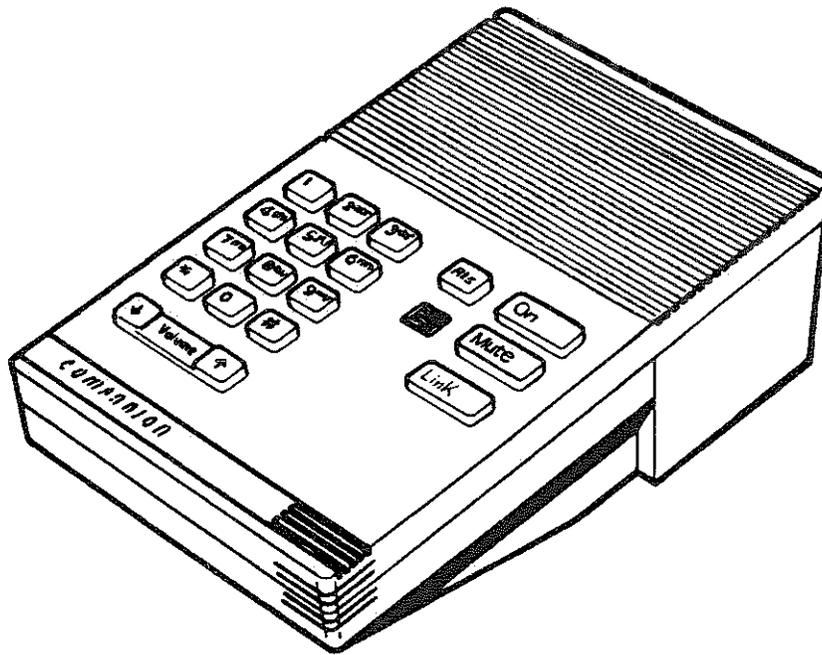


UNITY CONFERENCING PRODUCT

COMPANION* 4S HANDSFREE UNIT

NT1L06AA TYPE

DESCRIPTION, FEATURES, INSTALLATION AND OPERATION



CONTENTS	PAGE	CONTENTS	PAGE
1. GENERAL.....	2	4. CONNECTIONS	3
2. DESCRIPTION AND FEATURES	2	5. OPERATION TESTS AND FAULT LOCATION GUIDE	3
3. INSTALLATION	3		

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1. GENERAL

1.01 This practice covers the description, features, installation, operation tests and fault location procedures for the COMPANION 4S handsfree unit.

1.02 The NT1L06AA type handsfree unit permits voice-switched handsfree conversation to be carried out. The unit can be used with a UNITY* or an e2500 -type telephone set. Dialing from the handsfree unit is possible since the NT1L06AA is equipped with its own DIGITONE* dial pad. The telephone set provides the alerting device as well as the use of a handset if privacy is preferred.

2. DESCRIPTION AND FEATURES

2.01 The COMPANION 4S handsfree unit comprises a dial pad, a voice-switching circuit, and a built-in microphone and loudspeaker. This wedge-shaped unit is housed in a two-piece, high impact plastic base and cover. A wall plug-in power supply and 'T' adapter are included.

2.02 This handsfree unit is available in chameleon gray only.

2.03 The NT1L06AA handsfree assembly includes the following components:

- Component board assembly
- Keyboard assembly
- Speaker assembly
- Microphone assembly
- Plastics, line cord, etc.

2.04 The power to this handsfree unit is provided by a NT1L0404 ac power supply.

Caution: In the event of a handsfree unit failure, the associated telephone line cord must be unplugged from the power supply 'T' adapter and plugged directly into the CO or PBX line modular wall jack.

2.05 A 'T' type modular plug adapter (part of the power supply) mates with a RJ11C (or equivalent) modular central office (CO) line wall receptacle. The telephone set and the handsfree unit line cords plug into this power supply 'T' adapter.

2.06 On all units provision is made for the following features:

- (a) Receiving incoming calls on either the handsfree unit or the associated telephone set.

(b) Transferring calls between the handsfree unit and the associated telephone set.

(c) Dialing outgoing calls from either the dial pad on the handsfree unit (handset on-hook) or the associated telephone set (off - hook).

