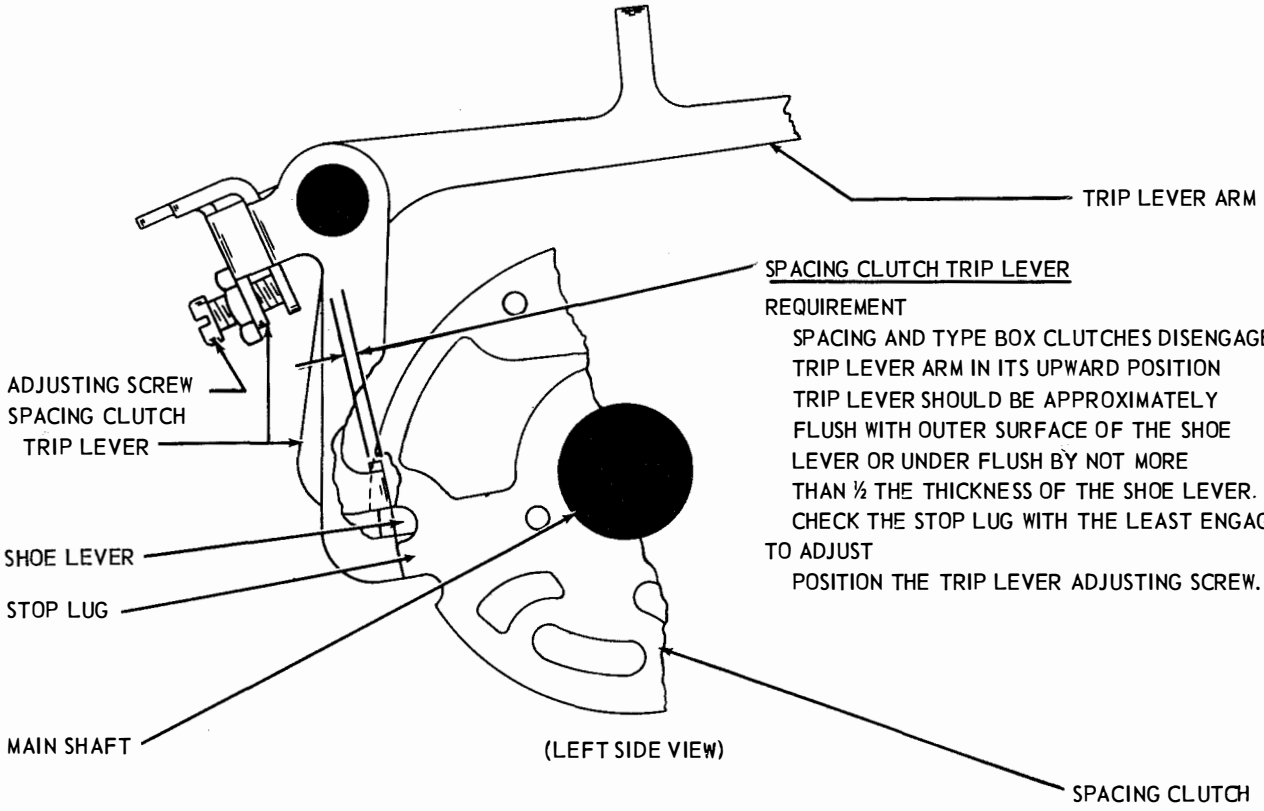
TO ADJUST

POSITION THE PLATE WITH ITS MOUNTING SCREWS LOOSENED.



(LEFT SIDE VIEW, UPSIDE DOWN)

FIGURE 18 TYPER , TRIP LATCH MECHANISM



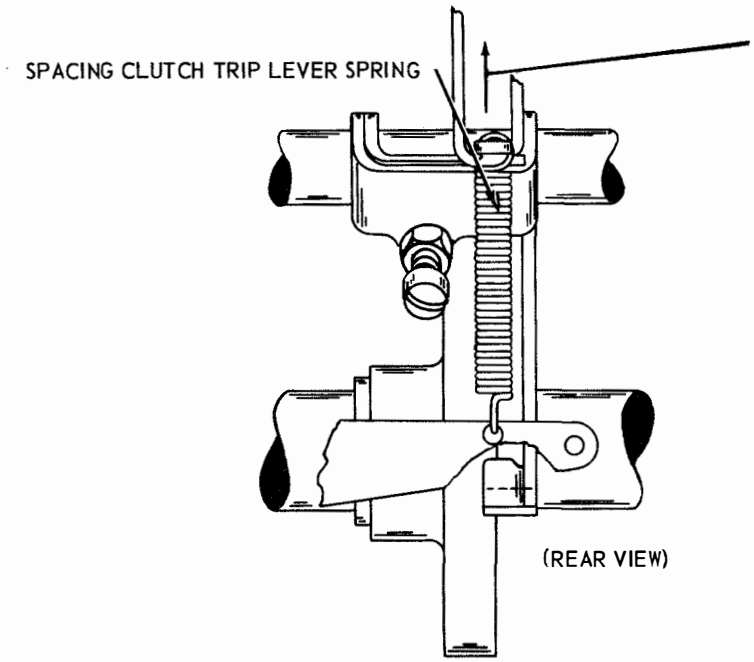
SPACING CLUTCH TRIP LEVER

REQUIREMENT

SPACING AND TYPE BOX CLUTCHES DISENGAGED.
TRIP LEVER ARM IN ITS UPWARD POSITION
TRIP LEVER SHOULD BE APPROXIMATELY
FLUSH WITH OUTER SURFACE OF THE SHOE
LEVER OR UNDER FLUSH BY NOT MORE
THAN ½ THE THICKNESS OF THE SHOE LEVER.
CHECK THE STOP LUG WITH THE LEAST ENGAGEMENT

TO ADJUST

POSITION THE TRIP LEVER ADJUSTING SCREW.



CLUTCH TRIP LEVER SPRING TENSION

1. SPACING
2. LINE FEED
3. TYPE BOX

REQUIREMENT

CLUTCH ENGAGED AND ROTATED UNTIL
TRIP LEVER RESTS ON STOP LUG.
MIN. 5 OZS.
MAX. 7 1/4 OZ.
TO MOVE TRIP LEVER AWAY FROM STOP LUG

FIGURE 19 TYPER, SPACING CLUTCH MECHANISM

OF

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.

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 ADJUSTING SCREW AND THE TRIP ARM. MAX. 0.006 INCH

TO ADJUST

POSITION THE ADJUSTING SCREW.

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. CHECK AT STOP LUG WITH LEAST ENGAGEMENT.

TO ADJUST

POSITION THE TRIP LEVER ECCENTRIC POST.

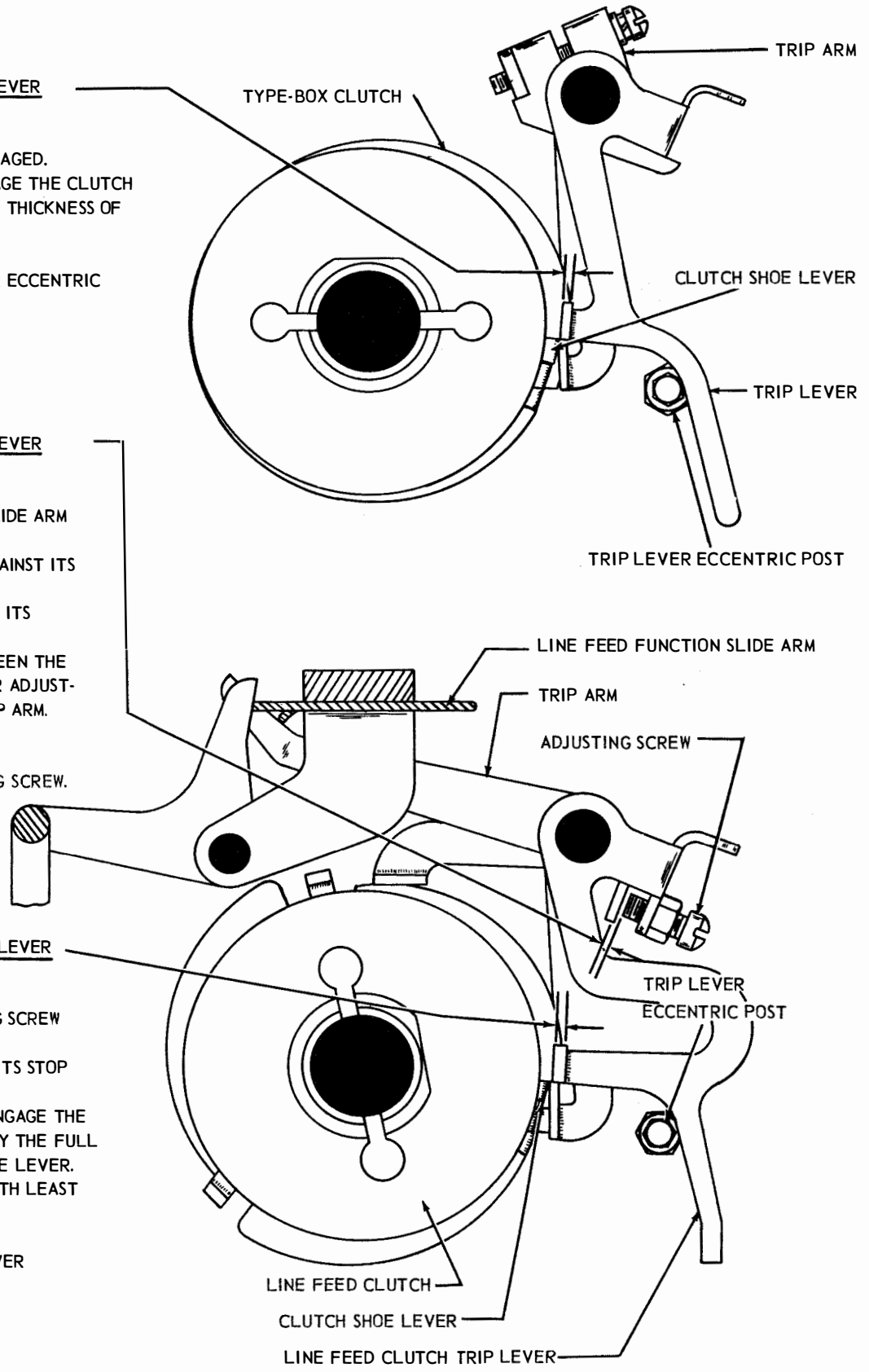
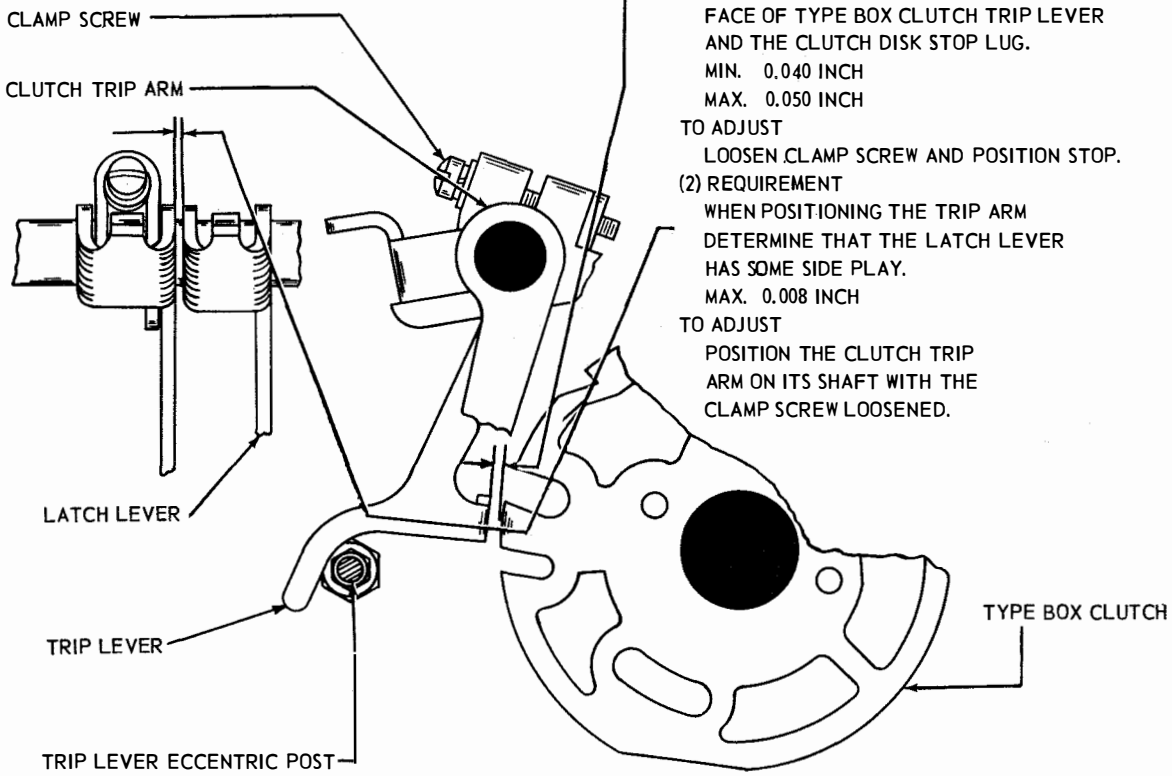


FIGURE 20 TYPER, TYPE BOX CLUTCH AND LINE FEED CLUTCH MECHANISM



TYPE BOX CLUTCH TRIP LEVER

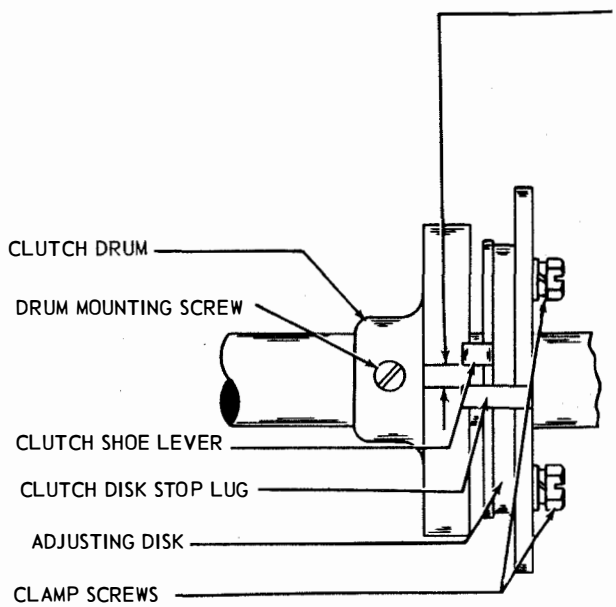
(1) REQUIREMENT (See Note 3 Page 2–1)
CLUTCH TRIP SHAFT CAM FOLLOWER ROLLER (SEE FIG. 17) ON THE LOWEST SURFACE OF CAM (LOCATED ON CODE BAR CLUTCH). CLEARANCE BETWEEN INNER FACE OF TYPE BOX CLUTCH TRIP LEVER AND THE CLUTCH DISK STOP LUG.
MIN. 0.040 INCH
MAX. 0.050 INCH

TO ADJUST
LOOSEN CLAMP SCREW AND POSITION STOP.

(2) REQUIREMENT
WHEN POSITIONING THE TRIP ARM DETERMINE THAT THE LATCH LEVER HAS SOME SIDE PLAY.
MAX. 0.008 INCH

TO ADJUST
POSITION THE CLUTCH TRIP ARM ON ITS SHAFT WITH THE CLAMP SCREW LOOSENED.

FIGURE 21 TYPER, TYPE BOX CLUTCH MECHANISM



CLUTCH SHOE LEVER

REQUIREMENT
GAP BETWEEN CLUTCH SHOE LEVER AND ITS STOP LUG SHOULD BE 0.055 INCH TO 0.075 INCH GREATER WHEN CLUTCH IS ENGAGED THAN WHEN THE CLUTCH IS DISENGAGED.

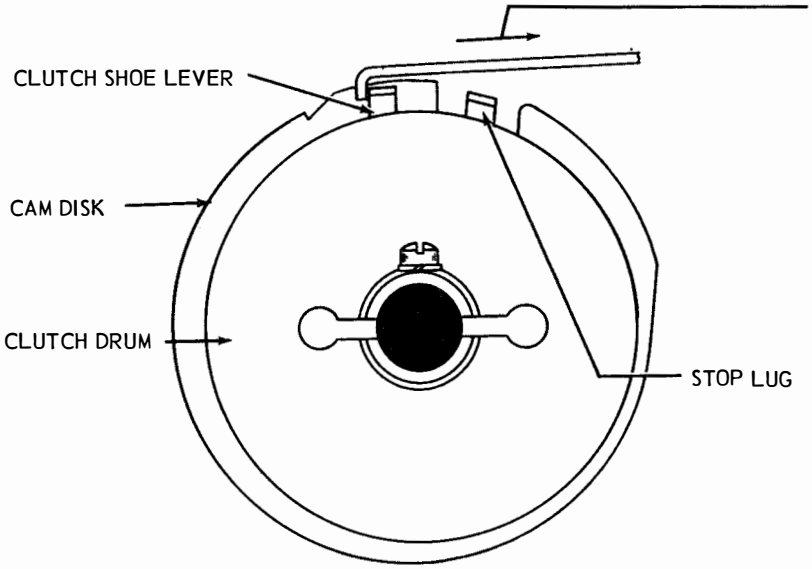
TO CHECK
DISENGAGE THE CLUTCH AND MEASURE THE GAP. TRIP THE CLUTCH AND ROTATE IT UNTIL THE CLUTCH SHOE LEVER IS TOWARD THE BOTTOM OF THE UNIT. ALIGN THE HEAD OF THE CLUTCH DRUM MOUNTING SCREW WITH THE STOP LUG. MANUALLY COMPRESS THE SHOE LEVER AGAINST THE STOP LUG AND ALLOW THEM TO SNAP APART. AGAIN MEASURE THE GAP WITH THE CLUTCH THUS ENGAGED.

NOTE
ON MULTIPLE STOP CLUTCHES CHECK THE CLEARANCE AT THE STOP LUG THAT IS ADJACENT TO THE NOTCH IN THE CLUTCH ADJUSTING DISK.

TO ADJUST
LOOSEN THE TWO CLAMP SCREWS ON THE CLUTCH DISK. ENGAGE A WRENCH ON THE LUG OF THE ADJUSTING DISK AND ROTATE THE DISK.

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 SHOE IF THE DRUM DRAGS, REFINE THE ABOVE ADJUSTMENT.

FIGURE 22 TYPER, CLUTCH SHOE MECHANISM (ALL CLUTCHES)



CLUTCH SHOE LEVER SPRING TENSIONS

REQUIREMENT

CLUTCH ENGAGED. HOLD CAM DISK TO PREVENT TURNING. SPRING SCALE PULLED AT TANGENT TO CLUTCH.

MIN. 15 OZS.
MAX. 20 OZS. ONE-STOP CLUTCHES

MIN. 16 OZS.
MAX. 22 OZS. MULTIPLE-STOP CLUTCHES

TO MOVE THE SHOE LEVER IN CONTACT WITH THE STOP LUG.

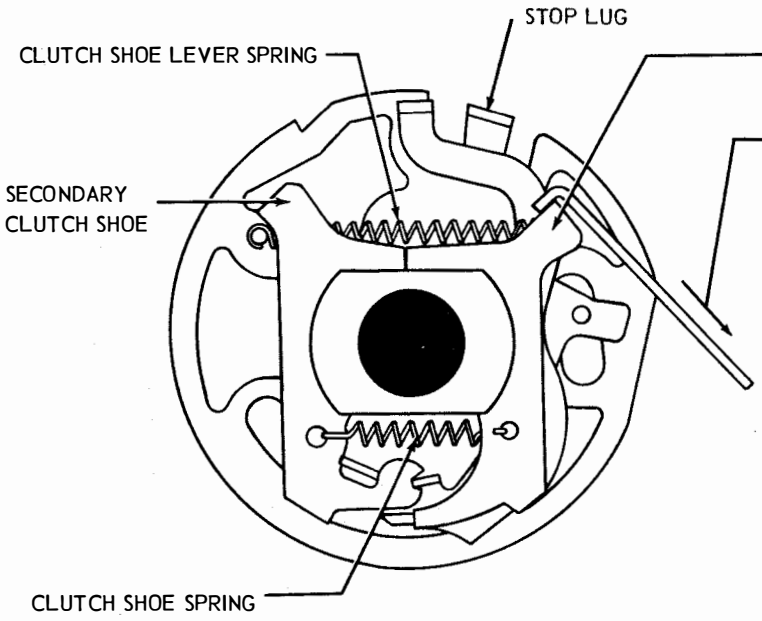
CLUTCH DRUM POSITION (EXCEPT SELECTOR)

REQUIREMENT

CLUTCH SHOE LEVER HELD DISENGAGED. CLUTCH SHOULD HAVE SOME END PLAY
MAX. 0.020 INCH

TO ADJUST

POSITION EACH DRUM AND SPACING CLUTCH SET COLLAR WITH MOUNTING SCREWS LOOSENED.



CLUTCH SHOE SPRING TENSION

NOTE

IN ORDER TO CHECK THIS SPRING TENSION, IT IS NECESSARY TO REMOVE THE CLUTCH FROM THE MAIN SHAFT. THEREFORE, IT SHOULD NOT BE CHECKED UNLESS THERE IS GOOD REASON TO BELIEVE THAT IT DOES NOT MEET ITS REQUIREMENT.

REQUIREMENT

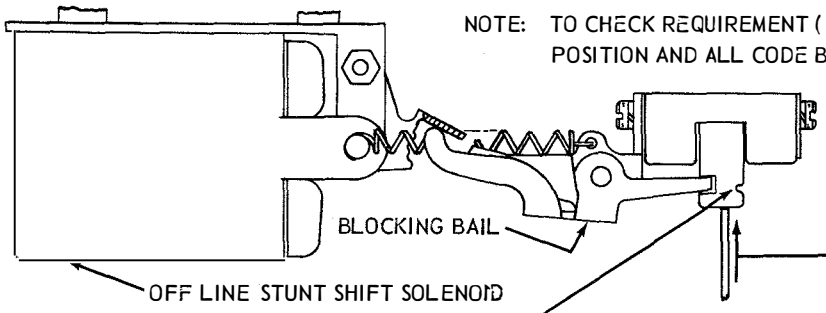
CLUTCH DRUM REMOVED. SPRING SCALE APPLIED TO PRIMARY SHOE AT A TANGENT TO THE FRICTION SURFACE

MIN. 3 OZS.
MAX. 5 OZS.

TO START THE PRIMARY SHOE MOVING AWAY FROM SECONDARY SHOE AT POINT OF CONTACT.

FIGURE 23 TYPER, CLUTCH MECHANISM, LEFT SIDE VIEW

NOTE: TO CHECK REQUIREMENT (A,B, and D), SET FUNCTION CLUTCH IN STOP POSITION AND ALL CODE BARS TO THE RIGHT



SUPPRESSOR CODE BAR SPRING

REQUIREMENT

SUPPRESSOR CODE BAR TO LEFT
MIN. 3 OZ. — MAX. 6 OZ.
TO START CODE BAR MOVING.

A STUNT CASE CODE BAR SHIFT MECHANISM

REQUIREMENT

WITH LATCH FUNCTION LEVER ON ITS LOWER RELEASING LATCH, NOTCH IN SUPPRESSION CODE BAR SHOULD ALIGN WITH NOTCHES, IN OTHER CODE BARS

TO ADJUST

POSITION PROPER GUIDE PLATE WITH ITS CLAMP NUTS LOOSENED. (Similar parts Figure 53 and 54). REPEAT FOR EACH STUNT CASE CODE BAR SHIFT MECHANISM.

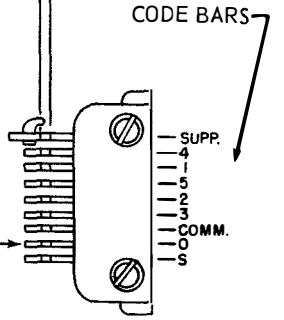
B CONDITION CODE (ZERO) CODE BAR SHIFT MECHANISM

REQUIREMENT

NOTCH IN CONDITION CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS

TO ADJUST

POSITION GUIDE PLATE (FIG. 53, WITH CLAMP NUTS LOOSENED.



D OFF LINE STUNT SHIFT BRACKET ASSEMBLY

REQUIREMENT

NOTCH IN SUPPRESSION CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN SOLENOID IS HELD IN OPERATED POSITION

TO ADJUST

POSITION SOLENOID BRACKET ASSEMBLY WITH ITS MOUNTING SCREWS LOOSENED.

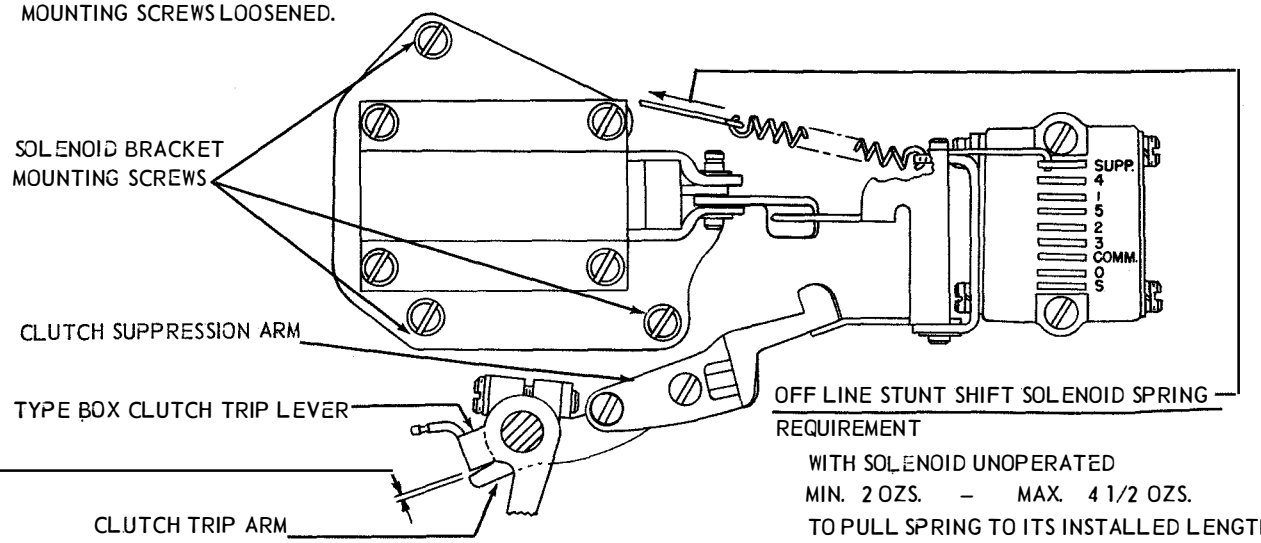
C TYPE BOX CLUTCH SUPPRESSION ARM

REQUIREMENT

WITH SUPPRESSION ARMS IN BLOCKED POSITION. SOME TO 0.005 INCH CLEARANCE BETWEEN TRIP ARM EXTENSION AND CLUTCH TRIP LEVER.

TO ADJUST

POSITION SUPPRESSION ARM WITH ITS MOUNTING SCREWS LOOSENED.



OFF LINE STUNT SHIFT SOLENOID SPRING

REQUIREMENT

WITH SOLENOID UNOPERATED
MIN. 2 OZS. – MAX. 4 1/2 OZS.
TO PULL SPRING TO ITS INSTALLED LENGTH

FIGURE 24 TYPER, OFF LINE STUNT SHIFT SOLENOID MECHANISM

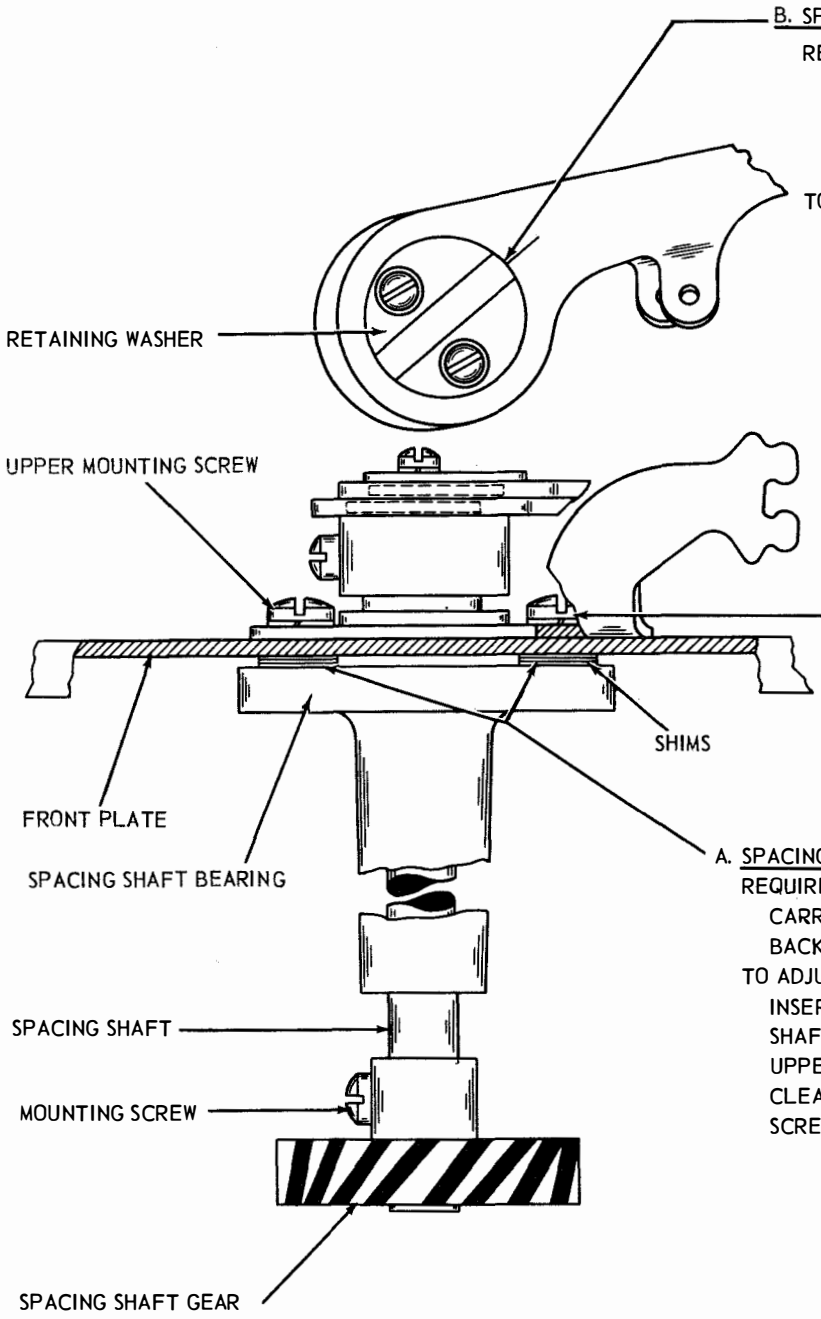


FIGURE 25 TYPER, SPACING MECHANISM

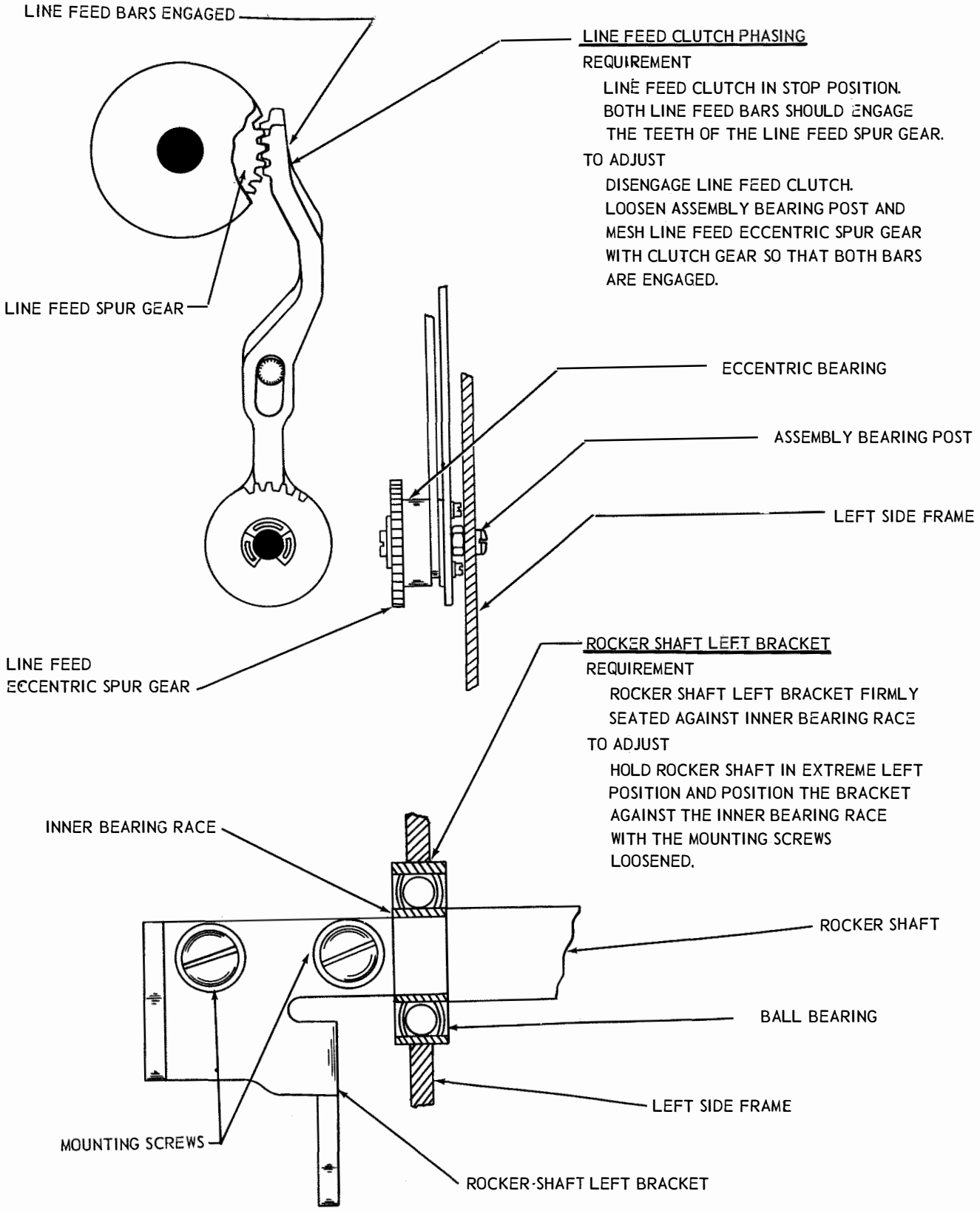


FIGURE 26 TYPER, LINE FEED AND ROCKER SHAFT MECHANISM

ROCKER SHAFT BRACKET ECCENTRIC STUD

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. PLAY IN ROLLER ARM TAKEN TOWARD FRONT. DISTANCE BETWEEN THE LOWER SIDE OF THE LOCK LEVER ROLLER AND THE TOP EDGE OF THE SHOULDER ON THE HORIZONTAL POSITIONING LOCK LEVER SHOULD BE

MIN. 0.065 INCH

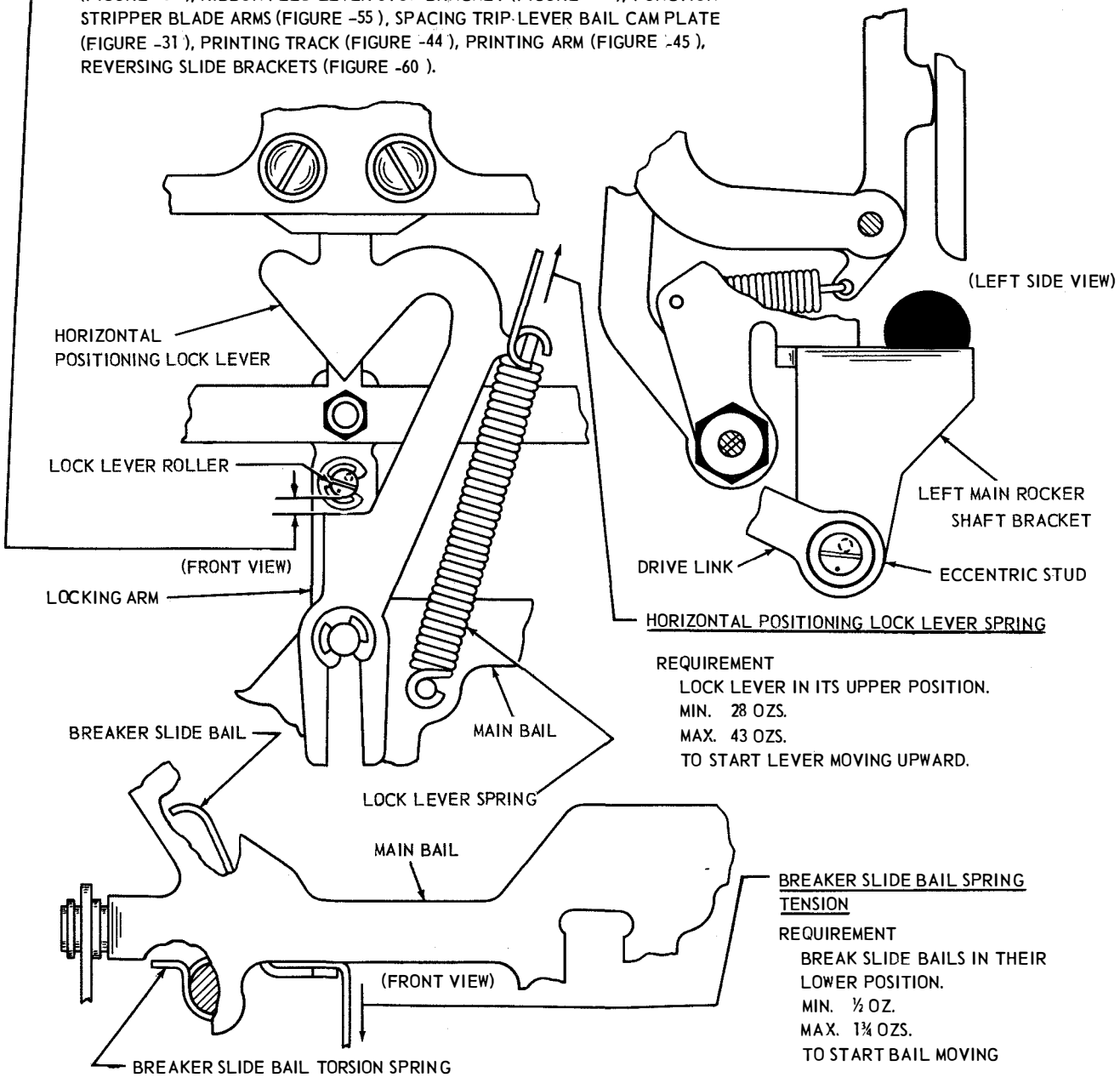
MAX. 0.080 INCH

TO ADJUST

POSITION THE ECCENTRIC STUD IN THE LOWER END OF THE ROCKER SHAFT LEFT BRACKET. KEEP HIGH PART OF ECCENTRIC (MARKED WITH DOT) BELOW CENTER LINE OF DRIVE LINK.

NOTE

AFTER MAKING RELATED ADJUSTMENTS ANY CHANGE IN THIS ADJUSTMENT WILL REQUIRE A RECHECKING OF THE FOLLOWING ADJUSTMENTS: HORIZONTAL POSITIONING DRIVE LINKAGE (FIGURE –32), RIGHT VERTICAL POSITIONING LEVER ECCENTRIC STUD (FIGURE 28), LEFT VERTICAL POSITIONING LEVER ECCENTRIC STUD (FIGURE 29), VERTICAL POSITIONING LOCK LEVER (FIGURE –35), RIBBON FEED LEVER STOP BRACKET (FIGURE –47), FUNCTION STRIPPER BLADE ARMS (FIGURE –55), SPACING TRIP LEVER BAIL CAM PLATE (FIGURE –31), PRINTING TRACK (FIGURE –44), PRINTING ARM (FIGURE –45), REVERSING SLIDE BRACKETS (FIGURE –60).



HORIZONTAL POSITIONING LOCK LEVER SPRING

REQUIREMENT

LOCK LEVER IN ITS UPPER POSITION.

MIN. 28 OZS.

MAX. 43 OZS.

TO START LEVER MOVING UPWARD.

BREAKER SLIDE BAIL SPRING TENSION

REQUIREMENT

BREAK SLIDE BAILS IN THEIR LOWER POSITION.

MIN. ½ OZ.

MAX. 1¾ OZS.

TO START BAIL MOVING

FIGURE 27 TYPER, SHIFT AND POSITIONING MECHANISMS

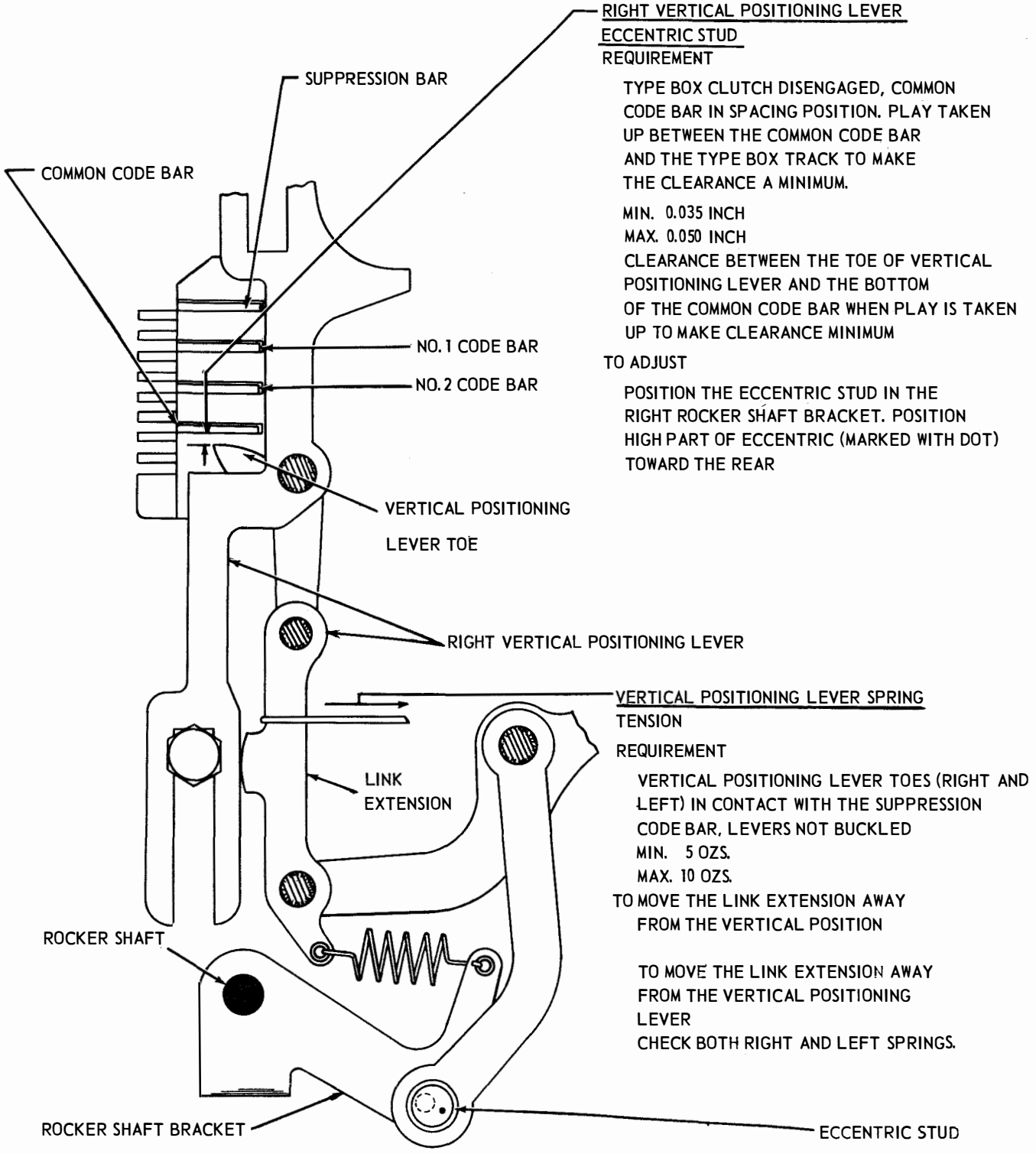


FIGURE 28 TYPER, VERTICAL POSITIONING MECHANISM, RIGHT

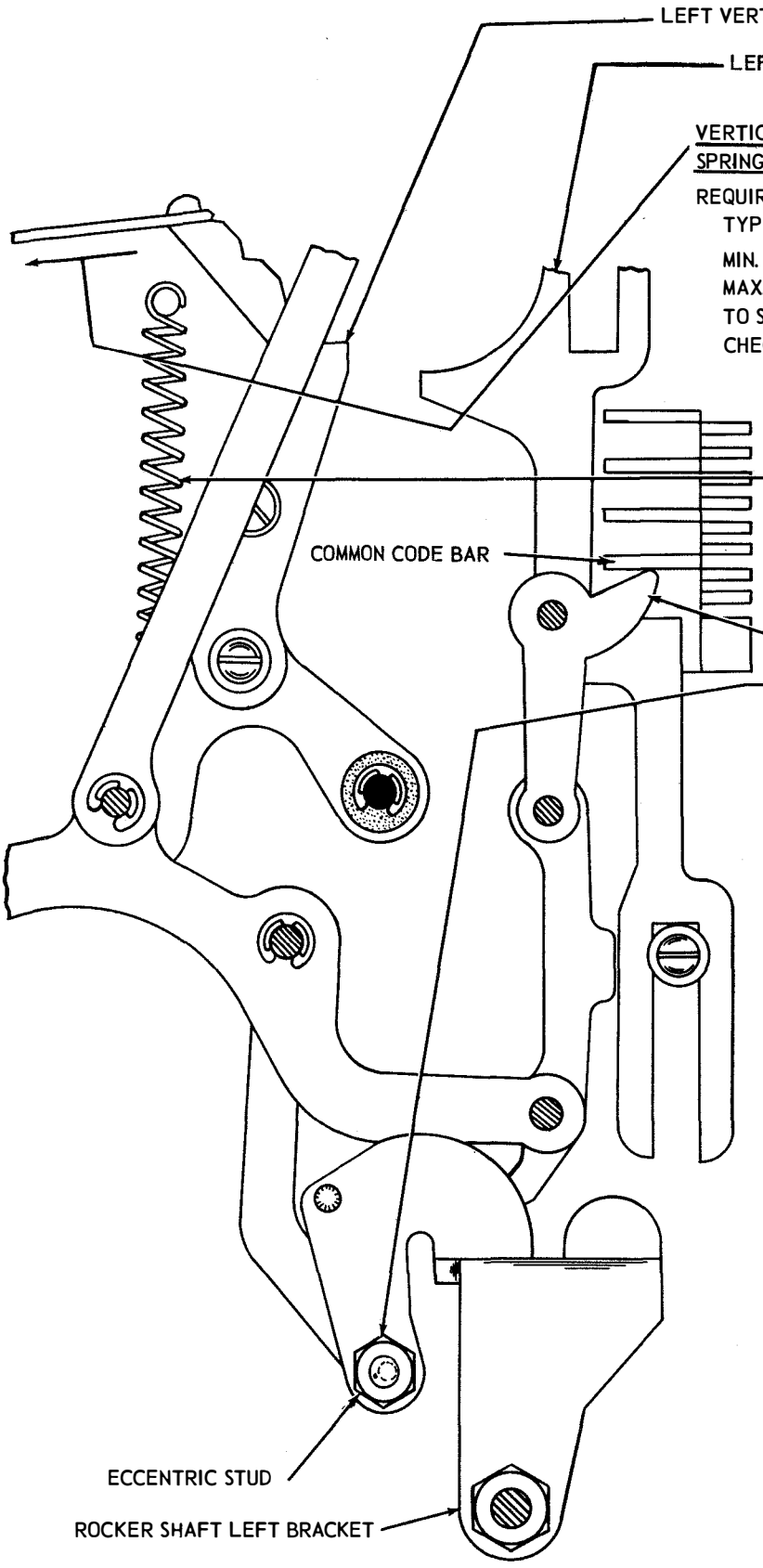
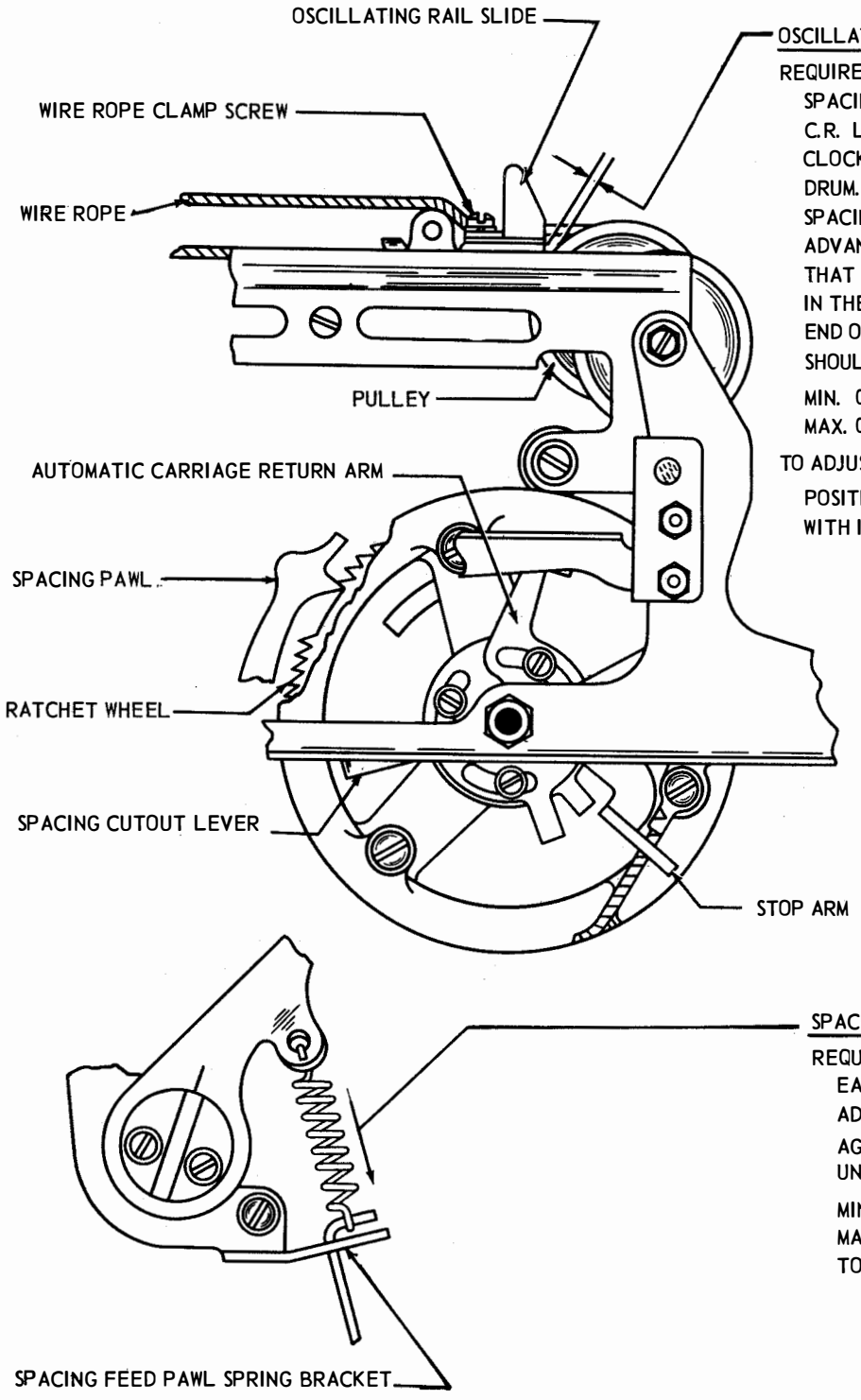


FIGURE 29 TYPER, VERTICAL POSITIONING MECHANISM, LEFT SIDE



OSCILLATING RAIL SLIDE POSITION

REQUIREMENT (See Note 3 Page 2-1)

SPACING CUTOUT LEVER AND AUTOMATIC C.R. L.F. ARM IN MAXIMUM COUNTER-CLOCKWISE POSITION ON THE SPACING DRUM. SPACING CLUTCH DISENGAGED. SPACING PAWL WHICH IS FARTHEST ADVANCED ENGAGED WITH THE TOOTH THAT IS JUST ABOVE CUT-AWAY SECTION IN THE RATCHET WHEEL. THE RIGHT END OF THE OSCILLATING RAIL SLIDE SHOULD CLEAR THE PULLEY BY

MIN. 0.025 INCH
MAX. 0.050 INCH

TO ADJUST

POSITION THE SLIDE ON THE WIRE ROPE WITH ITS CLAMP SCREWS LOOSENED.

