

NO. 1 ELECTRONIC SWITCHING SYSTEM ADF
FULL-DUPLEX—100 WORD PER MINUTE DATA STATION
USING 4-ROW TELETYPEWRITER
DISASSEMBLY AND REASSEMBLY

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1. GENERAL

1.01 This section describes the procedures to be followed where the disassembly and reassembly of a 33- or 35-type Teletypewriter (TTY) data station are required.

1.02 The procedures are designed to remove individual subassemblies for maintenance and/or replacement, and to reassemble the subassemblies into a complete station.

1.03 A TTY data station for 100-word per minute, full-duplex operation may consist of any of the following arrangements:

- One 33 Automatic Send and Receive (ASR) TTY and one 33 Receive Only (RO) TTY
- One 35 Automatic Send and Receive (ASR) TTY and one 35 Receive Only (RO) TTY
- 35 Receive Only Typing Reperforator (ROTR) TTY.

1.04 A TTY data station that is not complete, that is, either the transmitting or receiving

facility is not required, may consist of any one of the ASR or RO TTYs.

1.05 Table A is an equipment summary of the major subassemblies and arrangements used in the 33- and 35-type TTYs.

1.06 To reassemble the major subassemblies covered in this section, reverse the disassembly procedure.

Caution: Disconnect power cord from 117-volt ac customer receptacle before performing any procedures.

2. DISASSEMBLY OF 33 ASR AND RO TTY DATA STATION

2.01 Cover Removal—ASR and RO TTY:

- (1) Remove paper and paper roll spindle (Fig. 1).
- (2) If ASR TTY, remove LOCAL—ON LINE switch knob by loosening setscrew and pulling knob off shaft.
- (3) Remove the two screws that secure the faceplate to the cover and remove the faceplate by lifting vertically.
- (4) Remove platen knob by pulling it to the left.

Note: On sprocket feed typing units, the platen knob is held with a setscrew. Remove setscrew before removing knob.

- (5) Remove nameplate by pulling it down and out.
- (6) Remove seven mounting screws (four in front and three in rear) that fasten the TTY cover to the subbase.

TABLE A
TTY DATA STATION EQUIPMENT SUMMARY

SUBASSEMBLIES	TELETYPEWRITER ARRANGEMENT							NOTES
	STATION		STATION		STA- TION	STA- TION	STA- TION	
	33 ASR	33 RO	35 ASR	35 RO	33 RO	35 RO	35 ROTR	
804R3 Data Aux Set (Atnd Set)							X	2
804N1 Data Aux Set (Atnd Set)	X		X					1
804N2 Data Aux Set (Atnd Set)		X		X	X	X		2
820A1 Data Aux Set (Sta Controller)			X					3
820A2 Data Aux Set (Sta Controller)	X				X	X	X	3
108A Data Set	X		X		X	X	X	
Typing Unit	X	X	X	X	X	X		
Typing Reperforator							X	
Tape Reader	X							
Keyboard	X		X					
Transmitter Distributor (TD)			X					
Electrical Service Unit (ESU)			X	X			X	
48-Volt Rectifier	X	X	X	X	X	X	X	4
M36E Cord		X		X	X	X	X	5
91A Mounting Bracket	X	X			X			
92A Mounting Bracket			X	X		X		
95A Mounting Bracket							X	
KS-20018 L1, L2, L3, L4 Cabinet							X	6

Notes:

1. M24F Cord is part of this unit.
2. M24G Cord is part of this unit.
3. M3AY Cord is part of this unit.
4. 48-Volt Rectifier is part of ESU in ROTR TTY.
5. 4, 10, or 50 ft. long, as required.
6. As required.

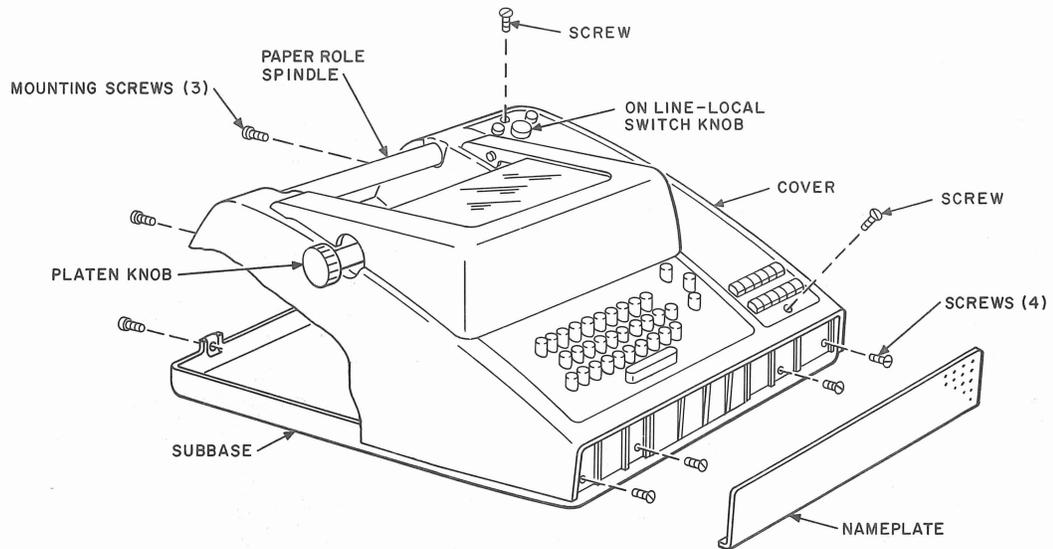


Fig. 1—33-Type TTY Data Station—Cover Removal

- (7) If ASR TTY, remove screw from the left rear corner of the tape reader cover.
- (8) Remove TTY cover by lifting vertically.

2.02 Typing Unit Removal—ASR and RO TTY:

- (1) Perform 2.01 (1) through (8).
- (2) Disconnect plugs 3, 4, and 8 from connectors on the call control unit (Fig. 2).
- (3) If ASR TTY, remove two push-on terminals from the tape reader feed magnet contact assembly (Fig. 3).
- (4) Remove the ground lug at the right rear of the typing unit.
- (5) Return the carriage mechanism fully to the left.
- (6) Insert screwdriver in H-plate and push to left against spring pressure until plate is disengaged.
- (7) Remove H-plate.
- (8) Remove typing unit from subbase by lifting vertically.

