

ADAPTERS FOR USE WITH CONNECTOR CABLES

1. GENERAL

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

- 148A (MD) and B
- 149A (MD) and B
- 153-type
- 258A
- 259A and B
- KS-19252, List 1; List 2, List 3, List 4, and List 5 3-way bridging types.

1.02 This section is reissued to:

- Provide information on the 153AM2 and 153BM2 adapters
- Change Fig. 13 to show the 153AM2 and 153BM2 adapters.

2. IDENTIFICATION

PURPOSE

- 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.
- 153-type adapters are used to avoid cutting off connector cable ends when a multibutton telephone station is "downgraded" to single- or 2-line service.
- 258- and 259-type adapters are intended primarily for connecting Multibutton Electronic

Telephone Sets (METS) to existing 25-pair connector cables.

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

ORDERING GUIDE

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

DESIGN FEATURES

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

- 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, L2 plug and a KS-16690, L3 receptacle.
- Loose spade-tipped leads at the free end of the cord are arranged for connection to 44-type connecting blocks, including stayhook for anchoring.
- 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).

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

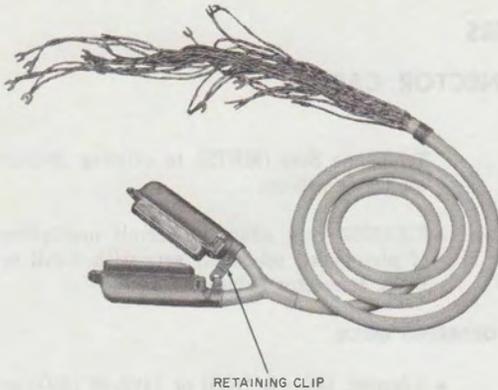


Fig. 1—148A (MD) or 148B Adapter

- 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.

- Connectors are held together by a retaining clip (Fig. 1) for protection during shipment.
- The 148B adapter is identical to the 148A (MD) adapter, except that the cordage incorporates the even-count color code. The 148B-87 adapter has replaced the 148B-49 (MD) adapter. The 148B-87 is identical to the 148B-49 (MD) except the 148B-87 is equipped with a satin-silver cord.

149A (MD) Adapter

- Has a removable polystyrene cover (Fig. 3).
- Two holes in the base provide a means for mounting.
- Consists of terminal block (Fig. 4), one KS-16671,L1 plug, and one KS-16672,L1 receptacle assembled on a metal base.

- Provides a locking screw assembly 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.

- The wiring diagram is attached to the inside of the cover assembly.

149B Adapter

- Has a removable high-impact polystyrene cover (Fig. 6).
- 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).
- Printed wiring board is mounted to a phenolic baseplate.
- Two holes in the baseplate and wiring board provide means for mounting the adapter.
- A reversible locking fixture attached to the inside of the cover (Fig. 6) secures an external plug (KS-16689,L1 plug-ended cord) to the KS-16672,L13 receptacle.
- The external receptacle (KS-16690,L1 receptacle on an A25B connector cable) is secured to the KS-16671,L10 plug by the inside surface of the cover assembly.
- When the cover assembly is put into position, both receptacles and plugs are secured.
- The wiring diagram (Fig. 5) is also molded into the inner surface of the cover assembly (Fig. 6).