(d) Automatic cut-off of the handsfree unit when the handset of the associated telephone set is taken off-hook.

(e) Manual CO line cut-off of the handsfree unit by use of the RELEASE button (symbol Rls).

(f) Transmit muting, which cuts off transmission when the MUTE button is depressed, without affecting reception.

(g) The LINK* button activates a timer circuit in the network/dial which provides a link break 400 ms to 600 ms, that can be used to access Custom Calling features provided by the telephone company.

(h) Volume adjustment by means of a rocker-arm type volume control. Pressing the right side of the control **increases** the volume, while pressing the left side of the control **decreases** the volume. This control has no affect on the transmitted signal.

(i) Selection of handsfree operation by means of an ON button and an LED to provide visual indication of the unit status. The LED is lit when the unit is on, goes out when the unit is off and flashes when the unit is muted.

2.07 This handsfree unit employs voice-switching circuitry which allows the direction of transmission to be controlled by the party who is speaking.

2.08 The NT1L06AA COMPANION 4S handsfree unit is designed for desk-top installation.

2.09 The handsfree unit housing cover contains the PCB assembly, keyboard assembly, microphone assembly and loudspeaker assembly. The base contains the line cord, a mounting clamp assembly to secure the cord and four screws assembled through mounting posts within the housing.

2.10 The handsfree unit dimensions are 180 mm (7.1 in) deep, 120 mm (4.7 in) wide and the unit tapers in height from 51 mm (2.0 in) at the back to 25.4 mm (1.0 in) at the front.

*UNITY, DIGITONE, AND LINK are registered trademarks of Northern Telcom Limited

3. INSTALLATION

- 3.01 The NT1L06AACOMPANION 4S should be installed directly on a hard surface, such as table, desk or counter top, and as far as possible from sources of noise such as typewriters, radios or home appliances.
- 3.02 In order to avoid degradation in speech quality do not place the handsfree unit between parallel hard surfaces which are less than 1.8 m (6 ft) apart (e.g., a narrow corridor).
- 3.03 The handsfree unit should not be placed in hard surfaced corners or under low, hard surfaced shelves less than 610 mm (2 ft) in height above the unit.
- 3.04 The front edge of the handsfree unit, containing the microphone, should be at least 51 mm (2 in) in from the edge of the desk, counter top or other surface on which it is resting. No obstacles should be placed close to the microphone.

4. CONNECTIONS

- 4.01 To prepare the handsfree unit for operation, insert the modular plug, on one end of the line cord, into the jack in the base of the unit. Ensure that the plug is properly seated (audible click). Route the cord under the tabs in cord channel; continue fitting cord to the edge of the base.
- 4.02 Insert the modular plug, on the other end of the line cord, into the power supply 'T' adaptor jack labelled HF (handsfree). Ensure that the plug is properly seated (audible click) and installed in the correct jack. Refer to connection information block diagram, Fig. 1, for details.

- 4.03 Insert the line cord plug, from the associated telephone set, into the 'T' adaptor jack labelled PH (phone). Insure that the plug is properly seated (audible click) and installed in the correct jack.
- 4.04 Insert the 'T' adaptor assembly into the CO wall jack.
- 4.05 Plug the power supply cord into any well grounded 115 Vac, 60 Hz power outlet.
- 4.06 The NT1L06AA handsfree unit comprises a NT1L0601 handsfree assembly, an NT1L0404 power supply and an NE-D8QT modular cord. Table A provides parts identification for the NT1L06AA handsfree unit, while Fig. 2 and Table B provide assembly and parts identification for the NT1L0601 handsfree assembly.

5. OPERATION TESTS AND FAULT LOCATION GUIDE

- 5.01 The operation tests are listed in Chart 1 and a fault location guide is given in Chart 2.
- 5.02 The operation tests listed in Chart 1 shall be performed on the handsfree unit after completing all connections.
- 5.03 The fault location guide given in Chart 2 can be used in conjunction with Chart 1 to determine specific sources of faulty operation. If the suggested action does not correct the fault, the unit should be tagged and returned for repair.