SPACING FEED PAWL SPRING TENSION

REQUIREMENT

EACH SPACING PAWL IN LEAST ADVANCED POSITION AND RESTING AGAINST RATCHET WHEEL, EACH SPRING UNHOOKED FROM SPRING BRACKET

MIN. 2 1/2 OZ.
MAX. 4 OZS.
TO PULL SPRINGS TO INSTALLED LENGTH

FIGURE 30. TYPER, SPACING MECHANISM

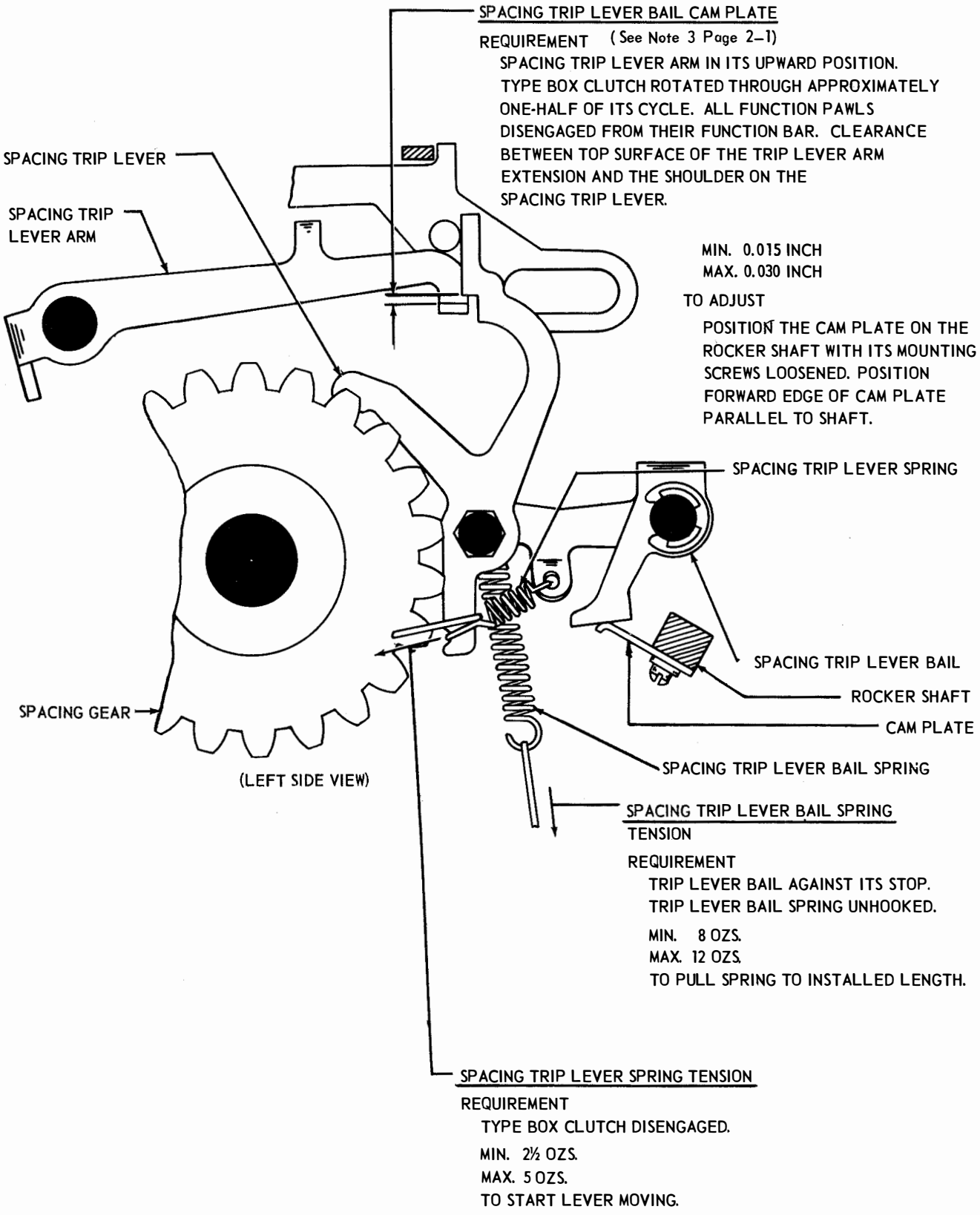
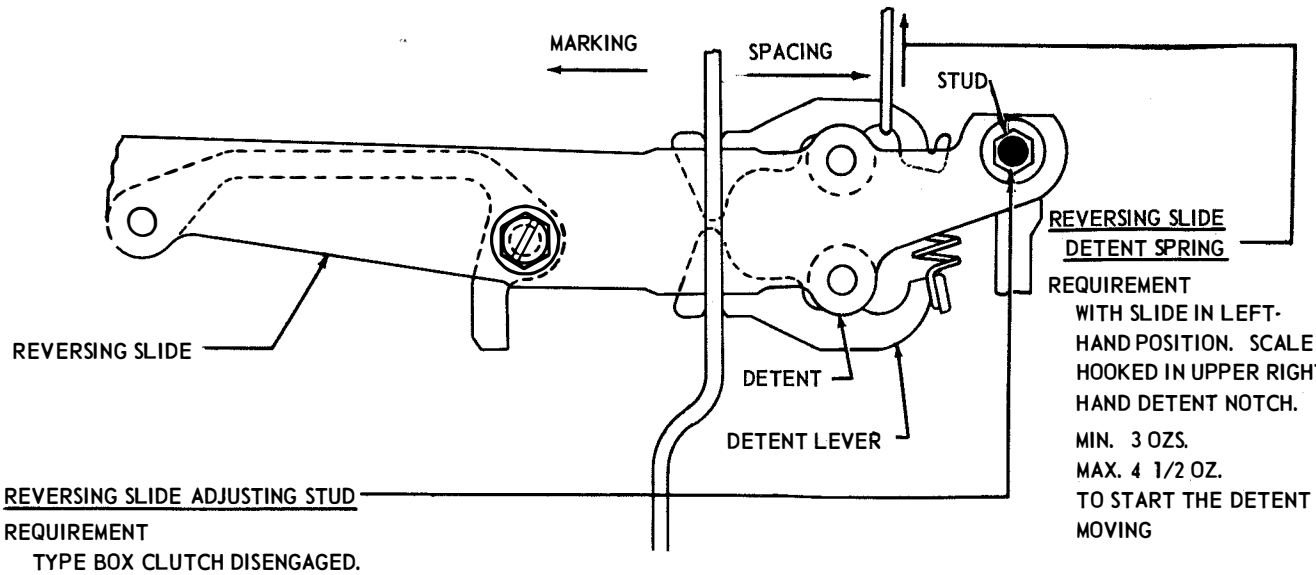


FIGURE 31 TYPER, SPACING MECHANISM



REVERSING SLIDE DETENT SPRING

REQUIREMENT

WITH SLIDE IN LEFT-HAND POSITION. SCALE HOOKED IN UPPER RIGHT-HAND DETENT NOTCH.

MIN. 3 OZS.
MAX. 4 1/2 OZ.
TO START THE DETENT MOVING

REVERSING SLIDE ADJUSTING STUD

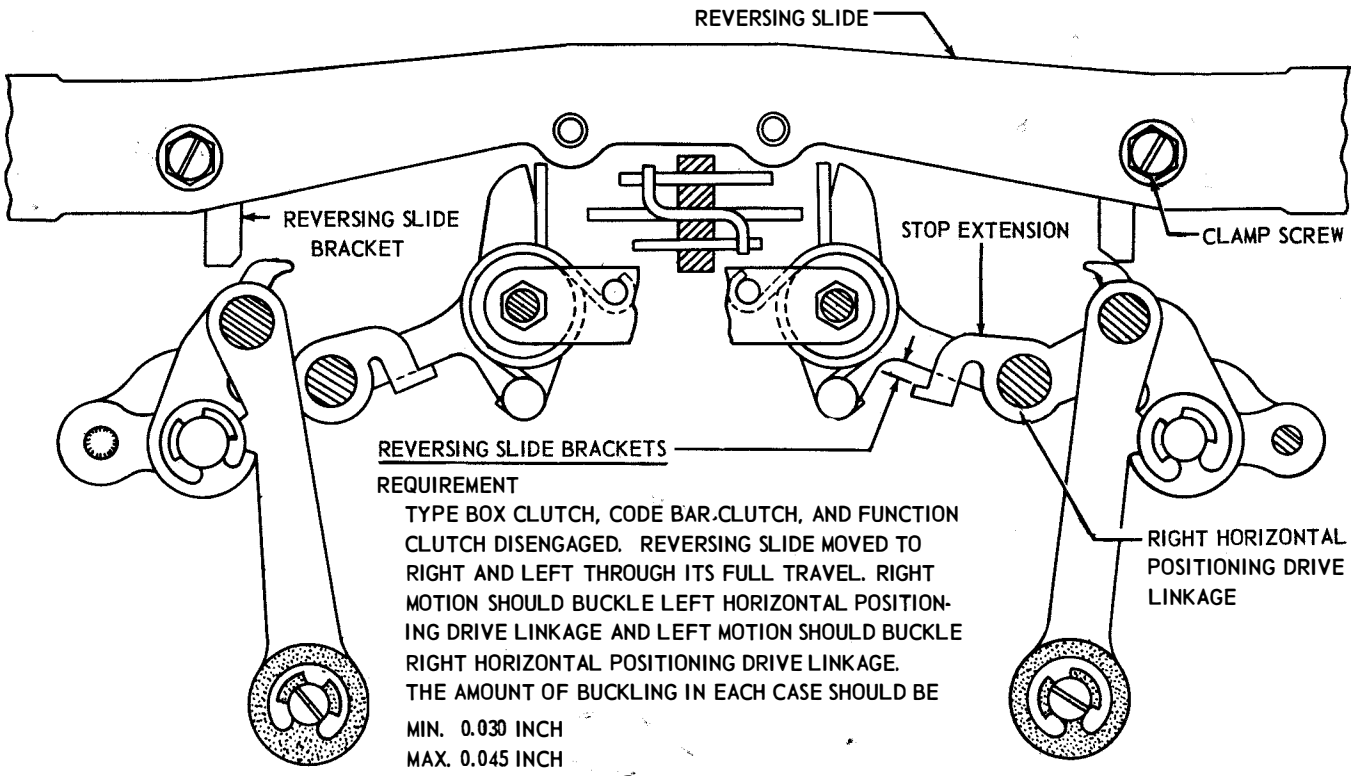
REQUIREMENT

TYPE BOX CLUTCH DISENGAGED.

WITH NO. 3 CODE BAR IN SPACING POSITION (RIGHT), THE REVERSING SLIDE DETENT ROLLERS SHOULD BE FULLY SEATED IN THE RIGHT-HAND NOTCHES OF THE DETENT LEVER WITH NO. 3 CODE BAR IN MARKING POSITION (LEFT), THE REVERSING SLIDE DETENT ROLLERS SHOULD BE FULLY SEATED IN THE LEFT-HAND NOTCHES OF THE DETENT LEVER.

TO ADJUST

POSITION THE REVERSING SLIDE STUD IN ITS ELONGATED HOLE WITH ITS MOUNTING NUT LOOSENED.



REVERSING SLIDE BRACKETS

REQUIREMENT

TYPE BOX CLUTCH, CODE BAR CLUTCH, AND FUNCTION CLUTCH DISENGAGED. REVERSING SLIDE MOVED TO RIGHT AND LEFT THROUGH ITS FULL TRAVEL. RIGHT MOTION SHOULD BUCKLE LEFT HORIZONTAL POSITIONING DRIVE LINKAGE AND LEFT MOTION SHOULD BUCKLE RIGHT HORIZONTAL POSITIONING DRIVE LINKAGE. THE AMOUNT OF BUCKLING IN EACH CASE SHOULD BE

MIN. 0.030 INCH
MAX. 0.045 INCH
MEASURED AT POINT OF MAXIMUM CLEARANCE.

TO ADJUST

POSITION EACH REVERSING SLIDE BRACKET WITH THEIR CLAMP SCREWS LOOSENED.

FIGURE 32 TYPER, HORIZONTAL MOTION REVERSING MECHANISM

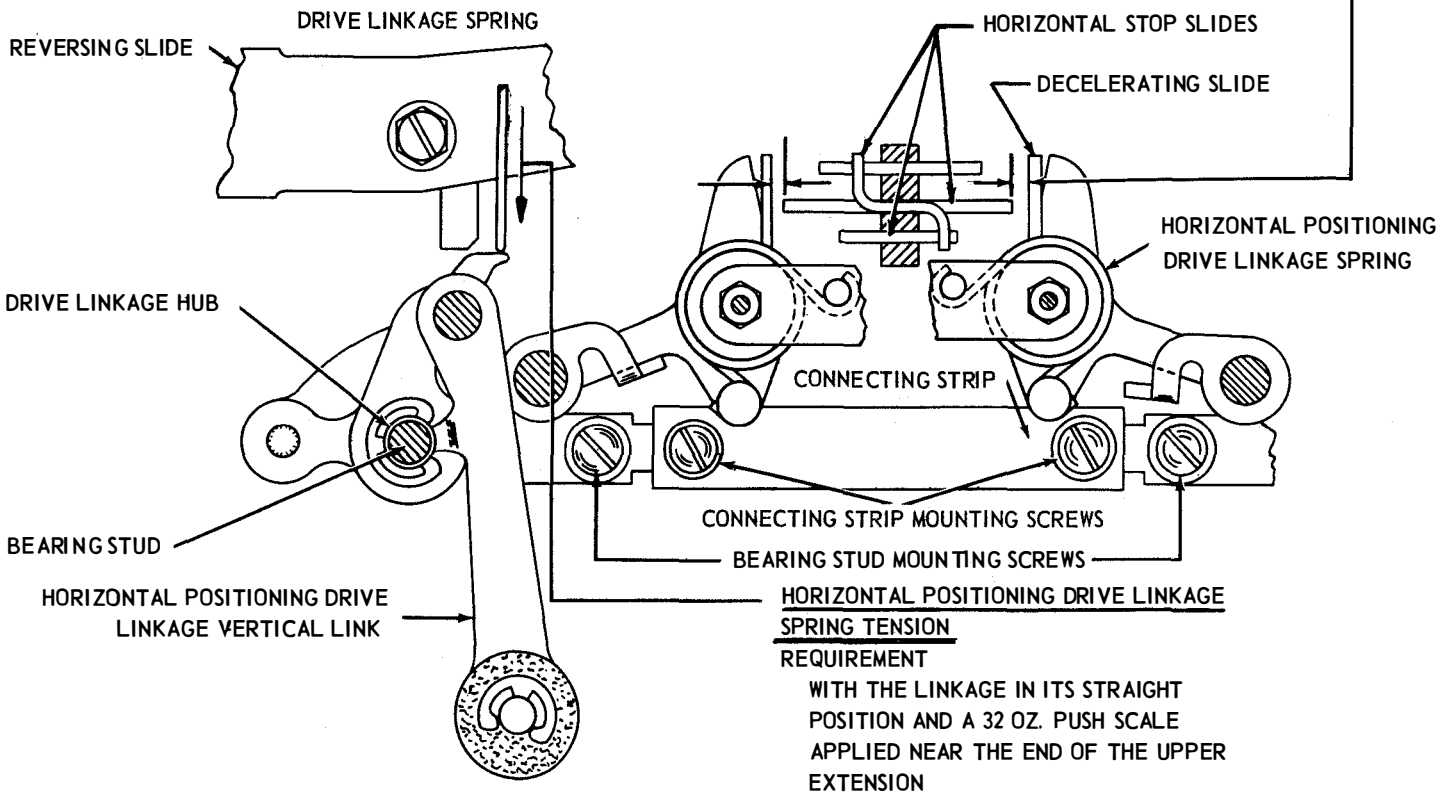
HORIZONTAL POSITIONING DRIVE LINKAGE

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED.
CODE BARS 5 AND 5 TO SPACING (RIGHT)
CLEARANCE BETWEEN EACH SIDE OF CENTER HORIZONTAL STOP SLIDE AND DECELERATING SLIDES, ON SIDE WHERE KNEE LINK IS STRAIGHT, SHOULD BE EQUAL (WITHIN 0.005 INCH)
MIN. 0.015 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.



HORIZONTAL POSITIONING DRIVE LINKAGE SPRING TENSION

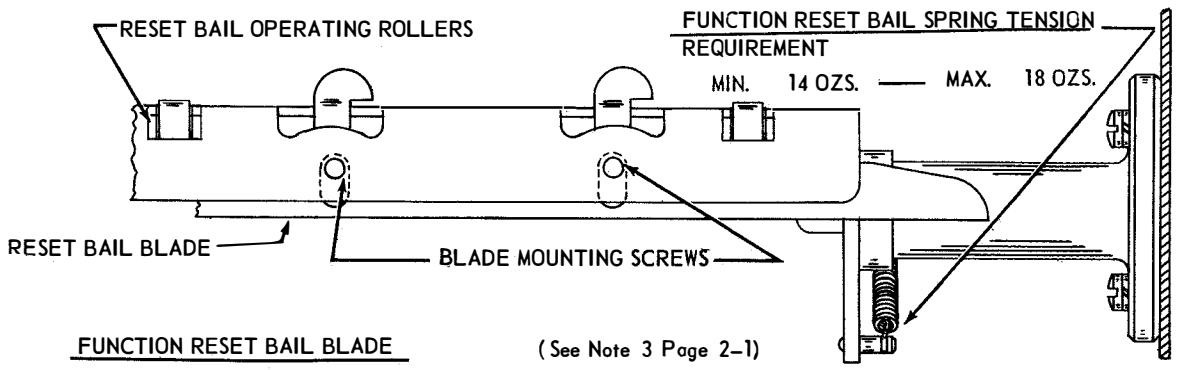
REQUIREMENT

WITH THE LINKAGE IN ITS STRAIGHT POSITION AND A 32 OZ. PUSH SCALE APPLIED NEAR THE END OF THE UPPER EXTENSION

MIN. 7 OZS.
MAX. 12 OZS.

TO START THE LINK BUCKLING

FIGURE 33 TYPER, SHIFT SLIDE DRIVE MECHANISM



FUNCTION RESET BAIL BLADE (See Note 3 Page 2-1)

(1) REQUIREMENT
CLEARANCE BETWEEN FRONT EDGE OF CARRIAGE RETURN AND INNER LINE FEED FUNCTION BARS AND EDGE OF RESET BAIL WHEN FUNCTION BARS ARE HELD IN THEIR EXTREME REAR POSITION
MIN. 0.018 —— MAX. 0.030 INCH
NOTE - - - ANY UNIT WITH FUNCTION BARS LOCATED BETWEEN THE NO. 10 AND NO. 30 SLOT, MEASURE CLEARANCE ON FUNCTION BARS CLOSEST TO EACH OF THE BLADE INNER MOUNTING SCREWS.
TO CHECK
DISENGAGE FUNCTION AND TYPE BOX CLUTCHES AND UNLATCH FUNCTION PAWLS FROM THEIR RESPECTIVE FUNCTION BARS. LOOSEN CARRIAGE RETURN LEVER CLAMP SCREWS.
TO ADJUST
POSITION BLADE ON FUNCTION BAIL WITH ITS MOUNTING SCREWS FRICTION TIGHT.

(2) REQUIREMENT
TYPE BOX CLUTCH ROTATED 1/2 REVOLUTION. EACH FUNCTION LEVER IN TURN HELD IN ITS EXTREME REAR POSITION. LATCH ASSOCIATED FUNCTION PAWL ONE AT A TIME. HOOK SCALE OVER END OF FUNCTION PAWL. WITH NOT MORE THAN 16 OZS. APPLIED, THE CLEARANCE BETWEEN FUNCTION PAWL AND ITS BAR SHOULD NOT BE LESS THAN 0.006 INCH.
NOTE - - - DO NOT LATCH MORE THAN ONE FUNCTION PAWL AT A TIME. THE SHIFT CODE BAR SHOULD HAVE SOME END PLAY WHEN LETTERS AND FIGURES FUNCTION PAWLS ARE ALTERNATELY LATCHED ON THEIR BARS
TO ADJUST
REFINE ABOVE ADJUSTMENT AND /OR SHIFT CODE BAR OPERATING MECHANISM, ADJUSTMENT. ALSO STUNT SHIFT MECHANISM ADJUSTMENT AND ZERO CODE BAR MECHANISM ADJUSTMENT.

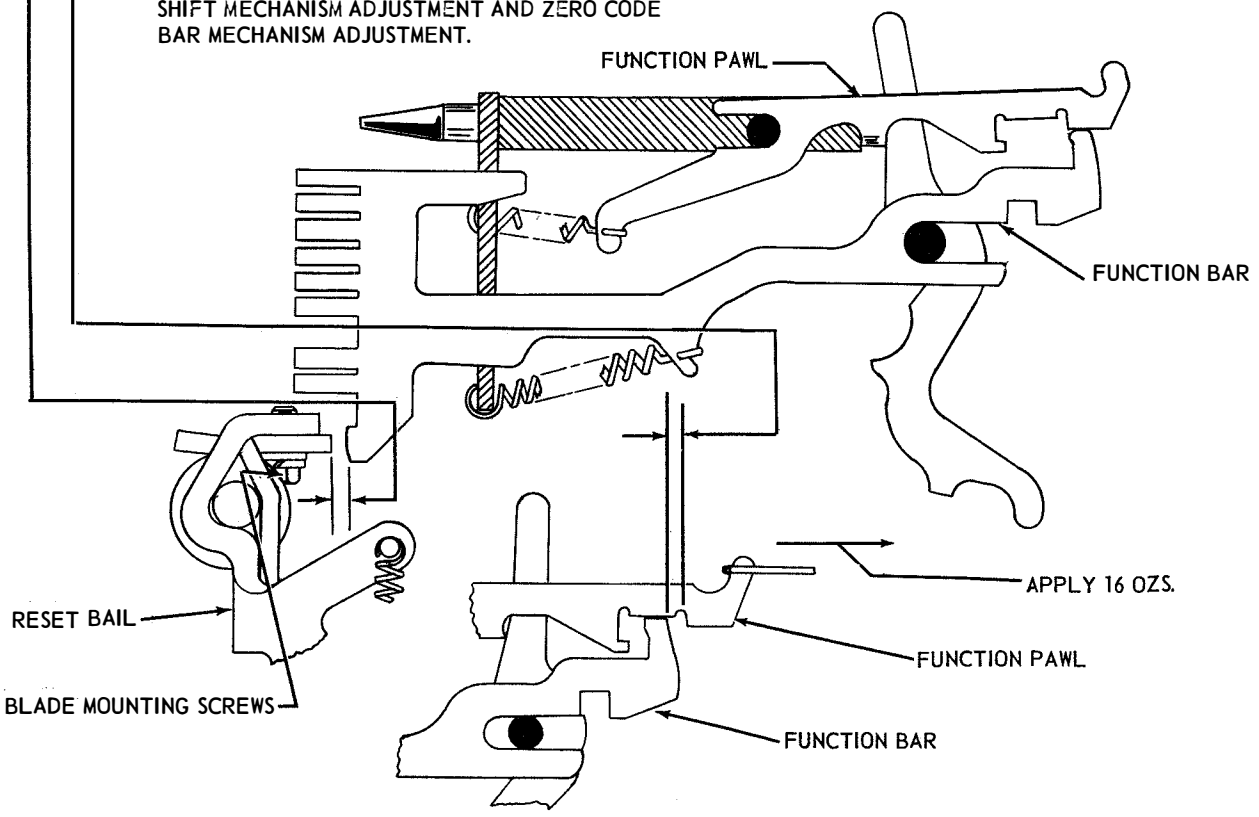
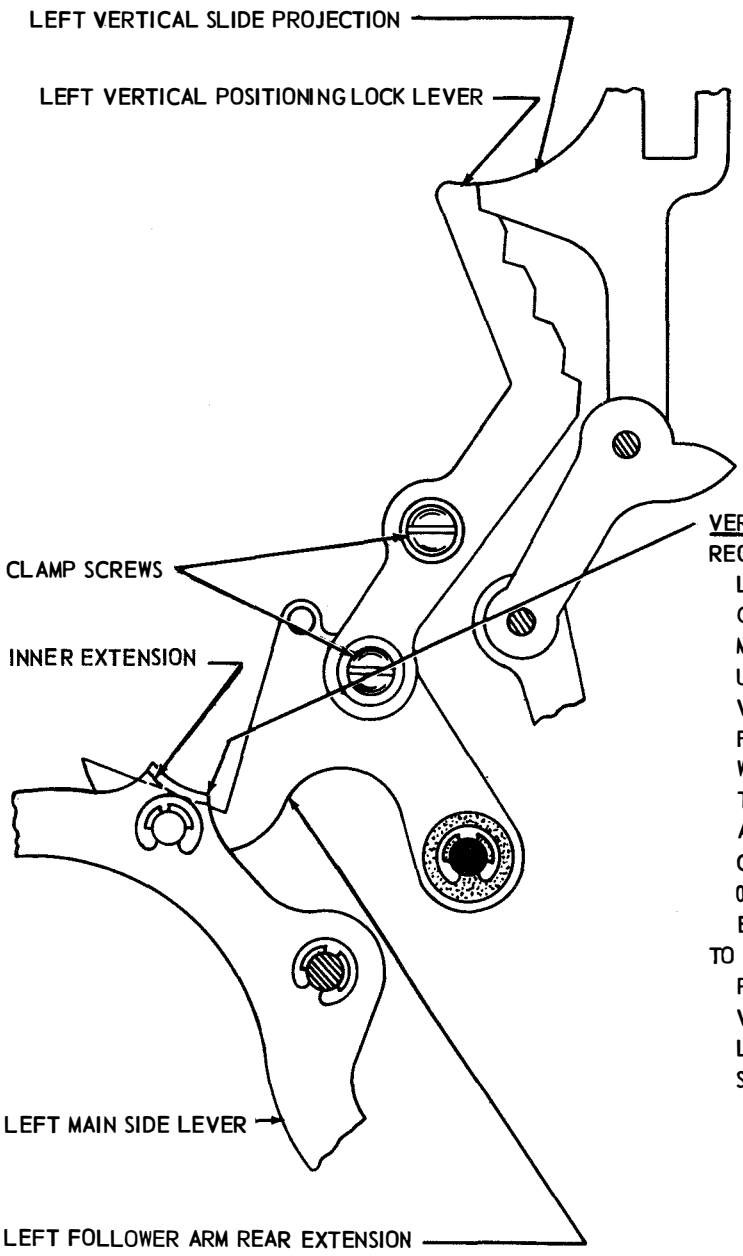


FIGURE 34 TYPER, RESET BAIL MECHANISM

INSTRUCTIONS FOR REMOVING FRONT PLATE ASSEMBLY

NOTE – – – REMOVE ONLY FOR SERVICING

REMOVE TYPING UNIT FROM BASE (SEE P.3–2.REMOVE RETAINING RING FROM TYPE BOX CARRIAGE LINK RIGHT STUD AND DISENGAGE LINK FROM CARRIAGE (SEE FIG. 43). REMOVE TWO SCREWS WHICH SECURE HORIZONTAL MECHANISM ROCKER BRACKET TO ROCKER SHAFT. REMOVE SPACING SHAFT GEAR. REMOVE FOUR SCREWS WHICH SECURE FRONT PLATE ASSEMBLY TO TYPER FRAME AND PULL FRONT PLATE FORWARD TO DISENGAGE IT FROM CONNECTING PARTS OF THE UNIT. REINSTALL IN REVERSE ORDER. MAKE SURE THAT HORIZONTAL STOP BELL CRANKS, SHIFT SLIDE LEVER, REVERSING SLIDE LEVER, AUTOMATIC C.R.–L.F. BELL CRANK, AND CARRIAGE RETURN LEVER EXTENSION ARE PROPERLY ENGAGED WITH MATING PARTS BEFORE TIGHTENING PLATE MOUNTING SCREWS. REPLACE SPACING SHAFT GEAR (SEE P. 2–25 FOR PHASING)



VERTICAL POSITIONING LOCK LEVER

REQUIREMENT (See Note 3 Page 2–1)

LETTERS COMBINATION SET UP ON CODE BARS.

MAIN SIDE OPERATING LEVERS AT THE UPPER END OF TRAVEL. UPPER NOTCH OF VERTICAL POSITIONING LOCK LEVER FULLY ENGAGED (MANUALLY IF NECESSARY) WITH THE VERTICAL SLIDE PROJECTION.

THE UPPER SURFACE OF THE FOLLOWER ARM REAR EXTENSION SHOULD BE IN CONTACT WITH OR NOT MORE THAN 0.004 INCH AWAY FROM THE INNER EXTENSION OF THE MAIN SIDE LEVER.

TO ADJUST

POSITION THE RIGHT AND LEFT VERTICAL POSITIONING LOCK LEVERS WITH THEIR CLAMP SCREWS LOOSENED. TAKE UP PLAY.

FIGURE 35 TYPER, VERTICAL POSITIONING MECHANISM

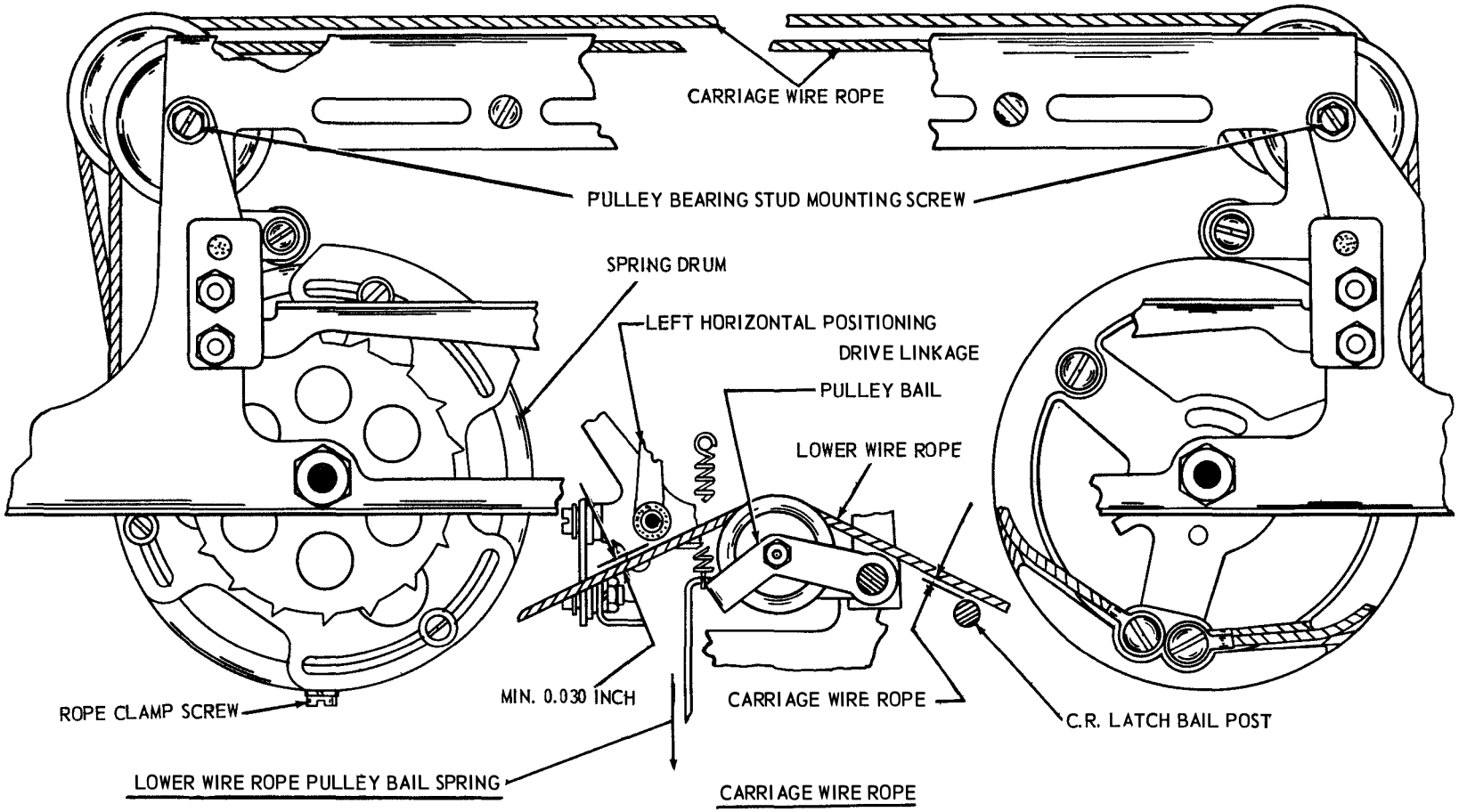


FIGURE 36 TYPER, SPACING MECHANISM

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LOWER WIRE ROPE PULLEY BAIL SPRING

REQUIREMENT

SPRING UNHOOKED FROM PULLEY BAIL, BAIL EXTENSION RESTING ON OPENING IN FRONT PLATE.
MIN. 18 OZS.
MAX. 22 OZS.
TO PULL SPRING TO POSITION LENGTH

CARRIAGE WIRE ROPE

REQUIREMENT (See Note 3 Page 2-1)

CLEARANCE BETWEEN LOWER WIRE ROPE AND CARRIAGE RETURN LATCH BAIL POST SHOULD BE AT LEAST 0.006 INCH. WITH THE HORIZONTAL POSITIONING MECHANISM IN ITS LOWEST POSITION, CLEARANCE BETWEEN THE LOWER WIRE ROPE AND THE LEFT HORIZONTAL POSITIONING DRIVE LINKAGE SHOULD BE.
MIN. 0.030 INCH

TO ADJUST

RETURN THE PRINTING CARRIAGE TO ITS LEFT HAND POSITION. LOOSEN THE ROPE CLAMP SCREW ONE TURN ONLY. POSITION THE PULLEY BEARING STUDS WITH THEIR MOUNTING SCREWS LOOSENED TO MEET THE REQUIREMENT. MAKE CERTAIN THAT THE ROPE MOVES AROUND ITS CLAMP SCREW TO AN EQUALIZED POSITION TIGHTEN THE CLAMP SCREW AND MOUNTING SCREWS.

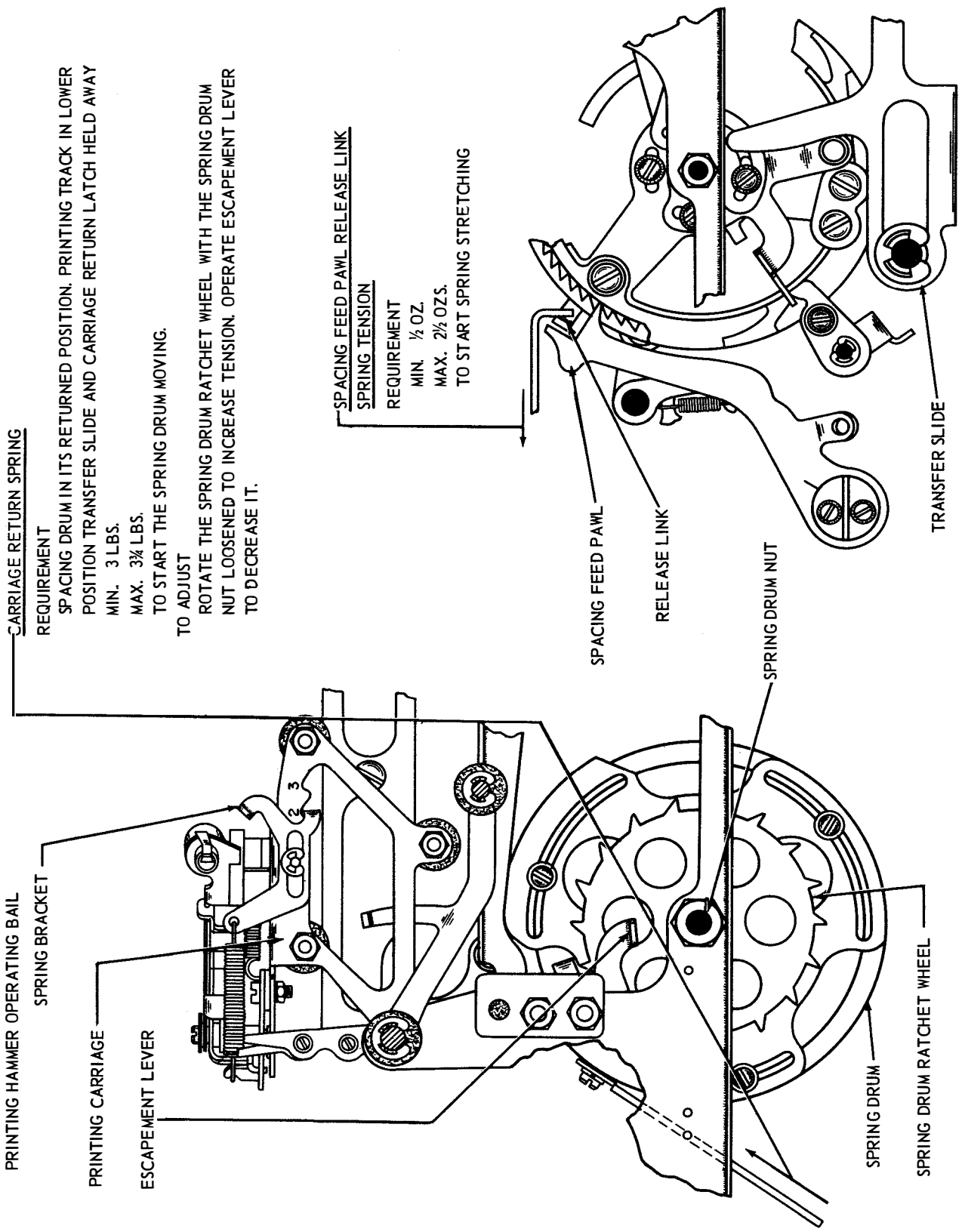


FIGURE 37 TYPER, CARRIAGE RETURN MECHANISM

INSTRUCTIONS FOR REMOVING CODE BAR ASSEMBLY

NOTE – – – REMOVE ONLY FOR SERVICING

REMOVE TYPING UNIT FROM BASE. (SEE P.3-2.) REMOVE STUNT BOX ASSEMBLY (P 2-50) AND FRONT PLATE ASSEMBLY (P.2–35) REMOVE CODE BAR ASSEMBLY MOUNTING SCREWS– 2 EACH SIDE. REMOVE CODE BAR SHIFT BAR RETAINER PLATE AND THE SHIFT BARS. PULL THE CODE BAR ASSEMBLY FORWARD AND TO THE LEFT. REINSTALL CODE BAR ASSEMBLY IN REVERSE ORDER. LOOSEN TIE BAR SCREWS AND PRESS THE ASSEMBLY TOWARD THE REAR AND DOWNWARD AGAINST THE LOCATING SURFACES.