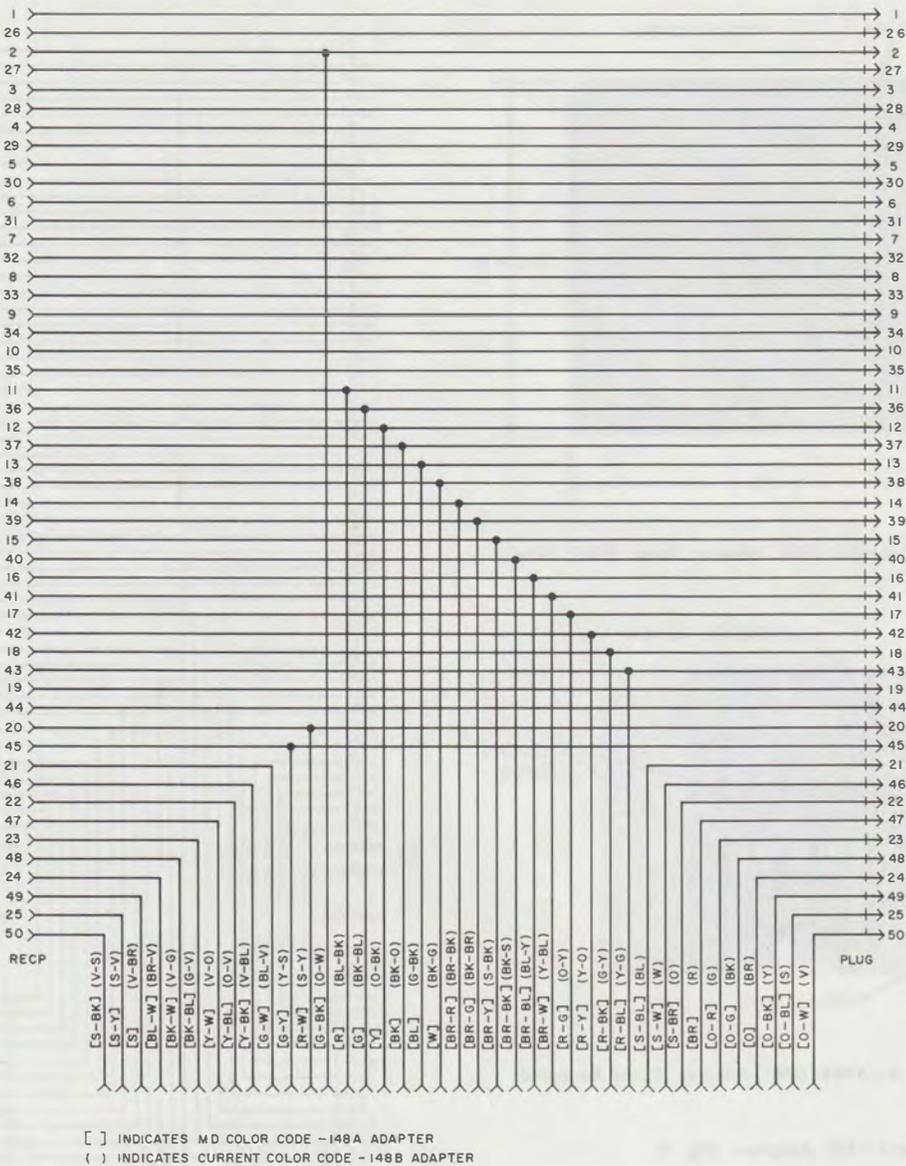


Fig. 2—148A (MD) or 148B Adapter, Schematic

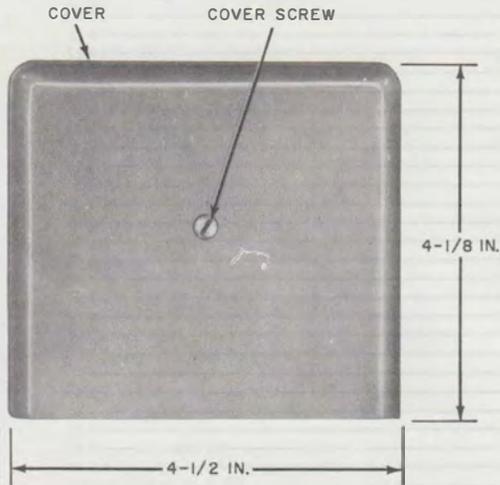


Fig. 3—149A (MD) Adapter Cover (Front View)

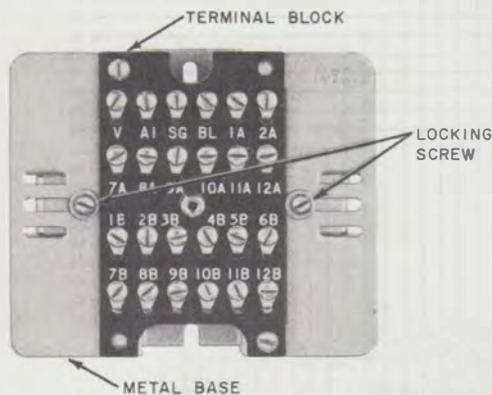


Fig. 4—149A (MD) Adapter, Cover Removed

153A and 153B Adapters (Fig. 8)

- 153A adapter consists of a KS-16689,L6 plug with a terminal block fitted to the back of plug body (Fig. 9).
- 153B adapter consists of a KS-16690,L4 receptacle with a terminal block fitted to the back of the receptacle body.

