

## RINGER ISOLATOR (D-180036 KIT OF PARTS)

### 1. GENERAL

1.01 This section contains identification, installation, and connection information on the D-180036 Kit of Parts and 74-type connecting block which must be installed when limited space is available in the telephone set or associated telephone base.

1.02 This section is reissued to:

- Add connection information for the AC- and AD-type telephone bases
- Include connection information on 74-type connecting blocks

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

### 2. IDENTIFICATION

2.01 The ringer isolator is an electronic switch which isolates a grounded ringer from the telephone line. It is intended for use on lines having inductive noise in excess of the isolation capability of the 4-element gas tube.

2.02 The isolator may be used on all grounded ringers except those used in 4-party full selective and 8-party semiselective ringing service.



***One ringer isolator is required for each grounded ringer on the line. Lines equipped with isolators cannot be tested for continuity by conventional test desk procedures unless the test desk has been modified.***

### ORDERING GUIDE

2.03 D-180036 Kit of Parts (Fig. 1) consists of the following:

- 819040114 (P-90D011) ringer isolator
- Connector, D-161488 (two)
- 824612402 (P-46J240) strap lead (BK)
- Sleeving insulation (two).

2.04 Associated apparatus ordered separately:

- 74C connecting block, Table F and Fig. 6
- 74D connecting block, Table G, H and Fig. 7, 8
- 623T6 jack, Table G, H and Fig. 7, 8
- D6AM mounting cord, Table G, H and Fig. 7, 8.

2.05 The isolator consists of a two-transistor switching circuit (Fig. 5) mounted on a printed circuit board and encased in a vinyl insulation sleeve.

### 3. INSTALLATION AND CONNECTIONS

3.01 This ringer isolator is designed for installation in 500-, 700-, 2500-, and 2700-series telephone set bases (Fig. 2), F- and L-type ringers, AC-type bases (Fig. 4), and subscriber sets. Wire the ringer isolator in these type bases as shown in Fig. 5 if tip party with identifying ground is not required. Consult Tables A through E for connection information for tip party with identifying ground. Consult Tables A through E for connection information for tip party with identifying ground with the ringer isolator. Space limitations in the AD-type telephone bases require use of a 74C or

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74D connecting block (Fig. 3) for mounting the ringer isolator.

**3.02** If unusually noisy conditions exist and tip party with identifying ground is required for 500-, 700-, 2500-, and 2700-series telephone sets with the ringer isolator, refer to Section 501-376-100.

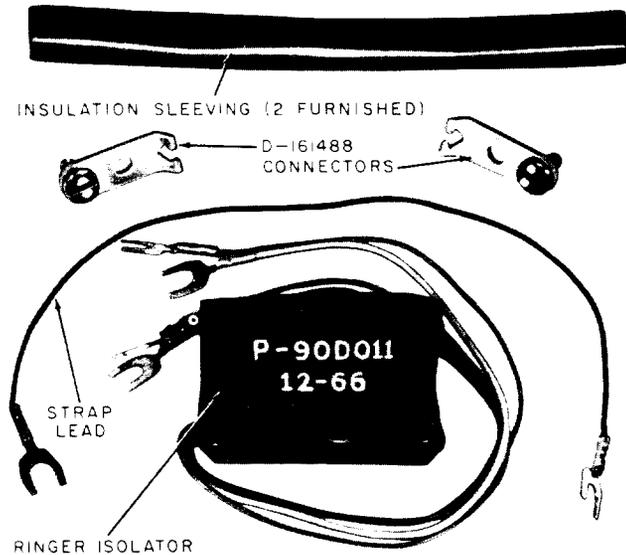
**3.03** For the AD1 (MD) telephone bases equipped with a 220A (MD), 220AM, 2220B (MD), or 2220BM handset, use a 74C connecting block and modify the base as shown in Table F and Fig. 6. If wiring for tip party with identifying ground and Table F does not eliminate the noisy condition it will be necessary to use an AD2 or AD3 telephone base.

