

Northern Telecom Practices

Section 502 - 9031 - 200

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Imagination Telephone Set*

Alexander Graham Bell

450 - Type

The material in this document was scanned from the Bell Canada publication entitled “Station Installation & Repair Manual”, dated 1981.

The manual consists of 1477 pages of technical information provided to technicians employed by Bell Canada.

**IMAGINATION* TELEPHONE SET
(ALEXANDER GRAHAM PLANE)
450-TYPE
DESCRIPTION, INSTALLATION AND MAINTENANCE**

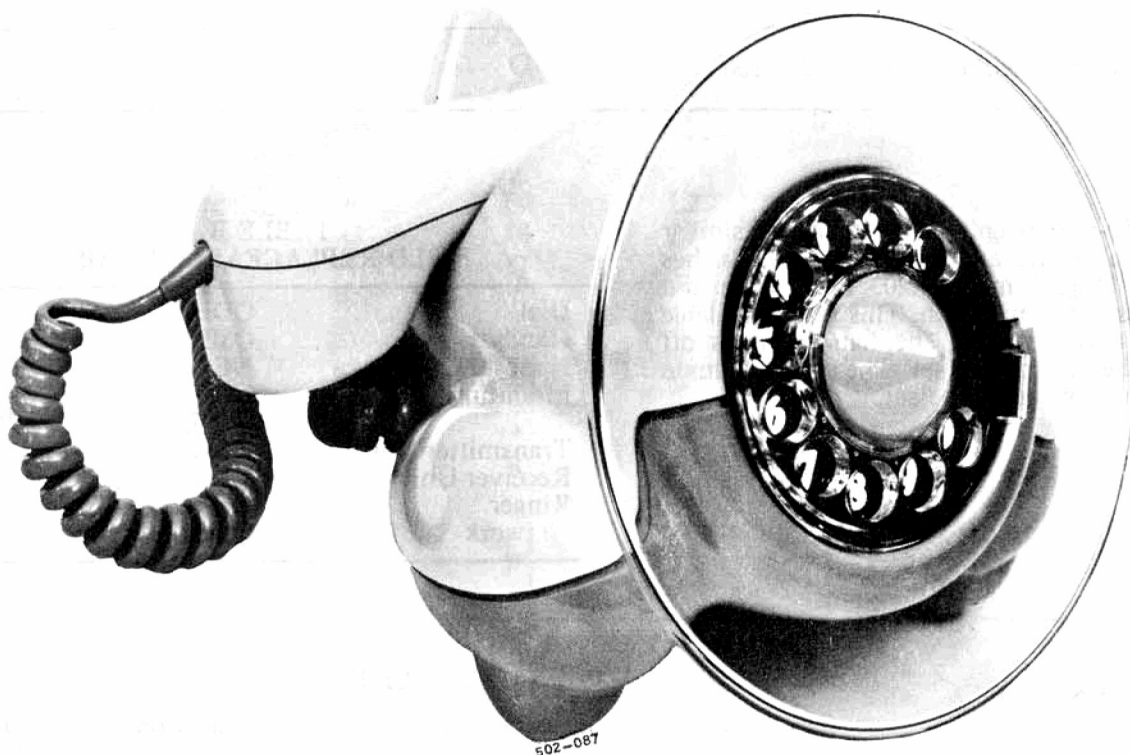


Fig. 1 - 450-Type

1. GENERAL

1.01 This section provides description, installation and maintenance information for the following sets:

- QSK450 ☐
- QSQM450

1.02 These sets are similar except that the QSK450-type set is equipped with a three conductor, round, spade-tip-ended mounting cord. The QSQM450-type set is equipped with a four conductor, flat, plug-ended mounting cord.

1.03 The QSK450-type set is factory wired for ring party service and the QSQM450-type set for individual or bridged service.

1.04 The 450-type telephone set is available in a two-tone color combination. For the colors of the major components refer to Table A.