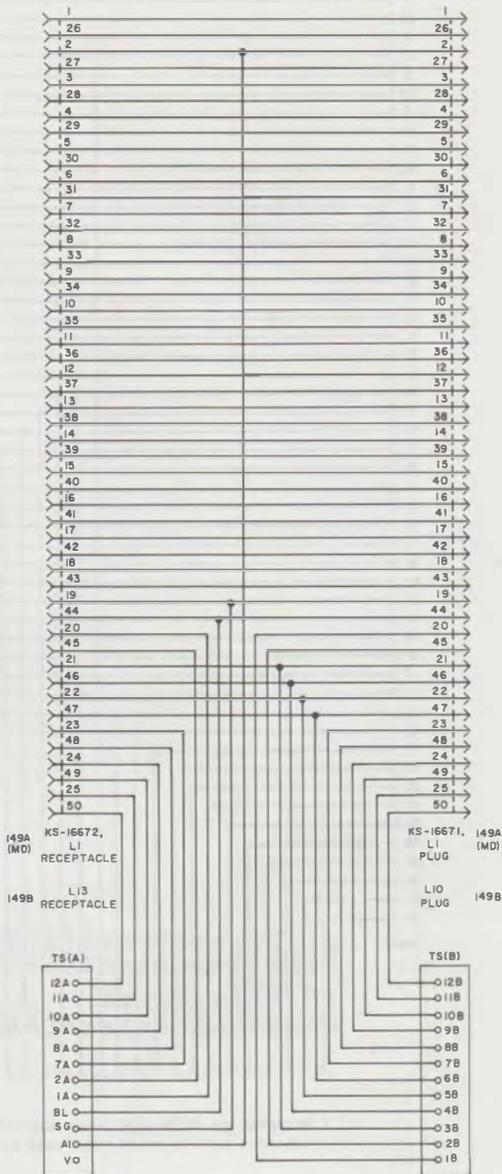


Fig. 5—149A (MD) and 149B Adapter, Schematic

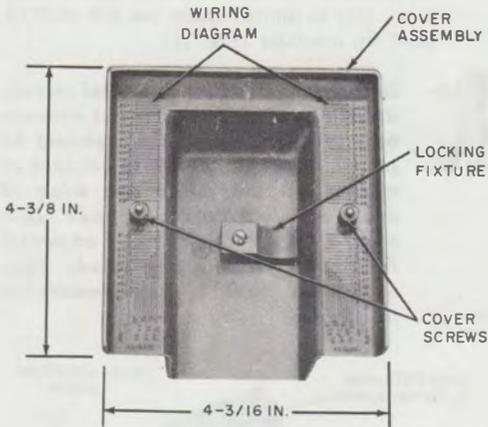


Fig. 6—149B Adapter, Inside Cover

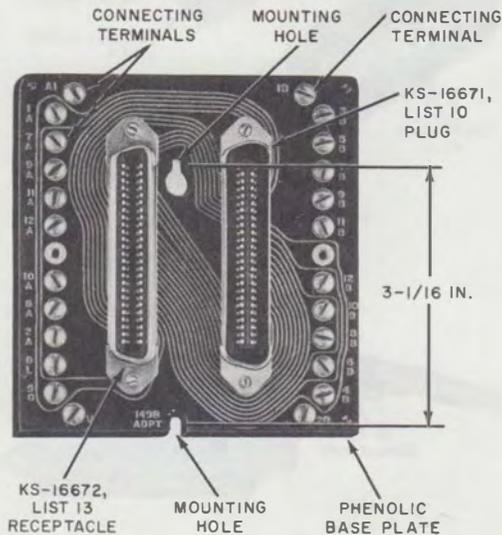


Fig. 7—149B Adapter, Printed Wiring Board Assembly

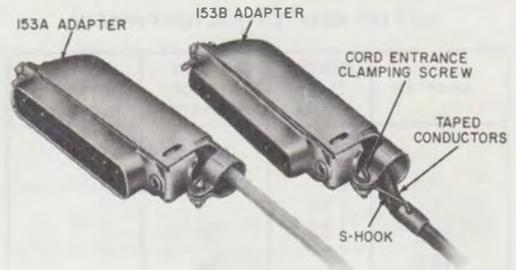


Fig. 8—153A and 153B Adapters

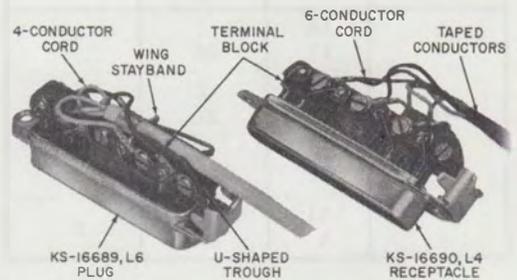


Fig. 9—153A and 153B Adapters, Hood Removed

- The terminal block has eight screw-type terminals wired to terminals of the plug or receptacle. (See 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.
- The hood has a cord-entrance clamping screw which is used to restrain S-hook terminated cords (Fig. 8), and cords of this design should have the conductors taped about 1-1/2 inches to improve appearance and protection (Fig. 8).
- 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

TABLE A

153-TYPE ADAPTER (FACTORY WIRED)

ADAPTER	SCREW TERM. DESIG.	KS-PLUG OR RECP CONTACT	EQUIV. CABLE PAIR NUMBER
153 A&B	1R 1T	1 26	1
	2R 2T	4 29	4
	R B	20 45	20
	X1 X2	25 50	25
153 C&D	1R 1T	1 26	1
	A1 A	2 27	2
	2R 2T	4 29	4
	A1 A	5 30	5

of vinyl tape placed over this opening will provide insulation between conductors and hood.

