

32 AND 33 TAPE PUNCH
DISASSEMBLY AND REASSEMBLY

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1. GENERAL

1.01 This section is issued to provide disassembly and reassembly instructions for the 32 and 33 tape punch and to present the instructions as a separate section.

1.02 References to "left," "right," "front," "rear," etc consider the tape punch to be viewed from a position where tape guide assembly faces up and the backspace lever is to the viewer's left. Orientation references in the drive link mechanism area consider the drive link to be up and located to the viewer's left.

1.03 The disassembly procedure given in this section will break the tape punch down into its major assemblies and mechanisms. If further disassembly is required, refer to the appropriate illustrated parts section which shows detailed arrangement of parts. Where it will help in determining their location, the numbers of the parts are given in the instructions.

2. DISASSEMBLY AND REASSEMBLY

CAUTION: BEFORE BEGINNING DISASSEMBLY, REMOVE CONNECTORS FROM EXTERNAL RECEPTACLES (POWER SOURCE, DATA SET, ETC.).

2.01 General:

(a) When self-tapping screws are used to mount mechanisms onto castings, do not remove the self-tapping screws. Merely loosen them enough to remove the mechanisms unless specifically instructed otherwise.

(b) Retaining rings are made of spring steel and have a tendency to release suddenly. To avoid loss of these rings when removing them, proceed as follows:

- (1) Hold retaining ring to prevent its rotating.
- (2) Place blade of screwdriver in one of ring's slots and rotate screwdriver to increase diameter.
- (3) Ring will come off easily in fingers without flying.

2.02 To disassemble the parts of the tape punch cover assembly, proceed as follows:

Note: Reference Figure 1.

- (1) Remove the composite cover — tape punch cover assembly, tape reader cover, and typing unit cover and lid from the subbase of a 5-level or 8-level Automatic Send-Receive Teletypewriter Set as described in the appropriate cover section.
- (2) Unsnap the tape punch lid assembly from the bosses located in both halves of the tape punch cover assembly.
- (3) Remove the six screws, twelve flat washers, six lockwashers, and six nuts that secure the tape punch cover to the composite cover.

Note: The heads of the screws, when assembled, shall be on the inside wall of the right cover half.

- (4) Remove the two TP182916 screws and one TP180798 screw that secure the right cover half to the left cover half.
- (5) Separate TP182922 left cover half from the TP182921 right cover half.

