

28 TELETYPEWRITER BASE (KSR AND RO)

DISASSEMBLY AND REASSEMBLY

| CONTENTS | PAGE | CONTENTS | PAGE |
|---|------|--|------|
| 1. GENERAL | 1 | Label cover | 4 |
| 2. DISASSEMBLY AND REASSEMBLY . . | 2 | Local line feed mechanism | 5 |
| A. Later Design, Keyboard (KSR) and Receive-Only Base (RO) | 2 | Sealing plate | 5 |
| Keyboard assembly | 2 | 1. GENERAL | |
| Keyboard front seal | 2 | 1.01 This section provides instructions for disassembly and reassembly procedure for the 28 keyboard and base units. It is reissued to bring it generally up to date and to provide more of a standard format. Since this is a gen- eral revision, marginal arrows ordinarily used to indicate changes have been omitted. | |
| Keyboard hood | 2 | 1.02 Disassembly as outlined in this section covers a procedure for removing the main subassemblies. For additional informa- tion, refer to the appropriate parts literature for exploded illustrations of mechanisms to be disassembled and for visual identification. | |
| Keyboard seal plate | 2 | 1.03 If possible, disassembly should be con- fined to subassemblies, many of which can be removed without disturbing adjustments. When reassembling the subassemblies, be sure to check all associated adjustments and spring tensions. | |
| Keytop guide plate | 3 | 1.04 Many parts are secured by retaining rings which have a tendency to release suddenly when being removed. Loss of these retainers can be minimized by placing a forefinger over the retainer; then place the blade of a suitable screwdriver in one of the slots of the retainer and rotate the screwdriver in a direction to in- crease the diameter of the retainer for removal. | |
| Label set | 2 | 1.05 The loss of tension springs may also be avoided by placing a forefinger over one end while unhooking the other end with a spring hook. Avoid stretching or mutilating the springs when removing or replacing them. | |
| Label-set window | 2 | | |
| Signal generator assembly | 2 | | |
| Signal generator contact box assembly . | 3 | | |
| Signal generator shaft and cam assembly | 3 | | |
| Transfer lever locking bail | 3 | | |
| B. Earlier Design, Keyboard (KSR) and Receive-Only Base (RO) | 3 | | |
| Keyboard (KSR) | | | |
| Codebar | 6 | | |
| Codebar assembly | 5 | | |
| Keyboard assembly | 3 | | |
| Keyboard label set | 4 | | |
| Keyboard lock mechanism | 5 | | |
| Keylever | 5 | | |
| Keylever assembly cover | 4 | | |
| Keytop guide plate | 5 | | |
| Label cover | 4 | | |
| Local line feed mechanism | 5 | | |
| Lockball channel | 5 | | |
| Sealing plate | 5 | | |
| Signal generator assembly | 4 | | |
| Signal generator shaft and cam assembly | 4 | | |
| Spacebar | 5 | | |
| Base (RO) | | | |
| Base assembly | 3 | | |
| Keyboard label set | 4 | | |
| Keyboard lock mechanism | 5 | | |
| Keylever assembly cover | 4 | | |

CAUTION: REMOVE POWER FROM UNIT.

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SECTION 573-116-702

2. DISASSEMBLY AND REASSEMBLY

Note: In the absence of reassembly notes, reassemble the mechanisms by reversing the procedure used in removing them.

- A. Later Design Keyboard - KSR (This keyboard may be identified by noting that the transfer lever locking bail locks the transfer levers underneath the top portion of the transfer lever. Refer to adjusting sections for figures.) and Receive-Only Base (RO).

2.01 Removal of Signal Generator Assembly:

- (1) Remove the typing unit, if present.
- (2) Remove the contact box cover and disconnect the signal line leads from the contact terminals.
- (3) Remove the two mounting screws at the front of the signal generator frame and the mounting screws at the right rear of the frame.
- (4) Lift the signal generator carefully, while holding the universal bail back so that the nonrepeat lever clears and its spring will not be stretched excessively.