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.
- Early production 153A and B adapters had spare contact springs in the plug and receptacle. These unused contacts have been removed on later production adapters.
- 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,L1 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.

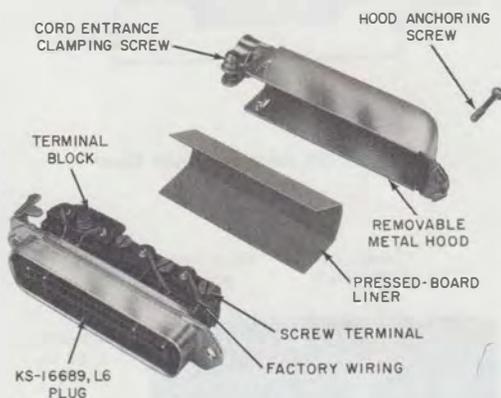


Fig. 10—153A Adapter

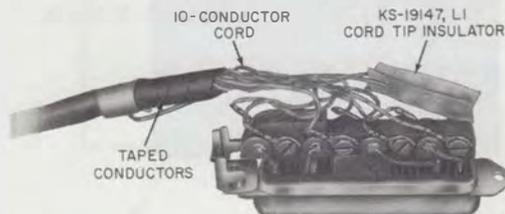
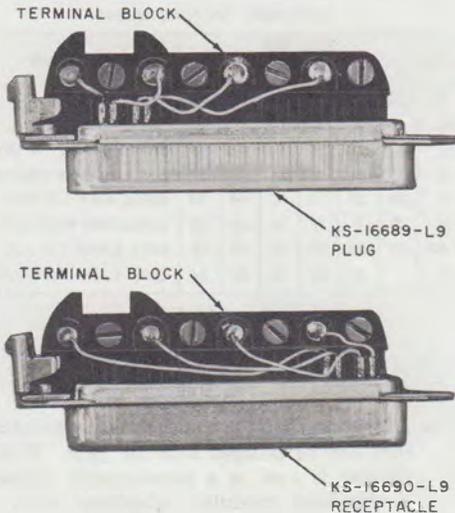


Fig. 11—10-Conductor Cord in 153-Type Adapter

153C and 153D Adapters (Fig. 12)

- Physically, the 153C and D adapters are the same as the 153A and B adapters and differ only in the electrical connections.
- The 153C adapter consists of a KS-16689,L9 plug and a terminal block which has screw terminals electrically connected to pins 1, 26, 2, 27, 4, 29, 5, and 30.
- The 153D adapter consists of a KS-16690,L9 receptacle and a terminal block electrically connected to the same pins as the 153C adapter.
- Connection information for the 153C and D adapters is covered in Table A.

**Fig. 12—153C and 153D Adapters****153AM1 and 153BM1 Adapters (Fig. 13)**

- The 153AM1 adapter consists of a KS-16689,L24 miniature ribbon plug with a 652A6 modular jack fitted to one end.

