

28 TYPING REPERFORATOR AND TAPE PRINTER KEYBOARDS

DISASSEMBLY AND REASSEMBLY

CONTENTS	PAGE
1. GENERAL.....	1
2. BASIC UNITS.....	1
SIGNAL GENERATOR.....	1
KEYBOARD.....	4
CHARACTER COUNTER.....	5
TAPE CONTAINER.....	5

1. GENERAL

1.01 This section provides disassembly and reassembly for the 28 typing reperforator and tape printer keyboards.

1.02 Disassembly as outlined in this section covers a procedure for removing the principal subassemblies which make up the unit.

1.03 Refer to the exploded views found in the appropriate parts literature for illustrations of the mechanisms to be disassembled, for location and visual identification of parts and detailed disassembly and reassembly features.

1.04 Most maintenance, lubrication and adjustments can be accomplished simply by removing the unit from the enclosure. If possible, disassembly should be confined to subassemblies, which can, in some cases, be removed without disturbing adjustments. When reassembling the subassemblies, be sure to check all associated adjustments, clearances and spring tensions.

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

1.06 Retaining rings are made of spring steel and have a tendency to release suddenly when being removed. Loss of these retainers can be minimized as follows: Hold the retainer with the left hand to prevent it from rotating. Place the blade of a suitable screwdriver in one of the slots of the retainer. Rotate the screwdriver in a direction to increase the diameter of the retainer for removal.

1.07 Avoid loss of springs in disassembly by holding one spring loop with the left hand while gently removing the opposite loop with a spring hook. Do not stretch or distort springs in removing them.

1.08 In removing a subassembly from the unit, the procedure followed and the location from which parts are removed must be carefully noted so that reassembly can be done correctly. Where no specific instructions are given for reassembly reverse the procedure used in removing it.

2. BASIC UNITS

SIGNAL GENERATOR

2.01 To remove the signal generator assembly:

(a) Remove the subcasting assembly with the typing reperforator.

(b) Remove the TP154131 contact box cover and disconnect the signal line leads. Pull up on the line cable, with its strain relief and grommet intact, and push it aside out of the way.

(c) Remove two mounting screws at front of the TP170385 signal generator frame casting and one at the rear.

(d) Lift the signal generator carefully, while holding the universal bail back so that the nonrepeat lever clears and its spring is not excessively stretched.