CAUTION: IF THE NONREPEAT LEVER IS PULLED DOWN AS MUCH AS 90 DEGREES FROM ITS NORMAL POSITION, THE NONREPEAT LEVER SPRING MAY BE STRETCHED BEYOND ITS ELASTIC LIMITS. THIS MAY CAUSE A MALFUNCTION IN OPERATION OF THE UNIT.

2.02 Removal of Label Set Windows and Label Sets, Keyboard Hood, Keyboard Front Seal, and Keyboard Seal Plates:

- (1) Remove the four special screws that secure the label set windows and label sets.
- (2) Remove the two screws under the keyboard hood that hold the keyboard hood to the hood mounting bracket; and remove the four screws on top of the keyboard hood which hold it to the left and right frame mounting brackets.
- (3) Pull the keyboard hood forward and remove it.
- (4) Stretch the keyboard front seal (rubber) off the keyboard upper and lower seal plates.

- (5) Remove the four screws that retain the two hood mounting brackets and remove the brackets.

- (6) Remove the keyboard upper seal plate by unscrewing the three screws at its rear.

- (7) Remove the keyboard lower seal plate by unscrewing the two screws at its front.

2.03 Removal of Keyboard Assembly:

Note: It is easier to disassemble and reassemble the keyboard assembly when it is resting on its rear.

- (1) Remove the typing unit in accordance with the section covering disassembly and reassembly of the 28 typing unit.

- (2) Remove the signal generator assembly in accordance with 2.01.

- (3) Remove the label-set windows and label sets, the keyboard hood, keyboard front seal, and the keyboard seal plates in accordance with 2.02.

- (4) Remove the four screws that hold the left and right frame mounting brackets to the front of the keyboard base.

- (5) Remove the screws that hold the right and left codelever guide brackets on the top of the keyboard base, and the two screws, at the extreme right and left of the front bracket, which hold the front bracket to the keyboard base.

- (6) Remove the four screws in the front of the keyboard base and the four screws on top of the keyboard base.

- (7) Tip the front of the keyboard assembly upward and pull it forward, disengaging the function levers.

Reassembly Notes

Note 1: Make sure that all of the function levers except the keyboard lock function lever are under their corresponding function bails.

Note 2: Depress the keyboard lock keylever so that the keyboard lock function lever will go into its position over its bail, in-

stead of under as the other function levers should.

2.04 Removal of Signal Generator Contact Box Assembly:

- (1) Remove the signal generator contact box cover and disconnect the signal line leads.
- (2) Unhook the toggle drive link spring.
- (3) Unscrew the two screws, at the front of the signal generator frontplate, that hold the signal generator contact box assembly.
- (4) Disengage the drive link from the transfer bail and lift off the signal generator contact box assembly.

Note: If it is necessary to provide new contacts, install an entire contact assembly instead of individual contacts.

2.05 Removal of Transfer Lever Locking Bail:

- (1) Remove the signal generator assembly in accordance with 2.01.
- (2) Remove the signal generator contact box assembly in accordance with 2.04.
- (3) Remove the transfer lever locking bail spring.
- (4) Take out the transfer lever locking bail by unlatching the clutch and rotating the shaft to position the cam in such a way that the transfer lever locking bail can be unhooked and dropped down from its guide post. Turn the transfer lever locking bail clockwise until it forms a right angle with its guide, and then remove it through the bottom of the frame.

Reassembly Note: It may be necessary to move the shaft back and forth to position the cam for maximum clearance.

2.06 Removal of Signal Generator Shaft and Cam Assembly:

- (1) Remove the transfer lever locking bail in accordance with 2.05.
- (2) Remove the two screws that mount the clutch shaft rear mounting plate to the signal generator frame, and remove the nut that locks the shaft to the front of the frame.
- (3) Hold the clutch latch lever and the clutch stop lever away and pull back on the clutch shaft rear mounting plate to disengage the shaft from the front plate.

- (4) Remove the entire cam, clutch, and shaft assembly by rotating it to clear the various transfer levers. The codebar bail eccentric follower, the felt washer, and the cam spacer will fall free.