- The 153BM1 adapter consists of a KS-16690,L15 miniature ribbon receptacle (female) with a 652A6 modular jack fitted to one end.
- 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 the table in Fig. 13.
- The hood can be removed from the adapter for access to the internal wiring.
- The modular mounting cord of the associated telephone set is attached to the adapter by plugging it into the 652A6 jack.



* 153BM1 ADAPTER KS-16690, L15 RECEPTACLE
 153AM2 ADAPTER KS-16689, L28 PLUG
 153BM2 ADAPTER KS-16690, L20 RECEPTACLE

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

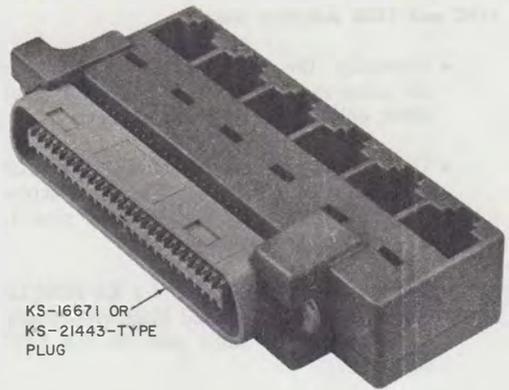
NOTE:

THE 153AM2 AND 153BM2 ADAPTER HAS FOUR CONDUCTORS, WHICH ARE THE RED, GREEN, YELLOW AND BLACK LEADS.

Fig. 13—153AM1, 153BM1, 153AM2, and 153BM2 Adapters

◆153AM2 and 153BM2 Adapters (Fig. 13)

- The 153AM2 adapter consists of a KS-16689,L28 miniature ribbon plug (male) with a 652A4 modular jack fitted to one end.
- The 153BM2 adapter consists of a KS-16690,L20 miniature ribbon receptacle (female) with a 652A4 modular jack fitted at one end.
- In both adapters, the four leads of the 652A4 jack are factory-wired to four terminals on the plug or receptacle to provide the required line service. Connection information is shown in the table in Fig. 13.
- The hood can be removed from the adapter for access to the internal wiring.
- The modular mounting cord of the associated telephone set is attached to the adapter by plugging it into the 652A4 jack.◆



258A Adapter (Fig. 14)

- 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. 14.
- A MET (Multibutton Electronic 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.
- The adapter can be plugged into a 25-pair connector cable or a 66E-type block.

259A and 259B Adapters (Fig. 15)

- 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. 15. 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.

INTERNAL FACTORY WIRING

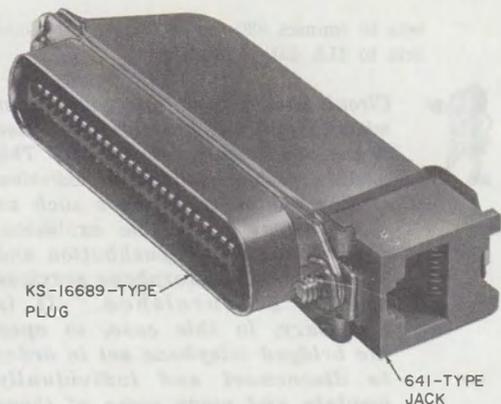
JACK LEAD	PLUG PIN						DESIGNATION
	1	2	3	4	5	6	
W-BL	26	30	34	38	42	46	TALK TIP (TT)
BL	1	5	9	13	17	21	TALK RING (TR)
W	27	31	35	39	43	47	DATA BUTTON TIP (BT)
Y	2	6	10	14	18	22	DATA BUTTON RING (BR)
R	28	32	36	40	44	48	AUXILIARY TIP (AT)
BK	3	7	11	15	19	23	AUXILIARY RING (AR)
W-BR	29	33	37	41	45	49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

Fig. 14—258A Adapter

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

KS-19252 Type 3-Way Bridging Adapters

- Each adapter consists of a removable cover with spacer inserts and a base section containing interwired (bridged) 50-contact plug(s) and/or receptacle(s). The inserts may be removed and stored to accommodate



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. 15—259A or 259B Adapter

deep-hood plugs. The plugs and/or receptacles are wired standard point-to-point (except List 5, Fig. 21) at the factory and cannot be changed. (Refer to Table B.)