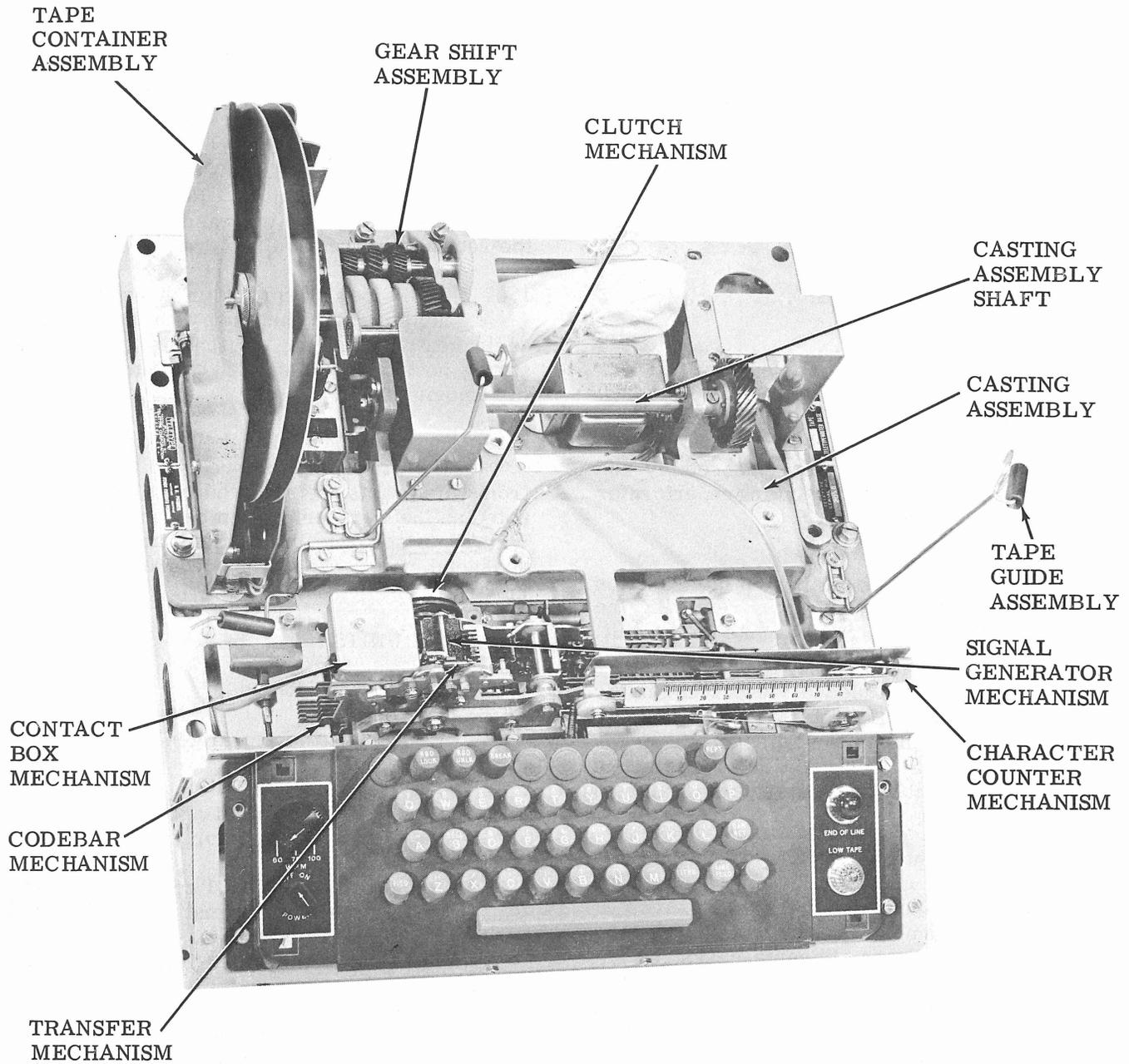


Figure 1 - 28 Tape Printer Keyboard (28 Typing Reperforator Keyboard is similar to the 28 Tape Printer Keyboard)

CAUTION: PREVENT THE NONREPEAT LEVER FROM BEING PULLED TOO FAR DOWNWARD. IF IT IS PULLED DOWNWARD AS MUCH AS 90 DEGREES FROM ITS OPERATING POSITION, THE SPRING WILL BE STRESSED BEYOND ITS ELASTIC LIMIT. MAKE SURE THE LEVER IS IN ITS SLOT BEFORE SETTING IT DOWN.

2.02 To disassemble the signal generator for replacing parts, the following procedure should be used:

- (a) Disconnect the suppressor leads at the contact terminals.
- (b) Unhook the drive link spring. Remove the two contact box bracket mounting screws. Disengage the drive link from the transfer bail and lift the contact box off.
- (c) Remove the locknut from the top of the phenolic block. Turn the box over and remove the two screws which secure the contact assembly in place. Slip the drive link out through the slot in the contact box and disconnect the link from the contact toggle by removing the connecting screw and insulator bushing.
- (d) To remove the TP154034 clutch stop lever, unhook the spring and unscrew the adjusting screw.
- (e) To remove the TP154237 nonrepeat lever, unscrew the locknut and remove the shoulder mounting screw.
- (f) To remove the TP154010 transfer bail, unhook the drive link spring. Remove the locknut at the end of the transfer bail shaft on the front plate of the signal generator. Disengage the drive link from the transfer bail and pull the bail and shaft toward the rear.
- (g) To remove the TP154036 detent plate, after the transfer bail and shaft have been taken out, remove the two detent plate mounting screws on the front plate of the signal generator. Disengage the drive link from the transfer bail and pull the bail and shaft toward the rear.
- (h) To remove the TP158268 codebar bail latch, remove the retainer from the end of its stud. Unhook the spring from the latch. Strip the latch off to allow the codebar bail to

move to its extreme right-hand position. Work the latch to the front off its stud.

