ADAPTERS FOR USE WITH CONNECTOR CABLES

IDENTIFICATION AND APPLICATION

1. GENERAL

1.01 This section provides the purpose, design features, schematics, application, and conversion of the following adapters:

- 148A manufacture discontinued (MD) and 148B (MD)
- 149A (MD) and 149B
- 153-type
- 258A
- 259A, 259B, and 259C
- KS-19252, List 1, List 2, List 3, List 4, List 5, List 6, List 7, List 9, and List 10 3-way bridging types.

1.02 This section is reissued to:

(a) Add information on the KS-19252, List 6, List 7, List 9, and List 10 3-way bridging adapters

(b) Review alphabetical designations of Tables B through E

(c) Change KS numbers and jack numbers of 153AM and 153BM adapters.

Revision arrows are used to emphasize the more significant changes.

2. IDENTIFICATION

PURPOSE

2.01 The 148-, 149-, 153-, and KS-19252-type adapters connect plug-ended telephone sets to speakerphone equipment, externally mounted lamps and buzzers, and other auxiliary services.

2.02 The 153-type adapters are used to adapt a single-button or nonbutton telephone set to a station wired with a connector cable when a multibutton telephone station is converted to single- or 2-line service.

2.03 The 258- and 259-type adapters are intended primarily for connecting Multibutton Electronic Telephone Sets (METS) to existing 25-pair connector cables.

2.04 The KS-19252-type adapters permit multipling of plug-ended telephone sets with A25B or B25A connector cables.

2.05 Order adapters as follows:

- Adapter, 148A-49 (MD) or 148B-49 (MD) or 148B-87
- Adapter, 149A-49 (MD) or 149B-49
- Adapter, 153A, 153B, 153C, 153D, 153AM1 (MD), 153BM1 (MD), 153AM2, 153BM2, 153AM3, and 153BM3
- Adapter, 258A
- Adapter, 259A, 259B, or 259C
- Adapter, Bridging, KS-19252, L1-49, L2-49, L3-49, L4-49, or L5-49, ▶L6-49, L7-49, L9-49, or L10-49◀.

DESIGN FEATURES

A. 148A (MD) and 148B (MD) Adapters (Fig. 1)

2.06 The 148A (MD) and 148B (MD) adapters consist of a 3-foot length of 39-conductor cord, terminated at one end in a Y-form molded sleeve attached to a 50-contact KS-16689, List 2 plug and a KS-16690, List 3 receptacle.

2.07 Loose spade-tipped leads at the free end of the cord are arranged for connection to 44-type connecting blocks, including stayhook for anchoring.

2.08 Pins 1 through 20 and 26 through 45 of the 50-contact plug are interwired by strapping to corresponding pins of the 50-contact receptacle through the Y arms of the cord (Fig. 2).

2.09 The 19 electrically bridged leads have spade-tip insulators to prevent accidental short-circuiting when not terminated beneath connecting block screws.

Do not use long-nose pliers to pull off insulators. Insulators should be cut and carefully removed with electrical scissors or diagonal pliers.

2.10 Connectors are held together by a retaining clip (Fig. 1) for protection during shipment.

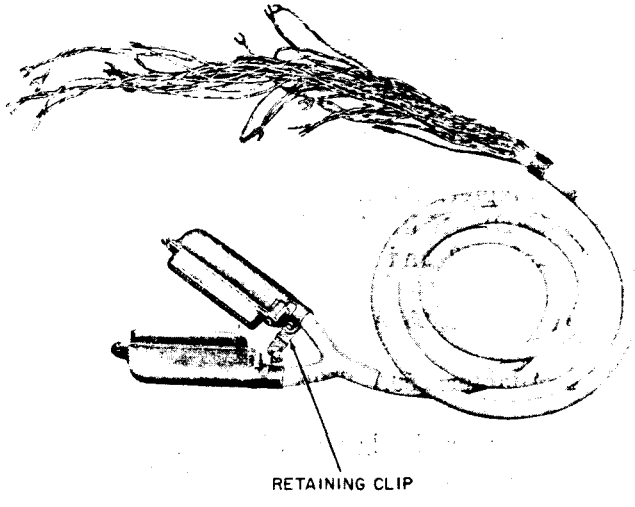


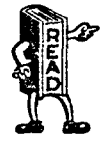
Fig. 1—148A (MD) or 148B (MD) Adapter

2.11 The 148B (MD) adapter is identical to the 148A (MD) adapter, except the cordage incorporates the even-count color code. The 148B-87 adapter replaced the 148B-49 (MD) adapter. The 148B-87 (MD) is identical to the 148B-49 (MD) except the 148B-87 (MD) is equipped with a satin-silver cord.

B. 149A (MD) Adapter

2.12 The 149A (MD) adapter consists of terminal block (Fig. 4), one KS-16671, List 1 plug, and one KS-16672, List 1 receptacle assembled on a metal base. It has a removable polystyrene cover (Fig. 3) and two holes in the base for mounting.

2.13 A locking screw assembly is provided to secure telephone set mounting cord plug and cable receptacle to the adapter. The plug and receptacle are wired as shown in Fig. 5. Terminal strip A is wired to pins of the receptacle, and terminal strip B is wired to pins of the plug.



Since pins 20, 23 through 25, 45, 48 through 50 are not common between plug and receptacle, it may be necessary to strap these leads through on the face of the terminal strip when features in the set use these leads. An example could be the common ringer leads.

2.14 A wiring diagram of the adapter is attached to the inside of the cover assembly.

C. 149B Adapter

2.15 The 149B adapter is similar to the 149A (MD) adapter except that wiring has been replaced by printed wiring, and the receptacle and plug are mounted on the face of the printed wiring board assembly (Fig. 7). The printed wiring board is mounted to a phenolic baseplate.

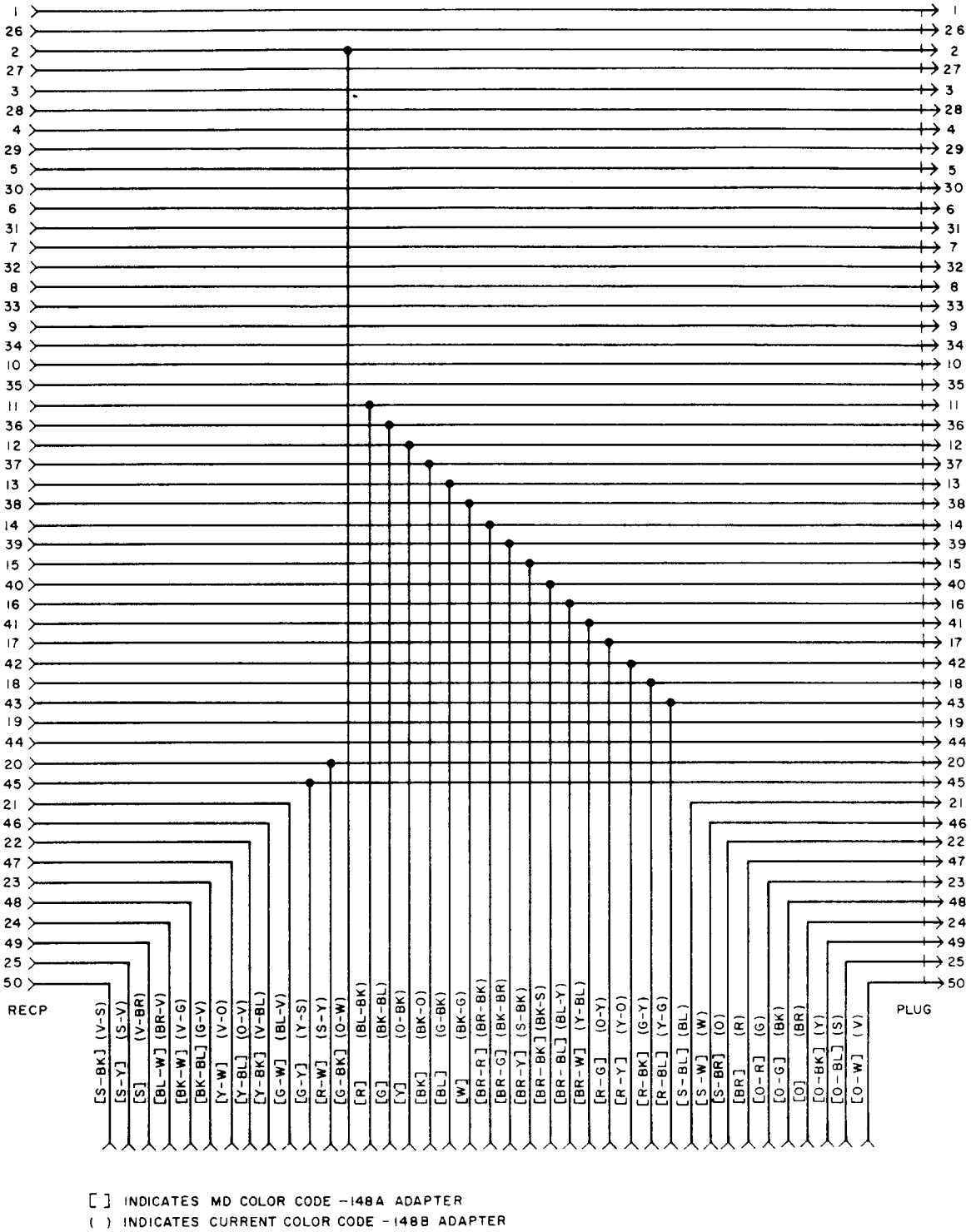
2.16 The 149B adapter has a removable high-impact polystrene cover (Fig. 6). Two holes in the baseplate and wiring board provide means for mounting the adapter.

