

REPLACING PAGE ADDENDUM

Filing Instructions:

1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.
2. INSERT THE ATTACHED PAGES INTO THE SECTION IN THEIR PLACE.
3. PLACE THIS PINK SHEET AHEAD OF PAGE 1 OF THE SECTION.

**DATA SET 103E-TYPE
DATA STATION
USING KS-20093 CABINETS
INSTALLATION AND CONNECTIONS**

1. GENERAL

1.001 This addendum supplements Section 591-025-201, Issue 4. The attached pages must be inserted into the section in accordance with the filing instructions above.

1.002 This addendum is issued for the following reasons:

- (a) to correct the tip and ring connections in Fig. 16
- (b) to correct the tip and ring connections in Table B
- (c) to correct the tip, ring, data tip, and data ring connections in Fig. 19

(d) to add information for the DAS 804J-type switchhook connections to tip and ring.

4. CONNECTIONS

The following changes apply to Part 4 of the section:

- (a) Fig. 16—revised
- (b) Table B—revised
- (c) 4.08.1—added
- (d) Fig. 19—revised

Attached:

Page 17 dated August 1973, revised
Page 18 dated August 1973, reissued
Page 19 dated August 1973, revised
Page 20 dated August 1973, revised
Page 21 dated August 1973, revised
Page 22 dated August 1973, revised
Page 22.1 dated August 1973, added

**DATA SET 103E-TYPE
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Data Auxiliary Set 804J-Type	3	1. GENERAL	
1A1 Data Mounting	3	1.01 This section describes the procedures to be followed for installing a Data Set 103E-type data station (103E-type Data Station) on customer premises and housed in a KS-20093-L1 cabinet (Fig. 1).	
1A2 Data Mounting	3	1.02 This section is reissued to add information on using the 103E-type Data Station as an answer-only data facility. Information is included on the terminating of 1A1 and 1A2 key telephone lines and on additional option connections. Due to extensive revision of this section, change arrows have been omitted.	
31A Power Unit	6	1.03 The 103E-type Data Station is intended to be assembled on the customer premises by telephone company installation personnel.	
2A1 Data Mounting	6	1.04 The customer must provide a standard 3-wire grounding-type 105- to 129-volt, 59.5- to 60.5-Hz ac power receptacle (to accept a plug equipped with two parallel blades and a round-shaped grounding pin). <i>The receptacle shall not be under control of a switch.</i> The receptacle should be adequately fused to provide the 5 amperes required for a completely equipped cabinet of 40 data sets. When the data sets are equipped with DAS 801-type automatic calling units (ACU), 2	
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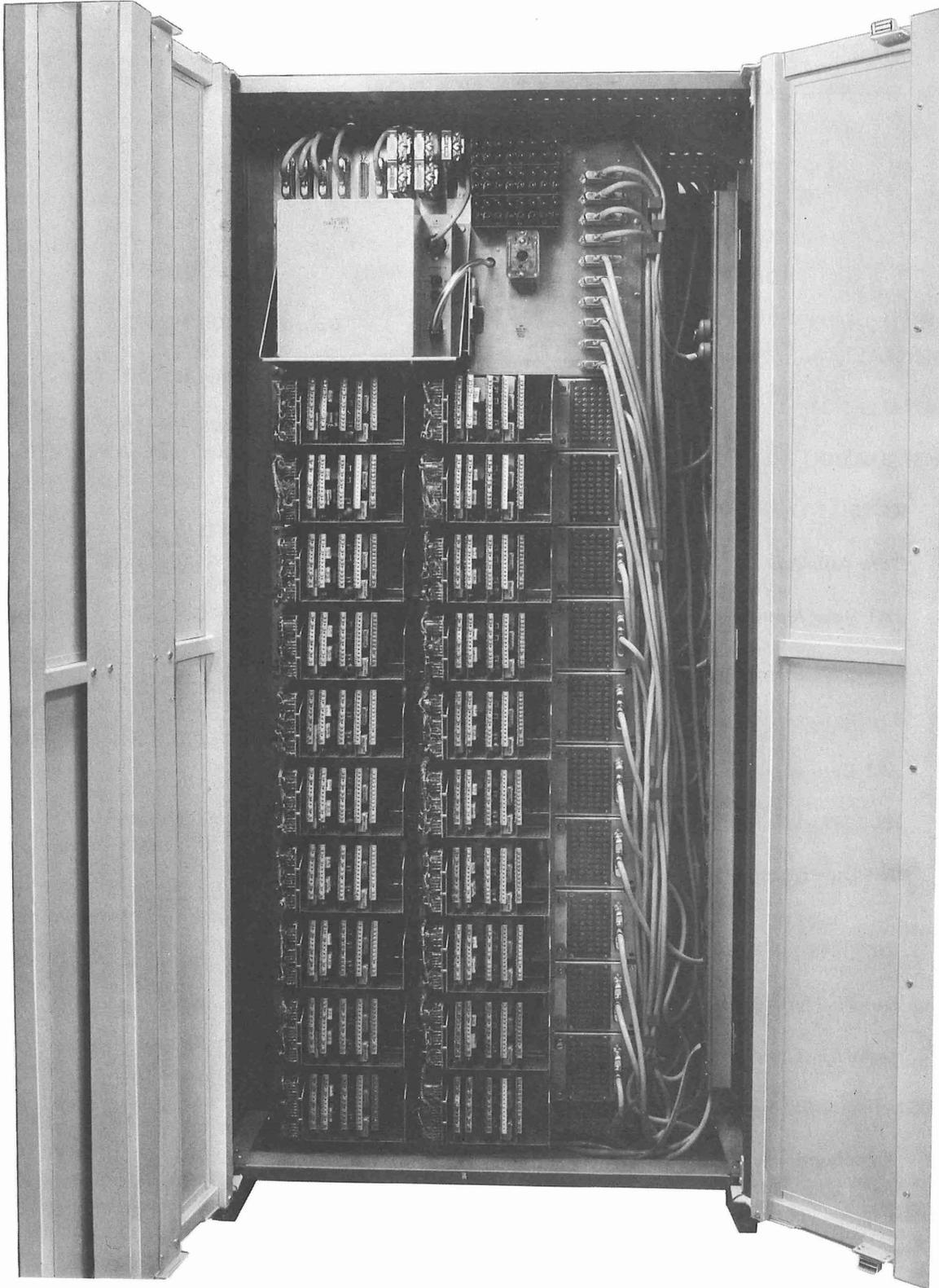


Fig. 1—Data Set 103E-Type Data Station—Cabinet Doors Open

receptacles fused to provide 11 amperes will be required.

1.05 Verify with the Plant Service Center (PSC) that the overall facilities meet transmission requirements specified in the section entitled Data Systems—DATA-PHONE® Service on Direct Distance Dialing Network, Overall Transmission Test Requirements (314-205-501).

1.06 Part 6 of this section provides information on the modification required to restrict the features of the data station to answer-only service. The installation procedures outlined in this text can be used when installing an answer-only station by omitting the parts that apply to call origination and to Data Auxiliary Sets 801-type (ACUs).

2. INSTALLATION

2.01 In addition to regular installation tools, installation of the components of the 103E-type Data Station will require:

- KS-19053-L1 Screwdriver or equivalent 10-inch screwdriver
- Screw-Starter, Kedman Co. No. 1736, or equivalent
- 21A Transmission Measuring Set or equivalent.

2.02 Verify that the location selected by the customer for the KS-20093-L1 cabinet is adequate for installation and maintenance. The space required for a KS-20093-L1 cabinet (with doors open to allow installation and servicing) is approximately 55 inches wide, 75 inches high, and 55 inches deep.

2.03 Install the KS-20093-L1 cabinet in accordance with the instructions contained in the section entitled Data Sets, Multiple Installation Information (590-010-201).

2.04 When the cabinet is to be partially filled, 2A1 Data Mountings are installed in the rear of the cabinet under the 1A1 Data Mounting (refer to Fig. 2, Rear View). Ten 2A1 Data Mountings can be installed in the rear, thereby providing for a maximum of 20 data sets (2 for each 2A1 Data Mounting) in the rear of the cabinet. The data mountings are installed, working downward until the required number of data sets can be accommodated.

2.05 When the cabinet is to be completely filled with data sets but not equipped with Data Auxiliary Sets 801-type, the configuration shown in Fig. 3 is followed. The front-mounted 1A2 Data Mounting is installed at the top front of the cabinet and the 2A1 Data Mountings are numbered from the bottom to the top.

2.06 When Data Auxiliary Sets 801-type are used with the data sets, KS-20093-L14 shelves are required to hold the data auxiliary sets (see Fig. 4). One shelf will hold two data auxiliary sets. KS-20093-L15-type adapter plates are required to adapt the 23-inch shelf to the 25-inch frame of the cabinet. For a completely equipped 103E-type Data Station (40 data sets equipped with 40 data auxiliary sets), 2 KS-20093-L1 cabinets will be required.

3. INSTALLATION PROCEDURES

KS-20129-L1 Power Strip

3.01 Installation of KS-20129-L1 power strip should be in accordance with Fig. 5.



Do not connect power cord plug until all installation work and connections have been completed.

Data Auxiliary Set 804J-Type

3.02 Installation of the panel-type data auxiliary set should be in accordance with Fig. 6.

1A1 Data Mounting

3.03 The 1A1 Data Mounting is installed at the top rear of the cabinet. Installation of the data mounting should be in accordance with Fig. 7.



Do not install 31A power unit in data mounting prior to installing the data mounting, as power unit will make data mounting difficult to align during installation.

1A2 Data Mounting

Data Sets Not Equipped With Data Auxiliary Sets 801-Type

3.04 The 1A2 Data Mounting is installed at the top front of the cabinet. Installation of the 1A2 Data Mounting is the same as for the 1A1 Data Mounting (Fig. 7).

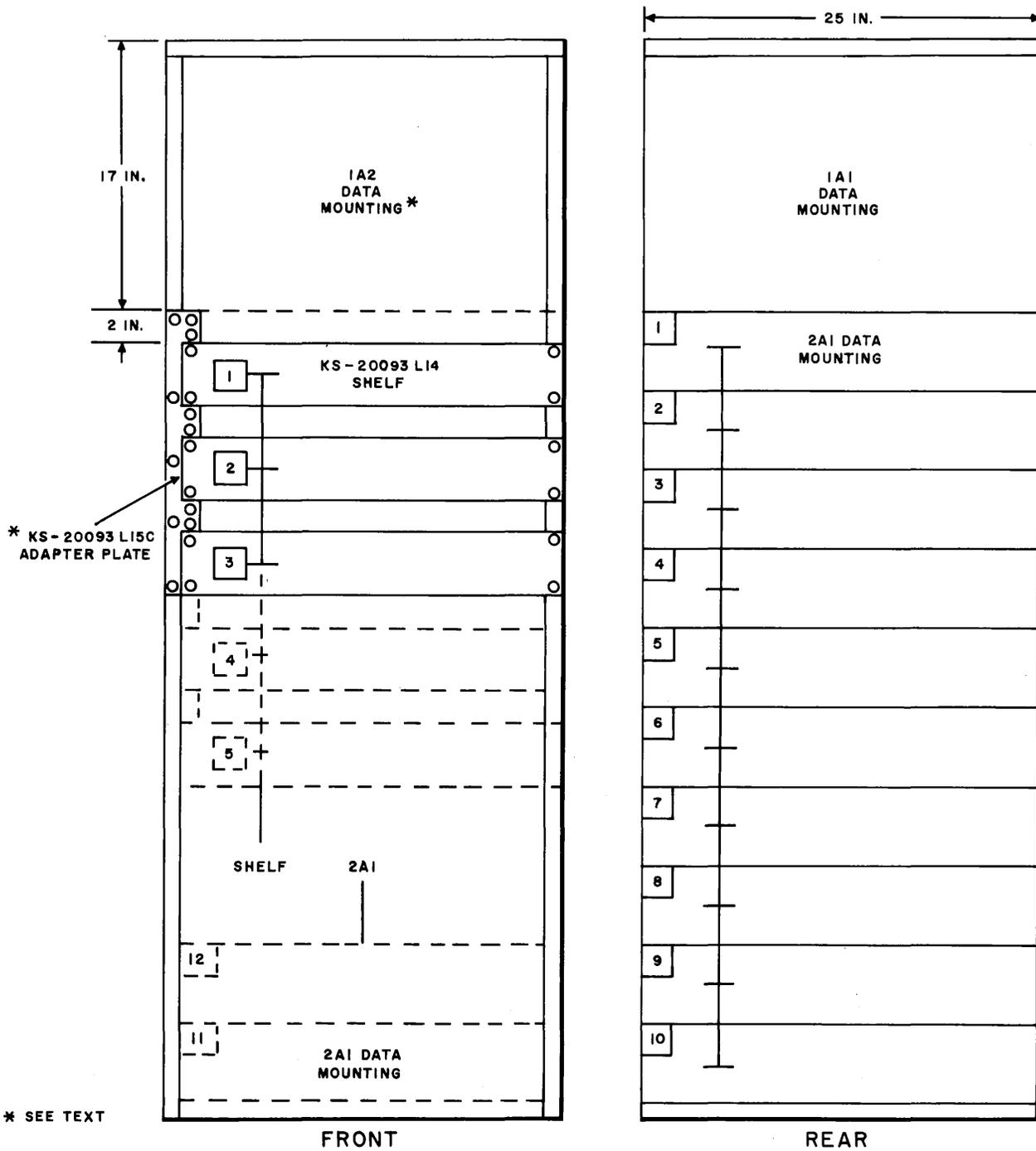


Fig. 2—Physical Layout of KS-20093-L1 Cabinet When Partially Filled and With Space Provided for Data Auxiliary Sets 801-Type