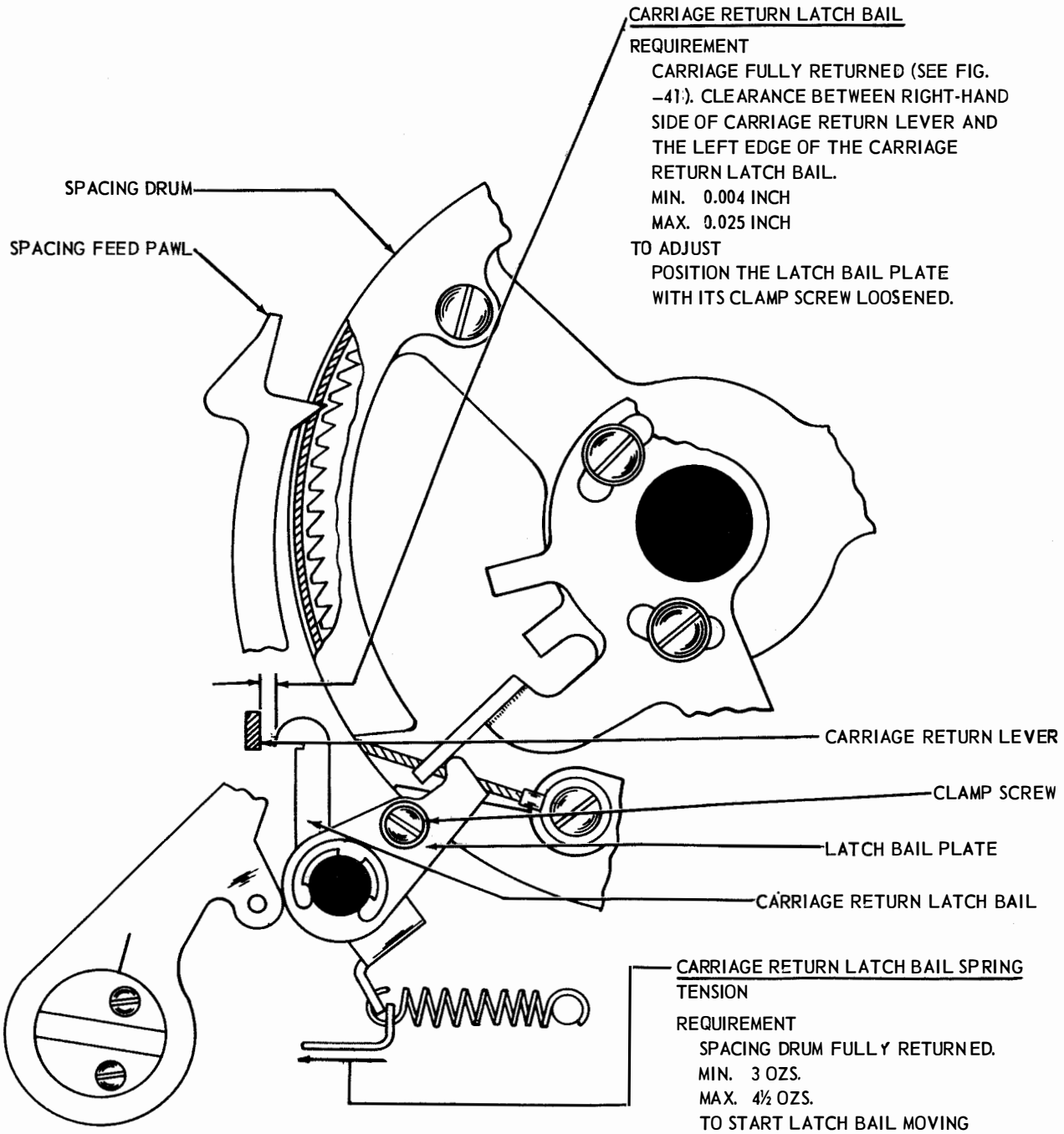


FIGURE 38 TYPER, CARRIAGE RETURN MECHANISM

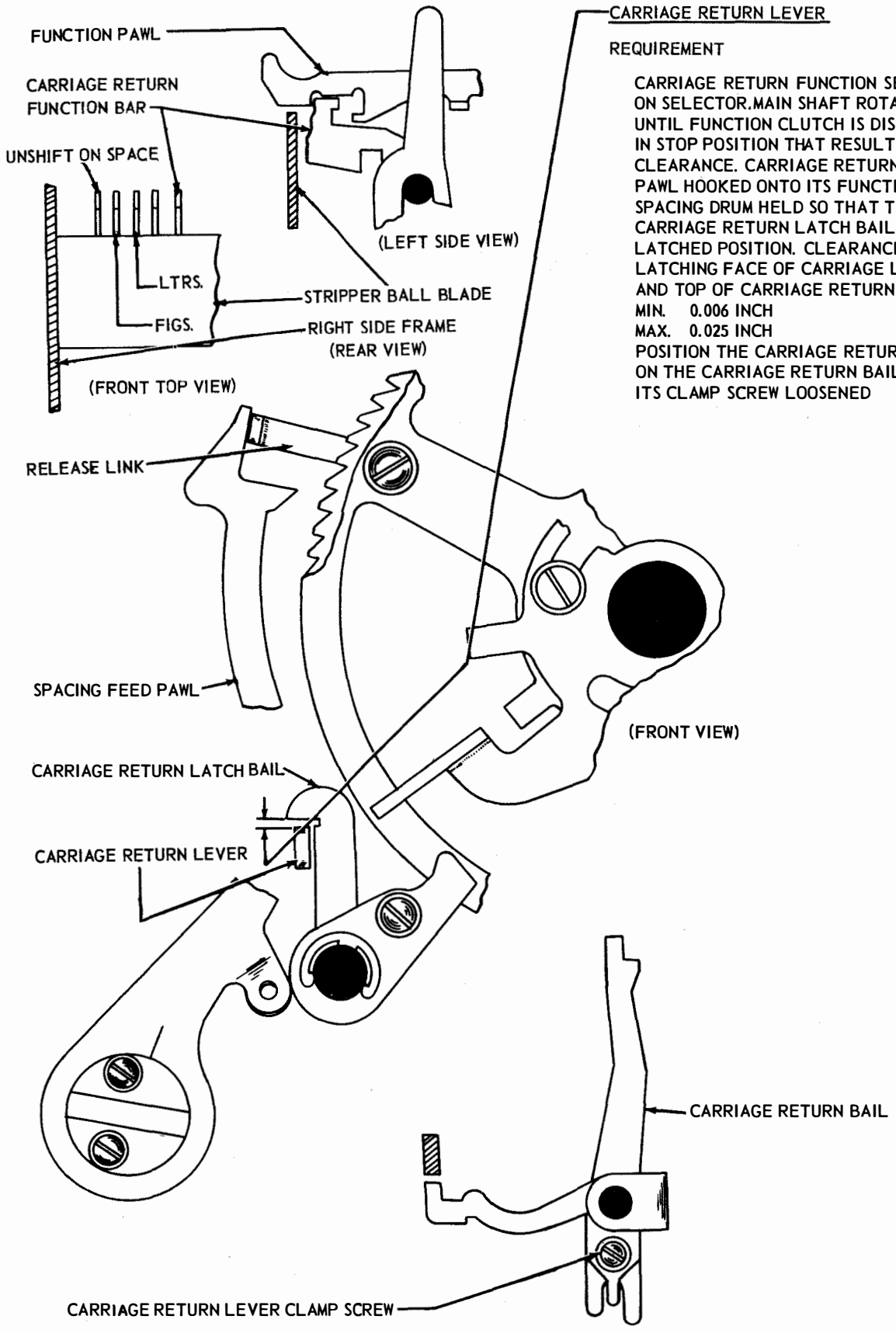
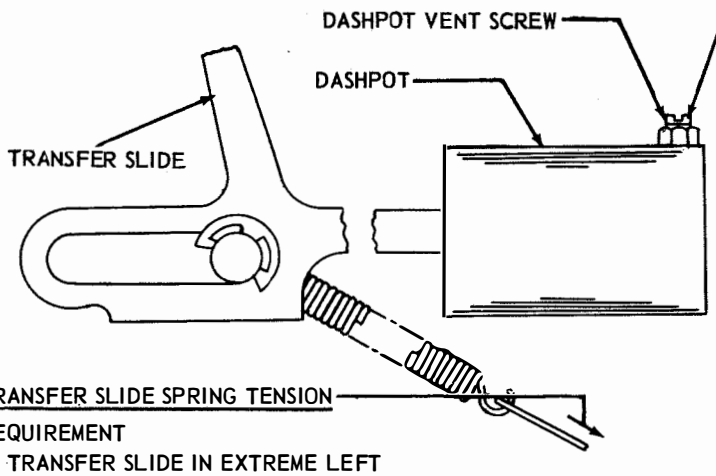


FIGURE 39 TYPER, CARRIAGE RETURN MECHANISM



DASH POT VENT SCREW

REQUIREMENT (See Note 3 Page 2-1)

TYPE BOX CARRIAGE SHOULD RETURN FROM ANY LENGTH OF LINE WITHOUT BOUNCING WHEN THE PRINTER IS OPERATED UNDER POWER FROM AUTOMATIC TRANSMISSION OF ONE CR AND ONE LF SIGNAL BETWEEN LINES AT ANY SPEED. THE FIRST CHARACTER OF EACH LINE SHOULD BE PRINTED IN THE SAME LOCATION (GAUGED BY EYE) AS IT WOULD IF THE UNIT WERE OPERATED SLOWLY IN MANUAL OPERATION

TO ADJUST

BACK OFF THE VENT SCREW UNTIL A MECHANICAL BOUNCE IS PERCEPTIBLE THEN ADVANCE THE SCREW UNTIL A SLIGHT PNEUMATIC BOUNCE IS PERCEPTIBLE. LOCK THE SCREW HALF WAY BETWEEN THE TWO POSITIONS.

TRANSFER SLIDE SPRING TENSION

REQUIREMENT

TRANSFER SLIDE IN EXTREME LEFT POSITION.
SPRING UNHOOKED.
MIN. 3 1/2 OZS
MAX. 4 1/2 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

FIGURE 40 TYPER, DASHPOT MECHANISM

INSTRUCTIONS FOR REPLACING THE SPACING CABLES

NOTE - - - DO NOT REMOVE UNLESS THERE IS REASON TO BELIEVE THAT THE ADJUSTMENTS CAN NOT BE MADE.

CARRIAGE CABLE

RETURN THE CARRIAGE TO THE LEFT POSITION. UNWIND CARRIAGE RETURN SPRING BY LOOSENING NUT ON FRONT OF SPRING DRUM BEARING POST AND OPERATING RATCHET ESCAPEMENT LEVER. REMOVE CABLE FROM CLAMP ON PRINTING CARRIAGE, AND THE CLAMP ON TYPE BOX DRIVING DRIVING SLIDE. LOOSEN CLAMP SCREW WHICH SECURES CABLE TO SPRING DRUM, AND REMOVE SCREW IN SPACING DRUM WHICH SECURES THE ENDS OF THE CABLE, AND REMOVE CABLE FROM DRUM. REPLACE IN REVERSE ORDER.

LOWER TIE CABLE

REMOVE SCREW WHICH SECURES CABLE TO SPACING DRUM AND REMOVE END OF CABLE FROM THE DRUM. LOOSEN SCREWS WHICH SECURE MARGIN BELL CONTACT CAM PLATE ON SPACING DRUM AND POSITION THE PLATE TO EXPOSE CABLE MOUNTING SCREW. REMOVE CABLE SCREW AND REMOVE CABLE FROM SPRING DRUM. LOOSEN SCREWS IN BEARING STUDS ON PRINTING CARRIAGE CABLE ROLLERS AND MOVE STUDS TOWARD CENTER OF TYPING UNIT. REPLACE IN REVERSE ORDER. WHEN INSTALLING CABLE OBSERVE THAT EACH CABLE IS IN ITS CORRECT TRACK AROUND DRUMS. (LOWER CABLE SHOULD BE TOWARD FRONT OF DRUM) ADJUST POSITION OF TYPE BOX, PRINTING CARRIAGE , MARGIN CONTACT CAM PLATE AND CABLE TENSION AS SPECIFIED IN ADJUSTING REQUIREMENTS.

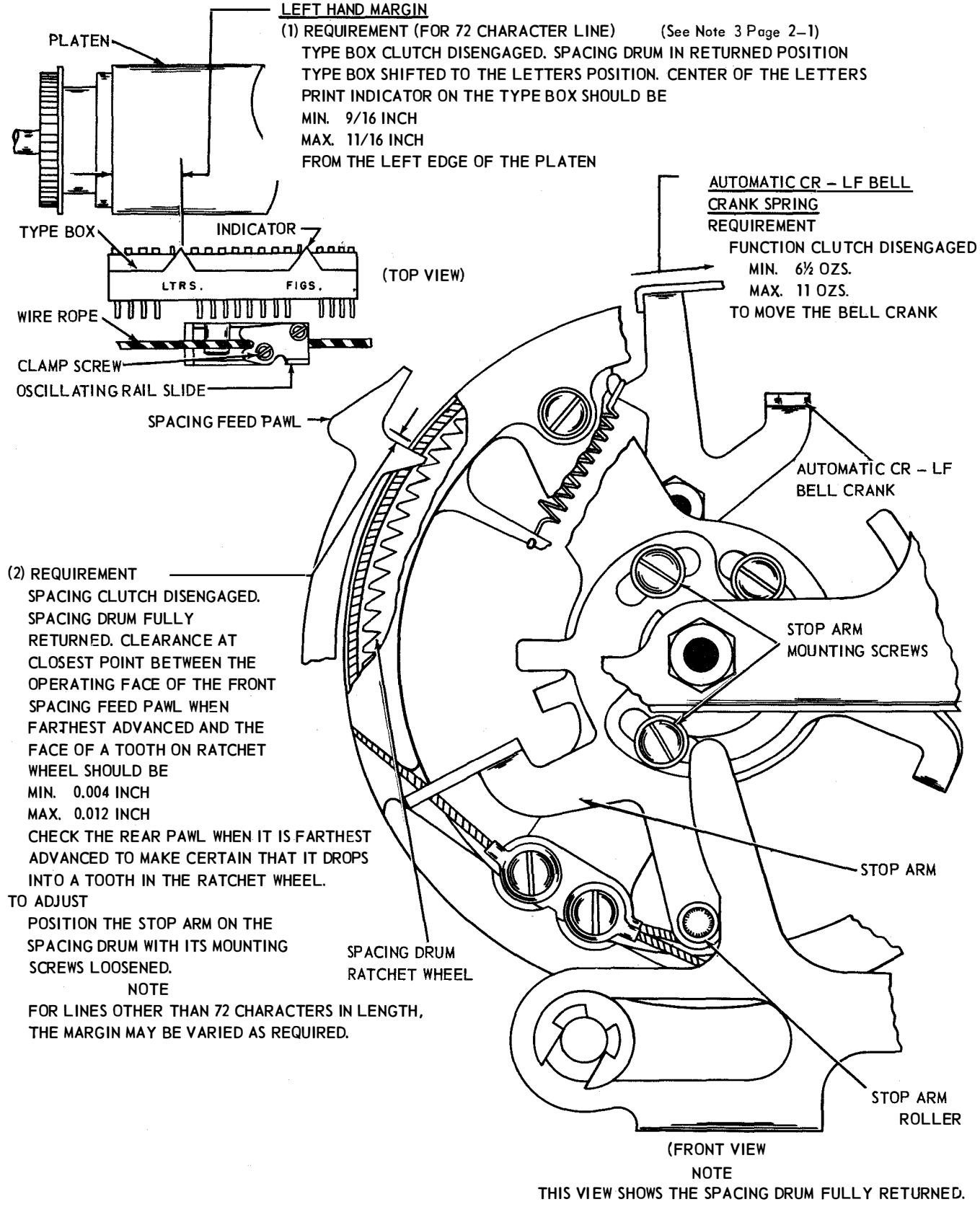
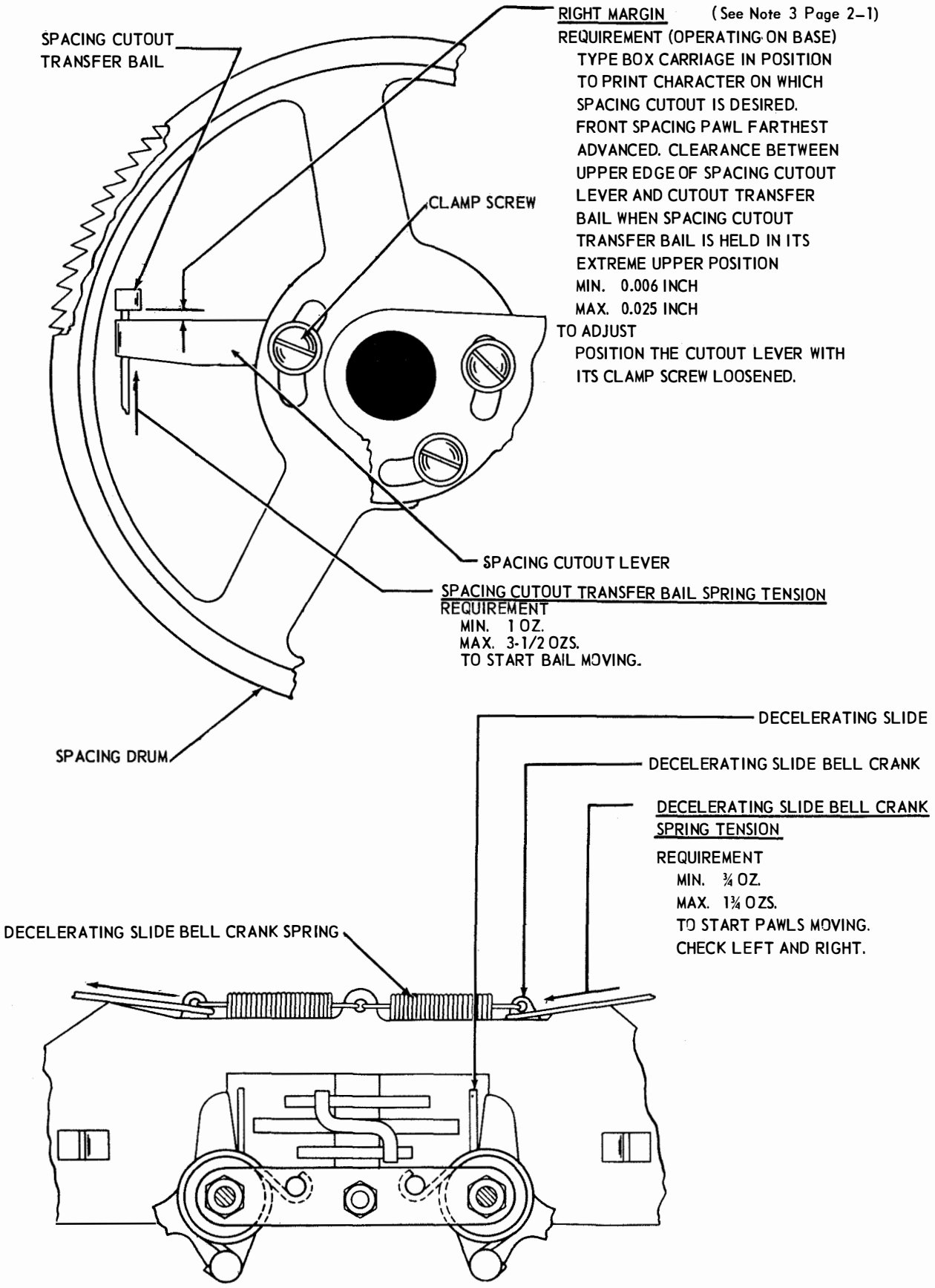


FIGURE 41 TYPER, CARRIAGE RETURN MECHANISM



RIGHT MARGIN (See Note 3 Page 2-1)

REQUIREMENT (OPERATING ON BASE)
TYPE BOX CARRIAGE IN POSITION TO PRINT CHARACTER ON WHICH SPACING CUTOUT IS DESIRED. FRONT SPACING PAWL FARTHEST ADVANCED. CLEARANCE BETWEEN UPPER EDGE OF SPACING CUTOUT LEVER AND CUTOUT TRANSFER BAIL WHEN SPACING CUTOUT TRANSFER BAIL IS HELD IN ITS EXTREME UPPER POSITION
MIN. 0.006 INCH
MAX. 0.025 INCH

TO ADJUST
POSITION THE CUTOUT LEVER WITH ITS CLAMP SCREW LOOSENED.

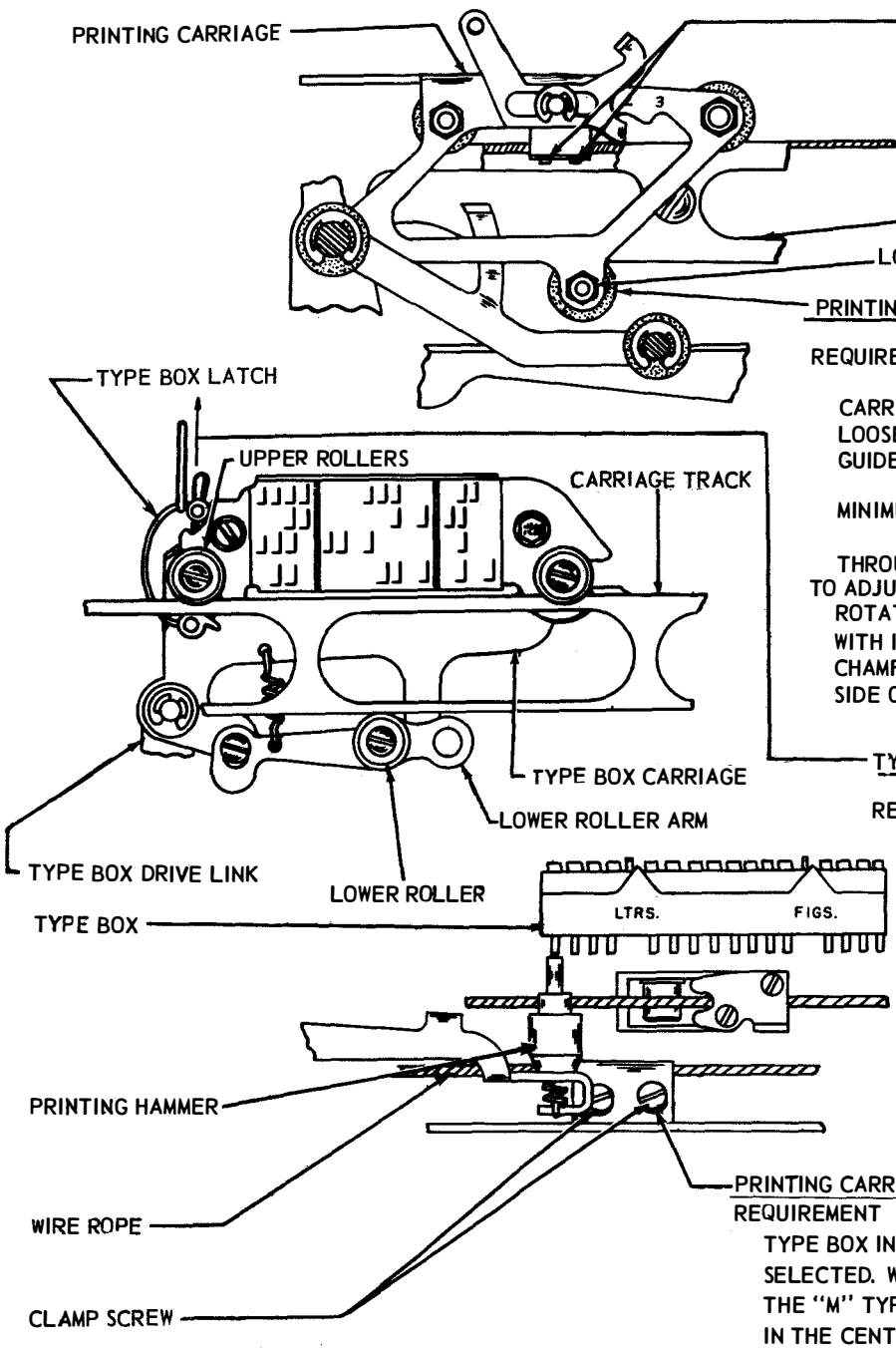
SPACING CUTOUT TRANSFER BAIL SPRING TENSION

REQUIREMENT
MIN. 1 OZ.
MAX. 3-1/2 OZS.
TO START BAIL MOVING.

DECELERATING SLIDE BELL CRANK SPRING TENSION

REQUIREMENT
MIN. ¾ OZ.
MAX. 1¾ OZS.
TO START PAWLS MOVING.
CHECK LEFT AND RIGHT.

FIGURE 42 TYPER, RIGHT MARGIN AND DECELERATING SLIDE MECHANISM



REQUIREMENT

CARRIAGE WIRE ROPE CLAMP SCREWS LOOSENED. PLAY OF CARRIAGE ON ITS GUIDE RAIL SHOULD BE

MINIMUM WITHOUT BIND

THROUGHOUT FULL LENGTH OF GUIDE RAIL

TO ADJUST

ROTATE THE LOWER ROLLER ECCENTRIC WITH ITS NUT FRICTION TIGHT. KEEP CHAMFERED CORNER OF ECCENTRIC TOWARD RIGHT SIDE OF UNIT.

REQUIREMENT

MIN. 28 OZS.
MAX. 36 OZS.
TO START THE UPPER ROLLER NEAREST THE TYPE BOX LATCH MOVING AWAY FROM THE CARRIAGE TRACK

PRINTING CARRIAGE POSITION

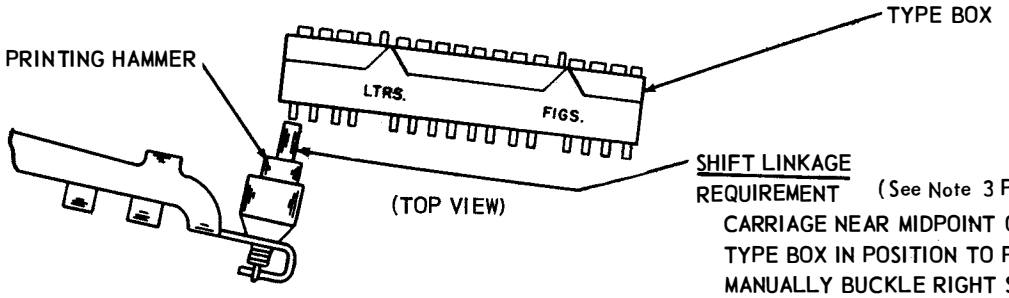
REQUIREMENT (See Note 3 Page 2-1)

TYPE BOX IN LETTERS POSITION. "M" TYPE PALLET SELECTED. WITH TYPE BOX IN PRINTING POSITION THE "M" TYPE PALLET SHOULD BE APPROXIMATELY IN THE CENTER OF THE PRINTING HAMMER WHEN THE PRINTING HAMMER IS JUST TOUCHING THE "M" TYPE PALLET.

TO ADJUST

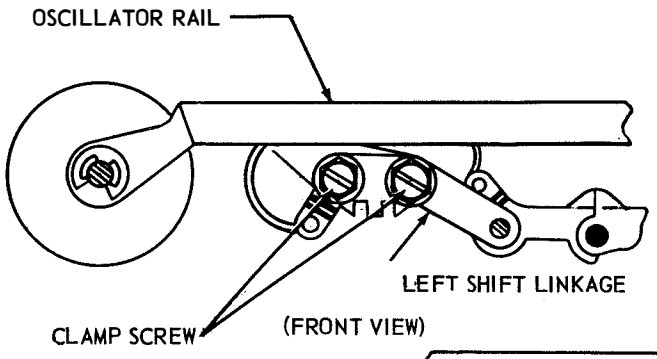
POSITION THE PRINTING CARRIAGE ON THE WIRE ROPE WITH ITS CLAMP SCREWS LOOSENED.

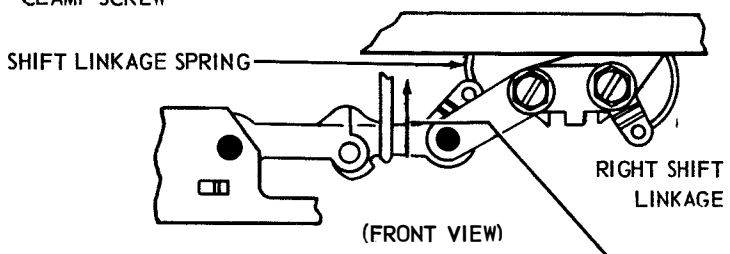
FIGURE 43 TYPER, PRINTING AND TYPE BOX CARRIAGE



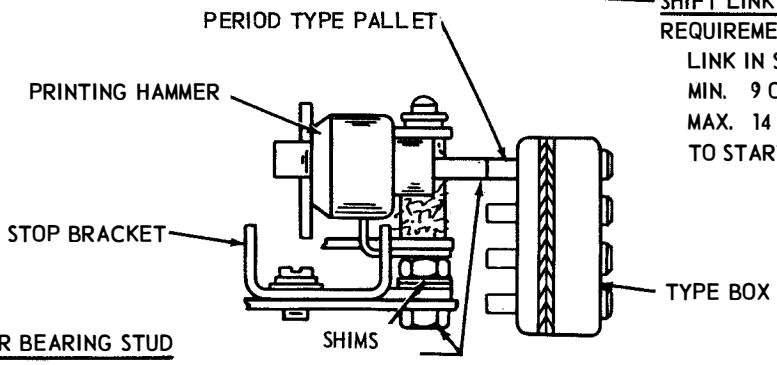
SHIFT LINKAGE
REQUIREMENT (See Note 3 Page 2–1)
CARRIAGE NEAR MIDPOINT OF PLATEN.
TYPE BOX IN POSITION TO PRINT "M".
MANUALLY BUCKLE RIGHT SHIFT LINKAGE AND SHIFT TYPE BOX TO LEFT. THE PERIOD TYPE PALLET SHOULD BE APPROXIMATELY IN THE CENTER OF THE PRINT HAMMER WHEN THE PRINT HAMMER IS JUST TOUCHING THE PERIOD TYPE PALLET.
TO ADJUST
POSITION THE LEFT SHIFT LINKAGE ON THE OSCILLATOR RAIL WITH ITS TWO CLAMP SCREWS LOOSENED.

RECHECK THE ADJUSTMENT BY SHIFTING ALTERNATELY FROM M TO PERIOD. TAKE UP PLAY IN EACH DIRECTION AND REFINE THE ADJUSTMENT IF NECESSARY.





SHIFT LINKAGE SPRING TENSION
REQUIREMENT
LINK IN STRAIGHT POSITION.
MIN. 9 OZS.
MAX. 14 OZS.
TO START EACH LINK MOVING.



PRINTING HAMMER BEARING STUD
REQUIREMENT
TYPE BOX AT MIDPOINT OF PLATEN AND IN POSITION TO PRINT PERIOD. PRINTING HAMMER IN CONTACT WITH TYPE PALLET AND PRESSED DOWNWARD AT ITS BEARING POST. FACE OF THE HAMMER SHOULD BE FULLY ON THE END OF THE TYPE PALLET.
TO ADJUST
ADD OR REMOVE SHIMS BETWEEN THE SHOULDER ON THE BEARING POST AND THE STOP BRACKET.

FIGURE 44 TYPER, SHIFT MECHANISM

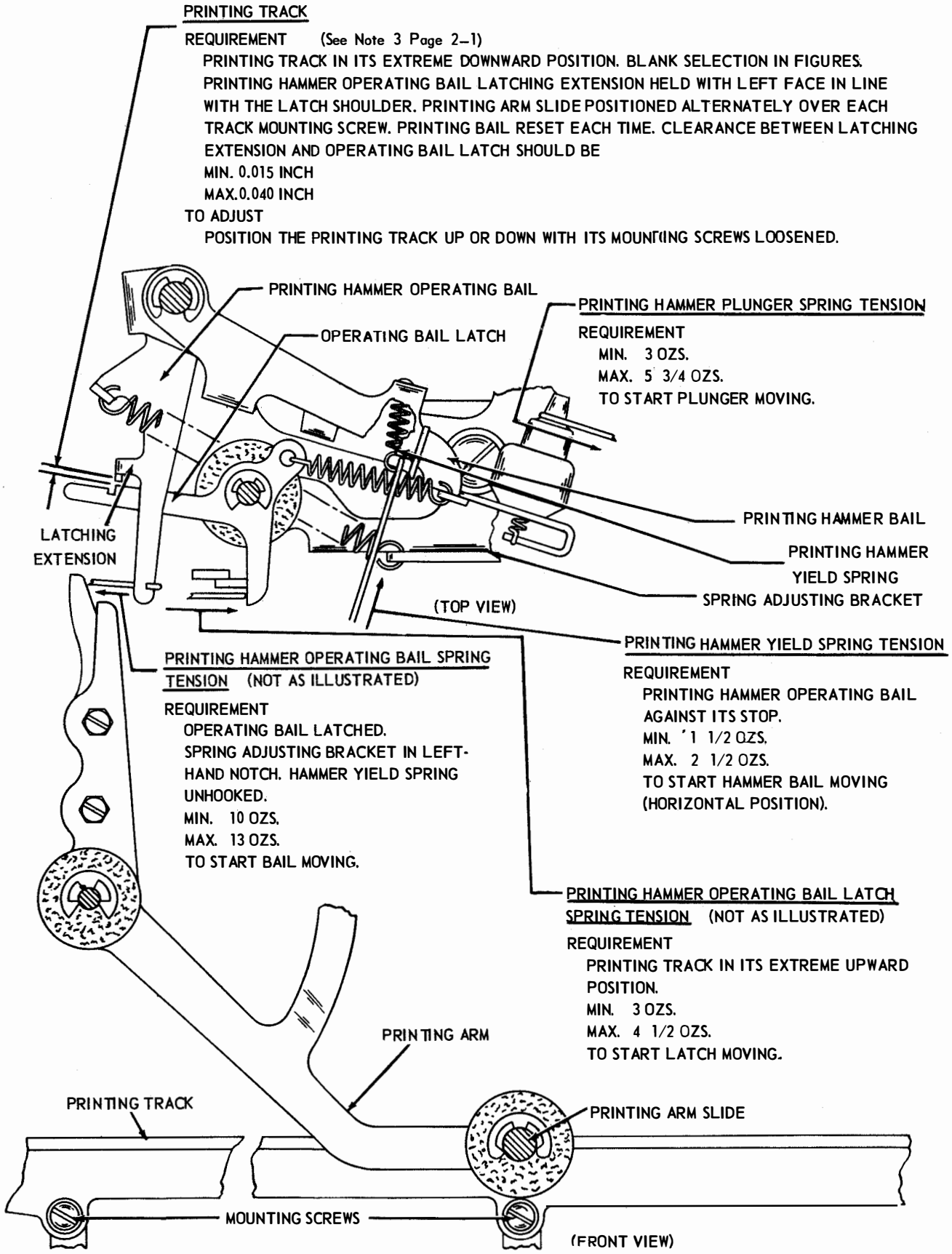


FIGURE 45 TYPER, PRINTING MECHANISM

PRINTING HAMMER STOP BRACKET

REQUIREMENT

TYPE BOX, IN BLANK POSITION AND NEAR CENTER OF PLATEN. PRINTING BAIL IN ITS DOWNWARD POSITION. PRINTING HAMMER HELD AGAINST ITS STOP WITH 8 OZS. OF PRESSURE, CLEARANCE BETWEEN PRINTING HAMMER AND DUMMY TYPE PALLET

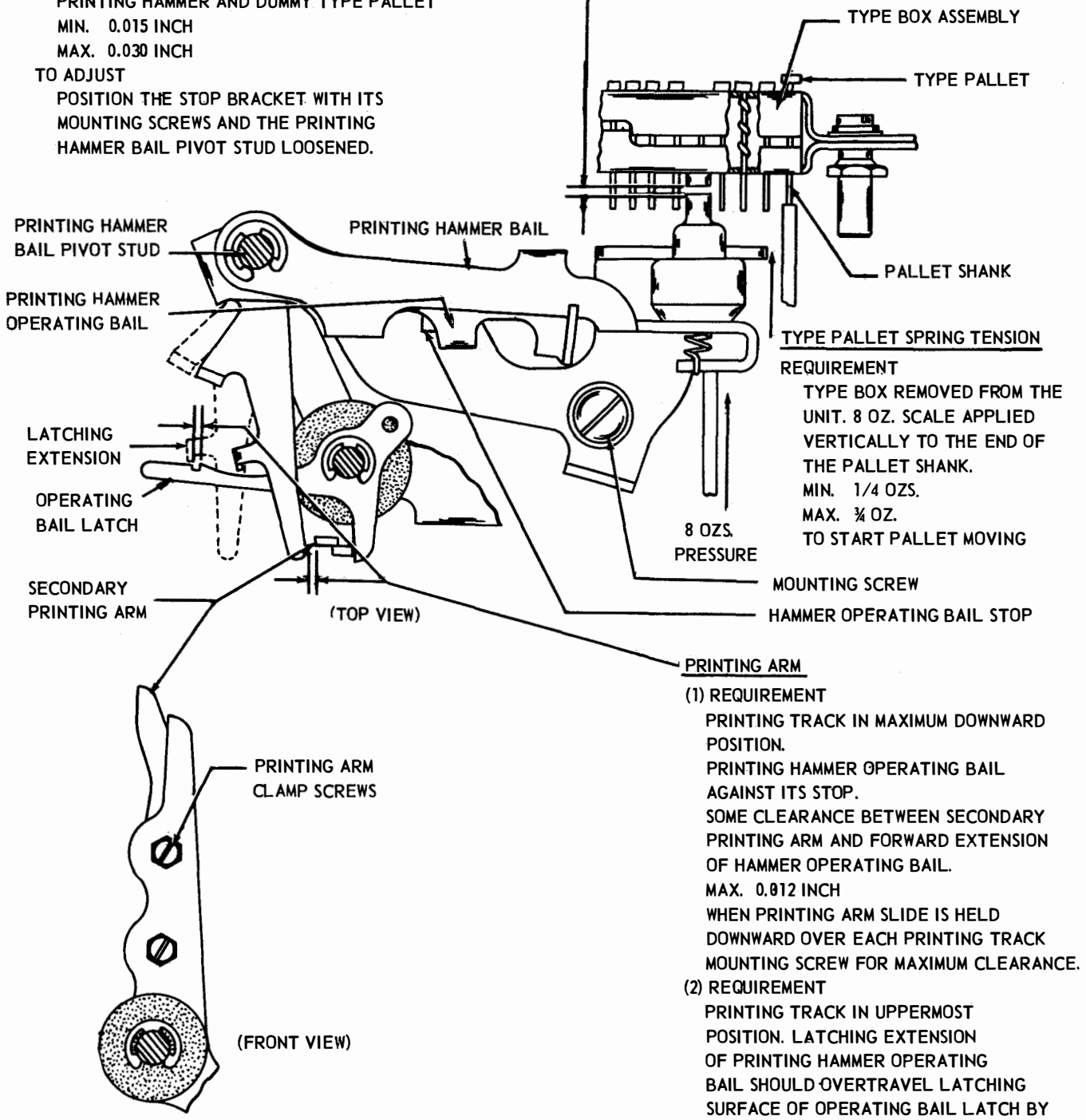
MIN. 0.015 INCH

MAX. 0.030 INCH

TO ADJUST

POSITION THE STOP BRACKET WITH ITS MOUNTING SCREWS AND THE PRINTING HAMMER BAIL PIVOT STUD LOOSENED.

(See Note 3 Page 2–1)



TYPE PALLET SPRING TENSION

REQUIREMENT

TYPE BOX REMOVED FROM THE UNIT. 8 OZ. SCALE APPLIED VERTICALLY TO THE END OF THE PALLET SHANK.

MIN. 1/4 OZS.

MAX. ¾ OZ.

TO START PALLET MOVING

PRINTING ARM

(1) REQUIREMENT

PRINTING TRACK IN MAXIMUM DOWNWARD POSITION.

PRINTING HAMMER OPERATING BAIL AGAINST ITS STOP.

SOME CLEARANCE BETWEEN SECONDARY PRINTING ARM AND FORWARD EXTENSION OF HAMMER OPERATING BAIL.

MAX. 0.012 INCH

WHEN PRINTING ARM SLIDE IS HELD DOWNWARD OVER EACH PRINTING TRACK MOUNTING SCREW FOR MAXIMUM CLEARANCE.

(2) REQUIREMENT

PRINTING TRACK IN UPPERMOST POSITION. LATCHING EXTENSION OF PRINTING HAMMER OPERATING BAIL SHOULD OVERTRAVEL LATCHING SURFACE OF OPERATING BAIL LATCH BY MIN. 0.006 INCH

CHECK RIGHT AND LEFT POSITIONS

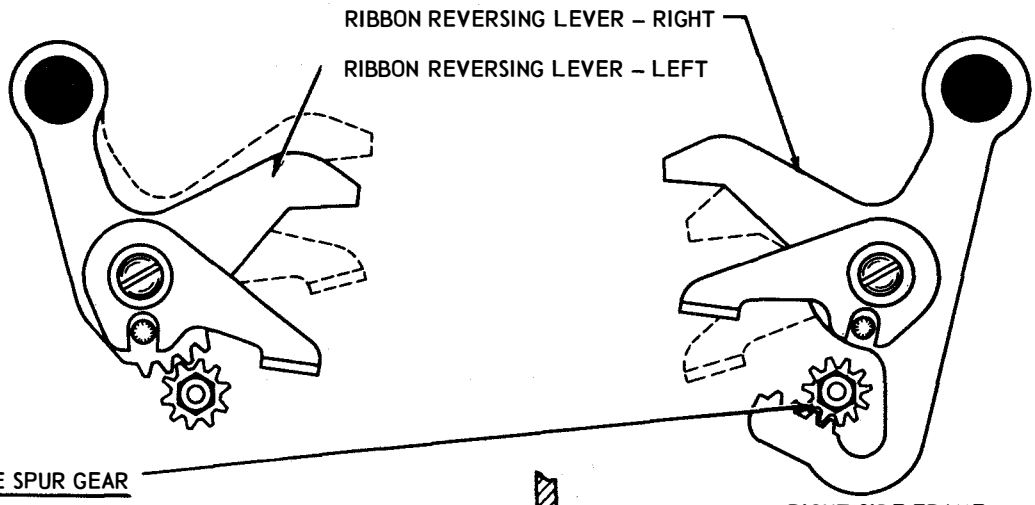
TO ADJUST

POSITION SECONDARY PRINTING ARM WITH CLAMP SCREWS LOOSENED.

NOTE

THE PRINTING ARM ADJUSTMENT SHOULD ALWAYS BE MADE WITH THE PRINTING HAMMER OPERATING BAIL SPRING BRACKET (FIGURE -37) IN THE NO 1 POSITION. POSITIONS NO. 2 AND NO. 3 ARE TO BE USED ONLY FOR MAKING MULTIPLE COPIES.

FIGURE 46 TYPER, PRINTING MECHANISM



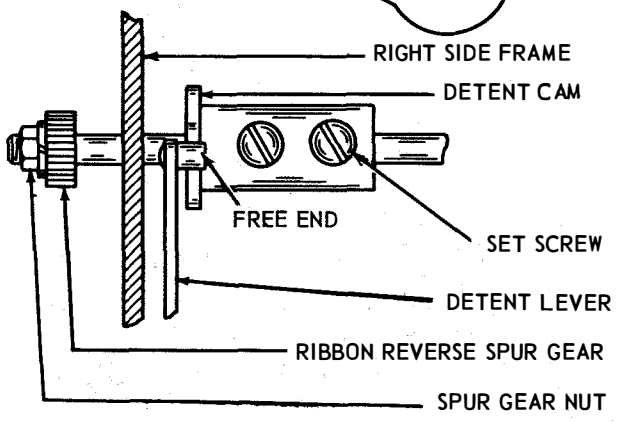
RIBBON REVERSE SPUR GEAR

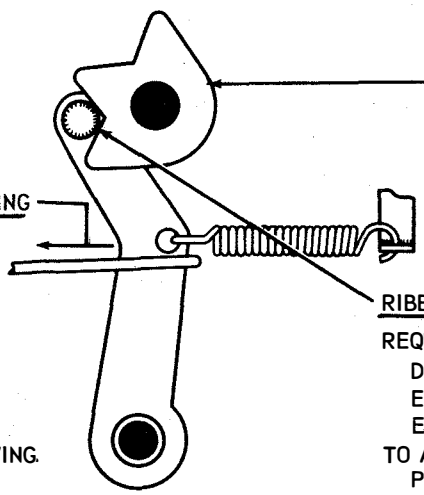
REQUIREMENT

WHEN RIGHT REVERSING LEVER IS IN MAXIMUM DOWNWARD POSITION, THE LEFT REVERSING LEVER SHOULD BE IN ITS MAXIMUM UPWARD POSITION.

TO ADJUST

LOOSEN THE SET SCREWS IN THE DETENT CAM. LOOSEN THE LEFT SPUR GEAR NUT. SECURELY TIGHTEN THE RIGHT SPUR GEAR NUT. MOVE THE RIGHT REVERSING LEVER TO ITS MAXIMUM DOWNWARD POSITION AND HOLD THE LEFT REVERSING LEVER IN ITS MAXIMUM UPWARD POSITION. THEN TIGHTEN THE LEFT SPUR GEAR NUT.





RIBBON REVERSE DETENT LEVER SPRING TENSION

REQUIREMENT

DETENT SEATED IN NOTCH OF CAM. RIGHT RIBBON REVERSING LEVER HELD DOWNWARD.

MIN. 6½ OZS.

MAX. 9 OZS.

TO START THE DETENT LEVER MOVING.

RIBBON REVERSE DETENT

REQUIREMENT

DETENT SHOULD BE SEATED APPROXIMATELY EQUAL IN EACH NOTCH OF CAM. FREE END OF THE DETENT FLUSH WITH CAM.

TO ADJUST

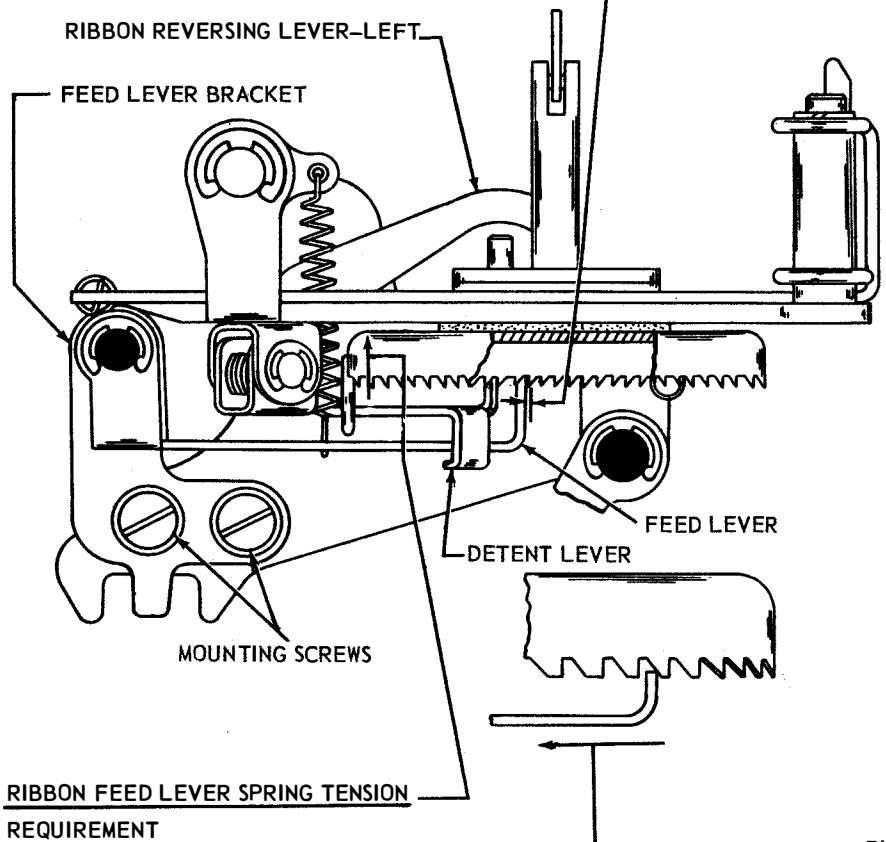
POSITION THE CAM ON ITS SHAFT WITH ITS SET SCREWS LOOSENED.

FIGURE 47 TYPER, RIBBON REVERSE MECHANISM

(See Note 3 Page 2-1)

RIBBON FEED LEVER BRACKET

(1) REQUIREMENT (LEFT-HAND MECHANISM)
LEFT REVERSING LEVER IN UPWARD POSITION.
RIBBON MECHANISM IN UPPER POSITION
RATCHET WHEEL HELD AGAINST THE DETENT LEVER.
CLEARANCE BETWEEN THE FRONT FACE OF THE FEED LEVER AND THE SHOULDER OF A TOOTH ON THE RATCHET WHEEL
MIN. 0.020 INCH
MAX. 0.030 INCH
TO ADJUST
POSITION THE FEED LEVER BRACKET WITH ITS MOUNTING SCREWS LOOSENED.