**3.04** For the AC-type telephone bases the ringer isolator is placed along the lower left hand side of the base near the handset cord jack (Fig. 4).

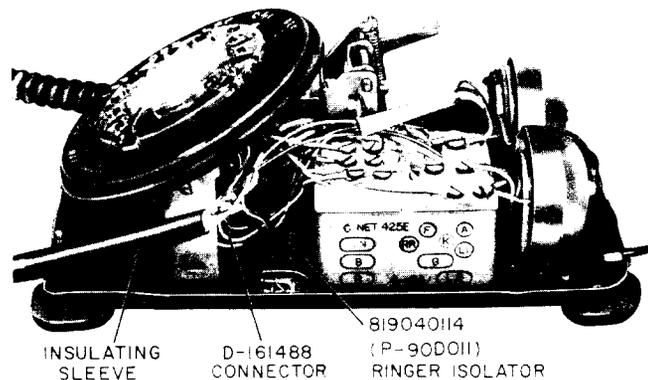
**3.05** For the AD2 and AD3 telephone bases equipped with a 220A (MD), 220AM, 2220B (MD), or 2220BM handset, use a 74D connecting block and modify the base as shown in Table G and Fig. 7.

**Note:** When a 220AM or 2220BM hand telephone set is used, it will be necessary to remove the 227D adapter. Refer to Section 502-303-101 or 502-303-102 for additional information.

**3.06** For the AD2 or AD3 telephone bases equipped with a 220B (MD), 220C, 220AL, 226A, 2220C, or 2226A handset, use a 74D connecting block and modify the base as shown in Table H and Fig. 8.



**Fig. 1—D-180036 Kit of Parts, Components**



**Fig. 2—Ringer Isolator in 500-Type Telephone**

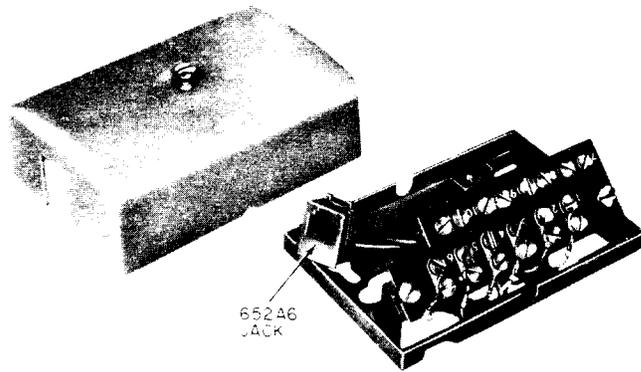
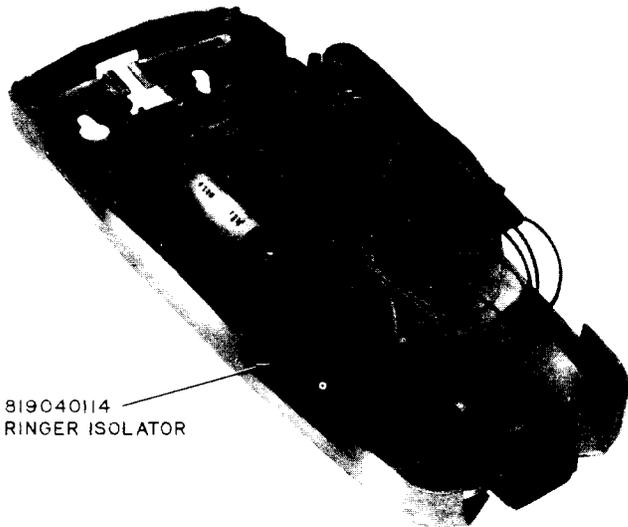
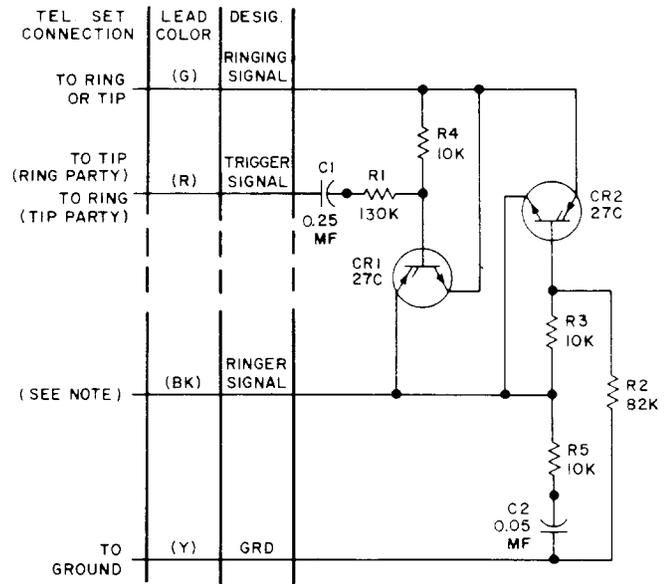