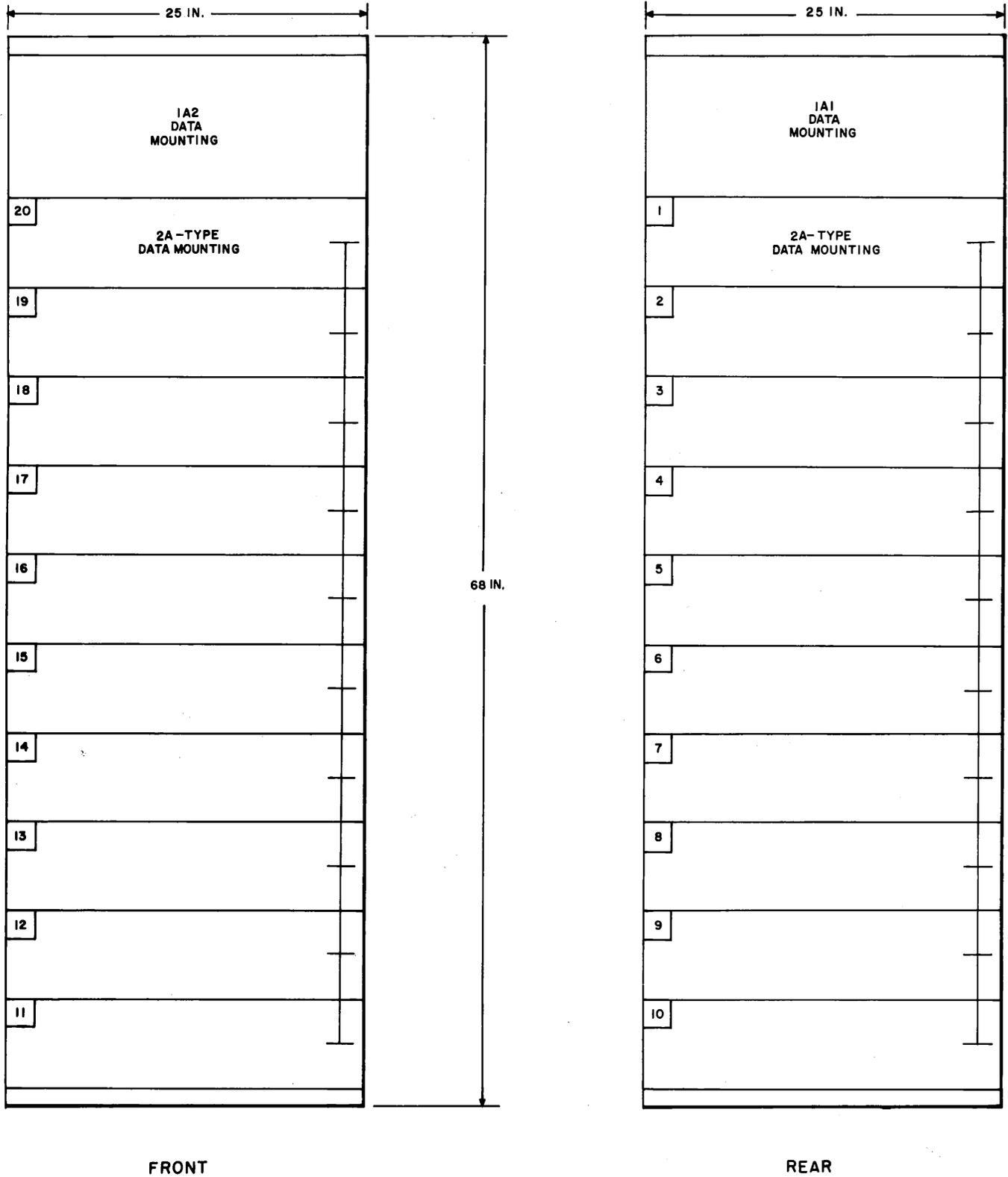


Fig. 3—Physical Layout of KS-20093-L1 Cabinet When Completely Filled With Data Sets—No Provisions for Data Auxiliary Sets 801-Type

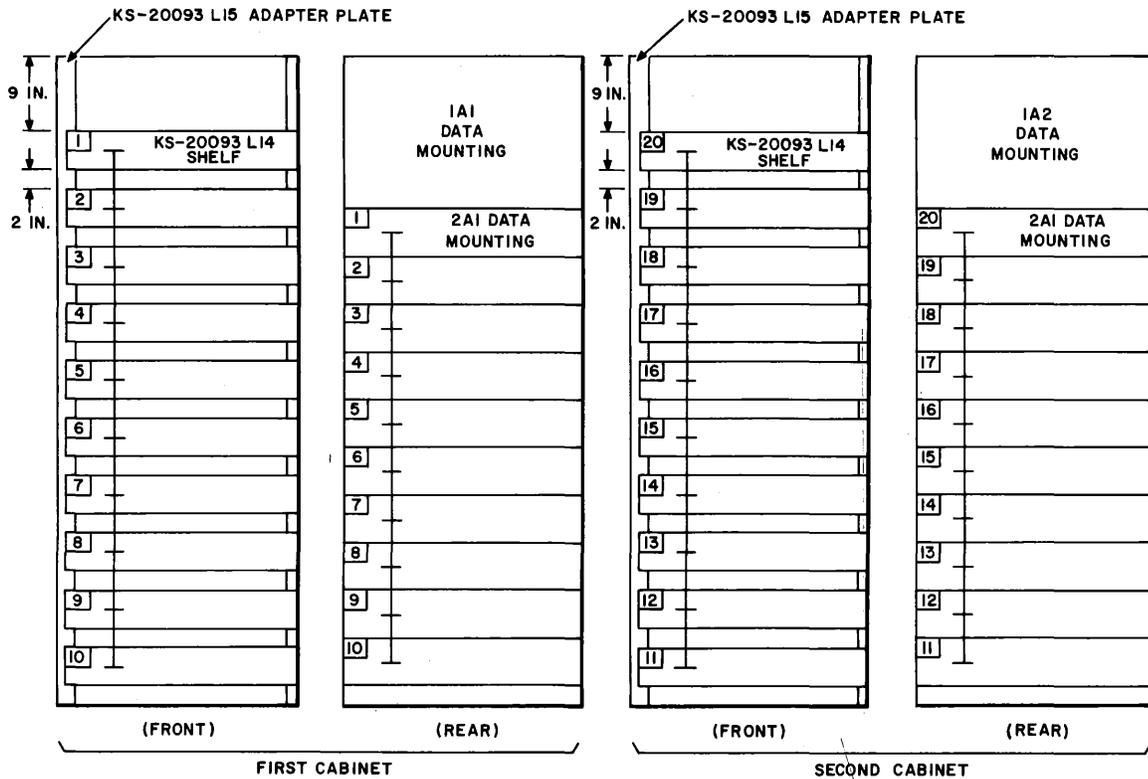


Fig. 4—Physical Layout of KS-20093-L1 Cabinets When Completely Filled With Data Sets and With Space Provided for Data Auxiliary Sets 801-Type



Do not install 31A power unit in data mounting prior to installing the data mounting, as power unit will make data mounting difficult to align during installation.

Data Sets Equipped With Data Auxiliary Sets 801-Type

Note: When the data sets are equipped with Data Auxiliary Sets 801-type, two KS-20093-L1 cabinets may be required (see Fig. 4).

3.05 The 1A2 Data Mounting is mounted at the top rear of the **second** cabinet when the 103E-type Data Station is fully equipped with 40 data sets and 40 Data Auxiliary Sets 801-type. If a 103E-type Data Station is partially equipped (eg, 24 data sets and 6 data auxiliary sets), consideration should be given to the possible expansion of the 103E-type Data Station to a fully equipped station. If possible expansion is very remote, the 1A2 Data Mounting should be mounted at the top front of the cabinet containing the 1A1 Data Mounting. Installation of the 1A2 Data Mounting is the same as for the 1A1 Data Mounting (Fig. 7).

31A Power Unit

3.06 The 31A power units are mounted on the shelf of the 1A-type Data Mountings. Installation of the power units is identical for either data mounting and should be in accordance with Fig. 8.

2A1 Data Mountings

Data Sets Not Equipped With Data Auxiliary Sets 801-Type

3.07 The 2A1 Data Mountings are mounted in the cabinet starting just under the 1A1 Data Mounting. There is room for ten 2A1 Data Mountings (20 data sets) on the rear of the cabinet.

Note: The cord equipped with two connectors (J1 and J2) should be routed to the **right** of the data mounting (to reach the customer interface section of the cabinet) and retained by a cord retainer clip on the data mounting (Fig 9).

3.08 Installation of the data mounting should be in accordance with Fig. 10.

3.09 Repeat the procedure shown in Fig. 10 for the remaining data mountings to be installed on the rear of the cabinet until ten data mountings are installed (Fig. 3).

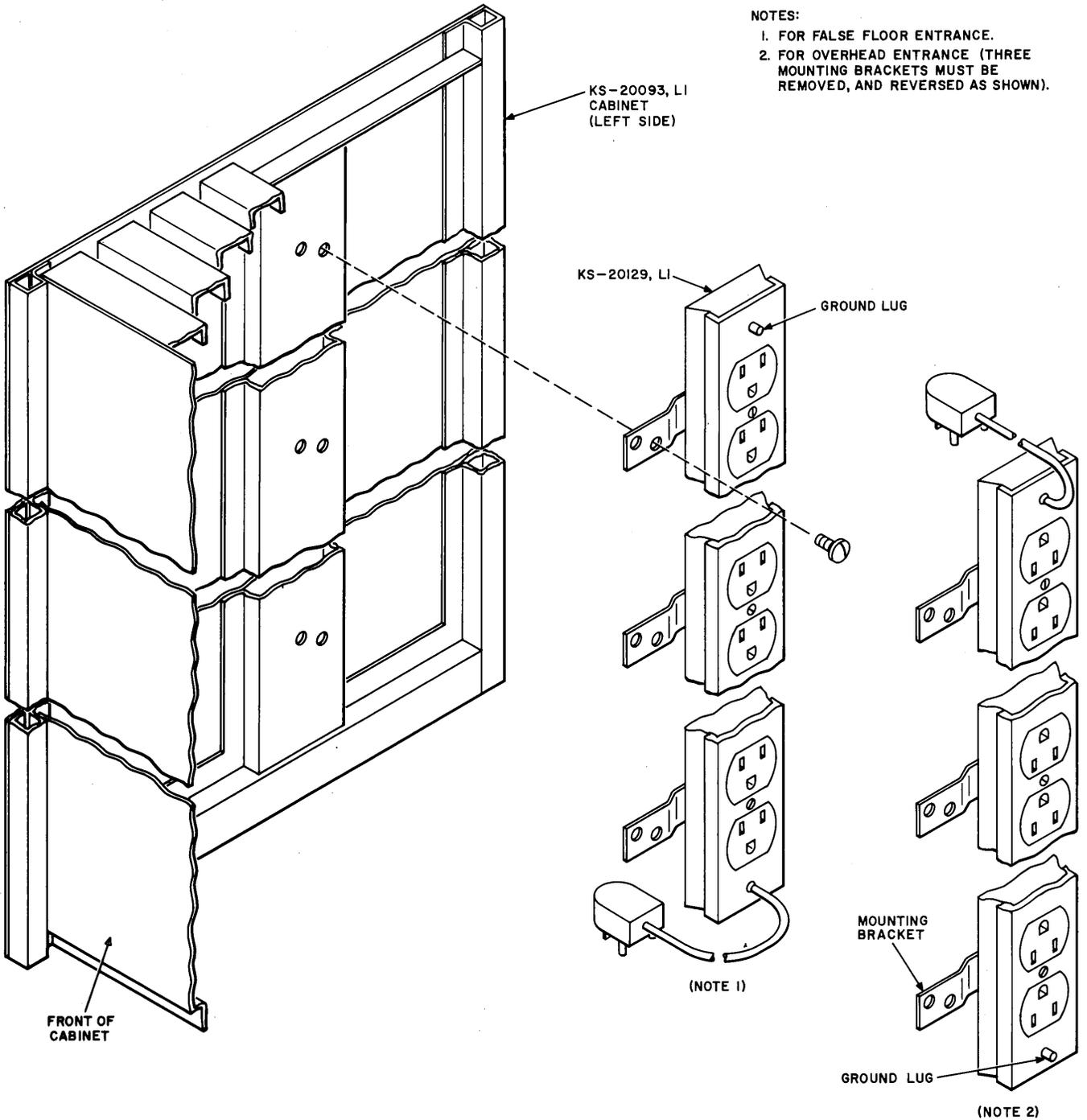
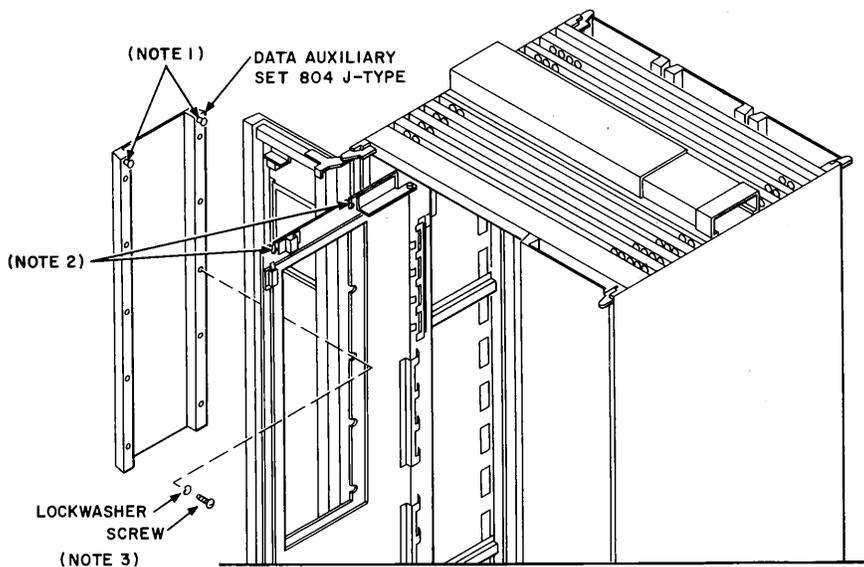


Fig. 5—Installation of KS-20129-L1 Power Strip on the Left Side of the Cabinet



NOTES:

DATA AUXILIARY SET (DAS) 804J
INSTALLATION PROCEDURE

1. START TWO MOUNTING SCREWS IN TOP HOLES OF DAS 804J. DO NOT TIGHTEN SCREWS.
2. SUPPORT THE WEIGHT OF THE 804 J TYPE BY PLACING TWO MOUNTING SCREWS IN HOLES AT TOP OF DOOR.
3. SECURE THE 804 J FROM THE BACK SIDE WITH TEN ADDITIONAL SCREWS AND LOCKWASHERS. DO NOT TIGHTEN SCREWS SECURELY.
4. ADJUST THE 804 J PLACEMENT ON THE DOOR BY SHIFTING THE 804 J TO THE RIGHT OR LEFT AS REQUIRED. WHILE HOLDING THE 804 J IN PLACE, TIGHTEN ALL THE MOUNTING SCREWS.