(i) To remove the TP154236 universal bail latchlever after the nonrepeat lever mechanism is removed, unhook the spring. Remove the mounting screw and eccentric bushing. Move the latchlever toward the rear to extract it from its slot.

(j) To remove the TP154040 transfer levers:

(1) Trip the clutch and rotate the shaft approximately 270 degrees. Unhook the locking bail spring. The locking bail can be dropped down and unhooked from the guide post under the cam. Reach underneath the assembly and turn the locking bail clockwise. It may be necessary to move the gear back and forth to get clearance to drop the locking bail out of the upper guide post through the bottom of the assembly.

(2) Remove the screws from the upper right-hand TP170391 transfer lever guide, and rotate the guide about the locking bail spring post so that it does not interfere with removing the transfer lever.

(3) Remove the transfer lever springs. Remove the screw and lockwasher from the right angle clamp in back of rear plate. Remove the nut and lockwasher from the TP154018 locking bail post. Remove the nut from the rear end of the TP154014 guide post. The nut on the rear end of the TP154015 codebar bail mounting post should be loosened to the end of the threads on the post.

(4) Drop the transfer lever. Reach under the cam with a pair of tweezers and remove the oil wicks.

(5) Unhook the transfer levers from the lower guide post and pull them up out of the assembly one at a time from rear to front. If the same levers are to go back into the assembly, number them in a manner to insure replacement in the same sequence.

(k) To remove the cam shaft assembly:

(1) With the locking bail removed, remove the two screws from the TP154101 rear gear plate, and the nut from the front end of the shaft.

(2) Hold the stop lever and latchlever out of the way and pull rearward on the shaft assembly to disengage it from the front plate. The entire cam clutch and shaft assembly can be removed toward the rear by gently rotating rearward. The eccentric follower arm and spacer washers will fall free and must be carefully positioned when reassembling.

(3) To remove the cam (with clutch) from the shaft, disengage the clutch by holding the clutch shoe lever against the stop-lug and sliding the cam off the shaft. For ease of reassembly, tie the clutch shoe lever and stop-lug together with wire. Place the shaft in first.

(4) After the cam and clutch assembly are removed, the clutch itself may be disassembled from the cam. To do so, carefully remove the springs. Remove the clutch shoes. Remove the two clamp screws in the clutch disc, and then remove the disc. The clutch disc can then be removed from the cam by removing the two screws securing it to the cam.

Note: If a new cam is being installed, the clutch shoes and disc should be tried in their respective grooves to see that they move freely before reassembly.

(1) To remove the TP154234 codebar bail, unhook its spring. Remove the locknut at the front and rear ends of the TP154015 pivot shaft. Remove the locknut from the rear end of the TP154014 transfer lever guide post (if these nuts have not already been removed). Pull the rear plate toward the rear until the codebar bail pivot post clears sufficiently to be removed.

KEYBOARD

2.03 To disassemble the keyboard assembly for replacing parts, two procedures may be followed: (a) With keyboard removed from base; (b) With keyboard attached to base.

(a) Keyboard removed from base.

(1) To remove the keyboard from the base, remove the four screws which hold the front frame to the front of the base.

(2) From the top of the base remove the two screws with flat washers at the right and left rear side of the codebar assembly brackets. Remove the two screws at the extreme left and right ends of the right angle bracket at the front of the codebar assembly. Remove the screw and cable clamp at the left of this bracket.