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TABLE A

BASE	HOUSING	FINGER WHEEL	HANDSET	HANDSET CORD	MOUNTING CORD	QSK450A	QSQM450A
-29	-40	-29	-40	-29	-29	*	
-29	-40	-29	-40	-29	-87		*

Note: For color codes, refer to 500-1201-100.

1.05 The 450-type telephone set is shaped similar to an airplane; approximately 9-1/2 inches (241 mm) long, 8 inches (203 mm) wide and 6-1/2 inches (165 mm) high. This set is available only with a rotary dial. The handset rests off center to the rear of the set. The ringer volume control is on bottom of the set.

TABLE B
FIELD REPLACEABLE ITEMS

Dial	QDB1U1
Handset	QSE5A □
Handset Cord	NE-H4CJ
Mounting Cord	NE-D3BN □ or NE-D4QH
Transmitter Unit	NE-T1
Receiver Unit	NE-U1 or QUU1A
Ringer	NE-M1A
Network	QNB425E1

2. MAINTENANCE

2.01 Maintenance of customer-owned apparatus is the responsibility of the customer. For maintenance of company-owned apparatus, field maintenance should be limited to cleaning and adjusting line switch contacts and replacing the components listed in Table B.

3. INSTALLATION

3.01 Information for the installation of the 450-type telephone set is contained in Table C, Fig. 2, and the following charts.

- Chart 1 – Substitution of the Ringer
- Chart 2 – Substitution of the Dial
- Chart 3 – Substitution of the Network
- Chart 4 – Fault Location Guide

TABLE C
CONNECTIONS FOR 450-TYPE SET

		COLOR	INDIVI- DUAL OR BRIDGED	RING PARTY	TIP PARTY	TIP PARTY' 2650 IDENT	'A' LEAD CONTROL
Mounting Cord at Connecting Block**	Ring Tip Grd Aux	R G Y BK	R G G B	R G Y B	G R Y B	G R Y B	R G Y B
Mounting Cord at Network	Ring Tip Grd Aux	R G Y BK	L2 L1 G *	L2 L1 G *	Ⓛ L2 Ⓛ L1 G *	Ⓛ L2 Ⓛ L1 G *	L2 L1 G L3
Ringer		BK S S-R R	Ⓛ L1 G * * K	G * * K	G * * K	G * B K	L1 * * K
Line Switch		S-BL G	L3 L3	L3 L3	L3 L3	L3 L3	L3 G

*Indicates dead dress.

**For sets equipped with NE-D3BN or NE-D4BJ cord only.

○ Indicates wiring differences for sets equipped with NE-D4QH cord.

Notes:

1. For 'A' lead control use NE-D4BJ cord.

- ☐ 2. If the telephone set is the only set on the premises, the ringer output may be increased by placing the ringer biasing spring in the high tension notch.