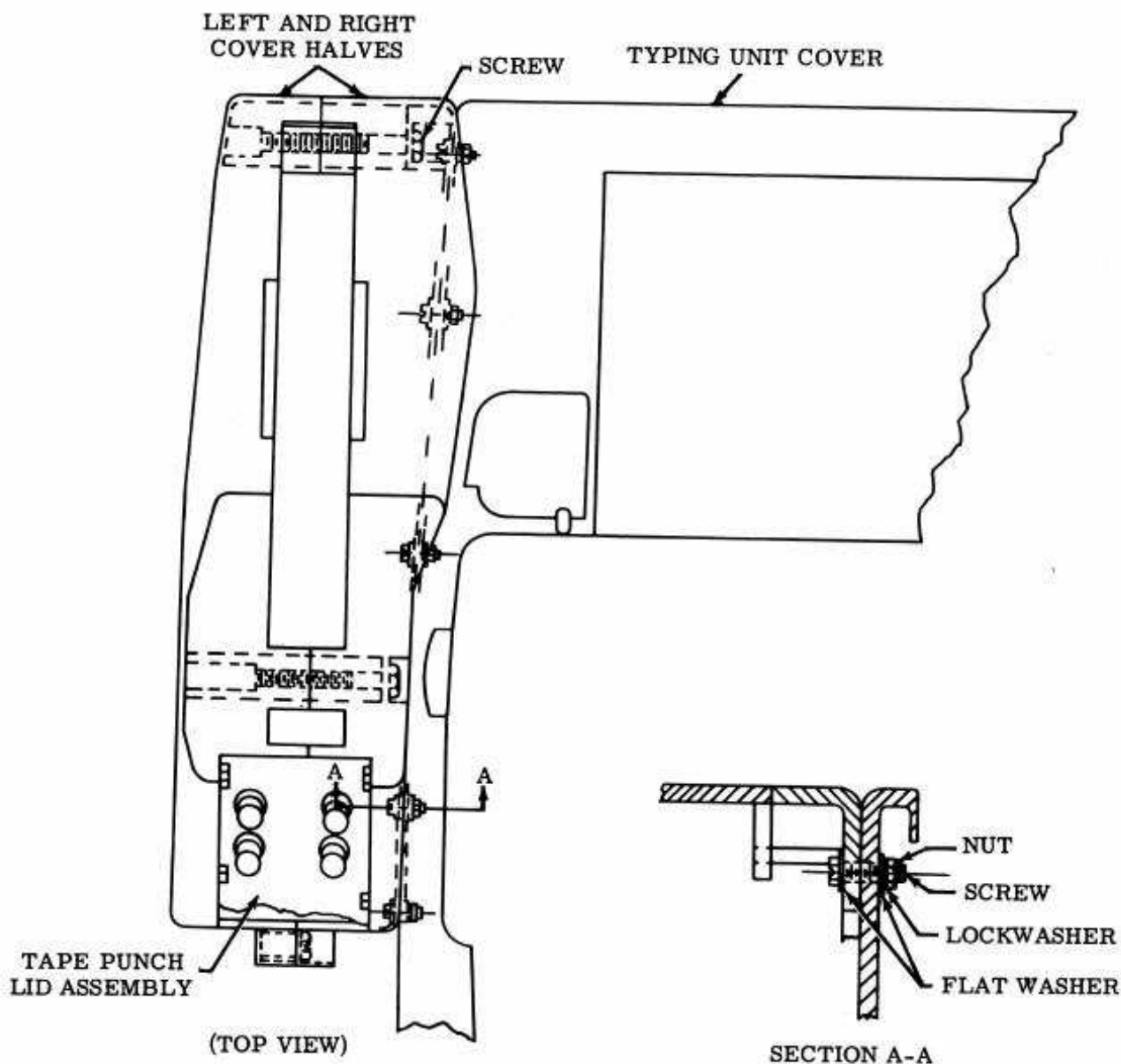


Figure 1 - Tape Punch Cover Assembly

- (6) To assemble the parts of the tape punch cover assembly, reverse the procedure used to disassemble it.
- 2.03 To remove parts of the tape punch lid assembly, proceed as follows:

Note: Reference Figure 2.

- (1) Carefully remove the TP182932 self-locking nut from the TP182912 lid.
- (2) Remove the TP182917 spider-leaf spring from the lid.
- (3) Remove the TP182919 pushbuttons from the lid holes.

