MOBILE RADIO

MAINTENANCE MANUAL

MASTR® LOCAL CONTROLLER (SERIES 659)
LOCAL CONTROLLER EXTENSION (SERIES 759)

Maintenance Manual LBI 4935 E
DATAFILE FOLDER - DF 4099

SERIES 659 & 759

*These specifications are intended primarily for the use of the serviceman. Refer to the appropriate Specification Sheet for the complete specifications.

GENERAL ELECTRIC

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WARNING

No one should be permitted to handle any portion of the equipment that is supplied with high voltage; or to connect any external apparatus to the units while the units are supplied with power. KEEP AWAY FROM LIVE CIRCUITS!

GENERAL ELECTRIC COMPANY • MOBILE COMMUNICATIONS DIVISION
WORLD HEADQUARTERS • LYNCHBURG, VIRGINIA 24502 U.S.A.

GENERAL ELECTRIC*
U.S.A.

COMBINATION NOMENCLATURE

1st Digit	2nd Digit	3rd Digit	4th Digit	5th Digit	6th Digit	7th Digit
Product	Unit	Package	Frequency Control	Option	Color	Control Option
6 MASTR Local Controller	**5** Multi-Conductor Cable	**9** Standard	**A** 1 Freq TX 1 Freq RX	**1** Standard	**S** Standard	**1** Standard
7 Local Control Extension			**B** 2 Freq TX 1 Freq RX	**2** Channel Guard		**2** Repeat Disable
			C 2 Freq TX 2 Freq RX			
			D 1 Freq TX 2 Freq RX			
			E 3 Freq TX 3 Freq RX			
			F 4 Freq TX 4 Freq RX			
			R 1 Freq TX PSLM			
			S 2 Freq TX PSLM			
			T 1 Freq TX Sim. Monitor			
			U 2 Freq TX Sim. Monitor			

OPTIONS

8601 - Channel Busy, CG Disable
8602 - 12-Hr./60 Hz Clock
8603 - 24 Hr./60 Hz Clock
8606 - Auxiliary No. 1 ON-OFF
8607 - Auxiliary No. 2 ON-OFF
8608 - Squelch Disable
8609 - Intercom
8610 - 50 Foot Cable
8611 - 100 Foot Cable
8612 - VU Meter Kit
8613 thru
8620 - Electronic Digital Clock
8621 - Digital Dial Encoder (1500 Hz)
8622 - Digital Dial Encoder (2805 Hz)
8623 - Tone Decoder Application
8624 - Type 90 Tone Encoder
8625 - Type 99 Tone Encoder
8626 - Multi-Local Application
8627 - Multi-Local Extension Cable (50 Feet)
8628 - Multi-Tone CG Kit (8 Foot Cable)
8629 - Multi-Tone CG Kit (50 Foot Cable)
8630 - Multi-Tone CG Kit (100 Foot Cable)
8631 thru
8634 - Handset/Hookswitch Assembly
8636 - DTMF Encoder

NOTE: The digital dial encoder (option 8621 or 8622) or DTMF Encoder (option 8636) occupies the center switch grid and is not available with PSLM or simultaneous monitor of two receivers. The digital dial encoder is also not compatible with options 8606, 8607, 8628, 8629 or 8630.
Options 8606, 8607, 8628, 8629 or 8630 can be applied directly to units with PSLM or simultaneous monitor of two receivers but require switch grid option 8558 (once per controller) if PSLM or simultaneous monitor are not present.

DESCRIPTION

The General Electric MASTR®Local Controller is a compact desk-top control console designed for extended local control of MASTR II Base Stations. The controller is housed in a compact cabinet with the function selection switches mounted on a slight incline for ease of operation. The unit is equipped with a built-in speaker, a variable audio pad (VOLUME control), a TRANSMIT switch (PTT), POWER ON and TRANSMIT indicator Light Emitting Diodes (LED), and thirty screw terminals for interconnecting the function selection switches.

A 24-conductor cable, eight feet in length is provided for connecting the Controller to the Base Station. Two optional cables, one fifty feet in length (Option 8610) and the other one hundred feet in length (Option 8611) are available.

A transistorized dynamic microphone is used with the Controller. Two versions of the microphone are available. The standard mike has one pushbutton (TRANSMIT) and is used with systems not equipped with Channel Guard. The Channel Guard mike has two pushbuttons on the mike base: a TRANSMIT button and a MONITOR button to allow monitoring the receiver channel on noise squelch.

A 12-hour or 24-hour clock and VU meter are optional accessories that may be located in the vertical panel along side the speaker grille.

The Local Controller Extension is housed in the same type of cabinet as the MASTR Local Controller. The Extension unit will accomodate the clock kits and VU Meter kit, along with the desk microphone, that are applied to the MASTR Local Controller. The Extension unit is equipped with a built-in speaker, VOLUME control, TRANSMIT switch, POWER ON LED and TRANSMIT LED. A maximum of three Local Controller Extensions may be used with a single MASTR Local Controller to control a MASTR II Base Station. Each Extension unit is connected to the MASTR Local Controller by means of a 19C321341G1 8-foot cable (or optional 19C321341G2 50-foot cable). A Multi-Local Board (Option 8626) is required for modifying the MASTR Local Controller to accomodate up to three Extension units.

INSTALLATION

The MASTR Local Controller and Extensions should be located convenient to the operators. The 24-conductor cable from the Controller is routed to the station cabinet and the molex connectors (P1101 and P1102) connected to the appropriate jacks at the rear of the station (P1102 to J1 and P1101 to J2). The nine-conductor cable from each of the Extension units is connected to a jack (J1, J2 or J3) on the Multi-Local Board at the MASTR Local Controller.

Connect the desk microphone to the MASTR Local Controller on the Extension unit as indicated in the following chart.

Standard Microphone 19B209458P1

Black Wire to TB1103-4 (GRD)
Red Wire to TB1103-3 (LOCAL PTT)
Blue Wire to TB1103-2 (MIKE LO)
White Wire to TB1103-1 (MIKE HI)

Channel Guard Microphone 19B209459P1

Green Wire to TB1103-5 (CHANNEL GUARD MONITOR)
Black Wire to TB1103-4 (GRD)
Red Wire to TB1103-3 (LOCAL PTT)
Blue Wire to TB1103-2 (MIKE LO)
White Wire to TB1103-1 (MIKE HI)

CONTROL FUNCTIONS

Power On

Turning the power ON at the Base Station applies 13 VDC to TB1103-8 at the Local Controller and Extensions. This voltage operates the POWER ON LED A2-CR1, indicating to the operator that the power is on at the station.

Single Frequency Transmit and Receive

Pressing the TRANSMIT switch A1-S1 on the Controller or Extension unit (or the TRANSMIT switch on the microphone) closes the PTT path by applying ground to TB1103-3. The ground is routed to the station LOCAL PTT circuit to key the transmitter.

The 13 VDC from the station is applied to the anode of the XMIT INDICATOR LED A1-CR1. When the station transmitter is keyed, ground is applied to TB1101-5 at the Controller and the Extension, turning ON the indicator. Operating the TRANSMIT switch on the desk microphone closes the same paths as described to key the transmitter and operate the XMIT INDICATOR LED. In addition, the MIKE LO & HI path is closed, connecting the output of the microphone to the station transmit audio path via TB1103-1 & 2.

In the receive mode (TRANSMIT switch not depressed), the received signal audio is applied to the Controller and Extension speakers A2-LS2 via TB1103-6 & 7. The VOLUME control A1-R2 is connected across the audio pair.

Two Frequency Transmit

Switch Kit 19D417152G1 is used in this application. The kit is located in Position 1 on the MASTR Local Controller (refer to the Switch Kit Installation Instructions. See Table of Contents).

With the switch in the non-depressed position (XMIT F1), ground is connected through switch contacts 2 and 4 to TB1102-5. This ground selects the F1 transmitter oscillator. Ground is also applied through contacts 1 & 3 to operate LED CR1 which indicates XMIT F1 is selected.

Depressing the switch closes contacts 4 & 6 and 3 & 5. The ground is now connected to the XMIT F2 terminal TB1102-6 to select the F2 transmitter oscillator and to LED CR2 to indicate XMIT F2 is selected.

Two Frequency Receive

Switch Kit 19D417152G1 is also used in this application. The kit is located in Position 2 on the Controller. With the switch in the non-depressed position, ground is connected through contacts 2 and 4 of the switch to the RCVR F1 terminal TB1102-1. This selects the F1 receiver oscillator. Ground is also connected through contacts 1 and 3 to the cathode of LED CR1, operating the LED to indicate REC F1 is selected.

Depressing the switch closes contacts 4 & 6 and 3 & 5. Ground is now connected to the RCVR F2 terminal TB1102-2, selecting the F2 receiver oscillator. LED CR2 is operated, indicating RCVR F2 is selected.

Channel Guard Monitor

Switch Kit 19D417152G5 is used in Position 4 of the Controller when the Base Station is equipped with Channel Guard. Depressing the switch applies ground through contacts 4 & 6 of the switch to terminal TB1103-5 to disable the Channel Guard function and allow monitoring the receiver on noise squelch.

Depressing the MONITOR switch on the 19B209459P1 Desk Microphone applies ground to this same terminal to perform the monitoring function.

Repeat Disable

Switch Kit 19D417215G2 is used in Repeater Station Control applications to disable the repeater function. This kit is located in Position 3 of the Controller. Depressing the switch closes contacts 4 & 6 and 3 & 5. Ground is connected through contacts 4 & 6 to terminal TB1101-4 to disable the repeater. Ground is also applied through contacts 3 & 5 to operate LED CR1, indicating the REPEAT DISABLE function has been selected.

Multi-Frequency Transmit and Receive

When MASTR II Station Combinations having three- or four-frequency capability are used in local control applications, a rotary two-section, two-pole switch is added to the Local Controller to select the individual frequencies. This switch is located in Position 2 of the Controller. A 19C320717G1 Switch Kit is employed in 3-frequency transmit and receive applications. A 19C320717G2 Switch Kit is employed in 4-frequency transmit and receive applications.

Turning the switch knob to the indicated channel applies ground to the selected switch position and connects the ground to the corresponding RCVR and XMIT terminal on TB1102 to select these particular transmitter and receiver oscillators.

Priority Search Lock Monitor

Two Switch Kits are required for this function. Switch Kit 19D417152G1 is used in Position 2 to select REC F1 or REC F2. Switch Kit 19D417152G6 is located in Position 9 to select the PSLM function. Also, a Switch Mounting Panel (19B219647G1) must be added to the Controller to accommodate the PSLM Switch Kit.

Ground is connected from TB1102-9 to contact 4 of the PSLM switch. As long as the PSLM switch is not depressed, this ground is applied through contacts 2 & 4 of the PSLM switch to contacts 1 & 3 of the receiver select switch to operate the REC F1 LED CR1. This same ground is also connected through contacts 1 & 3 of the PSLM switch to contacts 2 & 4 of the receiver select switch to select the F1 receiver oscillator. Depressing the receiver select switch will select the F2 receiver oscillator and operate the REC F2 LED CR2.

When the PSLM Switch is depressed, the ground is transferred to contacts 5 & 6 of the PSLM switch. Contact 6 connects the ground to TB1101-6 which starts the PSLM function at the station. Contact 5 connects the ground to the cathode of LED CR1, operating the LED to indicate the PSLM function has been selected. The receiver select switch is disabled as long as the PSLM switch is depressed.

Simultaneous Monitor of Two Receivers

When a second receiver option is added to the station, two 19D417152G4 Switch Kits are used to monitor each receiver individually or both receivers simultaneously. Depressing the RCVR 1 switch connects TB1101-2 (second receiver HI) through switch contact 4, dropping resistor R3, to VOLUME control contact A1-R2-1. Receiver 2 is thus muted, allowing receiver 1 only to be monitored. Switch contacts 3 & 5 connect ground to the RCVR 1 LED CR1 to indicate that receiver No. 1 has been selected.

Depressing the RCVR 2 switch connects TB1103-6 (first receiver HI) through switch contact 4 and the 47 ohm dropping resistor R3 to VOLUME control contact A1-R2-1. The

White-Blue wire from the switch kit replaces the White-Black-Orange wire from TB1103-6 to A1-R2-1. Receiver 1 is now muted, allowing receiver 2 only to be monitored. Switch contacts 3 & 5 connect ground to RCVR 2 LED CR1 to indicate that receiver No. 2 has been selected.

With neither of the switches depressed, both muting resistors are shorted out and both receivers are monitored simultaneously. Speaker HI from receiver No. 1 is connected from TB1103-6 to RCVR 2 switch contacts 2 & 4 and to VOLUME control contact A1-R2-1. Speaker HI from receiver No. 2 is connected from TB1101-2 to RCVR 1 switch contacts 2 & 4 and to VOLUME control contact A1-R2-1. The ground paths to both LED indicators are open, preventing operation.

Channel Busy, CG Disable (Option 8601)

A 19C320711G1 Switch Kit is used in this application, located in Position 4 of the Controller. When the switch is not depressed, and a signal is received, the high on the Carrier activated Switch (CAS) lead (TB1101-7) operates Q1. Conduction of Q1 turns on the CH BUSY LED CR1.

When the switch is depressed, ground is applied through contacts 4 & 6 to terminal TB1103-5 to disable the Channel Guard function and allow monitoring the receiver on noise squelch. 13 volts from the station is connected through contacts 3 & 5 to operate the CG DISABLE LED CR2.

Squelch Disable (Option 8608)

Switch Kit 19D417152G3 is used in this application, located in Position 5 of the Controller. This switch allows the operator to check receiver operation by listening for receiver unsquelched noise. In stations equipped with Channel Guard, the Squelch Disable switch also activates the Channel Guard monitor circuit. The Squelch Disable switch is a momentary activated pushbutton.

Depressing the switch applies ground through contacts 4 & 6 to disable the squelch control in the station. Ground is also applied through contacts 3 & 5 to allow Channel Guard monitor in stations so equipped. This ground is connected through contacts 9 & 11 to operate the SQ DISABLE LED CR11.