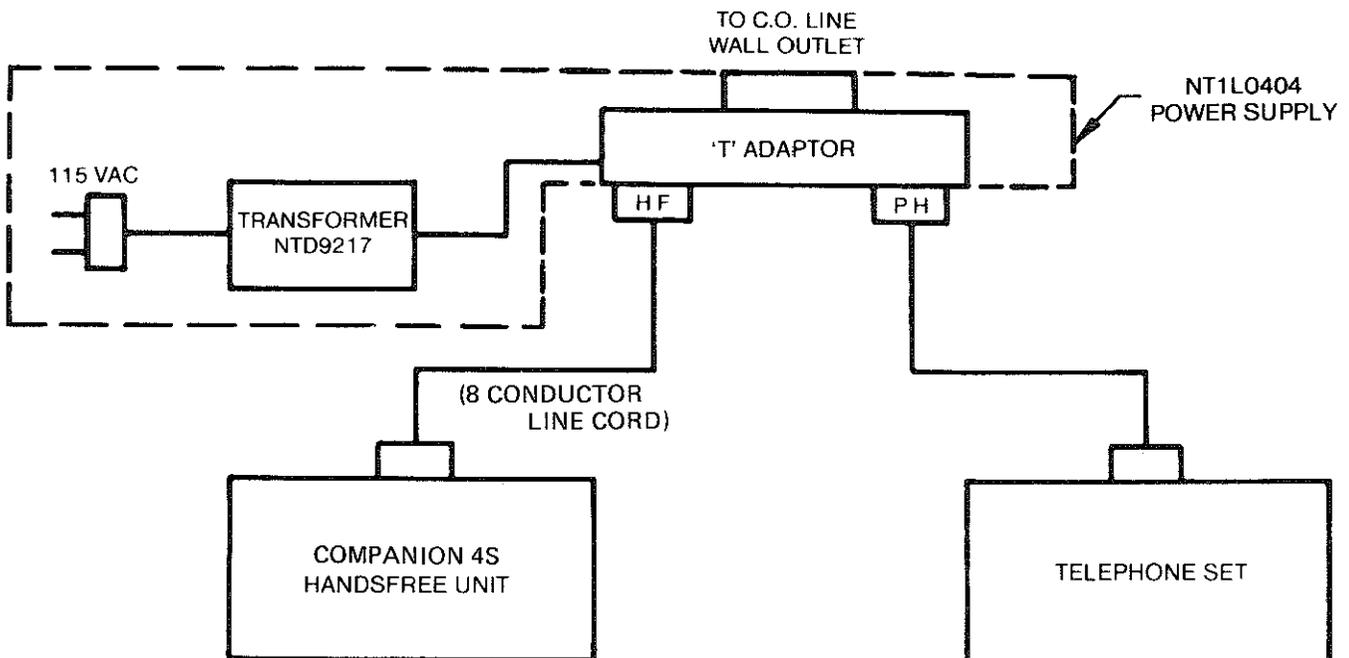


Fig. 1 — NT1L06AA Handsfree Unit - Connections

**CHART 1
NT1L06AA OPERATION TESTS**

This procedure tests all the operating features of a NT1L06AA installation. If a test cannot be completed satisfactorily, refer to the fault location guide (Chart 2).

STEP	PROCEDURE	INDICATION
1	Depress ON button momentarily.	Indicator LED lights. Dial tone is heard.
2	Dial test center number from handsfree unit dial pad.	Ring back heard, test center answers.
3	Operate volume control for increase (↑) and decrease (↓).	Volume of test center audio signal increases the decreases.
4	Press MUTE button. Pause and press MUTE button again.	Test center should not hear transmission while the LED flashes. Transmission should return to normal when the LED returns to a steady state.
5	Lift handset.	LED indicator OFF. Test center voice is heard in handset (speech is transferred from unit speaker to handset).
6	Replace handset, pause 3 sec. and lift handset again.	Dial tone heard.
7	Dial test center number from telephone.	Test center answers.
8	Depress ON button and replace handset.	Indicator LED lights and test center audio signal is heard on loudspeaker.
9	Depress OFF button.	LED indicator OFF. Test center audio signal no longer heard.