Fig. 6—Installation of Data Auxiliary Set 804J-Type on the Door of KS-20093-L1 Cabinet

3.10 The remaining 2A1 Data Mountings for the data station are installed on the front of the cabinet starting with the second mounting hole from the bottom and working up toward the 1A2 Data Mounting (Fig. 3).

Note: The cord equipped with two connectors (J1 and J2) should be routed to the *left* of the data mounting and retained by cord retainer clip (Fig. 9).

3.11 Installation of the data mounting on the front is the same as on the rear (Fig. 10).

3.12 Repeat the procedure shown in Fig. 10 for the remaining data mountings to be installed on the front of the cabinet or until ten data mountings are installed (Fig. 3).

Data Sets Equipped With Data Auxiliary Sets 801-Type

3.13 The 2A1 Data Mountings are mounted on the rear of the cabinet in the same configuration as given in 3.07 and in Fig. 2.

3.14 When the data station is partially equipped (eg, 24 data sets and 6 data auxiliary sets), consideration should be given to possible expansion of the 103E-type Data Station to a fully equipped station. If expansion is very remote, the two

remaining data mountings (in the example) should be installed on the front of the cabinet by starting at the bottom (No. 11 and 12 on Fig. 2).

3.15 When a partially equipped cabinet is to contain 12 or more data auxiliary sets, the configuration shown in Fig. 4 should be considered. This will provide for standard configurations and future expansion.

3.16 Installation of the data mountings should be in accordance with Fig. 10.

3.17 When the required data mountings have been installed, the data mounting interface cord (J1 and J2) should be routed to the customer interface section of the cabinet.

KS-20093-L10 Type Mounting Plates

3.18 The KS-20093-L10-type mounting plates are used to mount the interface cord from the 2A1 Data Mountings. The mounting plates are installed in the customer interface section of the cabinet.

3.19 Each completely equipped cabinet will require:

- 10 KS-20093-L10A Mounting Plates
- 3 KS-20093-L10B Mounting Plates.

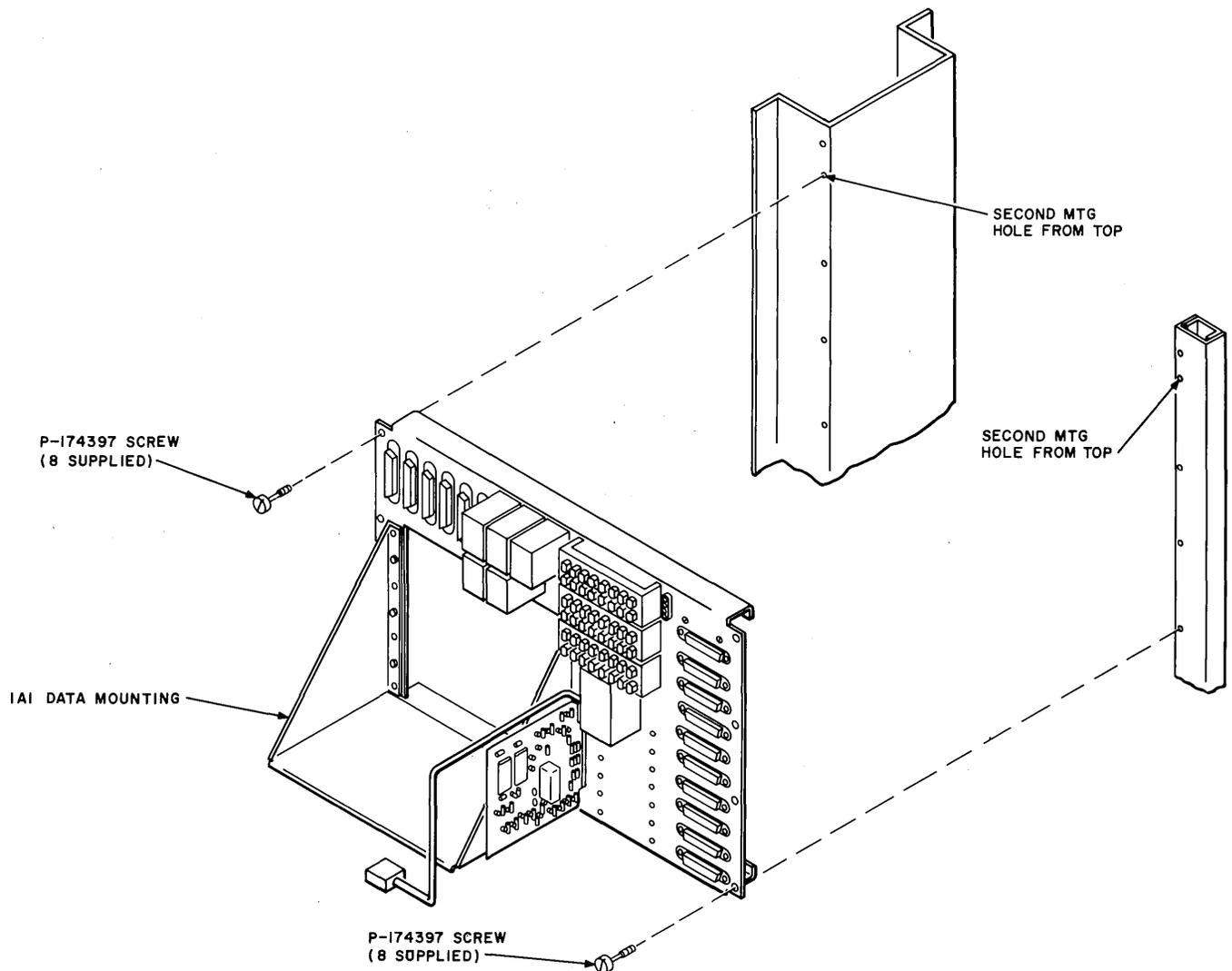


Fig. 7—Details for Mounting IA1 or IA2 Data Mounting

Note: The above quantities are required for either type of installation, with or without DAS 801-type. For a partially equipped cabinet, the L10A mounting plates are mounted adjacent to the data mountings and the remainder of the interface section is filled with L10B mounting plates.

- 3.20** Installation of the mounting plates should be in accordance with Fig. 11.

2A1 Data Mounting Interface Connectors

- 3.21** The data mounting interface connectors (J1 and J2) are mounted on the KS-20093-L10A

mounting plates so that connector J1 mounts above connector J2 for data mountings mounted on the rear of the cabinet, and reversed (J2 over J1) for data mountings mounted on the front of the cabinet.

Data Sets Not Equipped With Data Auxiliary Sets 801-Type

- 3.22** Connectors J1 and J2 for the data mountings installed on the rear of the cabinet are mounted on the right side of the mounting plate, as viewed from the rear (Fig. 12). The connectors for the front-mounted data mountings are mounted on the left side with connector J1 mounted below

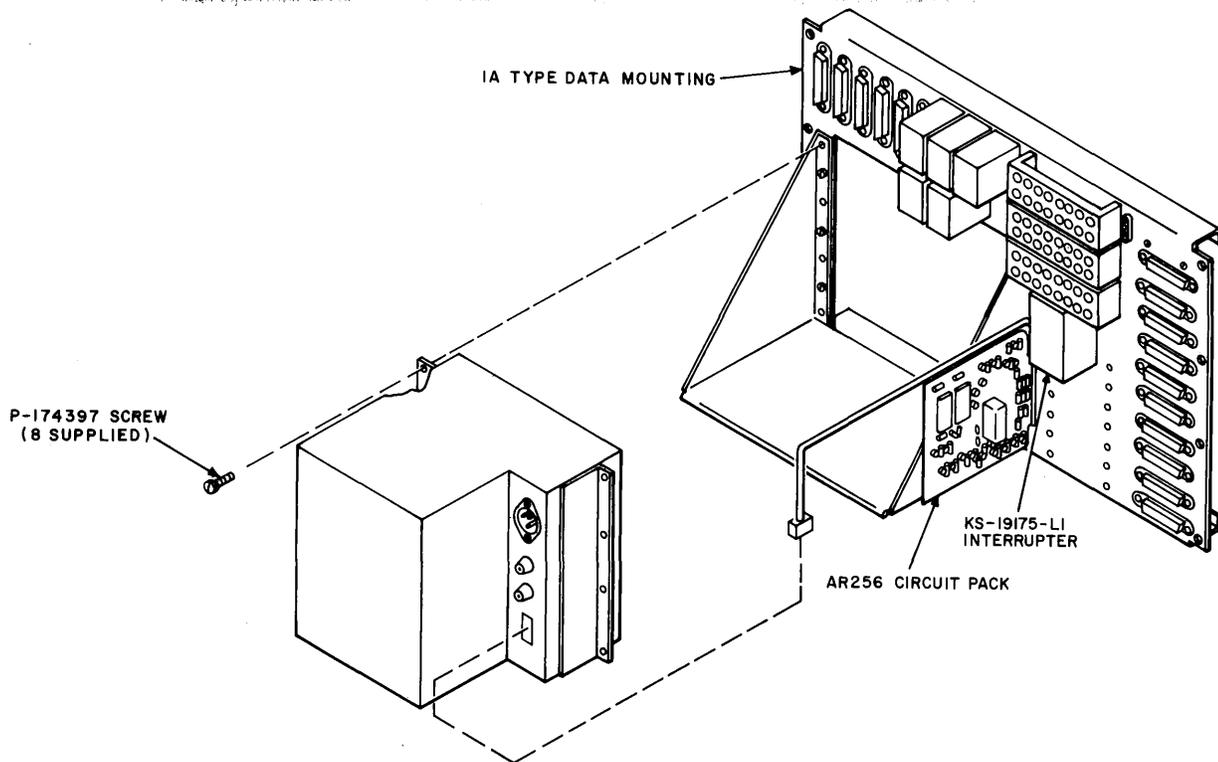


Fig. 8—Details for Mounting 31A Power Unit

J2. Installation should be in accordance with Fig. 12.

Data Sets Equipped With Data Auxiliary Sets 801-Type

3.23 When the 103E-type Data Station is fully equipped (40 data sets and 40 data auxiliary sets), the **first** cabinet requires connectors J1 and J2 to be mounted on the right side of the mounting plate as viewed from the rear (Fig. 12). The **second** cabinet also mounts on the right side with the exception that J1 mounts below J2.

3.24 A partially equipped 103E-type Data Station has J1 and J2 mounted in the same manner as indicated in 3.22.

KS-20093-L14 Shelf

3.25 Data Auxiliary Sets 801-type require the use of KS-20093-L14 shelves when used in the 103E-type Data Station. Due to the shelves being mounted on the front of the cabinet, KS-20093-L15-type adapter plates will be required to reduce the 25-inch cabinet to the 23-inch shelf. The adapter

plate is mounted on the left side of the cabinet as shown in Fig. 2. The number of KS-20093-L14 shelves to be installed will determine the length of the adapter plates required. Table A lists the adapter plate codes and the length of each.

Note: The minimum adapter plate length for use with the KS-20093-L14 shelf is 6 inches (List 15H). The adapter plates are not supplied with the KS-20093-L14 shelf and must be ordered separately.

3.26 The shelves should be positioned and installed in a partially equipped cabinet as shown in Fig. 2. For a fully equipped cabinet refer to Fig. 4 for the shelf positions. The shelf is installed by using the screws (P174397) supplied with the shelf as shown in Fig. 13.

Data Sets 103E-Type



Data Sets 103E2, 103E5, and 103E6 are equipped with a P47M664 housing assembly which enables the data set to be mounted on the 2A1 Data Mounting.