Intercom (Option 8609)

Switch Kit 19D417152G8 is used in this application. The kit is located in Position 6 of the Controller. The white-brown wire between the XMIT LIGHT terminal TB1101-5 and the XMIT LED is replaced by the white-black wire from TB1101-5 to switch contact 10 and the white-brown wire from switch contact 8 to the XMIT INDICATOR LED.

To avoid having to operate the TRANSMIT switch on the microphone, the jumper should be present in the microphone PTT circuit. This makes the microphone "live" at all times. Refer to the MASTR Local Controller Schematic Diagram.

Depressing the INTERCOM switch connects ground through contacts 4 & 6 to the TRANSMIT DISABLE terminal TB1101-1. This prevents the station transmitter from keying. Ground is also connected through contacts 3 & 5 to the LOCAL PTT path, allowing use of the desk microphone for talking to the remote contral operator. Contacts 8 & 10 are opened, preventing the TRANSMIT INDICATOR LED from operating. Ground is connected through contacts 9 & 11, operating the INTCM LED CR1.

Auxiliary No. 1 - Auxiliary No. 2 ON-OFF (Options 8606-8607)

Switch Kit 19D417152G1 is used for each of these options. Any auxiliary device requiring switching of ground may be controlled by these options.

Leads are provided to allow the customer to connect them to the auxiliary device as desired. When the switch is not depressed, ground is applied to the lead connected to switch contact 2. Ground is also connected through contacts 1 & 3 to the OFF LED CR1. Depressing the switch transfers the ground to the lead connected to switch contact 6 and the to the ON LED CR2.

VU Meter Kit (Option 8612)

The VU Meter Kit allows the operator to check the mike output level. Only LOCAL PTT activates the VU Meter circuit. This prevents the meter from deflecting on background noise when a "live" microphone is used. The VU Meter Kit is located in the space provided on the Controller (or Extension) front cover assembly.

Clock Kits

Mechanical Clock Kits (options 8602 & 8603) were provided with early production units of the local controller. These clocks may be set by removing the clock window and turning the indicator wheels in either direction until the correct time shows in the window.

Later production units utilize the Electronic Digital Clock (options 8613-8620). Refer to LBI-4912 for information on this clock.

Mic-Tone Board 19C321173G1

Tone Encoder Application Options (Digital Dial Encoder, Options 8621 and 8622; DTMF Encoder, Option 8636; Type 90 Encoder, Option 8624; Type 99 Encoder, Option 8625) require the use of Mic-Tone Board 19C321173G1. The Mic-Tone Board controls the tone input to the station transmitter. The station LOCAL PTT is connected to the Mic-Tone Board at H2. Closing the LOCAL PTT switch applies ground to TB1-7 (TX KEY) to key the station transmitter. This ground also forward biases CR4 and turns on Q1.

Conduction of Q1 operates Q2 and Q5. Conduction of Q2 turns off Q3, allowing Q4 to operate and pass the station microphone audio (connected to TB1-8) to the station transmitter through H1 (STATION MICROPHONE). Conduction of Q5 prevents Q6 from operating, blocking the tone path (connected to TB1-1).

When the tone encoder ground is applied to TB1-6 on the Mic-Tone Board, the station is keyed through TB1-7. The path to the base of Q1, however, encounters a three-diode drop (the output diode in the encoder and CR6-CR4 in the Mic-Tone Board). Q1 is now turned off and Q6 is turned on, passing the tone to the station transmitter.

Multi-Tone Channel Guard Kits (Option 8628-8630)

The Multi-Tone Channel Guard Encoder uses digital techniques to derive eight different Channel Guard tones within the continuous tone controlled squelch systems (CTCSS) range (67 Hz to 250 Hz).

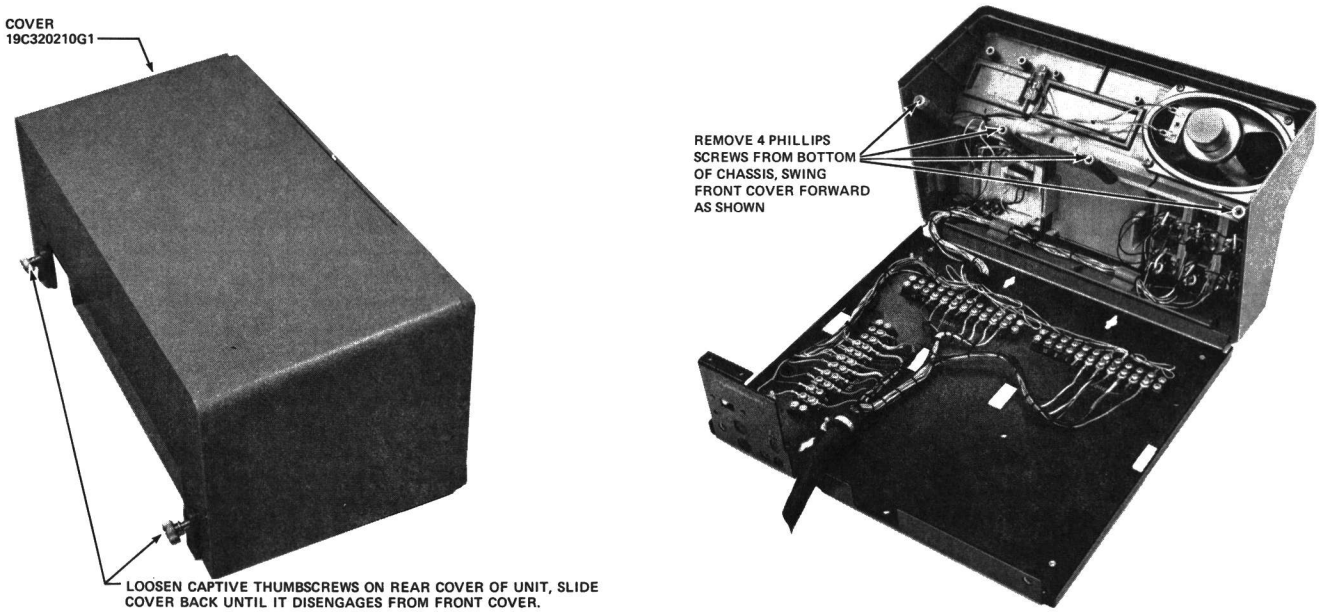
Options 8628-8630 provide a switch (S101) which applies a ground to the selected Channel Guard position (A-H) indicated on the switch to select the desired tone frequency. The first position (OFF) on the switch disables the Channel Guard function. Option 8628 provides a standard 8-foot cable to connect the switch to the station mother board. Option 8629 provides a 50-foot cable and Option 8630 provides a 100-foot cable.

Multi-Local Application Kit (Option 8626)

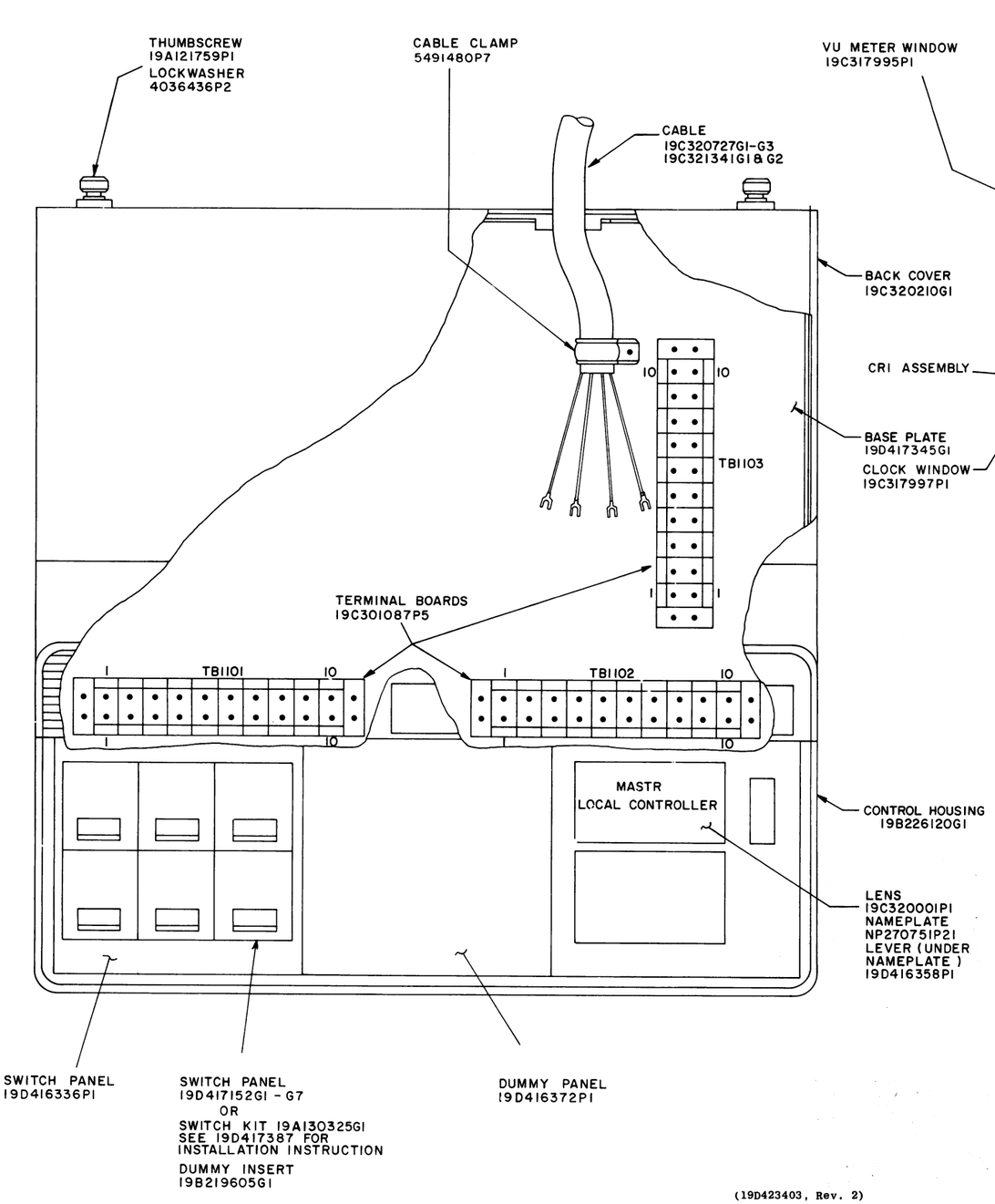
Option 8626 provides the Multi-Local Control Board which is located in the MASTR Local Controller and allows the connection of from one to three Local Controller Extension units to the MASTR Local Controller. A power divider (R1-R2) matches the 8-ohm station audio output to the speakers in the paralleled control units. The audio power is split evenly among the units.

When Option 8626 is used, the jumper located in each of the desk microphones must be removed. "Live" microphones must not be used when this option is incorporated because the outputs would be present at all times from the paralleled locations. If the Intercom option is also incorporated, the TRANSMIT switch on the desk microphone must be depressed while taking over the Intercom circuit.