(2) REQUIREMENT (RIGHT-HAND MECHANISM)
RIGHT REVERSING LEVER AND RIBBON MECHANISM IN UPWARD POSITION.
ADJUST FEED LEVER BRACKET IN THE SAME MANNER.

NOTE

ROTATE THE MAIN SHAFT. THE RATCHET WHEEL SHOULD STEP ONE TOOTH ONLY WITH EACH OPERATION.

RIBBON FEED LEVER SPRING TENSION

REQUIREMENT
FEED LEVER AND DETENT LEVER IN RATCHET WHEEL TOOTH. SCALE APPLIED VERTICALLY TO EACH LEVER NEAR FEED LEVER SPRING
MIN. 3/4 OZ.
MAX. 2 OZS.
TO START EACH LEVER MOVING DOWNWARD. CHECK LEFT AND RIGHT. IF NECESSARY ADJUST TORSION SPRING BY PULLING LOWER END TOWARD REAR.

RIBBON RATCHET WHEEL FRICTION SPRING TENSION

REQUIREMENT
FEED LEVERS DISENGAGED.
MIN. 3 OZS.
MAX. 7 1/2 OZS.
TO START THE RATCHET WHEEL MOVING

FIGURE 48 TYPER, RIBBON FEED MECHANISM

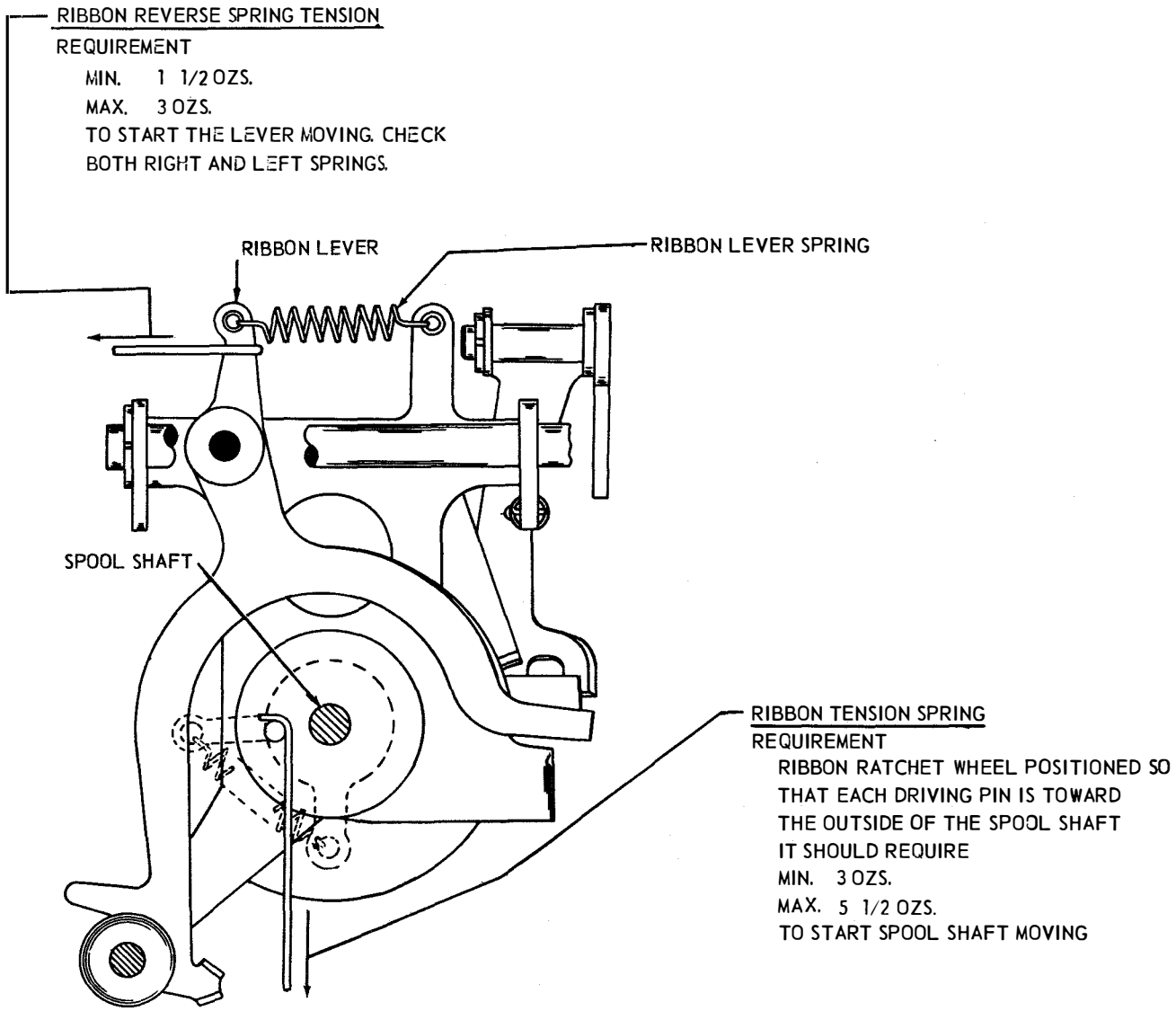


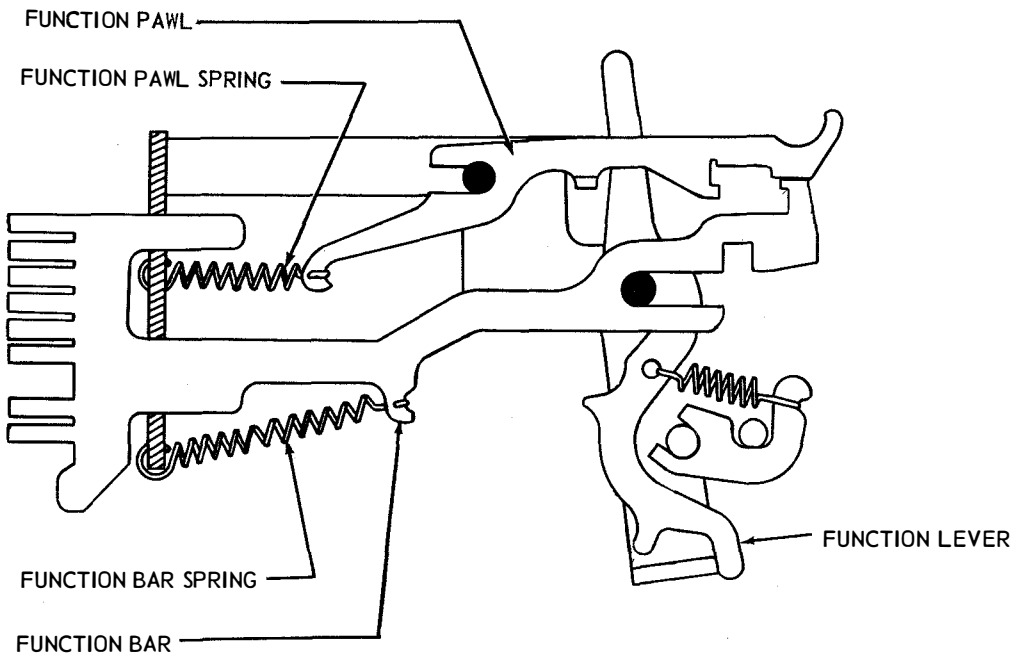
FIGURE 49 TYPER, RIBBON REVERSE MECHANISM

INSTRUCTIONS FOR REMOVING STUNT BOX ASSEMBLY

NOTE – – – REMOVE ONLY FOR SERVICING

REMOVE TYPING UNIT FROM BASE (SEE P.3-2). REMOVE THE STUNT BOX MOUNTING SCREWS AND DISCONNECT STRIPPER BAIL ARM (FIG. 55).

SLIDE UPPER END OF STRIPPER DRIVING LINK TO THE RIGHT (REAR VIEW) TO DISENGAGE LINK FROM STRIPPER BLADE DRIVING ARM. LIFT STUNT BOX ASSEMBLY UPWARD AND PULL TOWARD THE REAR TO DISENGAGE SHIFT FORKS AND PILOT PINS FROM CODE BAR ASSEMBLY. REMOVE CONTACT ASSEMBLY. REINSTALL STUNT ASSEMBLY IN REVERSE ORDER. PUSH THE ASSEMBLY FORWARD IN ITS GUIDE RAILS TO WITHIN 1/8" OF ITS FINAL POSITION, THEN MANUALLY DISENGAGE FUNCTION PAWLS FROM THEIR FUNCTION LEVERS AND PUSH FUNCTION ASSEMBLY FORWARD AND DOWN TO LATCH IN PLACE.



INSTRUCTIONS FOR INSTALLING FUNCTION BARS IN STUNT BOX

NOTE – – – TYPING UNITS ARE FURNISHED WITHOUT THE FUNCTION BARS ASSOCIATED WITH THE AREA CALL, STATION CALL, OR RELAY CALL (IF REQUIRED). REFER TO P-51 FOR LOCATION AND P. 51 FOR IDENTIFICATION OF FUNCTION BARS CORRESPONDING TO ASSIGNED CALL OBSERVE POSITION OF EACH STUNT CASE FUNCTION BAR.

CAUTION – – – DO NOT OPERATE TYPER UNTIL ALL FUNCTION BARS HAVE BEEN INSTALLED FOR WHICH CORRESPONDING FUNCTION PAWLS AND FUNCTION LEVERS HAVE BEEN SUPPLIED.

INSERT THE ASSIGNED FUNCTION BAR INTO THE SPECIFIED SLOT OF THE STUNT BOX FROM THE FRONT. GUIDE REAR PROJECTIONS OF THE BAR INTO ENGAGEMENT WITH ITS SHAFT AND THE FUNCTION PAWL. INSTALL THE FUNCTION BAR SPRING.

REMOVE THE FUNCTION BAR IN THE REVERSE ORDER.

FIGURE 50 TYPER, STUNT BOX MECHANISM

FUNCTION BAR POSITION FOR SEQUENTIAL SELECTION

SLOT NO.	TYPING UNIT RESPONDS TO	ARRANGEMENT		
		AJ.	AK.	AL
9	153409 – 153438	153409 – 153438	153409 – 153438	153409 – 153438
10	STATION SELECT CODE	152676 – 152703	152676 – 152703	152676 – 152703
11	STATION SELECT CODE	152676 – 152703	152676 – 152703	152676 – 152703
15	#1 RELAY SELECT CODE	NONE	153409 – 153438	153409 – 153438
16	#1 RELAY SELECT CODE	"	152676 – 152703	152676 – 152703
17	#1 RELAY SELECT CODE	"	152676 – 152703	152676 – 152703
18	#2 RELAY SELECT CODE	NONE	NONE	153409 – 153703
19	#2 RELAY SELECT CODE	"	"	152676 – 152703
20	#2 RELAY SELECT CODE	"	"	152676 – 152703
21	#1 RELAY SELECT CODE	NONE	153409 – 153438	153409 – 153438
22	#1 RELAY SELECT CODE	"	152676 – 152703	152676 – 152703
23	#1 RELAY SELECT CODE	"	152676 – 152703	152676 – 152703
24	#2 RELAY SELECT CODE	NONE	NONE	153409 – 153438
25	#2 RELAY SELECT CODE	"	"	152676 – 152703
26	#2 RELAY SELECT CODE	"	"	152676 – 152703
27	AREA SELECT CODE	NONE	153432	153432
28	AREA SELECT CODE	"	152676 – 152703	152676 – 152703
29	AREA SELECT CODE	"	152676 – 152703	152676 – 152703
30	AREA SELECT CODE	153432	153432	153432
31	AREA SELECT CODE	152676 – 152703	152676 – 152703	152676 – 152703
32	AREA SELECT CODE	152676 – 152703	152676 – 152703	152676 – 152703

WARNING – – – DO NOT OPERATE TYPING UNIT WITHOUT INSTALLING ALL THE FUNCTION BARS

STUNT CASE FUNCTION BARS

(INITIAL FUNCTION BAR FOR AREA, STATION OR RELAY CALL CODE)

CHARACTER		PART NO.	CHARACTER		PART NO.	CHARACTER		PART NO.
A	SC	153409	J	SC	153418	S	SC	153427
B	SC	153410	K	SC	153419	T	SC	153428
C	SC	153411	L	SC	153420	U	SC	153429
D	SC	153412	M	SC	153421	V	SC	153430
E	SC	153413	N	SC	153422	W	SC	153431
F	SC	153414	O	SC	153423	X	SC	153432
G	SC	153415	P	SC	153424	Y	SC	153433
H	SC	153416	Q	SC	153425	Z	SC	153434
I	SC	153417	R	SC	153426			

COMMON FUNCTION BARS

(SUCCESSIVE FUNCTION BARS FOR AREA, STATION OR RELAY CALL CODE)

CHARACTER	PART NO.	CHARACTER	PART NO.	CHARACTER	PART NO.
A	152676	J	152685	S	152696
B	152677	K	152686	T	152697
C	152678	L	152687	U	152698
D	152679	M	152688	V	152699
E	152680	N	152689	W	152700
F	152681	O	152690	X	152701
G	152682	P	152691	Y	152702
H	152683	Q	152692	Z	152703
I	152684	R	152695		

FIGURE 51 TYPER, STUNT BOX MECHANISM

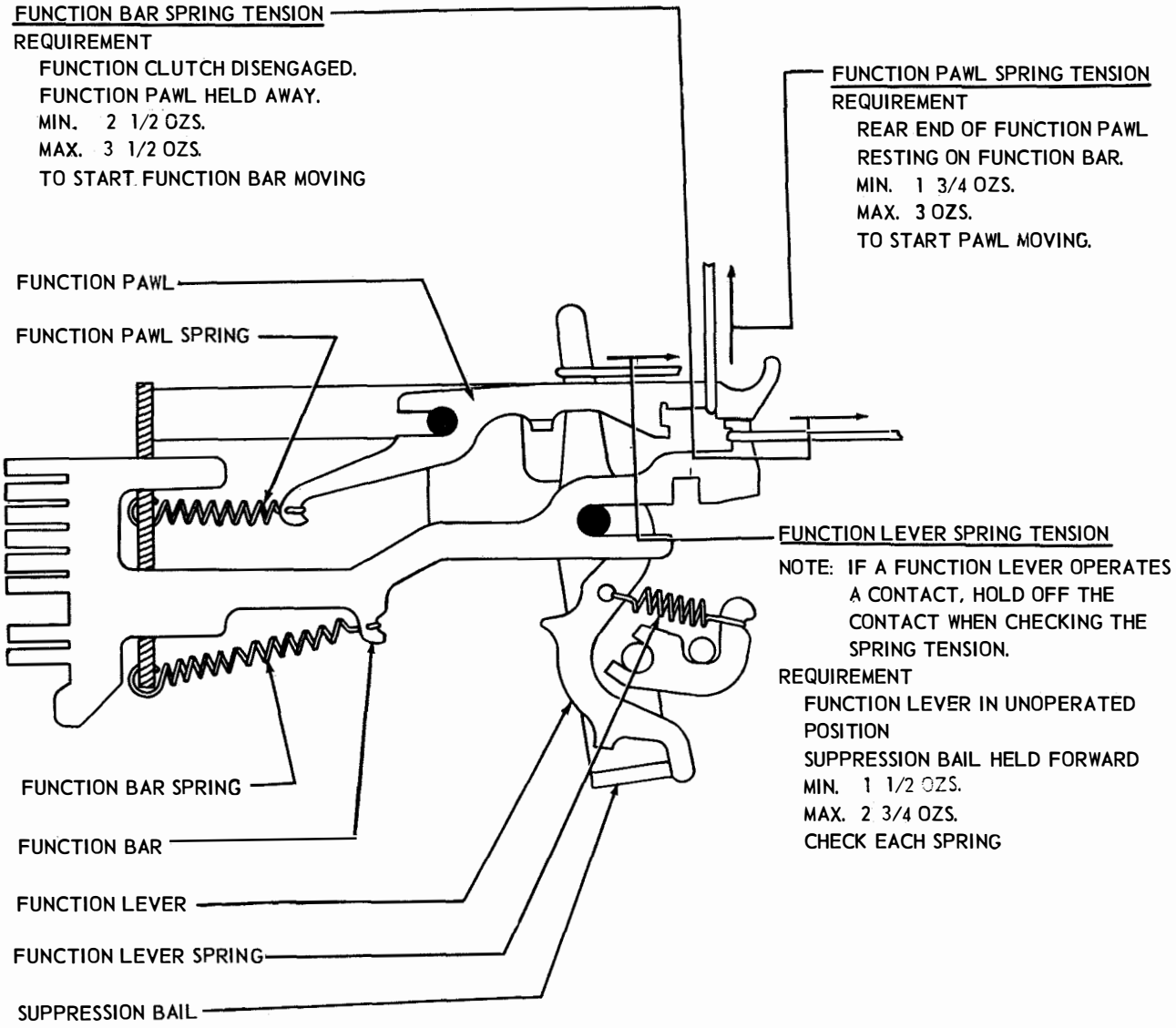
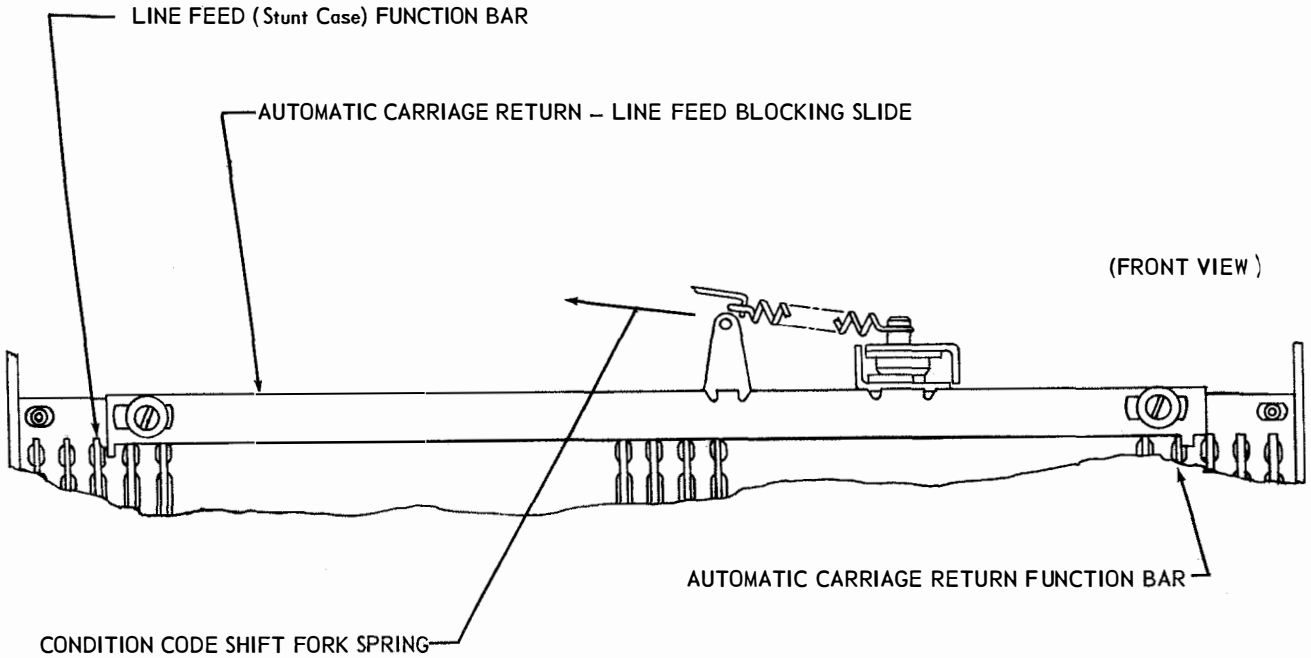


FIGURE 52 TYPER, STUNT BOX MECHANISM



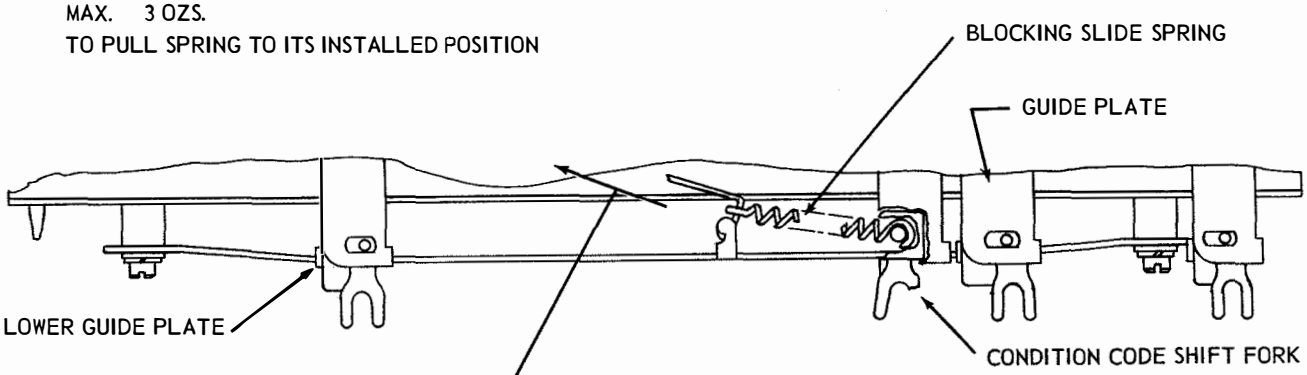
REQUIREMENT

WITH CONDITION CODE SHIFT FORK IN ITS UNOPERATED POSITION.

MIN. 1 OZ.

MAX. 3 OZS.

TO PULL SPRING TO ITS INSTALLED POSITION



REQUIREMENT

WITH CONDITION CODE SHIFT FORK IN ITS UNOPERATED POSITION.

MIN. 1 OZ.

MAX. 3 OZS.

TO PULL SPRING TO ITS INSTALLED LENGTH.

FIGURE 53 TYPER, STUNT BOX MECHANISM

FIGURES AND LETTERS CODE BAR SHIFT MECHANISM

NOTE – – – ROTATE FUNCTION CLUTCH UNTIL FUNCTION BARS ARE IN THEIR EXTREME REAR POSITION.

(1) REQUIREMENT

HOOK LETTERS FUNCTION PAWL OVER END OF FUNCTION BAR (FIGS. PAWL DISENGAGED).
CLEARANCE BETWEEN LOWER GUIDE PLATE EXTENSION AND LETTERS SHIFT SLIDE.

MIN. 0.005 INCH ——— MAX. 0.015 INCH

(2) REQUIREMENT

HOOK FIGURES FUNCTION PAWL OVER END OF FUNCTION BAR (LTRS. PAWL DISENGAGED).
CLEARANCE BETWEEN LOWER GUIDE PLATE EXTENSION AND FIGURES SHIFT SLIDE

MIN. 0.005 INCH ——— MAX. 0.015 INCH

TO ADJUST

POSITION UPPER AND/ OR LOWER GUIDE PLATE BY ITS ADJUSTING SLOT WITH THE CLAMP NUTS LOOSENED.

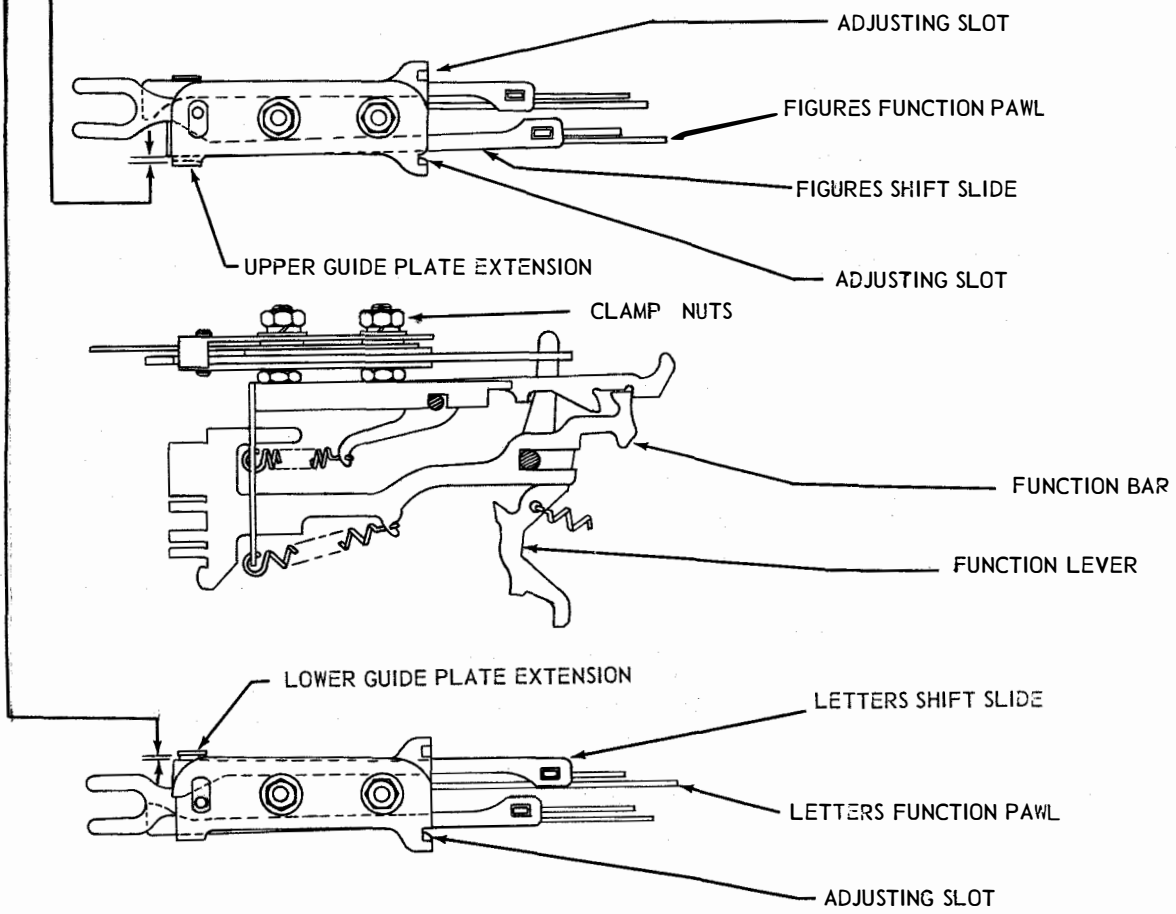


FIGURE 54 TYPER, SHIFT MECHANISM

STRIPPER BLADE CAM POSITION

REQUIREMENT

STRIPPER BLADE CAM SHOULD MOVE EACH STRIPPER BLADE ARM AN EQUAL DISTANCE ABOVE AND BELOW CENTER LINE OF ITS PIVOT. (GAUGE BY EYE).

A. UPWARD DIRECTION

B. DOWNWARD DIRECTION

TO CHECK

WITH FUNCTION CLUTCH IN ITS STOP POSITION, OBSERVE ENGAGEMENT OF STRIPPER BLADE CAM (UPPER PEAK) WITH STRIPPER BLADE ARM. THEN ROTATE CLUTCH TO TURN CAM TO ITS EXTREME DOWNWARD POSITION AND OBSERVE ENGAGEMENT OF LOWER CAM PEAK.

TO ADJUST

WITH STRIPPER BLADE DRIVING LINK MOUNTING SCREWS LOOSENED, EQUALIZE THE OVER TRAVEL OF EACH CAM PEAK BY USING SCREW DRIVER ADJUSTMENT ON LINK.

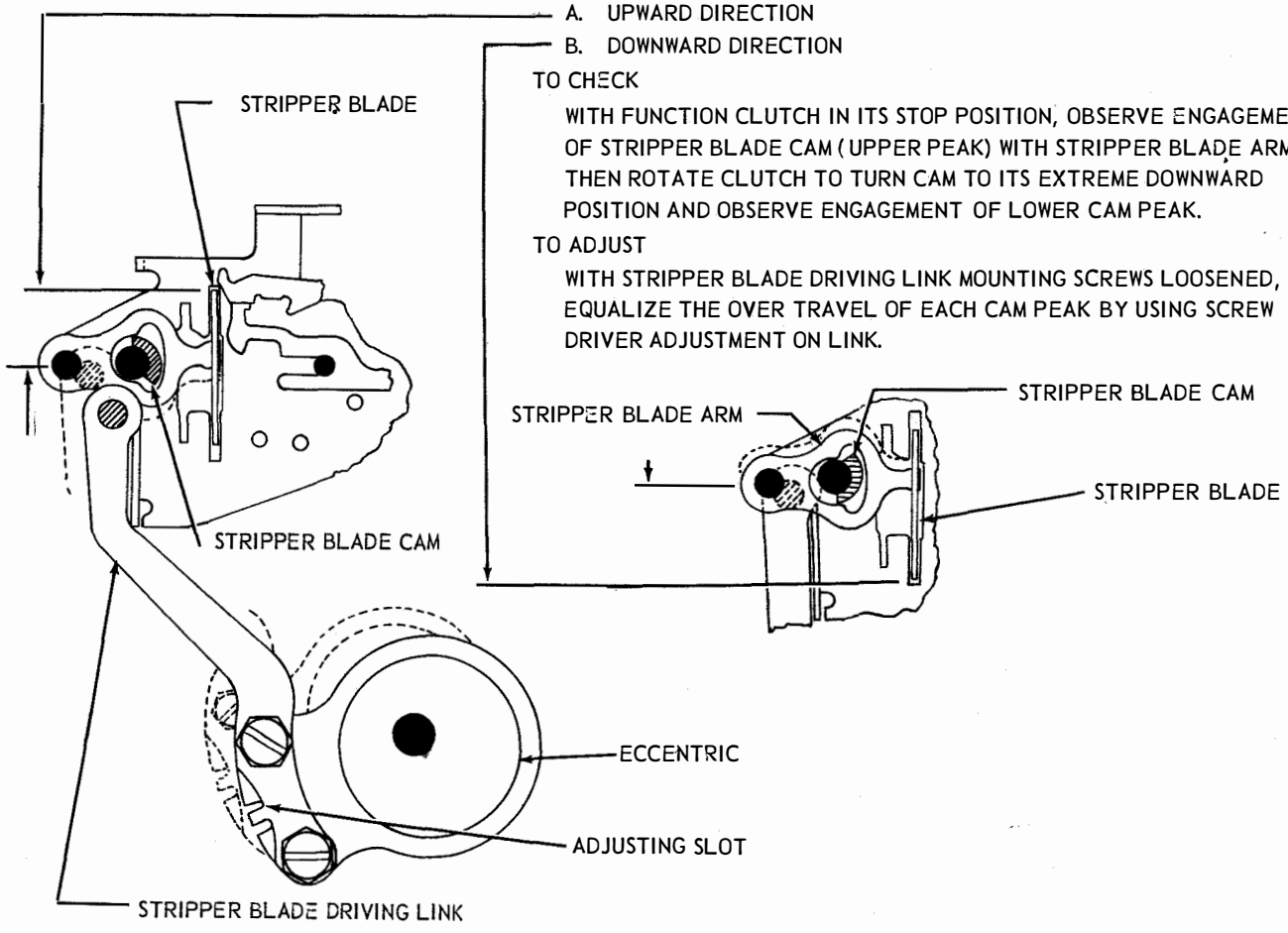
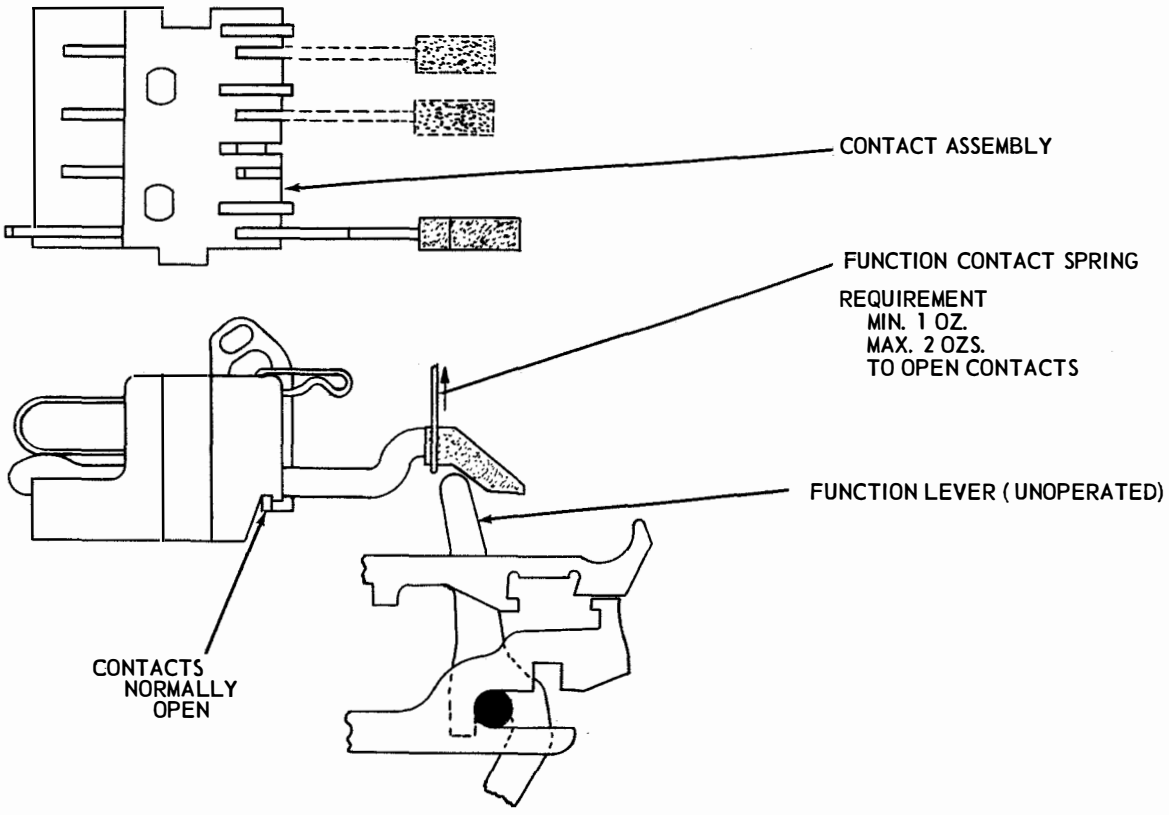


FIGURE 55 TYPER, FUNCTION PAWL STRIPPER,



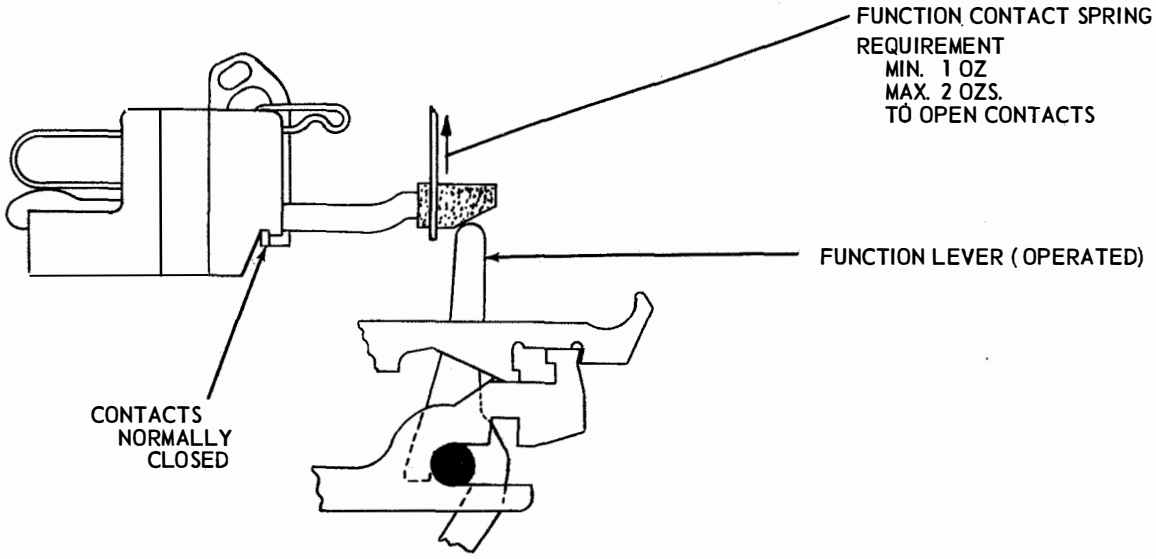


FIGURE 56 TYPER, FUNCTION CONTACTS

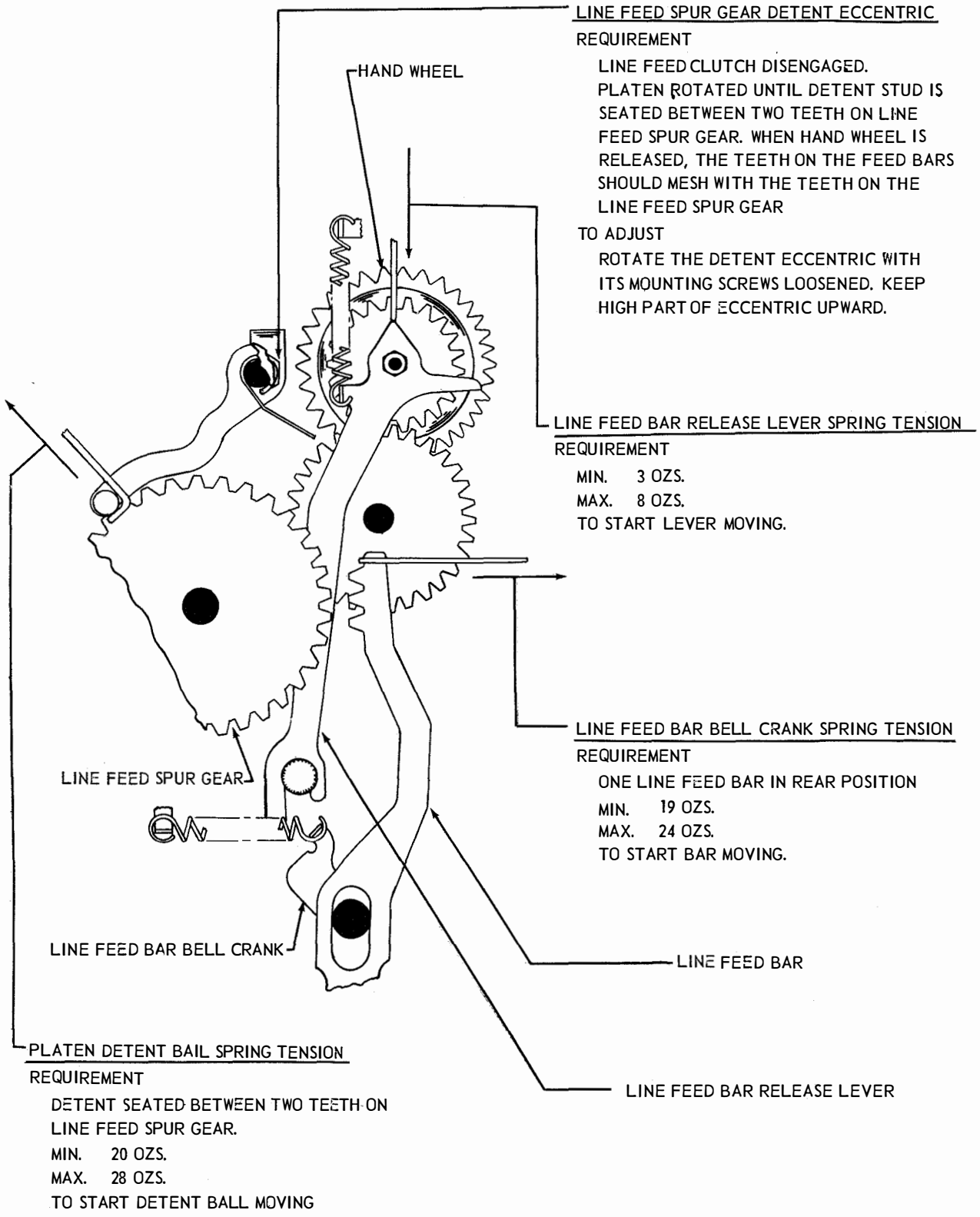


FIGURE 57 TYPER, LINE FEED MECHANISM

INSTRUCTIONS FOR REMOVING THE MAIN SHAFT ASSEMBLY

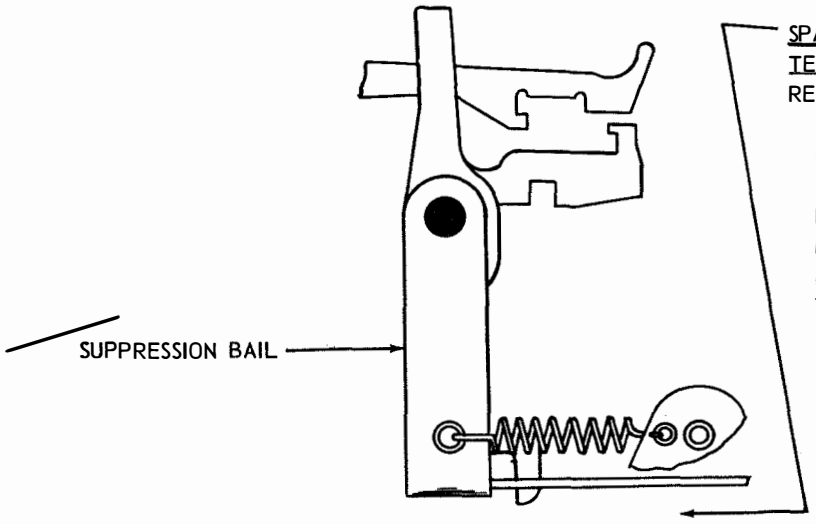
NOTE – – – REMOVE ONLY FOR SERVICING

REMOVE PRINTER FROM BASE (SEE P.3-2). REMOVE SELECTOR CAM ASSEMBLY (SEE 2–14) ,REMOVE CLAMP COLLAR (WITH OILER) FROM RIGHT END OF SHAFT. PLACE CARRIAGE IN ITS LEFT POSITION. REMOVE SCREW WHICH SECURES SPACING SHAFT (FIG. 25) IN SPACING PAWL ASSEMBLY AND REMOVE SPACING SHAFT WITH GEAR. REMOVE MAIN SHAFT RIGHT HAND BEARING RETAINER PLATE. REMOVE TYPE BOX CLUTCH CONNECTING LINK RETAINER PLATE AT THE CLUTCH STUD AND REMOVE STUD. REMOVE LEFT BEARING RETAINER MOUNTING SCREWS. SLIDE UPPER END OF STRIPPER DRIVING LINK TO THE RIGHT (REAR VIEW) TO DISENGAGE LINK FROM STRIPPER BLADE DRIVING ARM. UNHOOK SPRINGS FROM STOP LEVERS AND LATCH LEVERS ON ALL CLUTCHES AND THE CLUTCH TRIP SHAFT CAM FOLLOWER SPRINGS POSITION CODE BAR CLUTCH SO THAT LOW PART OF TRIP CAM CLEARS CAM FOLLOWER. MOVE MAIN SHAFT ASSEMBLY TOWARD THE LEFT TO DISENGAGE THE CODE BAR CLUTCH AND FUNCTION CLUTCH LINKS FROM THEIR CONNECTING PINS. LIFT LEFT END OF SHAFT OUT OF THE SIDE FRAME AND POSITION THE SHAFT SO THAT THE FUNCTION

INSTRUCTIONS FOR REMOVING THE PLATEN

NOTE – – – REMOVE ONLY FOR SERVICING

REMOVE PLATEN, GEAR, PLATEN BEARING RETAINERS AND PAPER FINGER SHAFT. HOLD OFF DETENT AND LIFT PLATEN OUT OF SIDE FRAME. REPLACE IN THE REVERSE ORDER. WHEN REPLACING THE PLATEN BEARING RETAINERS, PUT THE RETAINER UPPER SCREW IN FIRST. LEAVE SCREW SLIGHTLY LOOSE. PRESS LOWER END OF RETAINER DOWN AND HOOK IT INTO ELONGATED HOLE IN SIDE FRAME. REPLACE LOWER SCREW. TIGHTEN BOTH SCREW.



SPACING SUPPRESSION BAIL SPRING TENSION

REQUIREMENT

SPACING SUPPRESSION BAIL IN REAR POSITION. SCALE APPLIED NEAR CENTER OF HORIZONTAL PORTION OF BAIL.

MIN. 1/2 OZ.

MAX. 1 1/2 OZS.

TO START BAIL MOVING.