2.17 A reversible locking fixture attached to the inside of the cover (Fig. 6) secures an external plug (KS-16689, List 1 plug-ended cord) to the KS-16672, List 13 receptacle.

2.18 The external receptacle (KS-16690, List 1 receptacle on an A25B connector cable) is secured to the KS-16671, List 10 plug by the inside surface of the cover assembly.

2.19 When the cover assembly is put into position, both receptacles and plugs are secured.

2.20 The wiring diagram (Fig. 5) is also molded into the inner surface of the cover assembly (Fig. 6).



[ ] INDICATES MD COLOR CODE – 148A ADAPTER
( ) INDICATES CURRENT COLOR CODE – 148B ADAPTER

Fig. 2—148A (MD) or 148B (MD) Adapter, Schematic

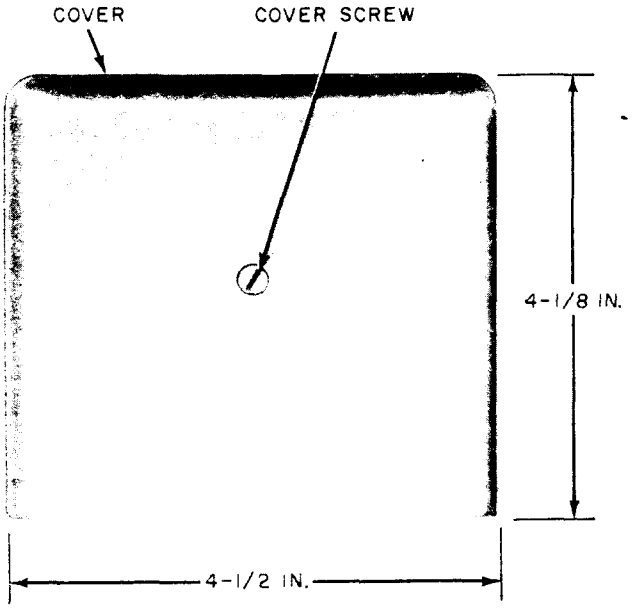


Fig. 3—149A (MD) Adapter Cover (Front View)

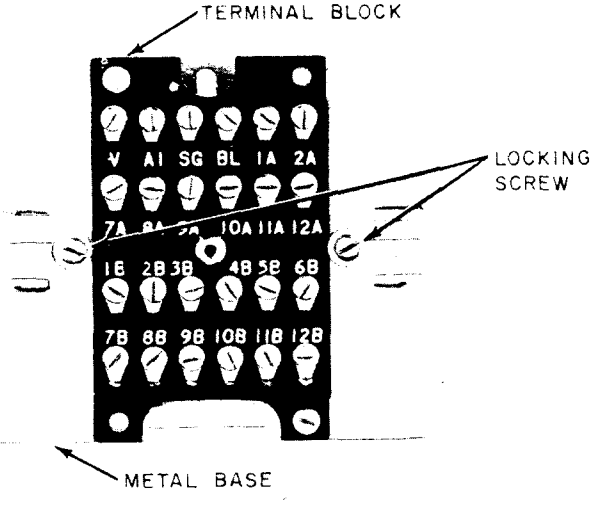


Fig. 4—149A (MD) Adapter, Cover Removed

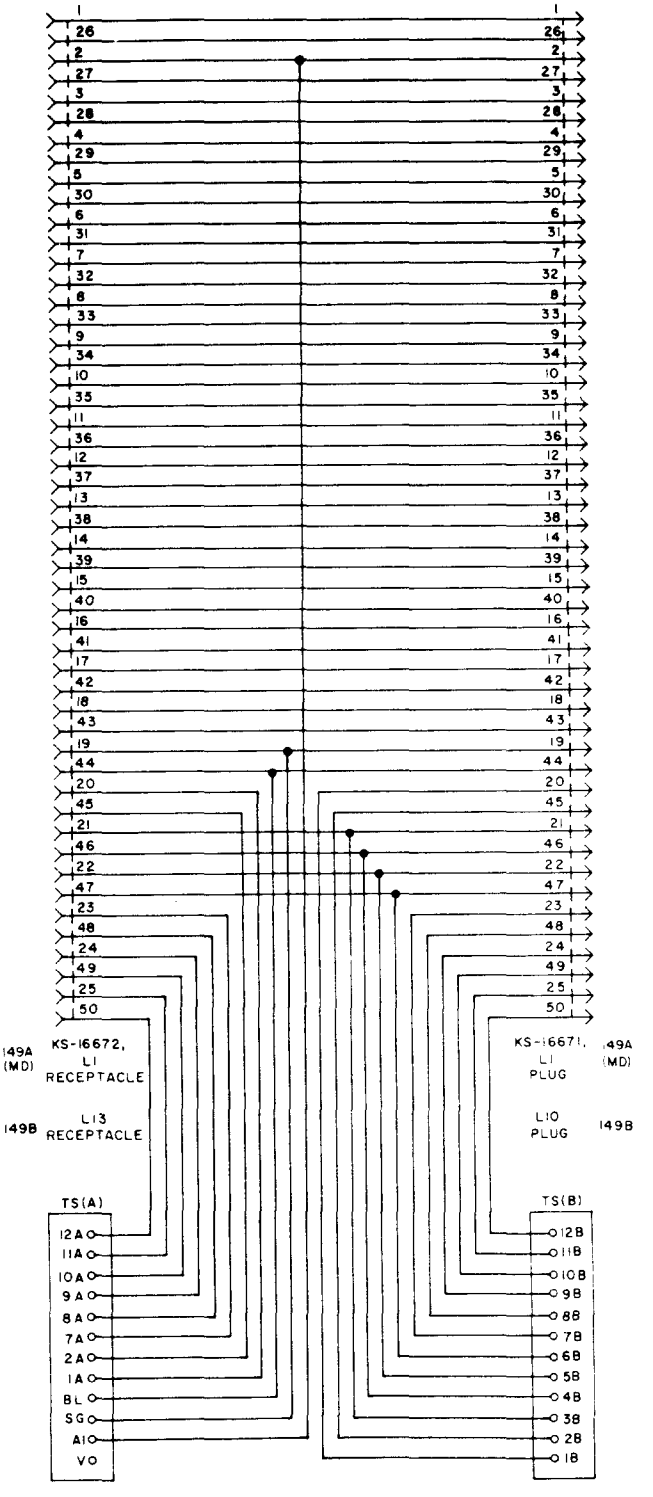


Fig. 5—149A (MD) and 149B Adapters, Schematic

D. 153A and 153B Adapters (Fig. 8)

2.21 The 153A adapter consists of a KS-16689, List 6 plug with a terminal block fitted to the back of plug body (Fig. 9).