DISASSEMBLY INSTRUCTIONS



REMOVING FRONT AND REAR COVERS



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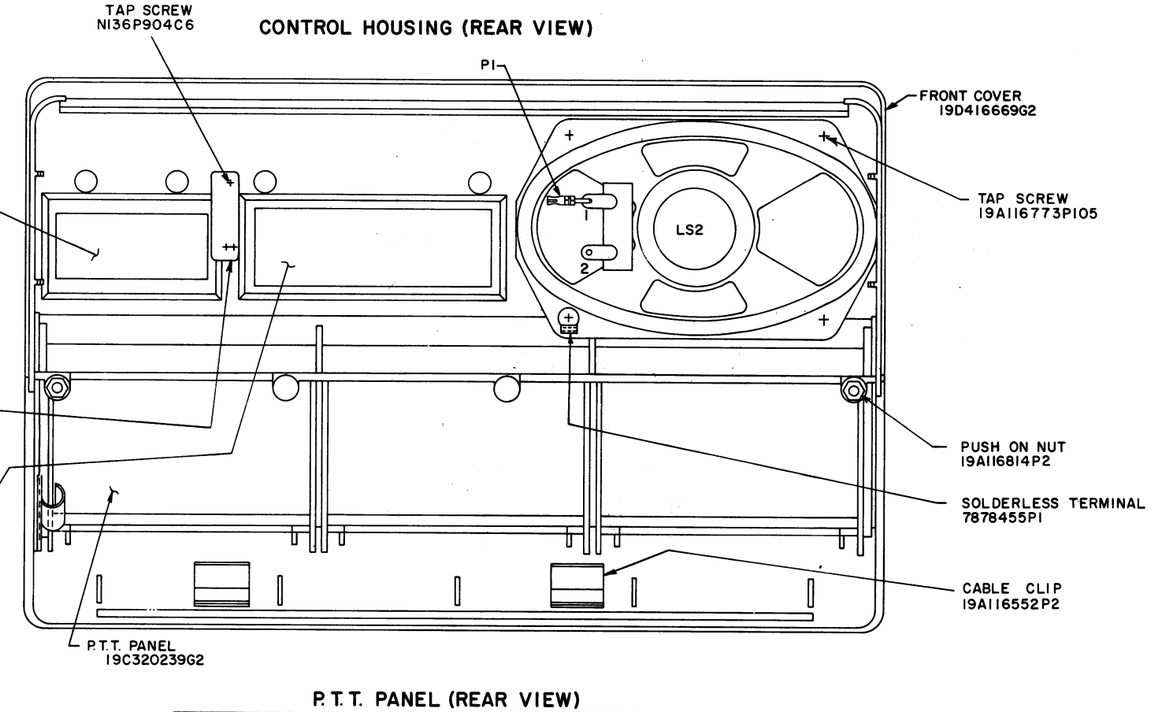
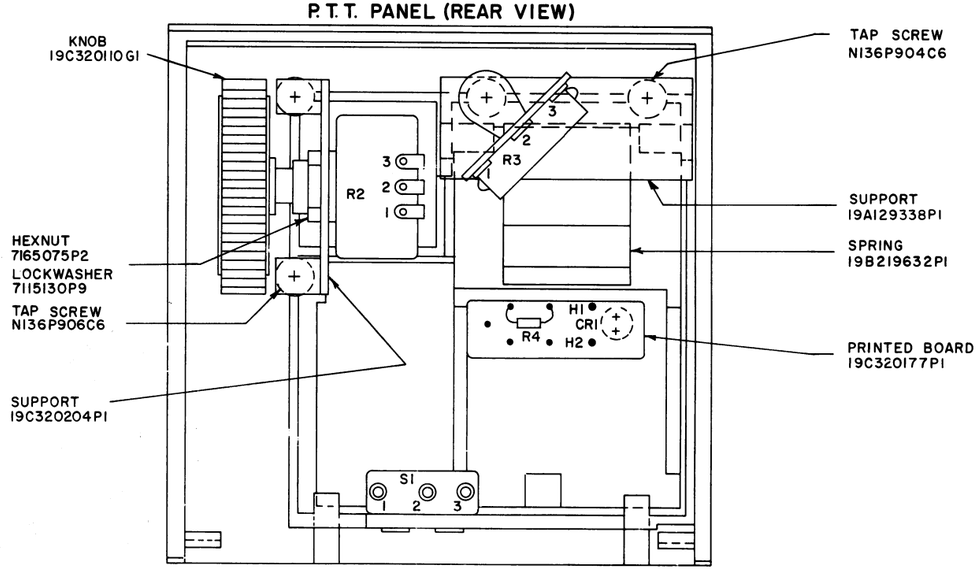
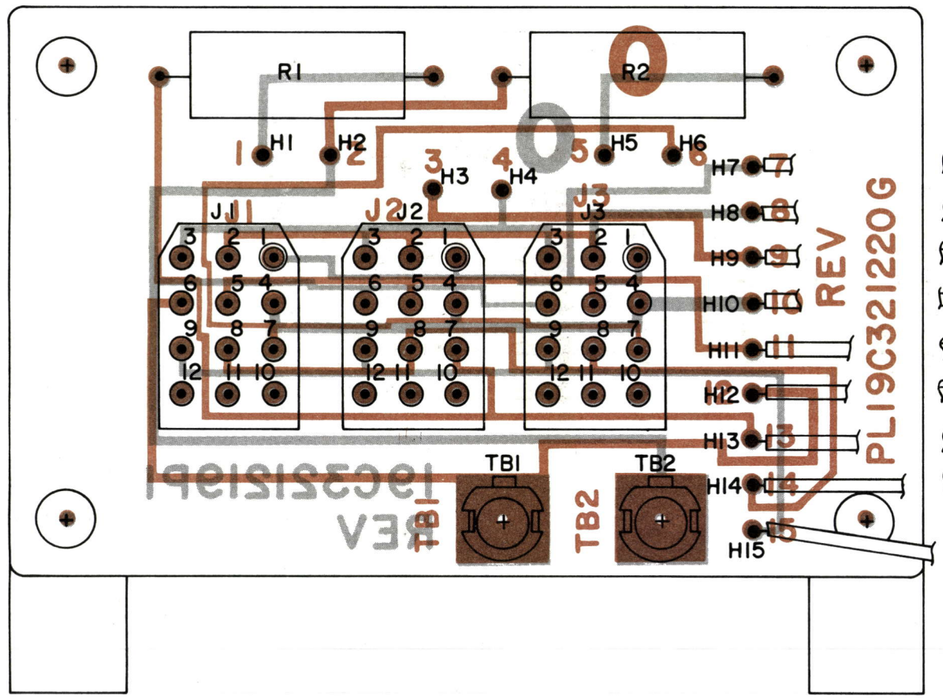


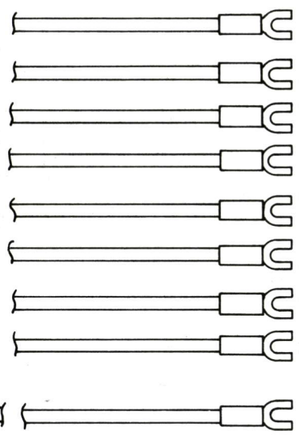


OUTLINE DIAGRAM

MASTR LOCAL CONTROLLER

MULTI-LOCAL CONTROL BOARD





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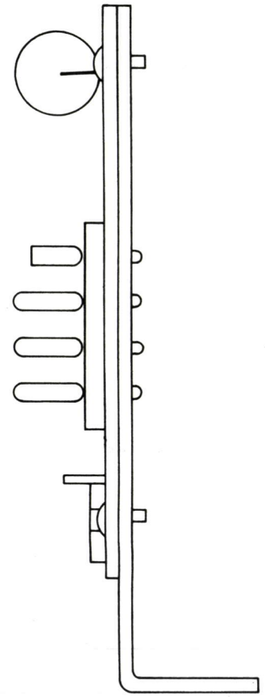
TERMINALS



(19C321716, Rev. 0)
(19C321219, Sh. 2, Rev. 0)
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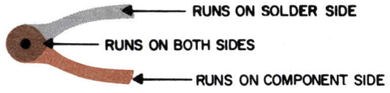
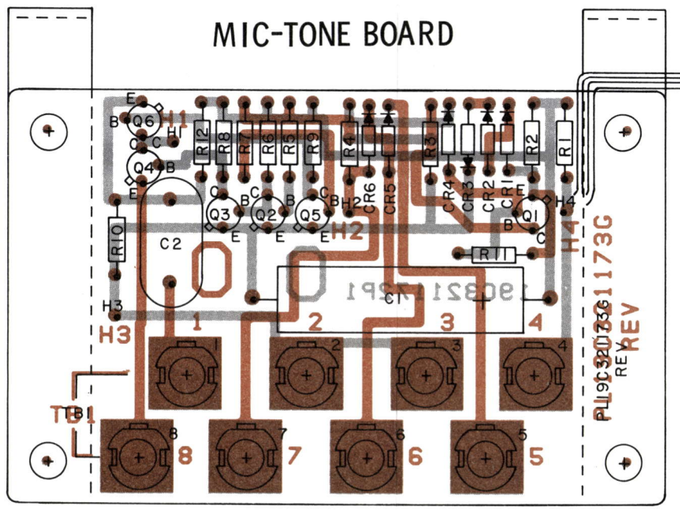
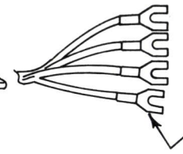


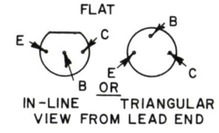
MIC-TONE BOARD





19B209260P103
TERMNAL

LEAD IDENTIFICATION
FOR Q1- Q6

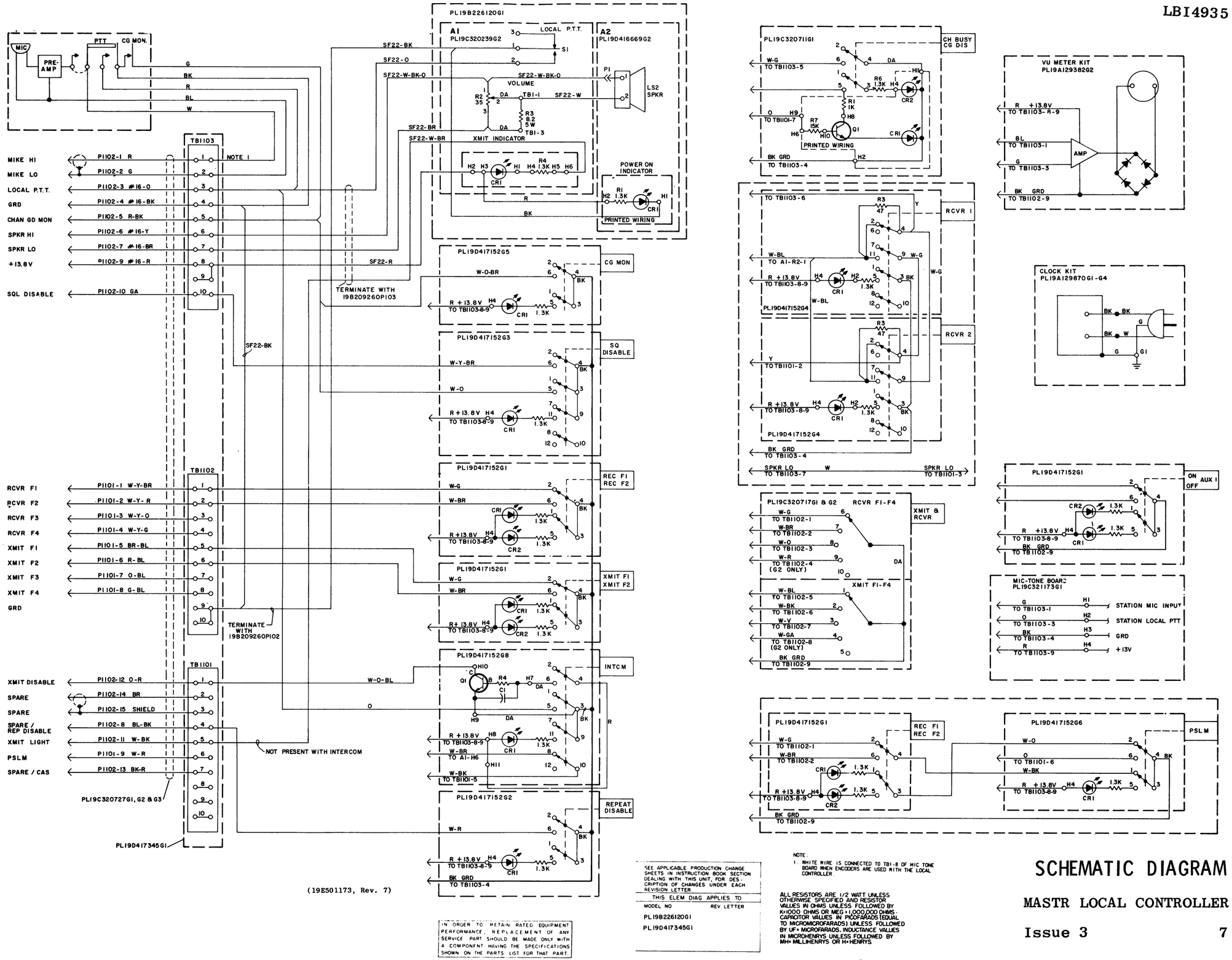


NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION

(19C321717, Rev. 0)
(19B226491, Sh. 1, Rev. 0)
(19B226491, Sh. 2, Rev. 0)

OUTLINE DIAGRAMS

MULTI-LOCAL CONTROL BOARD
MIC-TONE BOARD



(DF-4609)

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PL19B226120G1	
PL19D417345G1	

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

NOTE:
1. WHITE WIRE IS CONNECTED TO TB1-8 OF MIC TONE BOARD WHEN ENCODERS ARE USED WITH THE LOCAL CONTROLLER.

ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS; CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF=MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH=MILLIHENRYS OR H=HENRYS.

