

35 KEYBOARD FOR AUTOMATIC SEND-RECEIVE SET  
DISASSEMBLY AND REASSEMBLY

CONTENTS	PAGE
1. GENERAL . . . . .	1
2. DISASSEMBLY AND REASSEMBLY . .	1
SIGNAL GENERATOR . . . . .	1
KEYBOARD . . . . .	4

1. GENERAL

1.01 Disassembly, as outlined in this section, covers a procedure for removing the principal sub-assemblies which make up the unit.

1.02 The technician should refer to the exploded views found in the appropriate parts literature for an illustration of the mechanism to be disassembled, for location and visual identification of parts and detailed disassembly and reassembly features.

1.03 Most maintenance, lubrication and adjustments can be accomplished simply by removing the subject component from the cabinet. If possible, disassembly should be confined to sub-assemblies, which can, in some cases, be removed without disturbing adjustments. When reassembling the sub-assemblies, be sure to check all associated adjustments, clearances and spring tensions.

1.04 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.

1.05 Retaining rings (Tru-arcs) 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.

1.06 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.

1.07 Raise cabinet lid or enclosure cover (after removing the control panel bezel) and remove the typing unit from its base by removing the four screws that secure it to its keyboard or base. Remove the cable plug connector from the side frame. Lift the typing unit off.

Note: On sets equipped with a form supply container on the rear of the cabinet, rearward foot extensions should be in position to prevent the cabinet from tilting when any of the components are removed.

1.08 Remove the four TP151549 screws that secure the base to the cradle or sub-base. Disconnect the cable plug from the connector at the rear of the keyboard base. Remove the base with the motor unit and non-typing perforator still in position.

2. DISASSEMBLY AND REASSEMBLY

2.01 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.

SIGNAL GENERATOR

2.02 To Remove: Take cover off contact box 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.

2.03 Remove two mounting screws at front of the signal generator frame casting and one at the rear.

2.04 Hold the TP170372 universal bail back so that the TP170392 non-repeat lever clears, without stretching its spring, when the signal generator is lifted out.