Fig. 3—74D Connecting Block



819040114  
RINGER ISOLATOR

Fig. 4—Ringer Isolator in AC-Type Telephone Base

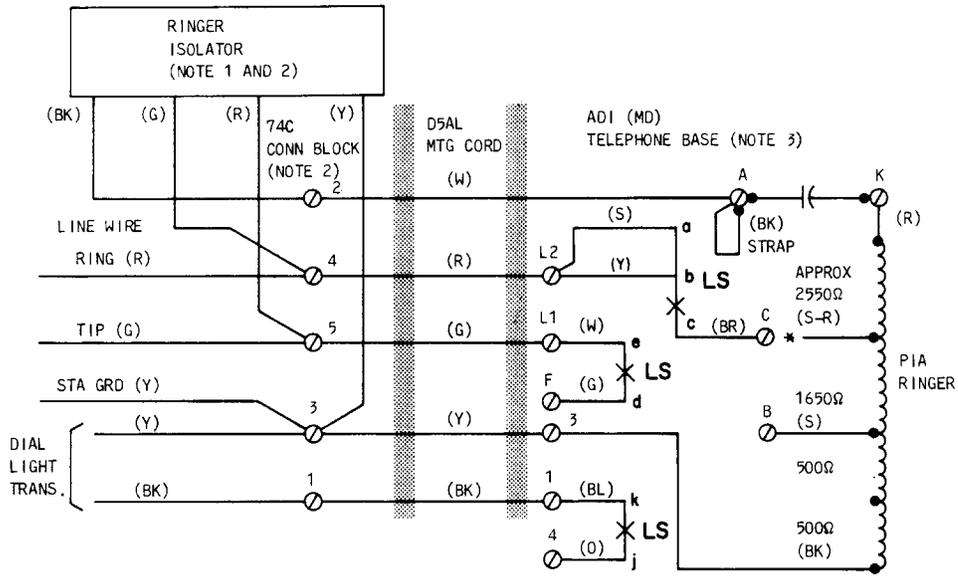


NOTE:

THESE CONNECTIONS ARE FOR RING PARTY OR TIP PARTY WITH IDENTIFYING GROUND. WHEN SET IS EQUIPPED WITH A MAXI-PHONE TYPE RINGER, CONNECT TO NEXT TERM. A. FOR AC-TYPE BASS TERMINAL A IS ON TERMINAL BOARD, REMOVE (G) LEAD WITH LEAD FROM TERMINAL A AND CONNECT TO L. ALSO INCLUDE AN STORE (BK) STRAP FROM TERMINAL A. WHEN SET IS EQUIPPED WITH A DC-TYPE RINGER, CONNECT TO (R) RINGER TERMINAL ON NEXT TERM. OR TERMINAL R.