2.22 The 153B adapter consists of a KS-16690,

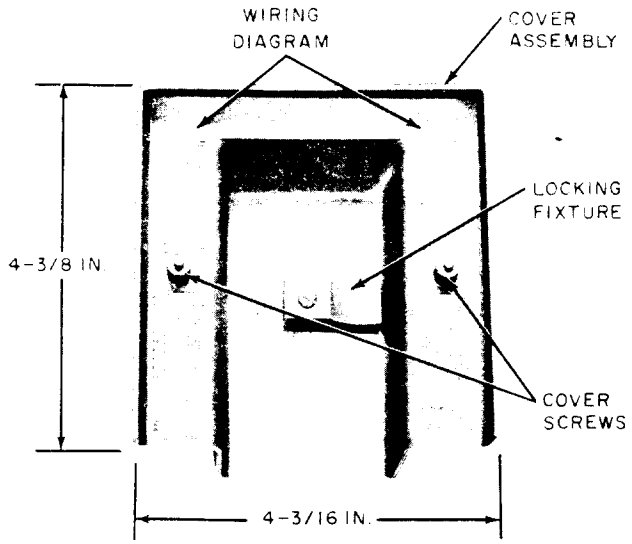


Fig. 6—149B Adapter, Inside Cover

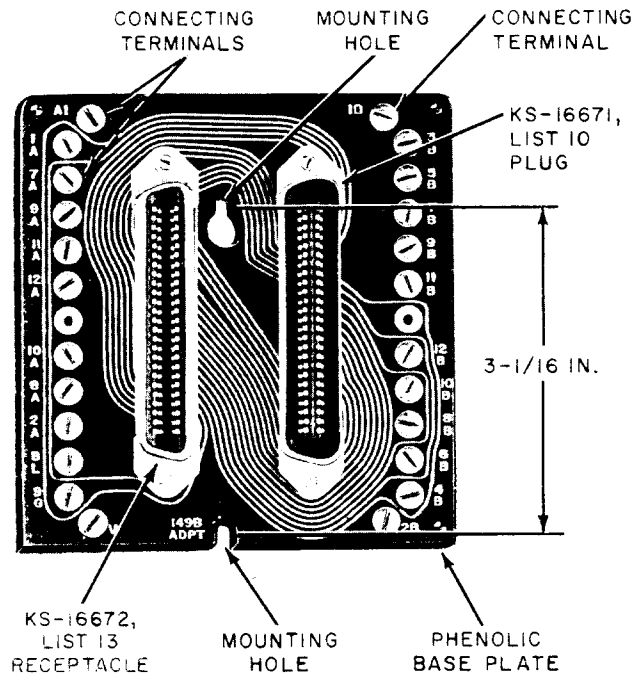


Fig. 7—149B Adapter, Printed Wiring Board Assembly

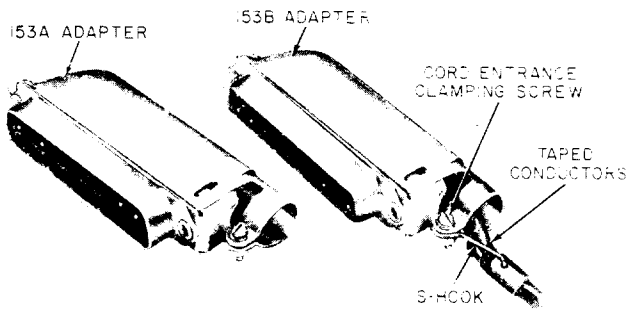


Fig. 8—153A and 153B Adapters

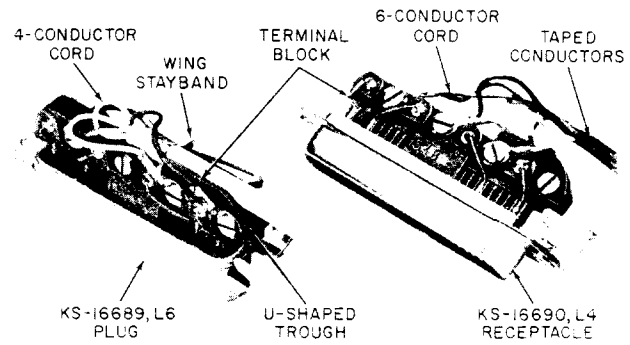


Fig. 9—153A and 153B Adapters, Hood Removed

List 4 receptacle with a terminal block fitted to the back of the receptacle body. The terminal block has eight screw-type terminals wired to terminals of the plug or receptacle (Table A). A U-shaped trough on top and at cord entrance end of the terminal block assembly (Fig. 9) serves to retain the wing-type stayband of cords so equipped.

2.23 The hood has a cord-entrance clamping screw which is used to restrain S-hook terminated cords (Fig. 9), and cords of this design should have the conductors taped about 1-1/2 inches to improve appearance and protection (Fig. 8).

2.24 A removable metal hood (Fig. 10) with a pressed-board liner contains and protects spade-tipped cord leads or wire conductors terminated beneath the screw terminals. If the liner is of early production design and has an opening in the top portion, a piece of vinyl tape placed over this opening will provide insulation between conductors and hood.

2.25 ***Caution: To avoid damage to the wiring or insulation while assembling the adapter, lower the hood over the block approximately 1/4 inch from the assembled position and slide hood to the rear to engage holding tabs. Secure with hood anchoring screw. When removing hood, reverse procedure.*** The hood anchoring screw holds the hood in place. It in turn fastens into a threaded insert of a mating receptacle or plug to hold the two elements together.

2.26 Early production 153A and 153B adapters had spare contact springs in the plug and receptacle. These unused contacts have been removed on later production adapters.

TABLE A

153-TYPE ADAPTER (FACTORY WIRED)

ADAPTER	SCREW TERMINAL DESIGNATION	KS-PLUG OR RECEPTACLE CONTACT	EQUIVALENT CABLE PAIR NUMBER
153A and B	1R 1T	1 26	1
	2R 2T	4 29	4
	R B	20 45	20
	X1 X2	25 50	25
153 C and D	1R 1T	1 26	1
	A1 A	2 27	2
	2R 2T	4 29	4
	A1 A	5 30	5

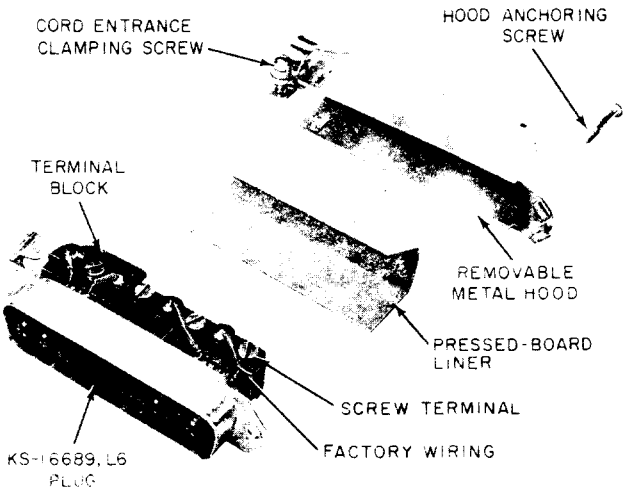


Fig. 10—153A Adapter

2.27 Cords with up to ten conductors (Fig. 9 and 11) may be used with the 153-type adapter. Only eight spade tips can be terminated. Insulate and store extra spade tips. Due to limited space, use KS-19147, List 1 cord tip insulator (Fig. 11).

In connecting leads to terminal screws, dress spade tips to prevent crosses between terminals. Care should be taken to permit possible contact of spade tips with only one wing of stayband on cord. Spade tips should not touch any exposed factory-wiring, other spade tips, or metal part of the connector or plug.

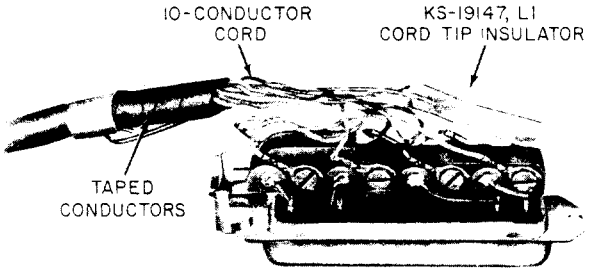


Fig. 11—10-Conductor Cord in 153-Type Adapter

E. 153C and 153D Adapters (Fig. 12)

2.28 Physically, the 153C and 153D adapters are the same as the 153A and 153B adapters and differ only in the electrical connections.

2.29 The 153C adapter consists of a KS-16689, List 9 plug and a terminal block which has screw terminals electrically connected to pins 1, 26, 2, 27, 4, 29, 5, and 30.

2.30 The 153D adapter consists of a KS-16690, List 9 receptacle and a terminal block electrically connected to the same pins as the 153C adapter.

2.31 Connection information for the 153C and 153D adapters is covered in Table A.

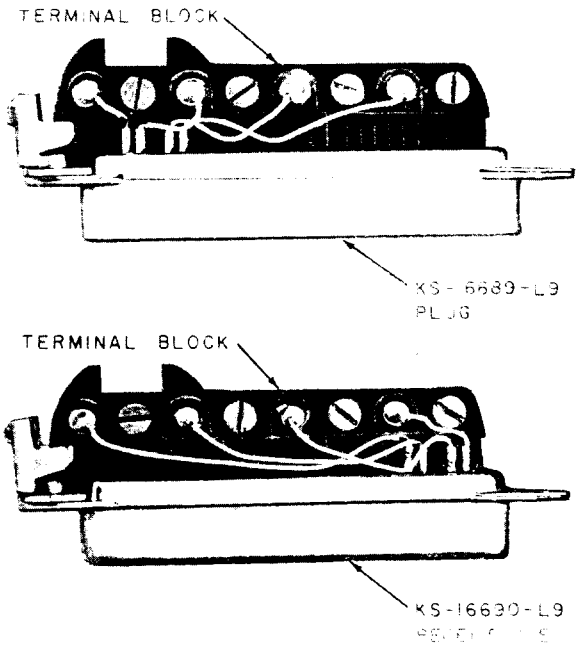


Fig. 12—153C and 153D Adapters

F. 153AM1 (MD) and 153BM1 (MD) Adapters

2.32 The 153AM1 (MD) adapter consists of a KS-16689, List 24 miniature ribbon plug with a 652A6 modular jack fitted to one end.