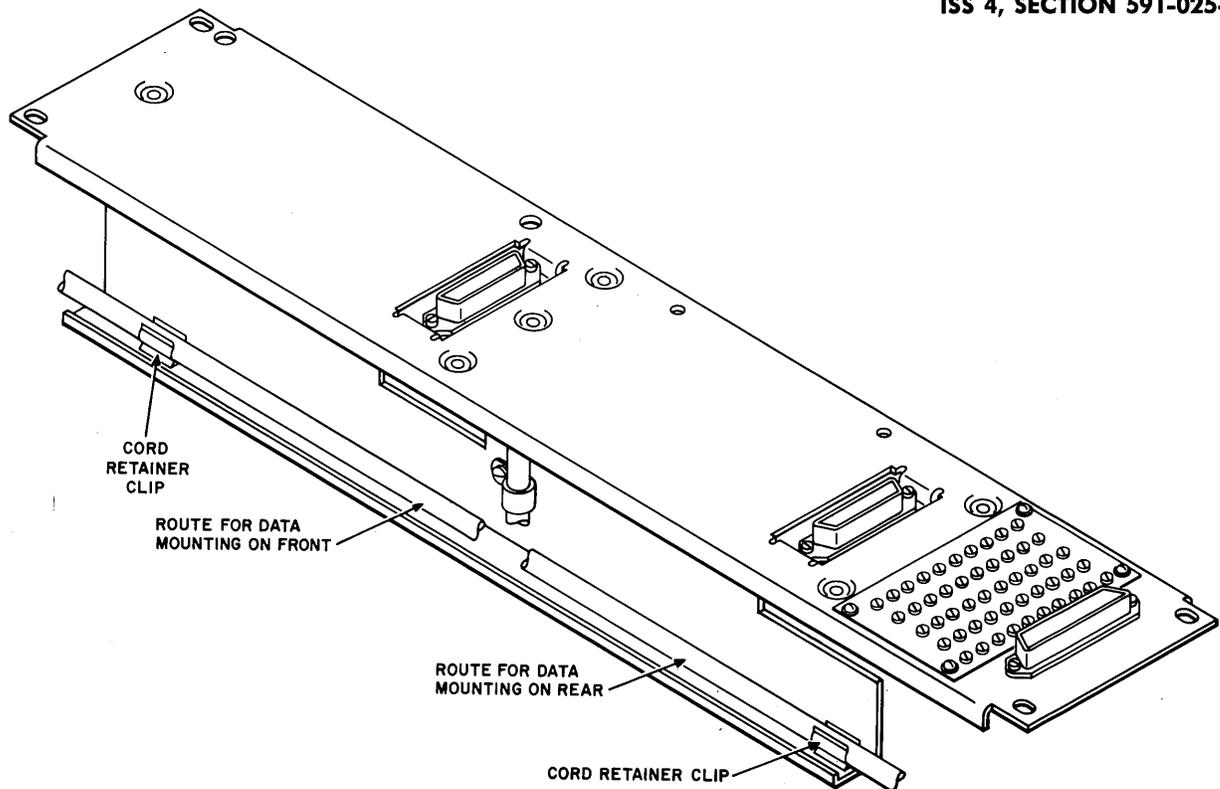


Fig. 9—Alternate Routing for 2A1 Data Mounting Interface Cord

3.27 Installation of the data sets starts on the 2A1 Data Mounting located at the top rear of the cabinet (just under the 1A1 Data Mounting). The data set numbering is from left to right; ie, data set on the left is *odd* numbered and data set on right is *even* numbered.

3.28 Installation of each data set should be in accordance with Fig. 14.

Data Auxiliary Sets 801-Type



When Data Auxiliary Sets 801-type are used with the 103E-type Data Station, an M25A-61 cord is required to extend the interface connector to the customer interface section of the cabinet. The M25A-61 cord is not furnished and must be ordered separately.

3.29 The data auxiliary set should be associated with the lowest numbered data set (ie, if 6 data auxiliary sets are installed, data sets 1 through 6 will be equipped). The M25A-61 cord from the

data auxiliary set to the customer interface section of the cabinet should be mounted to the left of its associated data set interface connector, as viewed from the rear.

3.30 Only three types of Data Auxiliary Set 801-type are compatible for use with the 103E-type Data Station. The types are as follows:

- Data Auxiliary Set 801A5 (dial pulse)
- Data Auxiliary Set 801C3 (TOUCH-TONE® calling)
- Data Auxiliary Set 801C4 (TOUCH-TONE calling)

3.31 When Data Auxiliary Sets 801A5 or 801C3 are installed, verify that the telephone line is arranged for ground-start operation. Data Auxiliary Set 801C4 may be option strapped for either loop-start *or* ground-start operation.

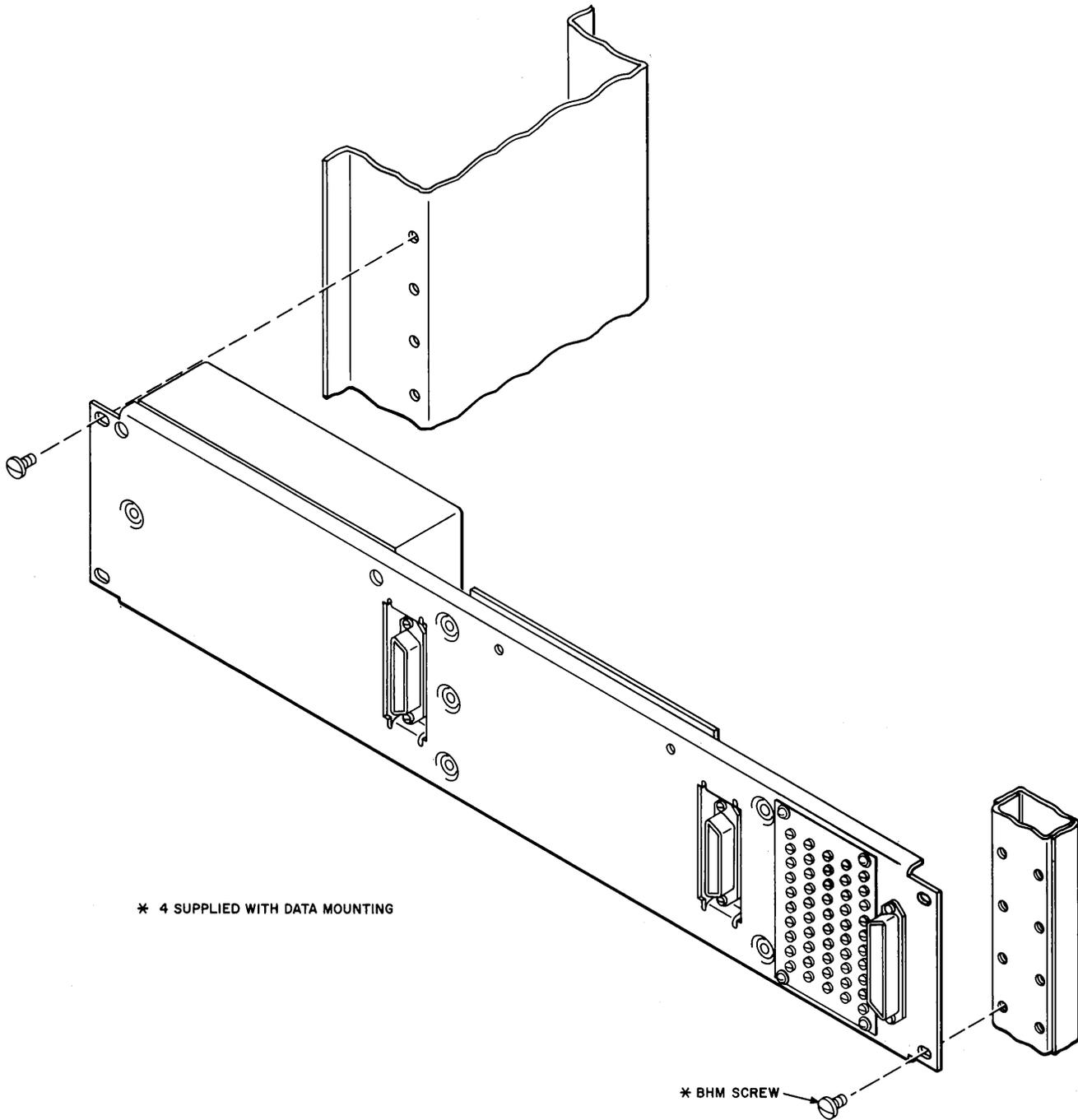


Fig. 10—Details for Mounting 2A1 Data Mounting

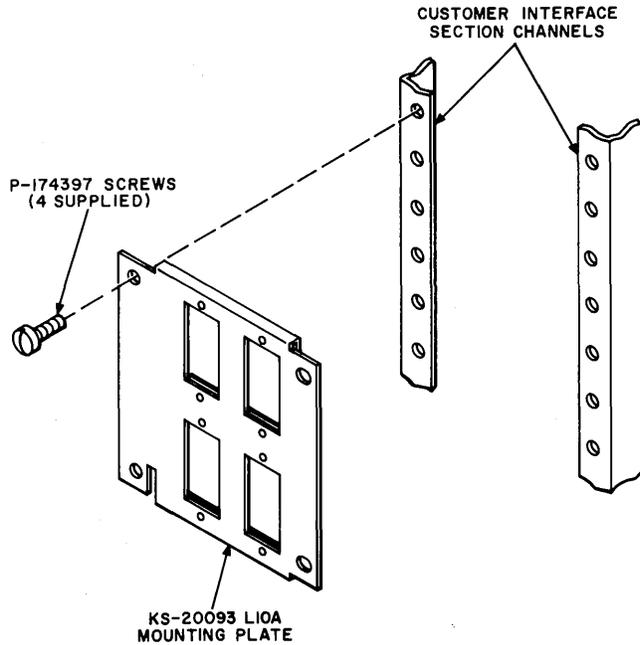


Fig. 11—Details for Mounting KS-20093-L10A Mounting Plates

TABLE A
ADAPTER PLATES

KS-20093 LIST	LENGTH IN INCHES
15A	68
15B	30
15C	18
15D	12
15E	10
15F	9
15G	8
15H	6
15J	3

3.32 If Data Auxiliary Set 801C-type is installed, verify that the telephone line is arranged for TOUCH-TONE service.



If the data auxiliary set is equipped with a M14C-61 (N option) mounting cord, this cord must be removed and a D10P-61 (M option) mounting cord installed. In all cases (unless specified on the service order and/or work sheet), the S-W mounting cord conductor must be moved from terminal SH1 to terminal 3.

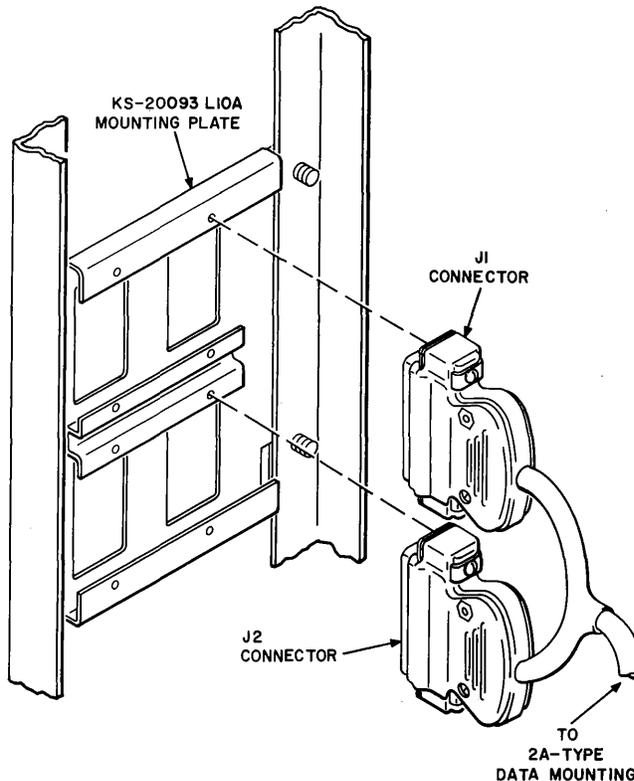


Fig. 12—Details for Mounting Interface Connectors in the Customer Interface Section of KS-20093-L1 Cabinet—Rear View

4. CONNECTIONS

4.01 The components of the 103E-type Data Station are interconnected using M50H cords. All but **seven** cords are supplied. Four of the seven cords are associated with the telephone lines and key telephone equipment (if provided). The remaining three cords are used to interconnect the 1A2 Data Mounting to the 1A1 Data Mounting and Data Auxiliary Set 804J-type. Due to the different locations in which the 1A2 Data Mounting may be installed, the length of the M50H cord will vary.