Fig. 5—Ringer Isolator Schematic

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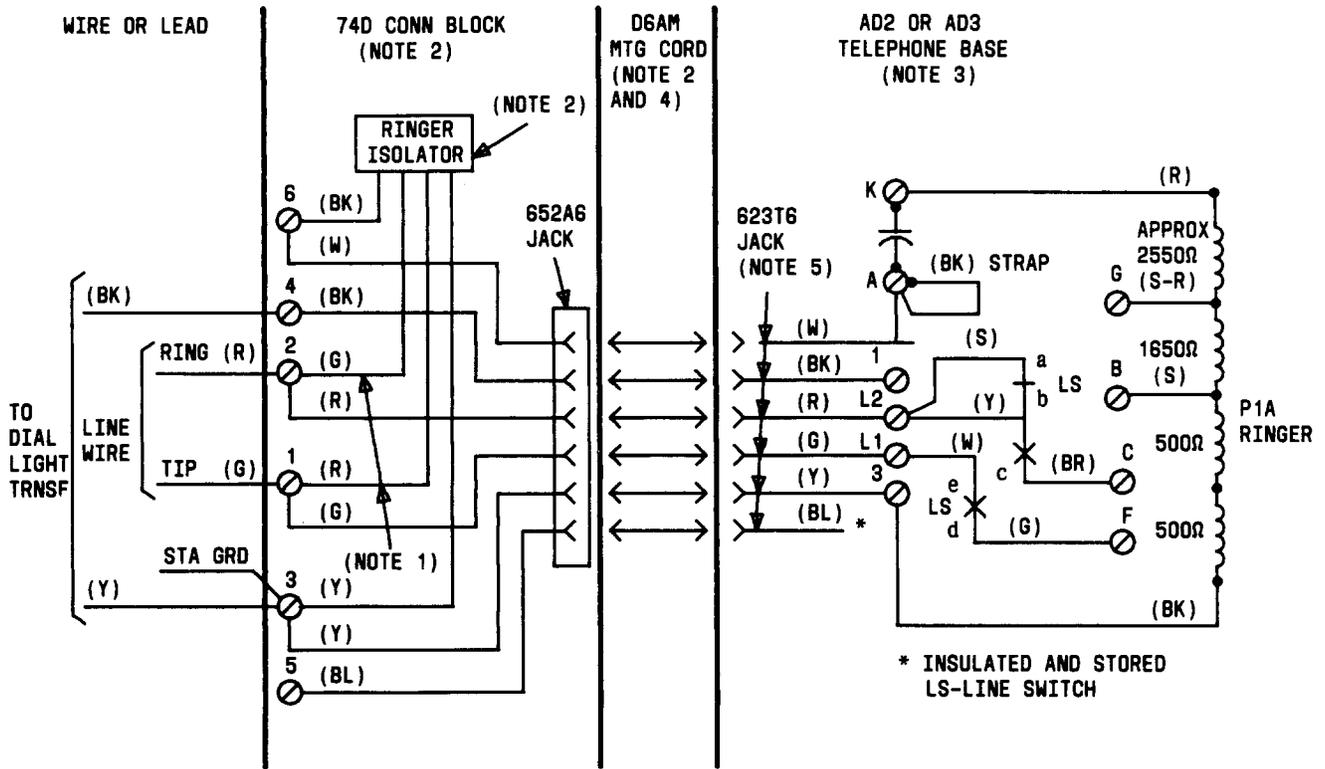


NOTES:

1. CONNECTION SHOWN FOR RING PARTY, REVERSE (R) AND (G) ISOLATOR LEADS FOR TIP PARTY.
2. MUST BE ORDERED SEPARATELY.
3. REFER TO TABLE F FOR TIP PARTY WITH IDENTIFYING GROUND CONNECTIONS.