SCHEMATIC DIAGRAM

MASTR LOCAL CONTROLLER

Issue 3

PARTS LIST

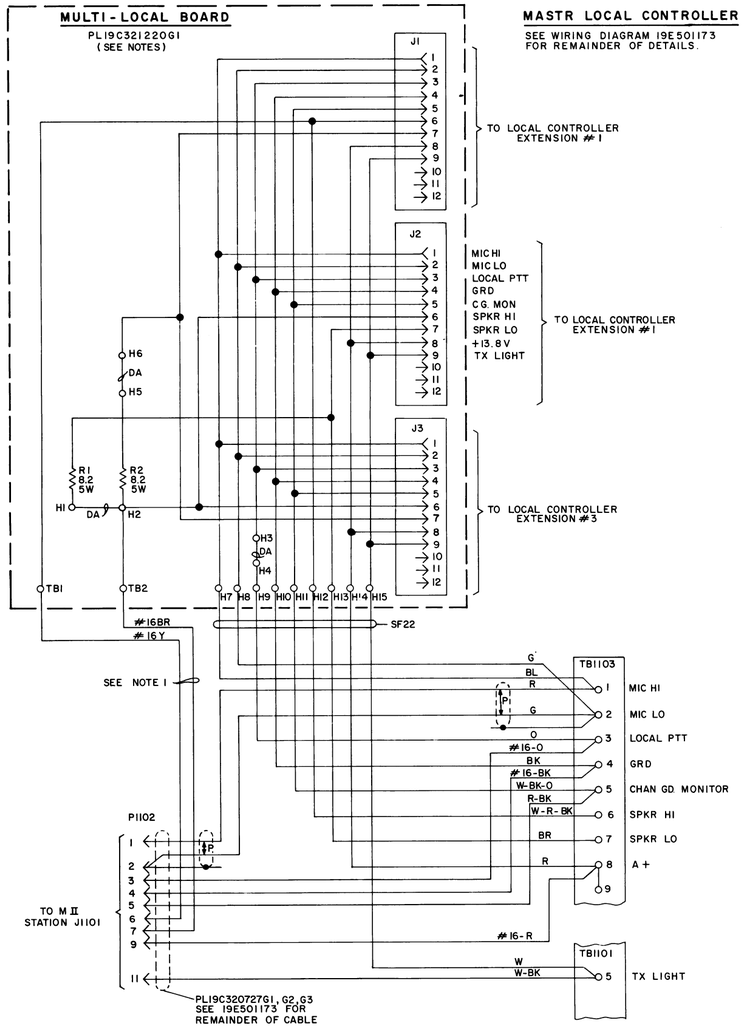
LBI-4943A

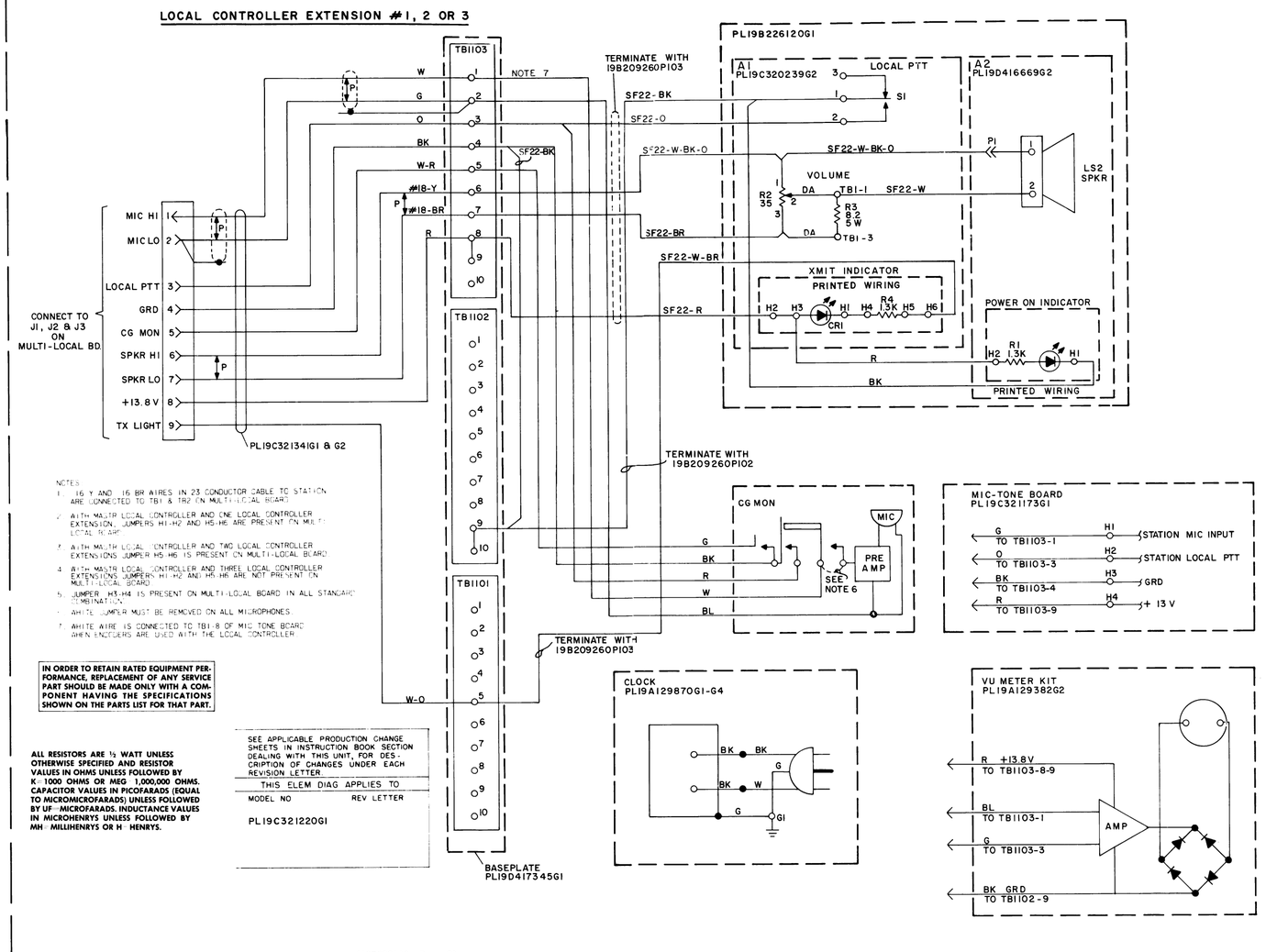
CONTROL HOUSING
LOCAL MASTR CONTROLLER
19B226120G1

SYMBOL	GE PART NO.	DESCRIPTION
		PPT PANEL 19C320239G2
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1	19A129291P1	Diode, red light emitting.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R2	19B209490P1	Variable, wirewound: 35 ohms ±20%, 2.25 w; sim to CTS Type 118.
R3	5493035P52	Wirewound: 8.2 ohms ±10%, 5 w; sim to Hamilton Hall Type HR.
R4	3R77P132J	Composition: 1300 ohms ±5%, 1/2 w.
		- - - - - - - - - - SWITCHES - - - - - - - - -
S1	19A116676P1	Switch, sensitive: SPDT, 5 amp at 24 VDC or 5 amp at 250 VRMS; sim to Microswitch 11SM1-T2.
		- - - - - - - - - TERMINAL BOARDS - - - - - - -
TB1	7775500P7	Phen: 3 terminals.
		FRONT COVER 19D416669G2
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1	19A129291P1	Diode, red light emitting.
		- - - - - - - - - - LOUDSPEAKERS - - - - - - - - -
LS2	19C307094P3	Permanent magnet: 8 ohms ±15% voice coil imp, 3 x 5 inch speaker; sim to Pioneer Sample 5A7106.
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P1	4036634P1	Contact, electrical; sim to AMP 42428-2.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R1	3R77P132J	Composition: 1300 ohms ±5%, 1/2 w.
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19D416372P1	Blank panel.
	19B219605G1	Inserts. (6).
	19D416336P1	Switch panel.
	19C317995P1	Window.
	19D416358P1	Lever. (Used in Push-To-Talk Assembly).
	NP270751P21	Nameplate. (TRANSMIT).
	19C320001P1	Lens. (Used with CR1).
	19C320177P1	Printed board. (Used with CR1).
	19B219632P1	Pushbutton spring.
	19C320110G1	Knob. (Used with R2).
	N136P904C6	Tap screw: No. 4-24 x 1/4. (Secures printed board, TB1, R3).
	7165075P2	Hex nut, brass: No. 3/8-32. (Used with R2).
	7115130P9	Lockwasher: sim to Shakeproof 1220-2. (Used with R2).
	19A116773P105	Tap screw, phillips posidriv: No. 7-19 x 5/16. (Secures LS2).
	19A116814P2	Nut, push-on:
	19A116552P2	Cable clip: sim to Richco KKC-5.
	19B209260P103	Solderless terminal. (Hung in wiring).

SYMBOL	GE PART NO.	DESCRIPTION
		CABLE ASSEMBLY 19C320727G1 8 FOOT 19C320727G2 50 FOOT 19C320727G3 100 FOOT
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P1101		Connector. Includes:
	19B209288P4	Shell.
	5496809P18	Contact, pin: male, brass; sim to Molex Products 1380-T.
P1102		Connector. Includes:
	19B209288P6	Shell.
	5496809P18	Contact, pin: male, brass; sim to Molex Products 1380-T. (P1102-1, P1102-5, P1102-8, P1102-10 thru P1102-15.
	19B209288P2	Contact, electrical. (P1102-2 thru P1102-4, P1102-6, P1102-7, P1102-9).
		- - - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B209260P102	Terminal, solderless. (Used on wires terminating at P1102-2 thru P1102-4, P1102-6, P1102-7, P1102-9).
	19B209260P103	Terminal, solderless. (Used on wires terminating at P1101-1 thru P1101-9, P1102-1, P1102-5, P1102-8, P1102-10 thru P1102-15.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.





NOTES:

1. 16 Y AND 16 BR WIRES IN 23 CONDUCTOR CABLE TO STATION ARE CONNECTED TO TB1 & TB2 ON MULTI-LOCAL BOARD.
2. WITH MASTR LOCAL CONTROLLER AND ONE LOCAL CONTROLLER EXTENSION, JUMPERS H1-H2 AND H5-H6 ARE PRESENT ON MULTI-LOCAL BOARD.
3. WITH MULTI-LOCAL CONTROLLER AND TWO LOCAL CONTROLLER EXTENSIONS JUMPER H5-H6 IS PRESENT ON MULTI-LOCAL BOARD.
4. WITH MASTR LOCAL CONTROLLER AND THREE LOCAL CONTROLLER EXTENSIONS JUMPERS H1-H2 AND H5-H6 ARE NOT PRESENT ON MULTI-LOCAL BOARD.
5. JUMPER H3-H4 IS PRESENT ON MULTI-LOCAL BOARD IN ALL STANDARD COMBINATIONS.
6. WHITE JUMPER MUST BE REMOVED ON ALL MICROPHONES.
7. WHITE WIRE IS CONNECTED TO TB1-8 OF MIC TONE BOARD WHEN ENCODERS ARE USED WITH THE LOCAL CONTROLLER.

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

ALL RESISTORS ARE ½ WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG 1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF=MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH=MILLIHENRYS OR H=HENRYS.

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PL19C321220G1	

(19R622119, Rev. 3)

SCHEMATIC DIAGRAM

MULTI-LOCAL CONTROLLER

Issue 2

PARTS LIST

LBI-4945

MULTI-LOCAL CONTROL BOARD
19C321220G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J1 thru J3	19A116647P4	Connector, printed wiring: 12 terminals, sim to Molex 03-04-4121.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R1 and R2	5493035P52	Wirewound: 8.2 ohms ±10%, 5 w; sim to Hamilton Hall Type HR.
		- - - - - - - - TERMINAL BOARDS - - - - - - - - -
TB1 and TB2	19A116667P3	Plate nut.
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B209260P103	Solderless terminal: sim to AMP 60495-1. (Hung in wiring).
	19B201074P304	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/4. (Secures printed board to Support).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

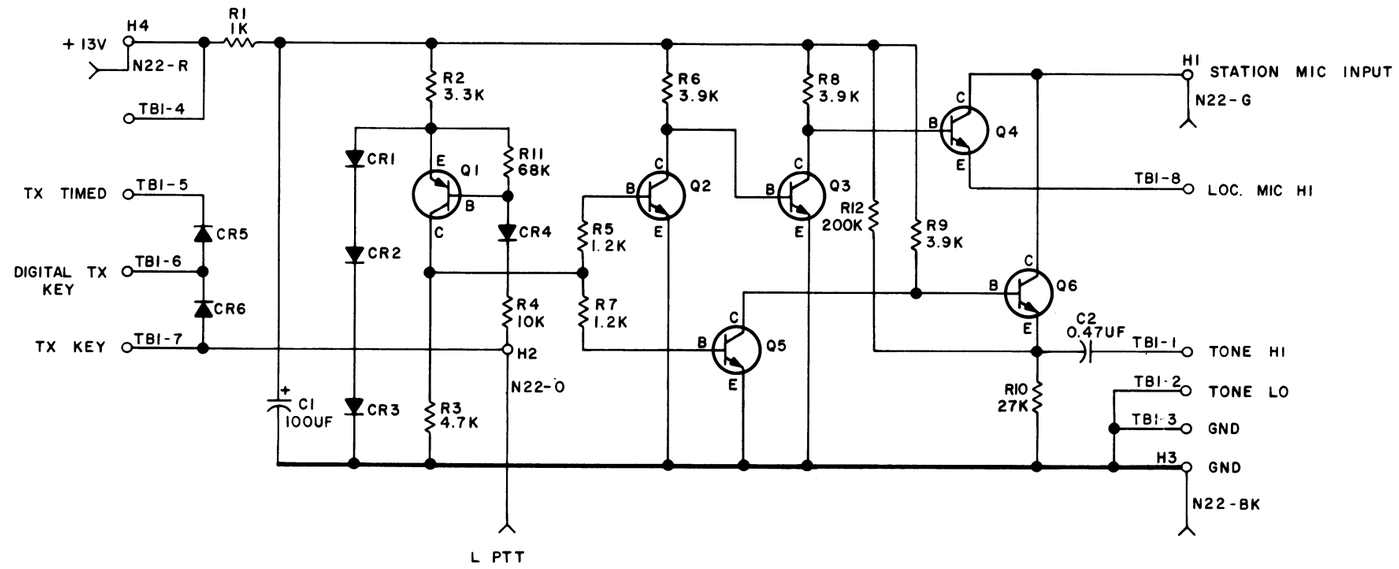
PARTS LIST

LBI-4946

MIC-TONE BOARD
19C321173G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A115680P5	Electrolytic: 100 µf +150% -10%, 25 VDCW; sim to Mallory Type TT.
C2	19A116080P111	Polyester: 0.47 µf ±10%, 50 VDCW.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1 thru CR6	19A115250P1	Silicon.
		- - - - - - - - - - TRANSISTORS - - - - - - - - - -
Q1	19A115852P1	Silicon, PNP; sim to Type 2N3906.
Q2 thru Q6	19A115910P1	Silicon, NPN; sim to Type 2N3904.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R152P102J	Composition: 1000 ohms ±5%, 1/4 w.
R2	3R152P332J	Composition: 3300 ohms ±5%, 1/4 w.
R3	3R152P472J	Composition: 4700 ohms ±5%, 1/4 w.
R4	3R152P103J	Composition: 10,000 ohms ±5%, 1/4 w.
R5	3R152P122J	Composition: 1200 ohms ±5%, 1/4 w.
R6	3R152P392J	Composition: 3900 ohms ±5%, 1/4 w.
R7	3R152P122J	Composition: 1200 ohms ±5%, 1/4 w.
R8 and R9	3R152P392J	Composition: 3900 ohms ±5%, 1/4 w.
R10	3R152P273J	Composition: 27,000 ohms ±5%, 1/4 w.
R11	3R152P683J	Composition: 68,000 ohms ±5%, 1/4 w.
R12	3R152P204J	Composition: 0.20 megohm ±5%, 1/4 w.
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1	19A116667P3	Plate nut. (Quantity 8 used).
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19B201074P304	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/4. (Secures printed board to Support).
	19B209260P103	Solderless terminal: sim to AMP 60495-1.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO

MODEL NO	REV LETTER
PL19C321173G1	

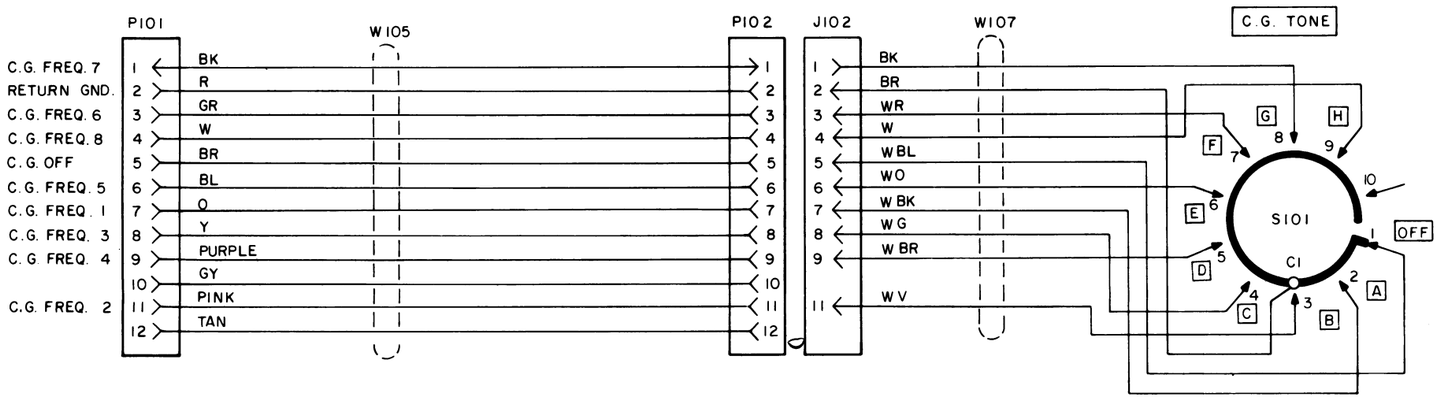
ALL RESISTORS ARE 1/4 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF=MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH=MILLIHENRYS OR H=HENRYS.