(3) When these eight screws have been removed, the keyboard assembly can be removed from the base by tipping it forward so as to disengage the function bails, so that they may be replaced correctly when reassembling.

(4) Remove the four screws from the spacebar. Lift spacebar out. Remove the four screws from the plastic keylever guide plate. Lift the guide plate out.

(5) To remove a keylever assembly, hook the end lug of the TP151383 keylever remover over the top of its associated codelever and the other lug in the slot of the keylever. A pull forward will snap each keylever from its pivot stud on the codelever.

(6) Disconnect the TP154021 space bail link at its codelever by removing its retainer. Remove the screw at each end of the lockball track to remove the track. The TP154080 wedge locks (32 in number) may then be removed from their codelevers.

(7) To remove the codebars after the signal generator has been removed, unhook the codebar springs from the spring bracket at the right end. Leave springs on codebars. Loosen the adjusting screws at the right and left end bracket. Lift the codebar guides to the top limit of their adjusting slots. Move the codebar to the right until it clears the left-hand guide. Lift the codebar slightly and move it to the left until it clears the right-hand guide.

(8) To remove a function lever or codelever after the keyboard assembly has been dismantled to the keylever guide assembly stage and the codebars have been removed, turn the assembly upside down. Remove all codelever springs. Remove the inner retainer from the pivot shaft and pull

the shaft out until the levers are free. Remove the levers toward the front.

- (b) With keyboard attached to base.
- (1) To remove a keylever assembly, hook the end lug of the TP151383 keylever remover over the top of its associated codelever and the other lug in the slot of the keylever. A pull forward will snap each keylever from its pivot stud on the codelever.
 - (2) To remove the lockball channel, remove the screws at each end of the wedge retainer plate. Loosen the clamp at the center. As the wedge retainer is removed note the number of spacer washers at each end. Remove the mounting screws at each end of the lockball bar assembly to free it from the keyboard.
 - (3) The 43 lockballs can be removed by taking the adjusting screw out at the end channel and permitting the balls to roll out.
 - (4) Remove the pivot screws which fasten the spacebar assembly to the spacebar bail. Remove the hold-down screw located under the spacebar, and the two screws at each end of the keylever guide plate. Work the guide plate upward and off the keylevers.
 - (5) To remove the universal bail, set the keyboard up vertically on its rear side using the motor as a prop. Remove the bail spring. Loosen the locknut on each universal bail pilot screw. Back off one pivot screw and lift the bail out.
 - (6) To reinstall the keylever guide plate with the keylevers attached, flip them all toward the rear. Place the front edge of the guide plate on the frame and push the keylevers of the front row into their respective holes. Then work in the second and third rows in a similar manner.

CHARACTER COUNTER

2.04 To disassemble the character counter from the keyboard base, remove the two hold-down screws, lift up the character counter and remove the two screws holding the end-of-line switch to its bracket.

- (a) To disassemble the ratchet drum assembly:
 - (1) Remove the two screws holding clamp to assembly and remove clamp.
 - (2) Remove the cam plate. The indicator and cord assembly may be removed at this point.
 - (3) Remove the retaining ring and washer. The ratchet and drum can now be removed.
- (b) To remove the idler pulley, remove the locknut holding the idler pulley bearing stud to the frame.
- (c) To disassemble the reset bail and feed bail from the character counter frame, remove the retaining ring and slide the bails from the pivot stud. Note carefully the position of the spacing washer between the feed and reset bail and replace accordingly.
- (d) To remove the reset lever assembly remove the bearing stud. Note the position of the spacing washer and replace accordingly.
- (e) While performing the disassembly procedure on the character counter, the various pivot points of the mechanism should be inspected carefully to determine whether any signs of wear or deficient lubrication (red rust) can be detected. The cord assembly should be inspected for signs of wear (fraying) and to be sure that the drive and latch levers do not strike the cord.

TAPE CONTAINER

2.05 To remove the tape container assembly remove the two screws, lockwashers and flat washers that secure it to the base.