\* INSULATED AND STORED  
LS - LINE SWITCH

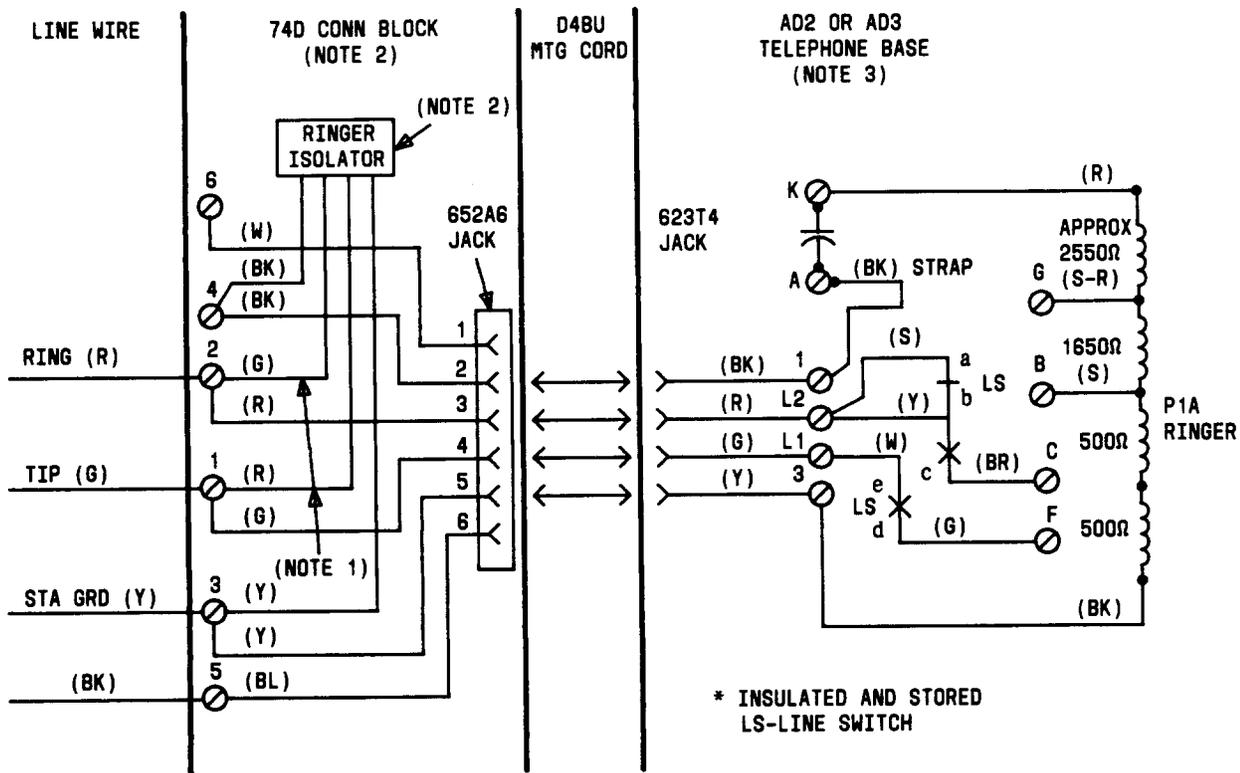
Fig. 6—Ringer Isolator Connections for AD1 (MD) Telephone Base With 220A (MD), 220AM, 2220B (MD) and 2220BM Hand Telephone Sets



NOTES:

1. CONNECTIONS SHOWN FOR RING PARTY. REVERSE (R) AND (G) ISOLATOR LEADS FOR TIP PARTY.
2. MUST BE ORDERED SEPARATELY.
3. REFER TO TABLE G FOR TIP PARTY WITH IDENTIFYING GROUND CONNECTIONS.
4. FIVE CONDUCTORS REQUIRED BETWEEN 74D CONNECTING BLOCK AND TELEPHONE BASE.
5. REPLACE 623T4 JACK FURNISHED WITH THESE BASES WITH 623T6 JACK, ORDERED SEPARATELY.

Fig. 7—Ringer Isolator Connections for AD2 or AD3 Telephone Base With 220A (MD), 220AM, 2220B (MD), and 2220BM Hand Telephone Sets



NOTES:

1. CONNECTIONS SHOWN FOR RING PARTY. REVERSE (R) AND (G) ISOLATOR LEADS FOR TIP PARTY.
2. MUST BE ORDERED SEPARATELY.
3. REFER TO TABLE H FOR TIP PARTY WITH IDENTIFYING GROUND CONNECTIONS.