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

(19C321178, Rev. 1)

SCHEMATIC DIAGRAM

MIC-TONE BOARD



(19C321249, Rev. 1)

SCHEMATIC DIAGRAM

MULTI-TONE CHANNEL GUARD
SWITCH KIT 19A130325G1

PARTS LIST

LBI-4947

MULTI-TONE CHANNEL GUARD
SWITCH KIT 19A130325G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CABLES - - - - - - - - - -
W107		CABLE ASSEMBLY 19B226577G1
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - -
J102		Connector. Includes:
	19B209288P24	Shell.
	5496809P18	Contact, male: sim to Molex Products 1380-T. (Quantity 9).
	5496809P17	Contact, female: sim to Molex Products 1381-T. (Quantity 1).
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S101	19A116195P4	Rotary: 1 section, 1 pole, (adj 2-10 positions), non-shorting; sim to Grayhill Co. 50MY23155-1-8N.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - -
	19A130335P1	Insert. (Used with S101).
	19A129866P1	Lens. (Used with S101).
	19A127319P2	Nut: No. 1/4-28. (Used with S101).
	N414P25C6	Lockwasher, internal tooth: 1/4 inch. (Used with S101).
	19B209527P1	Knob. (Used with S101).
	NP279848	Nameplate, plastic. (Used with S101).
	19A122309P1	Tape, pressure sensitive. (Part of W105 Clamp assembly).
	19A121457P1	Cable clamp. (Part of W105 Clamp assembly).
	19B201074P208	Tap screw, Phillips POZIDRIV®: No. 4-40 x 1/2. Quantity 2. (Part of W105 Clamp assembly).
	7150186P107	Spacer: No. 6 x 1/4. (Part of W105 Clamp assembly).
	N81P13008	Screw: No. 6-32 x 1/2. (Secures Clamp assembly to base plate).
	N210P13	Hexnut: No. 6-32. (Secures Clamp assembly to base plate).
	N403P13	Lockwasher, external tooth: No. 6. (Secures clamp assembly to base plate).
	19B219835P1	Support. (Part of W105 Clamp assembly).
	19A115185P4	Strap retainer: sim to Panduit Corp. TA-1. (Secures W107).
	19A115185P5	Strap retainer: sim to Panduit Corp. SST-1. (Secures W107).
	N210P15	Hexnut: No. 8-32. (Used with W107 strap).
	N403P16	Lockwasher, external tooth: No. 8. (Used with W107 strap).
	N80P15006	Machine screw: No. 8-32 x 3/8. (Used with W107 strap).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-4944

SWITCH KIT
19D417152G1 R-F1,R-F2,T-F1,T-F2,AUX ON-OFF
19D417152G2 REPEATER DISABLE
19D417152G3 SQUELCH DISABLE
19D417152G4 RX-1 MUTE, RX-2 MUTE
19D417152G5 CHANNEL GUARD MONITOR
19D417152G6 PSLM
19D417152G7 TRANSMIT DISABLE/INTERCOM

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1 and CR2	19A129291P1	Diode, red light emitting.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1 and R2	3R77P132J	Composition: 1300 ohms ±5%, 1/2 w.
R3	5493035P53	Wirewound: 18 ohms ±5%, 5 w; sim to Hamilton Hall Type HR.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	19A116009P14	Momentary action: DPDT, Single station; sim to Schadow Co. Series D.
S2	19A116009P15	Alternate action: DPDT, Single station; sim to Schadow Co. Series D.
S3	19A116009P17	Alternate action: 4PDT, Single station; sim to Schadow Co. Series D.
S5	19A116009P16	Momentary action: 4PDT, Single station; sim to Schadow Co. Series D.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19D416329P1	Switch insert. (Used in G2-G7).
	19D416330P1	Switch insert. (Used in G1).
	19C317983P1	Lens.
	19A116009P13	Pushbutton: "DV" Type Button, black.
	19C320172P1	Printed board.
	19B209260P103	Solderless terminal.
	N136P904C6	Tap screw: No. 4-24 x 1/4.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

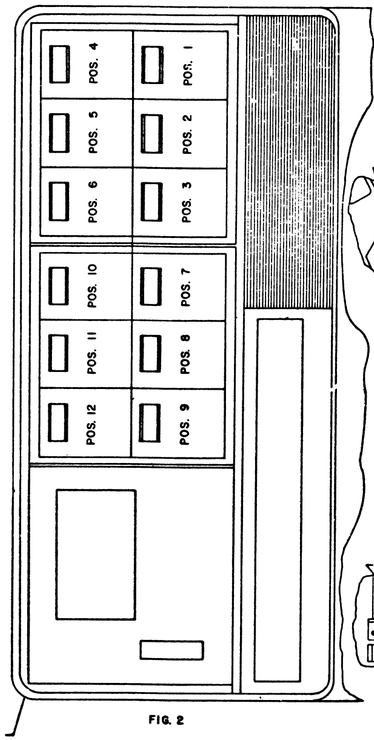


FIG. 2

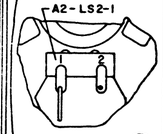


FIG. 4

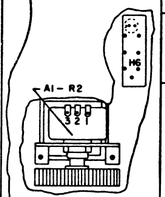


FIG. 5

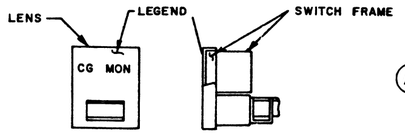


FIG. 1

INSTRUCTIONS (FOR FIG 1)

1. SNAP OFF (REMOVE) LENS FROM SWITCH FRAME.
2. PLACE LEGEND ON SWITCH FRAME ORIENTED AS SHOWN.
3. REPLACE LENS.

	LEGEND	SWITCH	SWITCH LOCATION SEE FIG. 2	CONNECTIONS SEE FIG. 3	CONTROL UNIT MODIFICATIONS
	SEE FIG. 1				
1	XMIT F1 XMIT F2 NP270751P13	19D417152G1	POS 1	WG TO TB1102-5 WBR TO TB1102-6 R TO TB1103-8-9 BK TO TB1102-9-10	
2	REC F1 REC F2 NP270751P12	19D417152G1	POS 2	WG TO TB1102-1 WBR TO TB1102-2 R TO TB1103-8-9 BK TO TB1102-9-10	
3	XMIT REC NP276388	19C320717G1&2	POS 2	WBL TO TB1102-5 WBK TO TB1102-6 WV TO TB1102-7 WGA TO TB1102-8 BK TO TB1102-9 WG TO TB1102-1 WBR TO TB1102-2 WO TO TB1102-3 WR TO TB1102-4	
4	REPEAT DISABLE NP270751P4	19D417152G2	POS 3	WR TO TB1101-4 R TO 1103-8-9 BK TO 1103-4	
5	CH BUSY CG DISABLE NP270751P20	19C320711G1	POS 4	WG TO TB1103-5 R TO TB1103-8-9 O TO TB1101-7 BK TO TB1103-4	
6	CG MON NP270751P1	19D417152G5	POS 4	WOBR TO TB1103-5 R TO TB1103-8-9 BK TO TB1103-4	
7	SQ DISABLE NP270751P19	19D417152G3	POS 5	WYBR TO TB1103-10 WO TO TB1103-5 R TO TB1103-8-9 BK TO TB1103-4	
8	INTCM NP270751P7	19D417152G8	POS 6	WOBL TO TB1101-1 O TO TB1103-3 R TO TB1103-8-9 WBR TO A1-H6 (XMIT INDICATOR) BK TO TB1103-4 WBK TO TB1101-5	REMOVE WBR WIRE FROM A1-H6 (XMIT INDICATOR) TO TB1101-5
9	REC 1 NP270751P2	19D417152G4	POS 7	V TO TB1103-6 WBL TO A1-R2-1 R TO TB1103-8-9 WG TO S3-9 (REC-2-POS 8) BK TO TB1103-4 SEE FIG. 4&5 SEE DETAIL "A"	REMOVE W-BK-O WIRE FROM A1-R2-1 TO TB1103-6 SEE FIG. 4&5
10	REC 2 NP270751P3	19D417152G4	POS 8	O TO TB1101-2 R TO 1103-8-9 WBL TO S3-11 (REC-1-POS 7) WG TO S3-9 (REC-1-POS 7) BK TO TB1103-4 SEE DETAIL "A"	CONNECT W WIRE FROM TB1103-7 TO TB1101-3
11	PSLM NP270751P22	19D417152G6	POS 9	WO TO S2-3 (REC F1&F2-POS 2) WBK TO S2-4 (REC F1&F2-POS 2) R TO TB1103-9 BK TO TB1102-9 O TO TB1101-6	REMOVE JUMPER ON (REC F1&F2-POS 2) BETWEEN S2-3 & S2-4 AND ALSO REMOVE BK WIRE FROM S2-4 TO TB1103-4 (GRD) SEE DETAIL "A"

(19D417387, Sh. 1, Rev. 11)

INSTALLATION INSTRUCTIONS:

1. LOOSEN THUMBSCREWS ON REAR OF UNIT AND REMOVE COVER.
2. REMOVE 4-#8 SCREWS FROM BASEPLATE AND REMOVE HOUSING FROM BASEPLATE.
3. INSTALL SWITCH LEGEND AS SHOWN IN TABULATION AND IN FIG. 1 (NOTE-COMBINATION OF SWITCH LEGEND AND SWITCH GR. NO., SEE TABULATION TO DETERMINE WIRING CONNECTIONS FOR SWITCH MODULE.)
4. INSTALL SWITCH MODULE IN HOUSING AS SHOWN IN TABULATION AND FIG. 2. (REMOVE SWITCH DUMMY, IF PRESENT, AND RETURN TO STOCK.)
5. MAKE CONNECTIONS AS SHOWN IN TABULATION. ROUTE WIRES TO TB1101, TB1102 & TB1103 THRU CABLE CLAMPS SHOWN IN FIG. 3, AND IN HOUSING. SPOT TIE TO EXISTING WIRING.
6. MAKE OTHER MODIFICATIONS TO UNIT, IF REQUIRED, AS LISTED IN CONTROL UNIT MODIFICATIONS COLUMN OF TABULATION.
7. REASSEMBLE UNIT.
8. SLEEVE UNUSED WIRES INDIVIDUALLY AT TERMINAL ENDS AND TIE DOWN SECURELY TO PREVENT SHORTS.

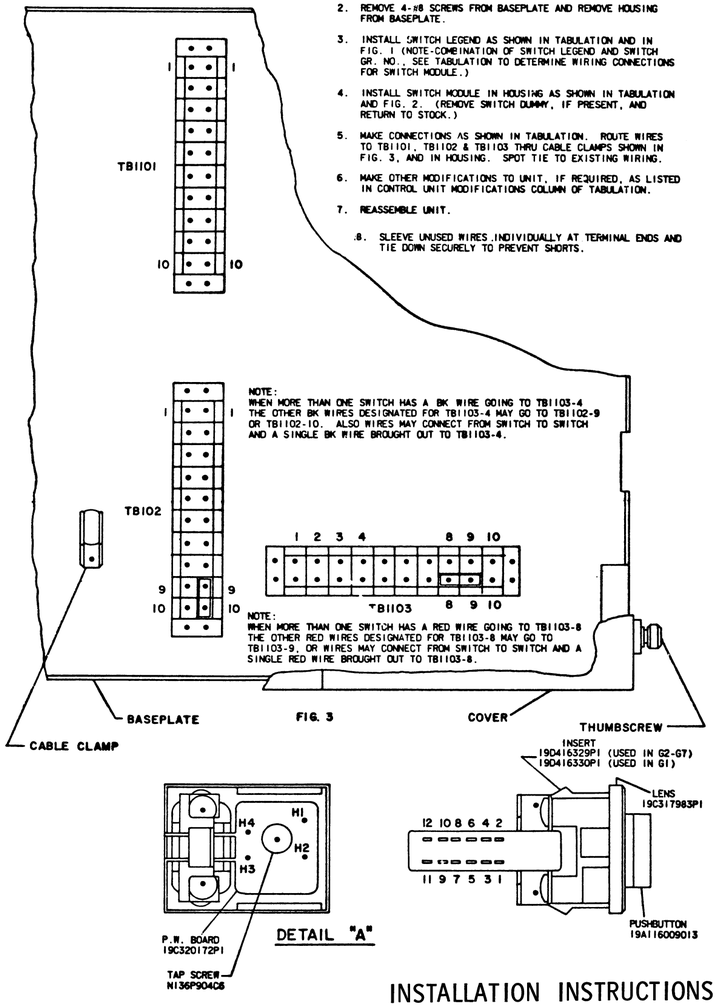


FIG. 3

DETAIL "A"