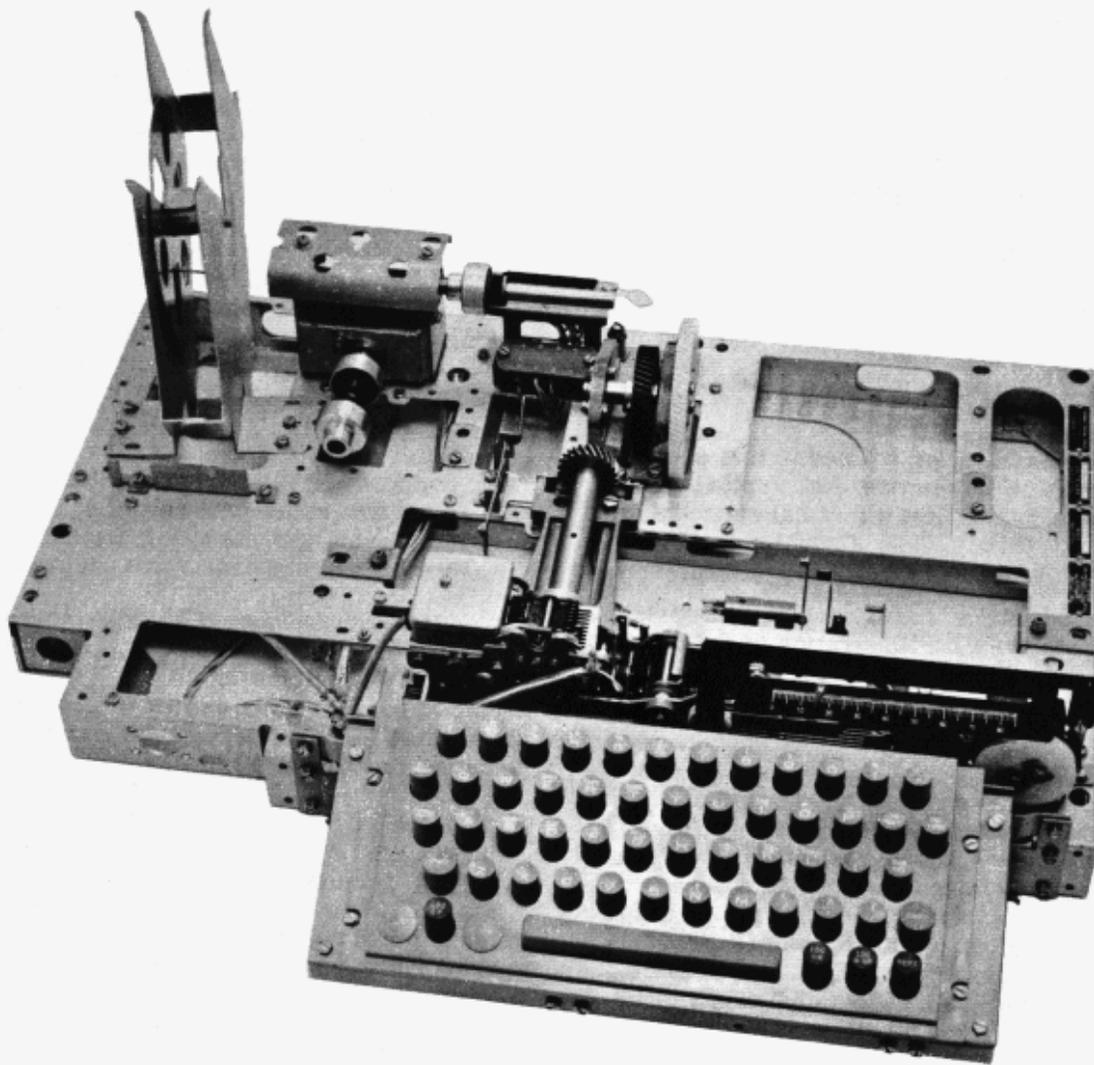


Figure 1 - 35 Keyboard for ASR Set

**CAUTION: PREVENT THE NON-REPEAT LEVER FROM BEING PULLED TOO FAR DOWNWARD. IF IT IS PULLED DOWNWARD AS MUCH AS 90° 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.**

2.05 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 lock nut 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 arm, unhook the spring and unscrew the adjusting screw.
- (e) To remove the TP170392 non-repeat lever, unscrew the lock nut and remove the shoulder mounting screw.
- (f) To remove the TP154010 transfer ball, unhook the drive link spring. Remove the lock nut at the end of the transfer ball shaft on the front plate of the signal generator. Disengage the drive link from the transfer ball 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. The detent plate assembly can then be lifted out of place. The TP156516 detent latches can then be taken off by removing the retainer from the studs.
- (h) To remove the TP158268 code bar ball latch, remove the retainer from the end of its stud. Unhook the spring from the latch. Strip the latch off to allow the code bar ball

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

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

(j) To remove the TP160090 transfer levers:

- (1) Trip the clutch and rotate the shaft approximately 270 degrees. Unhook the locking ball spring. The locking ball can be dropped down and unhooked from the guide post under the cam. Reach underneath the assembly and turn the locking ball clockwise. It may be necessary to move the gear back and forth to get clearance to drop the locking ball 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 ball spring post so that it does not interfere with removing the transfer lever.
  - (3) Remove the transfer lever springs. Remove the TP151631 screw and lock washer from the TP154094 right angle clamp in back of rear plate. Remove the TP3599 nut and lock washer from the TP192534 locking bail post. Remove the nut from the rear end of the TP170388 guide post. Loosen the end of the threads the nut on the rear end of TP154015 code bar bail mounting post. Remove the TP192589 stop pin.
  - (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 ball removed, remove the two screws from the TP154101

## SECTION 574-222-702

rear gear plate, and the nut from the front end of the shaft.

(2) Hold the stop lever and latch lever 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 disk, and then remove the disk. The clutch disk 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 disk should be tried in their respective grooves to see that they move freely before reassembly.

(1) To remove the TP154240 code bar ball, unhook its spring. Remove the lock nut at the front and rear ends of the TP154015 pivot shaft. Remove the lock nut from the rear end of the TP170388 transfer lever guide post. Remove the nut from the rear end of the TP192534 upper locking bail guide post (if these nuts have not already been removed). Pull the rear plate toward the rear until the code bar ball pivot post clears sufficiently to be removed.

### KEYBOARD

2.06 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 code bar assembly brackets. Remove the two screws at the extreme left and right ends of the right angle bracket at the front of the code bar 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 upward slightly at the front and pulling it forward so as to disengage the function levers. Note that all the function levers are under their corresponding function balls, so that they may be replaced correctly when reassembling.

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

(5) To remove a keylever, hook one lug of the associated code lever, and the other lug in the slot of the keylever. A pull forward on the tool will snap the keylever from its code lever.

(6) Disconnect the TP154021 space ball link at its code lever by removing its retainer. Remove the screw at each end of the lock ball track to remove the track. The TP154080 wedgelocks may then be removed from their code levers.

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

(8) To remove a function lever or code lever after the keyboard assembly has been dismantled to the keylever guide assembly stage and the code bars have been removed, turn the assembly upside

down. Remove all code lever 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 keylever remover over the top of its associated code lever and the other lug in the slot of the keylever. A pull forward will snap each keylever from its pivot stud on the code lever.

(2) To remove the lock ball channel, remove the 4-40 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 lock ball bar assembly to free it from the keyboard.

(3) The 53 lock balls 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 space bar assembly to the space bar bail. Remove the hold-down screw located under the space bar, 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 lock nut on each universal bail pilot screw. Back off one pilot 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, third and fourth rows in a similar manner.

2.07 To remove the character counter, take out the two screws which fasten the TP179279 character counter bracket to the base and lift the assembly out.