4.02 When the 1A2 Data Mounting is installed in the same cabinet as Data Auxiliary Set 804J-type, three M50H cords, 6 feet long, should

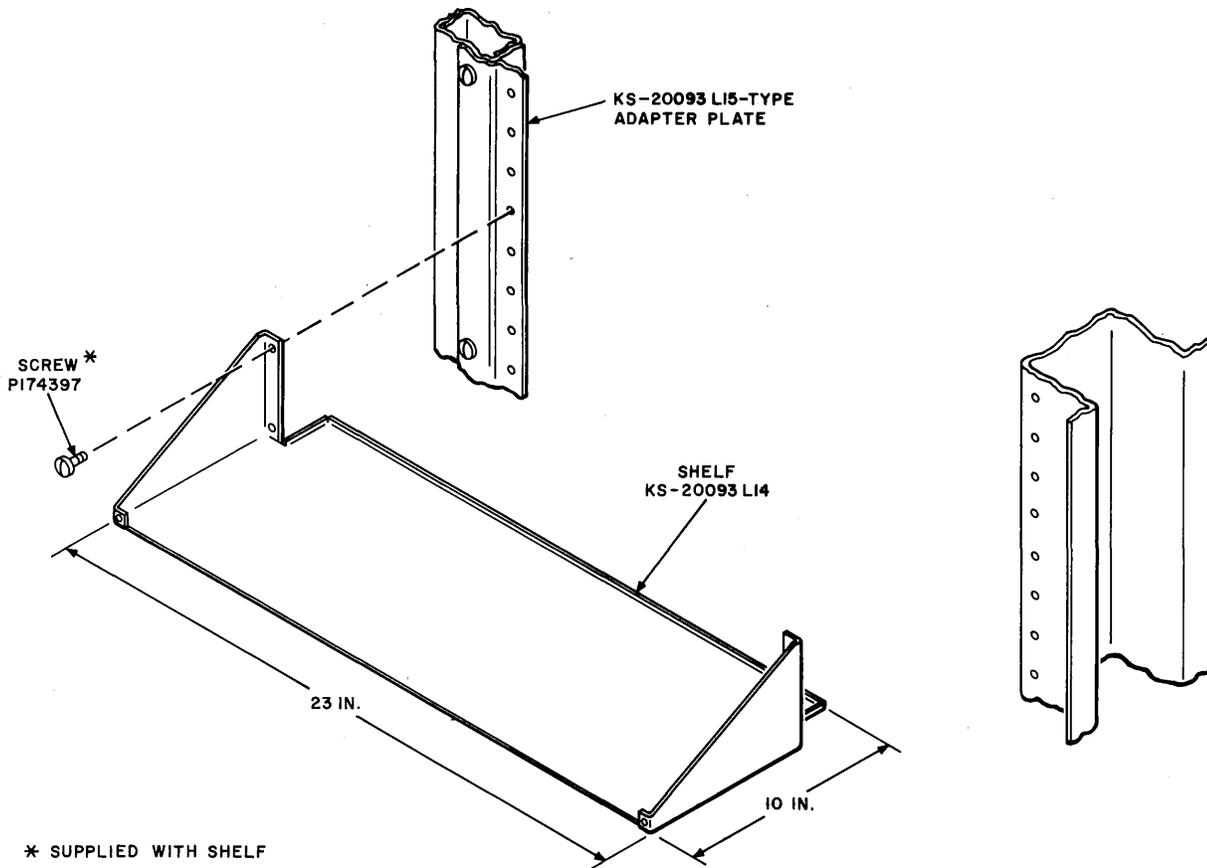


Fig. 13—Installation of KS-20093-L14 Shelf When Data Auxiliary Sets 801-Type are Used

be ordered. When the 1A2 Data Mounting is installed in a second cabinet (without Data Auxiliary Set 804J-type), three M50H cords, 12 feet long, should be ordered.

4.03 Interconnections of the 103E-type Data Station should be in accordance with the applicable Fig. 15 or 16.

Telephone Line Connections

4.04 Due to the many different combinations and possible configurations for partially equipped cabinets, specific information on the installation of the incoming telephone lines is not given in this section.



The connections of the incoming telephone lines are determined by the net loss of the local cable between the serving central office and the 103E-type Data Station. When the

103E-type Data Station is equipped with Data Sets 103E2 or in some cases Data Set 103E5, series 1, and the local cable net loss is from 0- to -2 dBm, an insertion loss pad will be required for each circuit. The pad consists of two 220-ohm 1-watt resistors (KS-13491-L1), connected in series with the tip and ring conductors of the circuit. The method of connecting the pads is shown in Fig. 17. It is suggested that the A25C connector cable from the 103F-type Data Station and the inside wiring cable to the incoming telephone lines be connected to the inside terminals of the 75A connecting block before connecting the resistors to the outside terminals. Each 113E apparatus box will serve 20 data circuits, and in addition, the first box will also pad the service line. A complete 103E-type Data Station

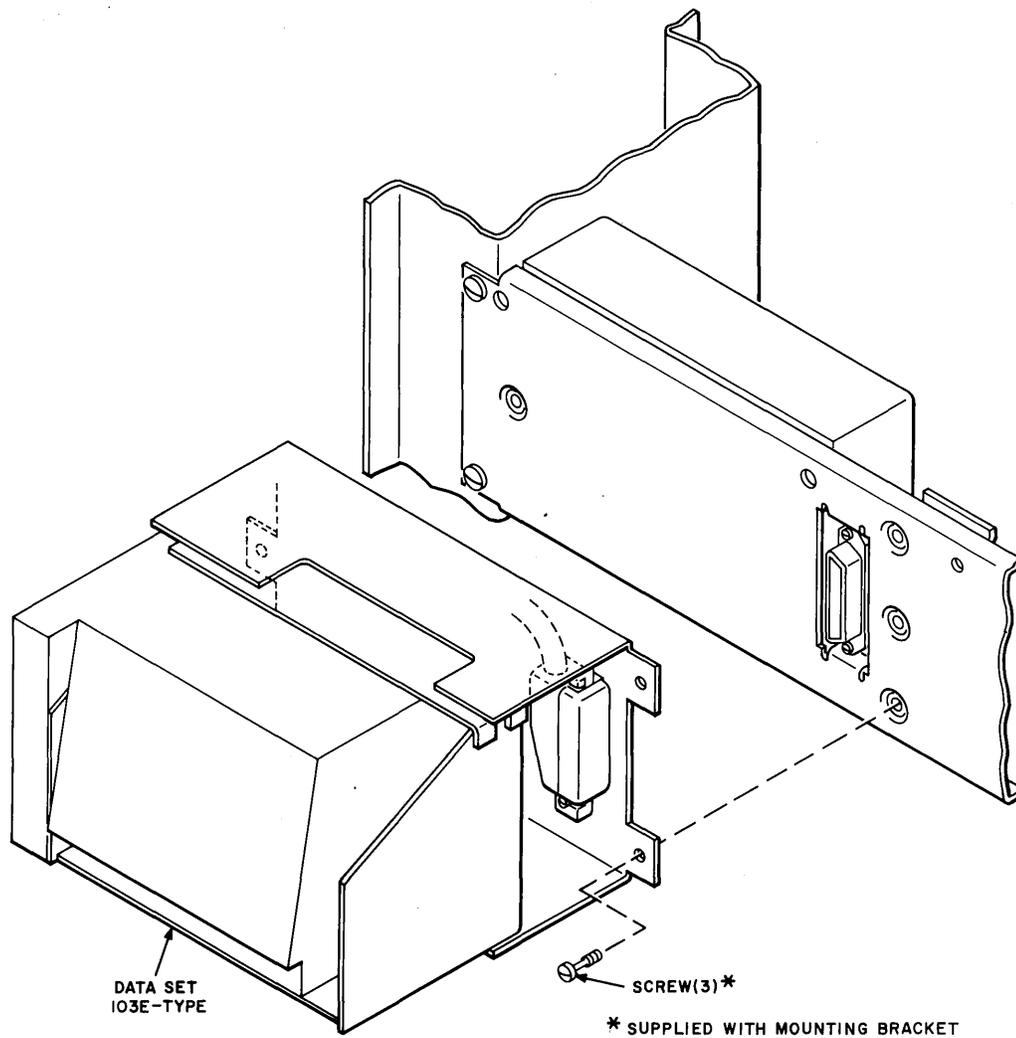


Fig. 14—Details for Mounting Data Set 103E-Type

(40 data sets) will require two 113E apparatus boxes, four 75A connecting blocks, eighty-two KS-13491-L1 (220 ohm, 1 watt) resistors, and two 107B apparatus blanks.

4.05 The incoming telephone lines and key telephone lines (if provided) are connected to the 1A-type Data Mountings (J4 and J5) by using one of the following connector cables or cords.

- A25C Connector Cable—Available in any length.
- M50G Cord—Available in 6-, 9-, or 18-foot lengths.

- M50H Cord—Available in 6-, 9-, or 12-foot lengths.

4.06 The A25C connector cable is equipped with a KS-16785-L8 plug on one end for connection to the 1A-type Data Mounting while the other end is unequipped. The cable may be used when cross-connection to a terminal, insertion loss pad, or distribution frame is required. Table B shows the color code and pairs to be used for connecting up to 40 data sets to the telephone line facilities when the A25C connector cable is used.