INSTALLATION INSTRUCTIONS

MASTR LOCAL CONTROLLER SWITCH KITS
19D417152G1-G7 AND 19C320717G1-G2

	LEGEND	SWITCH	SWITCH LOCATION SEE FIG. 2	CONNECTIONS SEE FIG. 7	CONTROL UNIT MODIFICATIONS
	SEE FIG. 8				
(12)	8 FREQ. C.G.	PL19A130325G1	POS. 10	P102 TO J102	
(13)	AUX 1 NP270751P5	19L417152G1	POS. 11	R - TB1103-8-9 BK - TB1102-9-10	--
(14)	AUX 2 NP270751P18	19D417152G1	POS. 12	OTHER WIRES LET HANG - SEE NOTE 8	--
(15)	TAKE OVER NP270751P17	19D417152G2	POS. 9	W-R TO TB1103-2 BK TO TB1103-3	REMOVE R WIRE FROM H4 SEE DETAIL "A"

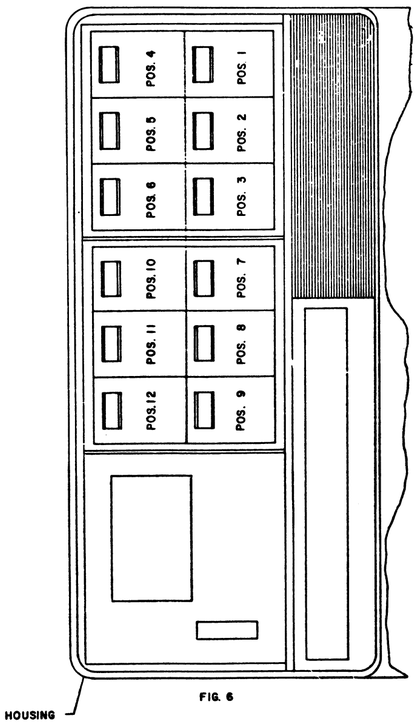
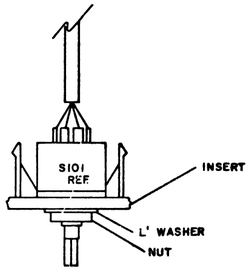
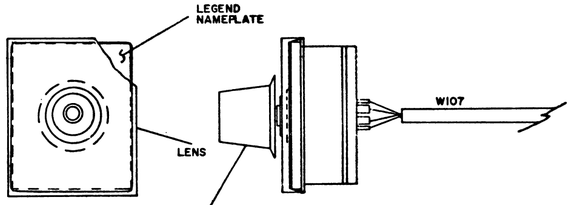


FIG. 6



VIEW SHOWN WITH LENS, KNOB & NAMEPLATE REMOVED



VIEW SHOWN WITH KNOB REMOVED

FIG. 8

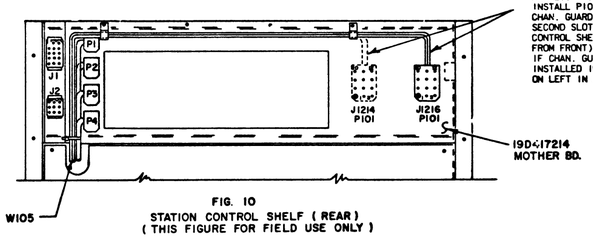


FIG. 10
STATION CONTROL SHELF (REAR)
(THIS FIGURE FOR FIELD USE ONLY)

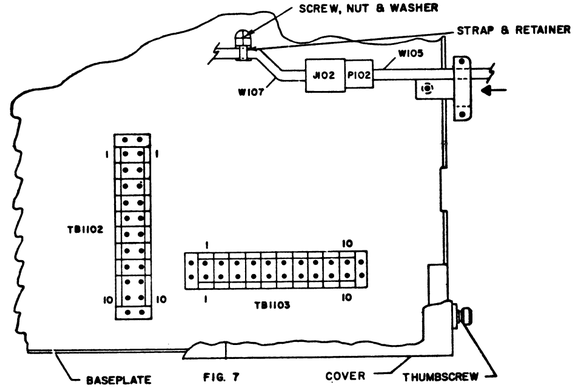


FIG. 7

THESE INSTRUCTIONS COVER THE APP. OF THE 8 FREQ. CG SWITCH KIT TO LOCAL CONTROLLER.

INSTRUCTIONS:

1. PROGRAMING SWITCH STOP.

1.1 SWITCH AS RECEIVED IS PROGRAMED FOR 7 CHANNEL GUARD FREQ. AND ONE OFF POSITION. STOP PIN IS BETWEEN 8 & 9. IF ANY NUMBER OTHER THAN 7 CHANNEL GUARD FREQUENCIES IS ORDERED, TURN THE SWITCH SHAFT TO THE MAXIMUM CCW POSITION. REMOVE PANEL SEAL FROM SWITCH AND MOVE STOP POST PER CHART BELOW. (SEE FIG. 9)

NO. OF CG TONES	MOVE STOP BETWEEN PINS
2	3 & 4
3	4 & 5
4	5 & 6
5	6 & 7
6	7 & 8
7	8 & 9 (AS REC'D)
8	9 & 10

1.2 ASSEMBLE PANEL SEAL WITH SIDE MARKED "BOTTOM" AGAINST SWITCH (S101) (SEE FIG. 9)

2.0 ASSEMBLE SWITCH AND ASSOCIATED ITEMS AS SHOWN IN FIG. 8. INSTALL KNOB SO THAT SET SCREW WILL TIGHTEN DOWN AGAINST FLAT ON S101 AND KNOB POINTER IS AT "OFF" WHEN SWITCH IS IN FULL CCW POSITION.

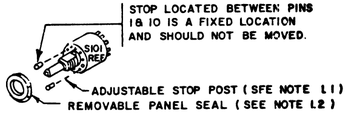
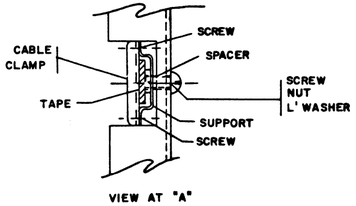


FIG. 9

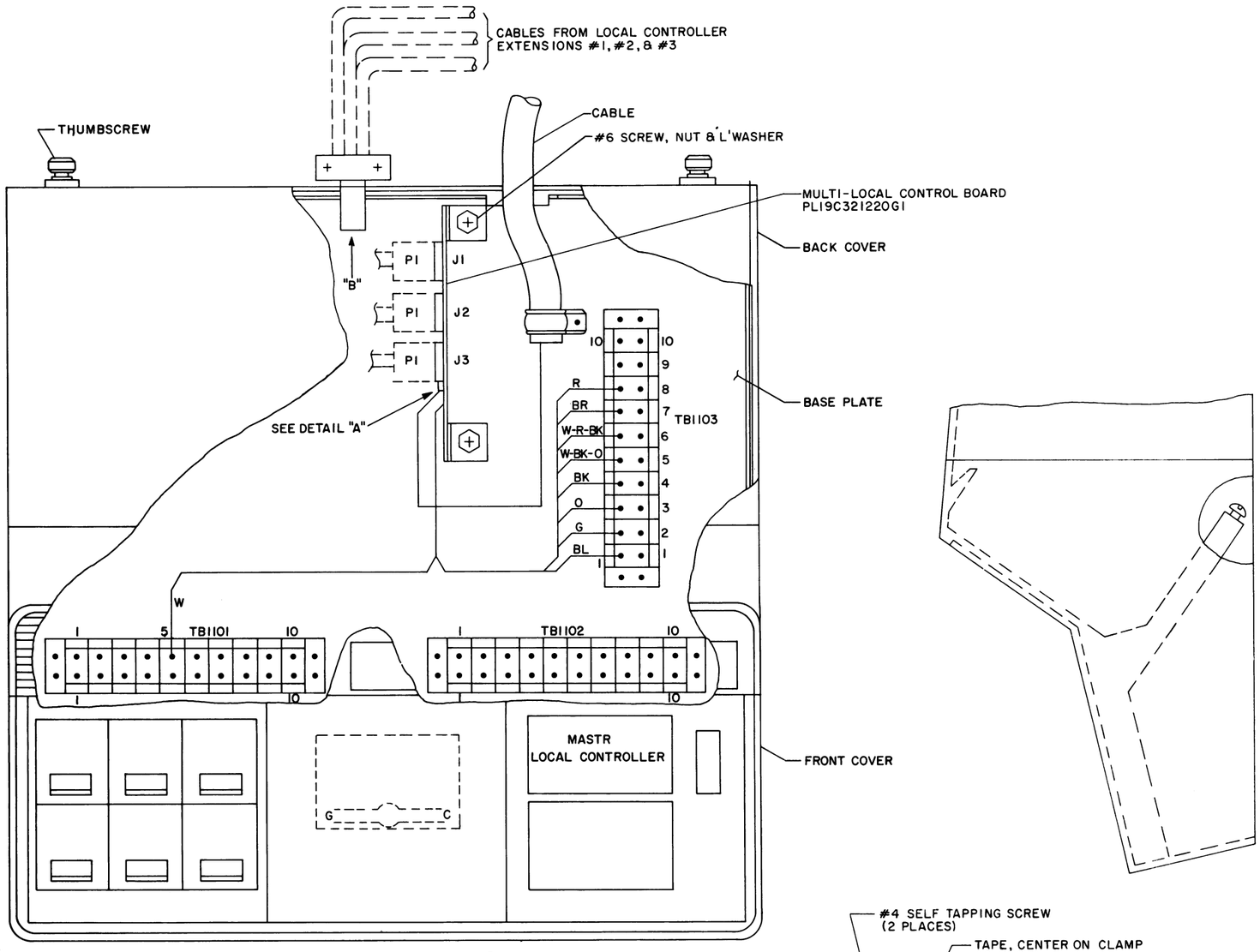


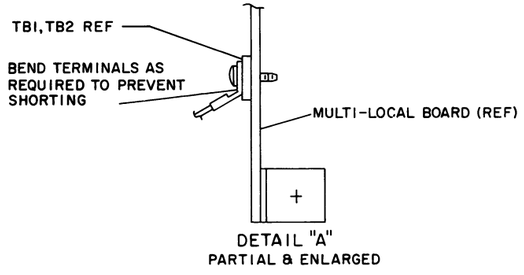
VIEW AT "A"

(19D417387, Sh. 2, Rev. 7)

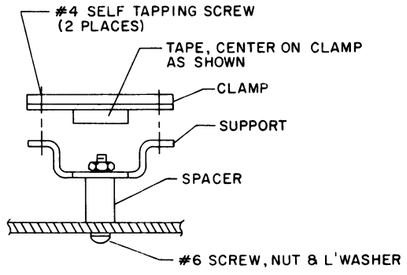
INSTALLATION INSTRUCTIONS

MASTR LOCAL CONTROLLER
SWITCH KIT 19A130325





DETAIL "A"
PARTIAL & ENLARGED



VIEW AT "B"
PARTIAL & ENLARGED

(19D423031, Rev. 2)

(1) THESE INSTRUCTIONS COVER THE INTERCONNECTION OF MULTI-LOCAL CONTROL BOARD TO MASTR LOCAL CONTROLLER.

INSTRUCTIONS:

1. LOOSEN 2 THUMBSCREWS AT REAR OF MASTR LOCAL CONTROLLER AND REMOVE COVER.
2. MOUNT MULTI-LOCAL CONTROL BOARD TO BASEPLATE USING #6 SCREW, LOCKWASHER AND NUT SUPPLIED WITH BOARD.
3. REMOVE YELLOW WIRE FROM TB1103-6 AND CONNECT TO TB1 ON BOARD.
4. REMOVE BROWN WIRE FROM TB1103-7 AND CONNECT TO TB2 ON BOARD.
5. CONNECT MULTI-LOCAL CONTROL BOARD WIRES TO TERMINAL BOARDS AS SHOWN. TERMINALS MAY BE ATTACHED TO EITHER SIDE OF TERMINAL BOARDS.
6. SPOT TIE ALL WIRES TO EXISTING WIRING HARNESS.
7. ASSEMBLE CABLE CLAMP PARTS SUPPLIED WITH MULTI-LOCAL CONTROL BOARD AS SHOWN IN VIEW B.
8. REASSEMBLE MASTR LOCAL CONTROLLER.

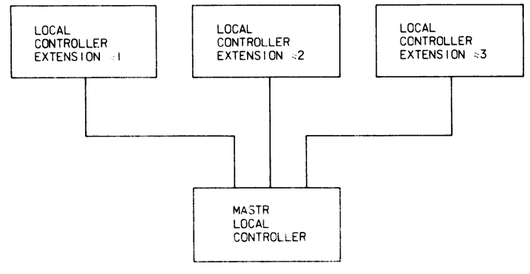


FIGURE 1

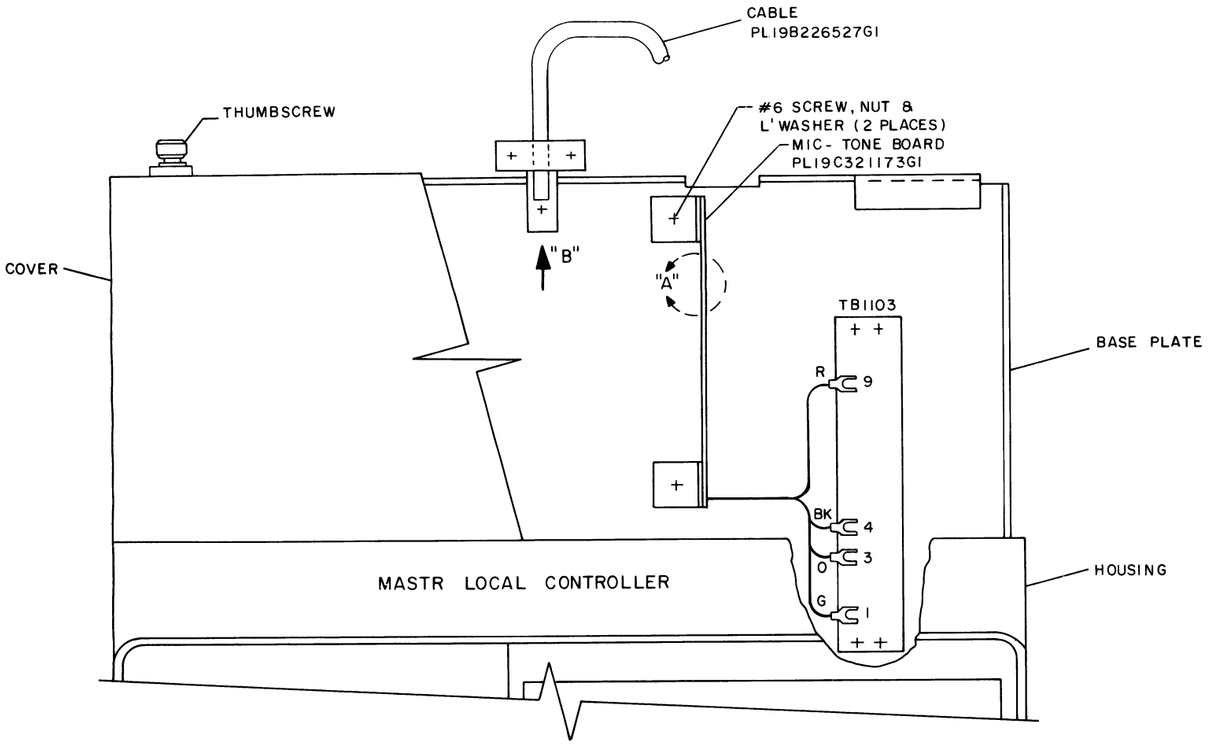


FIG. 1

THESE INSTRUCTIONS COVER THE INTERCONNECTION OF TYPE 90 ENCODER TO MASTR LOCAL CONTROLLER.