**TABLE A
NT1L06AA HANDSFREE UNIT
IDENTIFICATION OF PARTS
(REFER TO FIG. 2)**

ITEM	IDENTIFICATION	DESCRIPTION	QTY.
1	A0326056	NT1L0601 Handsfree Assembly**	1
2	A0320323	NT1L0404 Power Supply	1
5	P0665392	User's Guide	1
6	A0322456	NE-D8QT-87* Modular Cord, (8-conductor, 7 ft)	1
* Silver satin. ** Fig. 3 and Table B.			

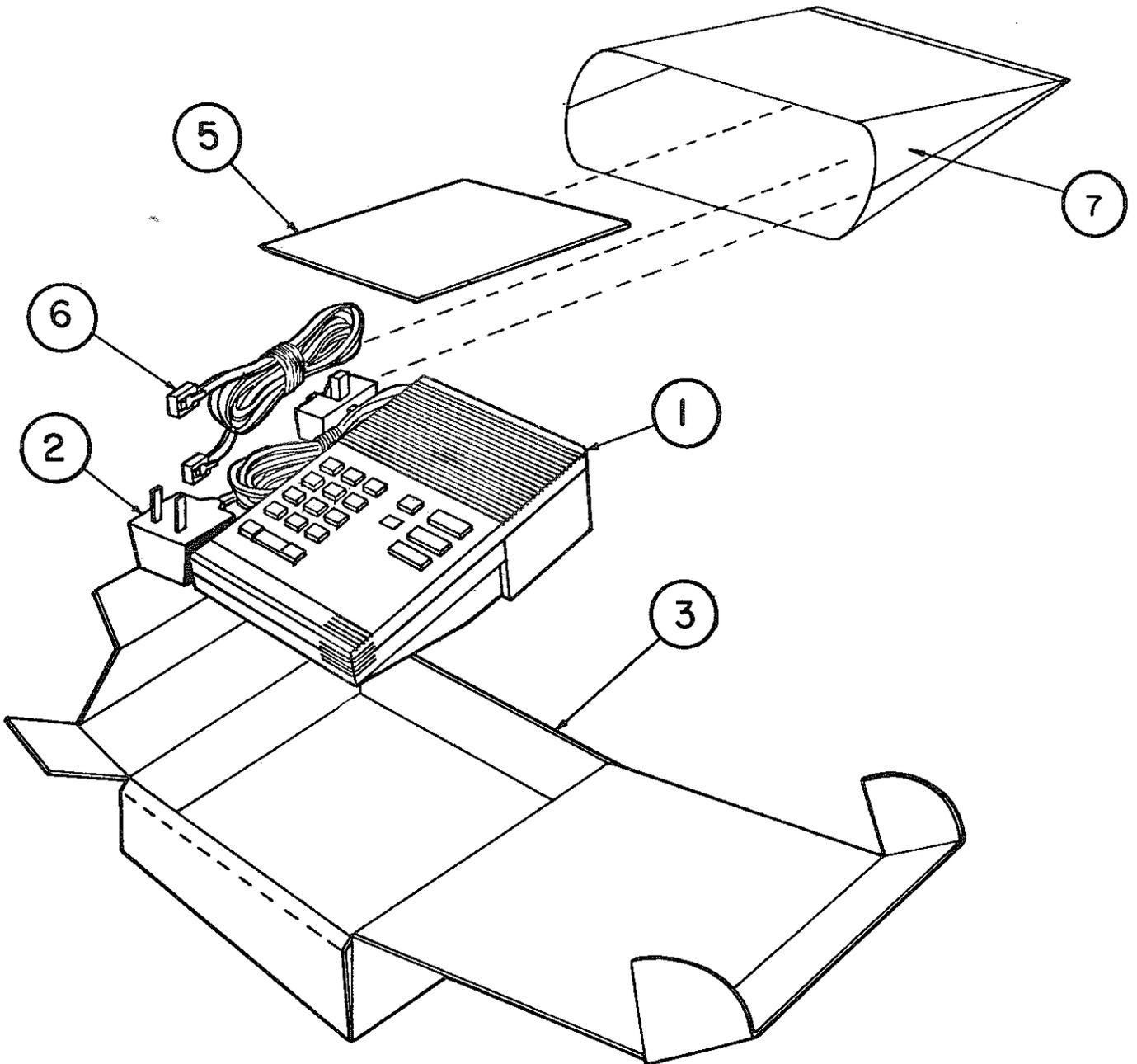


Fig. 2 — Identification of Parts

**CHART 2
FAULT LOCATION GUIDE**

FAULT SYMPTOMS	POSSIBLE CAUSE(S)	CORRECTIVE MEASURE
No dial tone.	Volume control turned down. Improper 'T' adaptor connections. Defective 'T' adaptor/transformer. Associated telephone handset is not in cradle. Defective COMPANION line cord. Defective set.	Press volume 'up' key. Check 'T' adaptor connections. Replace power supply assembly. Place handset in cradle. Replace COMPANION line cord. Replace set. Check for DIGITONE service.
Cannot break dial tone.	Defective set.	Replace set.
Cannot hear calling/called party.	Defective 'T' adaptor/transformer. Defective COMPANION line cord. Defective set.	Replace power supply assembly. Replace COMPANION line cord. Replace set.
Cannot be heard by calling/called party.	'Mute' is engaged; light is flashing. Defective set.	Press 'Mute' button; light is steady. Replace set.
Cannot stop incoming ringing.	Defective COMPANION line cord. Defective 'T' adaptor/transformer. Defective set.	Replace COMPANION line cord. Replace power supply assembly. Replace set.
Volume control does not work.	Check 'T' adaptor/connections. Defective set.	Check 'T' adaptor connections. Replace set.
Indicator lamp does not light.	Defective COMPANION line cord. Defective 'T' adaptor/transformer. Defective set.	Replace COMPANION line cord. Replace power supply assembly. Replace set.
