

BELL SYSTEM PRACTICES
Teletypewriter and Data Stations

SECTION P34.410
Issue 1, June, 1961
AT&TCo Standard

28 SEQUENCE SELECTOR UNIT AND BASE

DISASSEMBLY AND REASSEMBLY ROUTINES

	CONTENTS	PAR. NO.
1. GENERAL	1.01
2. DISASSEMBLY AND REASSEMBLY	2.01-2.12
A. Sequence Selector Unit	2.01-2.10
Codebar Assembly	2.09
Codebar-positioning Mechanism	2.04
Function Bar	2.08
Function Contact Spring	2.07
Main Shaft Assembly	2.10
Selector Cam Clutch Assembly	2.02
Selector Magnet Assembly	2.05
Selector Mechanism	2.03
Sequence Selector Unit	2.01
Stuntbox Assembly	2.06
B. Intermediate Gear Bracket	2.11
C. Motor Unit	2.12
3. ASSOCIATED BELL SYSTEM PRACTICES	..	3.01

1. GENERAL

1.01 This section contains the specific disassembly instructions for the 28 sequence selector unit, base, gears, and motor, and where necessary, contains the detailed reassembly information. The material herein, together with the section entitled Teletypewriter Apparatus, Disassembly and Reassembly, General Information and Routines, provides the complete disassembly and reassembly information for maintenance.

2. DISASSEMBLY AND REASSEMBLY

A. Sequence Selector Unit

2.01 To remove the sequence selector unit from the sequence selector base, proceed as follows:

- (1) Disconnect all electrical connections.
- (2) Remove the four mounting screws that secure the sequence selector unit to the base.
- (3) Lift the sequence selector unit from the base.

Reassembly Notes

1. Hold the unit tilted slightly to the right and lower the right end into engagement with the right locating stud. While easing the left end down, rotate the motor by hand to mesh the gears.
2. Tighten the four mounting screws and again rotate the motor by hand to insure proper meshing of the gears.

2.02 To remove the selector cam clutch assembly, proceed as follows:

- (1) Lift the pushlever reset bail camfollower from its cam and latch it in its raised position on the pushlever guide. Lift the selector levers and the marking locklever by moving the marking locklever forward until the armature drops behind it.
- (2) Remove the screw which mounts the selector clutch drum and position the selector cam clutch so that the stop lug on the clutch cam disc is in the uppermost position.
- (3) Hold the startlever and the spacing locklever to the left, away from their cams. Grasp the cam clutch by the cam disc (not by the drum) and pull it forward while slowly rotating the cam clutch.
- (4) The cam clutch should come off easily. Do not force it.

Reassembly Notes

1. As the cam clutch approaches its fully installed position, move the tripshaft lever and the cam clutch latchlever so that they ride on their respective cams.
2. Restore the pushlever reset bail camfollower and the armature to their respective operating positions.

2.03 To remove the selector mechanism, proceed as follows:

- (1) Remove the selector cam clutch assembly in accordance with 2.02.
- (2) Remove the screw that secures the selector mechanism to the intermediate arm bracket on the codebar-positioning mechanism.

(3) Remove from the selector mechanism the common transfer lever spring which connects with the common transfer lever on the codebar-positioning mechanism.

(4) Remove the remaining three selector mounting screws and lift the selector from the main shaft bearing housing.

2.04 To remove the codebar-positioning mechanism, proceed as follows:

(1) Remove from the selector the common transfer lever spring attached to the common transfer lever and restore any operating pushlevers to the spacing position by raising the pushlever reset bail.

(2) Loosen the clamp screw on the shift-lever drive arm and remove the two screws which mount the codebar-positioning mechanism (one to the side frame and one to the selector mounting plate).

(3) Manipulate the transfer levers and the codebar shiftbars while gently twisting the mechanism off the codebar shiftbars.

(4) Remove the codebar-positioning mechanism.

Reassembly Note: With the main shaft in the stop position, push the codebar shiftbars to the marking position. Manipulate the codebar shiftbars and the transfer levers so that the shiftbars line up with their respective slots in the shiftlever guide bracket, and slide the shiftbars through the slots, one at a time (leaving the bottom slot vacant).

2.05 To remove the selector magnet assembly, proceed as follows:

(1) Remove the two screws and the nut that mount the range-finder plate to the selector mounting plate.

(2) Remove the range-finder assembly.

(3) Remove the selector magnet cable from the coil terminal screws.

(4) Remove the two selector magnet assembly mounting screws.

(5) Lift the selector magnet assembly from the sequence selector unit.

2.06 To remove the stuntbar assembly, proceed as follows:

(1) Remove the reaction bar (rod) from the side frames of the sequence selector unit.

28 SEQUENCE
SELECTOR
UNIT AND
BASE

- (2) Remove the screws that secure the stuntbox assembly in the sequence selector unit.
- (3) Remove the screw from the cam-shaft drive arm.
- (4) Slide the cam-shaft drive arm to disengage it with the stripper-bar.
- (5) Lift the stuntbox assembly upward to disengage it from its locating brackets and pull toward the rear to disengage all the codebar forks from the codebars.
- (6) Remove the contact assembly and the cable clamp from the stuntbox.
- (7) Remove the stuntbox.