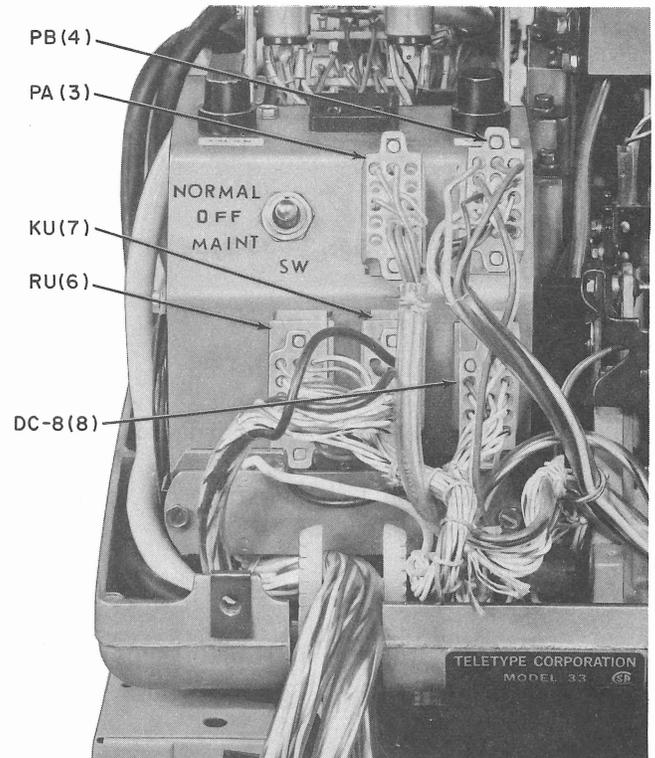


Fig. 2—33-Type TTY Data Station—Call Control Unit

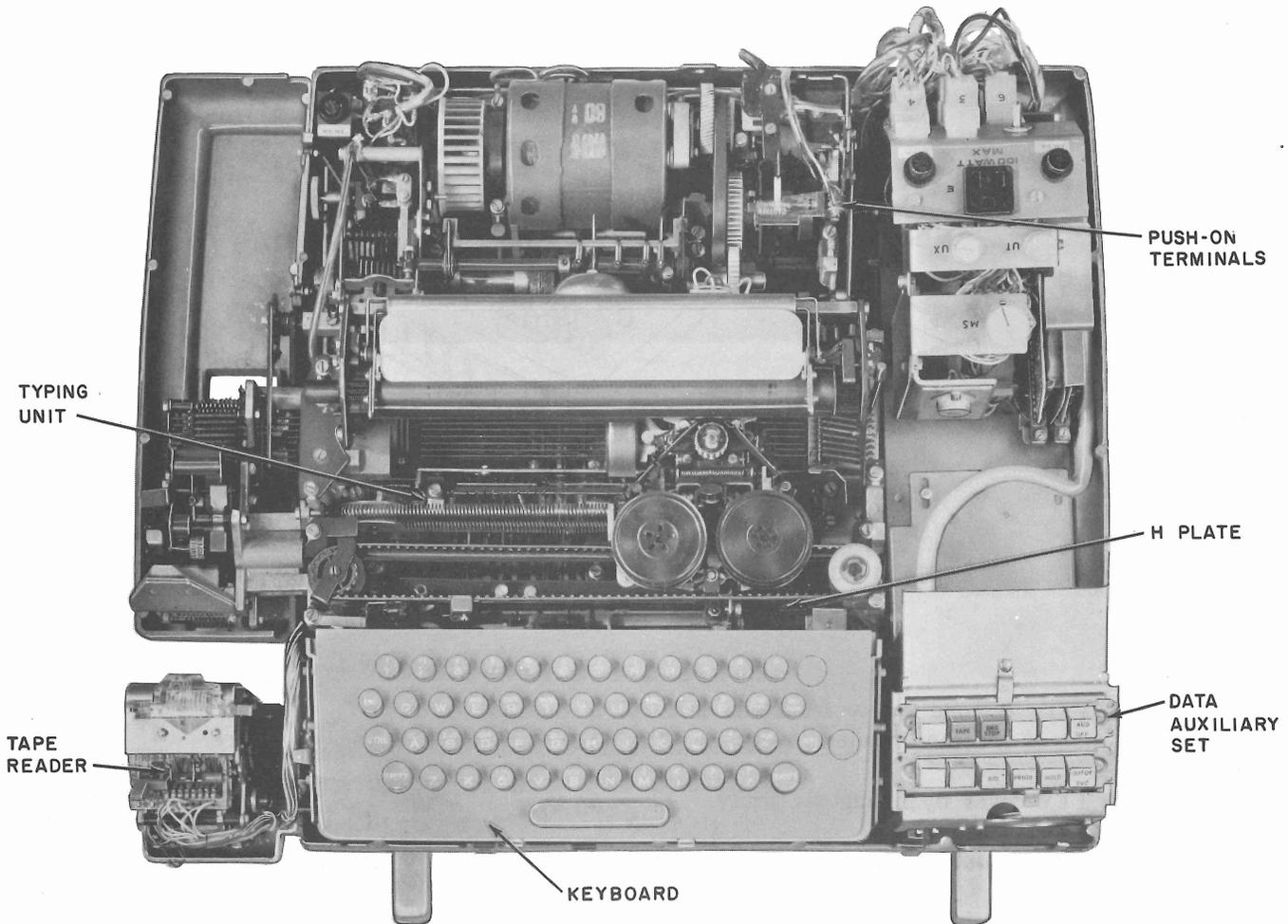


Fig. 3—33-Type TTY Data Station—Typing Unit and Keyboard

2.03 Keyboard Removal—ASR TTY:

- (1) Perform 2.01 (1) through (8).
- (2) Remove tape reader cable from side frame.
- (3) Disconnect the KU plug from its connector on the call control unit (Fig. 2).
- (4) Remove any necessary cable clamps.
- (5) Insert screwdriver in H-plate and push to left against spring pressure until plate is disengaged (Fig. 3).
- (6) Remove H-plate.
- (7) Remove the two mounting screws at the rear of the keyboard.

- (8) Slide the keyboard to the rear and disengage the locking tabs at the front of the keyboard.

- (9) Remove the keyboard by lifting vertically.

2.04 Tape Reader Removal—ASR TTY:

- (1) Perform 2.01 (1) through (8).
- (2) Perform 2.02 (1) through (8).
- (3) Remove the center mounting screw from tape reader base (Fig. 4).

Caution: Do not loosen or tighten the four adjusting screws in the tape reader base.

- (4) Remove two screws at the top of the rear cover on the TTY pedestal (Fig. 5).

- (5) Remove the rear cover by pulling the top slightly to the rear and sliding the cover up and out of the mounting flange at the TTY pedestal.
- (6) Remove the power pack in the pedestal by pulling it to the rear to disengage the spring clips.
- (7) Remove the plug from the power pack.
- (8) Remove the RU plug from the call control unit (Fig. 2).
- (9) Remove any cable clamps necessary.
- (10) Remove the tape reader and cable assembly from the TTY.

2.05 48-Volt Power Supply Removal—ASR and RO TTY:

- (1) Perform 2.01 (1) through (8).
- (2) Remove two screws at the top of the rear cover on the TTY pedestal (Fig. 5).
- (3) Remove the rear cover by pulling the top slightly to the rear and sliding the cover up and out of the mounting flange at the TTY pedestal.
- (4) Disconnect the plug and connector assembly associated with the 48-volt power supply.
- (5) Remove the 48-volt power supply and cable assembly by lifting it from the hanger bracket (Fig. 5).

2.06 Data Auxiliary Set 804N1 (Attendant Set) Removal—ASR TTY:

- (1) Perform 2.01 (1) through (8).
- (2) Remove two screws at the top of the rear cover on the TTY pedestal (Fig. 5).
- (3) Remove the rear cover by pulling the top slightly to the rear and sliding the cover up and out of the mounting flange at the TTY pedestal.

- (4) Remove the attendant set by removing the four mounting screws on the mounting plate (Fig. 6).
- (5) Move the attendant set to the right to gain access to the two left bracket assembly mounting screws.
- (6) Loosen, but do not remove, five bracket assembly mounting screws on the attendant set (Fig. 6).
- (7) Disconnect plug on the M24F cord (part of the 804N1 attendant set) from the P connector on the controller (Fig. 7).
- (8) Withdraw the cable from the pedestal of the TTY.
- (9) Remove the mounting bracket, key and lamp assembly, and loudspeaker by lifting vertically.

2.07 Data Auxiliary Set 804N2 (Attendant Set) Removal—RO TTY:

- (1) Perform 2.01 (1) through (8).
- (2) Remove the attendant set by removing the four screws on the mounting plate (Fig. 8).
- (3) Move the attendant set to the right to gain access to the two left bracket assembly mounting screws.

