

“LOGIC *” HANDS-FREE UNIT

QUSIC

INSTALLATION MANUAL

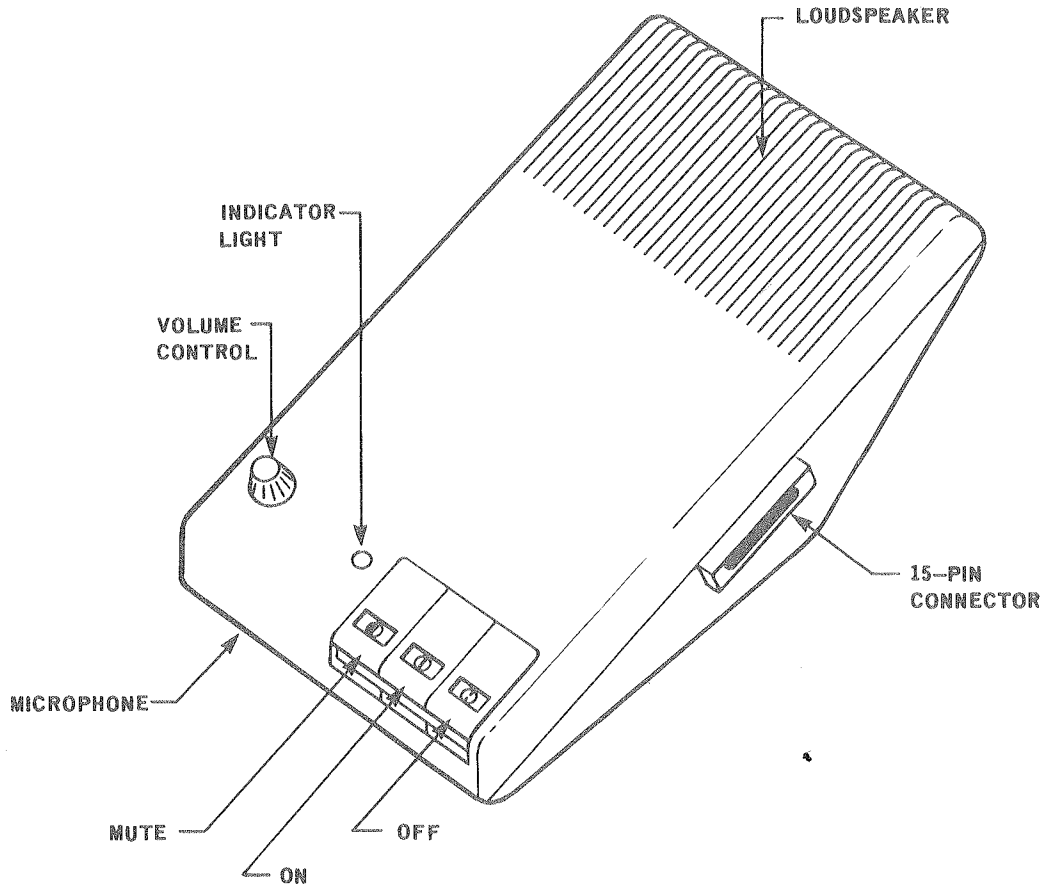


Fig. 1 — LOGIC Hands-Free Unit

1. GENERAL

1.01 The LOGIC hands-free unit (Fig. 1) permits voice-switched, hands-free conversation with LOGIC telephone sets.

1.02 The unit consists of speech and control circuitry packaged in a high-impact plastic housing which is plug-in compatible with LOGIC telephone sets.

1.03 The unit is designed for desk-top or wall-mounted installation.

1.04 The unit is powered by a separately mounted NE-2012B transformer (or equivalent power supply), which is connected to the unit through the associated telephone set.

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SECTION 512-6251-292

1.05 Provision is made for:

- (a) accepting incoming calls on either the unit or the associated telephone set
- (b) dialing outgoing calls with the handset either on-hook or off-hook
- (c) transferring calls between the unit and the associated telephone set, with automatic cutoff of the unit when transferring to handset operation.

2. CONTROLS AND INDICATOR

2.01 **VOLUME CONTROL.** This rotary control permits the user to set the loudspeaker to the desired volume. The control does not affect the level of the transmitted signal.