Reassembly Notes

1. Push the stuntbox assembly forward in its guide rails to within $\frac{1}{8}$ inch of its final position.
2. Manually disengage the function pawls from their bars.
3. Push the stuntbox assembly forward and downward until it is latched in place on its locating brackets.

2.07 To remove a function contact spring from a function switch, proceed as follows:

- (1) Remove the stuntbox assembly in accordance with 2.06.
- (2) Carefully unsolder the cable from the terminal lug, so as to avoid damage to the cable and remove the two screws which secure the contact plate to the contact block.
- (3) Remove the contact plate with the spring and remove the contact arm from the contact block.
- (4) Slip the contact spring from the contact plate.

Reassembly Notes

1. When replacing the spring, make sure that the end of the spring rests on top of the formed-over portion of the contact clip before remounting the contact plate to the contact block. There should be some clearance between the low end of the spring (front) and the upper edge of the contact arm to avoid interference with the normal movement of the contact arm.
2. Mount the contact plate with the spring to the contact block in the required position with the two screws friction tight.
3. Carefully resolder the cable to the terminal lugs in order to avoid overheating.
4. Insert the pointed end of the contact arm, notch downward, between the bent-up end of the spring and the

formed-over portion of the contact clip. Push the arm into its operating position in the contact block.

5. Before tightening the contact plate screws verify, and if necessary remake, the function contact spring adjustment as specified in the section containing the requirements and adjustments for the 28 sequence selector unit and base.
- 2.08 **To remove the function bar**, proceed as follows:
- (1) Remove the stuntbox assembly in accordance with 2.06.
 - (2) Unhook the function bar spring.
 - (3) Hold the function bar toward the rear of the stuntbox and disengage its function pawl from the function bar.
 - (4) Pull the function bar toward the front and remove it from the stuntbox.
- 2.09 **To remove the codebar assembly**, proceed as follows:
- (1) Remove the stuntbox assembly in accordance with 2.06.
 - (2) Remove the four screws that secure the front plate to the side frames of the sequence selector unit.
 - (3) Remove the screws and the lockwashers that secure the codebar assembly to the side frame.
 - (4) Remove the codebar-shiftbar retaining plate from the right codebar guide bracket.
 - (5) Remove the codebar shiftbars and the springs from the codebars and pull the codebar assembly forward and to the left.

Reassembly Notes

1. When reinstalling the codebar assembly, insert the mounting screws, but do not tighten them.
 2. Hook the **short** extension of the spring in the spring hole of the codebar shiftbar. (The **short** extension of the spring should be hooked from the bottom of the codebar and the **long** extension should be hooked over the top of the codebar shiftbar.)
 3. Loosen the codebar-assembly tie bar screws.
 4. Firmly hold the codebar guide brackets back and downward against their locating surfaces on the side frame and fully tighten the mounting screws. Then tighten the two tie bar screws.
- 2.10 **To remove main shaft assembly**, proceed as follows:
- (1) Remove selector cam clutch assembly in accordance with 2.02.

- (2) Set the sequence selector unit upside down.
- (3) Remove the screw that secures the collar and the collar clamp from the right end of the main shaft. Remove the main shaft right-hand bearing retainer plate.
- (4) Remove the two screws from the main shaft left-hand bearing clamp.
- (5) Unhook the springs from the triplevers and latchlevers associated with all the clutches. Position the codebar clutch so that the low part of the clutch cam clears the spring arm on the camfollower.
- (6) Move the main shaft assembly toward the left to disengage the codebar-clutch and function-clutch links from their connecting pins.
- (7) Lift the left end of the main shaft assembly out of the side frame and remove the shaft assembly from the sequence selector unit.

Reassembly Notes

1. When assembling the clutches that have cams and discs marked **O** for identification, the marked side of each part should face away from the clutch side of the assembly.
2. The function and codebar clutches should have their driving links assembled so that the longer end of the hub faces away from the clutch side of the assembly.

B. Intermediate Gear Bracket

2.11 **To remove the intermediate gear bracket** from the sequence selector base, proceed as follows:

- (1) Remove the three mounting screws that secure the intermediate gear bracket to the base.
- (2) Lift the intermediate gear bracket from the sequence selector base.

Reassembly Note: Check, and if necessary remake, the intermediate gear bracket adjustment as specified in the section containing the requirements and adjustments for the 28 sequence selector unit and base.

C. Motor Unit

2.12 **To remove the motor unit** from the sequence selector base, refer to the section entitled 28 Motor Unit, Disassembly and Reassembly Routines.

3. ASSOCIATED BELL SYSTEM PRACTICES

3.01 The following Bell System Practices provide additional information that may be required in connection with this section.

<u>Subject</u>	<u>Section</u>
Teletypewriter Apparatus, Lubrication, General Information and Routines	P30.011
Teletypewriter Apparatus, General Requirements and Procedures	P30.012
Teletypewriter Apparatus, Disassembly and Reassembly, General Information and Routines	P30.013
Teletypewriter Tools and Maintenance Supplies	P30.301
Teletypewriter Apparatus, Preparation of Apparatus for Installation	P33.014
Alphabetical Index of 28-type Equipment, Bell System Practices and Associated 28 ASR Station Drawings	P34.001

28 SEQUENCE

P34.410

SELECTOR

Page 7

UNIT AND

7 Pages

BASE