FIGURE 58 TYPER, SPACING SURPPRESSION MECHANISM

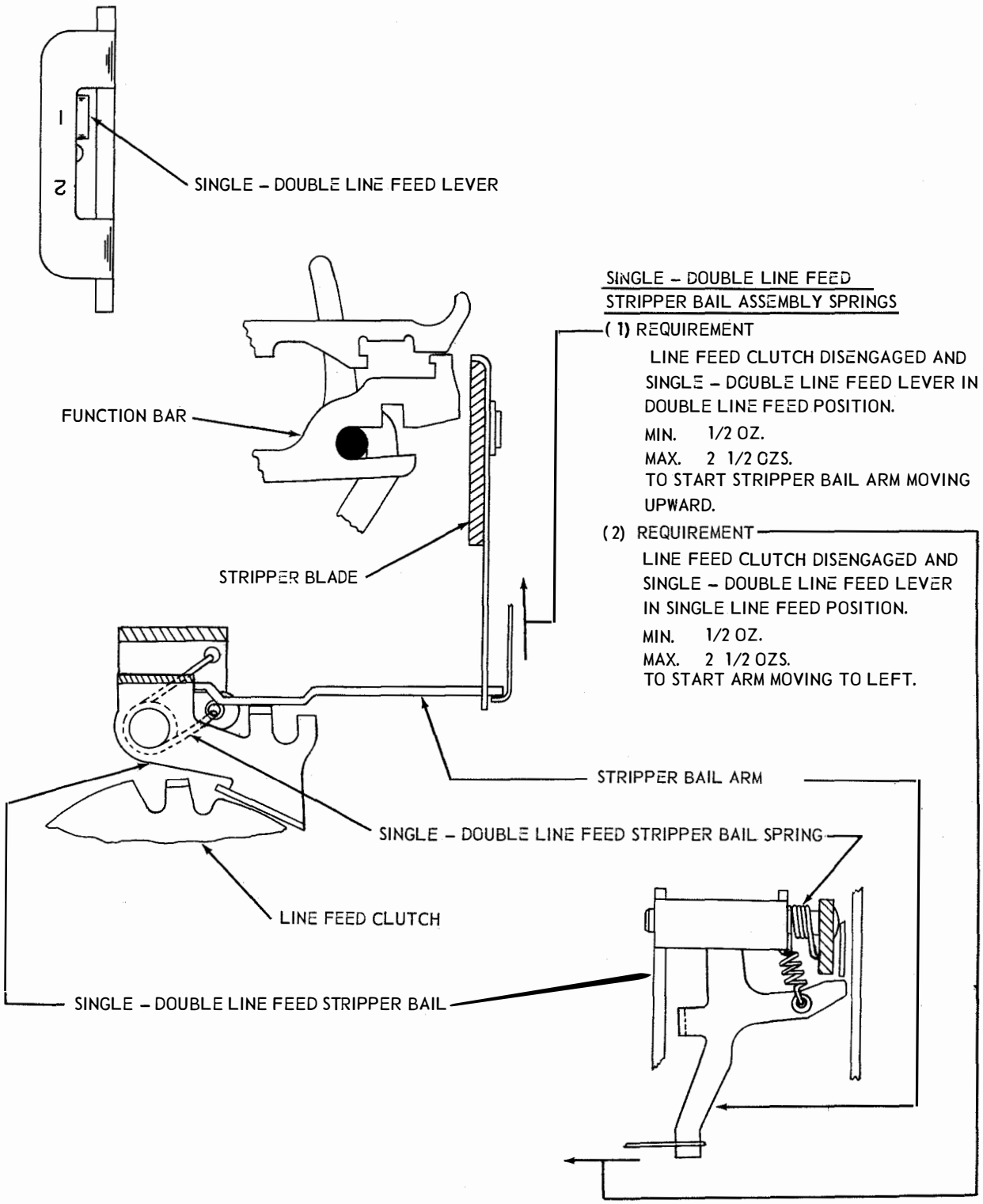
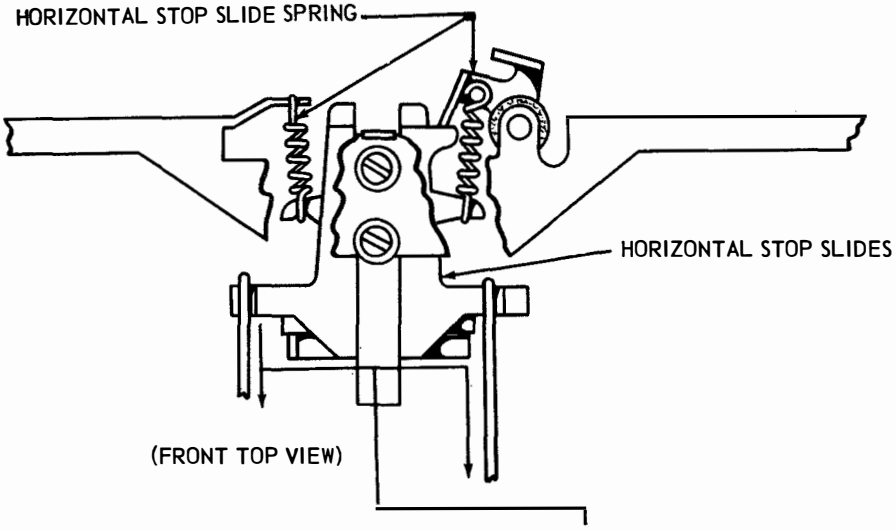


FIGURE 59 TYPER, SINGLE – DOUBLE LINE FEED MECHANISM

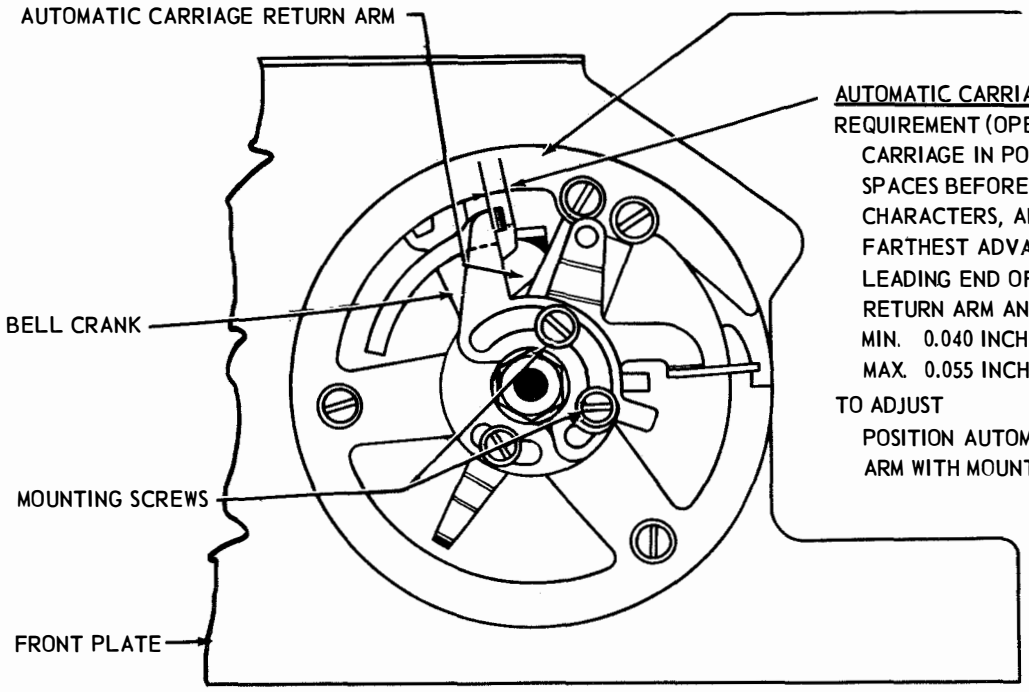


HORIZONTAL STOP SLIDE SPRING TENSION

REQUIREMENT

CODE BARS IN MARKING POSITION (LEFT).
TYPE BOX CLUTCH ROTATED ¼ TURN FROM ITS STOP POSITION.
HORIZONTAL MOTION DECELERATING SLIDES (FIG. 33) HELD AWAY FROM HORIZONTAL STOP SLIDES.
MIN. 1/2 OZ. MAX. 1½ OZS. FOR UPPER AND LOWER SLIDES
MIN. 1¾ 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.

(See Note 3 Page 2–1)



AUTOMATIC CARRIAGE RETURN ARM

REQUIREMENT (OPERATING ON BASE)

CARRIAGE IN POSITION TO PRINT TWO SPACES BEFORE THE LAST DESIRED CHARACTERS, AND FRONT SPACING PAWL FARTHEST ADVANCED. CLEARANCE BETWEEN LEADING END OF AUTOMATIC CARRIAGE RETURN ARM AND BELL CRANK.
MIN. 0.040 INCH
MAX. 0.055 INCH

TO ADJUST

POSITION AUTOMATIC CARRIAGE RETURN ARM WITH MOUNTING SCREWS LOOSENED.

NOTE

RANGE OF ADJUSTMENT IS FROM 65TH TO 85TH CHARACTERS.

FIGURE 60 TYPER, HORIZONTAL MOTION STOP AND AUTOMATIC CARRIAGE RETURN MECHANISM

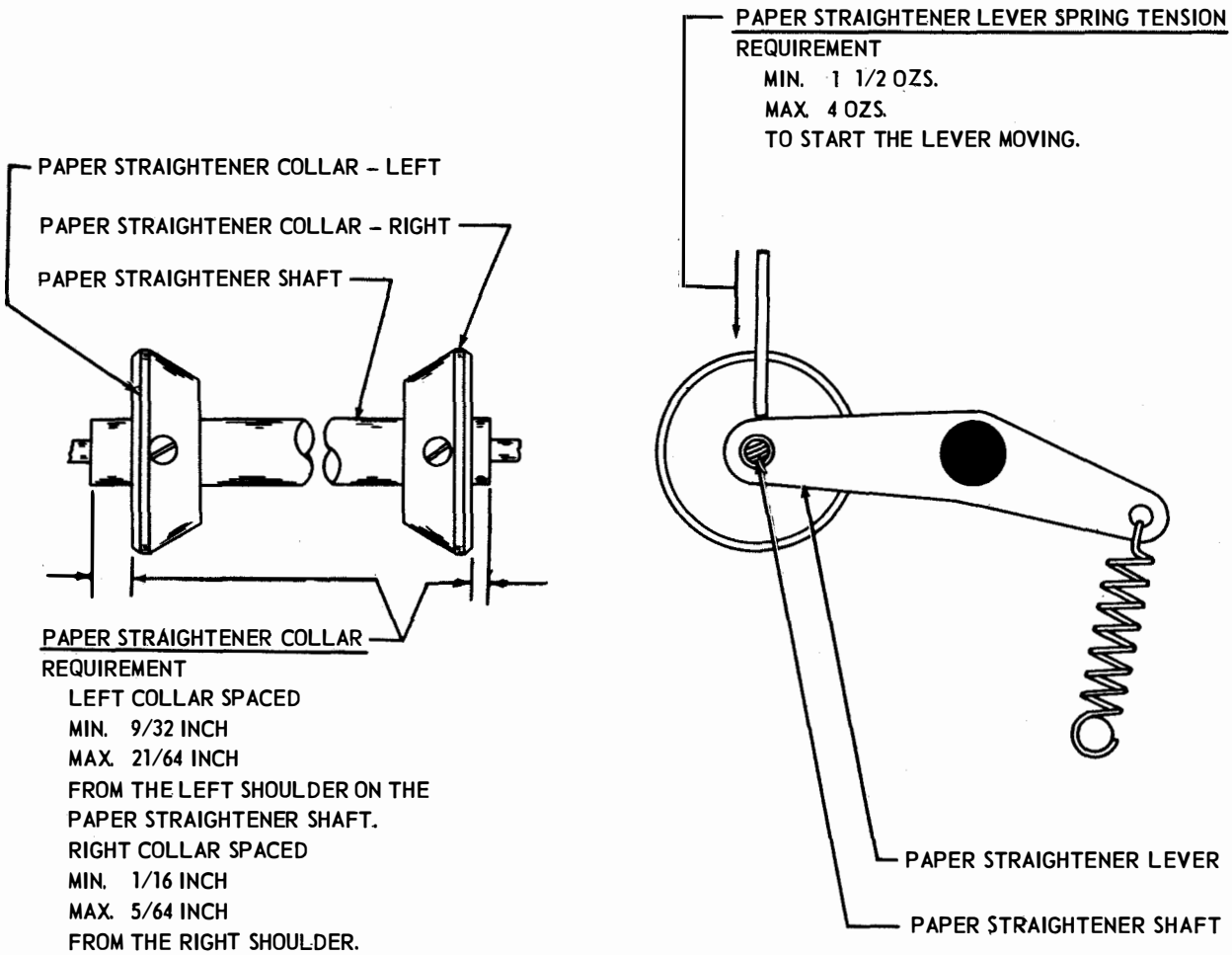
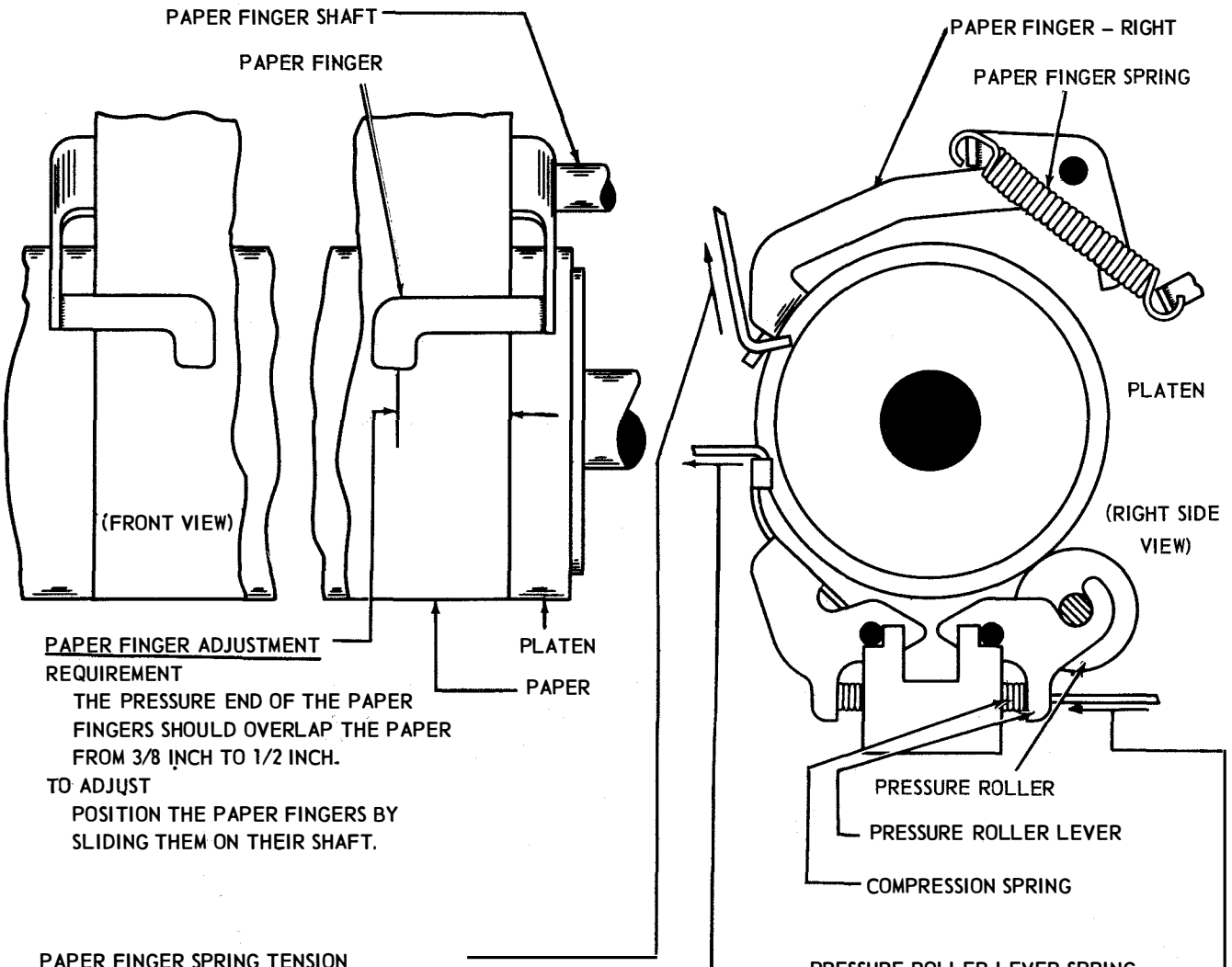


FIGURE 61 TYPER, PAPER MECHANISM



PAPER FINGER ADJUSTMENT
REQUIREMENT
THE PRESSURE END OF THE PAPER FINGERS SHOULD OVERLAP THE PAPER FROM 3/8 INCH TO 1/2 INCH.
TO ADJUST
POSITION THE PAPER FINGERS BY SLIDING THEM ON THEIR SHAFT.

PAPER FINGER SPRING TENSION
REQUIREMENT
PULL UPWARD ON RIGHT PAPER FINGER TO START LEFT PAPER FINGER MOVING FROM PLATEN.
MIN. 3 OZS.
MAX. 5 OZS.

PRESSURE ROLLER LEVER SPRING
REQUIREMENT
MIN. 26 OZS.
MAX. 32 OZS.
TO START EACH CENTER LEVER MOVING

PAPER PRESSURE BAIL SPRING TENSION
REQUIREMENT
SCALE HOOKED OVER PRESSURE BAIL AT EACH END OF PLATEN.
MIN. 10 OZS.
MAX. 20 OZS.
TO MOVE PRESSURE BAIL FROM PLATEN.

FIGURE 62 TYPER, PAPER MECHANISM

CODE BAR DETENT

REQUIREMENT

FRONT PLATE REMOVED. ALL CLUTCHES DISENGAGED. SHIFT CODE BAR SHOULD DETENT EQUALLY (Gauge By Eye).

TO ADJUST

EQUALIZE THE DETENTING OF THE CODE BARS BY ADDING OR REMOVING SHIMS BETWEEN THE CASTING AND THE CODE BAR BRACKET.

CODE BAR DETENT SPRING TENSION

NOTE

UNLESS THERE IS REASON TO BELIEVE THAT THESE SPRINGS ARE CAUSING OPERATING FAILURE DO NOT CHECK THIS REQUIREMENT.

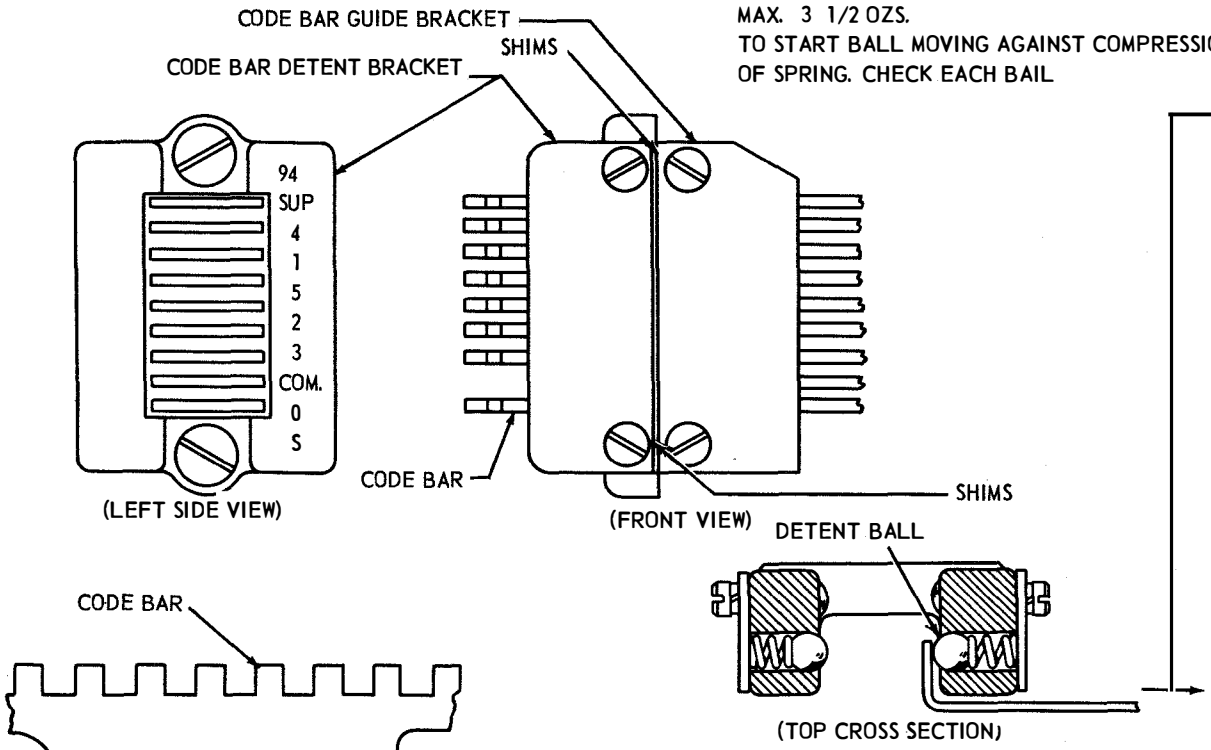
REQUIREMENT (EXCEPT SUPPRESSOR)

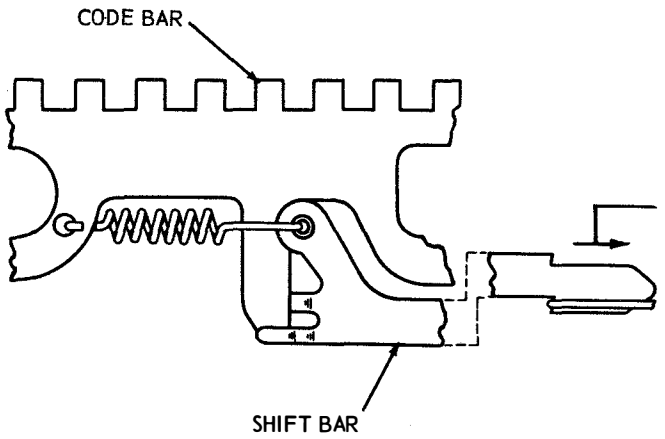
CODE BAR DETENT BRACKET CAREFULLY REMOVED AND CODE BARS REMOVED FROM DETENT BRACKET. SCALE APPLIED TO DETENT BALL AND PULLED IN DIRECTION OF BALL TRAVEL.

MIN. 1 1/2 OZS.

MAX. 3 1/2 OZS.

TO START BALL MOVING AGAINST COMPRESSION OF SPRING. CHECK EACH BAIL





CODE BAR YIELD SPRING

REQUIREMENT

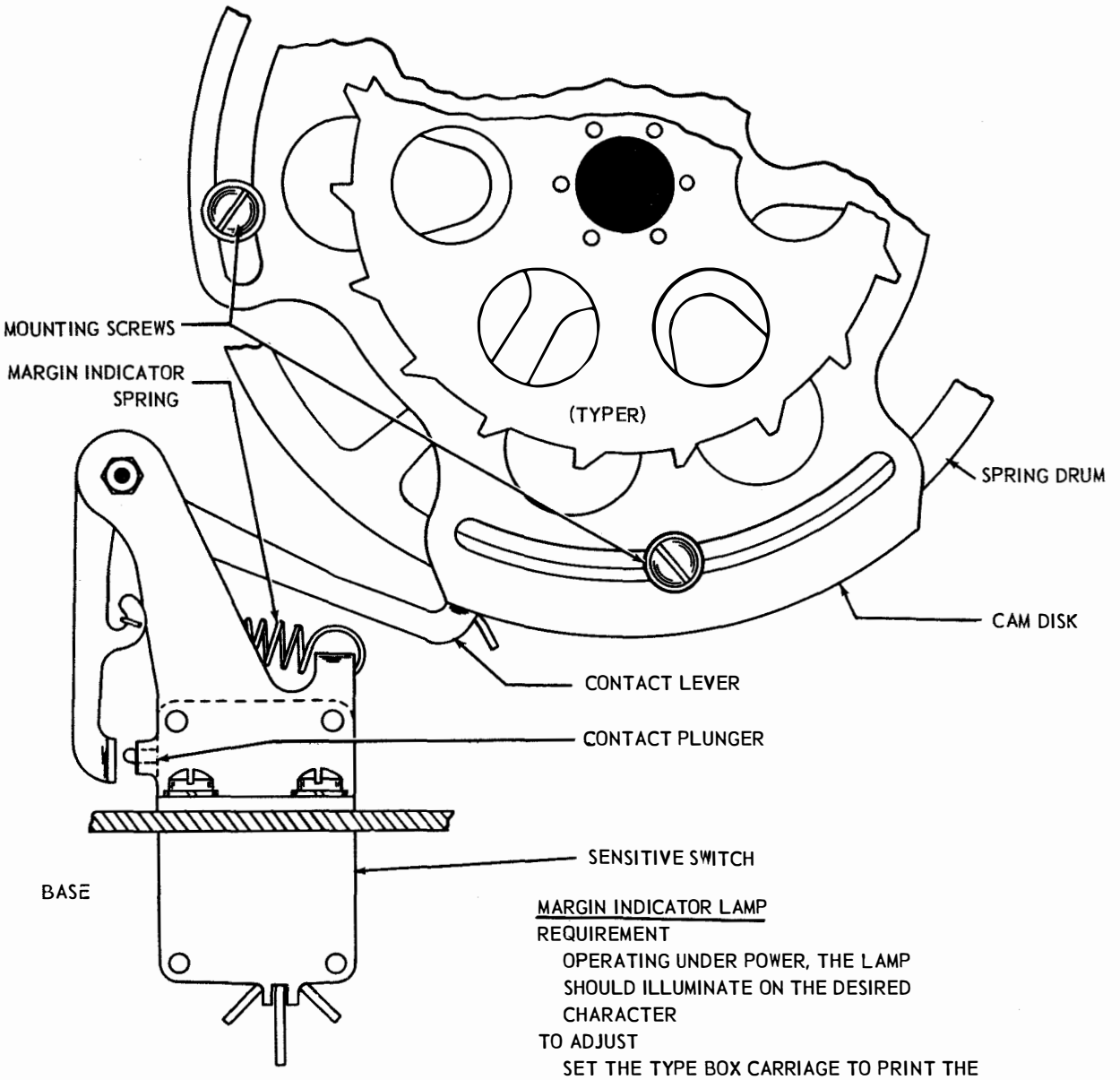
SELECTOR CLUTCH, CODE BAR CLUTCH, AND TYPE BOX CLUTCH DISENGAGED. NO. 1. CODE BAR IN SPACING POSITION

MIN. 17 OZS.

MAX. 23 OZS.

TO START CODE BAR SHIFT BAR PIVOT MOVING AWAY FROM CODE BAR. CHECK NO. 2 AND COMMON CODE BAR SHIFT BAR IN THE SAME MANNER.

FIGURE 63 TYPER, CODE BAR DETENT MECHANISM



MARGIN INDICATOR LAMP

REQUIREMENT

OPERATING UNDER POWER, THE LAMP SHOULD ILLUMINATE ON THE DESIRED CHARACTER

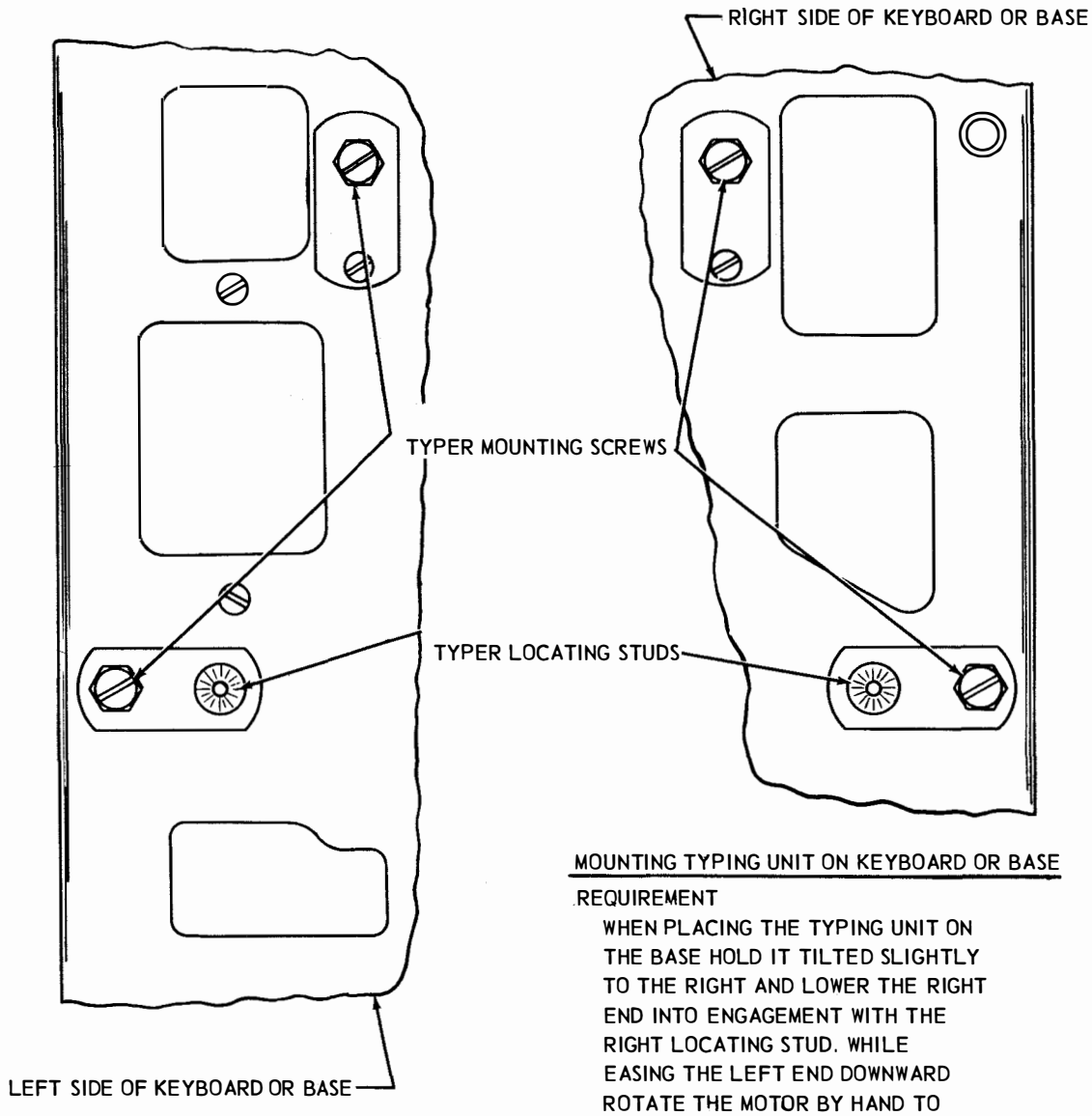
TO ADJUST

SET THE TYPE BOX CARRIAGE TO PRINT THE DESIRED CHARACTER AND POSITION THE CAM DISK COUNTERCLOCKWISE ON THE SPRING DRUM WITH ITS THREE MOUNTING SCREWS LOOSENED.

NOTE

THE RANGE OF ADJUSTMENT IS FROM THE 5TH TO 85TH CHARACTER.

FIGURE 64 TYPER, MARGIN INDICATING MECHANISM

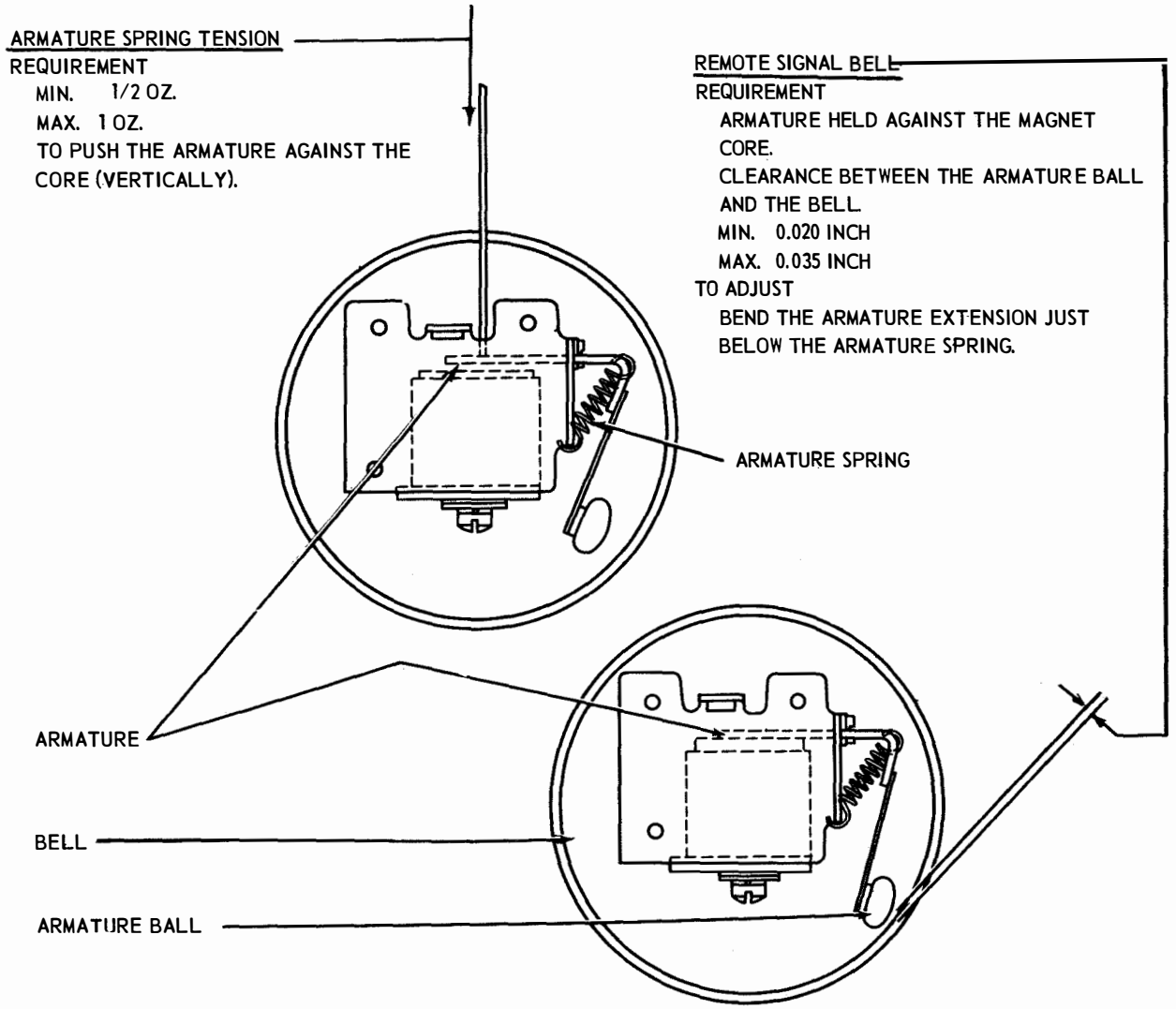


MOUNTING TYPING UNIT ON KEYBOARD OR BASE

REQUIREMENT

WHEN PLACING THE TYPING UNIT ON THE BASE 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 65 MOUNTING TYPING UNIT



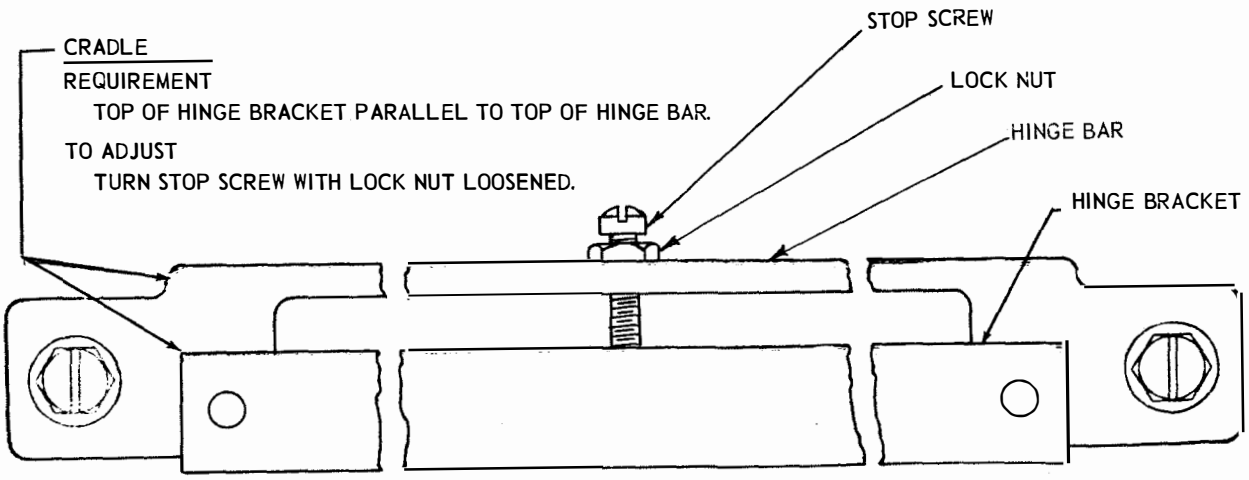
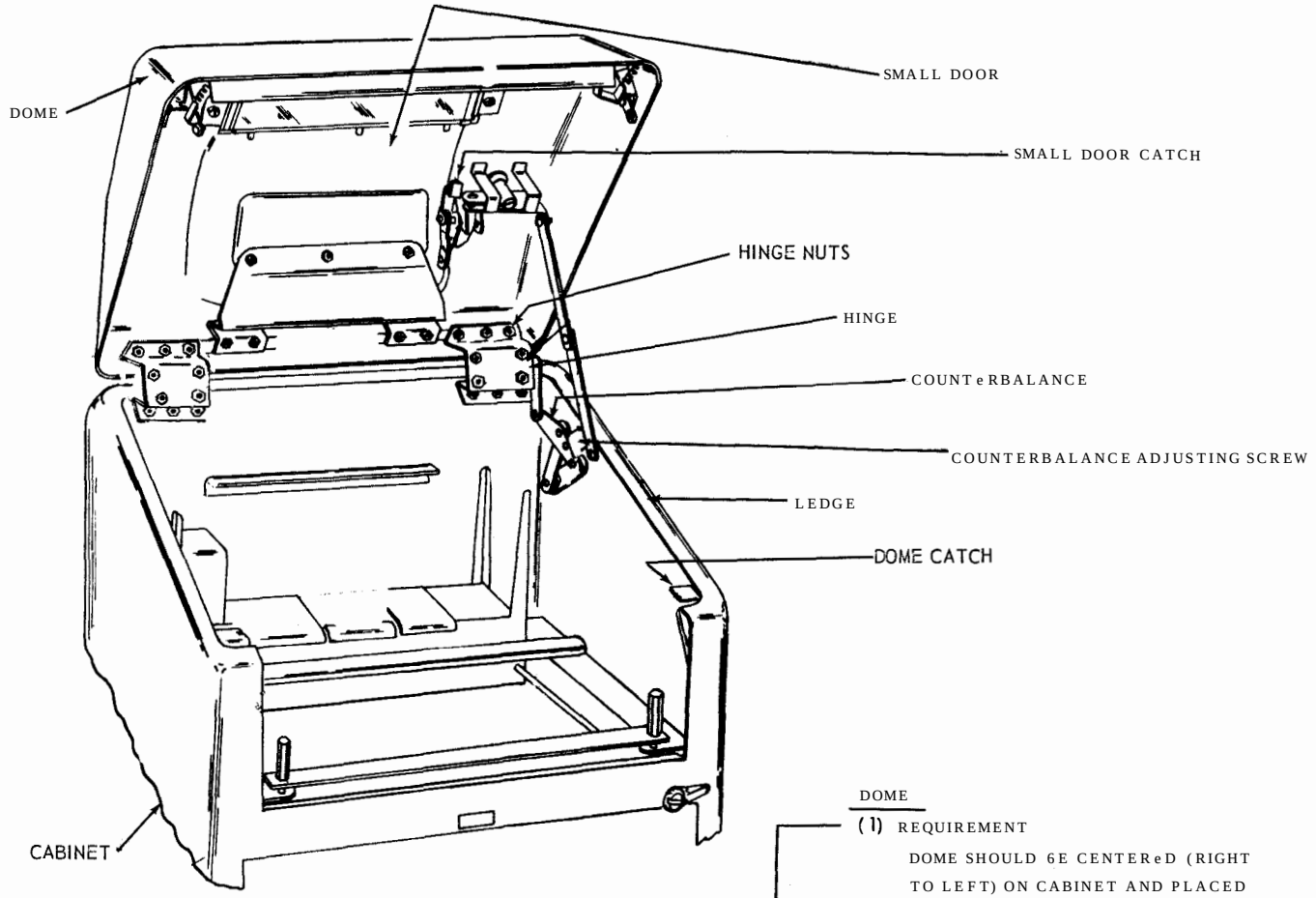


FIGURE 66 REMOTE SIGNAL BELL AND CRADLE

NOTE

THE FOLLOWING ADJUSTMENTS ARE MADE AT THE FACTORY AND SHOULD NOT BE DISTRUBED UNLESS THERE IS REASON TO BELIEVE THAT THE PARTS ARE OUT OF ADJUSTMENT OR HAVE BEEN DISASSEMBLED.



DOME

(1) REQUIREMENT

DOME SHOULD BE CENTERED (RIGHT TO LEFT) ON CABINET AND PLACED
MIN. 1/4 INCH
MAX. 5/16 INCH
FROM FRONT EDGE OF CABINET.

TO ADJUST

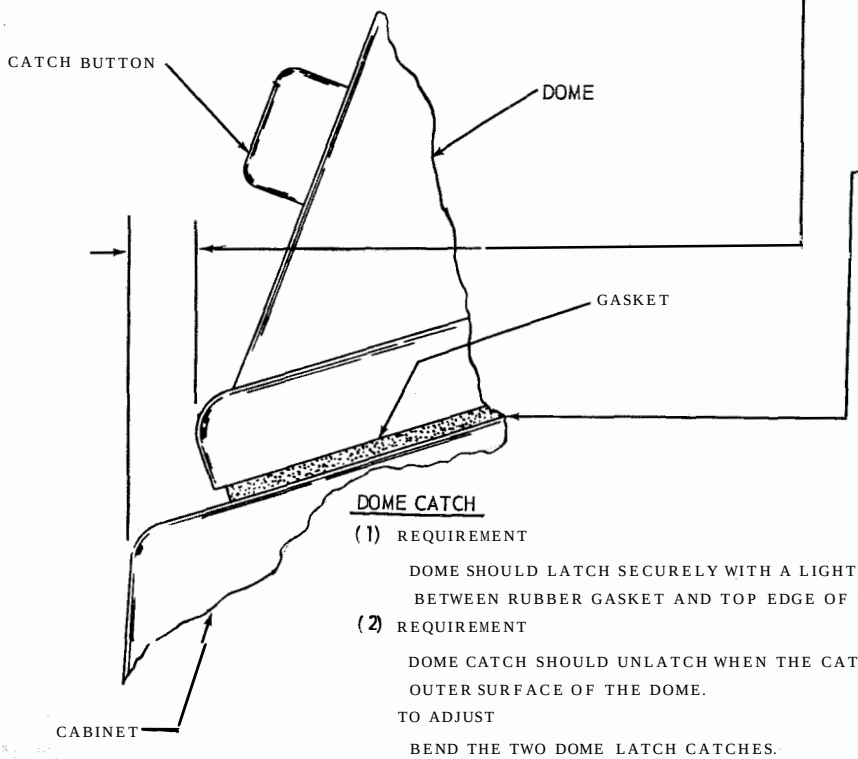
POSITION DOME WITH THE (6) NUTS, WHICH FASTEN THE DOME TO ITS HINGES, LOOSENED. THEN TIGHTEN NUTS.

(2) REQUIREMENT

THERE SHOULD BE A LIGHT-PROOF SEAL AT THE REAR OF THE DOME BETWEEN THE RUBBER GASKET AND TOP EDGE OF THO CABINET.

TO ADJUST

POSITION THE DOME IN THE DOWNWARD DIRECTION WITH THE (6) NUTS WHICH FASTEN THE DOME TO ITS HINGES, LOOSENED. TIGHTEN NUTS.



DOME CATCH

(1) REQUIREMENT

DOME SHOULD LATCH SECURELY WITH A LIGHT-PROOF SEAL AT THE FRONT OF THE DOME BETWEEN RUBBER GASKET AND TOP EDGE OF THE CABINET.

(2) REQUIREMENT

DOME CATCH SHOULD UNLATCH WHEN THE CATCH BUTTON IS DEPRESSED NO DEEPER THAN THE OUTER SURFACE OF THE DOME.

TO ADJUST

BEND THE TWO DOME LATCH CATCHES.

(CABINET ADJUSTMENT CONTINUED)

SMALL DOOR CATCH

(1) REQUIREMENT

WITH SMALL DOOR LATCHED, THE RUBBER GASKET SHOULD PRESS AGAINST THE LEDGE OF THE DOME AT ALL POINTS. THE DOOR SHOULD BE FLUSH WITHIN 1/16 INCH WITH TOP SURFACE OF DOME.

(2) REQUIREMENT

WHEN DOOR IS RELEASED FROM ITS CATCH IT SHOULD SPRING OPEN AT LEAST 1/2 INCH.

TO ADJUST

BEND THE SMALL DOOR CATCH. RECHECK REAR OF DOOR TO MAKE CERTAIN IT IS FLUSH WITH OR SLIGHTLY ABOVE THE DOME.

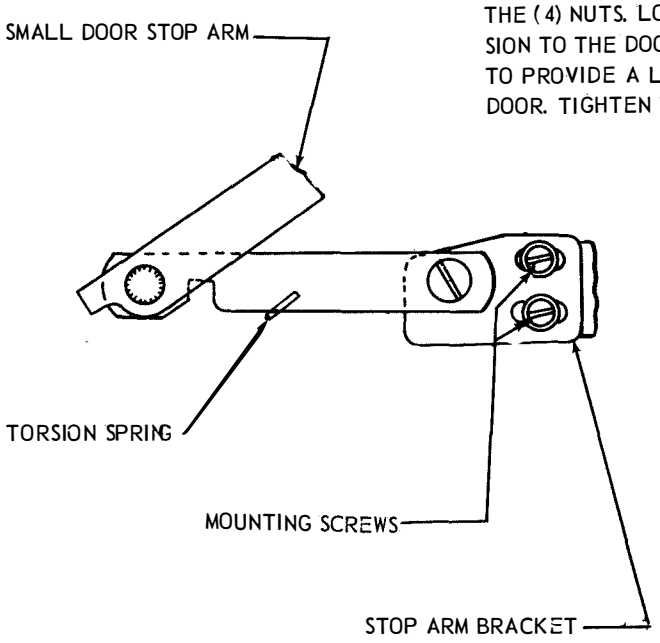
SMALL DOOR

REQUIREMENT

SMALL DOOR SHOULD BE CENTERED (LEFT TO RIGHT) AND SHOULD BE POSITIONED SO AS TO PROVIDE A LIGHT-TIGHT SEAL BETWEEN RUBBER GASKET AND LEDGE OF THE DOME AT ALL POINTS.

TO ADJUST

LOOSEN THE (4) NUTS WHICH SECURE THE DOME TO THE DOME BRACKET. PUSH THE HINGES AGAINST THE DOME BRACKET AND TIGHTEN THE (4) NUTS. LOOSEN THE (3) NUTS WHICH SECURE THE HINGE EXTENSION TO THE DOOR. SLIDE THE DOOR TO ITS EXTREME FORWARD POSITION AND POSITION CENTRALLY (SIDE TO SIDE). TIGHTEN THE (3) NUTS WHICH SECURE THE HINGE EXTENSION TO THE HINGES. POSITION THE DOOR SO THAT IT IS FLUSH WITH OR SLIGHTLY ABOVE THE DOME AND TIGHTEN THE (4) NUTS. LOOSEN THE (3) NUTS WHICH SECURE THE HINGE EXTENSION TO THE DOOR. CLOSE THE DOOR AND SLIDE IT TOWARD THE REAR TO PROVIDE A LIGHT-TIGHT SEAL AT THE FRONT CORNERS OF THE DOOR. TIGHTEN THE (4) NUTS.