2.02 **INDICATOR LAMP.** This red light emitting diode (LED) monitors the operating mode of the unit. The lamp is on when the unit is in the transmit mode and off when the unit is in the receive mode.

2.03 **ON KEY.** This piano-type key is momentarily depressed when the handset is on-hook to answer an incoming call or before on-hook dialing. The key is held depressed during transfer from handset to hands-free operation, or to hold a call on the unit with both transmission and reception inhibited.

2.04 **OFF KEY.** This piano-type key is momentarily depressed to terminate a call on the unit.

2.05 **MUTE KEY.** This piano-type key is held depressed during a call to inhibit transmission without affecting reception.

3. INSTALLATION

POWER CONNECTION

3.01 Each hands-free unit may be powered by an NE-2012B transformer (or equivalent) or in the case of a multiple installation by a common power supply. Select a commercial transformer that will supply an open circuit voltage not exceeding 25 V ac, and a fully loaded voltage, at the set terminals, not less than 16 V ac. The capacity of the common power supply is based on 110 mA as the maximum current for each unit.

3.02 Each unit must connect directly to the transformer terminals. Multiple connections must not be made between sets. *Do not ground either side of the line connecting the power supply to the hands-free unit.*

3.03 The maximum allowable lengths of 22, 24, and 26 AWG cable for connecting the transformer to the hands-free unit are:

- 22 AWG – 400 feet
- 24 AWG – 250 feet
- 26 AWG – 150 feet

3.04 The power supply is connected to the telephone set through spare conductors in the mounting cord or by installing an additional 2-conductor cord.

3.05 Remove the faceplate of the LOGIC telephone set by inserting the NS-16750L3 releaser into the hole in the parting line between the top and bottom housings, and pressing lightly to permit the faceplate to be lifted off.

3.06 Remove the top housing cover by loosening the mounting screws, and lifting the cover away from the bottom housing.

3.07 Remove the cable locking slide (under the bottom housing) and insert the spade tips of the 2-conductor mounting cord from the NE-2012B transformer (or equivalent power supply) in the appropriate power terminals in the LOGIC telephone set. Disconnect, insulate, and store the mounting cord leads that are on these terminals.

3.08 If the ringer cutoff feature is required on the LOGIC telephone set:

- (1) Disconnect the (BK) ringer lead.
- (2) Connect the (S-BK) hands-free socket lead to the terminal from which the (BK) ringer lead was removed.
- (3) Connect the (BK) ringer lead to the (BK) hands-free socket lead.

3.09 For external station busy lamp or relay control connect the BL lead from the left-hand interconnect to a spare conductor in the mounting cord.

3.10 The interface between the hands-free unit and the LOGIC telephone set consists of a 15-pin connector plug and socket located on matching sides (Fig. 6).

3.11 To connect the unit and the set for a desk top installation:

- (a) Grasp the set in the right hand, dial forward.
- (b) Grasp the unit in the left hand, controls forward.
- (c) Tilt the upper edge of the unit towards the upper edge of the set, bring the set and unit

together so that the plug is firmly in the socket, and set the coupled units on the desk top.

3.12 To connect the unit and the set for a wall installation:

(a) Mount a QBP7A mounting bracket securely on the wall. (The mounting bracket must be ordered separately.)

(b) Place the set in position on the mounting bracket, slide to the left and secure it with the thumb screw.

(c) Tilt the upper edge of the unit towards the upper edge of the set and bring the unit together with the set so that the plug is firmly in the socket and the unit is seated on the locking pin.

4. OPERATION

4.01 For the *best* operation, the following guidelines should be observed.

4.02 The microphone should be within arm's length of the user. This distance may, if necessary, be increased to 6 feet in normal rooms (i.e., not excessively noisy or reverberant) and to 10 feet in ideal rooms (i.e., highly sound-absorbing and quiet). At larger distances, the transmitted voice will sound hollow at the far-end.

4.03 Speech should be at normal conversation level. Low level speech will not operate the voice-switching circuit and consequently will not be transmitted. The level of speech must be raised proportionately as the distance is increased beyond an arm's length.

4.04 The speech level must always be higher than the ambient noise level at the microphone.

4.05 The unit represents the far-end party. Speech should be directed toward it. Speech directed away from the unit will sound hollow at the far end.