'Mute' key does not operate (i.e., light does not flash, or called/calling party still hears conversation).	Defective set.	Replace set.
Transfer from handsfree-to-telephone set operation (and vice-versa) does not function.	Improper 'T' adaptor connections. Defective line cord(s). Defective 'T' adaptor/transformer. Defective set.	Check 'T' adaptor connections. Replace line cord(s). Replace power supply assembly. Replace set.

Note: When checking connections, unplug and re-insert all modular plug-jack combinations (including wall-mounted transformer) to ensure proper seating.

TABLE B
NT1L0601 HANDSFREE ASSEMBLY
IDENTIFICATION OF PARTS

ITEM	IDENTIFICATION	DESCRIPTION	QTY.	NOTES
1	P0601001	Captive Screw M3.5 x 1.27-16	5	
2	P096D326	Foot	4	
3	P0653935	Base	1	
4	P0661035	Cover	1	
5	P0643988	Release Key	1	
6	P0652736	Mute Key	1	
7	P0652737	On Key	1	
8	P0652729	LED Lens	1	
9	P0643987	Volume Key	1	
10	P0643984	'0' Key	1	
11	P0643975	'1' Key	1	
12	P0643976	'2' Key	1	
13	P0643977	'3' Key	1	
14	P0643978	'4' Key	1	
15	P0643979	'5' Key	1	
16	P0643980	'6' Key	1	
17	P0643981	'7' Key	1	
18	P0643982	'8' Key	1	
19	P0643983	'9' Key	1	
20	P0643985	'*' Key	1	
21	P0643986	'#' Key	1	
22	A0320832	NPS-25176-14 Elastomer	1	
23	P0600951	8mm Screw	5	
24	A0327515	NT1L0602 Combination Board Assembly	1	
25	P0652734	Speaker Cover	1	2
26	TEC00167	Microphone Assembly	1	1, 5, 8
27	P0652726	F00300H02 Microphone Retainer	1	
28	P0652757	Seal	1	1
29	TEC00166	Speaker Assembly	1	2, 4, 5, 8
30	P0652732	F0100H02 Front Foam Sound Coat	1	2
31	P0652733	FF20H02 Back Foam Sound Coat	1	2
32	P0652796	Link Key		
34	P0665356	Foam Spacer	1	
35	P0665357	Foam Collar	1	3
36	P0657705	FCC Label	1	
37		Black PVC Electrical Tape	As Needed	6
38		Hot Melt		1