4.07 When Data Auxiliary Sets 801-type are provided, the cords should be routed in accordance with Fig. 18.

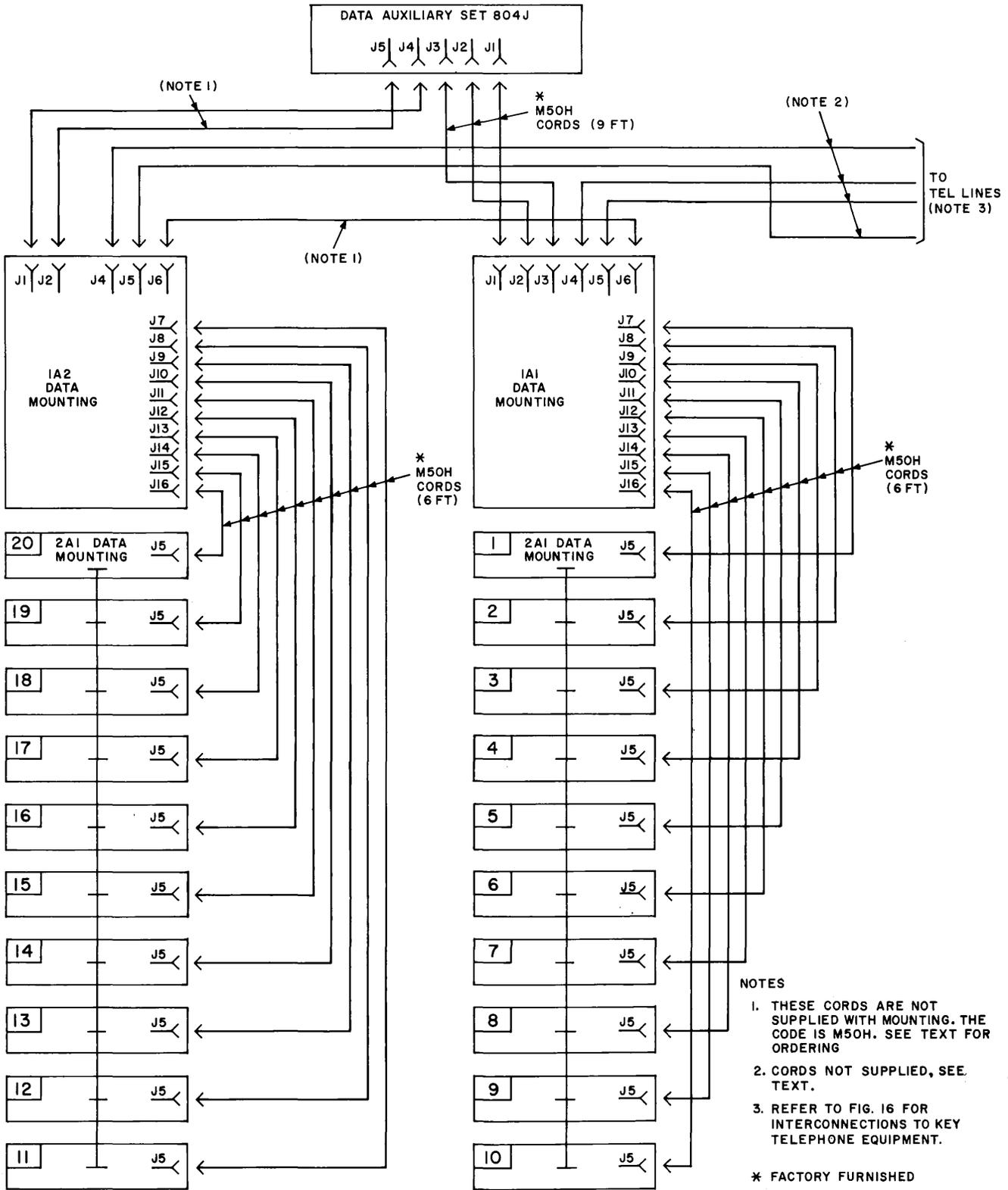


Fig. 15—Interconnections for 103E-Type Data Station—Cabling Diagram

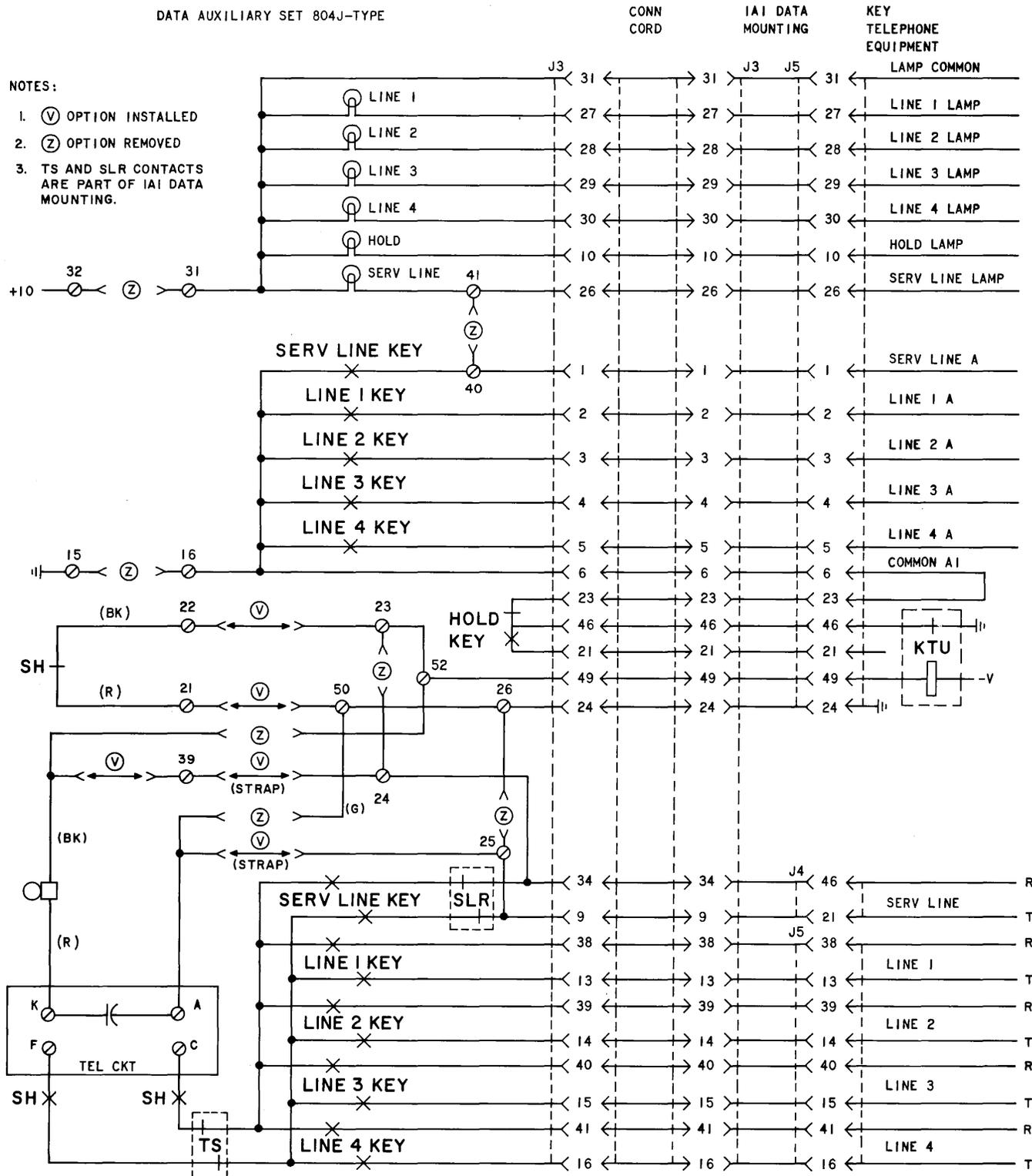
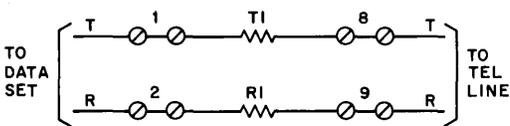
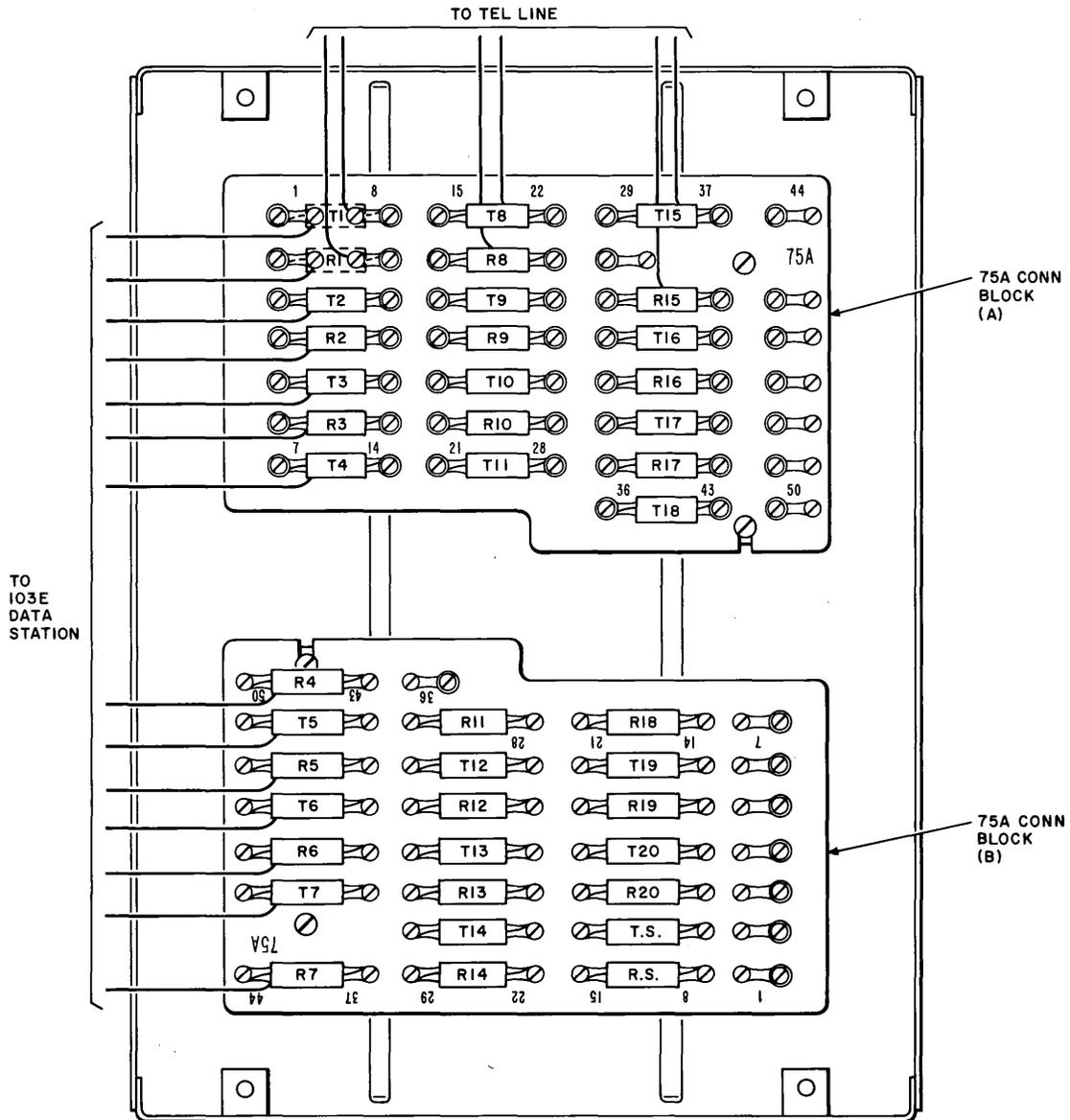


Fig. 16—Interconnections for the 103-Type Data Station to Key Telephone Equipment



NOTES:

1. ALL RESISTORS KS 13491, LI 220 OHM, 1 WATT.
2. TS AND RS DESIGNATED RESISTORS ARE FOR SERVICE LINE.
3. THIS ARRANGEMENT IS FOR TWENTY DATA SETS.
4. ONE IO7B APPARATUS BLANK IS REQUIRED AS A COVER.
5. ONE D-179941 KIT OF PARTS MAY BE ORDERED IF FLUSH MOUNTING IS DESIRED.
6. EITHER THE D-180039 OR D-180040 KIT OF PARTS MAY BE USED FOR NON-FLUSH INSTALLATION.

Fig. 17—Insertion Loss Pad Connections

◆ TABLE B ◆

A25C CONNECTOR CABLE

TEL LINE		LEAD DESIG	COLOR CODE	J4* CONN	J5 CONN
1A1	1A2				
1	21	T	BL-W	1	
		R	W-BL	26	
		3W	O-BK		12
2	22	T	O-W	2	
		R	W-O	27	
		3W	R-O		32
3	23	T	G-W	3	
		R	W-G	28	
		3W	R-G		33
4	24	T	BR-W	4	
		R	W-BR	29	
		3W	R-BR		34
5	25	T	S-W	5	
		R	W-S	30	
		3W	R-S		35
6	26	T	BL-R	6	
		R	R-BL	31	
		3W	BK-BL		36
7	27	T	O-R	7	
		R	R-O	32	
		3W	BK-O		37
8	28	T	G-R	8	
		R	R-G	33	
		3W	S-Y		20
9	29	T	BR-R	9	
		R	R-BR	34	
		3W	BR-Y		19
10	30	T	S-R	10	
		R	R-S	35	
		3W	G-Y		18

* See 4.08.1.

◆ TABLE B (Cont) ◆

TEL LINE		LEAD DESIG	COLOR CODE	J4* CONN	J5 CONN
1A1	1A2				
11	31	T	BL-BK	11	
		R	BK-BL	36	
		3W	O-Y		17
12	32	T	O-BK	12	
		R	BK-O	37	
		3W	Y-O		42
13	33	T	G-BK	13	
		R	BK-G	38	
		3W	Y-G		43
14	34	T	BR-BK	14	
		R	BK-BR	39	
		3W	Y-BR		44
15	35	T	S-BK	15	
		R	BK-S	40	
		3W	Y-S		45
16	36	T	BL-Y	16	
		R	Y-BL	41	
		3W	O-V		22
17	37	T	O-Y	17	
		R	Y-O	42	
		3W	V-O		47
18	38	T	G-Y	18	
		R	Y-G	43	
		3W	V-G		48
19	39	T	BR-Y	19	
		R	Y-BR	44	
		3W	S-V		25
20	40	T	S-Y	20	
		R	Y-S	45	
		3W	V-S		50
SERV LINE	—	T	BL-V	21	
		R	V-BL	46	

* See 4.08.1.