CHART 1 – OPERATION TESTS

This procedure tests all the operating features of an installation.

If a test cannot be completed satisfactorily, refer to the fault location guide (Table A).

STEP	PROCEDURE	INDICATION
1	Depress ON key momentarily.	Indicator lamp on, dial tone heard on loudspeaker, indicator lamp off.
2	Rotate volume control clockwise.	Volume of dial tone increases.
3	Dial first digit of test center number.	Dial tone silenced, indicator lamp on.
4	Complete dialing of test center number.	Ringing heard, test center answers.
5	Lift handset.	Speech transferred from loudspeaker to handset, indicator lamp off.
6	Hold ON key depressed, replace handset, release ON key.	Indicator lamp on. Speech transferred from handset to loudspeaker on release of ON key.
7	Ask test center to talk, then hold MUTE key depressed for 20 seconds and talk.	Speech heard on loudspeaker while key depressed, test center does not hear speech. Operation normal after test.
8	Ask test center to talk, and continue talking while holding ON key depressed for 20 seconds.	Indicator lamp on but no speech heard by either party. Operation normal after test.
9	Request test center to call back after call terminated, depress OFF key.	Indicator lamp off. No speech on loudspeaker. Ringing heard when test center returns call.
10	Depress line pickup key if telephone set is so equipped. Depress ON key momentarily.	Ringing stops, indicator lamp on. Speech heard on loudspeaker.
11	Operate HOLD key if telephone set is so equipped.	Speech removed from loudspeaker, indicator lamp on, line hold feature (flashing line lamp) operates in telephone set.
12	Operate line pickup key if telephone set is so equipped.	Speech heard on loudspeaker, line hold feature releases in telephone set.
13	Lift handset.	Speech transferred from loudspeaker to handset. Indicator lamp off, handset operation normal.
14	Replace handset.	Call terminated.

TABLE A
FAULT LOCATION GUIDE

FAULT INDICATION	ACTION
Indicator lamp does not light.	Hold ON key depressed: indicator lamp should light. If no light: (a) check NE-2012B (or equivalent) connections, (b) check power connections in telephone set, (c) if fault remains it is a circuit defect (see note).
No speech or dial tone on loudspeaker.	Lift handset, check for presence of speech. If speech is present: (a) Check T1 and R1 connections from telephone set to unit. (b) Check that P3 and P4 leads are not shorted. (c) If fault remains it is a circuit defect (see note).
If on-hook dialing is provided, and dial tone remains on loudspeaker after dialing first digit.	 (a) Check normal handset dialing (b) Check T1 and R1 connections from telephone set to unit. (If DIGITONE* dial, also check 1R and 1T.) (c) If fault remains it is a relay contact or circuit defect (see note).
Indicator lamp goes off when transmitting, with no received signal present.	This is a circuit defect (see note).
Speech remains on loudspeaker or lamp remains on, when handset is lifted.	(a) Check LK, LK1, and A1 connections in telephone set. (b) If fault remains it is a circuit defect (see note).
Far-end party hears speech with MUTE key depressed.	This is a control key defect (see note).
No received speech heard with MUTE key depressed.	This is a control key defect (see note).
Speech remains on loudspeaker, audio transmission continues, when ON key is held down.	This is a control key defect (see note).
Indicator lamp remains on or speech remains in loudspeaker, when OFF key depressed.	This is a control key defect (see note).
If on-hook dialing is provided, and dial pulses heard on loudspeaker.	(a) Check P3 and P4 connections in telephone set. (b) If fault remains, it is a circuit problem (see note).
HOLD feature does not work when using LOGIC hands-free unit.	(a) Check that hold feature works with handset. (b) Check AG, A1, and LK1 connections in telephone set. (c) If fault remains it is a circuit defect (see note).
<i>Note:</i> If suggested action does not correct the defect, field maintenance should be limited to replacing the unit.	