2.33 The 153BM1 (MD) adapter consists of a KS-16690, List 15 miniature ribbon receptacle

(female) with a 652A6 modular jack fitted to one end.

2.34 In both adapters, the six leads of the 652A6 jack are factory-wired to six terminals on the plug or receptacle to provide the required line service. Connection information is shown in Table B.

TABLE B

153AM1 (MD), 153BM1 (MD), 153AM2, 153BM2, 153AM3, AND 153BM3 ADAPTERS (NOTE)

INTERNAL FACTORY WIRING		
JACK LEAD	PLUG OR CONNECTOR PIN	DESIGNATION
Red	1	1R
Green	26	1T
Yellow	2	A1
Black	27	A
White	25	X1
Blue	50	X2

Note: The 153AM2 and 153BM2 adapters have four conductors — red, green, yellow, and black.

2.35 The hood can be removed from the adapter for access to the internal wiring.

2.36 The modular mounting cord of the associated telephone set is attached to the adapter by plugging it into the 652A6 jack.

2.37 The 153AM1 (MD) and 153BM1 (MD) adapters are replaced by the 153AM3 and 153BM3, respectively.

G. 153AM2 and 153BM2 Adapters (Fig. 13)

2.38 The 153AM2 adapter consists of a ◗KS-21997, List 2◖ miniature ribbon plug (male) with a ◗652D4◖ modular jack fitted to one end.

2.39 The 153BM2 adapter consists of a ◗KS-21998, List 3◖ miniature ribbon receptacle (female) with a ◗652D4◖ modular jack fitted at one end.

2.40 In both adapters, the four leads of the ◗652D4◖ jack are factory-wired to four terminals on the plug or receptacle to provide the required line service. Connection information is shown in Table B.

2.41 The hood can be removed from the adapter for access to the internal wiring.

2.42 The modular mounting cord of the associated telephone set is attached to the adapter by plugging it into the ◗652D4◖ jack.

2.43 ◗Solderless (insulation piercing) terminals allow internal wiring changes in the field.◖

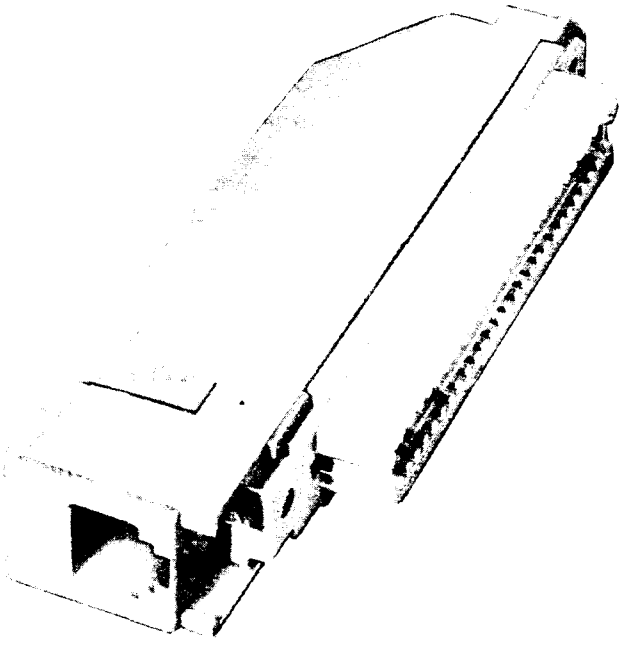


Fig. 13—153AM2, 153BM2, 153AM3, and 153BM3 Adapters

H. 153AM3 and 153BM3 Adapters (Fig. 13)

2.44 The 153AM3 adapter consists of a ◗KS-21997, List 3◖ miniature ribbon plug (male) with a ◗652D6◖ modular jack fitted at one end.

2.45 The 153BM3 adapter consists of a ◗KS-21998, List 4◖ miniature ribbon receptacle (female) with a ◗652D6◖ modular jack fitted at one end.

2.46 The 153AM3 and 153BM3 adapters are the same as the 153AM1 and 153BM1, respectively, except the plug and receptacle are equipped with solderless (insulation piercing) terminals, allowing internal wiring changes to be made in the field. As supplied from the factory, wiring is the same as the 153AM1 and 153BM1.

2.47 Two versions of the 153AM2, BM2, AM3, and BM3 adapters will be found in the field. The redesigned version eliminates the metal bracket staked to the connector and is assembled by sliding the modular jack into the back end of the plastic hood which is then snapped onto the connector. In addition, the redesigned version has a narrower hood which permits it to be connected to 66E-type connecting blocks without the modified bracket required on the older version.

2.48 ***Warning: When removing wire, do not pull the wire parallel to the slot as this may damage the terminal so that it cannot be reused.*** When wiring changes are required in the field on 153AM2, BM2, AM3, or BM3 adapters, remove wire from terminal by lifting with a rolling motion, using long-nose pilers as shown in Fig. 14. Cut off the used portion of the wire and reterminate using a KS-21872 hand-connecting tool as follows:

(1) Place the pawl of the tool in the Type I position (parallel to the handle).

(2) Partially insert the wire into the terminal using a KS-6320 orange stick or equivalent.

(3) Position the tool at the front (contact) side of the connector. Hold the tool so the blade presses the wire into the terminal while the anvil supports the opposite surface. Squeeze the handles until the wire is fully seated.

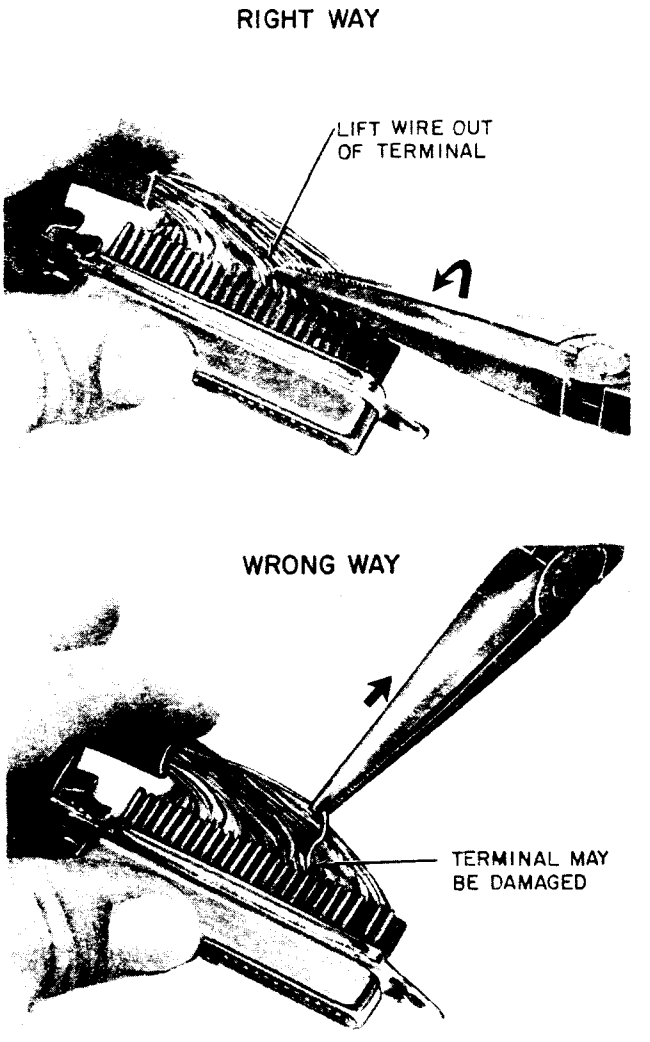


Fig. 14—Removing Terminated Wire

I. 153AM4 Adapter

2.49 The 153AM4 adapter is the same as the other 153-type adapters except the ◗652D4◖ jack is wired to the KS-21997, List 12 miniature ribbon connector as shown in Table C.

TABLE C

153AM4 ADAPTER

JACK LEAD	CONNECTOR PIN
Black	47
Red	21
Green	46
Yellow	22

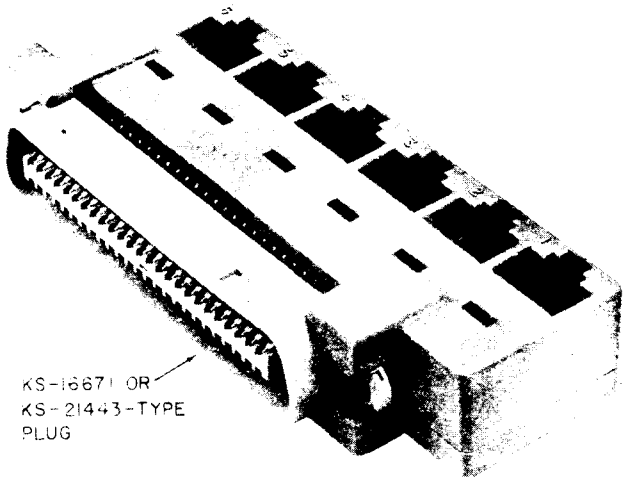
J. 258A Adapter (Fig. 15)

2.50 The 258A adapter consists of a block with six 8-conductor modular jacks fitted to a KS-16671 or KS-21443 50-pin miniature ribbon plug.