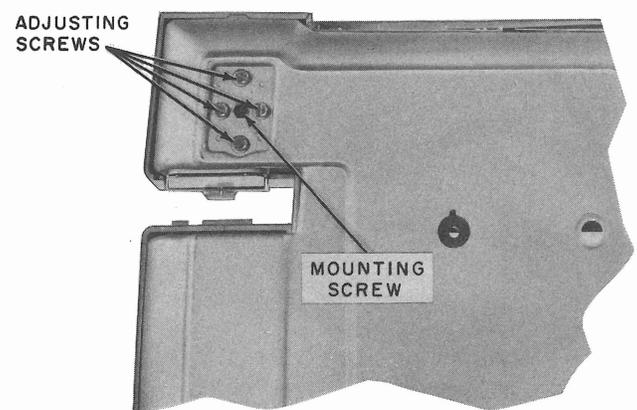


Fig. 4—33-Type TTY Data Station—Tape Reader Base

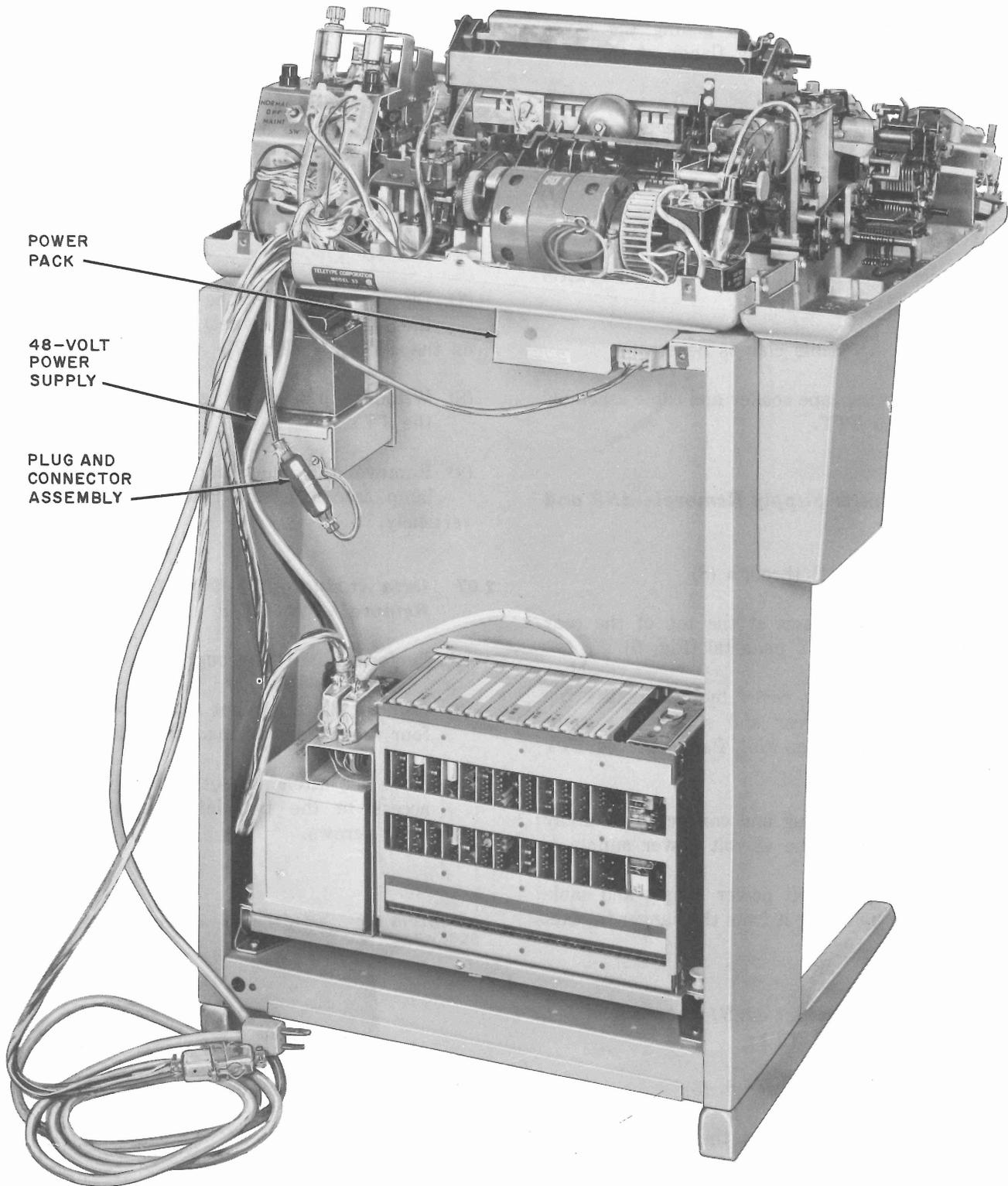


Fig. 5—33-Type TTY Data Station—Rear View

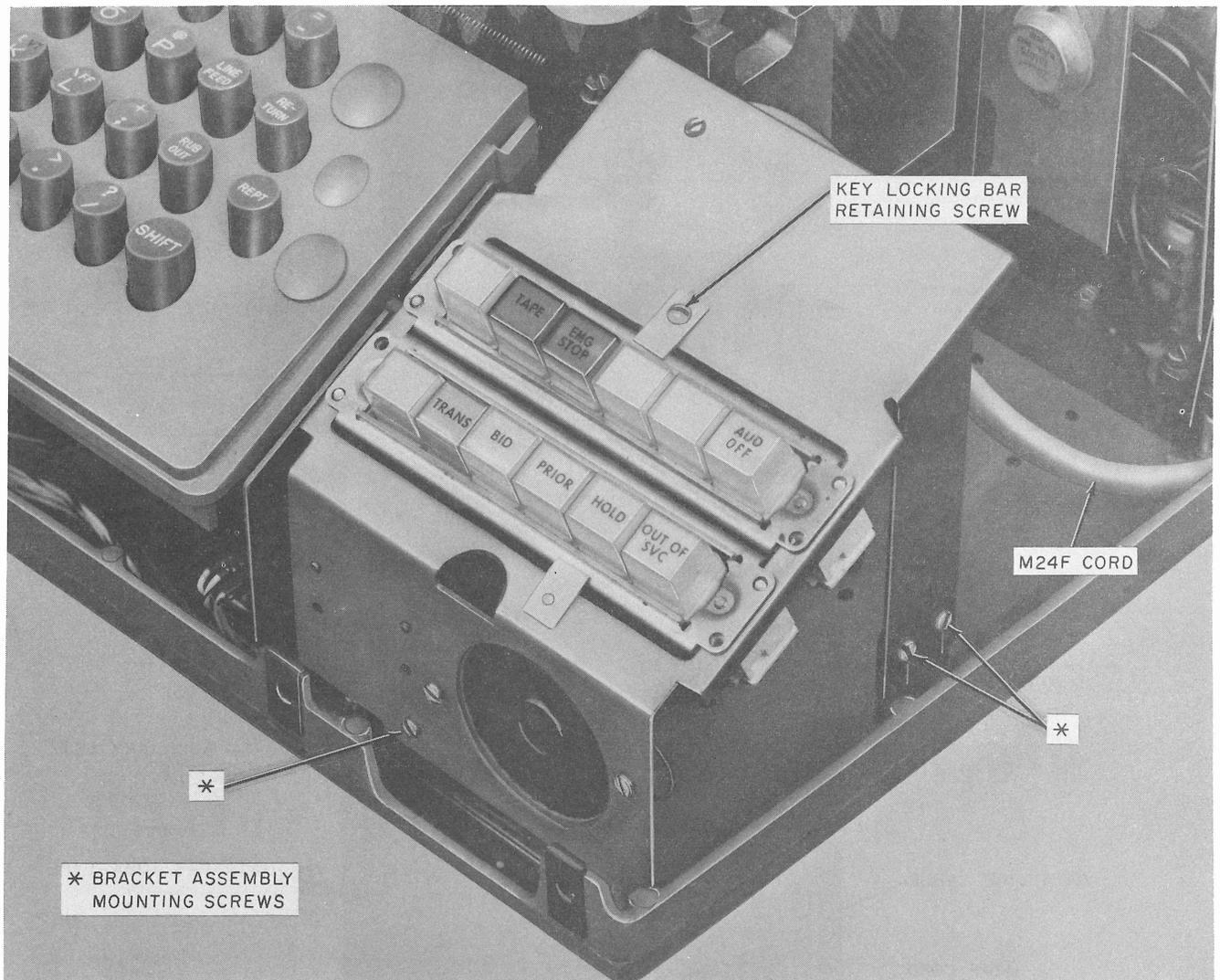


Fig. 6—33-Type TTY Data Station—Data Auxiliary Set 804N1

- (4) Loosen, but do not remove, five bracket assembly mounting screws on the attendant set (Fig. 8).
- (5) Disconnect the plug on the M24G cord (part of the 804N2 attendant set) from the connector at the rear of the attendant set.
- (6) Remove the mounting bracket, key and lamp assembly, and loudspeaker by lifting vertically.

2.08 Data Auxiliary Set 820A-Type (Controller) Removal—ASR and RO TTY:

Note: The controller mounting arrangement is the same for both the 33 ASR TTY and the 33 RO TTY. An 820A2 is used for the ASR and the RO TTY.

- (1) Remove the two screws at the top of the rear cover (Fig. 5).

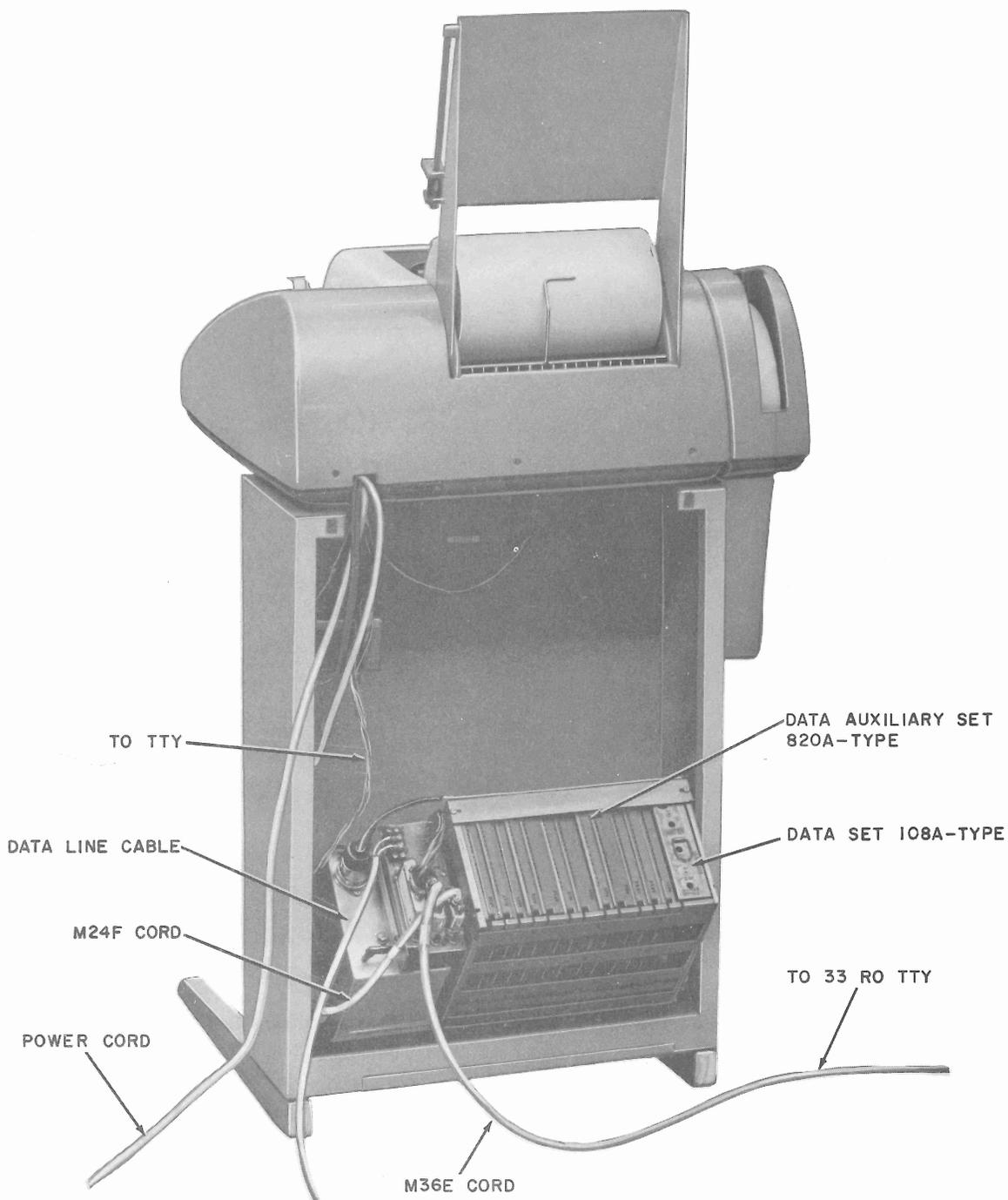


Fig. 7—33-Type TTY Data Station—Data Auxiliary Set 820A-Type

(2) Remove the rear cover by pulling the top slightly to the rear and sliding it up and out of the mounting flange at the TTY pedestal.

(3) Release the latch on the 91A bracket and pivot the controller to the maintenance position (Fig. 7).

(4) Disconnect the M, N, P, and power plugs from the controller connectors.

(5) Loosen the two screws on the controller terminal board and remove the Tip (T) and Ring (R) spade lug wiring.