- (5) To take the cam (with clutch assembly) off the shaft, disengage the clutch by holding the clutch shoe lever against the stop lug, and slide the cam and clutch off.

Reassembly Note: Reposition the codebar-bail eccentric follower, felt washer, and cam spacer before reassembling the signal generator cam and shaft assembly.

2.07 Removal of Keytop Guide Plate:

- (1) Remove the label set windows, label sets, and keyboard hood in accordance with 2.02.
- (2) Remove the spacebar by unscrewing the two shoulder screws that fasten it to the spacebar bail.
- (3) Remove the screw from under the spacebar on the keytop guide plate and remove the two screws, in the upper corners of the keytop guide plate, which hold the keytop guide plate to the frame.
- (4) Remove the keytop guide plate by working it off the keytops. (Let the key levers fall freely.)

Reassembly Note: Position all of the key levers to the rear. Place the front end of keytop guide plate down on the frame; and push the key levers into their respective holes, starting with the bottom row and proceeding upward toward the top row.

- B. Earlier Design Keyboard - KSR (This keyboard may be identified by noting that the transfer lever locking bail locks the transfer levers at the top of the transfer levers. Refer to adjusting section for figures.) and Receive-Only Base (RO)

2.08 Removal of Keyboard or Base Assembly:

- (1) Remove the typing unit, if present, in accordance with the section covering disassembly and reassembly of the 28 typing unit.
- (2) Remove the four screws (one at each corner of the keyboard or base) that secure the keyboard or base to the cradle assembly.

SECTION 573-116-702

- (3) Remove the keyboard plug connector from its keyboard receptacle connector on the left rear corner of the keyboard or base.
- (4) Lift the keyboard or base from the cradle assembly.

2.09 Removal of Signal Generator Assembly (Keyboard):

- (1) Remove the typing unit in accordance with the section covering disassembly and reassembly of the 28 typing unit.
- (2) Remove the signal generator guard bracket, if present.
- (3) Remove the two screws located to the right and left of the contact box and raise the contact box. (Do not unsolder the connections if the contact box is connected to metal tubing.) If the wire connections to the contact box are flexible, unsolder the wires inside the box and do not remove the contact box.
- (4) Remove the four screws that mount the signal generator casting (two at the front of the casting and two at the rear). If the keyboard is equipped with an electrical signal line break mechanism, remove the mechanism by removing its two mounting screws.
- (5) Lift the signal generator upward from the keyboard.

Reassembly Notes

Note 1: Position the codebar bail latch under the codelever bail latchlever, in the notches of all the codebars, and in the notches of the tripbar and upstop bar.

Note 2: Put the breakrod in its guide hole.

Note 3: Place the clutch tripbail extension in the clutch tripbar notch.

Note 4: Recheck the nonrepeat lever adjustments, the generator contact adjustment, the contact box spring tension, and the codelever guide adjustment as specified for keyboards of this design in the section giving the requirements for the 28 teletypewriter base (KSR or RO).

2.10 Removal of Signal Generator Shaft and Cam Assembly (Keyboard):

- (1) Remove the signal generator in accordance with 2.09.
- (2) Disconnect the clutch latchlever spring.
- (3) Disconnect the clutch stoplever spring.
- (4) Disconnect the flutter lever spring.
- (5) Remove the front nut of the signal generator shaft.
- (6) Remove the two screws that hold the signal generator rear plate to the casting.
- (7) Remove the signal generator shaft assembly by lifting it upward and pulling it to the rear simultaneously.
- (8) Remove the signal generator cam assembly.

Reassembly Note: Check that the clutch is fully seated and engages the drum.

2.11 Removal of Label Cover and Keyboard Label Set (Keyboard or Base):

- (1) Remove the label mounting screw (or screws).
- (2) Picking up the label cover at the top edge first, remove the cover and the keyboard label set.

2.12 Removal of Keylever Assembly Cover (Keyboard or Base):

- (a) Keyboard
 - (1) Remove the label cover and the keyboard label set in accordance with 2.11.
 - (2) Remove the four screws located under the keyboard label set (two at the extreme right side and two at the extreme left).