The jack leads are factory-wired to the plug terminals as shown in Fig. 15.

2.51 A MET set with an 8-conductor modular mounting cord can be plugged into each jack. Standard telephones with 4-conductor modular cords can also be plugged into the jacks when the adapter is used in a nonelectronic system.

2.52 The adapter can be plugged into a 25-pair connector cable or a 66E-type block.



INTERNAL FACTORY WIRING

JACK LEAD	PLUG PIN						DESIGNATION
	1	2	3	4	5	6	
W-BL	26	30	34	38	42	46	TALK TIP (TT)
BL	1	5	9	13	17	21	TALK RING (TR)
W	27	31	35	39	43	47	DATA BUTTON TIP (BT)
Y	2	6	10	14	18	22	DATA BUTTON RING(BR)
R	28	32	36	40	44	48	AUXILIARY TIP (AT)
BK	3	7	11	15	19	23	AUXILIARY RING (AR)
W-BR	29	33	37	41	45	49	DATA LAMP TIP (LT)
BR	4	8	12	16	20	24	DATA LAMP RING(LR)

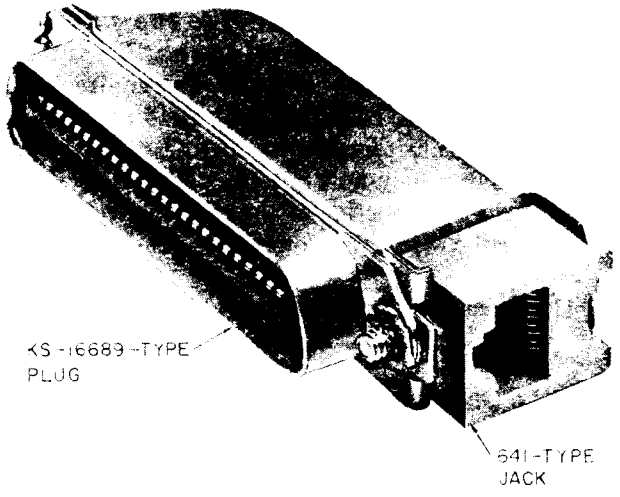
Fig. 15—258A Adapter

K. 259A and 259B Adapters (Fig. 16)

2.53 Both adapters consist of a KS-16689 50-pin miniature ribbon plug with a 641A modular jack fitted to one end. The jack leads are factory-wired to the plug terminals as shown in Fig. 16. The 259A is wired to pick up the first 4-pair line in a 25-pair cable. The 259B is wired to pick up the second 4-pair line.

2.54 A MET set with an 8-conductor modular mounting cord can be plugged into the jack. If the adapter is used in a nonelectronic system, a standard modular telephone with a 4-conductor cord can be plugged into the jack.

2.55 The adapter can be plugged into a 25-pair connector cable or a 66E-type block.



INTERNAL FACTORY WIRING

JACK LEAD	PLUG PIN		DESIGNATION
	259A	259B	
W-BL	26	30	TALK TIP (TT)
BL	1	5	TALK RING (TR)
W	27	31	DATA BUTTON TIP (BT)
Y	2	6	DATA BUTTON RING(BR)
R	28	32	AUXILIARY TIP (AT)
BK	3	7	AUXILIARY RING (AR)
W-BR	29	33	DATA LAMP TIP (LT)
BR	4	8	DATA LAMP RING (LR)

Fig. 16—259A or 259B Adapter

L. 259C Adapter

2.56 The 259C adapter is the same as other 259-type adapters except the 241B jack is wired to the miniature ribbon connectors as shown in Table D.

TABLE D

259C ADAPTER

JACK LEAD	CONNECTOR PIN
White	47
Yellow	22
Red	41
Blue	21
Blue/White	46
Black	16
Brown/White	42
Brown	17

M. KS-19252-Type 3-Way Bridging Adapters

2.57 Each adapter consists of a removable cover with spacer inserts and a base section containing interwired (bridged) 50-contact plug(s), receptacle(s), ▶or terminal strips◀. The inserts may be removed and stored to accommodate deep-hood plugs. The plugs and/or receptacles ▶of the List 1, List 2, List 3, and List 4 adapters◀ are wired standard (bridged) point-to-point. ▶The List 5, List 6, List 7, List 9, and List 10 are specially wired per figures shown in Table E.◀

2.58 The KS-19252, List 1 is arranged for use with an A25B connector cable and two plug-ended sets (Fig. 18). It can be converted for use with an A25B and B25A connector cable plus a plug-ended set by pulling two inserts and storing. Normally, in early models, the receptacles were positioned high enough to handle low-hood KS-16689, List 1 plugs furnished on cords of telephone sets (Fig. 17 and 18).

2.59 Field conversion of early models permits either or both of the two receptacles to be lowered sufficiently to receive the high-hood KS-16689, List 3 plug of B25A (extension-type) connector cables.

3. APPLICATION

A. 148A (MD) and 148B (MD) Adapters

3.01 The 148A (MD) and 148B (MD) adapters are used with plug-ended key telephone sets to provide external features.

B. 149A (MD) and 149B Adapters

3.02 The 149A (MD) and 149B adapters are used as follows:

- To connect a D30B- or D50B-type cord to the KS-16672, List 13 receptacle
- To connect an A25B connector cable to the KS-16671, List 10 plug
- With 6-button telephone sets equipped with plug-ended mounting cord
- Where external features are provided in addition to key telephone set features.

C. 153-Type Adapter

3.03 The 153-type adapter connects single-key or nonkey telephone sets to cabling systems involving A25B or B25A connector cables.

D. 258A, 259A, 259B, and 259C Adapters

3.04 These adapters connect MET sets to cabling systems involving A25B or B25A connector cables or 66E-type blocks.

E. KS-19252-Type 3-Way Bridging Adapter

Circuit backup conditions could occur when these bridging adapters are used in key telephone system cabling. This could happen especially where individual station customer services such as station busy lamp, line exclusion, control cutoff key, pushbutton and buzzer, and speakerphone services are to be furnished. It is necessary, in this case,

▶TABLE E◀

3-WAY BRIDGING ADAPTERS

ADAPTER		COMPONENT ARRANGEMENT			WIRING ARRANGEMENT
LIST NUMBER	INSERT POSITION				
KS-19252, L1	A and C	Receptacle	Plug	Receptacle	Standard Bridged
KS-19252, L2	B	Plug	Receptacle	Plug	
KS-19252, L3	Storage	Plug	Plug	Plug	
KS-19252, L4	Storage	Receptacle	Receptacle	Receptacle	
KS-19252, L5	Storage	Plug	Receptacle	Plug	Fig. 22
KS-19252, L6	Storage	Plug	Terminal Strip	Receptacle	Fig. 23
KS-19252, L7	Storage	Plug	Terminal Strip	Receptacle	Fig. 24
KS-19252, L9	Storage	Plug	Plug	Plug	Fig. 25
KS-19252, L10	Storage	Plug	Plug	Plug	Fig. 26

to open the bridged telephone set in order to disconnect and individually insulate and store some of these leads.

3.05 ▶The KS-19252, List 1, List 2, List 3, and List 4 adapters are◀ used to multiple service provided by plug-ended A- or B-type connector cables.

3.06 The KS-19252, List 5 adapter (Fig. 22) is used in multiple installations of 2025 data sets to connect 830- or 2830-type telephone sets to 41A data mounting.

3.07 ▶The KS-19252, List 6 and List 7 adapters are used for junctioning cables for power, switching, or display apparatus such as the 90B Customer Premise System or the 201 Customer Switching System.◀

3.08 ▶The KS-19252, List 9 and List 10 adapters are used in conjunction with the Switch Maintenance Access System (SMAS) 5A/B.◀

4. PROCEDURES FOR CONVERTING THE KS-19252, LIST 1 ADAPTER

A. Adapter Using Spacers

4.01 The receptacle can be positioned deeper within the base of the adapter as follows:

(1) Loosen receptacle mounting screws sufficiently to permit slipout of the two C-shaped plastic spacers (Fig. 18 and 19) which support the receptacle in base.

(2) Remove spacers. Receptacle can then be depressed to its lowest mounting position to receive the B25A connector cable plug.