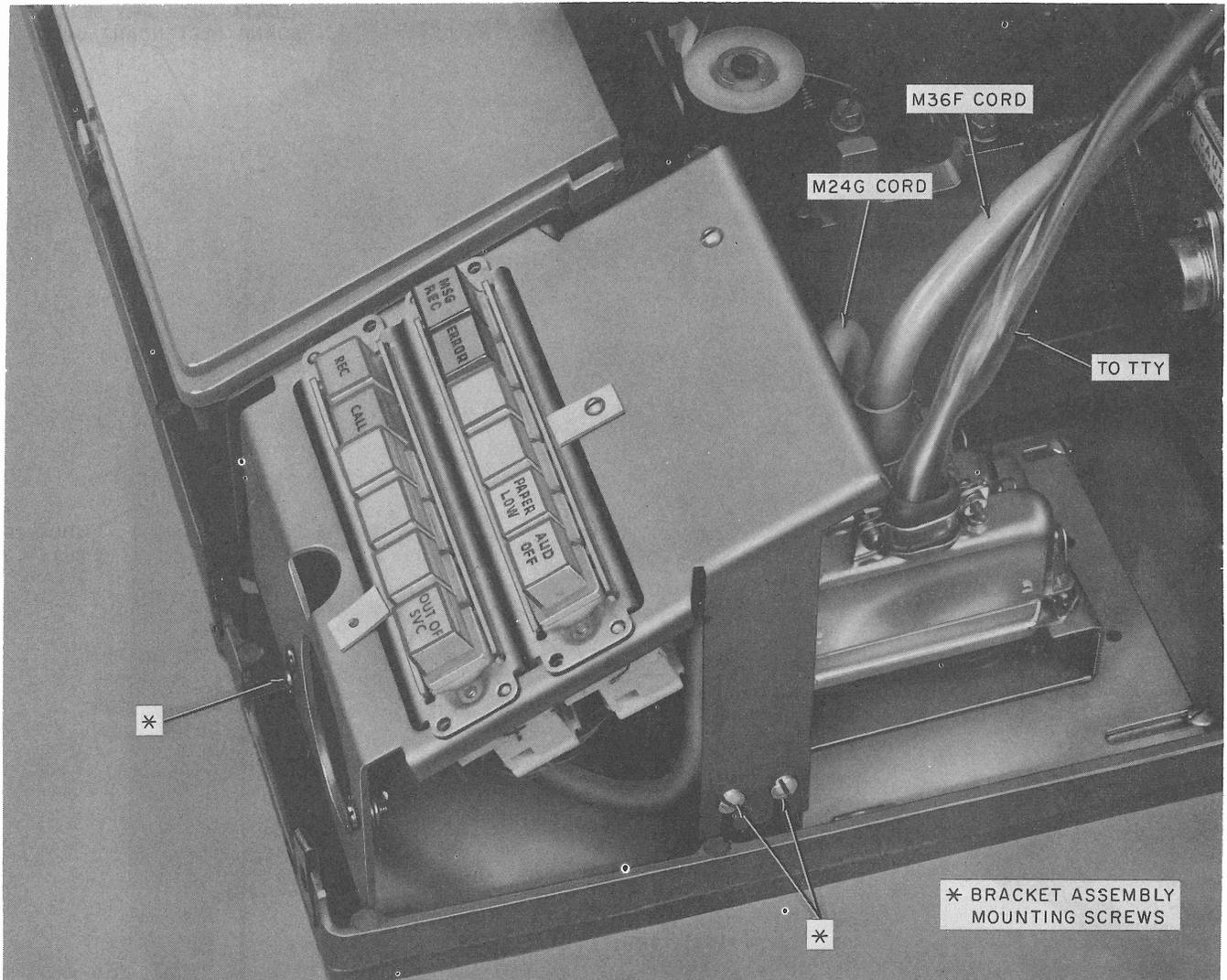


Fig. 8—33 RO TTY Data Station—Data Auxiliary Set 804N2

- (6) Return controller to the operating position and restore the latch.
 - (7) Disengage the two plungers that secure the controller to the 91A mounting bracket.
 - (8) Raise and slide the controller to disengage the controller mounting base from the 91A mounting bracket.
 - (9) Grasp the controller and remove it from TTY pedestal.
3. **DISASSEMBLY OF 35 ASR AND RO TTY DATA STATION**
 - 3.01 **Cover Removal—ASR and RO TTY:**
 - (1) Operate the two cover latches on each side of the upper cover and open the upper cover to its partially open latched position (Fig. 9 and 10).
 - (2) Remove the two screws that secure the faceplate to the lower cover and remove the faceplate by lifting vertically.

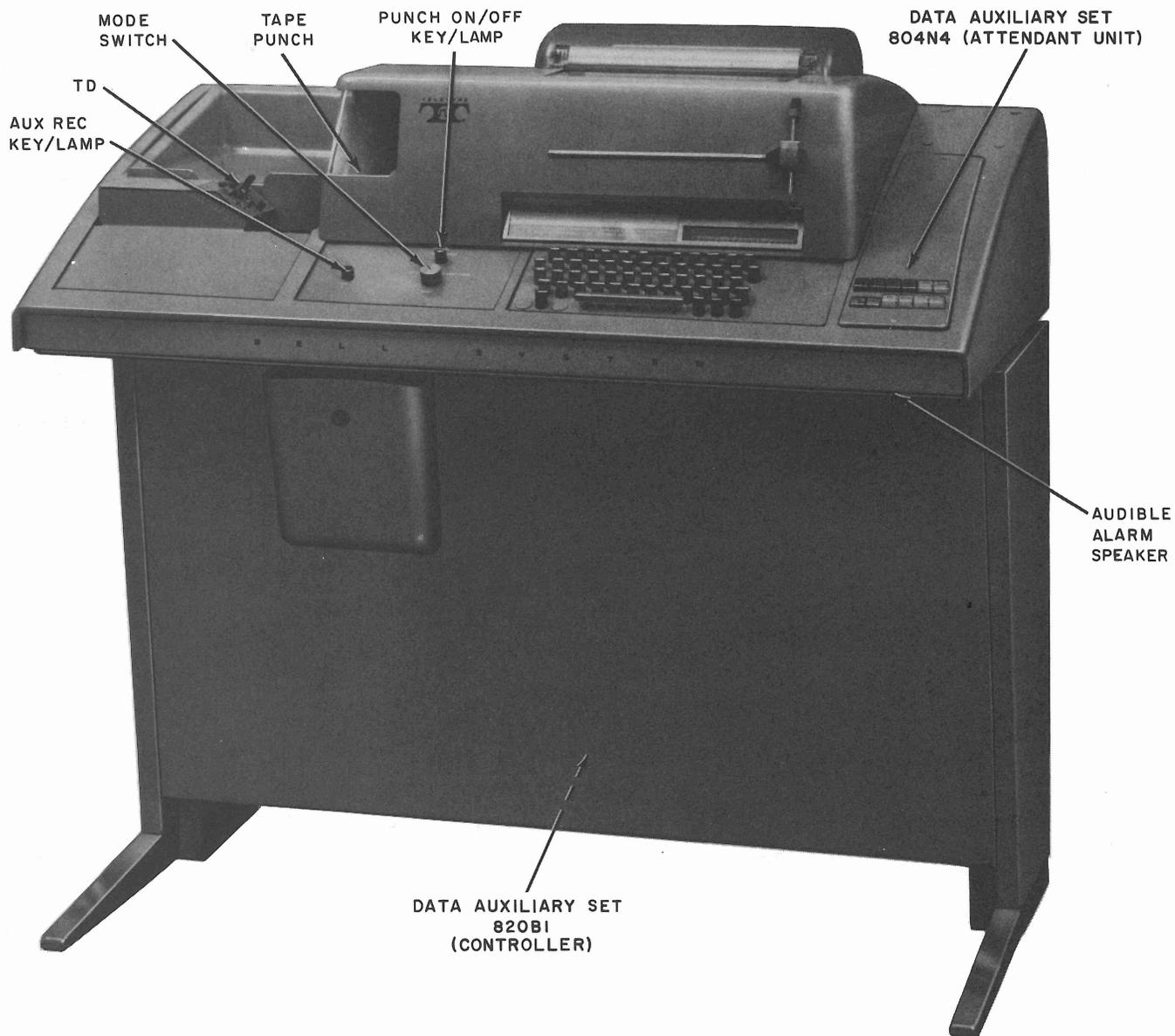


Fig. 9—35 ASR TTY Data Station

(3) Grasp the handgrips located in the front of the lower cover, operate the cover latch, and raise the cover.

(4) Verify that the left rear stoparm is latched when the lower cover is fully open.

3.02 Typing Unit Removal—ASR and RO TTY:

(1) Perform 3.01 (1) through (4).

(2) Remove the R plug from its connector on the electrical service unit (ESU) (Fig. 11).

(3) Remove the four screws and captive lockwashers that secure the typing unit to the subbase.

(4) Remove the typing unit by lifting vertically and to the right.