SMALL DOOR STOP ARM

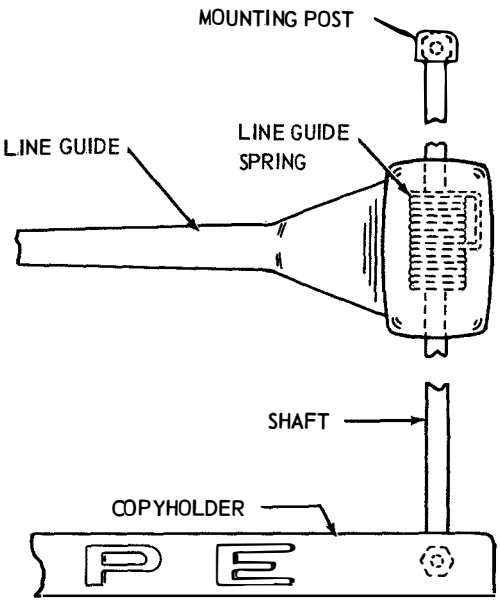
REQUIREMENT

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.

q. COVER



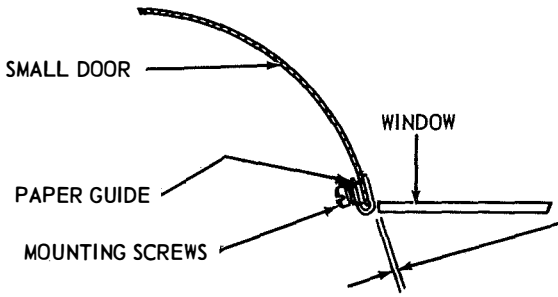
COPYHOLDER

REQUIREMENT

THERE SHOULD BE SUFFICIENT TENSION ON THE LINE GUIDE TO PREVENT IT FROM SLIPPING DOWN ITS SHAFT. IT SHOULD ALSO HOLD THE COPY IN PLACE.

TO ADJUST

REMOVE THE NUTS FROM SHAFT MOUNTING POST, AND TURN THE SHAFT. REPLACE THE SHAFT MOUNTING POST.



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

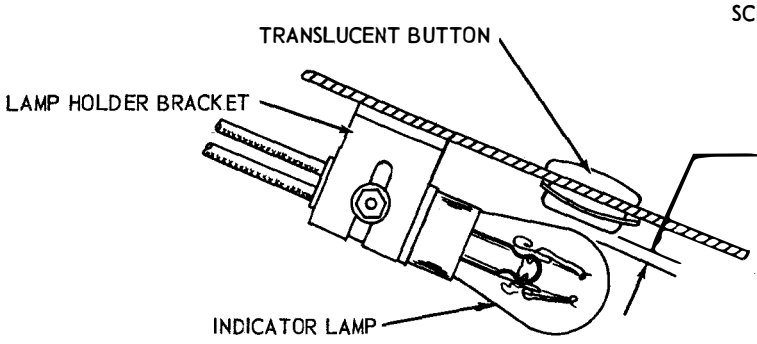
POSITION THE PAPER GUIDE WITH ITS MOUNTING SCREWS LOOSENED.

(2) REQUIREMENT

THE EDGE OF WINDOW SHOULD BARELY CLEAR THE PAPER GUIDE WHEN THE WINDOW IS OPENED OR CLOSED.

TO ADJUST

POSITION WINDOW WITH ITS RETAINER SCREWS LOOSENED.



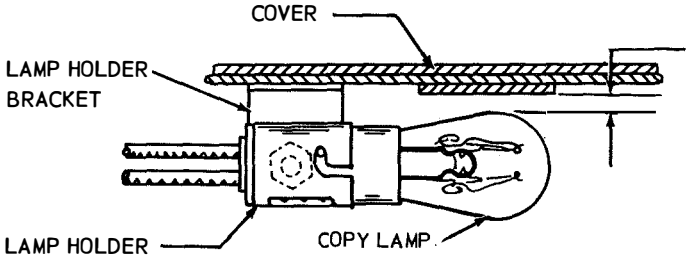
INDICATOR LAMP

REQUIREMENT

CLEARANCE BETWEEN INDICATOR LAMP AND TRANSLUCENT BUTTON APPROXIMATELY 1/16 INCH.

TO ADJUST

POSITION LAMP HOLDER ON ITS BRACKET WITH ITS MOUNTING NUT LOOSENED.



COPY LAMP

REQUIREMENT

CLEARANCE BETWEEN COPY LAMP AND COVER APPROXIMATELY 1/16 INCH.

TO ADJUST

POSITION LAMP HOLDER ON ITS BRACKET WITH ITS MOUNTING NUT LOOSENED.

FIGURE 69 COVER

3. SELECTOR RECEIVING MARGIN ADJUSTMENT (FINAL)

When a signal distoration 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 tolerance tabulated in Table 1 should be met.

TABLE 1 SELECTOR RECEIVING MARGIN **MINIMUM REQUIREMENTS**

Current	Speed in W.P.M.	Points Range with Zero Distortion	Percentage of Marking and Spacing Bias Tolerated	End Distortion With Scale At Bias Optimum Setting
0.060 Amp. (Windings Parallel)	60	72	40	35
	75	72	40	35
	100	72	40	35
0.020 Amp. (Windings Series)	60	72	40	35
	75	72	40	35
	100	72	35	35

SECTION III
LUBRICATION

1. GENERAL

1.01 The printer set should be lubricated as directed in this section. Their figures indicate points to be lubricated and the kind and quantity of lubricant to be used. Lubricate the printer just prior to placing it in service. After a few weeks in service, relubricate to make certain that all points receive lubrication. The following lubrication schedule should be followed thereafter.

Operating Speed (Words per minute)	Lubricating Interval (Typing Unit)	
60	3000 hrs. or 1 yr.)	
75	2400 hrs. or 9 mo.)	whichever occurs
100	1500 hrs. or 6 mo.)	first

1.02 Use Teletype KS–7470 oil at all locations where the use of oil is indicated. Use KS–7471 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 KS–7471 grease.

1.03 All spring wicks and felt oilers should be saturated. The friction surfaces of all moving parts should be thoroughly lubricated. However, over lubrication which will permit oil or grease to drip or to be thrown on other parts should be avoided. Take special care to prevent any oil or grease from getting between the selector armature and its magnet pole faces or between electrical contacts.

1.04 Apply a thin film of grease to all gears and the spacing clutch reset cam plate.

1.05 Apply oil to all cams, including the camming surfaces of each clutch disk.

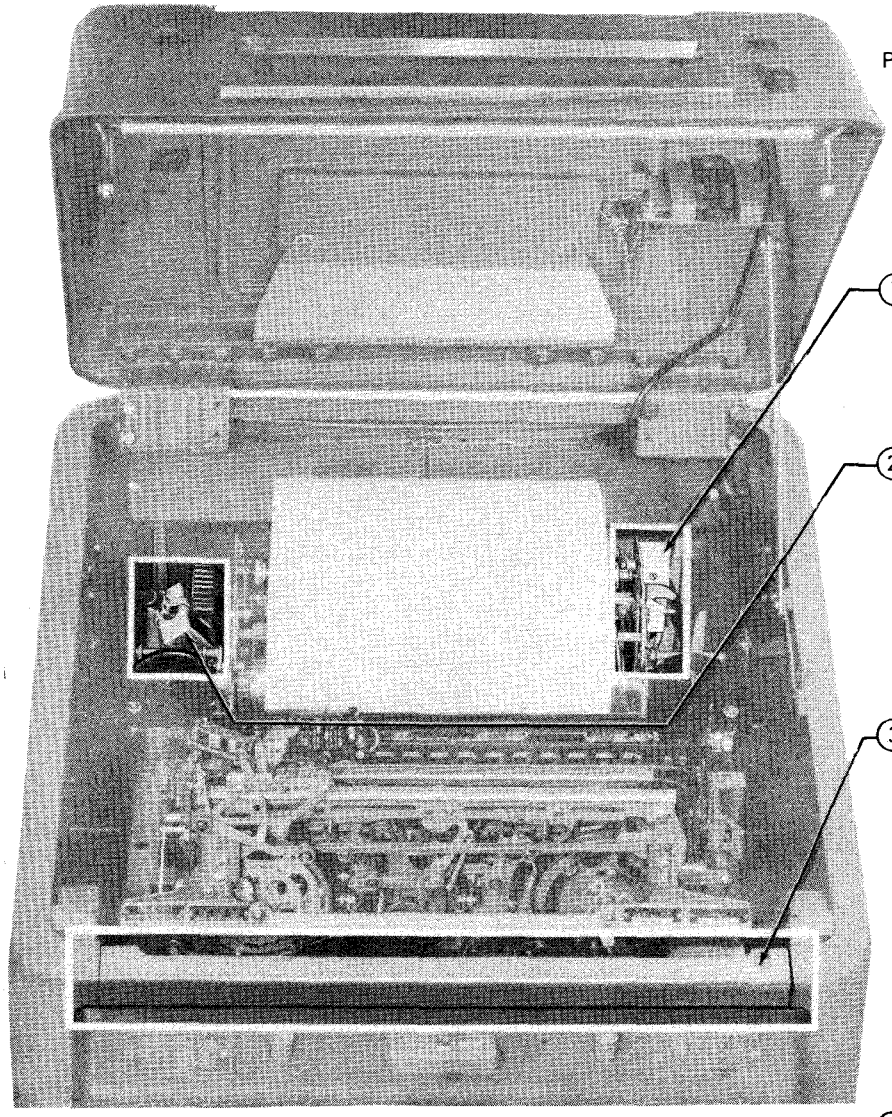
1.06 The photographs show the paragraph numbers referring to particular line drawings of mechanisms and where these mechanisms are located on the unit. Parts in the line drawings are shown in an upright position unless otherwise specified.

1.07 The illustration symbols indicate the following lubrication directions:

0 Apply 1 drop of oil.
02 Apply 2 drops of oil.
03 Apply 3 drops of oil.
020 Apply 20 drops of oil, etc.
G Apply thin film of grease.
GF Fill in (spaces between cams) with grease.
SAT Saturate (Felt oilers, washers, wicks) with oil.

2. DISASSEMBLY

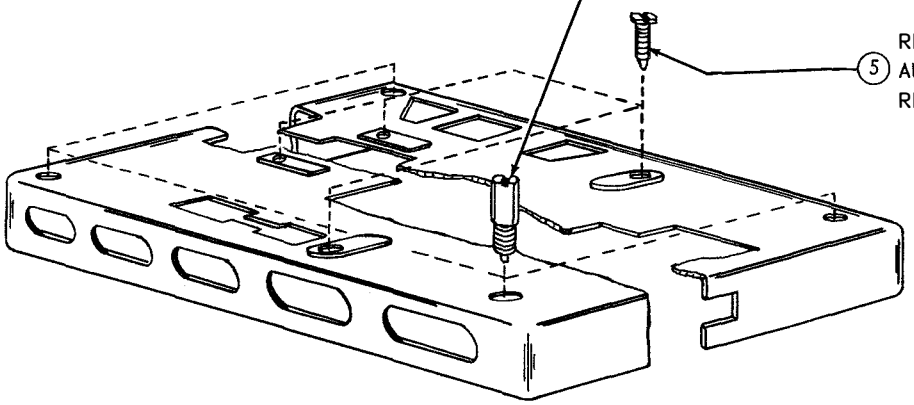
2.01 CABINET DISASSEMBLY



PERFORM OPERATIONS IN NUMERICAL SEQUENCE

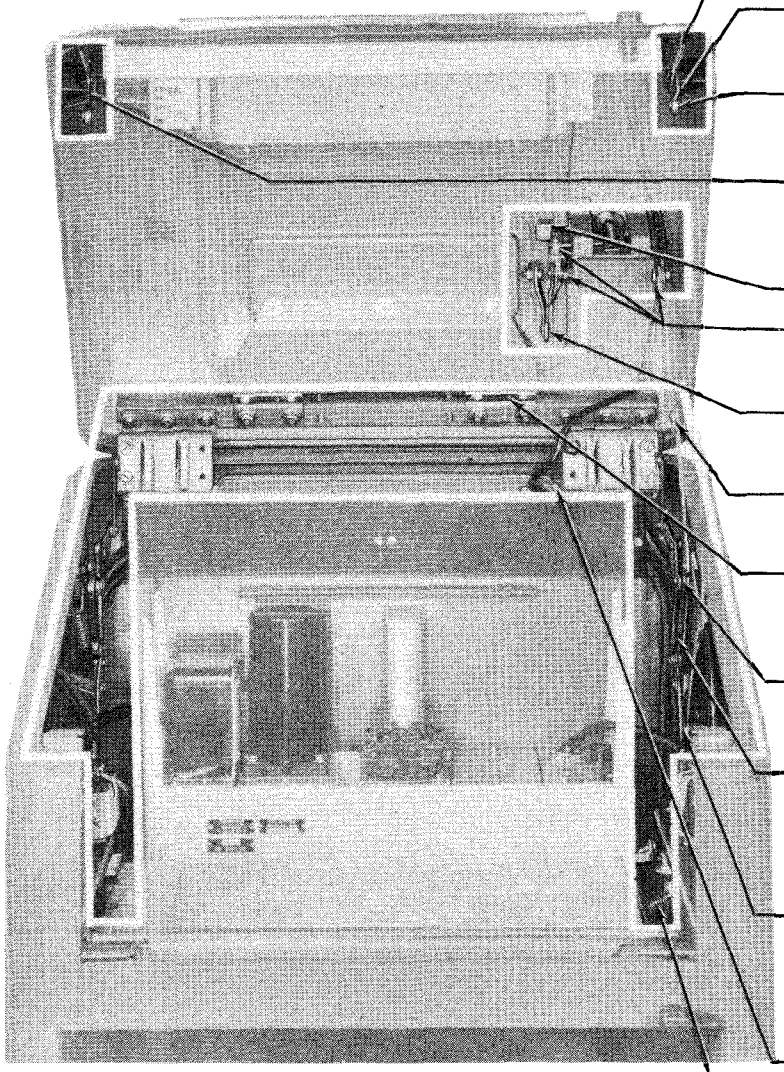
1. DISCONNECT THE PLUG ON THE CABLE FROM THE RECEPTACLE ON THE RIGHT SIDE OF THE TYPING UNIT.
2. DISCONNECT THE PLUG ON THE CABLE FROM THE RECEPTACLE ON THE LEFT SIDE OF THE BASE.
3. REMOVE THE CROSS BAR FROM THE FRONT OF THE CABINET BY LOOSENING THE TWO KNURLED THUMB SCREWS.

2.02 BASE DISASSEMBLY



4. REMOVE THE FOUR SCREWS HOLDING THE BASE TO THE CRADLE ASSEMBLY AND REMOVE THE BASE WITH AUTOMATIC TYPER.
5. REMOVE THE FOUR SCREWS HOLDING THE AUTOMATIC TYPER TO THE BASE AND REMOVE TYPING UNIT.

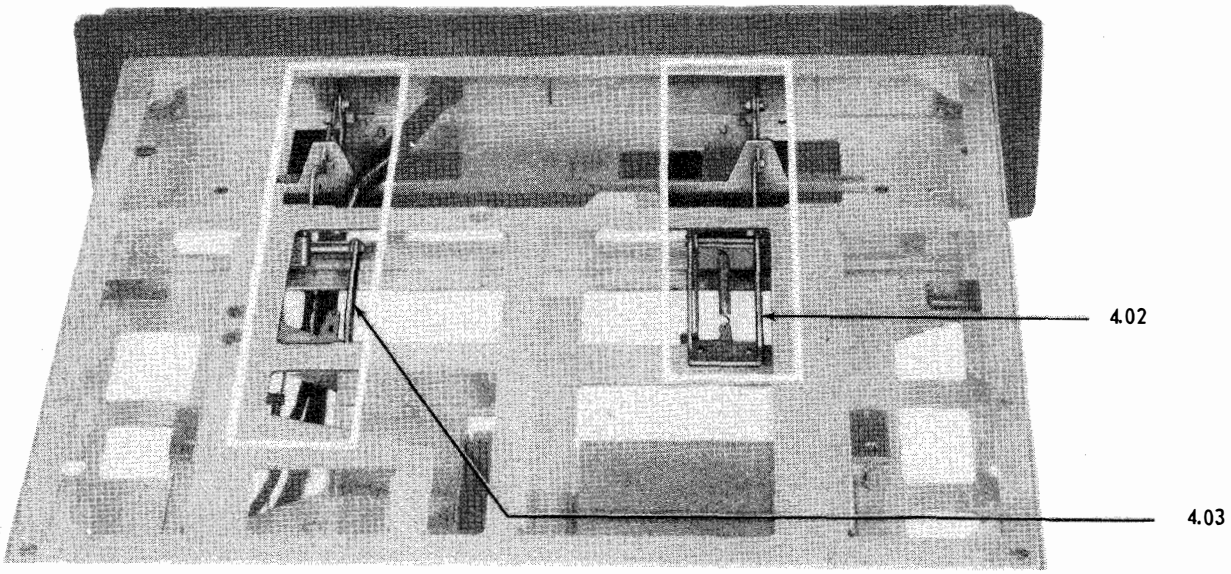
3. CABINET



G	HOOKS–EACH END (4 SPRINGS)	SPRING
G	ROLLER SURFACE (2 ROLLERS)	DOME LATCH ROLLER
O	BEARING SURFACES (2 ROLLERS)	DOME LATCH ROLLER
O	BEARING SURFACES (2 LEVERS)	DOME LATCH LEVER
G	ENGAGING SURFACE	DOOR LATCH
G	HOOKS–EACH END (3 SPRINGS)	SPRING
O	BEARING SURFACES (3 PLACES)	DOOR STOP ARM
O	BEARING SURFACES (3 PLACES)	DOME STOP ARM
G	SPRING LOOP'S (2 SPRINGS)	SPRING
O	BEARING SURFACES (4 PLACES)	DOME COUNTERBALANCE ARMS
G	SLIDING GROOVE	DOME COUNTERBALANCE ARMS
O	BEARING SURFACE	TILT ARM
02	BEARING SURFACES (2 HINGES)	DOME HINGES
G	HOOKS-EACH END	SPRING

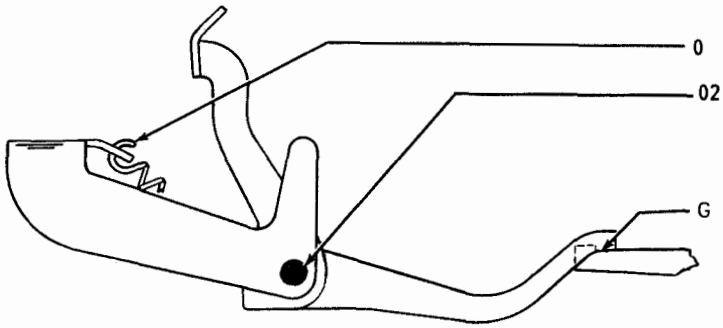
4. BASE

4.01 REST BASE BOTTOM SIDE UP



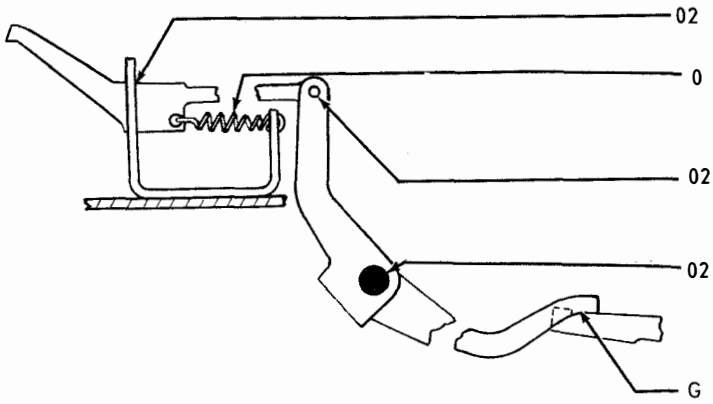
(BOTTOM VIEW)

4.02 LOCAL CARRIAGE–RETURN MECHANISM



0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	LOCAL CARRIAGE–RETURN TRIP SHAFT
G	ENGAGING SURFACE	LOCAL CARRIAGE–RETURN FUNCTION ARM

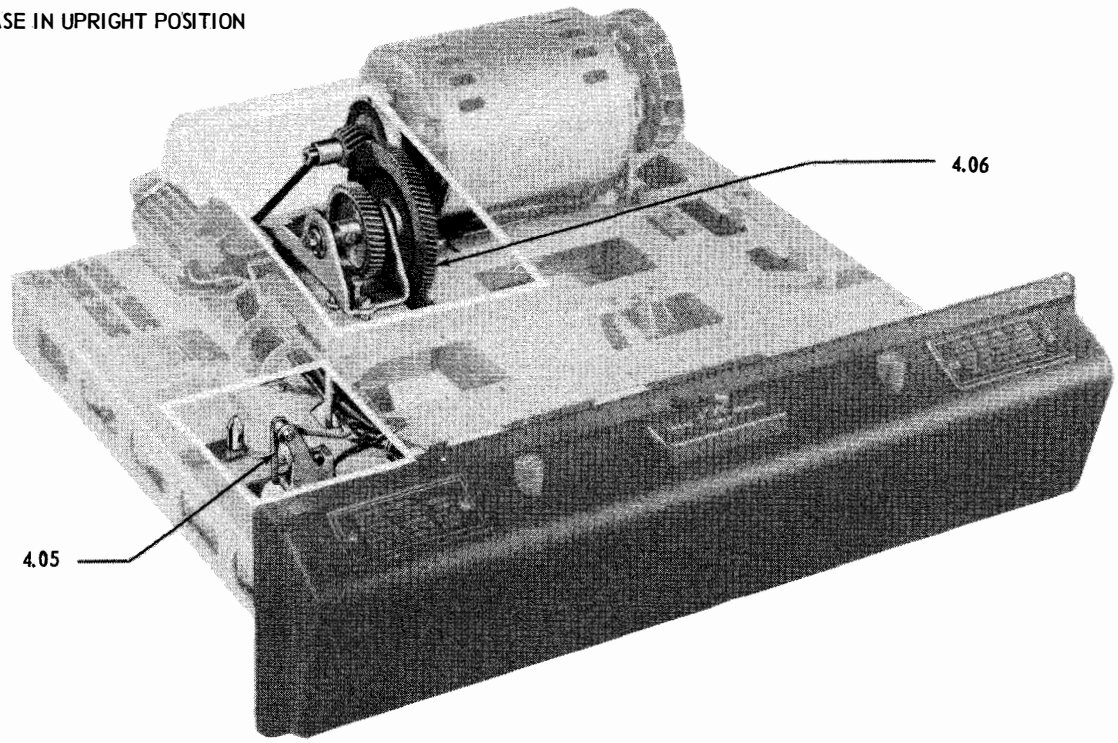
4.03 LOCAL LINE–FEED MECHANISM



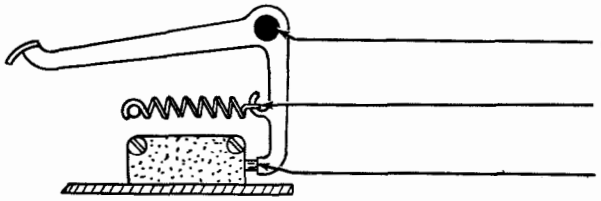
02	GUIDE SLOT	LOCAL–LINE–FEED TRIP LINK
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	LOCAL–LINE–FEED TRIP ARM
02	BEARING SURFACE	LOCAL–LINE–FEED TRIP SHAFT
G	ENGAGING SURFACE	LOCAL–LINE–FEED FUNCTION ARM

4.04 BASE GEARS AND MARGIN INDICATOR

REST BASE IN UPRIGHT POSITION

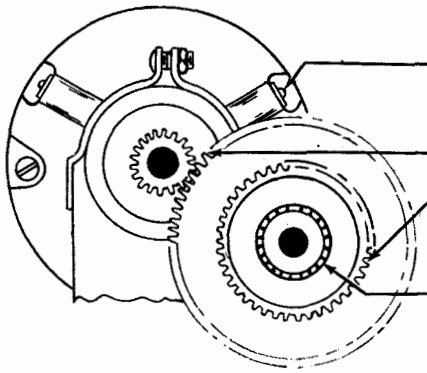


4.05 MARGIN–INDICATING MECHANISM



02	BEARING SURFACE	MARGIN–INDICATOR CONTACT LEVER
0	HOOKS–EACH END	SPRING
0	CONTACTING SURFACE	SWITCH PLUNGER

4.06 BASE GEARS

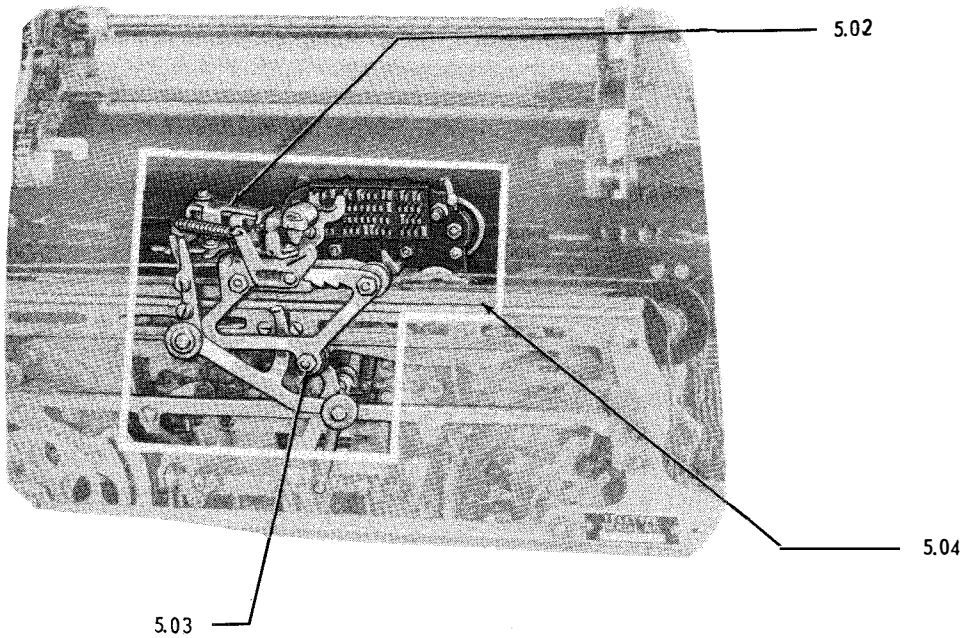


02	OILER–EACH END (RIGHT AND LEFT)	MOTOR SHAFT BEARING
G	TEETH (2 GEARS)	INTERMEDIATE GEARS
02	BALL BEARING	INTERMEDIATE GEAR SHAFT

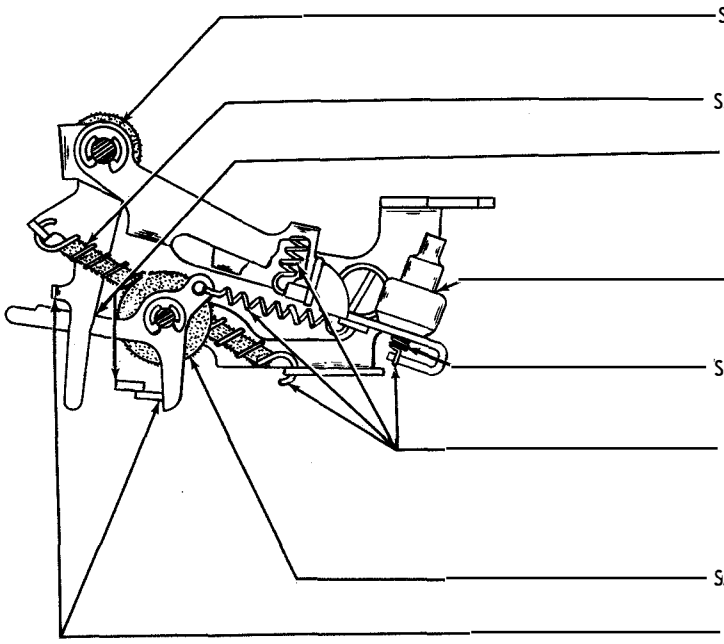
5. TYPING UNIT

5.01 TYPE BOX CARRIAGE AND PRINTING MECHANISM

REST TYPING UNIT IN UPRIGHT POSITION

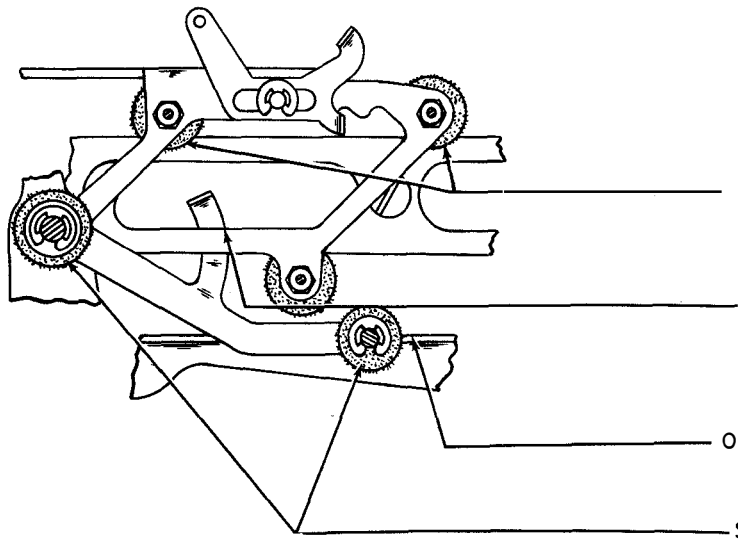


5.02 PRINTING MECHANISM



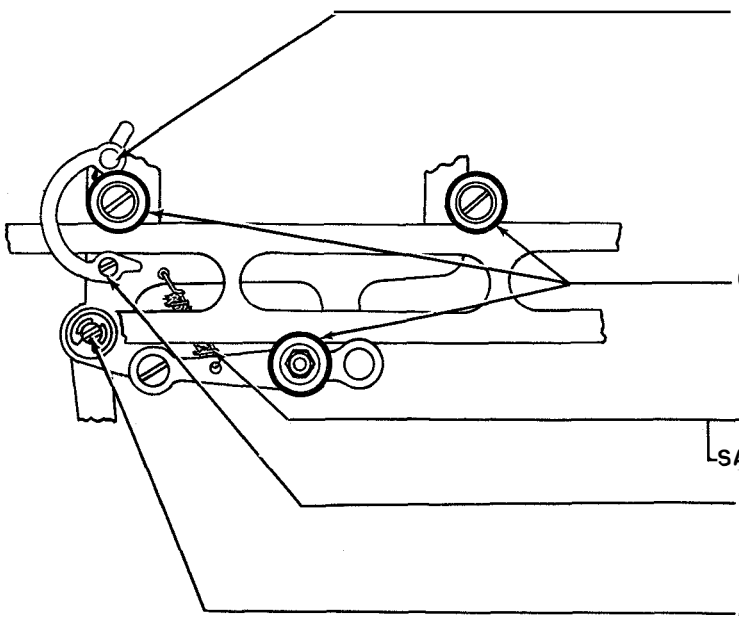
SAT	FELT WASHERS (2 WASHERS)	PRINTING HAMMER OPERATING BAIL
SAT	FELT WICK	SPRING WICK
G	ENGAGING SURFACE	SECONDARY PRINTING ARM
G	ENGAGING SURFACE	PRINTING HAMMER
SAT	FELT WICK	SPRING WICK
0	HOOKS–EACH END (4 SPRINGS)	SPRING
SAT	FELT WASHER	OPERATING BAIL LATCH
02	ENGAGING SURFACES (2 PLACES)	OPERATING BAIL LATCH

5.03 PRINTING MECHANISM (Continued)



SAT	FELT WASHER (3 WASHERS)	PRINTING CARRIAGE ROLLERS
G	GUIDING SURFACE	PRINTING ARM EXTENSION
010	TRACK SURFACE	PRINTING TRACK
SAT	FELT WASHERS (2 WASHERS)	PRINTING ARM

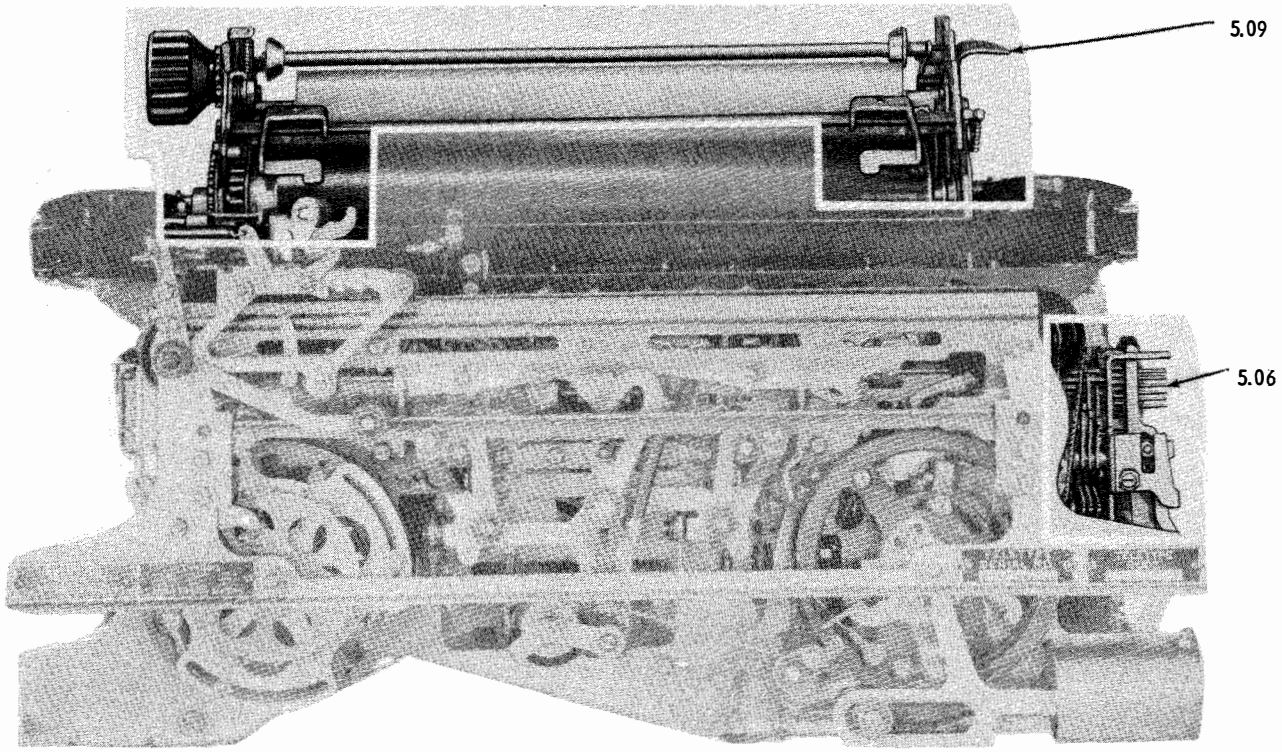
5.04 TYPE BOX CARRIAGE MECHANISM



0	BEARING SURFACE	TYPE BOX CARRIAGE LATCH TOGGLE
02	BEARINGS (3 ROLLERS)	TYPE BOX CARRIAGE ROLLERS
0	HOOK-EACH END	SPRING
SAT	FELT WICK	
0	BEARING SURFACE	TYPE BOX CARRIAGE LATCH
02	BEARING SURFACE	TYPE BOX CARRIAGE LINK

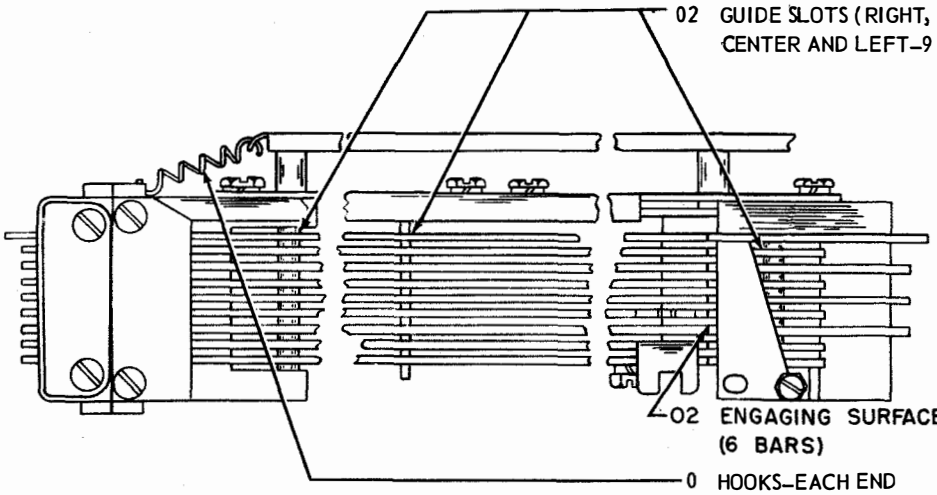
5.05 CODE BAR AND PAPER FEED MECHANISM

REST TYPING UNIT IN UPRIGHT POSITION



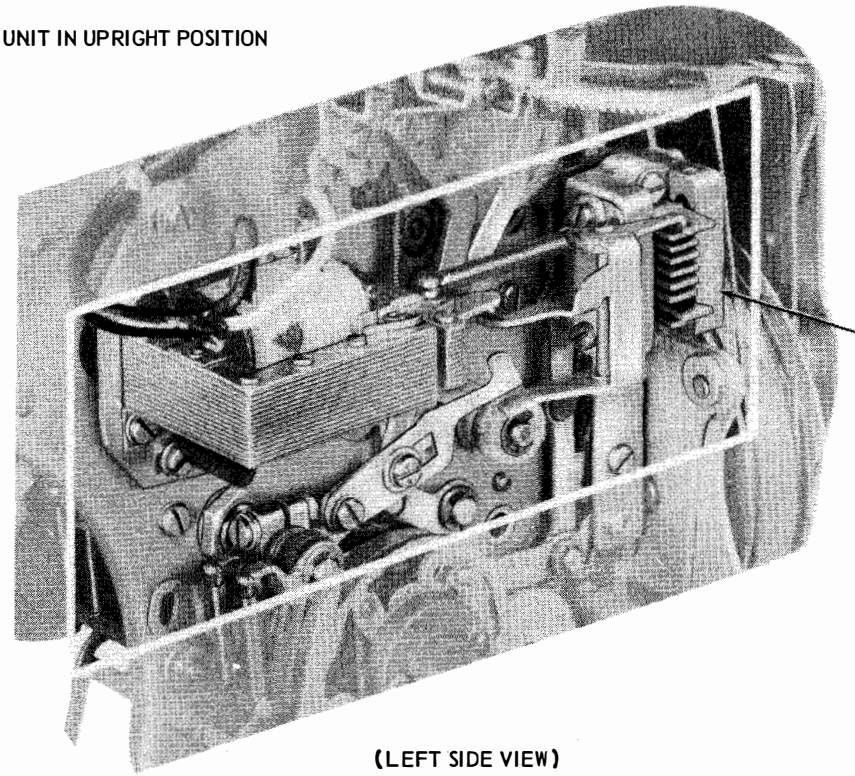
(FRONT VIEW)

5.06 CODE BAR MECHANISM (Continued)



5.07 CODE BAR MECHANISM (Continued)

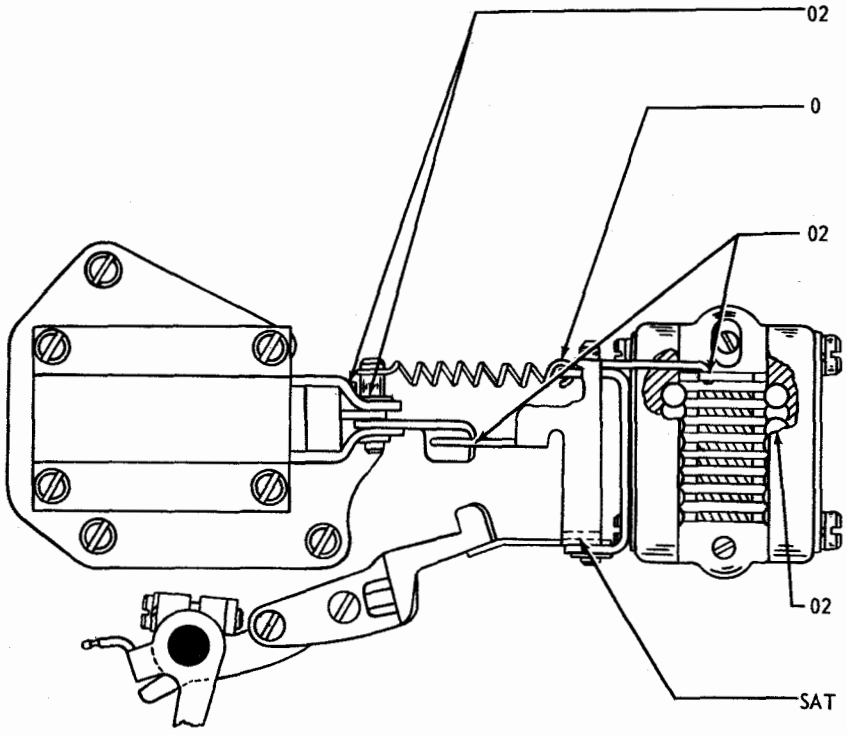
REST TYPING UNIT IN UPRIGHT POSITION



5.08

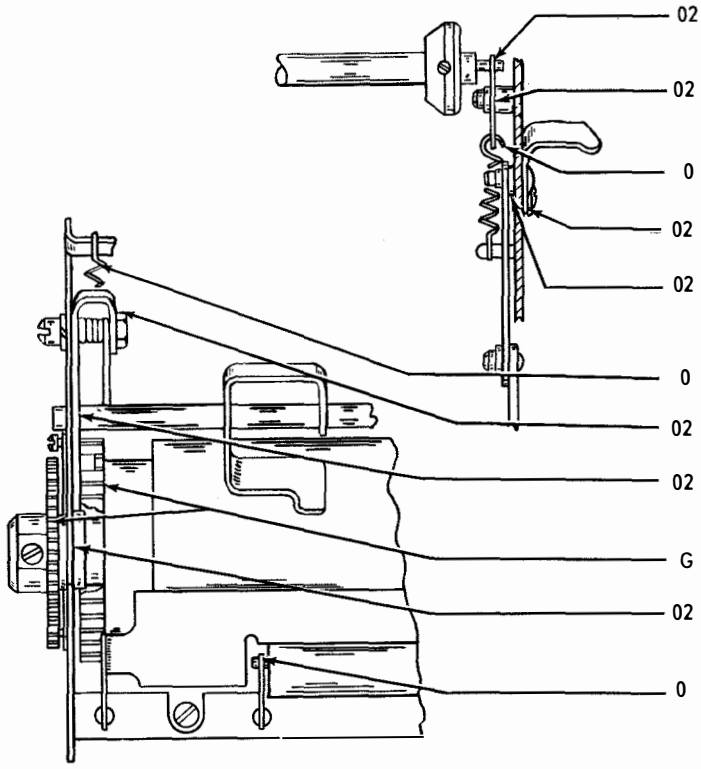
(LEFT SIDE VIEW)

5.08 TYPE BOX CLUTCH SUPPRESSION MECHANISM



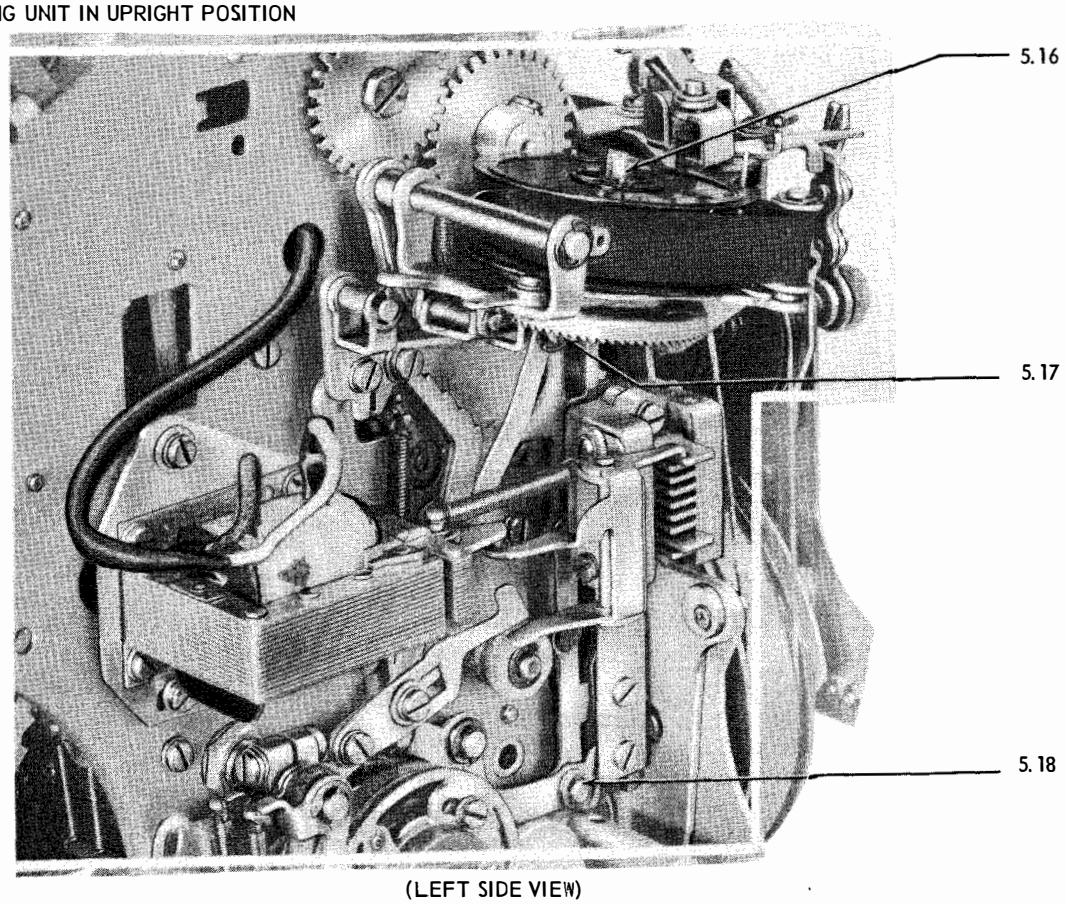
02	BEARING SURFACES (2 PIVOTS)	SOLENOID BELL CRANK LEVER
0	HOOKS–EACH END	SPRING
02	ENGAGING SURFACES (2 PLACES)	SUPPRESSION CODE BAR BLOCKING BAIL
02	BEARING BALLS (16 BALLS)	CODE BAR DETENTS
SAT	FELT WASHERS (TOP AND BOTTOM)	SUPPRESSION CODE BAR BLOCKING BAIL