- The KS-19252,L1 is arranged for use with an A25B connector cable and two plug-ended

sets (Fig. 17). 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,L1 plugs furnished on cords of telephone sets (Fig. 16 and 17).

- Field conversion of early models permits either or both of the two receptacles to be lowered sufficiently to receive the high-hood KS-16689,L3 plug of B25A (extension-type) connector cables.

APPLICATION

148A (MD) and 148B Adapters

- Used with plug-ended key telephone sets.

149A (MD) and 149B Adapters

- Connect a D30B- or D50B-type cord to the KS-16672,L13 receptacle
- Connect an A25B connector cable to the KS-16671,L10 plug
- Used with 6-button telephone sets equipped with plug-ended mounting cord
- Used where external features are provided in addition to key telephone set features.

153-Type Adapter

- Connects nonkey telephone sets to cabling systems involving A25B or B25A connector cables.

TABLE B

3-WAY BRIDGING ADAPTERS

ADAPTER		COMPONENT ARRANGEMENT
LIST NO.	INSERT POSITION	
KS-19252, L1	A and C	Receptacle Plug Receptacle
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

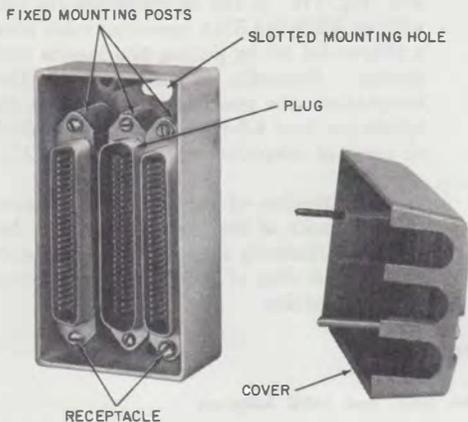


Fig. 16—KS-19252 Bridging Adapter, Nonconvertible

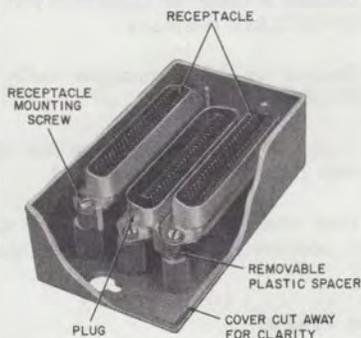


Fig. 17—KS-19252, List 1 Adapter Before Conversion (Early Model)

258A, 259A, and 259B Adapters

- Connect METS to cabling systems involving A25B or B25A connector cables or 66E-type blocks.

KS-19252 Type 3-Way Bridging Adapter

- Used to multiple service provided by plug-ended A- or B-type connector cables.
- The KS-19252 L5-type adapter (Fig. 21) is used in multiple installations of 2025 data

sets to connect 830- or 2830-type telephone sets to 41A data mounting.



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

3. PROCEDURES FOR CONVERTING THE KS-19252 L1 ADAPTER

Adapter Using Spacers

3.01 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. 17 and 18) 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. 19) and tighten receptacle mounting screws.

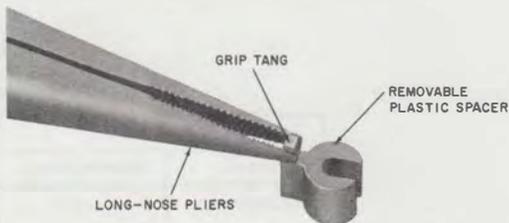


Fig. 18—Spacer

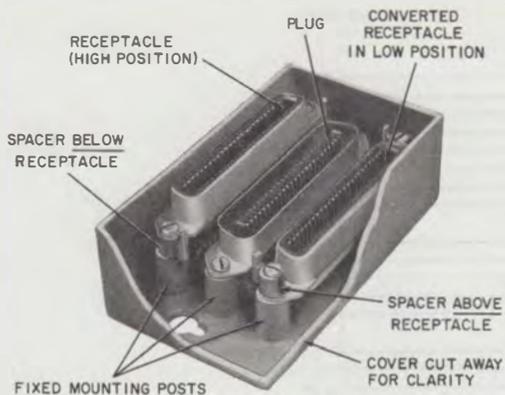


Fig. 19—KS-19252, List 1 Adapter After Conversion (Early Model)

Adapters Using Inserts

3.02 In the current model adapters, the receptacles are stationary and inserts are placed in the cover pockets to accommodate low-hood plugs.