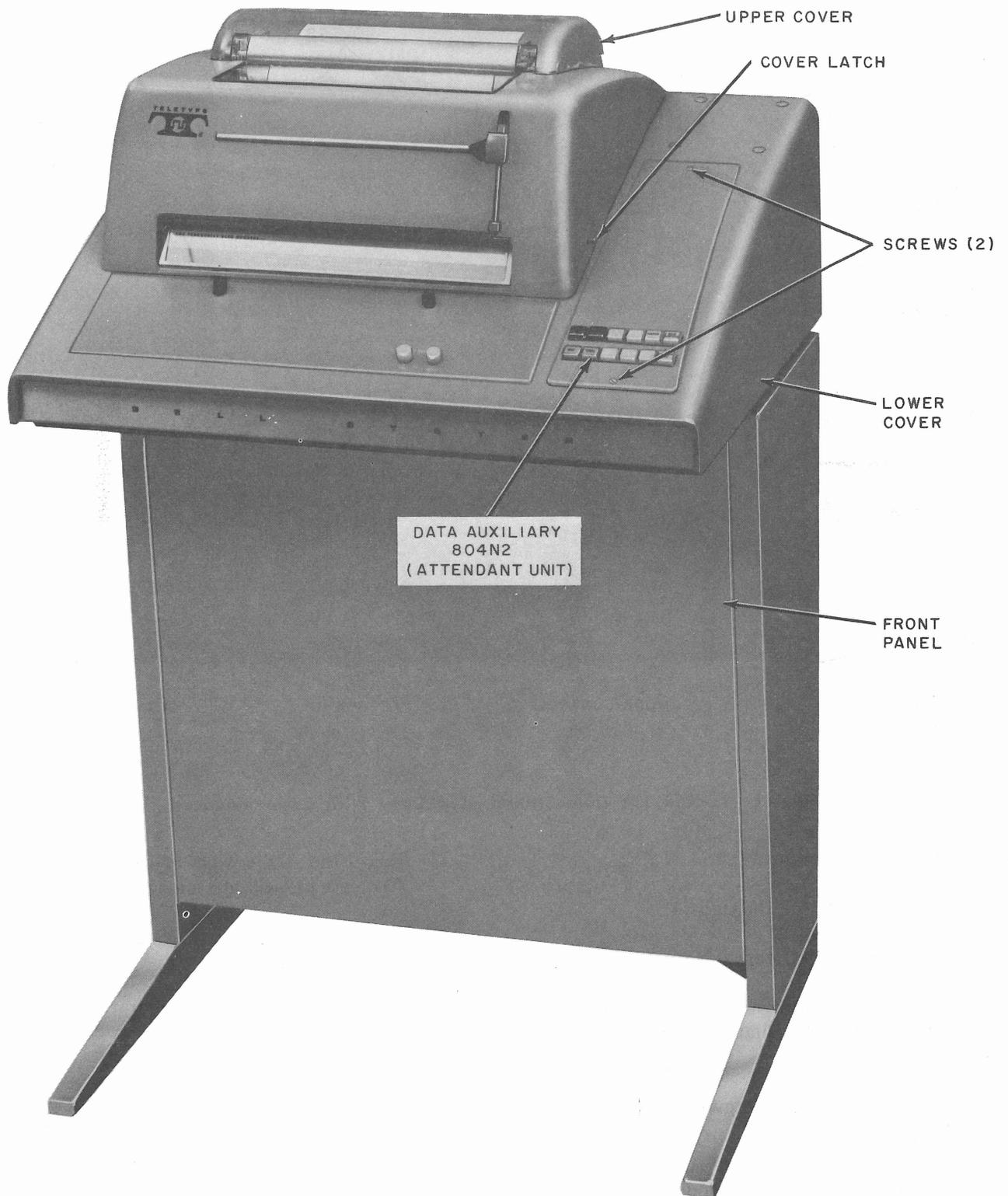


Fig. 10—35 RO TTY Data Station

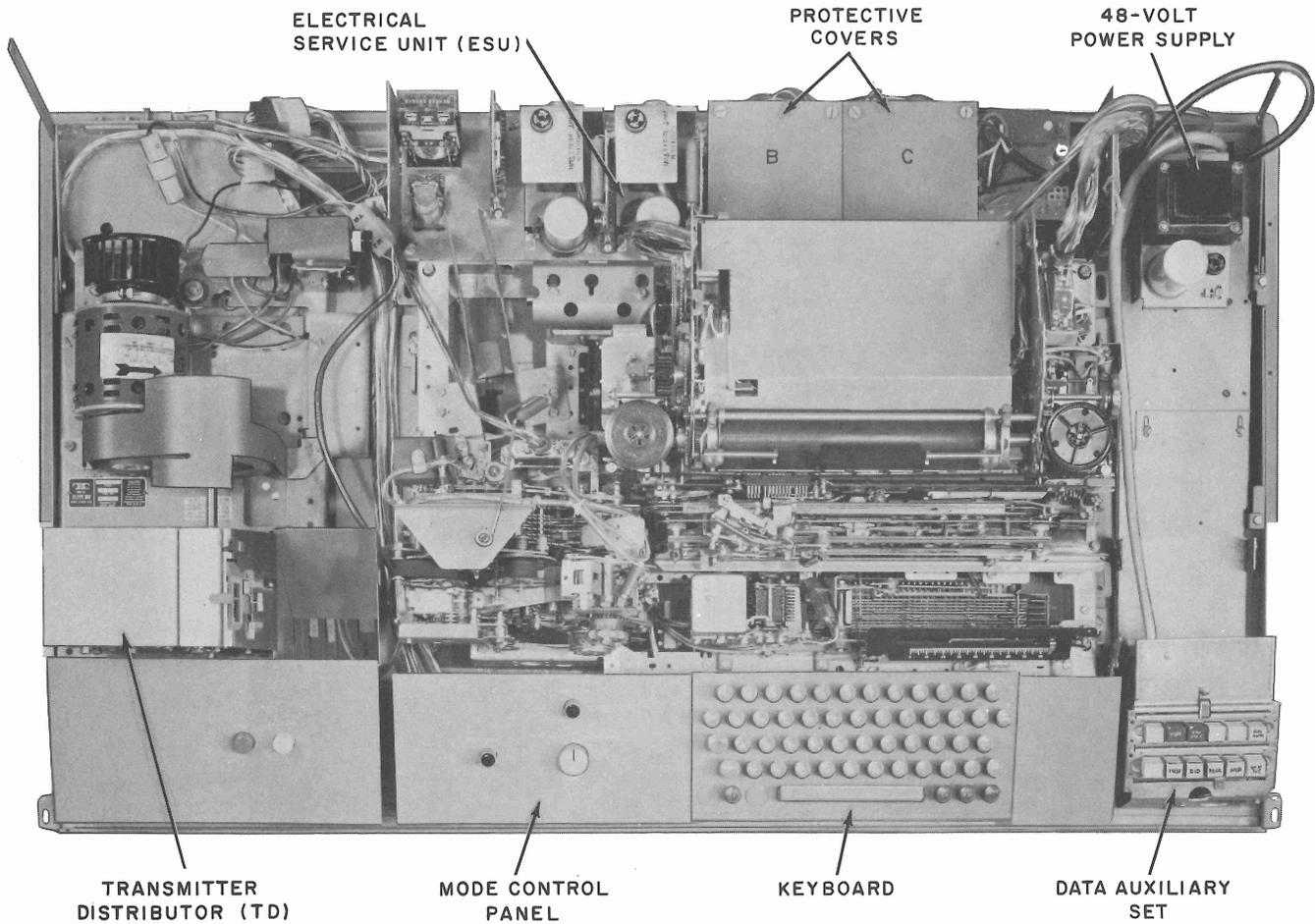


Fig. 11—35 ASR TTY Data Station—Top View With Cover Removed

3.03 Keyboard Removal—ASR TTY:

- (1) Perform 3.01 (1) through (4).
- (2) Perform 3.02 (1) through (4).
- (3) Loosen four screws on the mode control and keytop faceplate mounting brackets (Fig. 11).
- (4) Remove four post screws at each corner of the keyboard base.
- (5) Disconnect the ground conductor at the right rear of the keyboard base.
- (6) Disconnect the F plug from the connector assembly.

- (7) Raise the right side of the mode control faceplate to facilitate removal of the keyboard.

- (8) Remove the keyboard by lifting it vertically from the TTY.

3.04 Transmitter Distributor (TD) Removal—ASR TTY:

- (1) Perform 3.01 (1) through (4).
- (2) Disconnect the U and M plugs from the connector assemblies (Fig. 11).
- (3) Remove the ground conductor from the TD base.
- (4) Remove three anchor bolts that secure the TD to its subbase.

- (5) Remove the TD from the TTY by lifting vertically.

3.05 Electrical Service Unit (ESU) Removal—ASR and RO TTY:

- (1) Perform 3.01 (1) through (4).
- (2) Remove the two screws at the rear of the protective covers B and C (Fig. 11).
- (3) Loosen the two screws at the front of the protective covers B and C.
- (4) Remove the protective covers by sliding them to the rear.
- (5) Locate and disconnect the 48-volt rectifier wiring from the terminal fields.

Note: The rectifier wiring consists of two pairs of leads equipped with push-on terminals for connection to the terminal field as follows:

PAIR { black—terminal H5
red —terminal A3

PAIR { white—terminal G3
slate—terminal H4

- (6) If ASR TTY, disconnect the A, F, P, R, S, U, V, and Z plugs from the connector assemblies. If auxiliary receiver is used, disconnect K connector.
- (7) If RO TTY, disconnect the A, P, R, S, and U plugs from the connector assemblies.
- (8) Remove any necessary cable clamps.
- (9) Loosen the shoulder screw at the left side of the ESU.
- (10) Slide the ESU to the right to disengage the mounting tab and shoulder screw.
- (11) Remove the ESU from the TTY by lifting vertically.

3.06 48-Volt Power Supply Removal—ASR and RO TTY:

- (1) Perform 3.01 (1) through (4).
- (2) Perform 3.05 (2) through (5).
- (3) Remove two mounting screws at the left front and right rear of the power supply base (Fig. 11).
- (4) Remove the power supply and cable assembly by lifting vertically.

3.07 Data Auxiliary Set 804N1 (Attendant Set) Removal—ASR TTY:

- (1) Perform 3.01 (1) through (4).
 - (2) Remove the chad box located on the front panel (Fig. 9).
 - (3) Release the front panel by momentarily operating the two pushbutton latches at the top of the panel.
 - (4) Depress the spring clip underneath the keyboard and lower the front panel to the floor.
 - (5) Grasp the front panel by the sides and lift to disengage the hinge pins.
 - (6) Remove the front panel.
 - (7) Disengage the attendant set lower bracket and mounting plate by removing two Allen screws (Fig. 12).
 - (8) Disengage the speaker mounting bracket by removing four Allen screws.
 - (9) Move the attendant set to the right to gain access to the left side of the bracket assembly.
- Note:** The loudspeaker is not mounted on the bracket assembly. Exercise care when lifting the bracket assembly to prevent damage to the loudspeaker leads.
- (10) Loosen, but do not remove, the five bracket assembly mounting screws on the attendant set (Fig. 13).

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- (11) Disconnect plug on the M24F cord (part of the 804N1 attendant set) from the P connector on the controller (Fig. 14).
- (12) Withdraw the cable from the pedestal of the TTY.
- (13) Remove the mounting bracket, key and lamp assembly, and loudspeaker from the TTY.

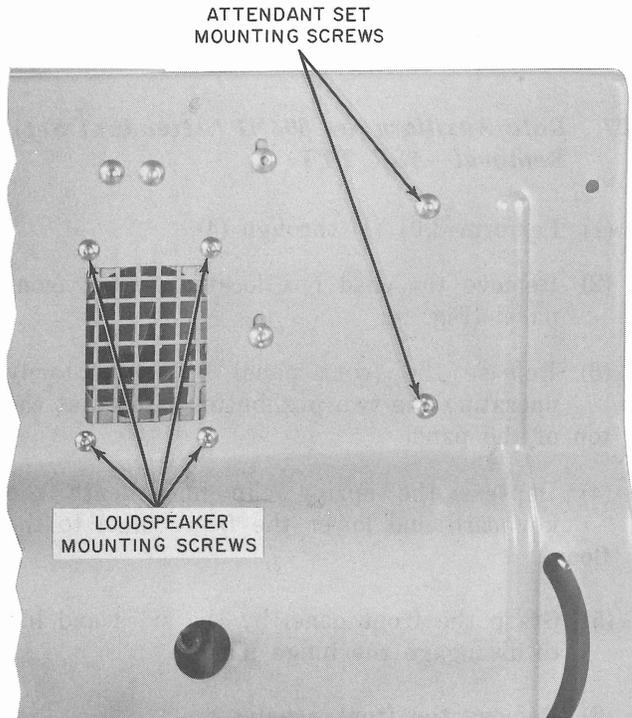


Fig. 12—35-Type TTY Data Station Attendant Set Mounting—Underneath View

3.08 Data Auxiliary Set 804N2 (Attendant Set) Removal—RO TTY:

- (1) Perform 3.01 (1) through (4).
- (2) Disengage the attendant set lower bracket and mounting plate by removing two Allen screws (Fig. 12).
- (3) Disengage the speaker mounting bracket by removing four Allen screws.
- (4) Move the attendant set to the right to gain access to the left side of the bracket assembly.

Note: The loudspeaker is not mounted on the bracket assembly. Exercise care when lifting the bracket assembly to prevent damage to the loudspeaker leads.

- (5) Loosen, but do not remove, the five bracket assembly mounting screws on the attendant set (Fig. 15).
- (6) Disconnect plug on the M24G cord (part of the 804N2 attendant set) from the connector at the rear of the attendant set.
- (7) Remove the mounting bracket, key and lamp assembly, and loudspeaker from the TTY.

3.09 Data Auxiliary Set 820A-Type (Controller) Removal—ASR and RO TTY:

Note: The controller mounting arrangement is the same for both the 35 ASR TTY and the 35 RO TTY. An 820A1 is used for the ASR TTY and an 820A2 is used for the RO TTY.

- (1) If ASR TTY, remove the chad box located on the front panel (Fig. 9).
- (2) Release the front panel by momentarily operating the two pushbutton latches at the top of the panel.

Note: On RO TTY, only one pushbutton latch is provided.

- (3) Depress the spring clip underneath the keyboard and lower the front panel to the floor.
- (4) Grasp the front panel by the sides and lift to disengage the hinge pins.
- (5) Remove the front panel.
- (6) Disconnect the M, N, P, and power plugs from the controller connectors (Fig. 14).
- (7) Loosen the two screws on the controller terminal and remove the Tip (T) and Ring (R) spade lug wiring.