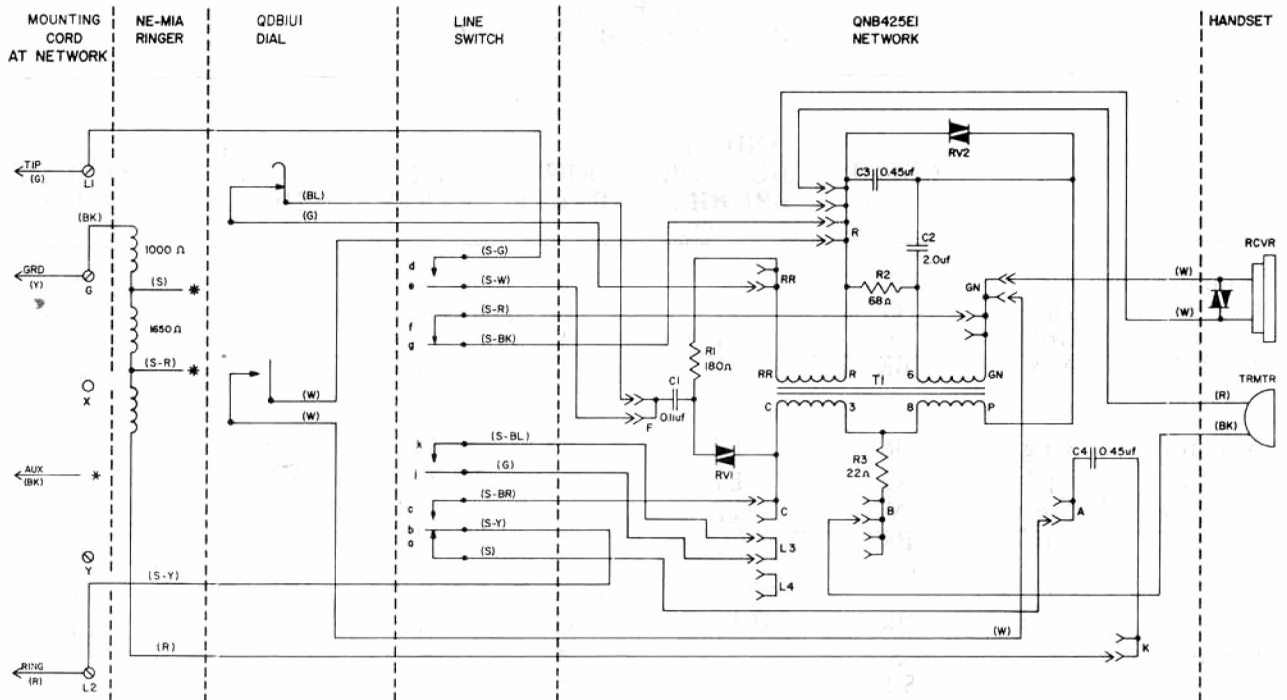


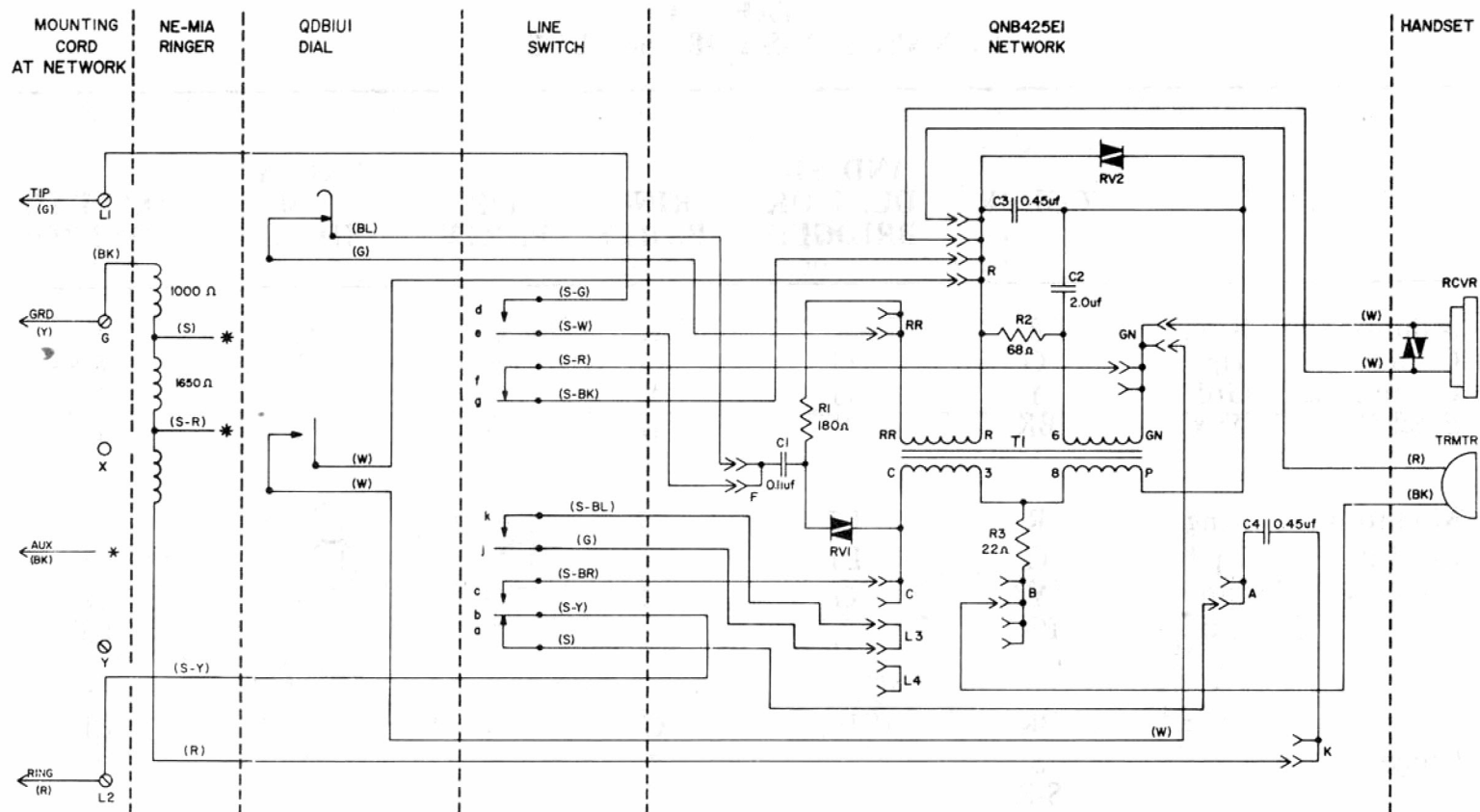
Fig. 2 – Schematic Diagram of 450A-Type Telephone Set