Fig. 8—Ringer Isolator Connections for AD2 or AD3 Telephone Base With 220B (MD), 220C, 220AL, 226A, 2220C, and 2226A Hand Telephone Sets

TABLE A

**CONNECTIONS FOR 500-, 554-, AND  
2500-TYPE TELEPHONE SETS FOR TIP  
PARTY WITH IDENTIFYING GROUND**

WIRE OR LEAD	LEAD DESIG	COLOR	CONNECTION	
			1000 $\Omega$	2650 $\Omega$
Mounting Cord or Jack Lead Inside Set	Ring	R	L2	L2
	Tip	G	L1	L1
	GRD	Y	G	G
	Spare	BK	*	*
Ringer Isolator Kit of Parts in Set		R	L2	L2
		G	L1	L1
		Y	G	G
		BK	A	A
Ringer		R	K	B
		S-R	B	G
		S	B	K
		BK	G	B

\* Insulate and store.

TABLE B

**CONNECTIONS FOR 2554-TYPE TELEPHONE SETS  
FOR TIP PARTY WITH IDENTIFYING GROUND**

WIRE OR LEAD	LEAD DESIG	COLOR	CONNECTION			
			1000Ω		2650Ω	
			4010D NET.	4228K NET.	4010D NET.	4228K NET.
Inside Wire or Plug Lead in Set	Ring	R	2	L2	2	L2
	Tip	G	1	L1	1	L1
	GRD	Y	3	G	3	G
	Spare	BK	*	*	*	*
Ringer Isolator Kit of Parts in Set		R	2	L2	2	L2
		G	1	L1	1	L1
		Y	3	G	3	G
		BK	A	A	A	A
Line Switch		S	2	L2	2	L2
Strap from A		BK	A	A	A	A
Ringer		R	K	K	K	K
		S-R	*	*	B	B
		S	B	B	*	*
		BK	3	G	3	G

\* Insulate and store.

**TABLE C**  
**CONNECTIONS FOR 700- AND**  
**2700-SERIES TELEPHONE SETS FOR**  
**TIP PARTY WITH IDENTIFYING GROUND**

WIRE OR LEAD	LEAD DESIG	COLOR	CONNECTION	
			1000 $\Omega$	2650 $\Omega$
Mounting Cord or Jack Lead Inside Set	Ring	R	L2	L2
	Tip	G	L1	L1
	Trnsf&GRD	Y	4	4
	Trnsf	BK	3	3
Ringer Isolator Kit of Parts in Set		R	L2	L2
		G	L1	L1
		Y	G	G
		BK	A	A
Line Switch		S	G	G
		Y	4	4
		BR	2	2
		O	L2	L2
		BL	C	C
Strap from H		BK	*	*
Ringer		R	K	K
		S-R	*	B
		S	B	*
		BK	4	4

\* Insulate and store.

TABLE D

**CONNECTIONS FOR AC-TYPE TELEPHONE BASES  
WITH 220A(MD), 220AM, 2220B(MD), AND 2220BM  
HAND TELEPHONE SETS FOR TIP PARTY  
WITH IDENTIFYING GROUND (SEE NOTE)**

WIRE OR LEAD	LEAD DESIG	COLOR	CONNECTION
Inside Wire or Plug Leads in Set	Ring	R	L2
	Tip	G	L1
	TRNSF&GRD	Y	1
	TRNSF	BK	3
Ringer Isolator Kit of Parts in Set		R	L2
		G	L1
		Y	G
		BK	A
Line Switch		S	G
		Y	1
		BR	4
		O	L2
		BL	C
Strap from A		BK	A
Ringer		R	K
		S-R	*
		S	B
		BK	1

\* Insulate and store.

*Note:* An H5AA handset cord (ordered separately) must be used. In 220AM and 2220BM handsets, it will be necessary to remove the 227D adapter from the handset cord jack. Refer to Section 502-303-102 for additional information.