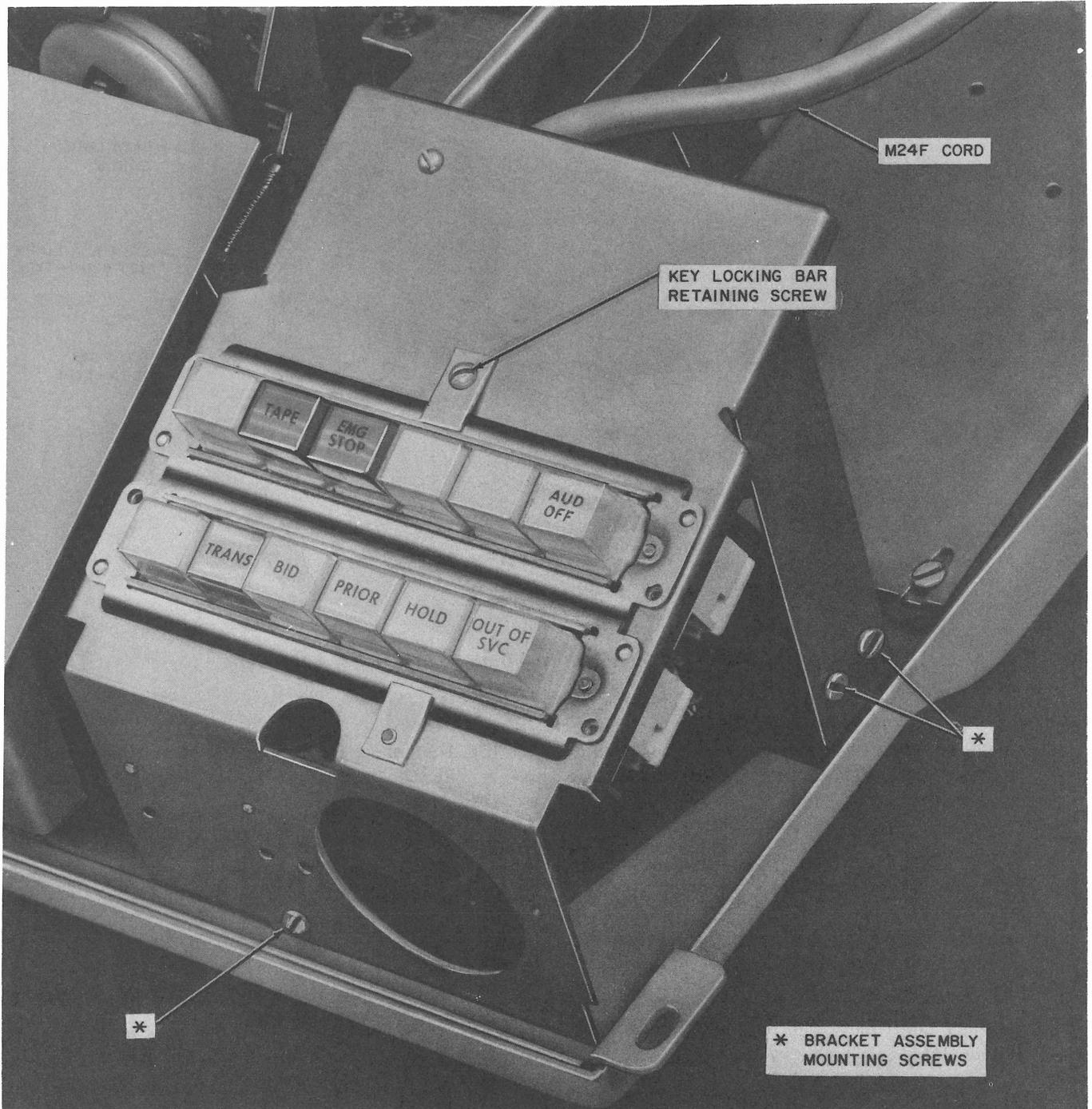


Fig. 13—35 ASR TTY Data Station—Data Auxiliary Set 804N1

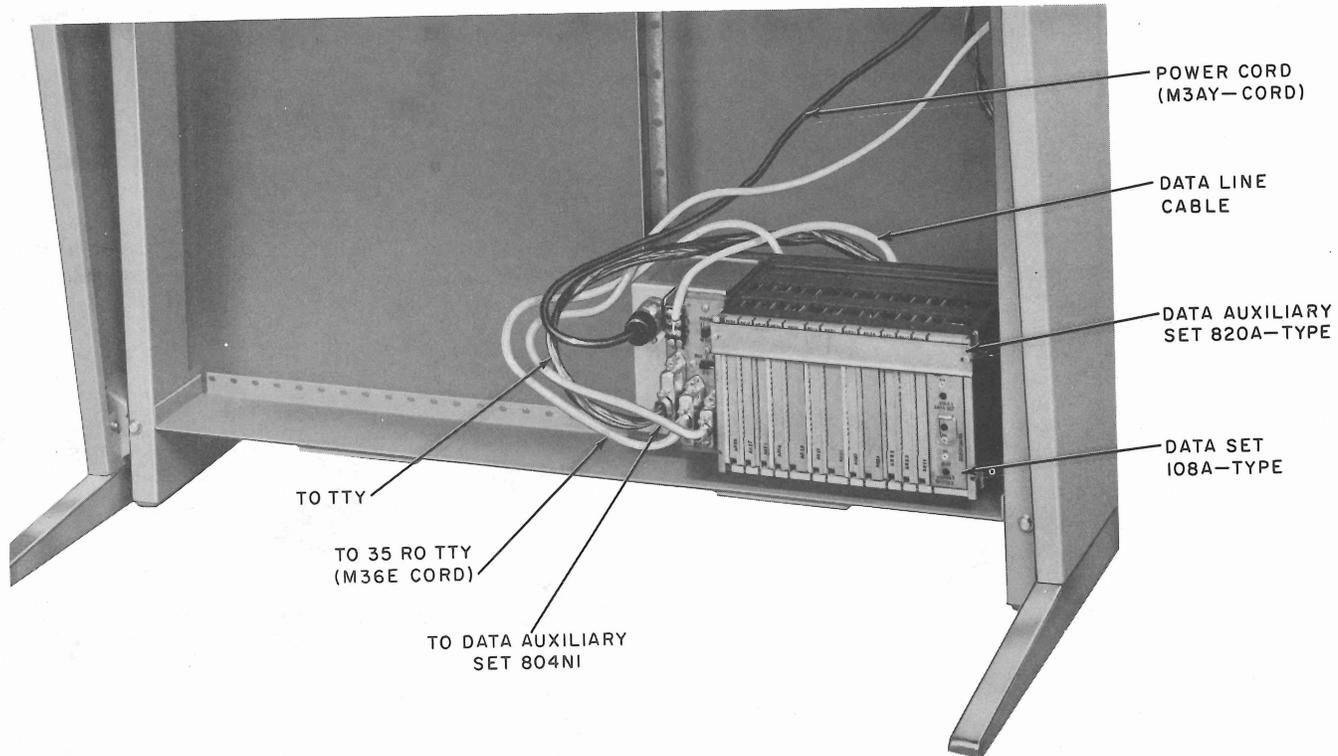


Fig. 14—35-Type TTY Data Station—Data Auxiliary Set 820A-Type

(8) Remove the two screws, hex nuts, and lockwashers that secure the controller to the 92A mounting bracket.

Note: The controller must be supported while the screws are being removed.

(9) Disengage the two plungers that secure the controller to the 92A bracket.

(10) Grasp controller and pull out of 35 TTY pedestal.

4. DISASSEMBLY OF 35 ROTR TTY DATA STATION

4.01 Typing Reperforator Removal—TTY:

(1) Remove the take-up spool and spindle (Fig. 16).

(2) Remove the cover by lifting vertically to disengage the spring clips.

(3) Disconnect the D plug and connector assembly at the rear of the typing reperforator (Fig. 17).

(4) Remove the four screws, washers, and lockwashers that secure the typing reperforator to the base casting.

(5) Remove the drive belt guard by removing two hex-head screws.

(6) Disconnect the motor unit drive belt.

(7) Remove the typing reperforator by lifting vertically.

4.02 Electrical Service Unit (ESU) Removal—ROTR TTY:

(1) Open the magnetically latched front access door on the TTY stand (Fig. 16).