5.09 PAPER FEED MECHANISM



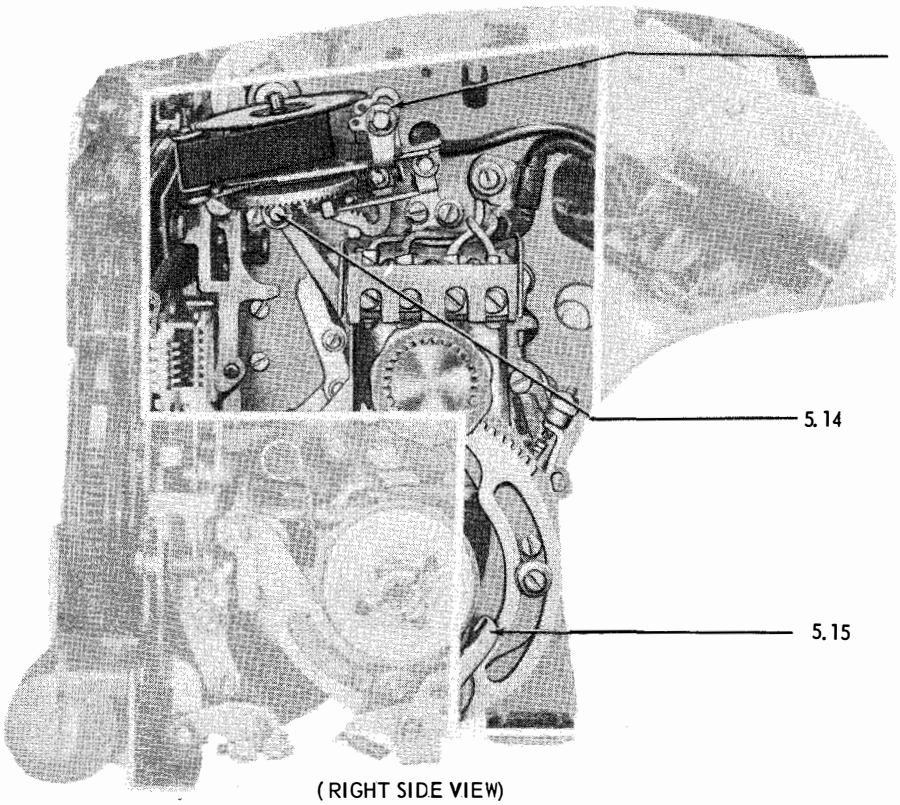
02	BEARING SURFACES (EACH END)	PAPER STRAIGHTENER SHAFT
02	BEARING SURFACES (RIGHT AND LEFT)	PAPER STRAIGHTENER LEVERS
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	RELEASE LEVER
02	BEARING SURFACES (EACH END)	RELEASE LEVER LINK
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	PLATEN DETENT BAIL
02	BEARING SURFACES (EACH END)	PAPER FINGER SHAFT
G	TEETH (2 GEARS)	PLATEN GEARS
02	BEARINGS (EACH END)	PLATEN SHAFT
0	BEARING SURFACES–EACH END (6 ROLLERS)	PAPER PRESSURE ROLLER SHAFTS (WIPE OFF EXCESS OIL)

5.10 REST TYPING UNIT IN UPRIGHT POSITION



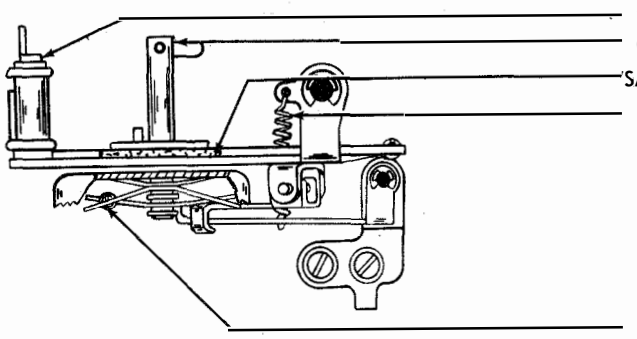
(LEFT SIDE VIEW)

5.11 REST TYPING UNIT IN UPRIGHT POSITION



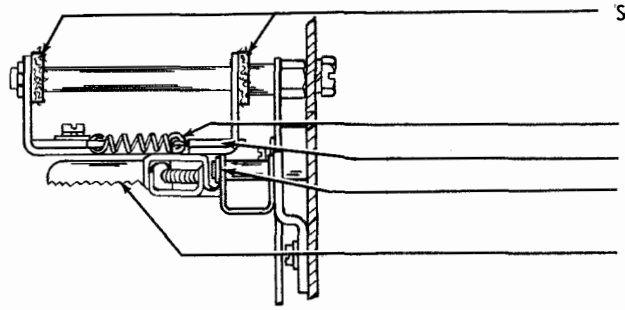
(RIGHT SIDE VIEW)

5.12 RIBBON FEED MECHANISM (RIGHT SIDE)



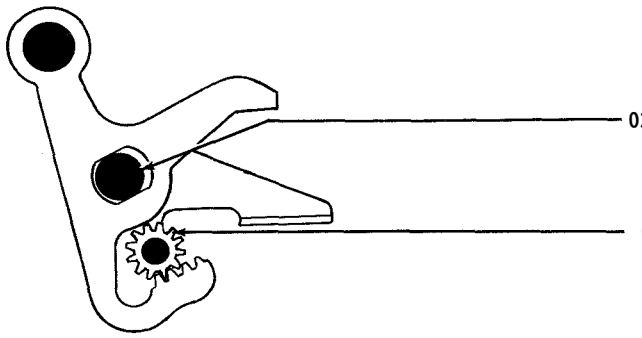
02	BEARING SURFACE	RIBBON ROLLER SHAFT
02	BEARING SURFACE	RIBBON SPOOL TOGGLE
SAT	FELT WASHER	RIBBON SPOOL SHAFT
0	HOOKS–EACH END	RIBBON FEED LEVER SPRING
0	HOOKS–EACH END	RIBBON RATCHET WHEEL SPRING

5.13 RIBBON FEED MECHANISM (Continued)



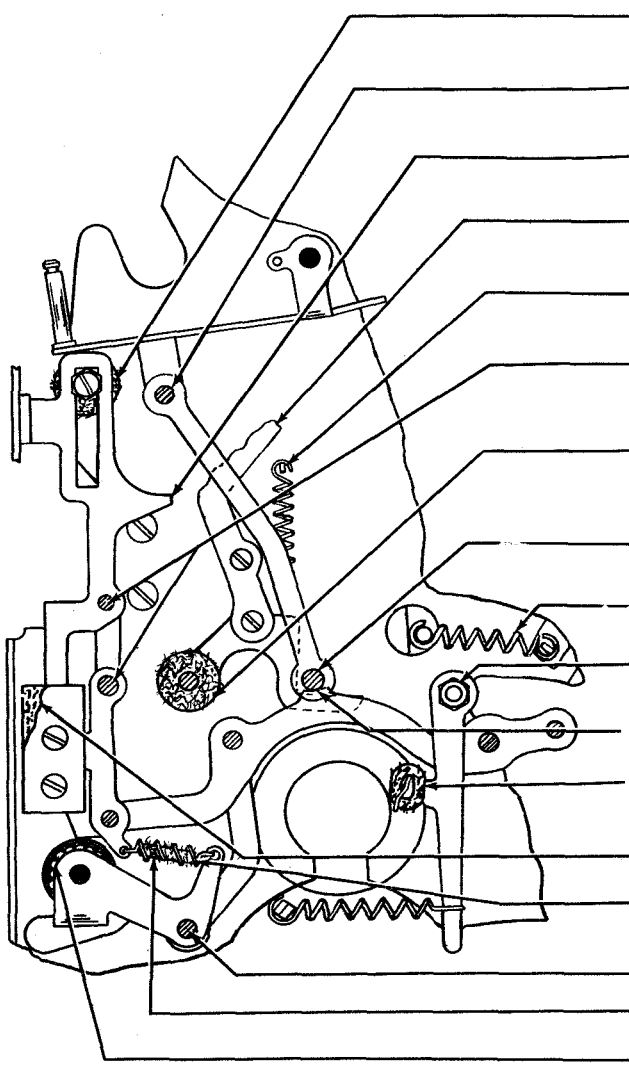
SAT	FELT WASHERS (2 WASHERS)	RIBBON FEED LEVER BAIL
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	RIBBON–REVERSE LEVER
02	BEARING SURFACES (2 PLACES)	RATCHET FEED LEVER SHAFT
G	TEETH	RIBBON RATCHET WHEEL

5.14 RIBBON FEED MECHANISM (Continued)



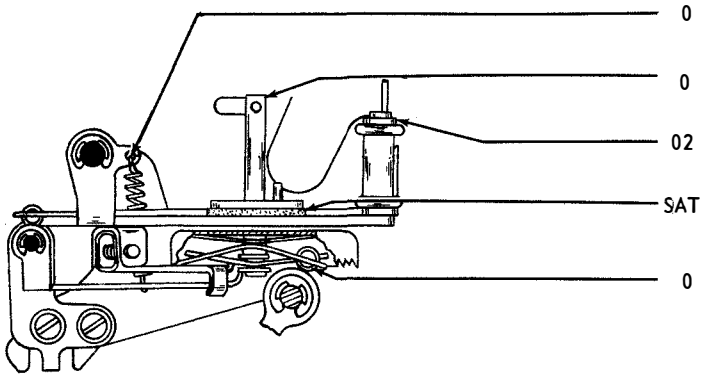
02	BEARING SURFACE	RIBBON DETENT LEVER
G	TEETH	RIBBON–REVERSE SPUR GEAR

5.15 VERTICAL POSITIONING MECHANISM (RIGHT SIDE)

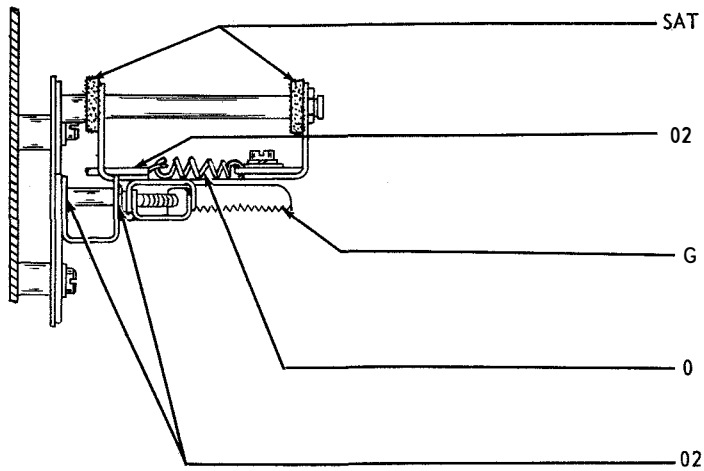


SAT	FELT WASHER	VERTICAL POSITIONING LEVER
02	BEARING SURFACE	RIBBON DRIVE LINK
02	ENGAGING SURFACE	VERTICAL POSITIONING LEVER
0	ENGAGING SURFACES (4 PLACES)	VERTICAL POSITIONING LOCK LEVER
0	HOOKS–EACH END	SPRING
02	BEARING SURFACES (2 PLACES)	VERTICAL POSITIONING LEVER
SAT	FELT WASHERS (2 WASHERS)	MAIN SIDE LEVER FOLLOWER ARM
02	BEARING SURFACE	RIBBON DRIVE LINK
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	CODE BAR CLUTCH TRIP SHAFT OPERATING LEVER
02	ENGAGING SURFACE	MAIN SIDE LEVER FOLLOWER ARM
SAT	FELT WASHER	CODE BAR CLUTCH TRIP SHAFT OPERATING LEVER EXTENSION
SAT	FELT OILER	VERTICAL POSITIONING LEVER
0	HOOKS–EACH END (2 SPRINGS)	SPRING
02	BEARING SURFACE	ROCKER SHAFT BRACKET
SAT	FELT WICK	SPRING WICK
02	BALL BEARING	MAIN ROCKER SHAFT

5.16 RIBBON FEED MECHANISM (LEFT SIDE)

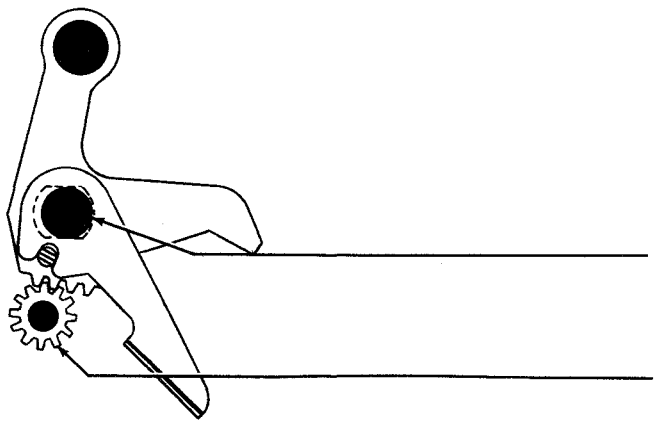


0	HOOKS–EACH END	SPRING
0	BEARING SURFACE	RIBBON SPOOL SHAFT
02	BEARING SURFACE	RIBBON ROLLER SHAFT
SAT	FELT WASHER	RIBBON SPOOL SHAFT
0	HOOKS–EACH END	SPRING



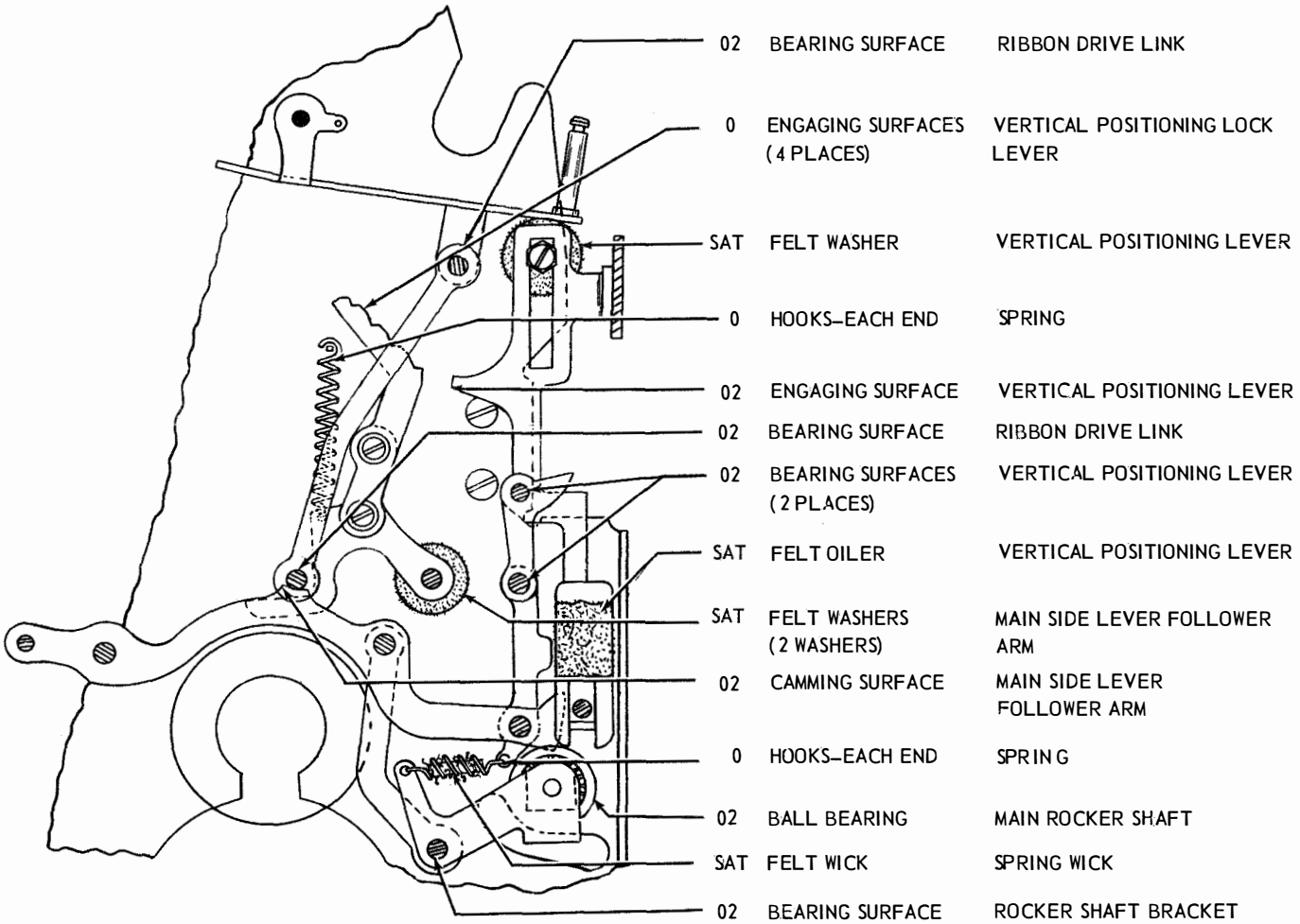
SAT	FELT WASHERS (2 WASHERS)	RIBBON FEED LEVER BAIL
02	BEARING SURFACE	RIBBON–REVERSE LEVER
G	TEETH	RIBBON RATCHET WHEEL
0	HOOKS–EACH END	SPRING
02	BEARING SURFACES (2 PLACES)	RATCHET FEED LEVER SHAFT

5.17 RIBBON FEED MECHANISM (Continued)



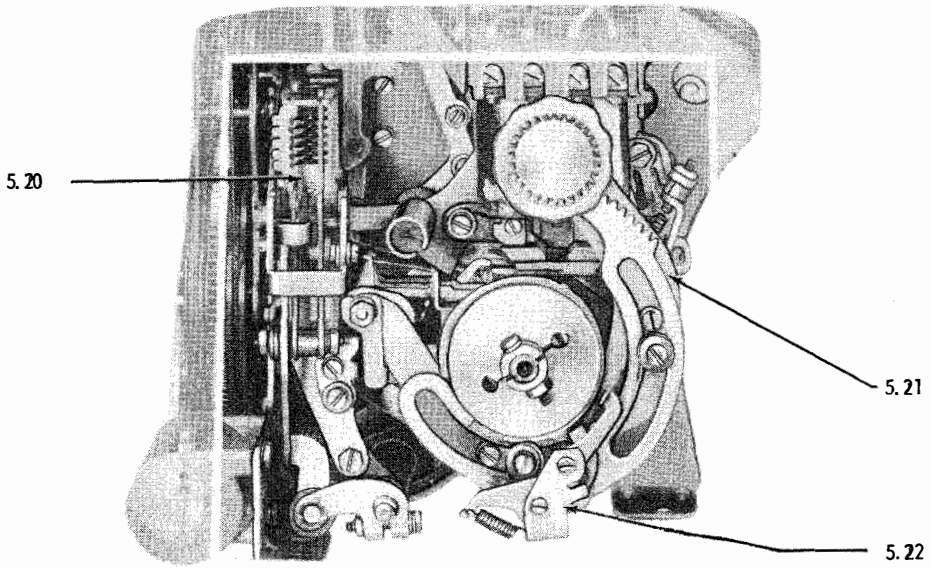
02	BEARING SURFACE	RIBBON DETENT LEVER
G	TEETH	RIBBON–REVERSE SPUR GEAR

5.18 VERTICAL POSITIONING MECHANISM (LEFT SIDE)



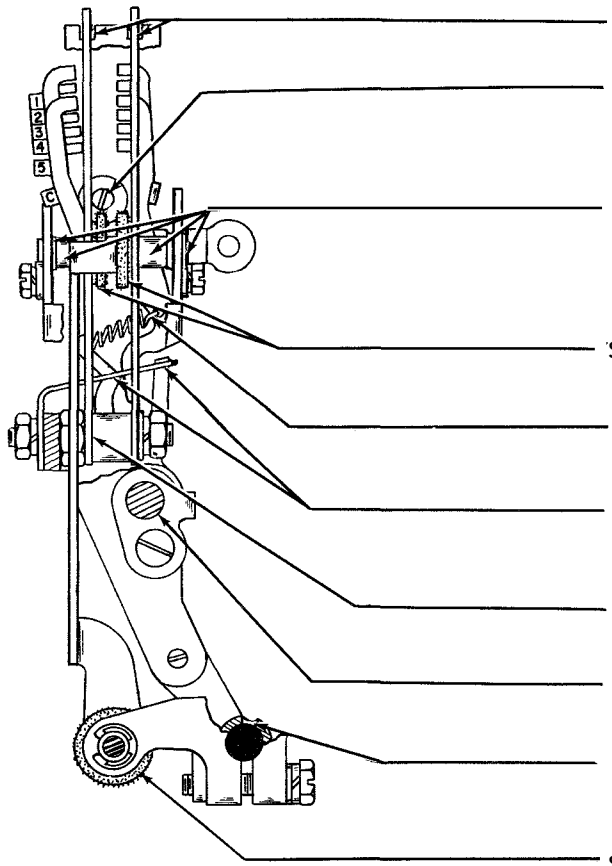
02	BEARING SURFACE	RIBBON DRIVE LINK
0	ENGAGING SURFACES (4 PLACES)	VERTICAL POSITIONING LOCK LEVER
SAT	FELT WASHER	VERTICAL POSITIONING LEVER
0	HOOKS–EACH END	SPRING
02	ENGAGING SURFACE	VERTICAL POSITIONING LEVER
02	BEARING SURFACE	RIBBON DRIVE LINK
02	BEARING SURFACES (2 PLACES)	VERTICAL POSITIONING LEVER
SAT	FELT OILER	VERTICAL POSITIONING LEVER
SAT	FELT WASHERS (2 WASHERS)	MAIN SIDE LEVER FOLLOWER ARM
02	CAMMING SURFACE	MAIN SIDE LEVER FOLLOWER ARM
0	HOOKS–EACH END	SPRING
02	BALL BEARING	MAIN ROCKER SHAFT
SAT	FELT WICK	SPRING WICK
02	BEARING SURFACE	ROCKER SHAFT BRACKET

5.19 REST TYPING UNIT IN UPRIGHT POSITION



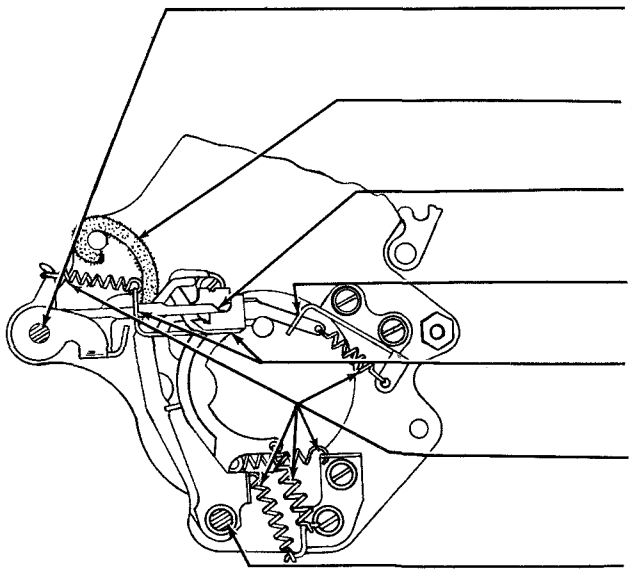
(RIGHT SIDE VIEW)

5.20 CODE BAR MECHANISM



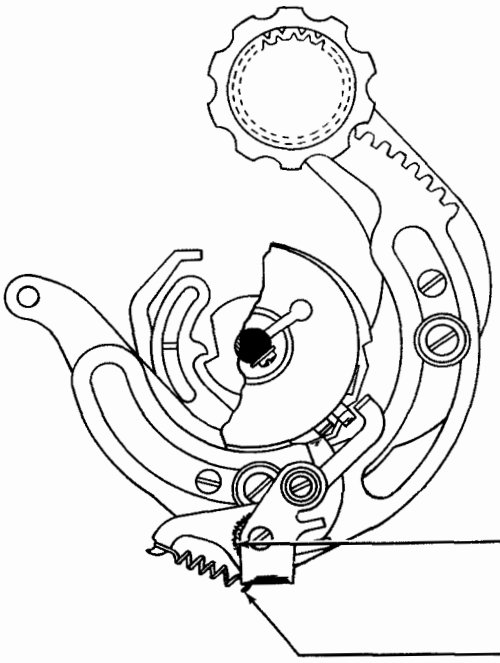
02	GUIDE SLOTS	SHIFT LEVERS
02	BEARING GUIDE SLOTS (6 SLOTS)	TRANSFER LEVER GUIDE BEARING
02	ROLLER BEARINGS (4 ROLLERS)	SHIFT LEVER LINK ROLLERS
SAT	FELT WASHERS (2 WASHERS)	SHIFT LEVER LINK SHAFT
0	HOOKS–EACH END (5 SPRINGS)	SPRING
02	GUIDE SLOTS (5 SLOTS)	INTERMEDIATE ARMS AND TRANSFER LEVERS
02	BEARING SURFACES (2 PLACES)	SHIFT LEVERS
02	BEARING GUIDE SLOTS (5 SLOTS)	INTERMEDIATE ARM GUIDE BEARING
03	OIL HOLE	SHIFT LEVER DRIVE ARM SHAFT
SAT	FELT WASHER	SHIFT LEVER LINK

5.21 SELECTOR MECHANISM



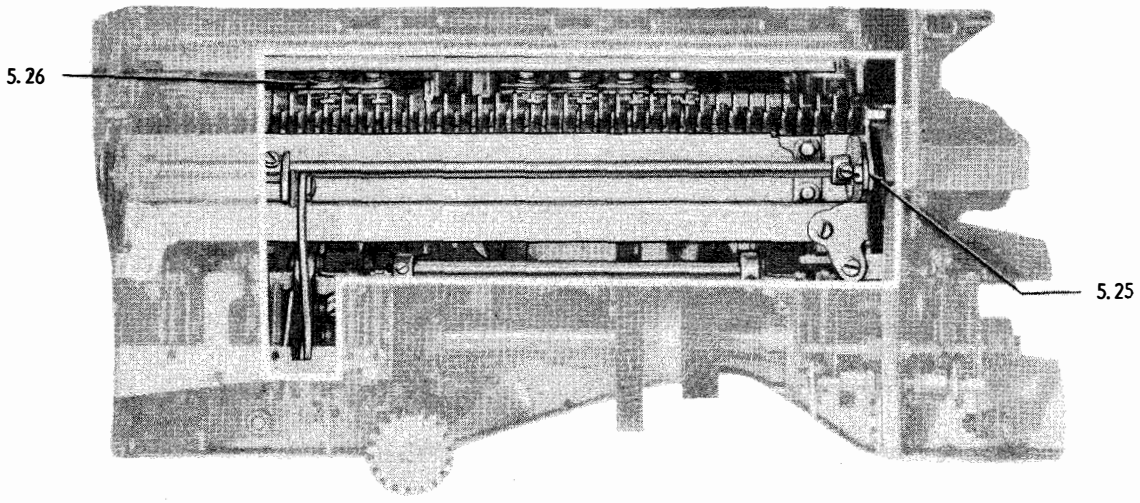
02	BEARING GUIDE SLOTS (5 SLOTS)	PUSH LEVER GUIDE BEARING
SAT	FELT WICK	SELECTOR WICK
02	ENGAGING SURFACES (5 LEVERS)	PUSH LEVERS
02	GUIDE SLOT	MARKING LOCK LEVER
02	GUIDE SLOTS (5 LEVERS)	SELECTOR AND PUSH LEVERS
0	HOOKS–EACH END (12 SPRINGS)	SPRINGS
02	BEARING GUIDE SLOTS (6 SLOTS)	SELECTOR LEVER GUIDE BEARING

5.22 SELECTOR MECHANISM (Continued)



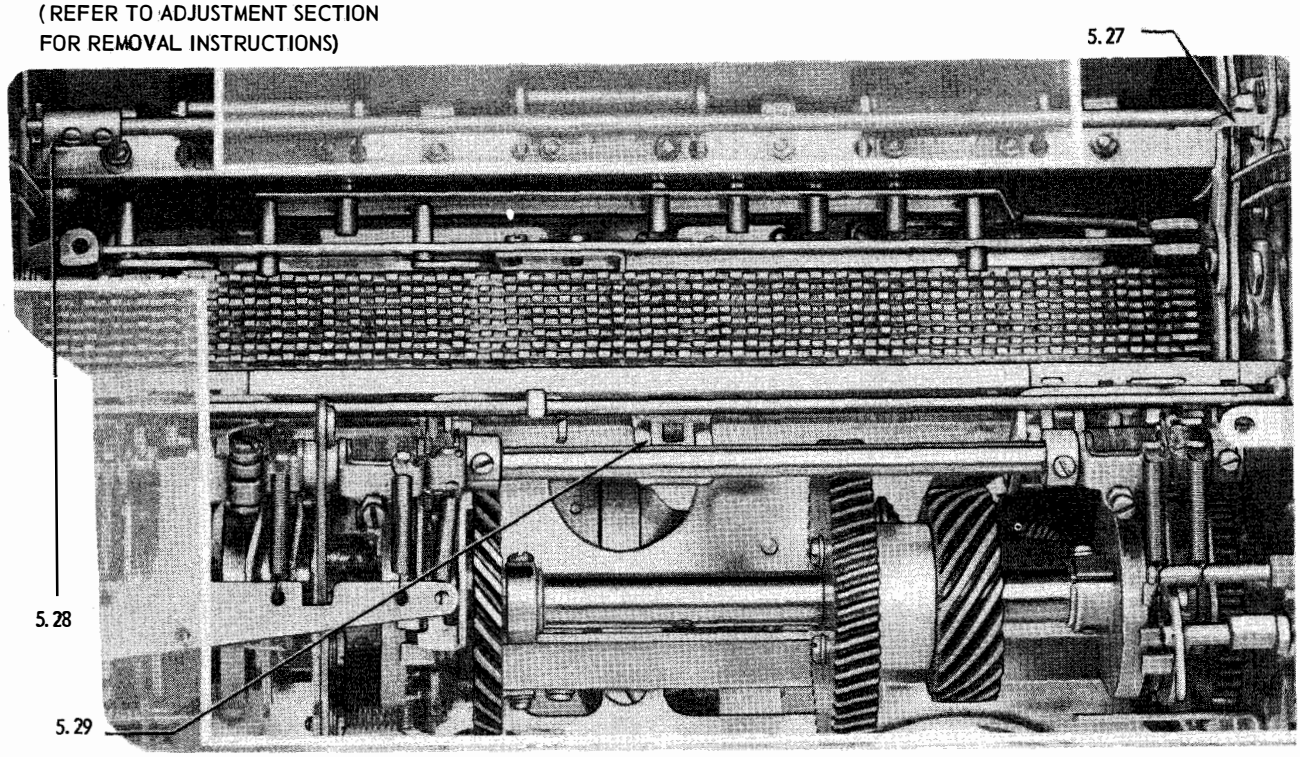
SAT	FELT WASHERS (2 WASHERS)	CLUTCH TRIP LEVER
0	HOOKS–EACH END	SPRING

5.23 REST TYPING UNIT IN UPRIGHT POSITION



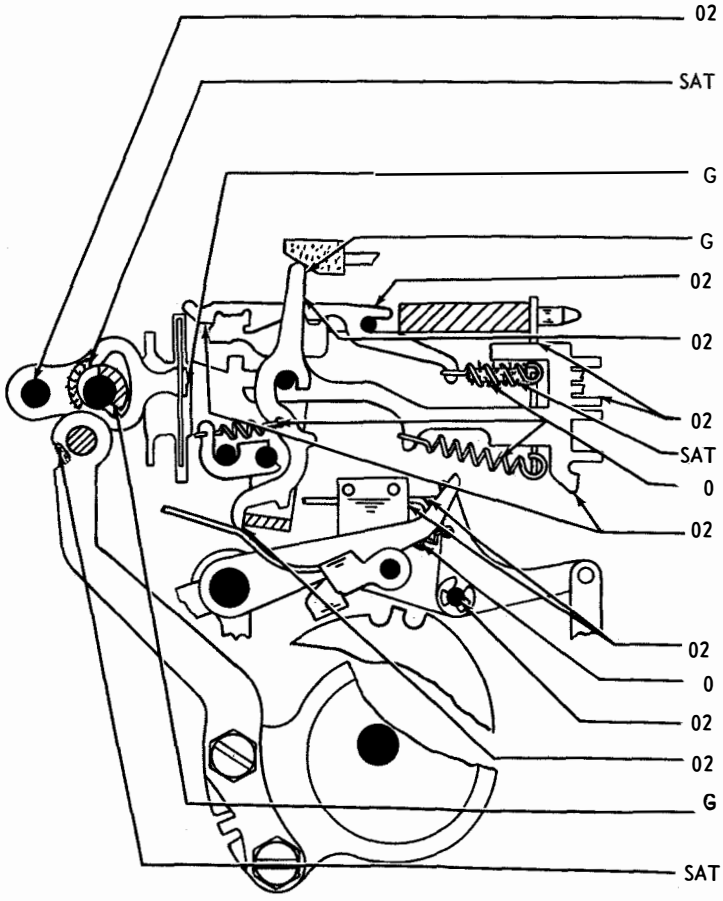
(REAR VIEW)

5.24 REMOVE STUNT BOX
(REFER TO ADJUSTMENT SECTION
FOR REMOVAL INSTRUCTIONS)



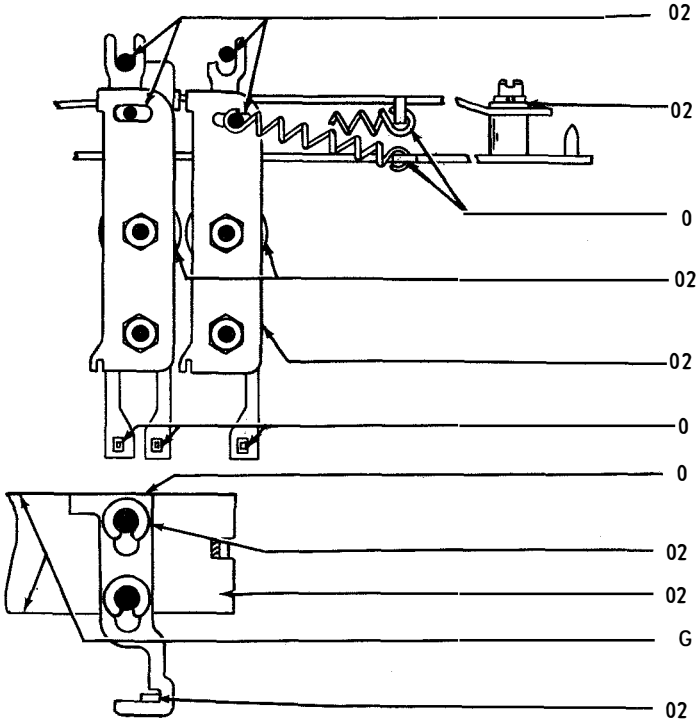
(REAR VIEW)

5.25 STUNT BOX MECHANISM



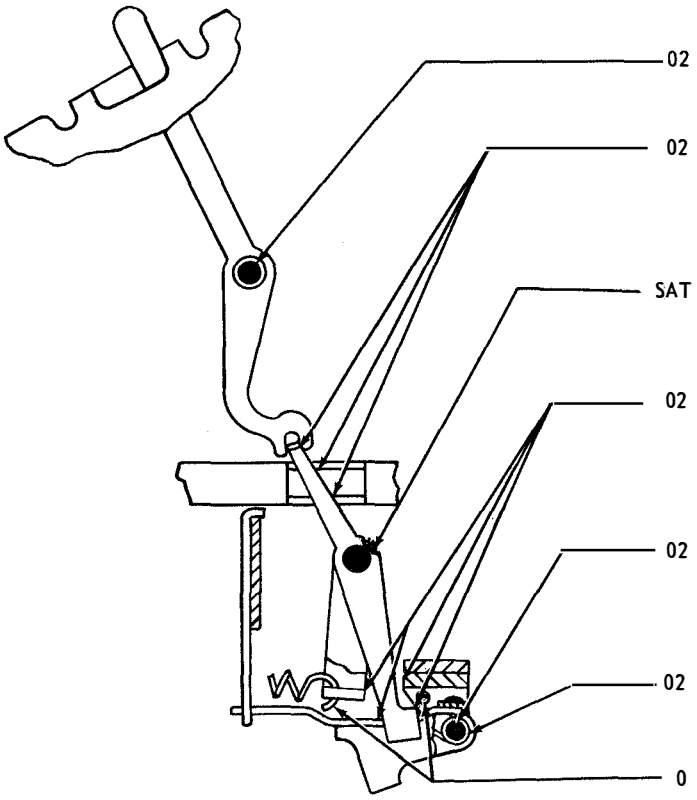
02	PIVOT BEARINGS (2 BEARINGS)	STRIPPER BLADE CAM ARMS
SAT	FELT WASHERS (4 WASHERS-RIGHT AND LEFT)	STRIPPER BLADE CAMS
G	ENGAGING SURFACES (2 ARMS)	STRIPPER BLADE CAM ARMS
G	EACH ENGAGING SURFACE	SWITCH ARM
02	EACH GUIDE SLOT	FUNCTION PAWLS
02	EACH GUIDE SLOT	FUNCTION LEVERS
02	EACH GUIDE SLOT	FUNCTION BARS
SAT	EACH FELT WICK	FUNCTION PAWL SPRINGS
0	HOOKS–EACH END	SPRINGS
02	ENGAGING SURFACES (FRONT AND REAR)	FUNCTION BARS
02	ENGAGING SURFACES	LINE–FEED SLIDE ARM
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	KEYBOARD LOCK LEVER
02	ENGAGING SURFACES	FUNCTION LEVERS
G	CAMMING SURFACES (2 CAMS)	STRIPPER BLADE CAMS
SAT	FELT WASHER	STRIPPER BLADE DRIVE LINK

5.26 STUNT BOX MECHANISM (Continued)



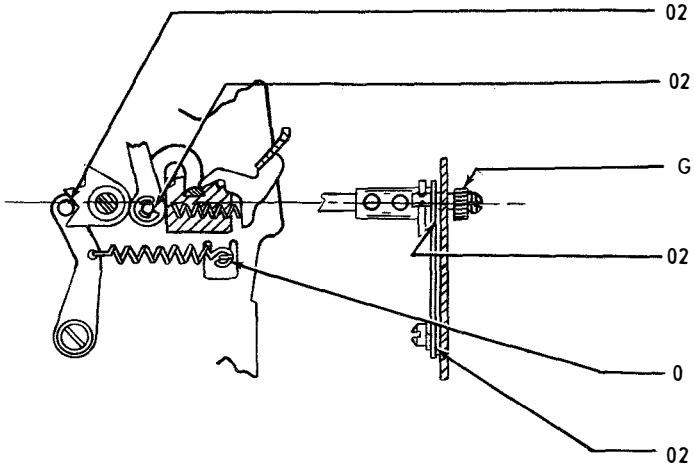
02	ENGAGING SURFACE (EACH FUNCTION SLIDE)	CODE BAR FORKS
02	SLIDING SURFACES (2 PLACES)	BLOCKING SLIDE
0	HOOKS–EACH END (2 SPRINGS)	CR–LF SUPPRESSION SPRINGS
02	EACH ROLLER AND FORK PIVOT	FUNCTION SLIDES
02	EACH SLIDING SURFACE	FUNCTION SLIDES
0	EACH ENGAGING SURFACE	FUNCTION SLIDES
0	ENGAGING SURFACES (2 PLACES)	LINE FEED FUNCTION PAWL STRIPPER SLIDE
02	SLIDING SURFACE	STRIPPER SLIDE
02	GUIDING SURFACE	STRIPPER BLADE
G	UPPER AND LOWER WORKING SURFACES	STRIPPER BLADE
02	ENGAGING SURFACES	STRIPPER BAIL

5.27 SINGLE–DOUBLE LINE FEED MECHANISM



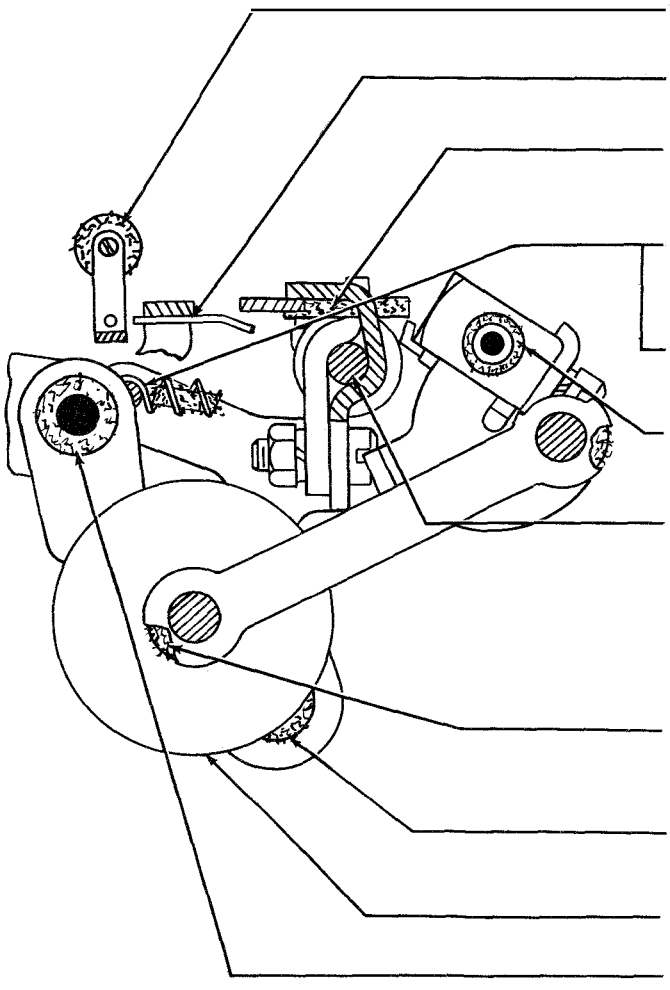
02	PIVOT	SINGLE–DOUBLE LINE FEED LEVER
02	EACH ENGAGING AND GUIDING SURFACE	OPERATING ARM
SAT	FELT WASHER	OPERATING ARM
02	EACH ENGAGING SURFACE	STRIPPER BAIL
02	BEARINGS (2 BEARINGS)	STRIPPER BAIL
02	SPRING COILS	TORSION SPRING
0	HOOKS–EACH END	SPRINGS

5.28 RIBBON–REVERSE MECHANISM



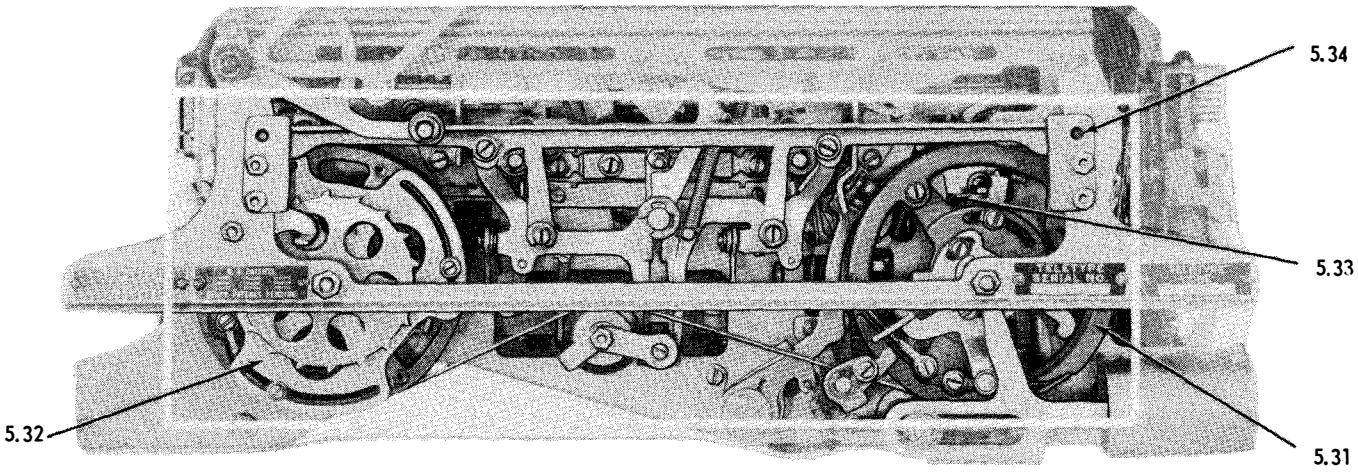
02	ENGAGING SURFACE	RIBBON–REVERSE DETENT
02	BEARING SURFACE	PAPER RELEASE LEVER
G	TEETH	RIBBON–REVERSE SPUR GEAR
02	BEARING (RIGHT AND LEFT)	RIBBON–REVERSE SHAFT
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	RIBBON–REVERSE DETENT LEVER

5.29 FUNCTION BAR RESET MECHANISM

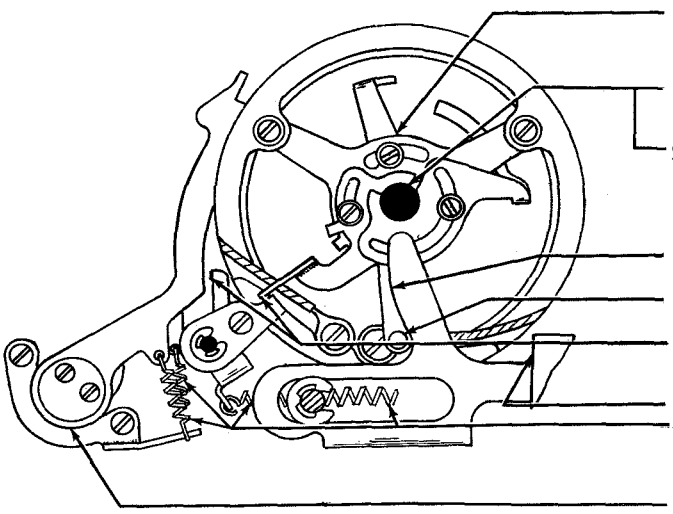


SAT	FELT WASHER	SPACE SUPPRESSION BAIL
02	GUIDE SURFACE	CARRIAGE RETURN SLIDE ARM
SAT	FELT WASHERS (3 WASHERS)	FUNCTION RESET BAIL ROLLERS
0	HOOKS–EACH END (2 SPRINGS)	RESET BAIL SPRINGS
SAT	FELT WICKS (2 SPRINGS)	SPRINGS
SAT	FELT WASHERS (2 BEARINGS)	RESET BAIL CAM SHAFT
02	BEARINGS (3 ROLLERS)	FUNCTION RESET BAIL ROLLERS
SAT	FELT WASHER (EACH END)	CAM SHAFT DRIVE LINK
SAT	FELT WASHERS (2 PIVOTS)	FUNCTION BAR RESET BAIL
G	ENGAGING SURFACE	FUNCTION CAM ROLLER
SAT	FELT WASHER	FUNCTION CAM ROLLER BRACKET LINK