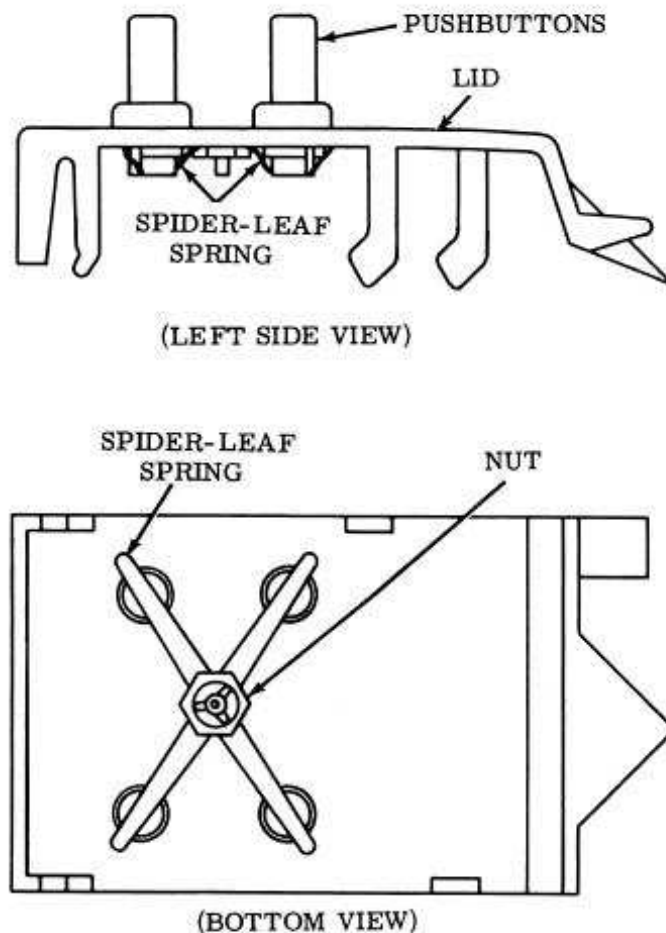


Figure 2 — Tape Punch Lid Assembly

- (4) To replace the parts, reverse the procedure used to remove them. Engage each spider-leaf of the spider-leaf spring with a slot in its associated pushbutton.

2.04 To remove the tape punch from the typing unit base casting, proceed as follows:

Note: Reference Figure 3.

- (1) Unhook TP3864 spring from TP182894 drive link and rotate drive link out of the way.

- (2) Remove the three screws which secure the tape punch base casting to the typing unit base casting in the following order:

First, the most forward TP182891 screw. Second, the rear TP182891 screw. Finally, the TP181246 screw.

- (3) Remove the TP182805 nut plate from the inside surface of the front wall of the typing unit's base casting.
- (4) Remove the codebar extensions from their respective codebar slots while removing the tape punch base casting from the carriage shaft.