TABLE E

**CONNECTIONS FOR AC-TYPE TELEPHONE BASES  
WITH 220B(MD), 220C, 220AL, 226A, 2220C, AND  
2226A HAND TELEPHONE SET FOR TIP PARTY  
WITH IDENTIFYING GROUND (NOTE 1)**

WIRE OR LEAD	LEAD DESIG	COLOR	CONNECTION
Inside Wire or 523-Type Plug Leads in Base	Ring	R	L2
	Tip	G	L1
	GRD	Y	3
	—	BK	1
Ringer Isolator Kit of Parts in Base		R	L2
		G	L1
		Y	G
		BK	A
Line Switch		S	G
		Y	3
		BR	1
		O	L2
		BL	C(220-Type) 1†(2220C,2226A)
Strap from A		BK	A
Ringer		R	K
		S-R	*
		S	3†
		BK	3
Handset Cord Jack Leads in Base	Ring	R	C(220-Type) 2†(2220C,2226A)
	PTY ID	Y	5†
	PTY ID	BK	4†
Handset Cord Jack or Adapter Leads in Handset (Note 2)	PTY ID	Y	A
	PTY ID	BK	4 or B (220B only)

\* Insulate and store.

† Terminal on D-180825 Kit of Parts terminal board.

*Notes:*

1. The 220AL handset use the 227C adapter (D-180824 Kit of Parts) and the 220C, 226A, 2220C (later version), and 2226A handsets use the 282A adapter (D-180825 Kit of Parts). The 220B(MD) and early version 2220C handsets use only the terminal board of the D-180825 Kit of Parts.
2. The 220B (MD) and early version 2220C handsets have these leads attached to the jack.

TABLE F

**CONNECTIONS FOR AD1(MD) TELEPHONE BASE WITH  
220A(MD), 220AM, 2220B(MD) OR 2220BM HAND  
TELEPHONE SET USING RINGER ISOLATOR (FIG. 6)**

WIRE OR LEAD	LEAD DESIG	COLOR	RING PARTY	TIP PARTY WITH AND WITHOUT IDENT GRD (NOTE 2)
Inside Wire at 74C Conn Blk (Note 1)	Ring	R	4	4
	Tip	G	5	5
	TRNSF	Y	3	3
	TRNSF	BK	1	1
	STA GRD	Y	3	3
D5AL Mtg Cord at 74C Conn Blk		R	4	4
		G	5	5
		Y	3	3
		BK	1	1
		W	2	2
D5AL Mtg Cord in AD1 Base		R	L2	L2
		G	L1	L1
		Y	3	3
		BK	1	1
		W	A	A
Ringer Isolator at 74C Conn Blk (Note 1)	Ring	R	5	4
	Tip	G	4	5
	GRD	Y	3	3
		BK	2	2
Ringer		R	K	K
		S-R	*	*
		S	B	B
		BK	3	3
Line Switch		S	L2	L2
Strap from A		BK	A	A

\* Insulate and store.

*Notes:*

1. Use the 74C connecting block to mount the D-180036 Kit of Parts and terminate the mounting cord and line wire.
2. For tip party with identifying ground an H5AA handset cord must be used. When a 220AM or 2220BM hand telephone set is used, it will be necessary to remove the 227D adapter. Refer to Section 502-303-101 or 502-303-102 for additional information.

TABLE G

**CONNECTIONS FOR AD2 AND AD3 (NOTE 4) TELEPHONE BASES  
WITH 220A(MD), 220AM, 2220B(MD), AND 2220BM HAND  
TELEPHONE SET USING RINGER ISOLATOR (FIG. 7)**