TABLE D
450-TYPE TELEPHONE SET
IDENTIFICATION OF PARTS

ITEM NO.	PIECE PART NUMBER	DESCRIPTION	QSK450A	QSQM450A
1	P0251028	Screw	4	4
2	P0565018	Screw	3	3
3	P0502646	Screw	2	2
7	P0297882	Rivet	2	2
10	P096D326	Foot	3	3
11	P0565876	Volume Control	1	1
18	P0569400-*	Base	1	1
21B	P0565881	Chassis Assembly	1	1
25B	P0571200-*	Housing Assembly	1	1
29B	P0515926	Line Switch Assembly	1	1
36	QNB425E1	Network	1	1
40	QDB1U1-*	Dial	1	1
47	NE-M1A	Ringer	1	1
53	QSE5A-*	Handset	1	1
70	NE-D3BN-*	Mounting Cord	1	
	NE-D4QH-87	Mounting Cord		1
86D	P0535652	Card Holder Group	1	1

*Refer to Table A for appropriate color

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Fig. 2 – Schematic Diagram of 450A-Type Telephone Set

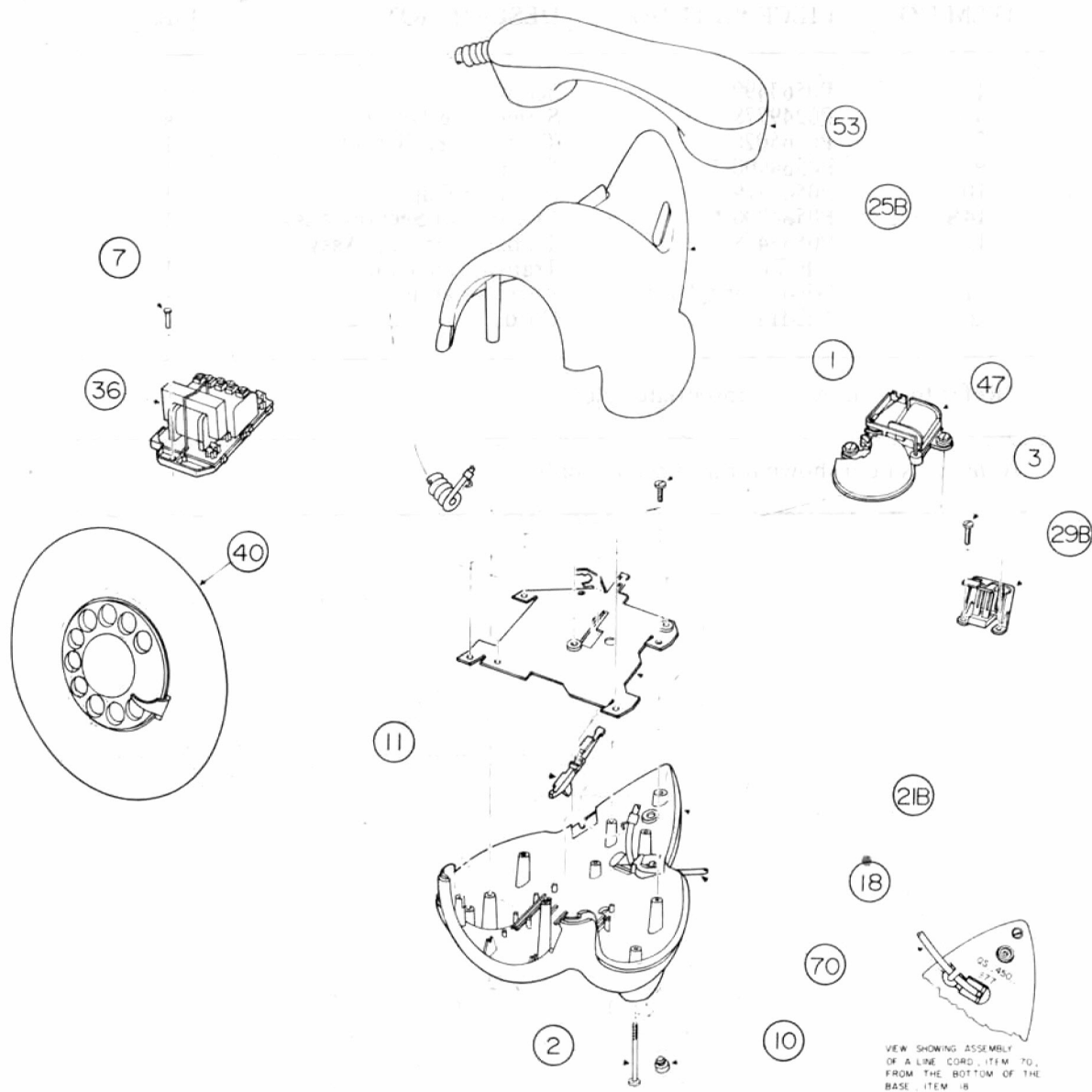


Fig. 3 – Exploded View of 450-Type Telephone Set

TABLE E
QSE5A HANDSET
INDENTIFICATION OF PARTS

ITEM NO.	PIECE PART NO.	DESCRIPTION	QSE5A
1	P0563499	Screw	2
4	P0249778	Screw (See Note)	4
7	P0565020	Transmitter Gasket	1
9	P0564900-*	Cover	1
10	P0563479	Receiver Cup	1
14B	P0564800-*	Instrument Section Assy	1
15B	P0563478	Transmitter Cup Assy	1
20	NE-T1	Transmitter Unit	1
21	NE-U1 or QUU1A	Receiver Unit	1
26	NE-H4CJ	Cord	1

*Refer to Table A for appropriate color

Note: This item shown for information only.