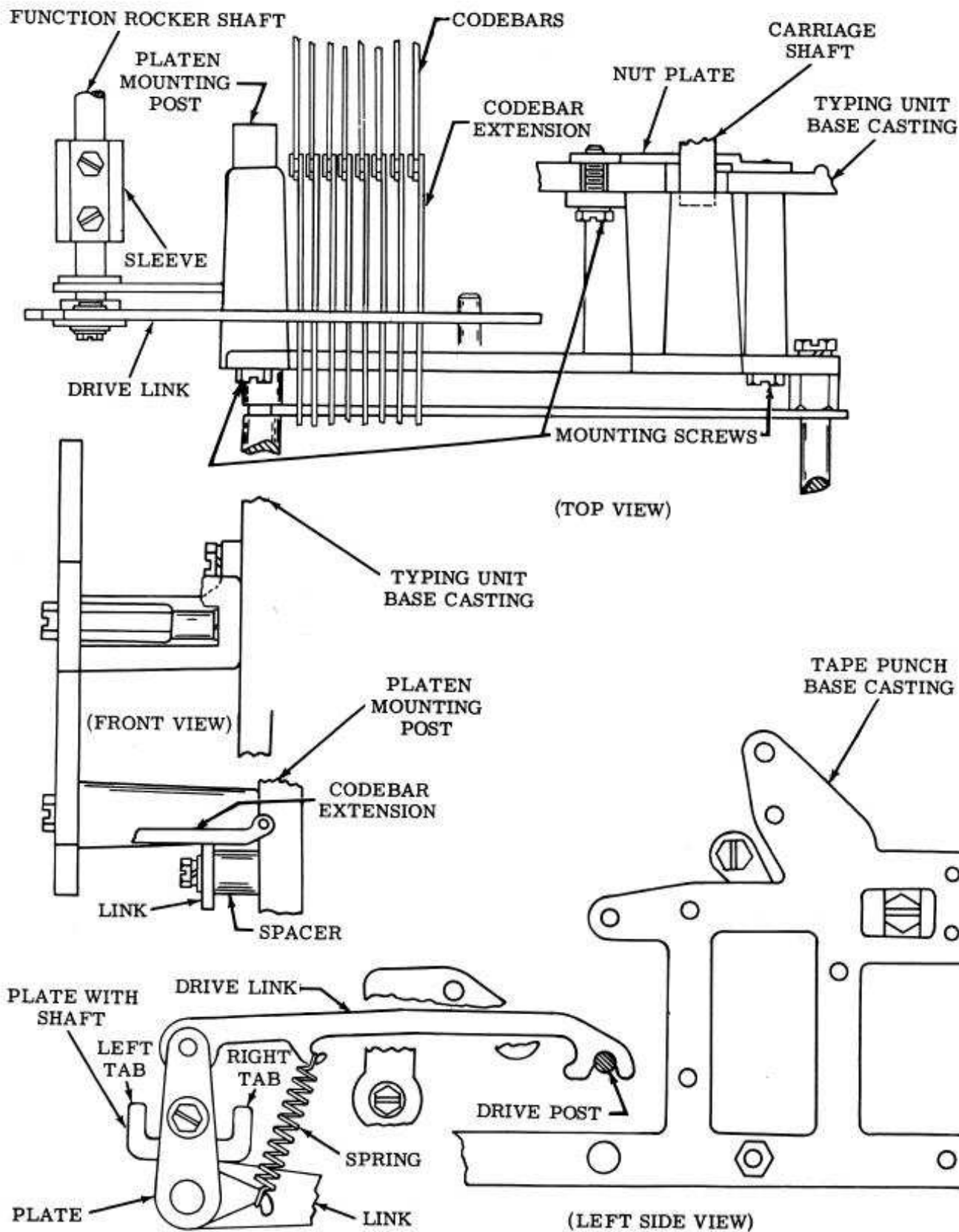


Figure 3 - Tape Punch

- (5) To replace the tape punch to the typing unit base casting, reverse the procedure used to remove it. Prior to replacing the tape punch to the left side of the typing unit base casting, however, manually set up the typing unit so that all codebars are in the marking position.

Note: The left end of the carriage shaft protrudes a nominal 0.189 inch beyond the outside surface of the typing unit base casting's left front wall. If this condition is not present on the typing unit, loosen the carriage shaft clamps and collars and move the carriage shaft to the left so that the right end of the carriage shaft is flush, as gauged by eye, with the right vertical surface of the V groove. The carriage shaft will protrude a nominal 0.189 inch beyond the left surface on the left front mounting wall and provide the tape punch base casting with a nominal 0.094 inch shaft to engage and locate from.

2.05 To remove the tape punch drive link assembly from the function rocker shaft, proceed as follows:

(a) Early Design:

Note: Reference Figure 4.

- (1) Unhook the TP3864 spring and remove it and the TP128357 retainer. Then, remove the TP182894 drive link.
- (2) Loosen the TP181249 screw and remove it from the TP181045 platen mounting post. Remove the TP182902 spacer.
- (3) Remove the TP182900 link from the bushing of the drive link plate.
- (4) Remove the TP181245 screw and TP76461 flat washer from the TP182895 drive link plate and remove the drive link plate.
- (5) Manually rotate the typing unit main shaft until the function rocker shaft is in its most forward position.
- (6) Loosen the TP181231 screw and remove it from the TP182898 arm. Remove the arm.