(3) Place removed spacers on top of the receptacle end tabs (Fig. 20) and tighten receptacle mounting screws.

B. Adapters Using Inserts

4.02 In the current model adapters, the receptacles are stationary and inserts are placed in the cover pockets to accommodate low-hood plugs as follows:

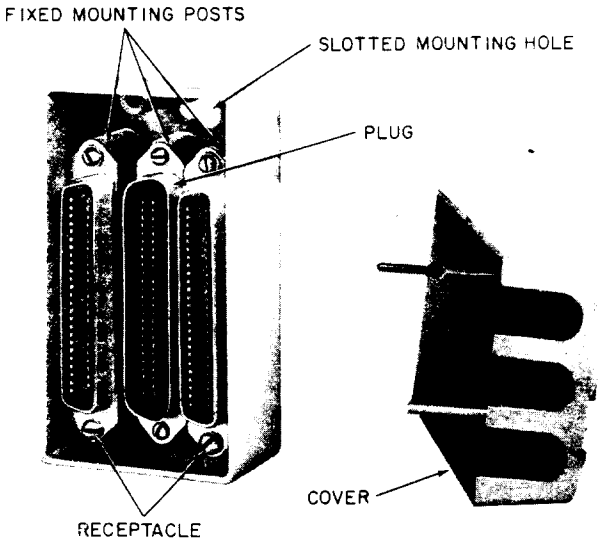


Fig. 17—KS-19252 Bridging Adapter, Nonconvertible

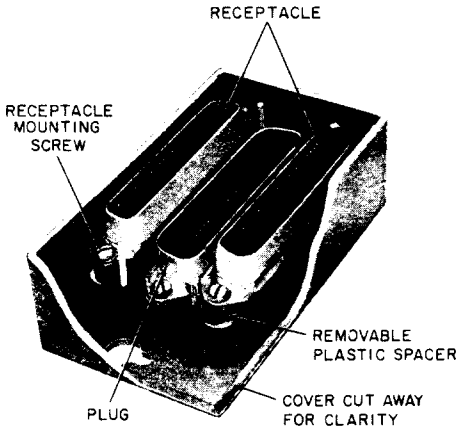


Fig. 18—KS-19252, List 1 Adapter Before Conversion (Early Model)

(1) The List 1 (C-P-C) adapter is arranged to accommodate two low hoods and one high hood. Four inserts are used and are placed in the outside pocket positions (A and C) of the cover (Fig. 21).

(2) To convert a List 1 adapter to accommodate two high hoods, remove the inserts from A or C position and place in cover storage pocket.

(3) In any assembly where a high hood is used, the inserts are not used in that receptacle position and should remain in the storage pocket.

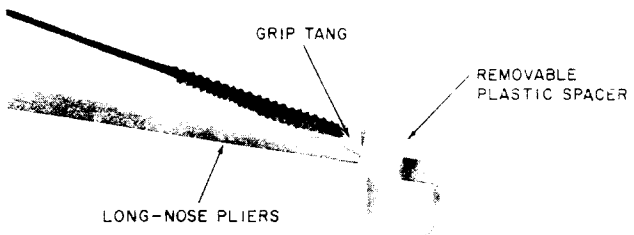


Fig. 19—Spacer

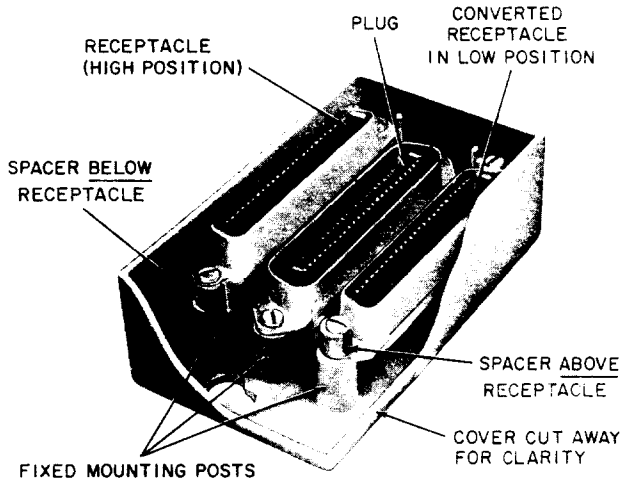


Fig. 20—KS-19252, List 1 Adapter After Conversion (Early Model)

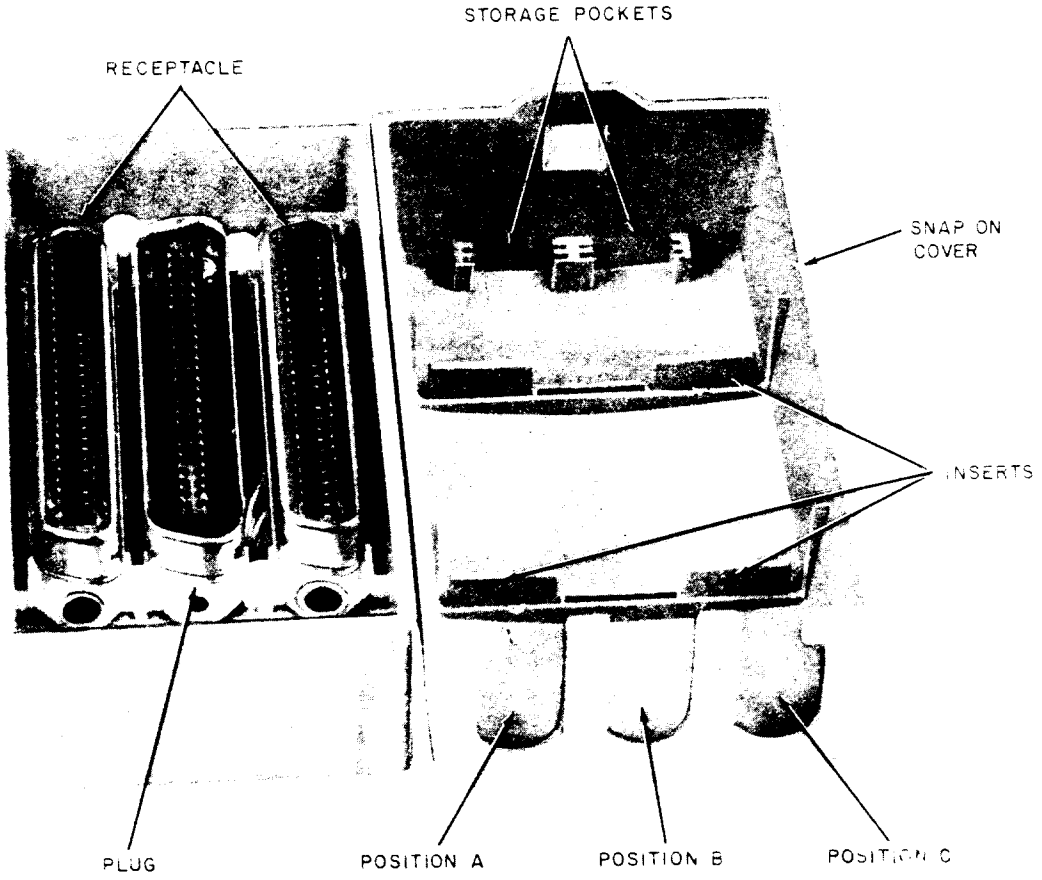


Fig. 21—KS-19252, List 1 3-Way Bridging Adapter (Current Model)