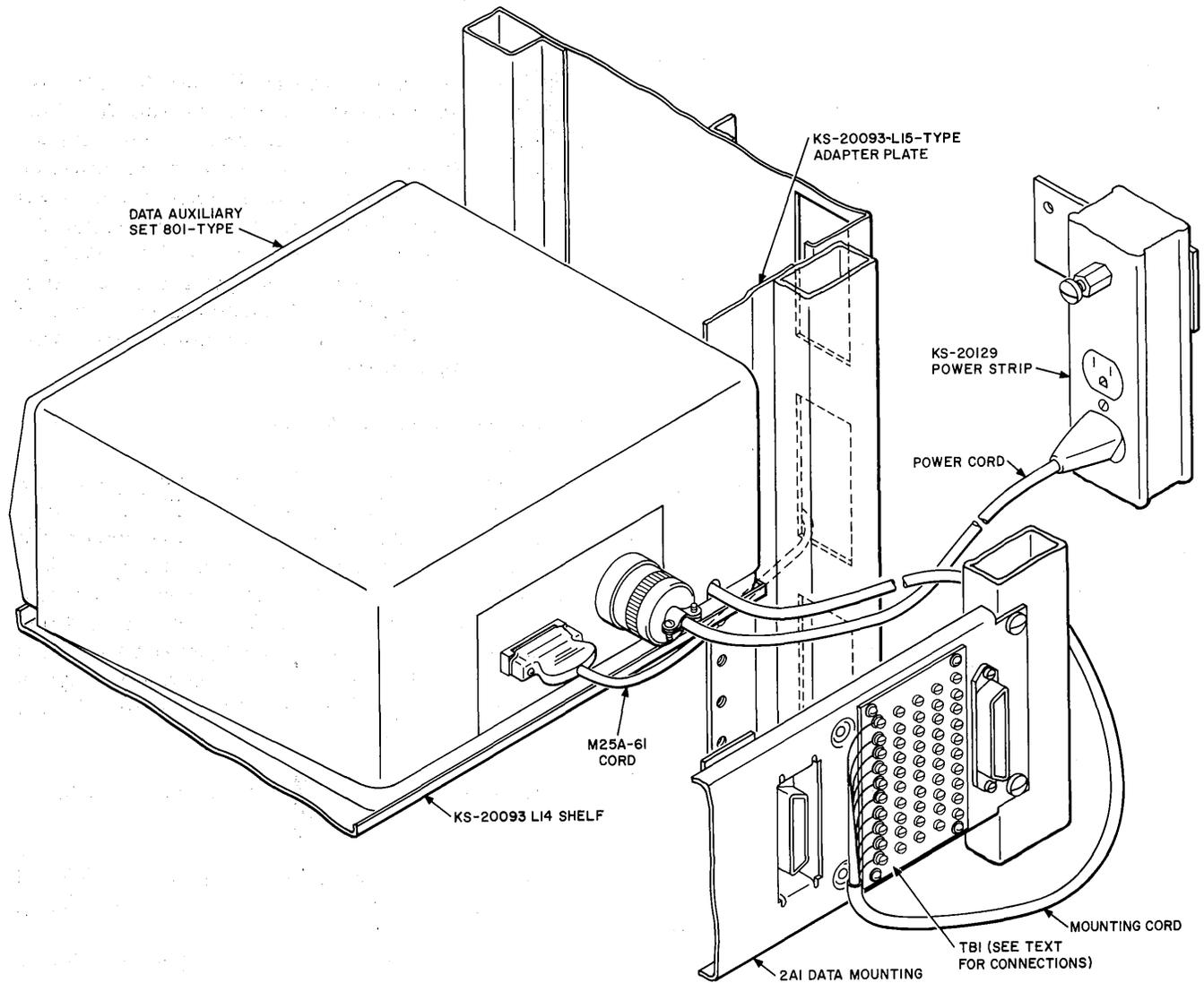


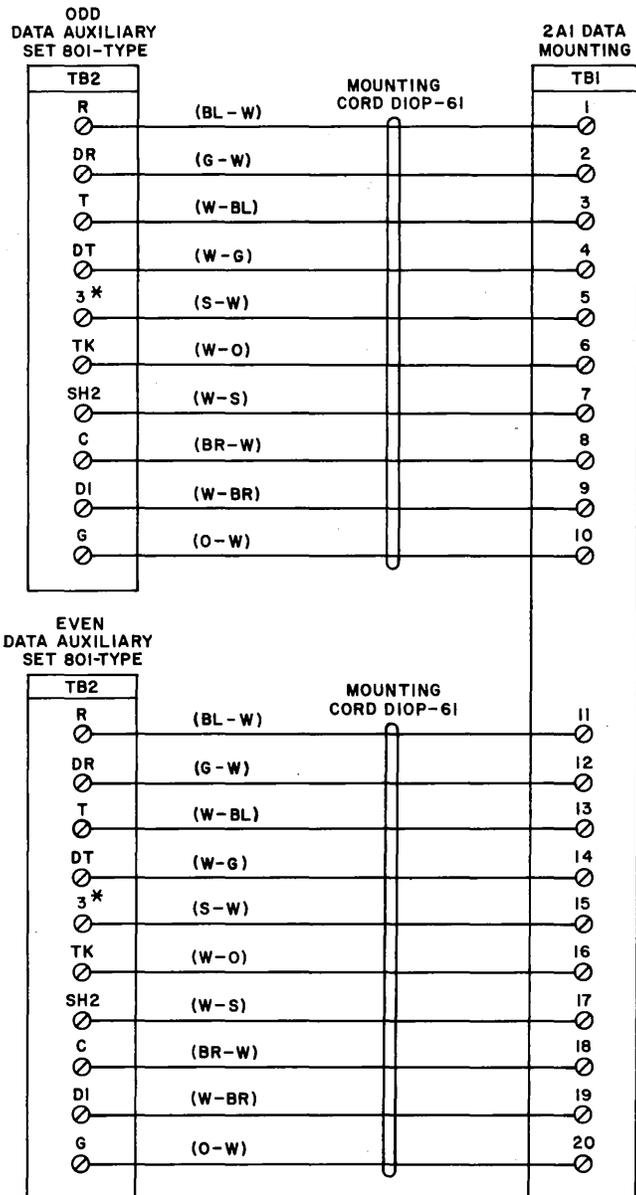
Fig. 18—Typical Data Auxiliary Set 801-Type Cord Routing

4.08 The D10P-61 mounting cord of the data auxiliary set should be connected to TB1 of the 2A1 Data Mounting as shown in Fig. 19.

Note: Certain terminal equipment manufacturers require a modification to the connections (Fig. 19). This modification consists of taping and storing the slate-white (S-W) conductor (D10P-61 cord) instead of connecting it to terminal block 2 (TB-2), terminal 3 on the data auxiliary sets. Unless otherwise specified on the service order and/or work sheet,

connections should be in accordance with Fig. 19.

4.08.1 Tip and ring connections were shown reversed in Table B, Issues 3 and 4 of this section. If the station currently is operating satisfactorily, do **not** change tip and ring to conform with the revised table. However, if a DAS 801-type ACU is to be added, or if unsatisfactory operation is experienced, reconnect tip and ring as shown.



* THE (S-W) WIRE IS NORMALLY CONNECTED TO SH1, AND MUST BE CHANGED TO TERMINAL 3.

Fig. 19—Data Auxiliary Set 801-Type—Mounting Cord Connections to 2A1 Data Mounting



If tip and ring are reversed as described in 4.08.1, verify that the DAS 804J-type switchhook BL lead is connected to TB1, terminal 19 and the switchhook BR lead is connected to TB1, terminal 8.

5. OPTIONS



Options for the 103E-type Data Station components should be specified on the service order and/or work sheet. Should the 3W ground make-busy option for sleeve lead control be specified, a ground wire must be installed between the KS-20093-L1 cabinet frame and protector ground. The method of providing this ground should be in accordance with local regulations.

Data Auxiliary Set 804J-Type

5.01 Two options, V and Z, are available on Data Auxiliary Set 804J-type. The Z option, which is factory-furnished, is installed when the 103E-type Data Station is *not* connected to key telephone equipment. When key telephone equipment is provided and the station is not being modified for answer-only service, option V must be installed in the DAS 804J. Option Z is removed and option V installed by performing the following steps. (Refer to Fig. 16.)

- (a) Move the ringer BK lead from TB1-52 to TB1-39.
- (b) Connect a wire between TB1-39 and TB1-24 if this connection has not been made previously.
- (c) Connect the switchhook R lead to TB1-21 and the switchhook BK lead to TB1-22.
- (d) Move the G lead from terminal A of the telephone network to TB1-21.
- (e) Connect a wire between terminal A of the telephone network and TB1-25.
- (f) Connect TB1-22 to TB1-23.
- (g) Remove all Z option straps as shown in Fig. 16.

1A-Type Data Mountings

5.02 The 1A-type Data Mountings do not contain any options.

2A1 Data Mountings

5.03 In addition to providing the connections for Data Auxiliary Sets 801-type mounting cords, TB1 on the 2A1 Data Mounting provides for service and/or feature options. Table C lists the available options.

Data Sets 103E-Type

5.04 Options are installed on Data Sets 103E-type by tightening or loosening screws on the circuit pack terminal blocks located at the front of the installed data set.



Exercise care when tightening option screws to prevent stripping the terminal blocks.

TABLE C
2A1 DATA MOUNTING OPTIONS

FEATURE OR OPTION		DESIG	STRAP TERM ON TB1
TWX Prime	UNIT 2	Z	41 to 42
	UNIT 1	Y	21 to 22
Tip-Ring Control	UNIT 2	X	44 to 45, 46 to 47
	UNIT 1	W	24 to 25, 26 to 27
Sleeve-Lead Control	UNIT 2	V	43 to 44, 47 to 48
	UNIT 1	T	23 to 24, 27 to 28
No Data Aux Set 801-Type	UNIT 2	S	11 to 12, 13 to 14
	UNIT 1	R	1 to 2, 3 to 4
Data Term Busy Control	UNIT 2	Q	36 to 37, 38 to 39 to 40
	UNIT 1	N	31 to 32, 33 to 34 to 35

5.05 Install options on the circuit packs of each *Data Set 103E5 or 103E6* as shown in Table D. Reference to Fig. 20 may be helpful to locate the option screws to be *tightened* for each option.

Note: The screw setting numbers in Table D are counted from the top down. The top screw is number 1.

5.06 Install options on the circuit packs of each *Data Set 103E2* as shown in Table E. Reference to Fig. 21 may be helpful to locate the option screws to be *tightened* for each option. The remaining option screws on Data Set 103E2 are for adjusting the transmit level and desensitizing pad of the data set and are shown in Table F.

Note: The screw setting numbers in Tables E and Table F are counted from the top down. The top screw is number 1.

5.07 Data Sets 103E5 and 103E6 are not equipped with a desensitizing pad. Furthermore, the transmit level is adjusted by potentiometer R34. The level adjusting potentiometer is located on CP CJ11 for Data Set 103E5 and on CP CJ15 for Data Set 103E6. Details for adjusting the transmit level and Data Set 103E2 desensitizing pad are covered in the section entitled Data Set 103E-Type

Data Station Using KS-20093 Cabinets, Test Procedures (591-025-501).



Failure to adjust the transmit level and desensitizing pad (if required) may result in an inoperative system.

Data Auxiliary Sets 801-Type



Certain options are not compatible with the 103E-type Data Station and must be removed. These noncompatible options are shown in Table G.

Note: Refer to the section entitled Data Auxiliary Set 801A5 And 801A6 For Automatic Calling, Installation And Connections (598-010-201), or the section entitled Data Auxiliary Sets 801C3 And 801C4, Installation (598-012-201) for option connection information.

5.08 Specific options must be installed in the data auxiliary sets to be compatible with the 103E-type Data Station in addition to the options required for data auxiliary set operation. The specific options are shown in Table H.

TABLE D
DATA SETS 103E5 AND 103E6 FEATURES OR OPTIONS

FEATURE OR OPTION		DESIG	CP NO.	SCREW SETTING	
				LOOSEN	TIGHTEN
Answer Mode Indication	CE ON	X*	CJ9 or CJ14	1	2
	CE OFF	W		2	1
Space Disconnect	LONG	V*	CJ10	3	8
	SHORT	H			3 and 8
	NONE	W/O V, H		3 and 8	
Send Disconnect	YES	T*	CJ10		1
	NO	W/O T		1	
Loss of Carrier Disconnect	YES	S	CJ10		4
	NO	W/O S*		4	
Common Grounds	YES	Q*	CJ9 or CJ14		10
	NO	W/O Q		10	
Originate Only Test	YES	G	CJ10		12
	NO	W/O G*		12	
Without ANS/ORG Transfer		N*	CJ10		10
		W/O N		10	
Answer Control	COMBINED	M*	CJ9		9
	SEPARATE	W/O M		9	
CB/CF Indication	COMMON	A	CJ9 or CJ14	5 and 7	4 and 6
	SEPARATE	B*		4 and 6	5 and 7
CC Indication Early	YES	ZD	CJ14		12
	NO*	W/O ZD		12	

Notes: (1) Options marked (*) are factory-furnished options.

(2) CP CJ9 or CP CJ14 is used in Data Set 103E5. CP CJ14 is used in Data Set 103E6.

6. MODIFICATIONS TO THE 103E DATA STATION TO PROVIDE ANSWER-ONLY SERVICE

- 1—#4 flat metal washer per data set.

6.01 The following items are required to modify the 103E-type Data Station for answer-only service:

- 75 ft—Wire, 20-24 gauge, solid
- Qty—Tape, cellophane insulating

6.02 The features that are disabled to provide answer-only service are given in Table I which also indicates the action required to disable the features or to modify the equipment.

Note: When a 103E-type Data Station is modified to provide answer-only service, the service lines must **not** be changed to answer-only

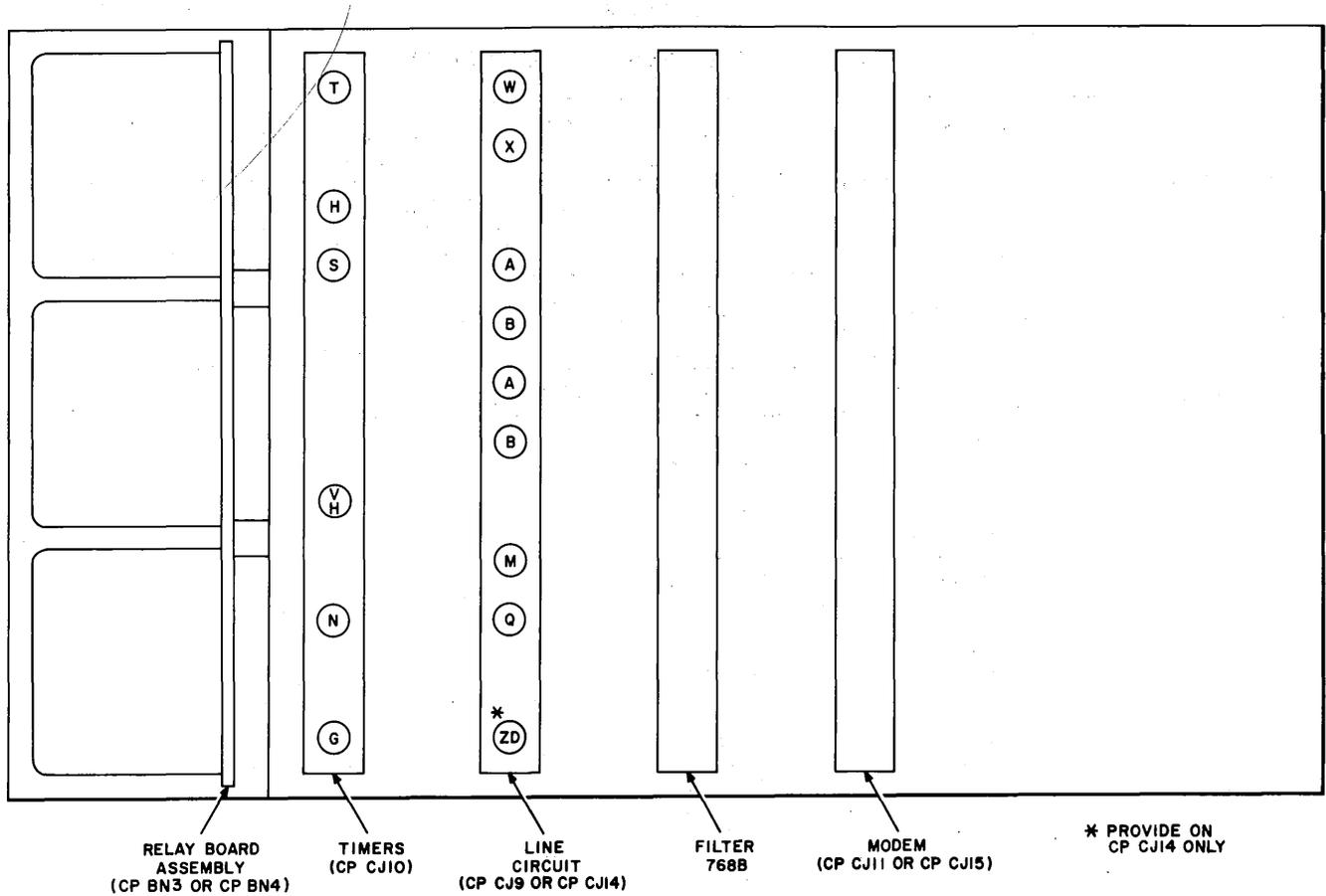


Fig. 20—Data Sets 103E5 and 103E6—Circuit Pack Locations and Option Screw Settings

operation. Modification of the service lines will prevent testing of the data station.