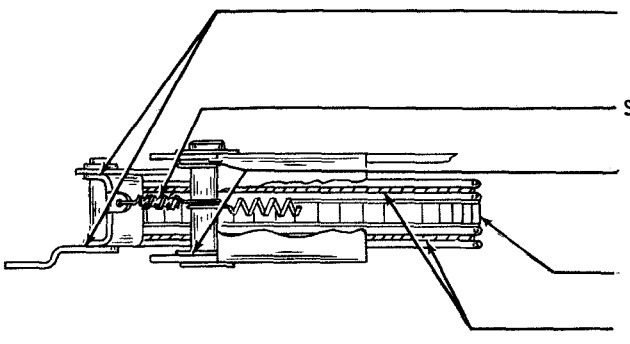
5.30 REST TYPING UNIT ON ITS BACK



5.31 SPACING DRUM DRIVE MECHANISM

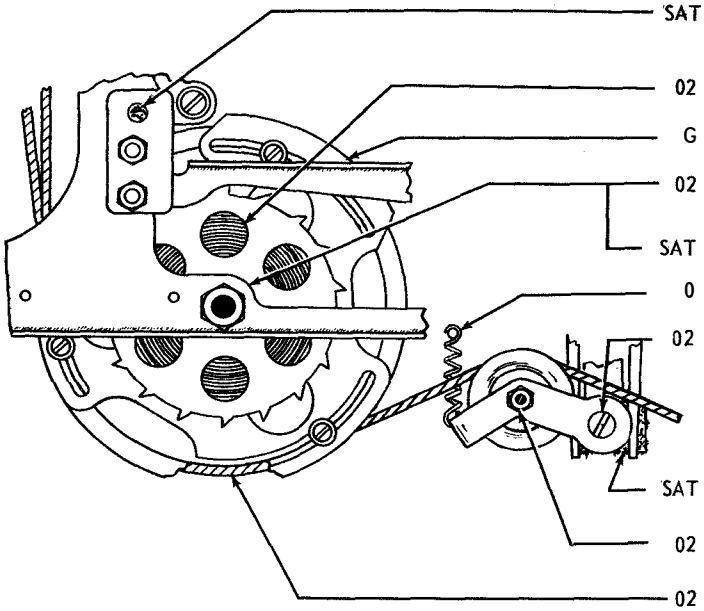


02	ENGAGING SURFACE	SPACING CUTOUT LEVER
02	BEARING (OUTER AND INNER END)	SPACING DRUM SHAFT
SAT	FELT WASHER	
02	ENGAGING SURFACE	TRANSFER SLIDE
02	ROLLER BEARING	STOP ARM ROLLER
02	ENGAGING SURFACES (2 PLACES)	CARRIAGE RETURN LATCH BAIL
02	GUIDING SURFACE	DASHPOT
0	HOOKS–EACH END (4 SPRINGS)	SPRING
02	BEARING SURFACES (2 ECCENTRICS)	SPACING DRUM FEED PAWLS ECCENTRICS



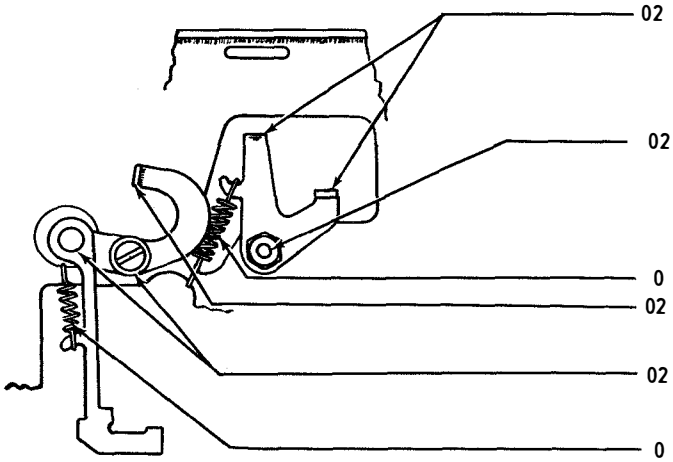
02	BEARING SURFACES (2 PLACES)	CARRIAGE RETURN LATCH BAIL
SAT	FELT WICK	SPRING WICK
02	ROLLER BEARINGS (2 ROLLERS)	TRANSFER SLIDE ROLLERS
G	TEETH	SPACING DRUM RATCHET WHEEL
02	CABLE GROOVES (2 PLACES)	SPACING DRUM

5.32 CARRIAGE RETURN MECHANISM



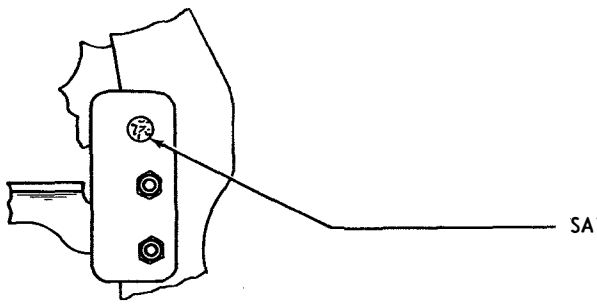
SAT	FELT OILER	PRINTING TRACK GUIDE
02	BETWEEN LAYERS	CARRIAGE RETURN SPRING
G	CAM DISK SURFACE	MARGIN INDICATOR CAM DISK
02	BEARING (OUTER AND INNER END)	CARRIAGE RETURN SPRING DRUM SHAFT
SAT	FELT WASHER	
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	TENSION PULLEY BAIL
SAT	FELT OILER	MAIN BAIL
02	BEARING SURFACE	PULLEY
02	CABLE GROOVES	CARRIAGE RETURN SPRING DRUM

5.33 CARRIAGE RETURN MECHANISM (Continued)



02	ENGAGING SURFACES (2 PLACES)	AUTOMATIC CARRIAGE RETURN BELL CRANK
02	BEARING SURFACE	AUTOMATIC CARRIAGE RETURN BELL CRANK
0	HOOKS–EACH END	SPRING
02	ENGAGING SURFACE	SPACING DRUM FEED PAWL RELEASE LINK
02	BEARING SURFACES (2 PLACES)	SPACING DRUM FEED PAWL RELEASE LINK
0	HOOKS–EACH END	SPRING

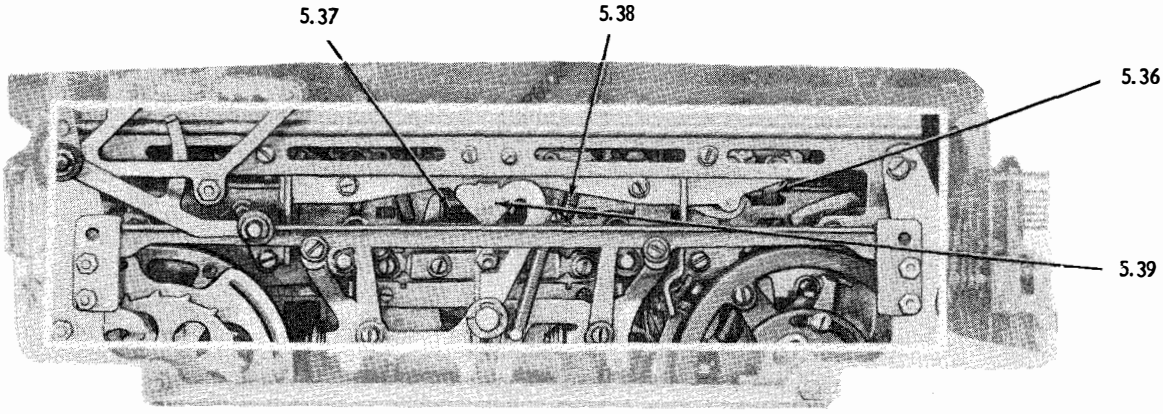
5.34 PRINTING TRACK GUIDE



SAT	FELT OILER	PRINTING TRACK GUIDE

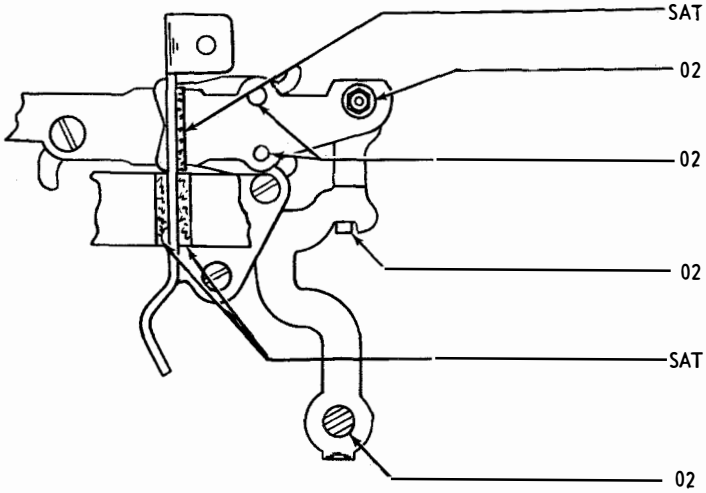
5.35 POSITIONING MECHANISM

REST TYPING UNIT ON ITS BACK

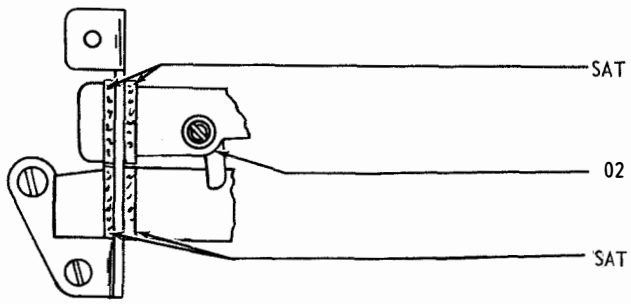


(FRONT VIEW)

5.36 HORIZONTAL POSITIONING MECHANISM

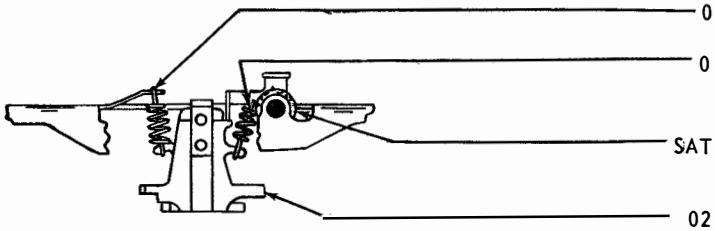


SAT	FELT WASHER	HORIZONTAL REVERSING SLIDE
02	ENGAGING SURFACE	HORIZONTAL REVERSING SLIDE SHIFT LEVER
02	DETENTS (2 DETENTS)	DETENT BAILS
02	ENGAGING SURFACE	HORIZONTAL REVERSING SLIDE SHIFT LEVER
SAT	FELT WASHERS (2 WASHERS)	OSCILLATING RAIL SHIFT SLIDE
02	BEARING SURFACE	HORIZONTAL REVERSING SLIDE SHIFT LEVER



SAT	FELT WASHERS (2 WASHERS)	HORIZONTAL REVERSING SLIDE
02	ENGAGING SURFACES (2 PLACES)	HORIZONTAL REVERSING SLIDE
SAT	FELT WASHERS (2 WASHERS)	OSCILLATING RAIL SHIFT SLIDE

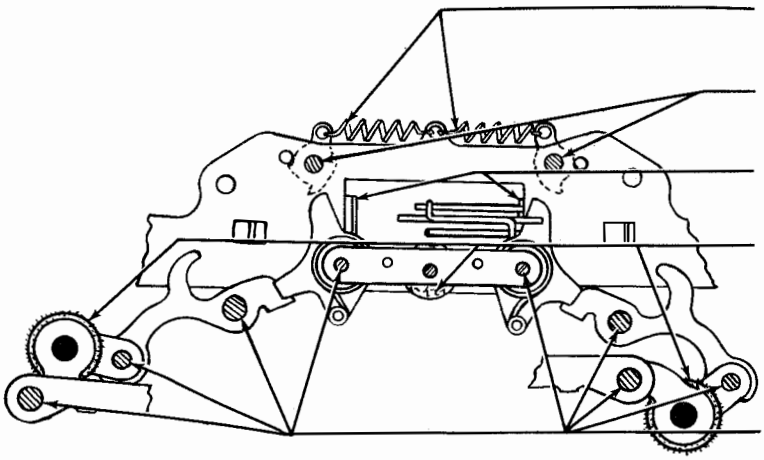
5.37 HORIZONTAL POSITIONING MECHANISM (Continued)



0	HOOKS–EACH END	SPRING
0	HOOKS–EACH END	SPRING
SAT	FELT WASHER	CODE BAR BELL CRANK
02	ENGAGING SURFACES (3 SLIDES)	HORIZONTAL MOTION STOP SLIDES

(TOP VIEW)

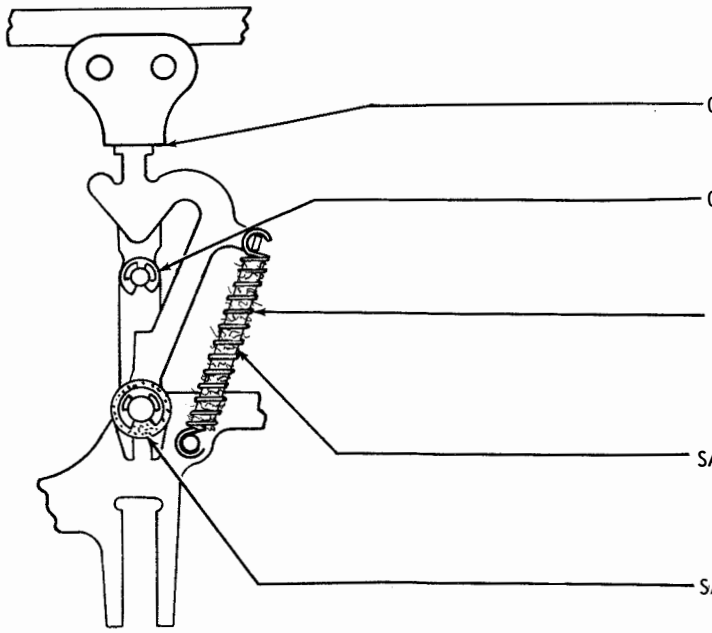
5.38 HORIZONTAL POSITIONING MECHANISM (Continued)



0	HOOKS–EACH END (2 SPRINGS)	SPRING
02	BEARING SURFACES (2 BELL CRANKS)	DECELERATING SLIDE BELL CRANKS
02	ENGAGING SURFACES (2 SLIDES)	DECELERATING SLIDES
SAT	FELT WASHERS (3 WASHERS)	SHIFT SLIDE DRIVE LINKS
0	BEARING SURFACES (8 PLACES)	SHIFT SLIDE DRIVE LINKS

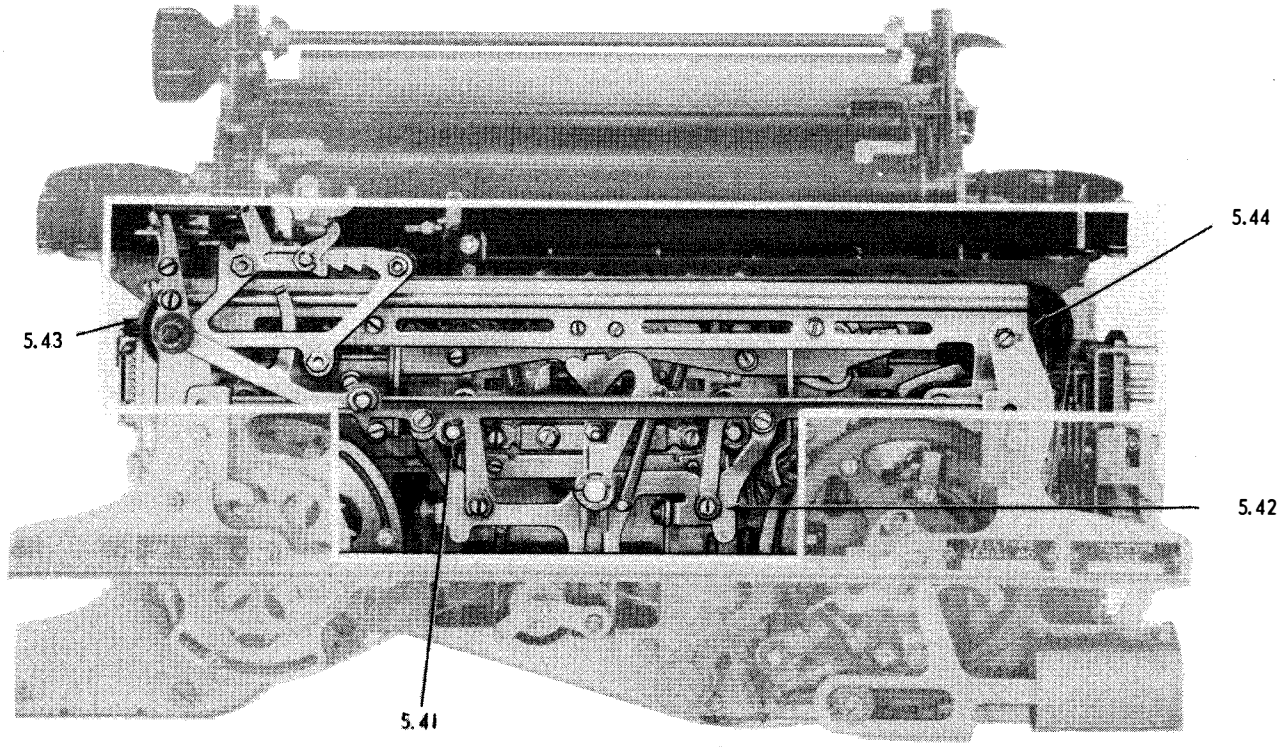
(FRONT VIEW)

5.39 HORIZONTAL POSITIONING MECHANISM (Continued)



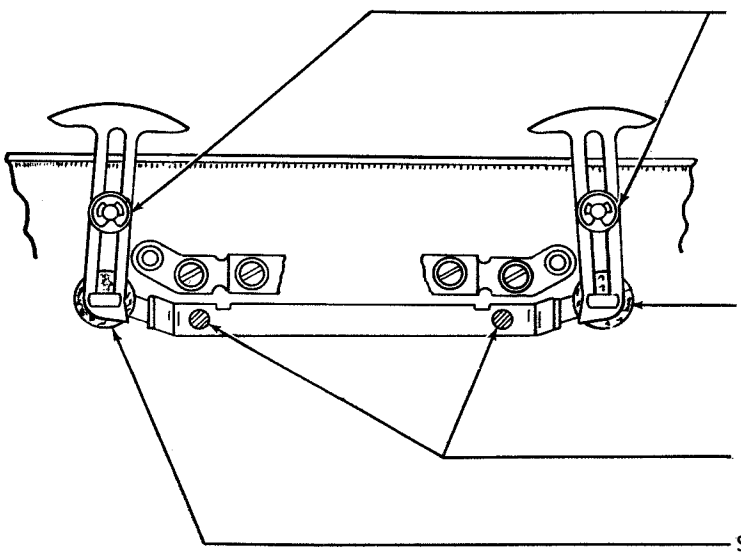
02	GUIDING SURFACE	HORIZONTAL POSITIONING LOCK LEVER
02	BEARING SURFACE	HORIZONTAL LOCK LEVER ARM ROLLER
0	HOOKS–EACH END	SPRING
SAT	FELT WICK	SPRING WICK
SAT	FELT WASHER	HORIZONTAL POSITIONING LOCK LEVER

5.40 REST TYPING UNIT IN UPRIGHT POSITION



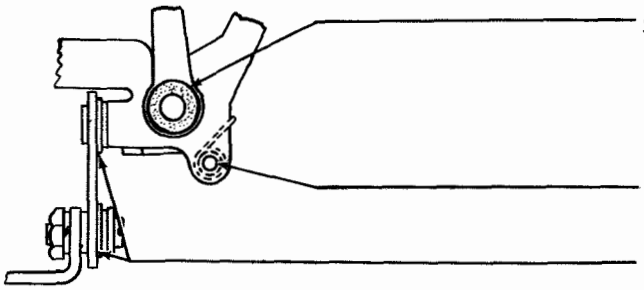
(FRONT VIEW)

5.41 LETTERS–FIGURES SHIFT MECHANISM

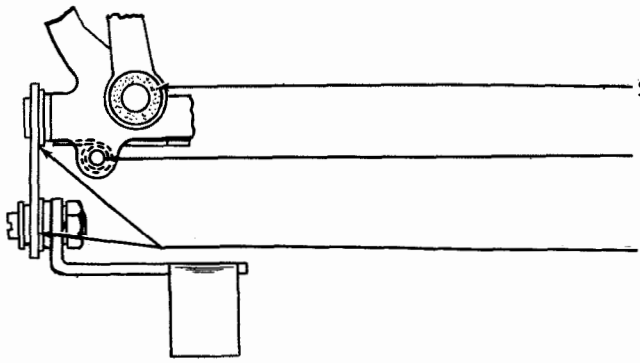


02	GUIDING SURFACES (2 SLIDES)	SHIFT LINK BREAKER SLIDE
SAT	FELT WASHER	LETTERS–FIGURES SHIFT SLIDE POST
02	BEARING SURFACE	LETTERS–FIGURES SHIFT SLIDE
SAT	FELT WASHER	LETTERS–FIGURES SHIFT SLIDE POST

5.42 LETTERS–FIGURES SHIFT MECHANISM (Continued)

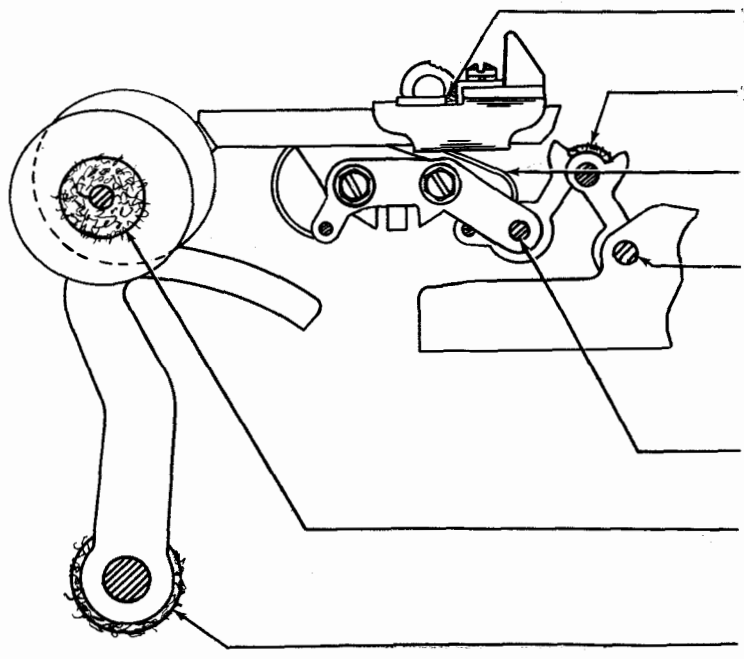


SAT	FELT WASHER	SHIFT SLIDE DRIVE LINK
02	BEARING SURFACE	BREAKER SLIDE BAIL
02	BEARING SURFACES (2 PLACES)	MAIN BAIL LINK



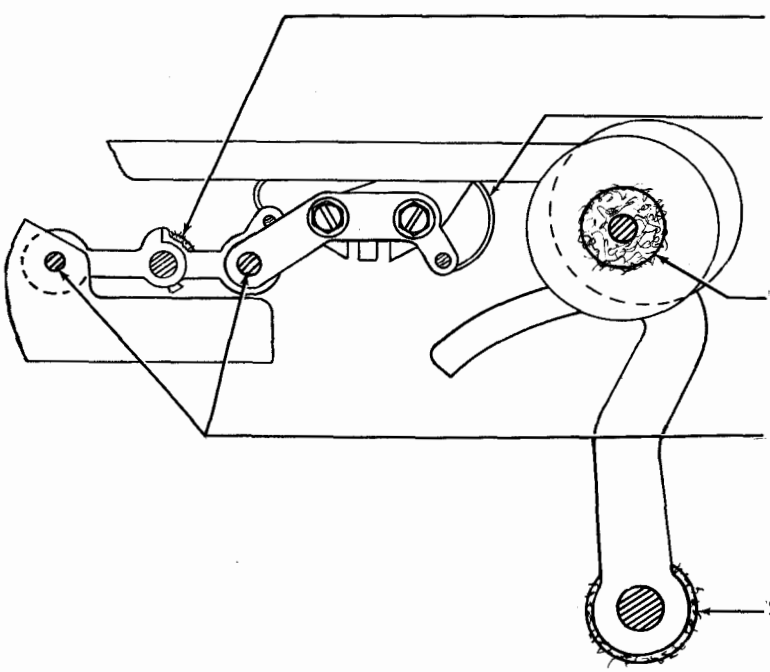
SAT	FELT WASHER	SHIFT SLIDE DRIVE LINK
02	BEARING SURFACE	BREAKER SLIDE BAIL
02	BEARING SURFACES (2 PLACES)	MAIN BAIL LINK

5.43 OSCILLATING MECHANISM



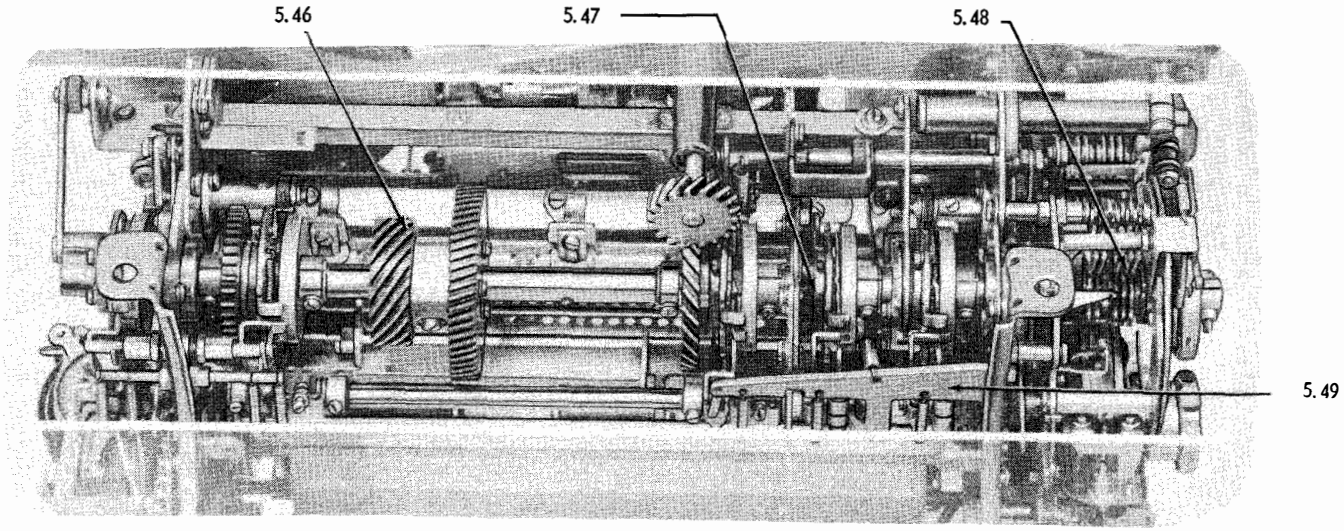
SAT	FELT OILER	OSCILLATING RAIL SLIDE
SAT	FELT WASHER	OSCILLATING RAIL SHIFT LINK
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	OSCILLATING RAIL SHIFT LINK
02	BEARING SURFACE	OSCILLATING RAIL SHIFT LINK
SAT	FELT WASHERS (3 WASHERS)	PULLEYS
SAT	FELT WASHER	OSCILLATING RAIL GUIDE ARM

5.44 OSCILLATING MECHANISM (Continued)



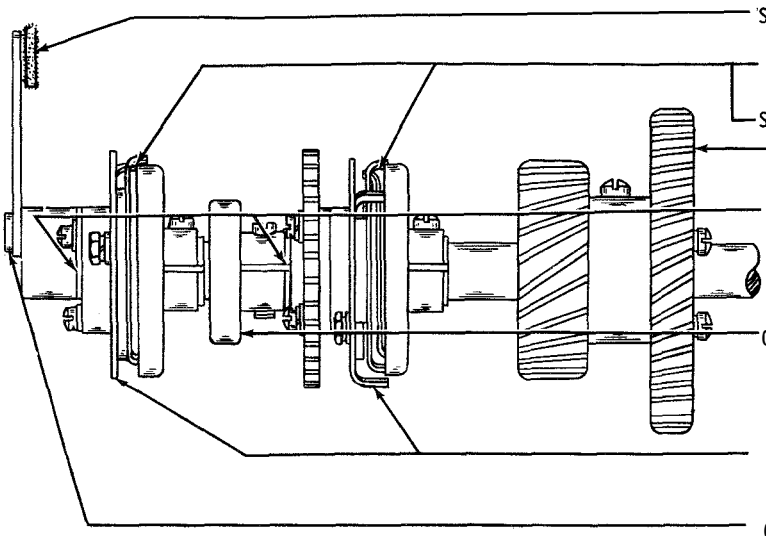
SAT	FELT WASHER	OSCILLATING RAIL SHIFT LINK
0	HOOKS–EACH END	SPRING
SAT	FELT WASHERS (3 WASHERS)	PULLEYS
02	BEARING SURFACES (2 PLACES)	OSCILLATING RAIL SHIFT LINK
SAT	FELT WASHER	OSCILLATING RAIL GUIDE ARM

5.45 REST TYPING UNIT IN BOTTOM UPWARD POSITION



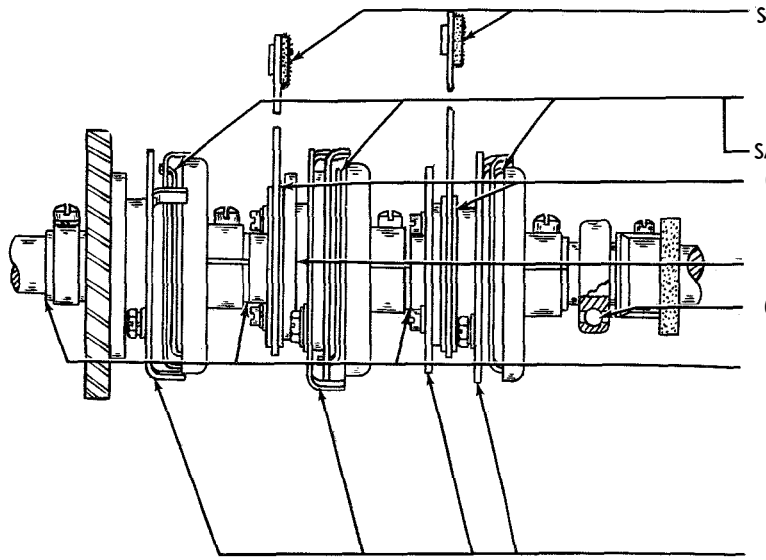
(BOTTOM VIEW)

5.46 MAIN SHAFT (CLUTCHES, GEARS, ETC.)



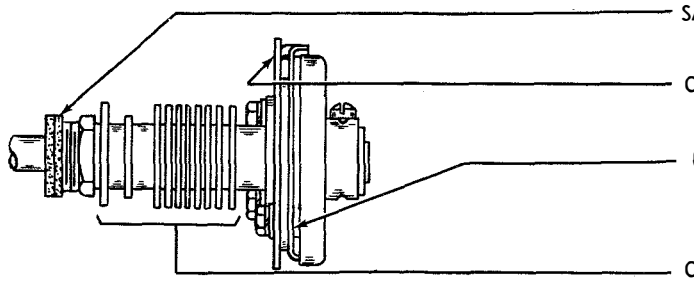
SAT	FELT WASHER	DRIVE LINK BEARING
04	INTERNAL MECHANISM (2 CLUTCHES)	CLUTCH ASSEMBLY
SAT	FELT **WICKS**	
G	TEETH (4 GEARS)	MAIN SHAFT GEARS
02	BEARING SURFACES (2 CLUTCHES)	CLUTCH SLEEVES
02	BALL BEARING	MAIN SHAFT BEARING
02	CAMMING SURFACES (2 DISKS)	CLUTCH DISK
02	BEARING SURFACE	DRIVE LINK BEARING

5.47 MAIN SHAFT (CLUTCHES, GEARS, ETC.) (Continued)



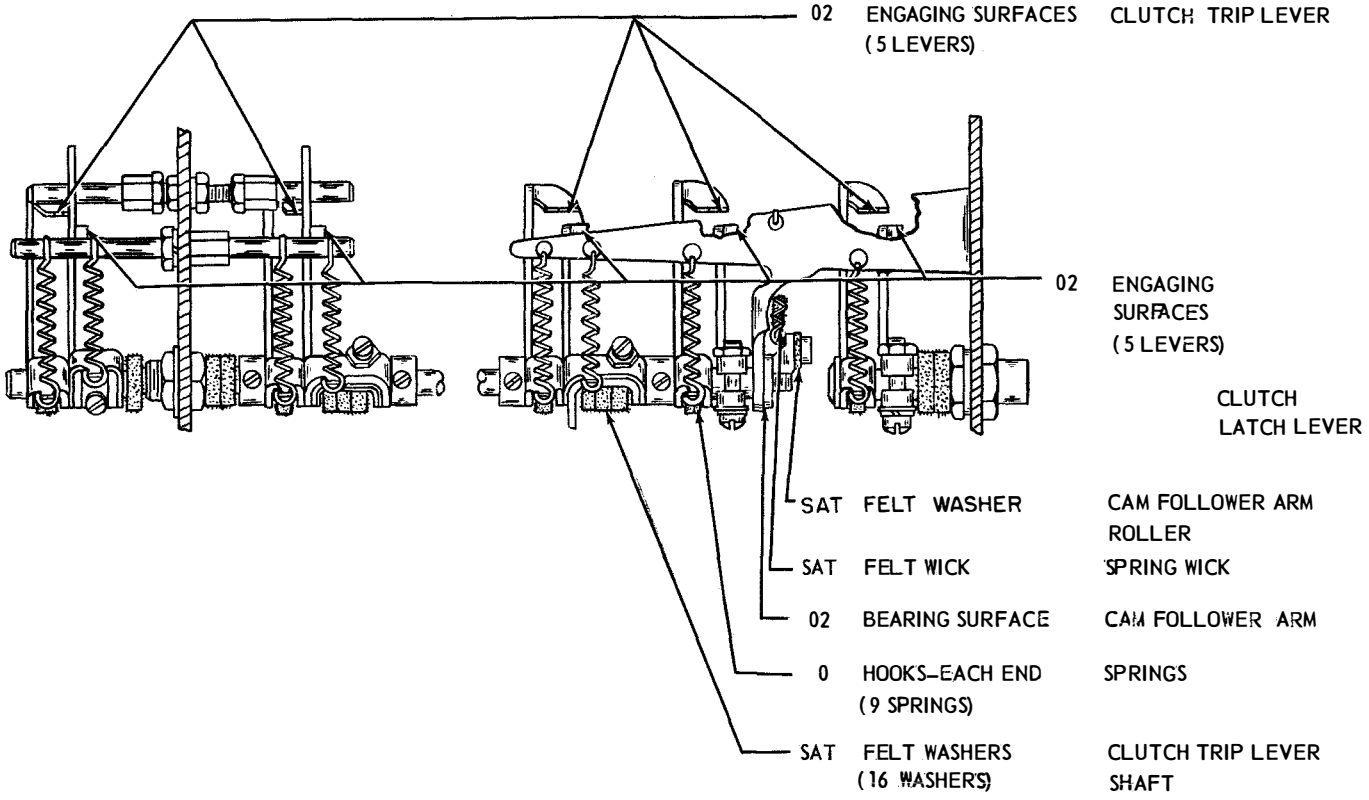
SAT	FELT WASHER (2 WASHERS)	ECCENTRIC FOLLOWER ARM BEARINGS
04	INTERNAL MECHANISM (3 CLUTCHES)	CLUTCH ASSEMBLY
SAT	FELT **WICKS**	
02	BEARING SURFACES (2 CAMS)	ECCENTRIC FOLLOWER ARM CAMS
02	CAMMING SURFACE	FUNCTION CAM
02	BALL BEARING	MAIN SHAFT BEARING
02	BEARING SURFACES (3 CLUTCHES)	CLUTCH SLEEVE
02	CAMMING SURFACES (4 DISKS)	CLUTCH DISKS

5.48 MAIN SHAFT (CLUTCHES, GEARS, ETC.) (Continued)

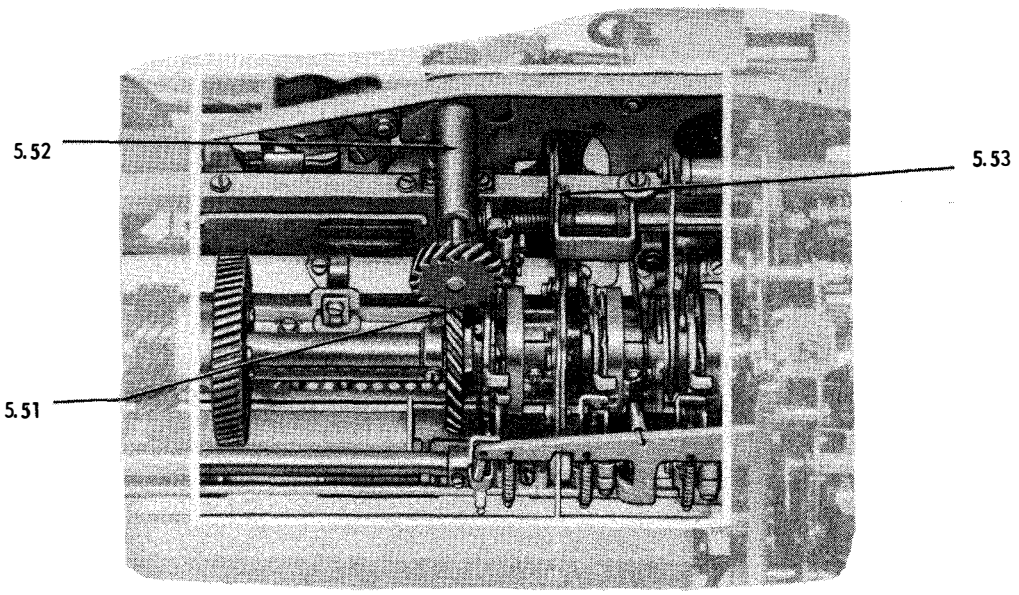


SAT	FELT WASHERS (2 WASHERS)	SELECTOR CAM ASSEMBLY
02	CAMMING SURFACE	CLUTCH DISK
04	INTERNAL MECHANISM	CLUTCH ASSEMBLY
02	**EACH CAMMING SURFACE**	SELECTOR CAM ASSEMBLY

5.49 MAIN SHAFT (CLUTCHES, GEARS, ETC.) (Continued)

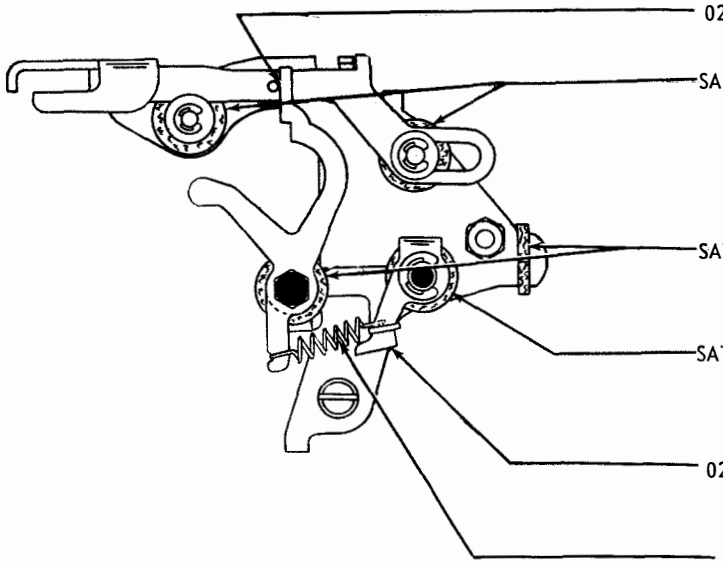


5.50 REST TYPING UNIT IN BOTTOM UPWARD POSITION



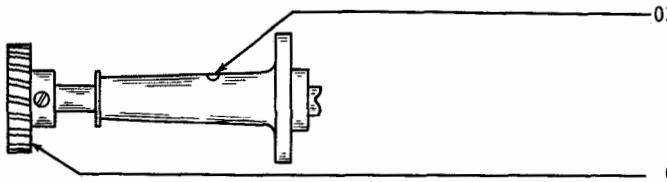
(BOTTOM VIEW)

5.51 SPACING MECHANISM



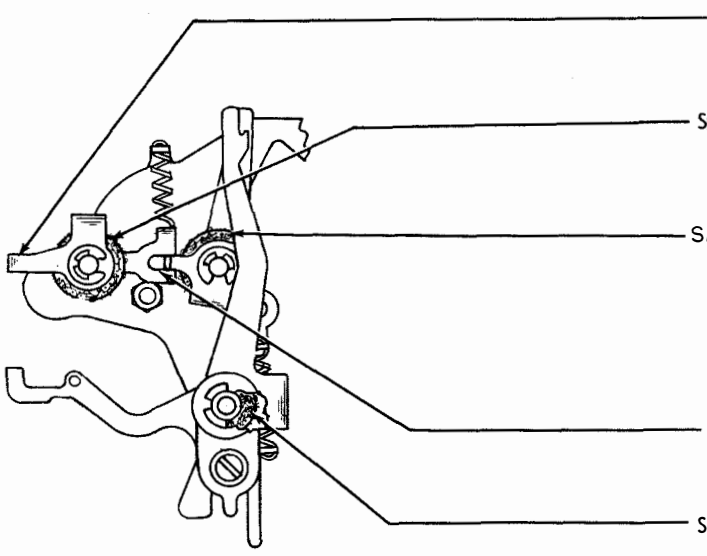
02	ENGAGING SURFACES	SPACING TRIP LEVER
SAT	FELT WASHERS (2 WASHERS)	SPACING SUPPRESSION SLIDE
SAT	FELT WASHER	SPACING TRIP LEVER
SAT	FELT WASHER	SPACING TRIP LEVER BAIL SHAFT
02	ENGAGING SURFACE	SPACING TRIP LEVER BAIL
0	HOOKS–EACH END (2 SPRINGS)	SPRING

5.52 SPACING MECHANISM (Continued)



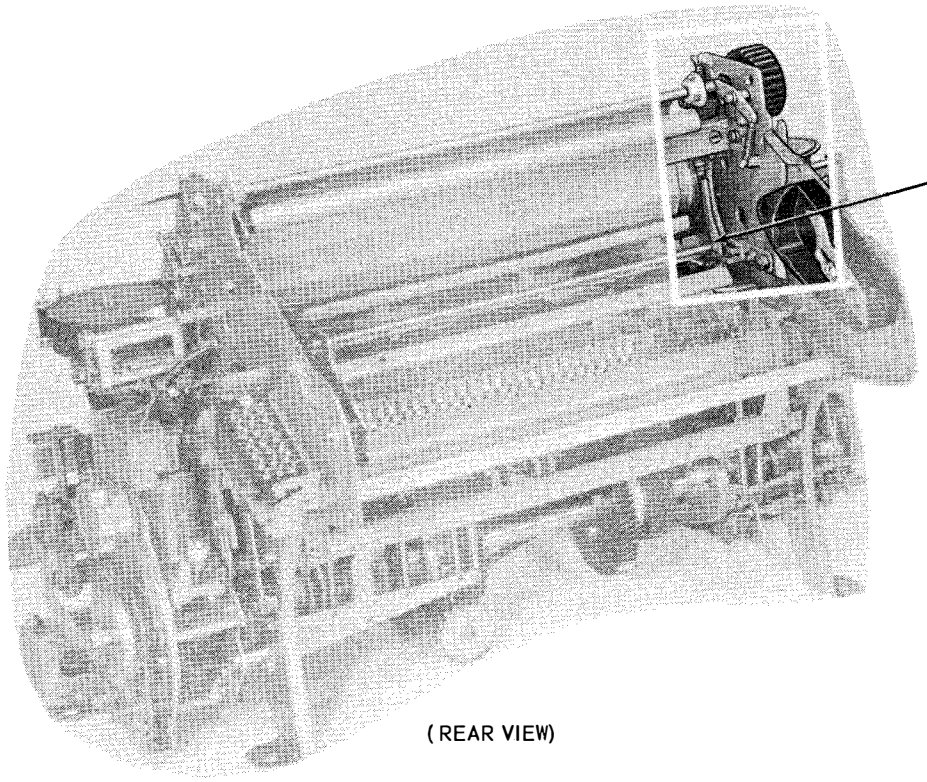
02	OIL HOLE	SPACING SHAFT
G	TEETH	SPACING SHAFT GEAR

5.53 SPACING MECHANISM (Continued)



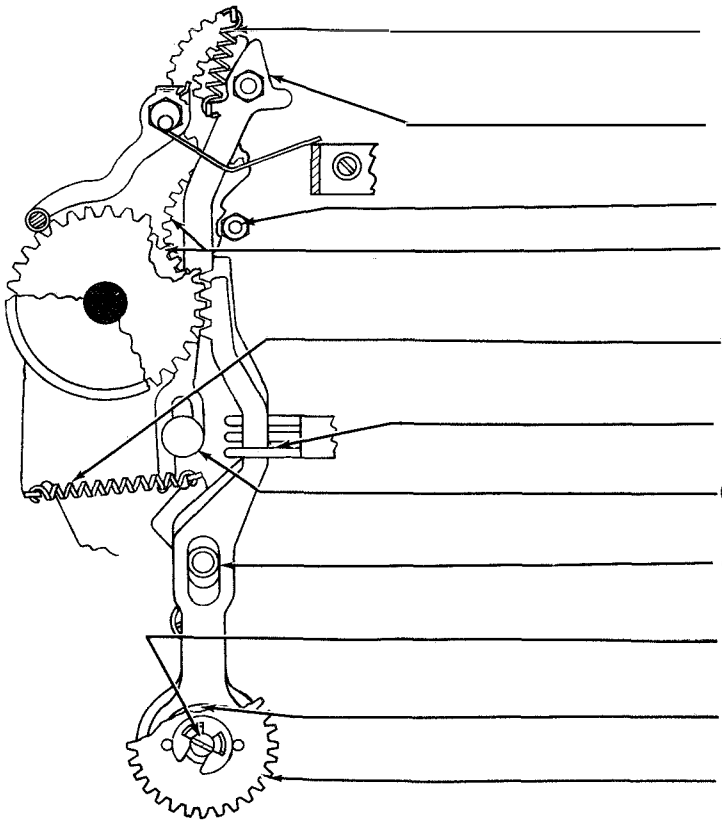
02	ENGAGING SURFACE	SPACING CUT OUT TRANSFER BAIL
SAT	FELT WASHERS (2 WASHERS)	SPACING CUT OUT TRANSFER BAIL
SAT	FELT WASHER	SPACING CUT OUT BAIL
02	ENGAGING SURFACE	SPACING CUT OUT BAIL
SAT	FELT WASHERS (2 WASHERS)	CARRIAGE RETURN BAIL SHAFT

5.54 REST TYPING UNIT IN BOTTOM UPWARD POSITION



(REAR VIEW)

5.55 LINE–FEED MECHANISM



0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	PLATEN HAND WHEEL
02	BEARING SURFACE	PLATEN IDLER SPUR GEAR
G	TEETH (2 GEARS)	PLATEN SPUR GEARS
0	HOOKS–EACH END	SPRING
02	GUIDING SURFACES (2 BARS)	LINE–FEED BARS
02	GUIDING SURFACE	LINE–FEED BAR RELEASE LEVER
02	GUIDING SURFACES (2 BARS)	LINE–FEED BAR BELL CRANK
02	BEARING SURFACE	LINE–FEED CLUTCH SPUR GEAR SHAFT
02	BEARING SURFACES (2 BEARINGS)	LINE–FEED BAR ECCENTRIC BEARING
G	TEETH	LINE–FEED CLUTCH SPUR GEAR