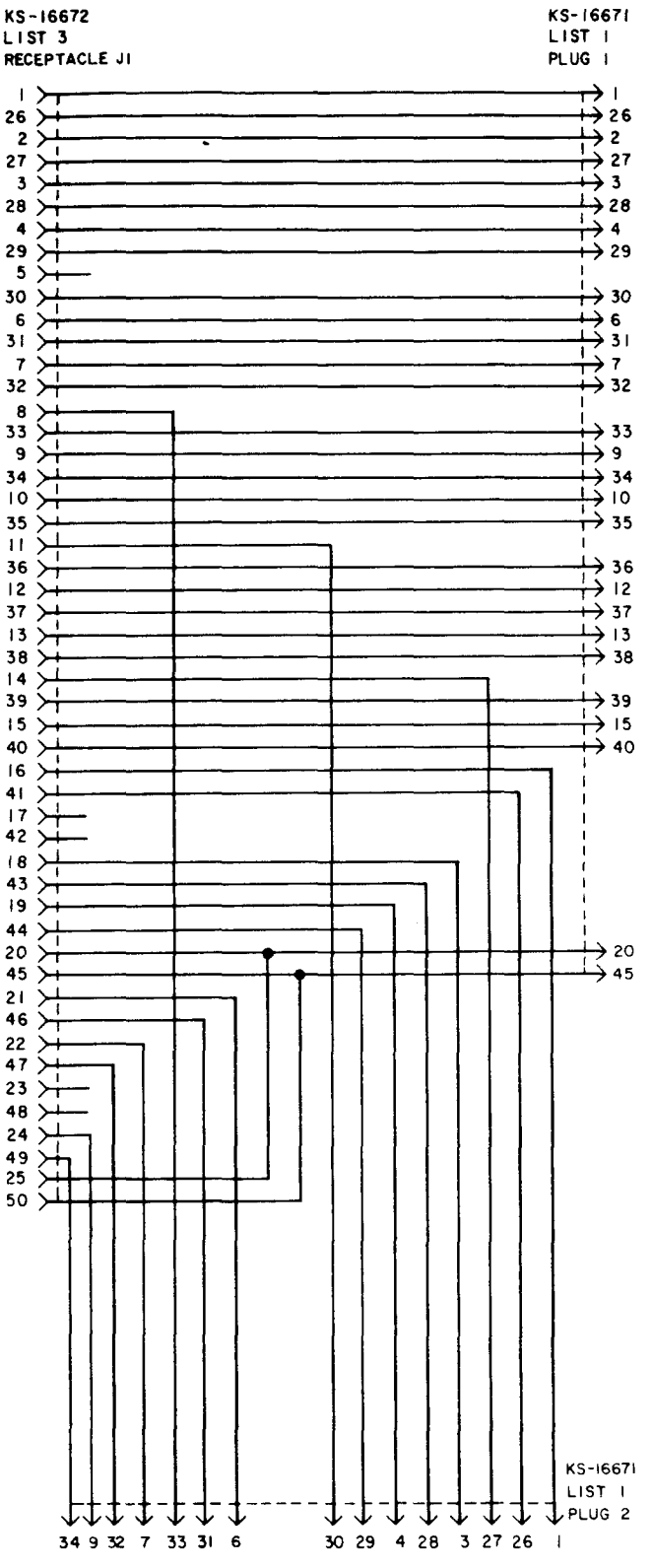


Fig. 22—KS-19252, List 5 3-Way Bridging Adapter, Schematic

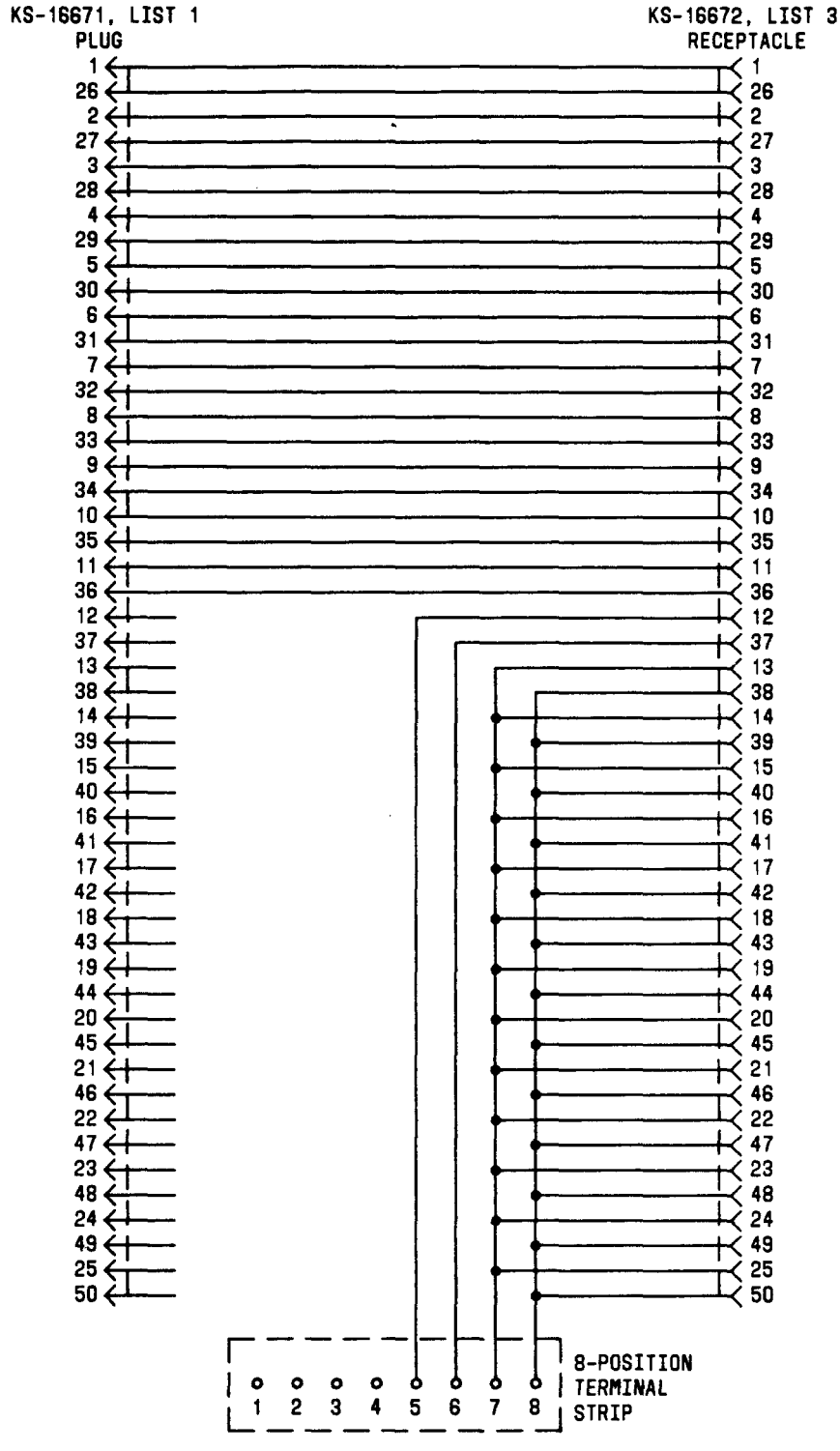


Fig. 23—Wiring of KS-19252, List 6 Adapter

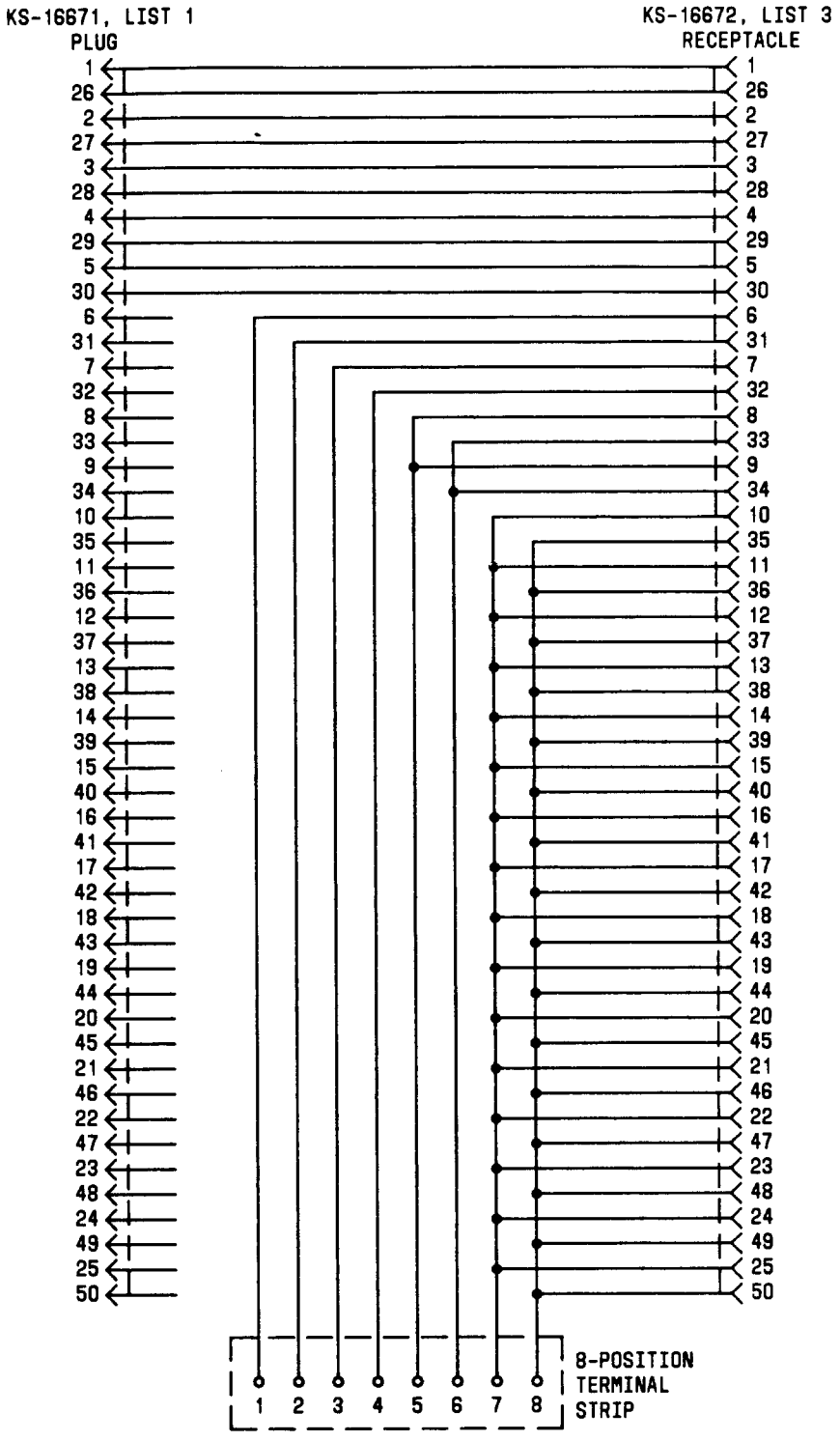