Note: Support the keylever assembly cover while removing the screws.

 - (3) Pull the keylever assembly cover forward to remove it.
- (b) Base
 - (1) Remove the two screws located inside the sealing plate (one at the right side and one at the left).

(2) Remove the keylever assembly cover by pulling it forward and downward to disengage it from the two studs near the bottom.

2.13 Removal of Keylever (Keyboard)

(1) Insert the small lug of the TP151383 keylever remover tool in the slot of the keylever and engage the shoulder of the larger lug on the top of the codelever. Pry upward to snap the keylever from the stud on its codelever.

(2) Remove the keylever. (The plastic keytop should not be removed from any keylever to change a character.)

Reassembly Notes

Note 1: Support the codelever so that it will not be forced down when the keylever is later re-engaged with the stud on its codelever.

Note 2: Make sure that the keylever is restored to its proper position in the keytop guide plate.

2.14 Removal of Spacebar (Keyboard):

(1) Remove the keylever assembly cover in accordance with 2.12(a).

(2) Remove the two shoulder screws on the left and right sides of the spacebar.

(3) Remove the spacebar.

2.15 Removal of Keytop Guide Plate (Keyboard):

(1) Remove the keylever assembly cover in accordance with 2.12(a).

(2) Remove the spacebar in accordance with 2.14.

(3) Remove the six mounting screws located on the top of the keytop guide plate.

(4) Remove the keytop guide plate.

2.16 Removal of Lockball Channel (Keyboard):

(1) Remove the keylever assembly cover in accordance with 2.12(a).

(2) Remove the two lockball channel mounting screws at the right and left ends.

(3) Pull the lockball channel forward, being careful not to drop any of the wedges that are located on the codelevers.

Reassembly Note: Reinstall the wedges individually.

2.17 Removal of Sealing Plate (Keyboard or Base):

(1) Remove the keylever assembly cover in accordance with 2.12.

(2) Remove the keylevers (keyboard only) in accordance with 2.13.

(3) Disconnect the space codelever extension (keyboard only) at its snap connection.

(4) Remove all the sealing plate mounting screws.

(5) Remove the sealing plate.

2.18 Removal of Keyboard Lock and Local Line Feed Mechanism (Keyboard and Base):

(1) Remove the signal generator (keyboard only) in accordance with 2.09.

(2) Unhook the codelever bail spring from the codelever bail (keyboard only).

(3) Loosen the two pilot screws and remove the codelever bail (keyboard only).

(4) Remove the retaining ring from the local line feed tripbail.

(5) Remove the two mounting screws and remove the keyboard lock and local line-feed mechanism through the hole in the bottom of the keyboard or base.

2.19 Removal of Codebar Assembly (Keyboard):

(1) Remove the keylever assembly cover in accordance with 2.12(a).

(2) Remove the keylevers in accordance with 2.13.

(3) Disconnect the space codelever extension at its snap connection.

(4) Remove the signal generator in accordance with 2.09.

SECTION 573-116-702

- (5) Remove the four codebar-assembly mounting screws located on top of the codebar frame.
- (6) Remove the two screws that mount the carriage-return bracket, and remove the carriage-return bracket.
- (7) Remove the keyboard-lock and local line-feed mechanism in accordance with 2.18.
- (8) Remove the nut that secures the code-lever-bail latchlever, and then remove the latchlever and its spring.
- (9) Remove the three screws that mount the nonrepeat-bellcrank mounting plate assembly, and remove the assembly.
- (10) Remove the codebar assembly through the opening in the top of the keyboard.

2.20 Removal of Codebar (Keyboard):

- (1) Remove the codebar assembly in accordance with 2.19.
- (2) Disconnect the codebar springs.
- (3) Remove the mounting screw and the lockbar pawl from the codelever guide.
- (4) Loosen the mounting screws for the left and right codebar guides until the screws are friction-tight, and lift each guide to its extreme upward position.
- (5) Slide the codebar to the left or the right so that one end of the codebar moves out of its codebar guide, and remove the codebar.