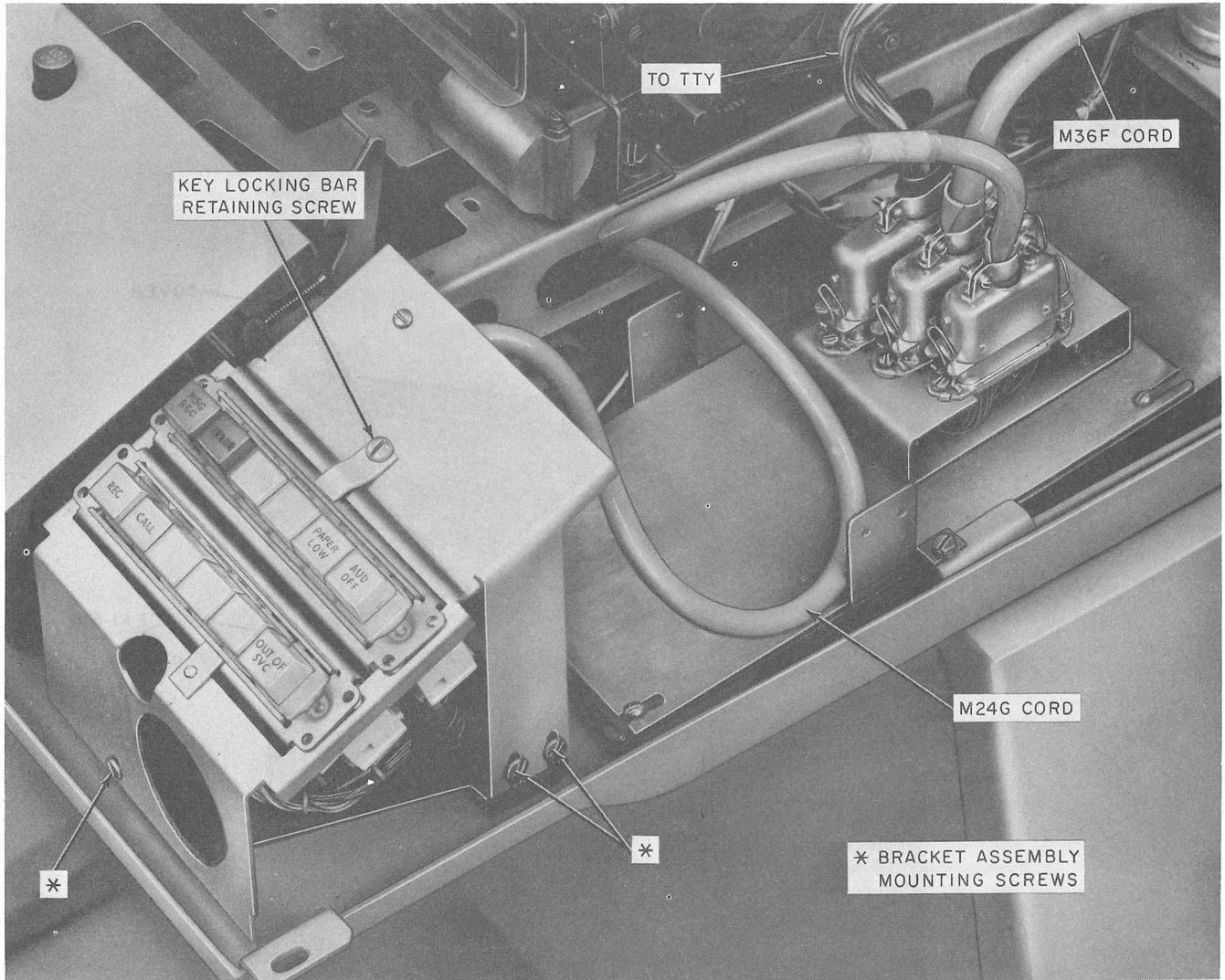


Fig. 15—35 RO TTY Data Station—Data Auxiliary Set 804N2

(2) Disconnect the ESU wiring from the terminal board (Fig. 18).

Note: The ESU wiring is connected as follows:

TERM.	COLOR
1	Brown
2	-
3	Blue
4	Yellow (18 gauge)

TERM.	COLOR
5	Yellow (24 gauge)
6	Slate
7	-
8	White-Green
9	{ White-Violet White-Yellow

(3) Disconnect the plug and connector assembly for the chad container warning lamp.

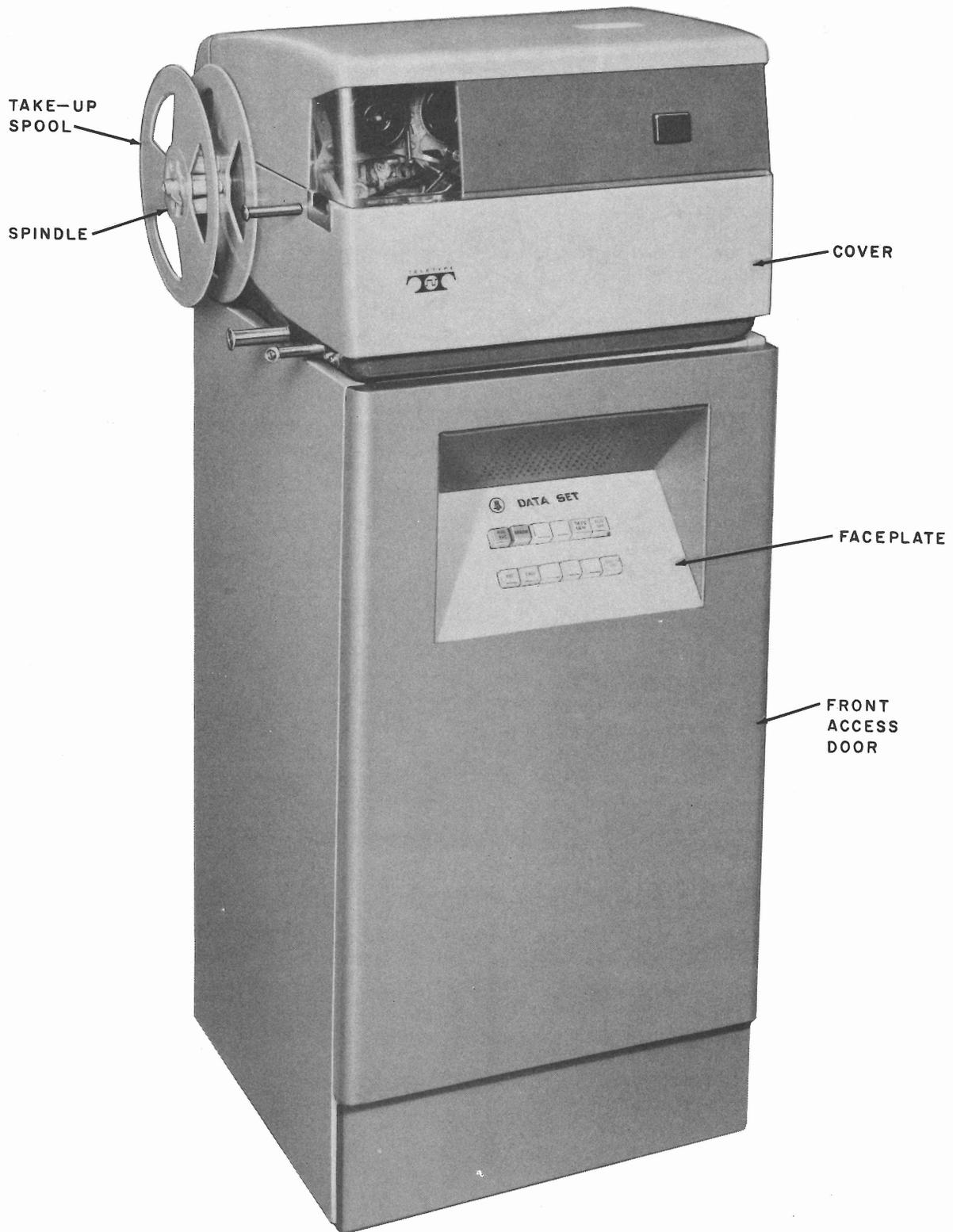


Fig. 16—35 ROTR TTY Data Station

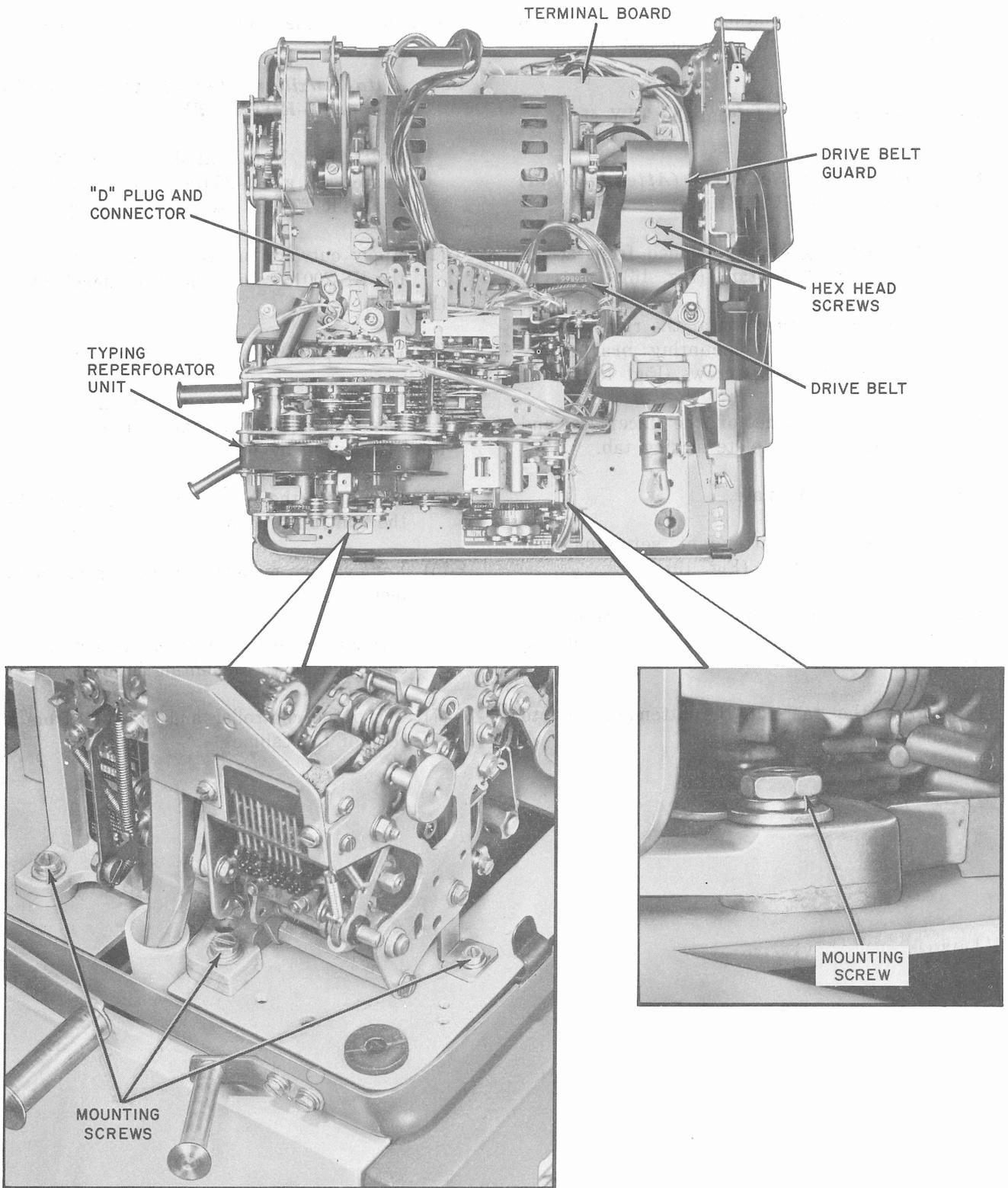


Fig. 17-35 ROTR TTY Data Station—Top View

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- (4) Remove four mounting screws (two at top and two at bottom) from the ESU mounting brackets.
- (5) Withdraw the ESU from the TTY stand.

4.03 *Data Auxiliary Set 804R3 (Attendant Set) Removal—ROTR TTY:*

- (1) Open the magnetically latched front access door on the TTY stand (Fig. 16).
- (2) Remove the spring clip at the right rear of the attendant set mounting bracket by removing two mounting screws (Fig. 19).
- (3) Lift the left side of the faceplate and disengage the faceplate locking tab.
- (4) Remove the faceplate.
- (5) Disconnect the attendant set plug and connector assembly (Fig. 19).
- (6) Remove two hex nuts and lockwashers from the weld screws on the angle bracket mounting assembly.
- (7) Lower the rear of the attendant set to disengage the locking tabs.