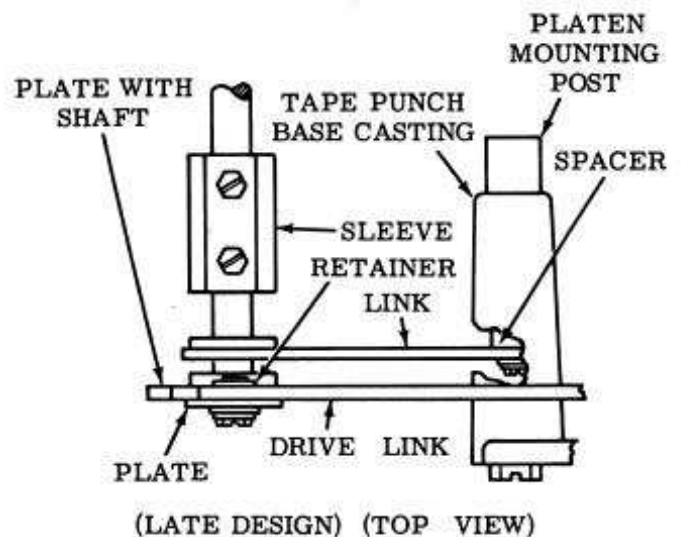
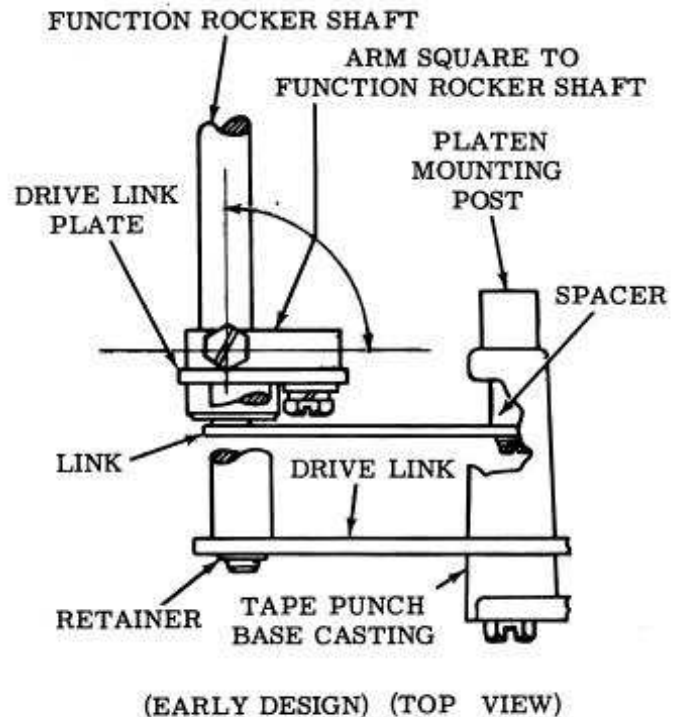


Figure 4 — Tape Punch Drive Link Assembly

- (7) To replace the tape punch drive link assembly onto the function rocker shaft, manually rotate the typing unit main shaft until the function rocker shaft is in its most forward position and reverse the procedure used to remove the tape punch drive link assembly.

Note 1: When replacing the TP182898 arm onto the function rocker shaft, line up the hole in the arm with the threads of the tapped hole in the function rocker shaft. Push down on the arm in line with the threads and replace the TP181231 screw.

Note 2: When replacing the TP182895 drive link plate, center the TP181231 screw in the opening in the drive link plate before tightening the TP181245 screw.

Note 3: Replace the TP182900 link into the bushing of the TP182895 drive link plate by applying finger pressure to the link in line with the function rocker shaft. After releasing the finger pressure, the link should spring back to its initial position. If it does not, loosen the TP181249 screw. Then, loosen the TP180798 screw on the top and bottom of the TP181045 platen mounting post and position the platen mounting post until the desired condition is obtained.

(b) Late Design:

Note: Reference Figures 3 and 4.

- (1) Unhook the TP3864 spring and remove it and the TP128357 retainer. Then, remove the TP182894 drive link.
- (2) Loosen the TP181242 screw and remove it from the TP181045 platen mounting post. Remove the TP182958 spacer.
- (3) Remove TP78103 screw, TP124177 lockwasher, and TP152890 flatwasher from the TP182960 plate with shaft. Remove the TP182957 plate from over the exposed end of the shaft.
- (4) Manually rotate the typing unit main shaft until the function rocker shaft is in its most forward position.
- (5) Loosen and remove the TP182962 screw which secures the TP182960 plate with shaft to the function rocker shaft. Remove the plate with shaft.
- (6) Remove the TP182955 link from the shaft of the plate with shaft.