Fig. 24—Wiring of KS-19252, List 7 Adapter

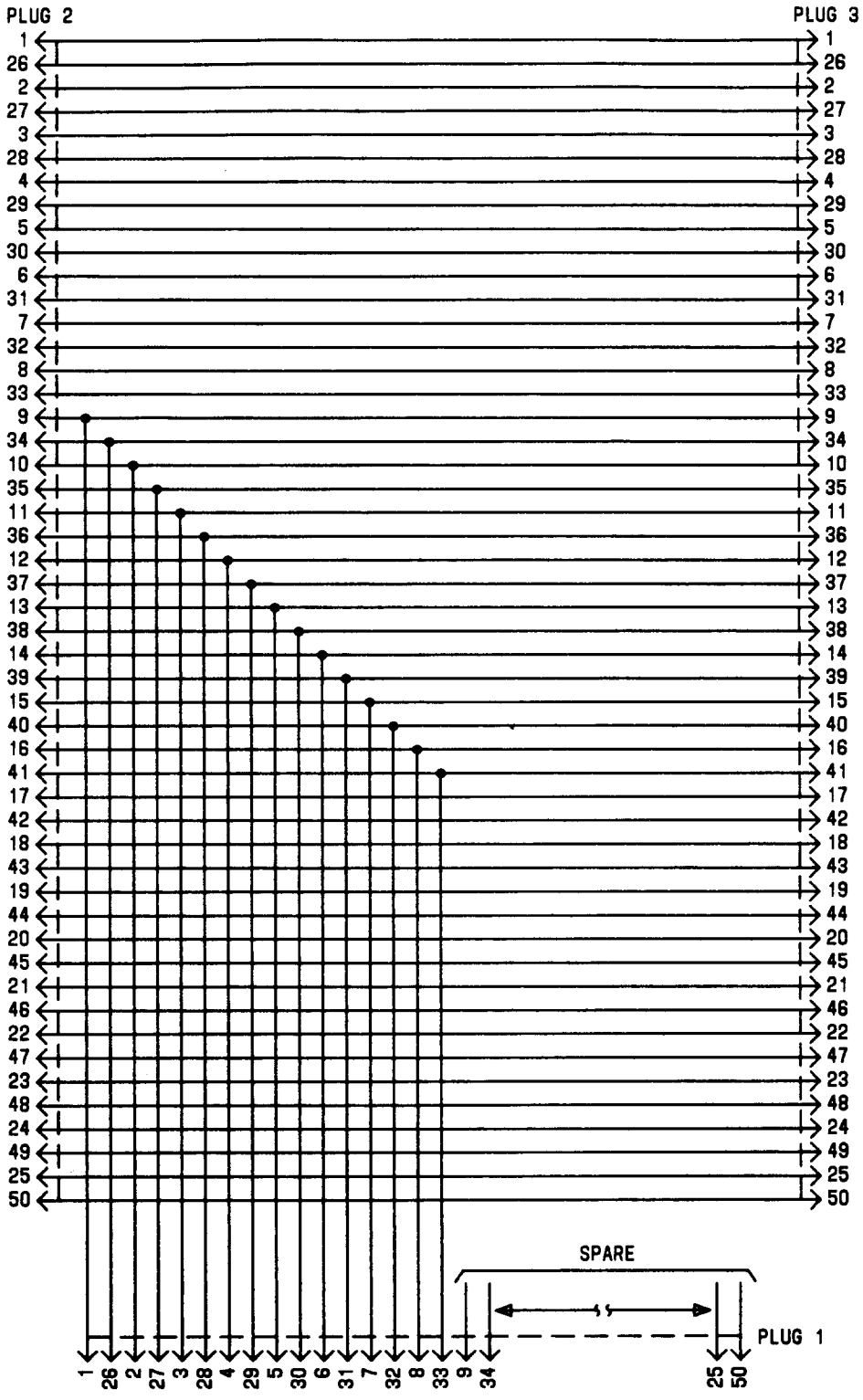


Fig. 25—Wiring of KS-19252, List 9 Adapter

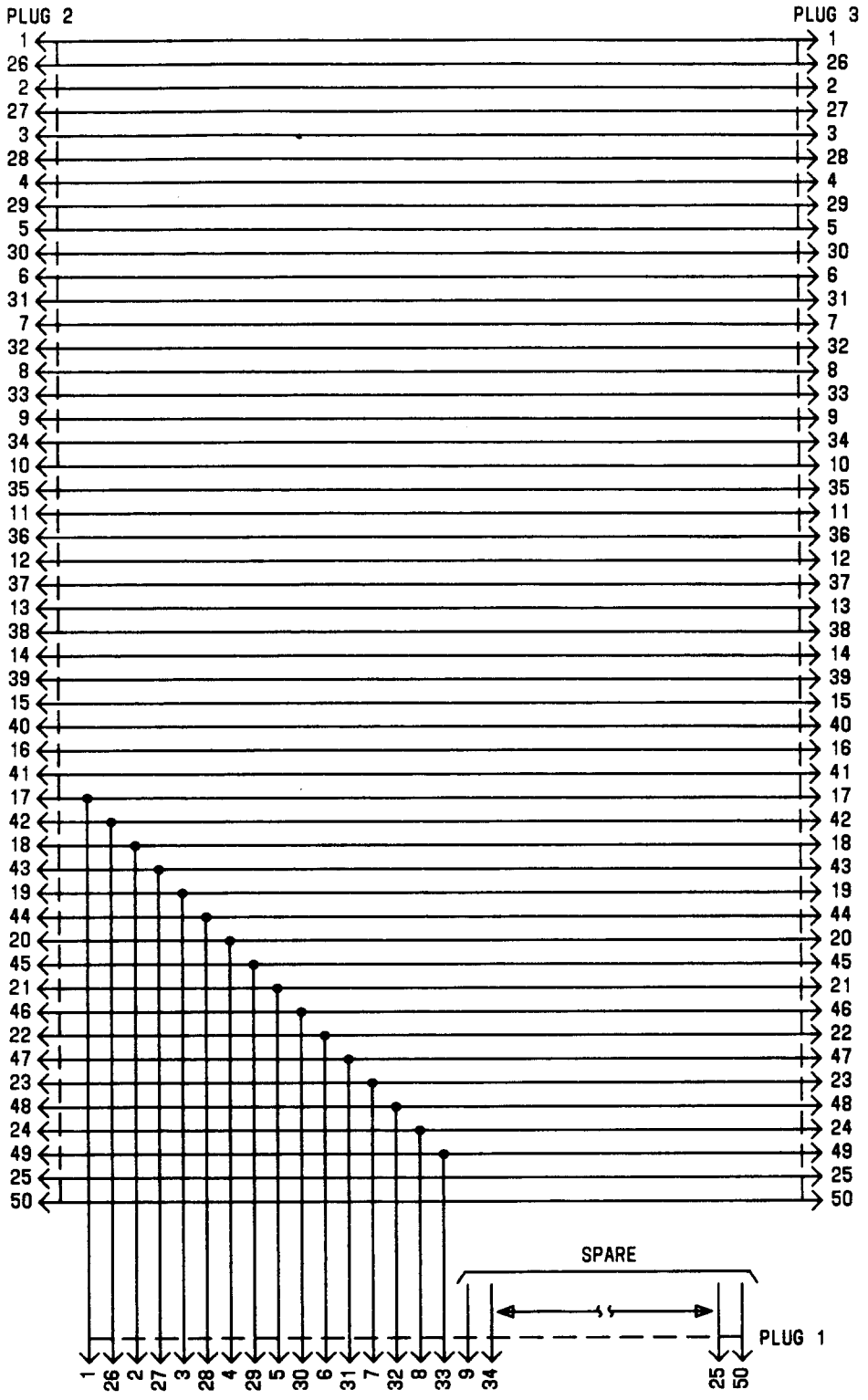


Fig. 26—Wiring of KS-19252, List 10 Adapter