- (8) Remove the attendant set by sliding it to the rear.

4.04 *Data Auxiliary Set 820A2 (Controller) Removal—ROTR TTY:*

Note: The Data Auxiliary Set 820A2 is mounted in a KS-20018 type cabinet when the ROTR TTY is used as a primary station.

- (1) Apply outward pressure at the top front of the KS-20018 cabinet until the panel releases (Fig. 20).
- (2) Lift the panel up to remove it from framework.
- (3) Loosen the two screws on the controller terminal board and remove the tip (T) and Ring (R) spade by wiring.
- (4) Disconnect the N, P, and power plugs from the controller connectors (Fig. 20).
- (5) Remove two mounting screws from the 95A mounting bracket.
- (6) Disengage the two plungers that secure the controller to the mounting bracket.
- (7) Grasp the controller and pull out from the rear of the cabinet.

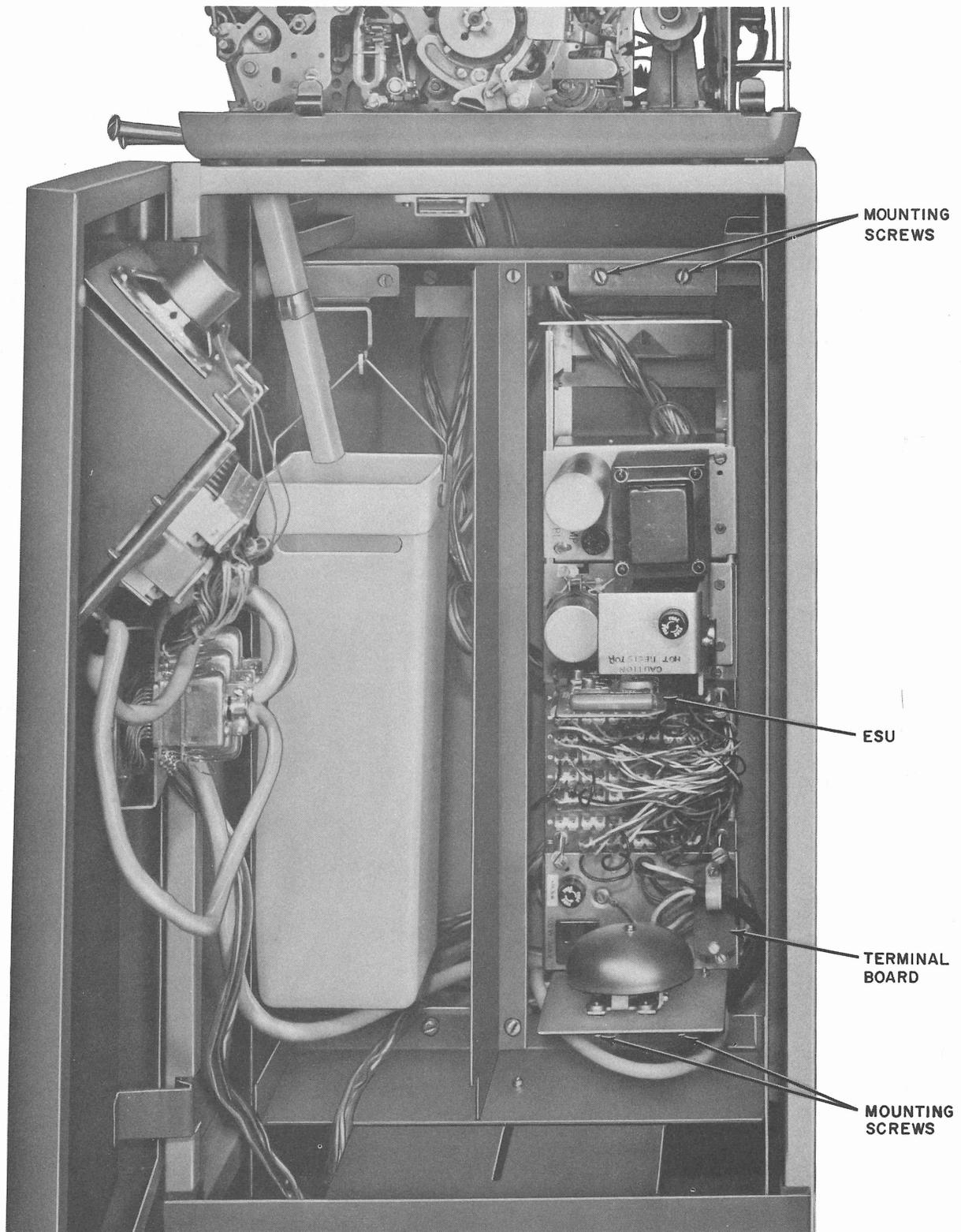


Fig. 18—35 ROTR TTY Data Station—ESU Removal

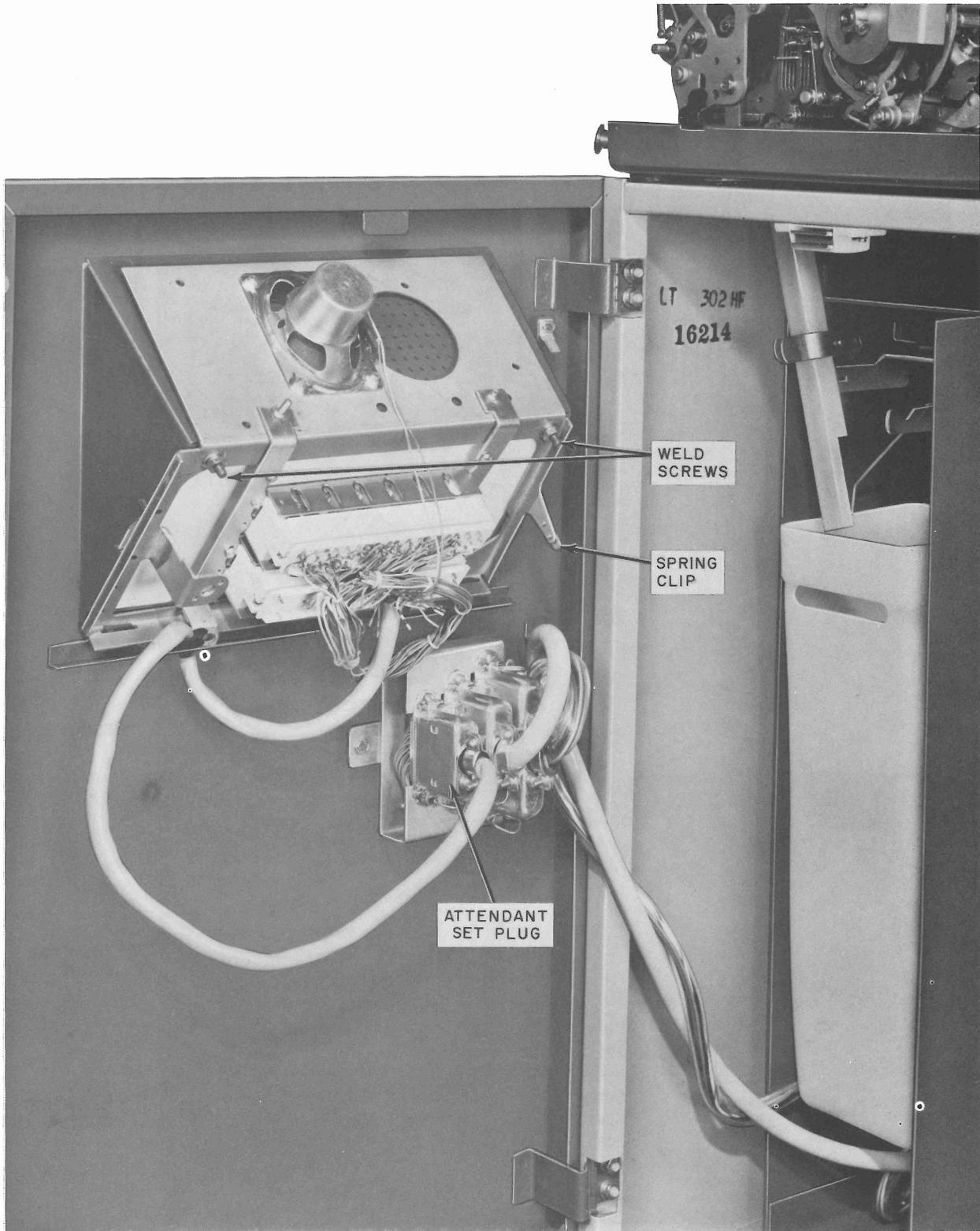


Fig. 19—35 ROTR TTY Data Station—Attendant Set Removal

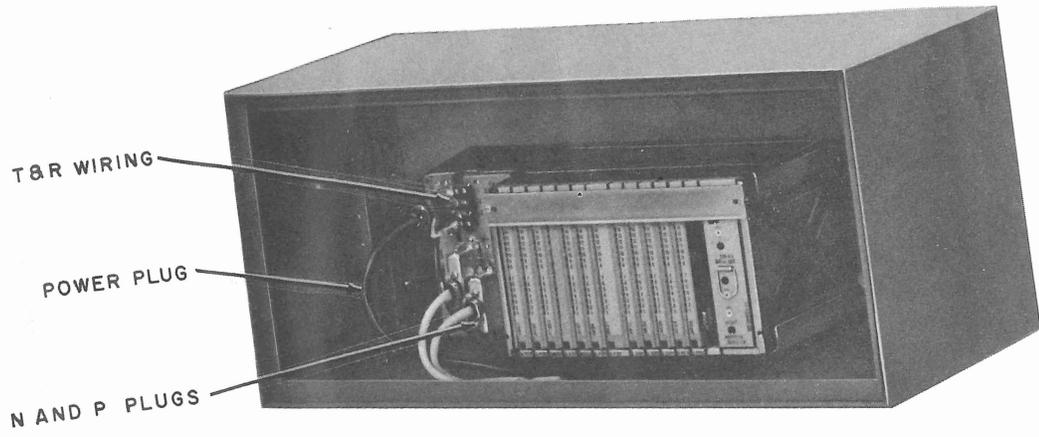


Fig. 20-35 ROTR TTY Data Station—Controller Removal