- (7) Loosen and remove the TP182962 screw which secures the TP182961 sleeve to the function rocker shaft. Remove the sleeve from over the function rocker shaft.

- (8) To replace the tape punch drive link assembly onto the function rocker shaft, manually rotate the typing unit main shaft until the function rocker shaft is in its most forward position and reverse the procedure used to remove the tape punch drive link assembly.

Note 1: When replacing the TP182961 sleeve onto the function rocker shaft, line up one hole in the sleeve with the tapped hole in the function rocker shaft. Also, when replacing the TP182960 plate with shaft, line up the tapped hole in the shaft of the plate with shaft with the second hole of its sleeve.

Note 2: When replacing the TP182957 plate, center the plate between the left and right tabs of the TP182960 plate with shaft before tightening the TP78103 screw.

Note 3: After replacing the TP182955 link, use finger pressure to displace it on the shaft. After releasing the finger pressure, the link should spring back. If it does not, loosen the TP181242 screw. Then, loosen the TP180798 screw on the top and bottom of the TP181045 platen mounting post and position the platen mounting post until the desired condition is obtained.

Note 4: There shall be some clearance between the typing unit subbase and the tape punch drive link assembly in the assembled state. If necessary, file the typing unit subbase to provide the clearance.

- 2.06 To remove the chad chute assembly, proceed as follows:

Note: Reference Figure 5.

- (1) Remove the TP182915 extension.
- (2) Loosen and remove two TP151152 screws and TP110743 lockwashers.
- (3) Remove the TP182908 chad chute assembly.

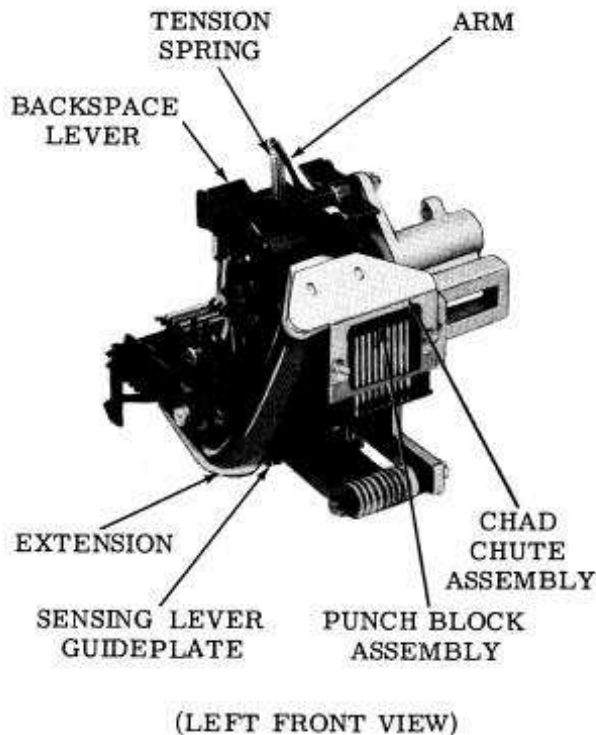


Figure 5 — Tape Punch (Cover Removed)

(4) To replace the chad chute assembly, reverse the procedure used to remove it. Line up the oblong holes of the plate with the holes in the punch block holder. Apply finger pressure on top of the chad chute assembly towards punch block holder when replacing and tightening the two screws.

2.07 To remove the punch block assembly, proceed as follows:

Note: Reference Figure 5.