INSTRUCTIONS:

1. LOOSEN 2 THUMBSCREWS AT REAR OF MASTR LOCAL CONTROLLER AND REMOVE COVER.
2. MOUNT MIC-TONE BOARD TO BASEPLATE USING #6 SCREW, LOCKWASHER AND NUT SUPPLIED WITH BOARD.
3. CONNECT MIC-TONE BOARD WIRES TO TERMINAL BOARD TB1103 AS SHOWN. TERMINALS MAY BE ATTACHED TO EITHER SIDE OF TB1103. SPOT TIE WIRES TO EXISTING WIRING HARNESS.
4. ASSEMBLE CABLE CLAMP PARTS SUPPLIED WITH MIC-TONE BOARD AS SHOWN IN VIEW B.
5. MATE CONNECTORS ON CABLE AND TYPE 90 ENCODER.
6. CONNECT CABLE FROM TYPE 90 ENCODER TO MIC-TONE BOARD PER CONNECTION CHART.
7. WHEN PRESENT, REMOVE LOCAL MICROPHONE WHITE WIRE FROM TB1103-1 AND CONNECT TO TB1-8 ON MIC-TONE BOARD.
8. REASSEMBLE MASTR LOCAL CONTROLLER.

CONNECTION CHART	
FROM CABLE PL19B226527G1	TO MIC-TONE BOARD
G	TB1-1
SHIELD	TB1-2
BR	TB1-3
R	TB1-4
BL	TB1-5

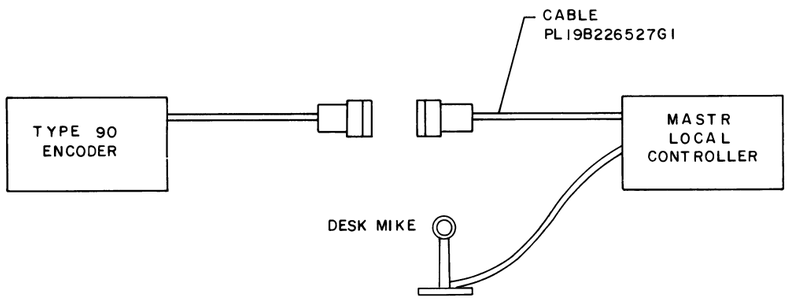
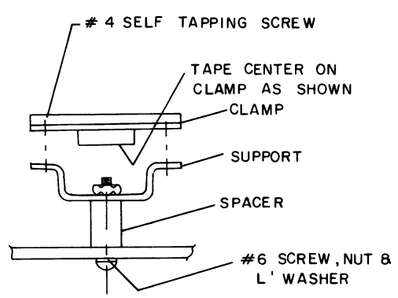
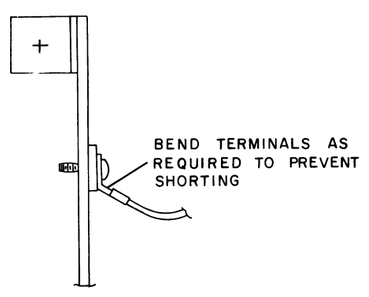


FIG. 2



VIEW "B"



DETAIL "A"

INSTALLATION INSTRUCTIONS

TYPE 90 TONE ENCODER

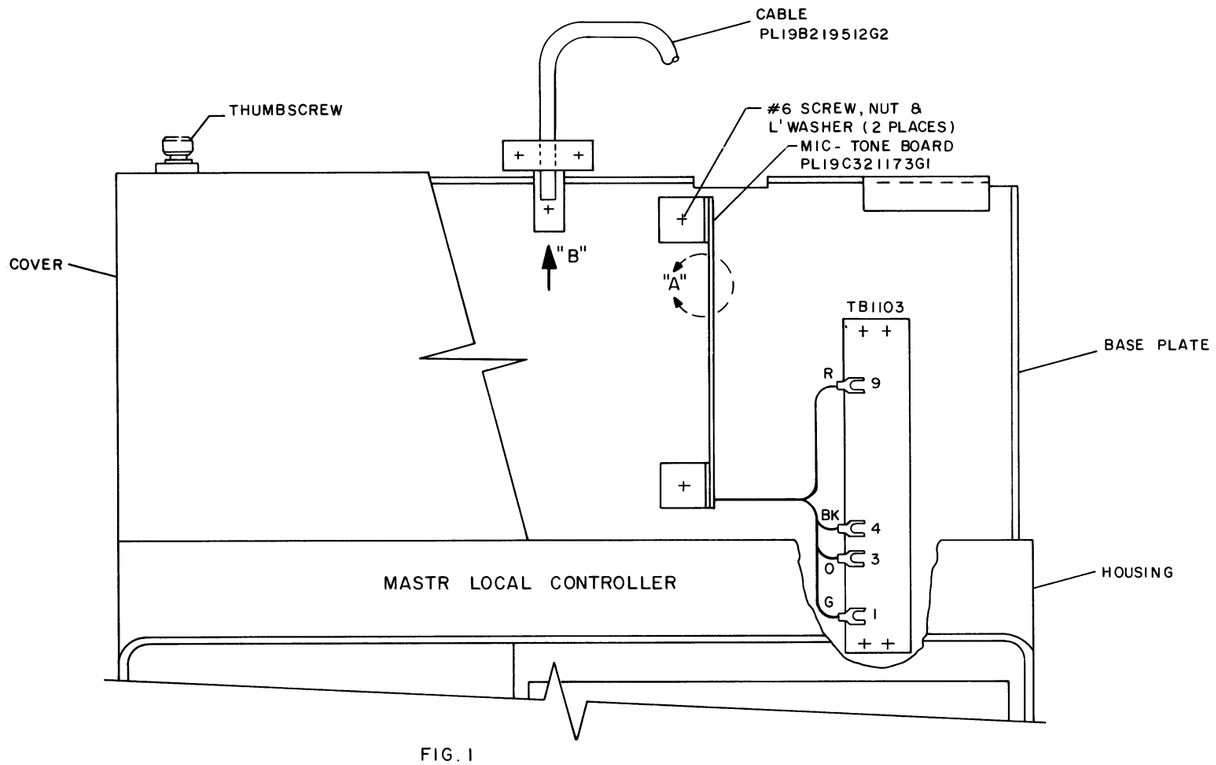


FIG. 1

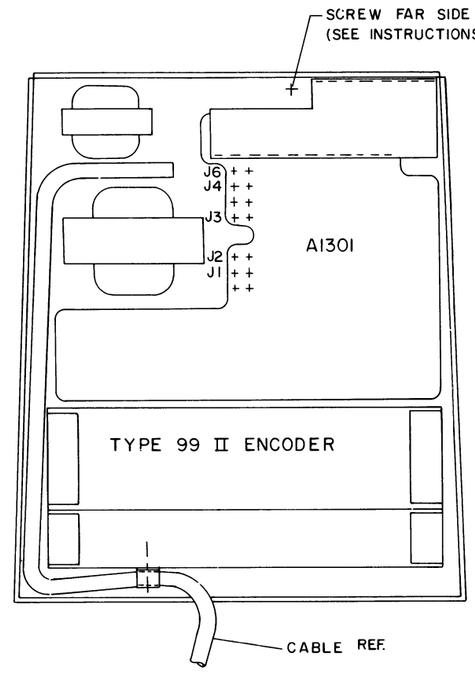


FIG. 3

THESE INSTRUCTIONS COVER THE INTERCONNECTION OF TYPE 99 II ENCODER TO MASTR LOCAL CONTROLLER.

INSTRUCTIONS:

1. LOOSEN 2 THUMBSCREWS AT REAR OF MASTR LOCAL CONTROLLER AND REMOVE COVER.
2. MOUNT MIC-TONE BOARD TO BASEPLATE USING #6 SCREW, LOCKWASHER AND NUT SUPPLIED WITH BOARD.
3. CONNECT MIC-TONE BOARD WIRES TO TERMINAL BOARD TB1103 AS SHOWN. TERMINALS MAY BE ATTACHED TO EITHER SIDE OF TB1103. SPOT TIE WIRES TO EXISTING WIRING HARNESS.
4. ASSEMBLE CABLE CLAMP PARTS SUPPLIED WITH MIC-TONE BOARD AS SHOWN IN VIEW B.
5. REMOVE 2 SCREWS AT REAR AND ONE AT BOTTOM OF TYPE 99 II ENCODER AND REMOVE COVER.
6. CONNECT CABLE FROM TYPE 99 II ENCODER TO MIC-TONE BOARD PER CONNECTION CHART. SEE FIGURE 3 FOR ROUTING OF CABLE INTO TYPE 99 II ENCODER.
7. WHEN PRESENT, REMOVE LOCAL MICROPHONE WHITE WIRE FROM TB1103-1 AND CONNECT TO TB1-8 ON MIC-TONE BOARD.
8. REASSEMBLE BOTH UNITS.

CONNECTION CHART		
FROM TYPE 99 II ENCODER	TO MIC-TONE BOARD	WIRE
A1301-J6		SHIELD
A1301-J4	TB1-1	G
A1301-J2	TB1-7	R
A1301-J1	TB1-5	BK
A1301-J3	TB1-3	W

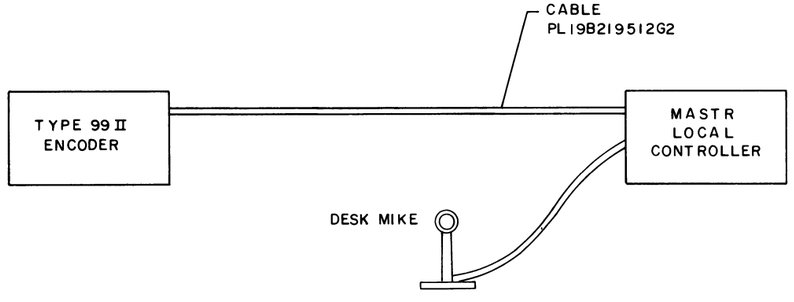
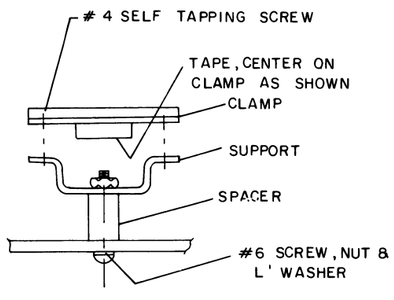
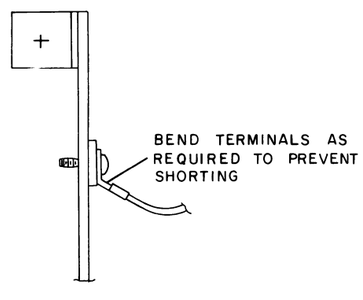


FIG. 2



VIEW "B"



DETAIL "A"

(19D417931, Rev. 3)