WIRE OR LEAD	LEAD DESIG	COLOR	RING PARTY	TIP PARTY	
				NO IDENT GRD	WITH IDENT GRD (NOTE 3)
Inside Wire at 74D Conn Blk (Note 1)	Ring	R	2	2	2
	Tip	G	1	1	1
	TRNSF	Y	3	3	3
	TRNSF	BK	4	4	4
	STA GRD	Y	3	3	3
623T6 Jack in Base (Note 2)	Ring	R	L2	L2	L2
	Tip	G	L1	L1	L1
	TRNSF	Y	3	3	1
	TRNSF	BK	1	1	3
		W	A	A	A
	Spare	BL	*	*	G
Ringer Isolator at 74D Conn Blk (Note 1)		R	1	2	2
		G	2	1	1
		Y	3	3	5
		BK	6	6	6
Ringer		R	K	K	K
		S-R	*	*	*
		S	B	B	B
		BK	3	3	3
Line Switch		S	L2	L2	G
		Y	L2	L2	1
		BR	C	C	4
		O	4	4	L2
		BL	1	1	C
Strap from A		BK	A	A	A

\* Insulate and store.

*Notes:*

1. Use the 74D connecting block to mount the D-180036 Kit of Parts and terminate the mounting cord and line wire.
2. Remove the 623T4 jack and replace with 623T6 jack (ordered separately).
3. For tip party with identifying ground an H5AA handset cord must be used. When a 220AM or 2220BM hand telephone set is used, it will be necessary to remove the 227D adapter. Refer to Section 502-303-101 or 502-303-102 for additional information.
4. The AD3 telephone base can not be used for tip party with identifying ground when these hand telephone sets are provided.

TABLE H

CONNECTIONS FOR AD2 OR AD3 TELEPHONE BASE WITH 220B(MD), 220C, 220AL, 226A, 2220C, AND 2226A HAND TELEPHONE SETS USING D-180036 KIT OF PARTS (RINGER ISOLATOR), (FIG. 8)

WIRE OR LEAD	LEAD DESIG	COLOR	RING PARTY	TIP PARTY	
				NO IDENT GRD	WITH IDENT GRD (NOTE 3 AND 5)
Inside Wire at 74D Conn Blk (Note 1)	Tip	G	1	1	1
	Ring	R	2	2	2
	GRD	Y	3	3	3
	—	BK	5	5	5
623T4 or 623T6 † Jack in Base		G	L1	L1	L1
		R	L2	L2	L2
		Y	3	3	3
		BK	1	1	A
		W †	—	—	G
	BL †	—	—	*	
Ringer Isolator at 74D Conn Blk (Note 1)		G	2	1	1
		R	1	2	2
		Y	3	3	6
		BK	4	4	4
Ringer		R	K	K	K
		S-R	G	G	*
		S	B	B	3 ‡
		BK	3	3	3
Line Switch		S	L2	L2	G
		Y	L2	L2	3
		BR	C	C	1
		O	4	4	L2
		BL	1	1	C(220-Type) 1 ‡ (2220C, 2226A)
Strap from A		BK	1	1	A
Handset Cord Jack Leads in Base (Note 4)	Ring	R	C	C	C(220-Type) 2 ‡ (2220C, 2226A)
	PTY ID	Y	3	3	5 ‡
	PTY ID	BK	4	4	4 ‡
Handset Cord Jack or Adapter Leads in Handset (Note 2)	PTY ID	Y	*	*	A
	PTY ID	BK	*	*	4 or B(220B)

\* Insulate and store.

† 623T6 jack with extra (W) and (BL) leads required for tip party identification.

‡ Terminal on kit of parts terminal board.

Notes:

1. Use 74D connecting block to mount the D-180036 Kit of Parts and terminate the mounting cord and line wire.
2. The 200B(MD) and early version 2220C handsets have these leads attached to the handset cord jack. The 220AL uses the 227C adapter (D-180824 Kit of Parts) and the 220C, 226A, 2226A, and 2220C (later version) use the 282A adapter (D-180825 Kit of Parts) which provide these leads.
3. The 220B(MD) and early version 2220C handsets use only the terminal board of the D-180825 Kit of Parts.
4. The AD2 telephone base requires an 231A adapter (ordered separately).
5. For tip party with identifying ground only, a D6AM mounting cord and 623T6 jack must be ordered separately. The 623T4 jack in the base must be replaced by the 623T6 jack.