6.03 When answer-only service similar to that provided by a 113-type Data Station without a data auxiliary set (ie, the service line is terminated in a 500-type telephone set) is provided, the station must be modified as indicated in Table I. In addition, the interface monitor circuits and the data lamp indications are disabled by removing the following lamps located in the DAS 804J-type:

- (1) TRMT DATA
- (2) RCV DATA
- (3) CLR SEND
- (4) SET READY

- (5) TERM READY
- (6) CARR DET
- (7) TERM BUSY
- (8) RING IND
- (9) DATA (key lamp).

7. INSTALLATION TESTS

7.01 At the completion of the installation for the 103E-type Data Station, refer to the section entitled Data Set 103E-Type Data Station Using KS-20093 Cabinets, Test Procedures (591-025-501) for the test procedures and requirements.

TABLE E

DATA SETS 103E2 – FEATURES OR OPTIONS

FEATURE OR OPTION		DESIG	CP NO.	SCREW SETTING	
				LOOSEN	TIGHTEN
Frequencies	Inverted	Z	CJ4	1 and 3	2
			CJ5	6, 9, and 11	7, 10, and 12
	Normal	Y*	CJ4	2	1 and 3
			CJ5	7, 10, and 12	6, 9, and 11
Answer Mode Indication	CE ON	X*	CJ8	1	2
	CE OFF	W	CJ8	2	1
Space Disconnect	LONG	V*	CJ2		1
	SHORT	H			1 and 3
	NONE	W/O V, H		1	
Send Disconnect	YES	T*	CJ2		7
	NO	W/O T		7	
Loss of Carrier Disconnect	YES	S	CJ8		12
	NO	W/O S*		12	
Common Grounds	YES	Q*	CJ8		10
	NO	W/O Q		10	
Originate Only Test	YES	G	CJ2		10
	NO	W/O G*	CJ2	10	
Without ANS/ORG Transfer		N*	CJ2		12
		W/O N		12	
Answer Control	COMMON	M*	CJ8		4
	SEPARATE	W/O M		4	
CB/CF Indication	COMBINED	A	CJ8	6	7
	SEPARATE	B*		7	6

* Factory-furnished feature or option.

Note: Test procedures and test requirements for Data Auxiliary Sets 801-type will be found in the appropriate sections covering the type of data auxiliary set being installed (598-010-501 or 598-012-501).



After completing all installation tests (591-025-501), connect the customer interface cord to KS-20093-L10A mounting plate as shown in Fig. 22.

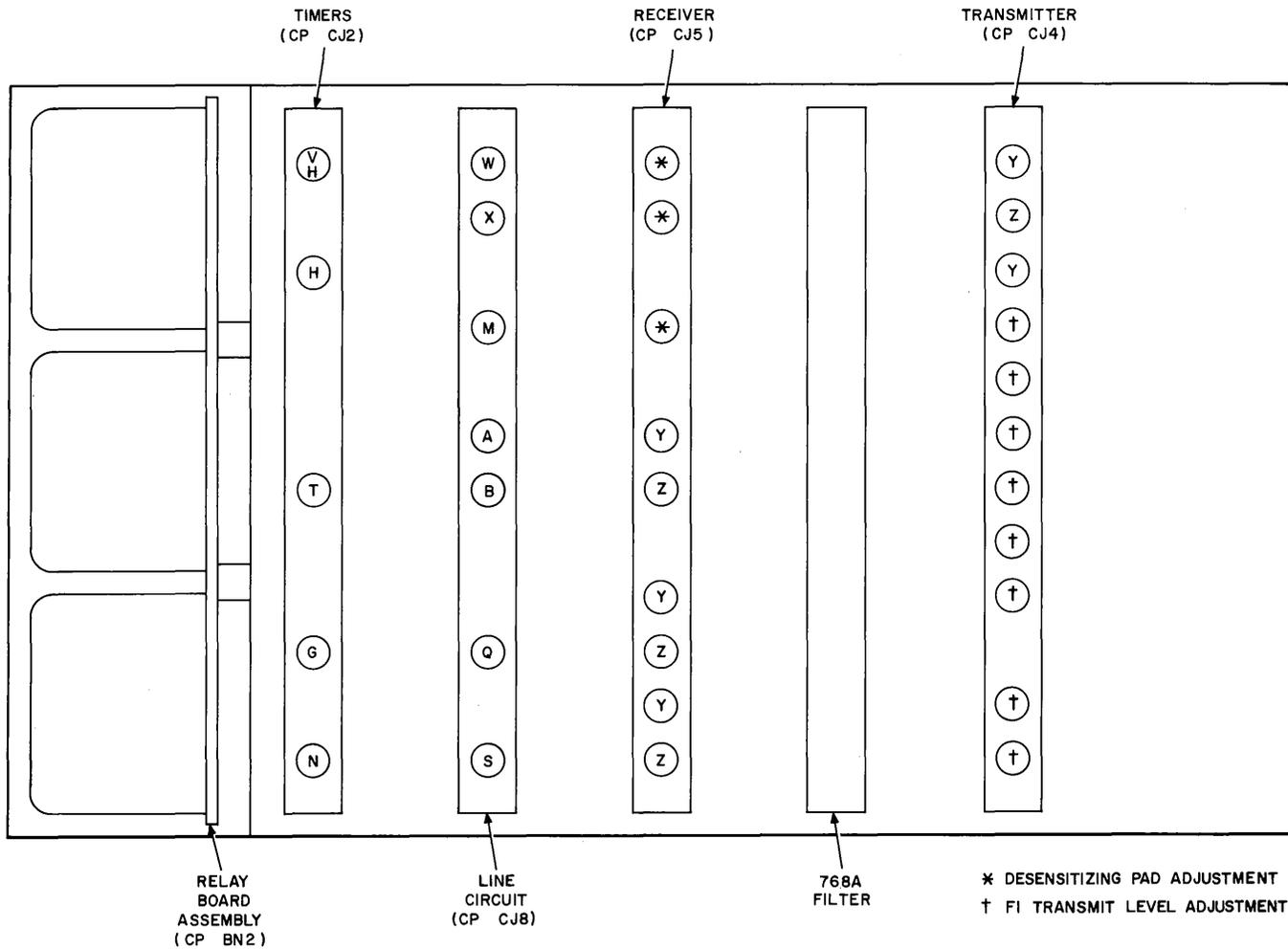


Fig. 21—Data Set 103E2—Circuit Pack Locations and Option Screw Settings

TABLE F
DATA SET 103E2
TRANSMIT LEVEL (CP CJ4) AND DESENSITIZING PAD (CP CJ5)

1000 Hz MEAS. LOSS	TRANSMIT LEVEL				DESENSITIZING PAD		
	DB		LOOSEN	TIGHTEN	DB	LOOSEN	TIGHTEN
	F2	F1					
Above 12	0	0	4, 12	5, 6, 7, 8, 9, 11	0	1, 2, 4	—
*—	0	-4	4, 11	5, 6, 7, 8, 9, 12	0	1, 2, 4	—
10-12	-2	-2	5, 12	4, 6, 7, 8, 9, 11	0	1, 2, 4	—
—	-2	-6	5, 11	4, 6, 7, 8, 9, 12	0	1, 2, 4	—
8-10	-4	-4	6, 12	4, 5, 7, 8, 9, 11	2	1, 2	4
—	-4	-8	6, 11	4, 5, 7, 8, 9, 12	2	1, 2	4
6-8	-6	-6	7, 12	4, 5, 6, 8, 9, 11	4	1, 4	2
—	-6	-10	7, 11	4, 5, 6, 8, 9, 12	4	1, 4	2
4-6	-8	-8	8, 12	4, 5, 6, 7, 9, 11	6	2, 4	1
—	-8	-12	8, 11	4, 5, 6, 7, 9, 12	6	2, 4	1
2-4	-10	-10	9, 12	4, 5, 6, 7, 8, 11	6	2, 4	1
—	-10	-14	9, 11	4, 5, 6, 7, 8, 12	6	2, 4	1
0-2†	-12	-12	9, 12	4, 5, 6, 7, 8, 11	6	2, 4	1

* Factory-furnished strapping is “— (F2 - 0, F1 - -4)”

† Requires external insertion loss pad

TABLE G
DATA AUXILIARY SET 801-TYPE
OPTIONS NOT USED WITH DATA SET 103E2

FEATURE OR OPTION	OPTION DESIGNATION
Data Set to Data Mode by Contact to D1	Q
Data Set to Data Mode by Isolated Contact	F
ACU Answer Detection or End of Number	B
Isolated TK Contact	ZA
Isolated CL Contact	ZC
Ground Start (4-Wire)	ZK*
4-Wire	ZJ*
Terminate Call via Data Set After DSS Goes on (Line Transfer) in Test	G
Terminate Call via CRQ After DSS Goes on (Line Transfer)	Z
DLO Controlled by ACU and Data Set	ZL*

*DAS 801C Only

TABLE H
DATA AUXILIARY SET 801-TYPE
REQUIRED OPTIONS

FEATURE OR OPTION	OPTION DESIGNATION
Data Set to Data Mode by Grounded Contact	ZG
Grounded TK and CL Contacts	ZB
Data Set Answer Detection Without End of Number	E
2-Wire	ZH*
DLO Controlled by ACU	ZM*

*DAS 801C Only

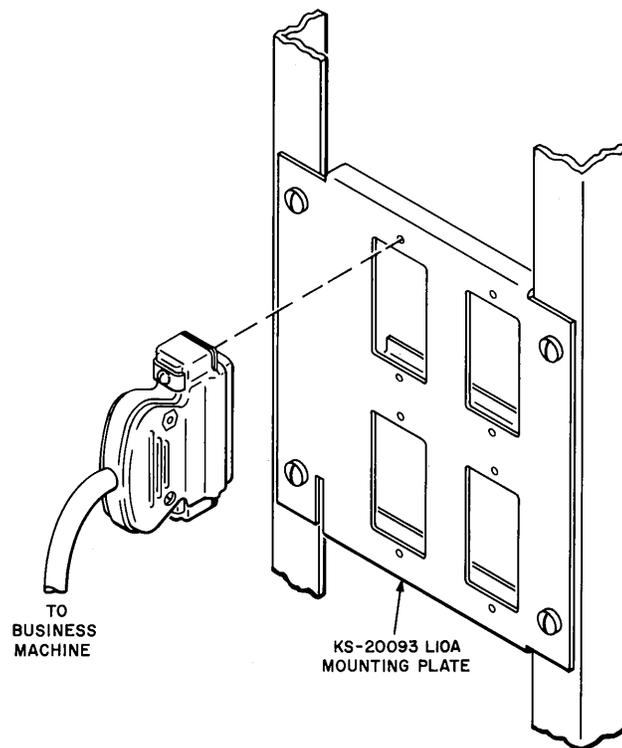
TABLE I

MODIFICATIONS TO 103E-TYPE DATA STATION FOR ANSWER-ONLY SERVICE

FEATURE TO BE DISABLED	ACTION REQUIRED
(1) Auxiliary Telephone Lines	Disconnect all auxiliary telephone lines, remove V option, and install the Z option by providing the straps and connections indicated by Fig. 16.
(2) Automatic Call Origination	Remove all DAS 801-type automatic calling units and provide S and R options on all 2A1 Data Mounting Units. Refer to Table C for information on providing the required options.
(3) Manual Call Origination (on data line)	Restrict the lines in the central office for answer-only operation.
(4) Audible Ring Indication (Incoming call on the selected data line)	Disconnect, individually tape, and tie back the wires connected to terminal A and terminal C of the buzzer located in the DAS 804J-type.
(5) Visual Ring Indication (Flash for incoming call on data line)	<p>Loosen the retaining screw and remove the interrupter unit located on the 1A1 Data Mounting Unit (see Fig. 8). Using a single piece of cellophane insulating tape, cover all of the gold-plated portion of printed circuit board terminal 7 and terminal 14 by wrapping the tape from top to bottom at the end of the terminals. <i>Do not</i> cover any portion of the adjacent terminals. After insulating the terminals, replace the interrupter unit.</p> <p><i>Note:</i> Terminals 7 and 14 are the leftmost top and bottom terminals when the interrupter is positioned so that the circuit board is on top and the motor faces the observer.</p>
(6) Data Set Operation In The Originate Mode	<p>When Data Sets 103E5 or E6 are used: Connect a wire from screw switch 10 on circuit pack CJ10 to terminal TB1-10 of the associated 2A1 Data Mounting unit. For the second data set on the mounting, the wire is connected from screw switch 10 on circuit pack CJ10 to terminal TB1-20 of the 2A1 Data Mounting. When Data Set 103E2 is used: Connect from screw switch 12 on circuit pack CJ2 to terminal 10 (or 20) of the associated 2A1 Data Mounting.</p> <p><i>Note:</i> Use a washer between the wire and the screw switch terminals when making the above connections. Each data set in the data station will have to be connected to its associated 2A1 Data Mounting in the manner indicated above.</p>
(7) Space Disconnect	Remove the V option on all Data Sets 103E-type (refer to Tables D and E).

TABLE I (Cont)

FEATURE TO BE DISABLED	ACTION REQUIRED
(8) Send Disconnect	Remove the T option on all Data Sets 103E-type (refer to Tables D and E).
(9) Answer Mode Indication CE ON	Remove the X option and install the W option on all Data Sets 103E-type (refer to Tables D and E).



**Fig. 22—Customer Interface Cord Attached to
KS-20093-L10 Mounting Plate—Front View**