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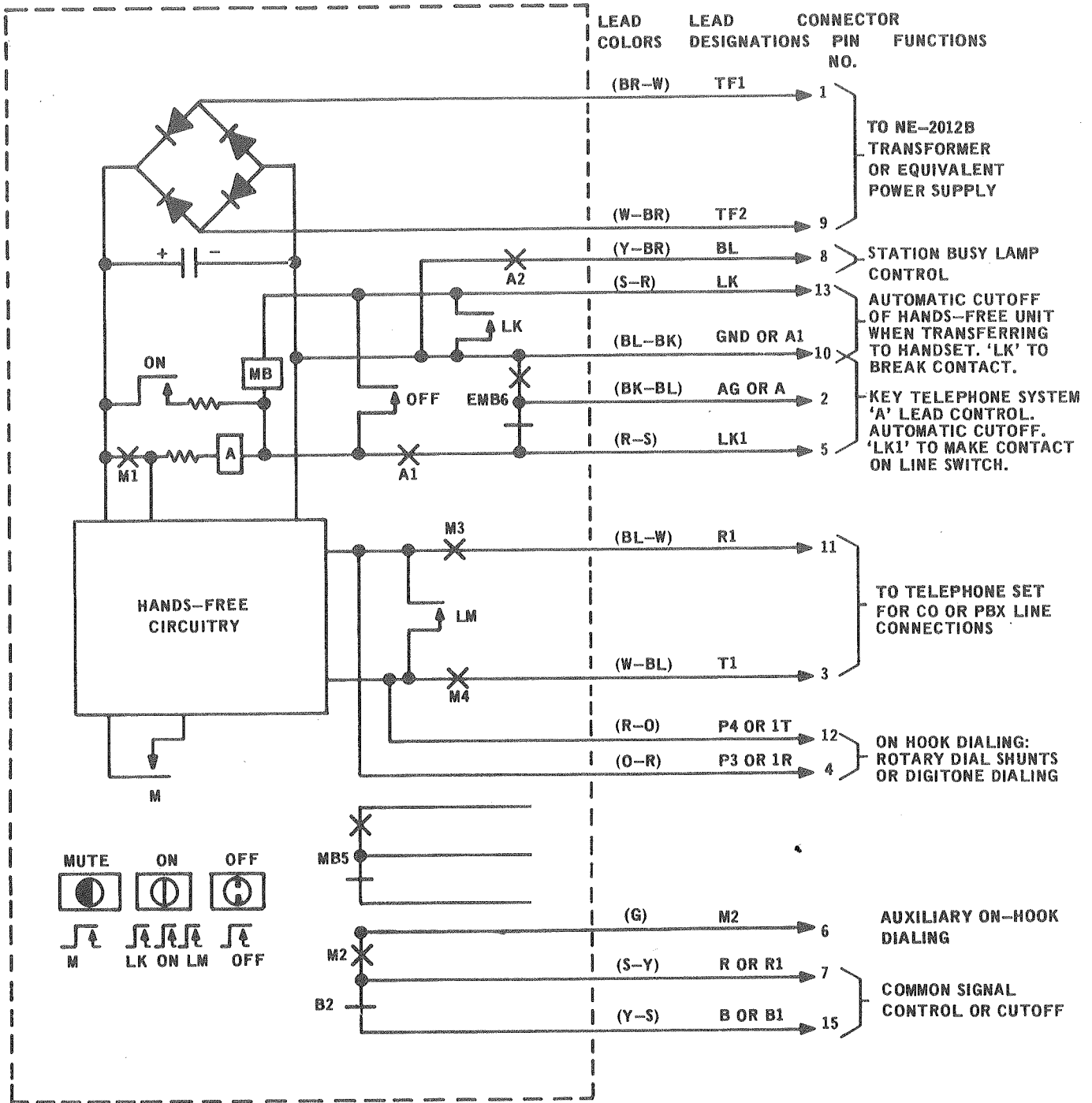