- (1) Remove two TP153817 mounting screws and TP110743 lockwashers.
- (2) Slide the punch block assembly forward until the tongue in the punch block holder and the punch pins disengage the groove in TP182903 tape punch casting and TP182813 levers respectively.
- (3) To replace the punch block assembly, position the slots in the punch pins so that they face the guide pin. The bottom of

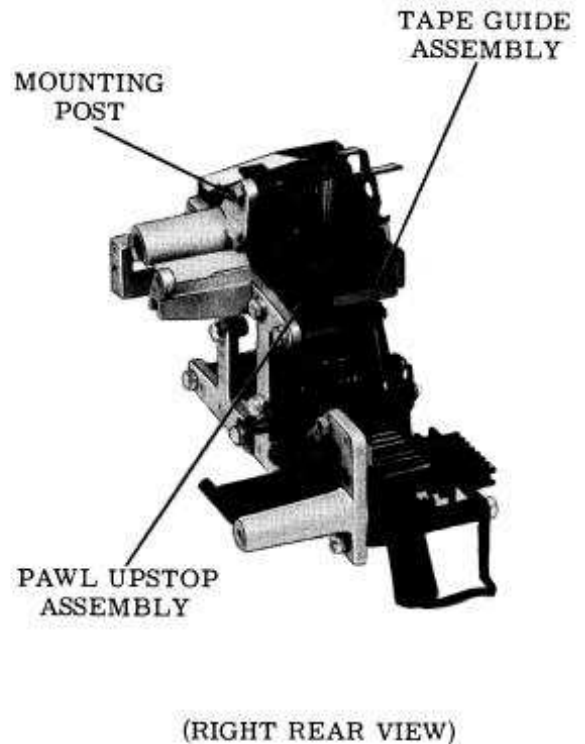


Figure 6 — Tape Punch (Cover Removed)

the punch pins should be in line and in a position that approximates their position when on the tape punch. Line up the punch pin slots with their levers and reverse the procedure used to remove the punch block assembly.

2.08 To remove the tape guide assembly, proceed as follows:

Note: Reference Figures 5 and 6.

- (1) Mark the notch where the TP119904 tension spring end is positioned with a pencil or other suitable marking instrument.
- (2) Unhook the TP119904 tension spring, remove the TP182936 arm, and then remove the TP182845 mounting post.
- (3) Remove the TP181244 mounting screw from the tape guide assembly.
- (4) Remove the tape guide assembly.

- (5) To replace the tape guide assembly, reverse the above procedure making sure that the tension spring is positioned in the marked notch of the arm.

2.09 General instructions for the removal of the pawl, lever, and spring combinations are given below:

- (1) To make the removal of the pawl, lever, and spring combinations from TP182824 post easier, always keep the "ball" of each lever and the "socket" of its associated pawl joined together by their appropriate TP42661 spring. The tension of the spring should keep the two together in one plane. This permits easy handling.
- (2) Where the spring does not supply a force to keep the two together, apply finger pressure on the ends of the levers in the same direction as the spring. This procedure simulates the spring and also provides for easy handling.
- (3) Following either of the above procedures will allow the pawl, lever, and spring combinations to be easily disassembled or assembled.

Note: Once assembled to the tape punch, the TP182822 plate of the pawl upstop assembly keeps the pawl, lever, and spring combination in one plane.

2.10 To remove the pawl upstop assembly, proceed as follows:

Note: Never disassemble the pawl upstop assembly prior to removing the pawl, lever, and spring combinations. The slotted TP182822 plate keeps the "ball" and "socket" of the lever and pawl in full engagement.

- (1) Remove the TP181244 screw.
- (2) Remove the TP182821 post, TP182893 bracket, and TP182822 plate.
- (3) To replace the pawl upstop assembly, reverse the procedure used to remove it.

Note: Always mount the pawl upstop assembly before assembly the pawl, lever, and spring combinations. To position the pawl upstop assembly, refer to the PAWL UPSTOP ASSEMBLY—PRELIMINARY adjustment in the appropriate tape punch section.