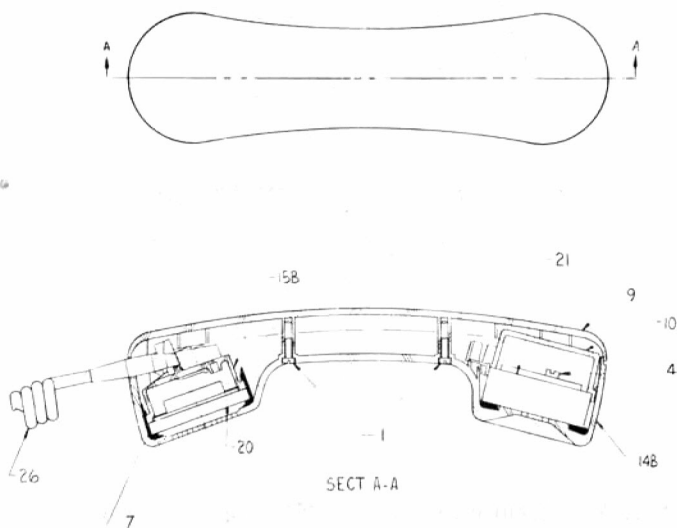


Fig. 4 – Cross Section of QSE5A Handset

CHART 1 SUBSTITUTION OF THE RINGER

STEP	PROCEDURE
1	Remove the housing by loosening the screws in the base until the screws disengage from the housing.
2	Disconnect the ringer leads.
3	Loosen the ringer mounting screws until the screws disengage from the chassis.
4	Replace the ringer. See Table C for connections.

CHART 2 SUBSTITUTION OF THE DIAL

STEP	PROCEDURE
1	Remove the housing according to Chart 1, Step 1.
2	Disconnect the dial leads.
3	Remove the dial.
4	Replace the dial. See Table C for connections.

CHART 3 SUBSTITUTION OF THE NETWORK

STEP	PROCEDURE
1	Remove the housing according to Chart 1, Step 1.
2	Disconnect all leads on the network.
3	Insert the NS-16750 L3 releaser into the releaser hole of the tab on the network mounting adaptor.
4	Slide and lift the network from the mounting adaptor.
5	Replace the network. See Table C and Fig. 2 for connections.

CHART 4 **FAULT LOCATION GUIDE**

INDICATION	PROBABLE CAUSE	CORRECTIVE MEASURE
Bell does not ring	Ringer disconnected or wired incorrectly	Connect according to Table C.
	Volume Control Lever in cut-off position.	Move control lever and advise customer of cut off position.
	Open winding.	Replace ringer.
	Metal particles in armature.	Remove with adhesive tape or equivalent.
	Open ringing capacitor.	Replace network.
Bell taps while dialing or operating line switch	Incorrect wiring	Check mounting cord and ringer connection
	Loose gong.	Tighten screw as required.
	Biasing tension too low.	Place bias spring in higher tension notch.
Can't trip ring	Open handset cord.	Replace handset cord.
	Defective network or open wiring.	Replace network.
	Contacts on line switch do not close.	Clean or adjust line contacts.
No dial tone	Open mounting or handset cord	Replace handset cord.
	Defective receiver unit or short circuit varistor.	Replace receiver unit.
	Dial shunt contacts closed	Replace dial
	Open network	Replace network
	Line switch contacts do not close	Check switch cover for proper installation

CHART 4
FAULT LOCATION GUIDE, Con't

INDICATION	PROBABLE CAUSE	CORRECTIVE MEASURE
No dial tone	Line switch contacts do not close	Clean or adjust line switch contacts
Can't break dial tone	Dial does not pulse	Replace dial
	Line reversed at telephone set	Check for battery on ringer line
Loud clicks heard in receiver while dialing	Dial shunt contacts do not close	Replace dial
Can't hear	Open or short circuit receiver unit or handset cord	Replace receiver unit or handset cord
	Open induction coil in network	Replace network
	Line switch contacts do not open	Check line switch cover for interference
Can't be heard	Defective transmitter unit or open handset cord	Replace transmitter unit or handset cord