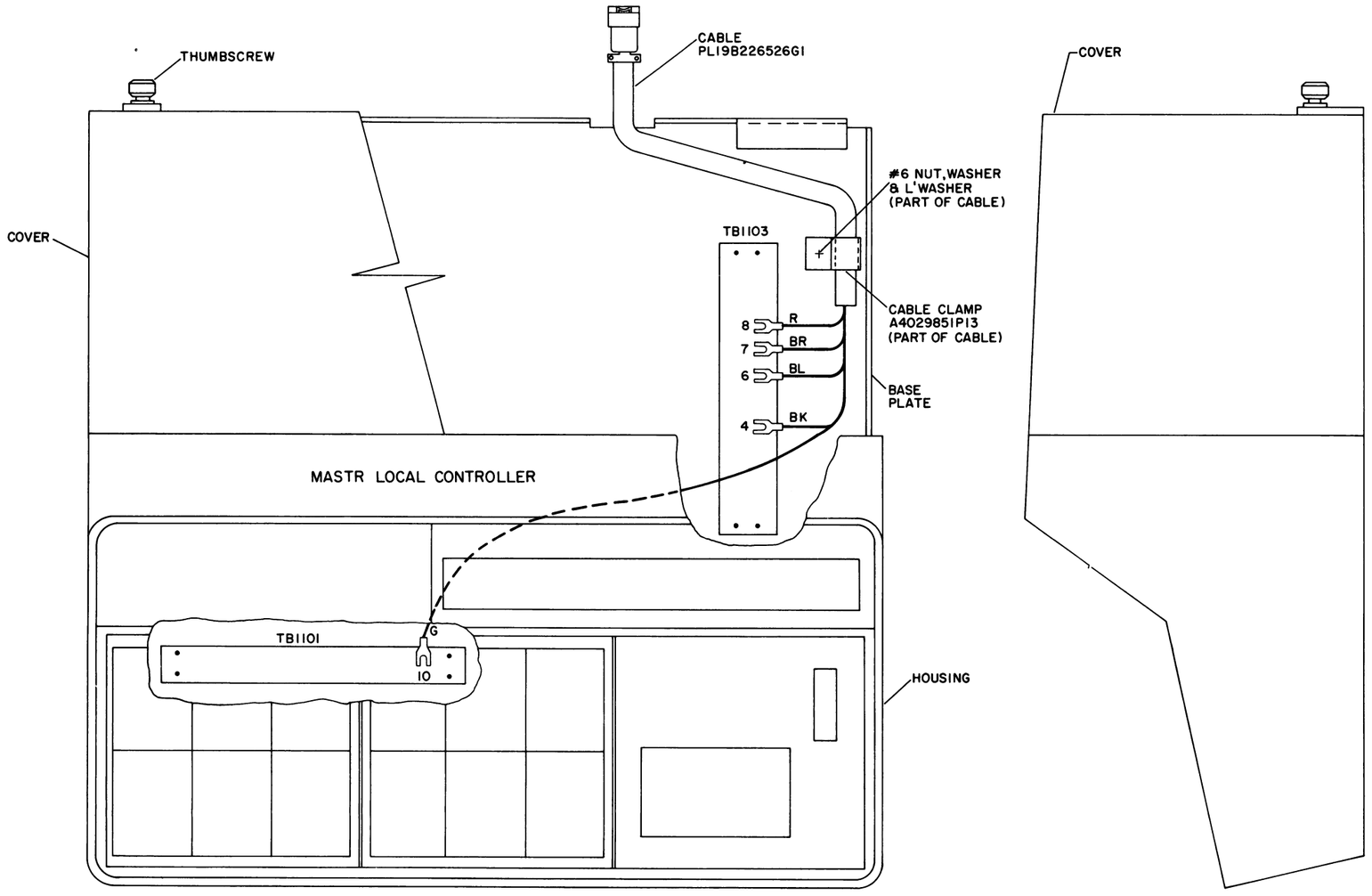


FIG. 1

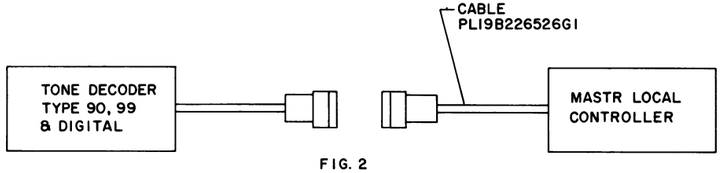
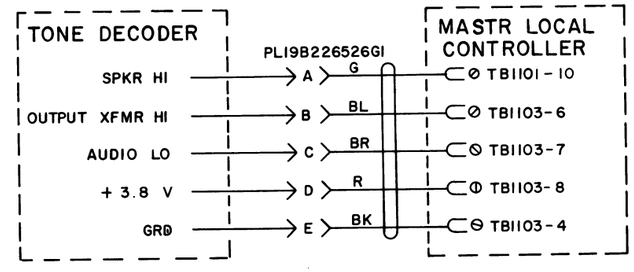


FIG. 2

THESE INSTRUCTIONS COVER THE INTERCONNECTION OF TYPE 90 DECODER, TYPE 99 DECODER OR DIGITAL DECODER TO MASTR LOCAL CONTROLLER

INSTRUCTIONS:

1. LOOSEN 2 THUMBSCREWS AT REAR OF MASTR LOCAL CONTROLLER & REMOVE COVER.
2. FOR MASTR LOCAL CONTROLLER WITHOUT REC 1 & REC 2 SWITCHES, REMOVE WHITE-BLACK-ORANGE WIRE FROM TB1103-6 & CONNECT TO TB1101-10.
3. FOR MASTR LOCAL CONTROLLER WITH REC 1 & REC 2 SWITCHES, REMOVE YELLOW WIRE FROM TB1103-6 & CONNECT TO TB1101-10.
4. MATE CONNECTORS ON CABLE & TONE DECODER. CONNECT CABLE TO MASTR LOCAL CONTROLLER AS SHOWN IN FIG. 1.
5. TERMINALS MAY BE ATTACHED TO EITHER SIDE OF TERMINAL BOARD. SPOT TIE WIRES TO EXISTING WIRING HARNESS.
6. REASSEMBLE MASTR LOCAL CONTROLLER.

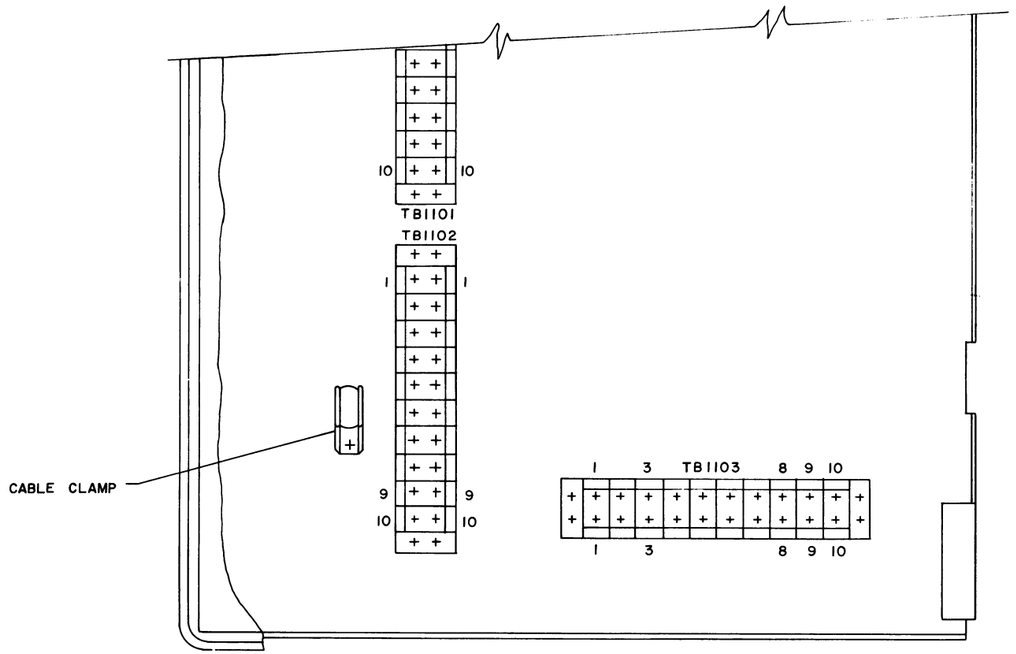


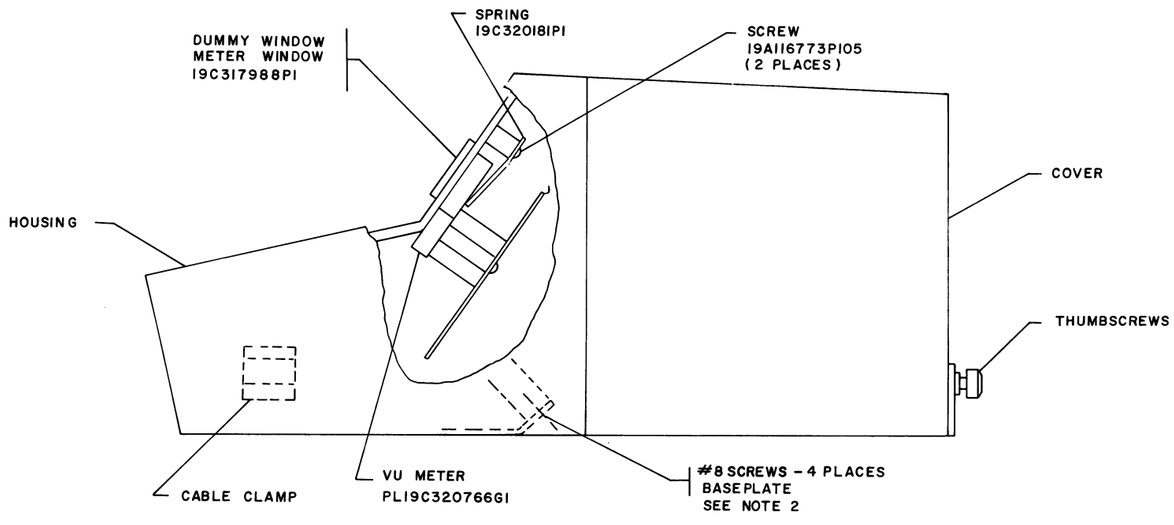
(19B226604, Rev. 1)

(19D417932, Rev. 2)

INSTALLATION INSTRUCTIONS

TONE DECODERS TYPE 90, 99 & DIGITAL





(19D417413, Rev. 2)

THESE INSTRUCTIONS COVER THE INSTALLATION OF MODIFICATION KIT PL 19A129382G2 FOR MODIFYING MASTR LOCAL CONTROLLER TO PROVIDE VU METER.

(1) INSTALLATION INSTRUCTIONS.

1. LOOSEN THUMBSCREWS ON REAR OF UNIT AND REMOVE COVER.
2. REMOVE 4-#8 SCREWS FROM BASEPLATE AND REMOVE HOUSING FROM BASEPLATE.
3. REMOVE DUMMY WINDOW AND INSERT METER WINDOW. RETURN DUMMY WINDOW TO STOCK.
4. INSTALL SPRING (19C320181P1) LOOSELY WITH 2-#6 SCREWS AS SHOWN.
5. INSTALL VU METER (19C320766G1) UNDER SPRING AND TIGHTEN SPRING NOW.
6. ROUTE WIRES THROUGH CABLE CLAMPS
   CONNECT THE GREEN WIRE TO TB1103-3
   CONNECT THE BLUE WIRE TO TB1103-1
   CONNECT THE BLACK WIRE TO TB1102-9
   CONNECT THE RED WIRE TO TB1103-8-9
7. RE-ASSEMBLE UNIT.

INSTALLATION INSTRUCTIONS

VU METER KIT 19A129382G2

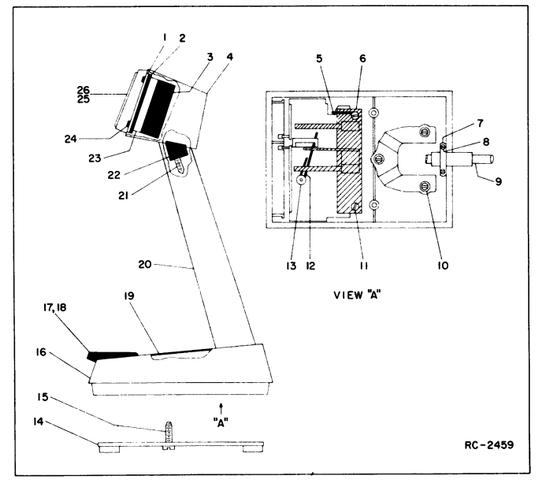
PARTS LIST

LBI-4473

DESK MICROPHONES
19B209458P1 (STANDARD)
19B209459P1 (CHANNEL GUARD)
(SEE RC-2459)

SYMBOL	GE PART NO.	DESCRIPTION
		STANDARD DESK MICROPHONE 19B209458P1
1		Locking plate. (Part of item 4).
2		Gasket. (Part of item 4).
3		"O" Ring. (Part of item 4).
4		Head Assembly. RP122. (Includes items 1-3, 24-26).
5		(Not Used).
6		Switch Kit. RP124. (Includes items 11, 17).
7		Retaining Bar. (Part of item 9).
8		Screw, thread forming, slotted: No. 4 x 1/2. (Part of item 9).
9		Cable Kit. RP123. (Includes items 7, 8).
10		Screw, thread forming, slotted: No. 8 x 3/4. (Part of item 20).
11		Screw, thread forming, slotted: No. 4 x 5/8. (Part of item 6).
12		(Not Used).
13		(Not Used).
14		Base plate. (Part of item 16).
15		Screw, thread forming, slotted: No. 8 x 3/4. (Secures Base Plate- Part of item 16).
16		Base Assembly. RP125. (Includes items 14, 15, 19).
17		Pushbutton, Transmit. (Part of item 6).
18		(Not Used).
19		Nameplate. (Part of item 16).
20		Stem Assembly. RP121.
21		Screw, thread forming, slotted: No. 8 x 1/2. (Part of item 20).
22		Clamp. (Secures Head Assembly to Stem Assembly- Part of item 20).
23		Transistorized Cartridge. RP117.
24		Screw, thread forming, slotted: No. 4 x 1/2. (Part of item 4).
25		Grille. (Part of item 4).
26		Dust cloth. (Part of item 4).
		CHANNEL GUARD DESK MICROPHONE 19B209459P1
1		Locking plate. (Part of item 4).
2		Gasket. (Part of item 4).
3		"O" Ring. (Part of item 4).
4		Head Assembly. RP122. (Includes items 1-3, 24-26).
5		Lock spring. (Part of item 6).
6		Switch Kit. RP119. (Includes items 5, 11, 12, 13, 17, 18).
7		Retaining Bar. (Part of item 9).
8		Screw, thread forming, slotted: No. 4 x 1/2. (Part of item 9).
9		Cable Kit. RP118. (Includes items 7, 8).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.



ORDERING SERVICE PARTS

Each component appearing on the schematic diagram is identified by a symbol number, to simplify locating it in the parts list. Each component is listed by symbol number followed by description and GE Part Number.

Service parts may be obtained from Authorized GE Communication Equipment Service Stations or through any GE Radio Communication Equipment Sales Office. When ordering a part, be sure to give:

1. GE Part Number for component
2. Description of part
3. Model Number of equipment
4. Revision letter stamped on unit

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance.

Should further information be desired, or should particular problems arise which are not covered sufficiently for the purchaser's purposes, contact the nearest Radio Communication Equipment Sales Office of the General Electric Company.

MAINTENANCE MANUAL

LBI-4935

GENERAL ELECTRIC COMPANY • MOBILE COMMUNICATIONS DIVISION
WORLD HEADQUARTERS • LYNCHBURG, VIRGINIA 24502 U.S.A.

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