Fig. 2 - LOGIC Hands-Free Unit - Connections

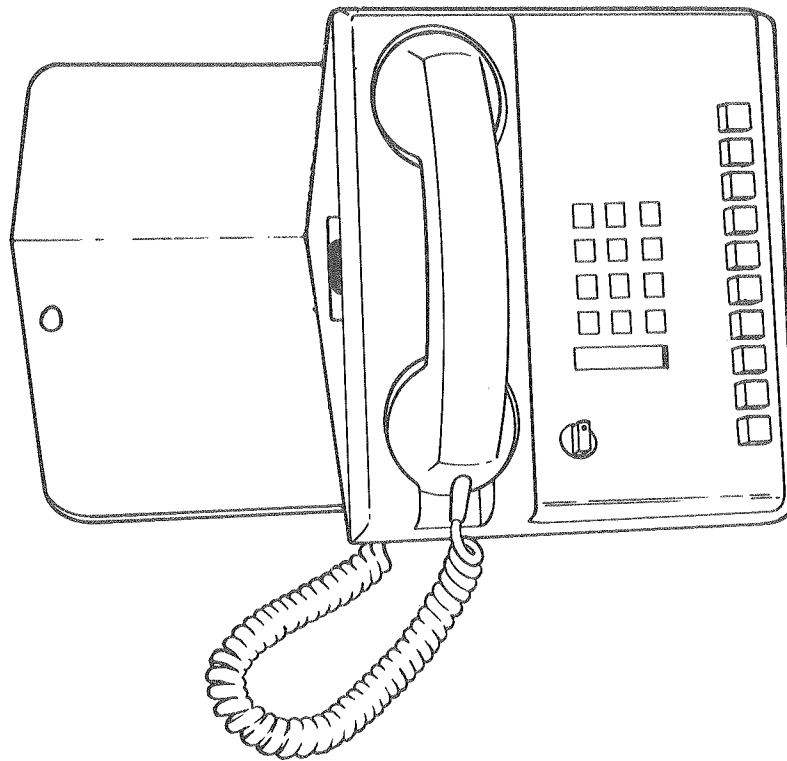


Fig. 3 — LOGIC Hands-Free Unit — Wall Mounting (Using Optional Mounting Bracket)

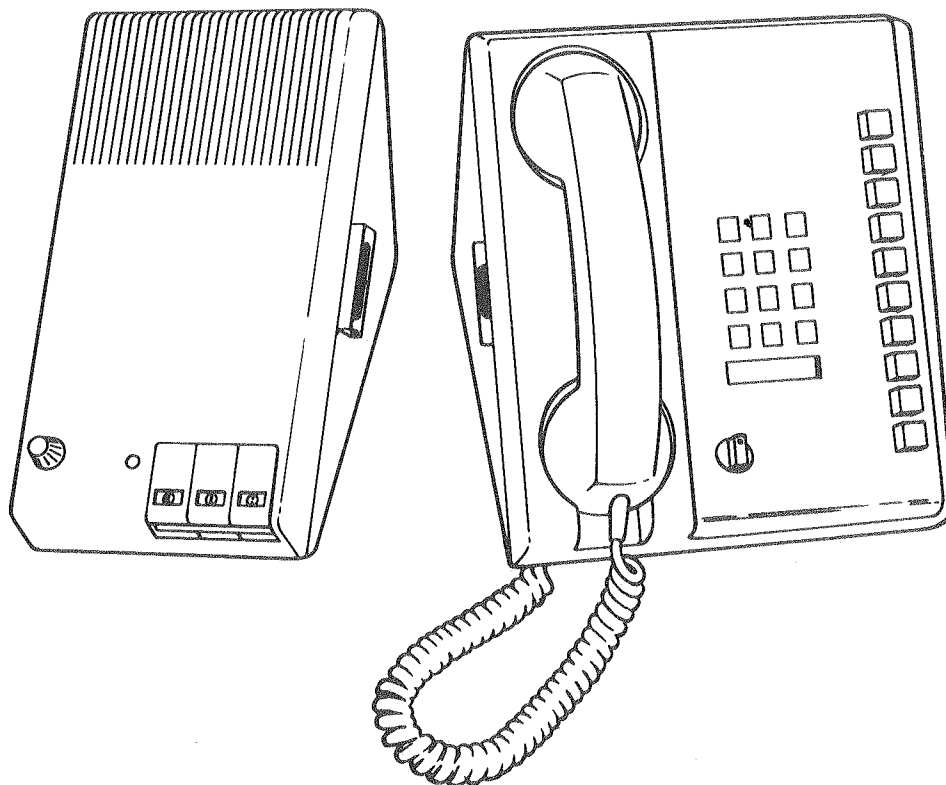


Fig. 4 — LOGIC Hands-Free Unit — Desk Mounting