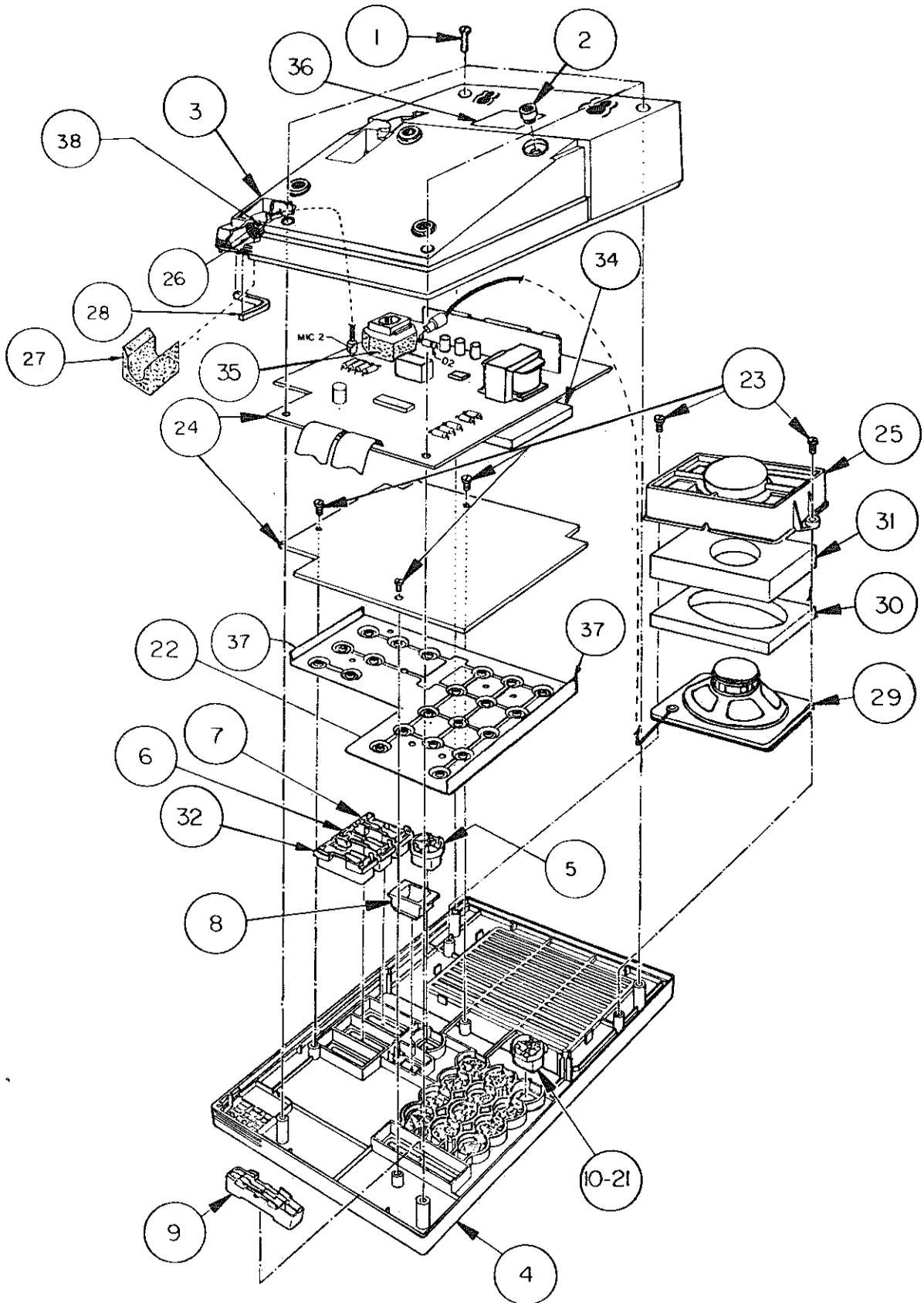


Fig. 3 — NT1L0601 Handsfree Assembly - Assembly of Parts