- (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. See Fig. 20.
- (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.

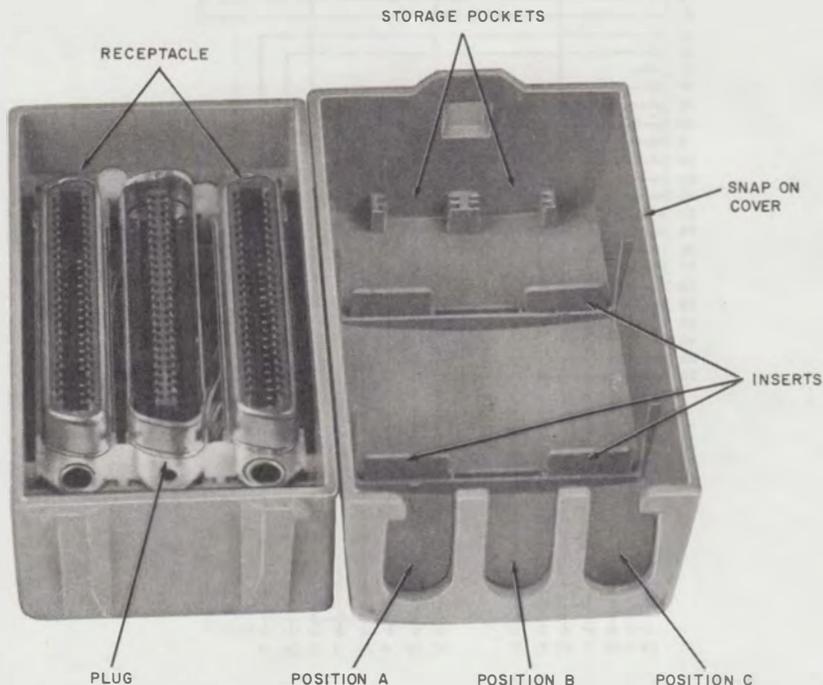


Fig. 20—KS-19252, List 1 3-Way Bridging Adapter (Current Model)

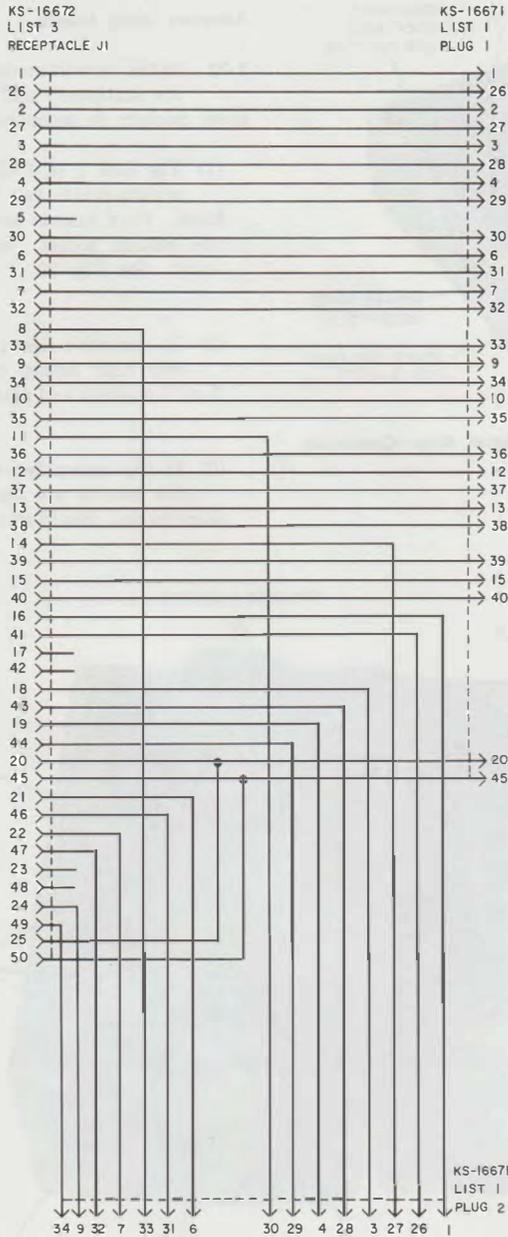


Fig. 21—KS-19252, List 5 3-Way Bridging Adapter Schematic