2.11 To remove the pawl and sensing lever guideplate, proceed as follows:

- (1) Unhook each TP182909 sensing lever spring and rotate each sensing lever out of the way.
- (2) Remove the TP181242 screw and TP3598 nut.
- (3) Remove the TP182815 sensing lever guideplate.
- (4) To replace the pawl and sensing lever guideplate, reverse the procedure used to remove it. However, before tightening the TP181242 screw and TP3598 nut, push the pawl and sensing lever guideplate downward to take up all the play. Viewing the tape punch from the left side, position the plate in a horizontal to a slight counter-clockwise direction from a horizontal plane, as gauged by eye. Then, tighten the TP181242 screw and TP3598 nut.

2.12 To remove the tape punch pan from the typing unit subbase, proceed as follows:

Note: Reference Figure 7.

- (1) Remove three TP181244 screws, three TP125015 flat washers, three TP124177 lockwashers and three TP3598 nuts from three slots in the tape punch pan and typing unit subbase.
- (2) Remove the tape punch pan.
- (3) To replace the tape punch pan, reverse the procedure used to remove it.

Note: Line up the back end of the tape punch pan with the back end of the typing unit subbase. Engage the locating tabs on the tape punch pan with the typing unit subbase before tightening screws.

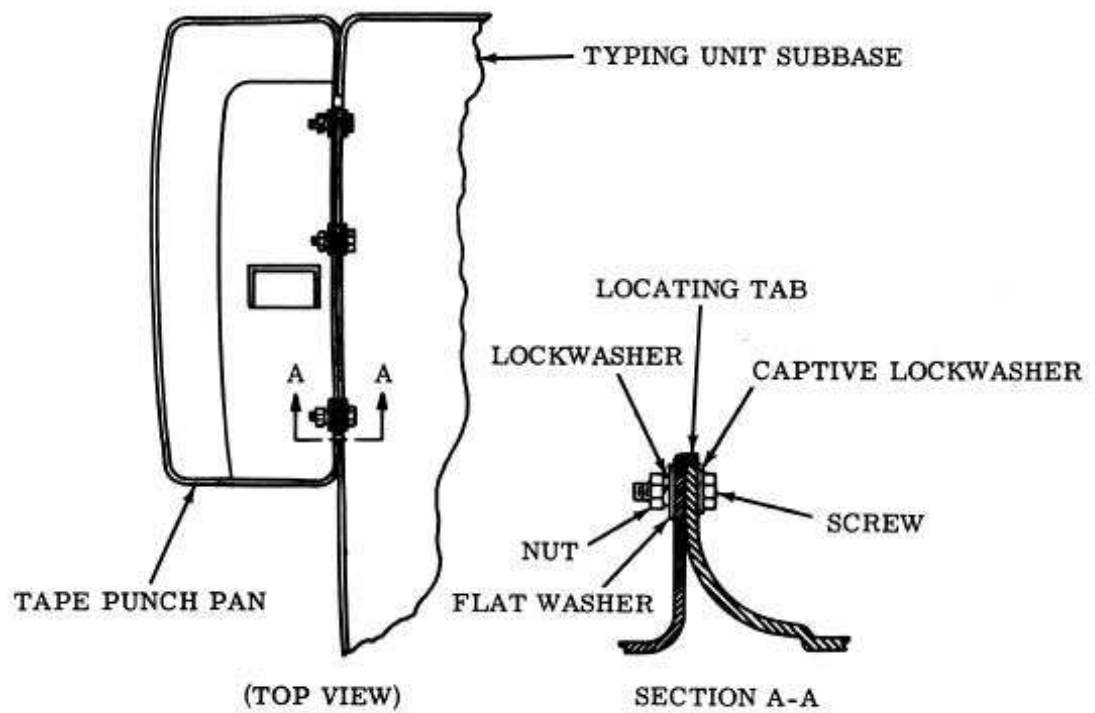


Figure 7 — Tape Punch Pan