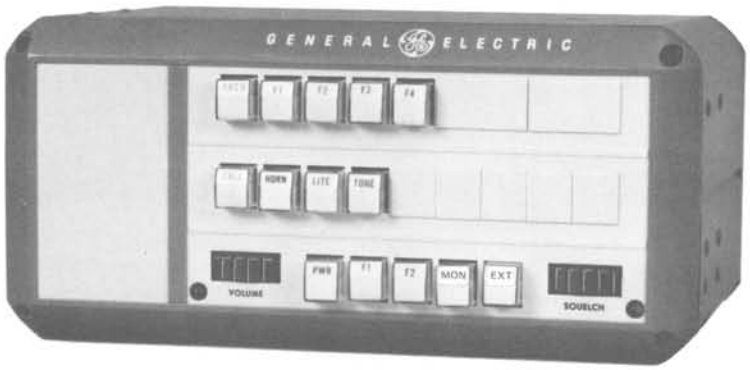
MOBILE RADIO

MAINTENANCE MANUAL

C-900 SERIES CONTROL UNIT (PUSHBUTTON CONTROL)



SPECIFICATIONS *

Pushbutton Control Module	19D417661G1-3
Number of Frequencies	1, 2 or 4
Supply Voltage	±13.8V ±20%
Current Drain (Control Module Only)	90 Milliamperes (maximum)
Controls	Power-On Volume Squelch Channel Selector Switch Option Switch Blanker Disable Switch (Optional)
Indicators	Power On Light Transmit Light Channel Busy Light Option Light
Dimensions (H X W X D)	4 3/8" x 9 3/8" x 7 1/8"

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

Maintenance Manual LBI-30234

C-900 SERIES CONTROL UNIT (PUSHBUTTON CONTROL)

GENERAL ELECTRIC

TABLE OF CONTENTS

WARNING

Although the highest DC voltage in the radio is supplied by the vehicle battery, high current may be drawn under short circuit conditions. These currents can possibly heat metal objects such as tools, rings, watchbands, etc. enough to cause burns. Be careful when working near energized circuits!

High-level RF energy in the transmitter Power Amplifier assembly can cause RF burns. KEEP AWAY FROM THESE CIRCUITS when the transmitter is energized!

COMBINATION NOMENCLATURE

1st Digit	2nd Digit	3rd Digit	4th Digit	5th Digit	6th Digit	7th Digit	8th Digit	9th Digit
Mechanical Package	System Voltage	Channel Capacity	No. of Operating Channels	Microphone or Handset	Center Option Deck	Upper Option Deck	Option Bay	Control Unit Series
S Control Unit with Bracket, Speaker and Cables MASTR II app.	**1** ±12 VDC MASTR II Appl.	**A** 1 Channel	**A** One	**1** None	**S** No Option	**S** No Option	**I** No Option	**9** C-900
E Control Unit with Brackets only	**2** ±24 to 48 VDC	**C** 2 Channel	**C** Two	**2** Std. Microphone	**A** PSLM 4 Freq.	**A** PSLM 4 Freq.		
U Control Unit with Bracket, Speaker and Cables MASTR Executive II App.	**3** +12 VDC (Negative Gnd.)	**F** 4 Channel	**E** Three	**3** Std. Mike w/HS	**C** T99 Decoder 2 Tone	**C** T99 Decoder, 2-Tone		
	4 -12 VDC (positive Gnd.)		**F** Four	**4** Handset & Hookswitch	**D** T99 Decoder 4 Tone	**D** T99 Decoder, 4-Tone		
				5 Noise Canc Microphone	**E** T90 Enc/Dec.	**E** T90 Enc./Dec.		
				6 Noise Canc Mike w/HS	**F** T90 Decoder	**F** T90 Decoder		
					G T90 Encoder	**G** T90 Encoder		
					H Channel Grd. 2 Encode Tones	**H** Channel Guard 2 Encode Tones		
					J Channel Grd. 8 Encode Tones	**J** Channel Guard 8 Encode Tones		
					K Public Address & Ext. Spkr.	**K** Public Address & Ext. Speaker		
					L 5 Auxiliary Switches	**L** 5 Auxiliary Switches		

DESCRIPTION

The C-900 Series Control Unit with pushbutton control is an attractively styled, highly functional unit that provides maximum versatility in radios with up to 4 RF channels. (See Figure 1). This control unit can be used to control either the MASTR II or MASTR Executive II ("S" Series) radios. The C-900 series control unit may be equipped with up to three different pushbutton switch options, two of six different component board options, a Noise blanker Disable switch, a universal tone connector, and may be modified to include the Fixed Squelch option.

The pushbutton switch options include Channel Guard Monitor (MON), Internal/ External Speaker (EXT) or Dual Control (CONT) when two control units are used to control a single radio. The component board options include the following:

- Multi-tone Channel Guard Encoders (2 or 8 tones)
- Priority Search Lock Monitor (4 channels)
- Type 90 Tone Encoder/Decoder
- Type 99 Tone Decoder (Selective call)
- Public Address
- Auxiliary Switch Board

A control module occupies the control deck (lower) and provides the volume, squelch, and power ON/OFF controls; the channel selector switch, and the Transmit and Channel Busy indicators. The component board options occupy the center and upper option decks as desired. All pushbutton switches are backlighted with light-emitting diodes (LED's) for reliability, long life and low power consumption.

CONTROL UNIT

The control unit consists of a front panel, a sheet metal housing, a printed wire board backplane, a rear cover, associated subassemblies (Component Boards which plug into the printed wire board backplane) and mounting brackets with hardware.

The front panel, is made of molded plastic which contains clearance holes for pushbutton switches and applicable indicator lights (LEDs). Slots for the thumbwheel type VOLUME and SQUELCH controls are also provided.

Mounted on the front of the plug-in modules are switches, controls, and indicators. Necessary controls and pushbutton switches protrude through holes and slots in the front panel of the control unit. Light-emitting diodes are mounted behind the pushbutton assemblies to provide illumination. Normally the indicators glow at reduced intensity until selected (depressed), then full illumination is provided. The VOLUME and SQUELCH controls are part of the Control Module and are mounted horizontally.

The control unit housing is divided into two separate sections. The larger section contains three sets of card guide slots which position the printed circuit cards horizontally for proper insertion into the connectors located on the printed wire board backplane.

The control unit rear cover backplane assembly provides a means for connecting the Power/Control Cable, microphone connector,

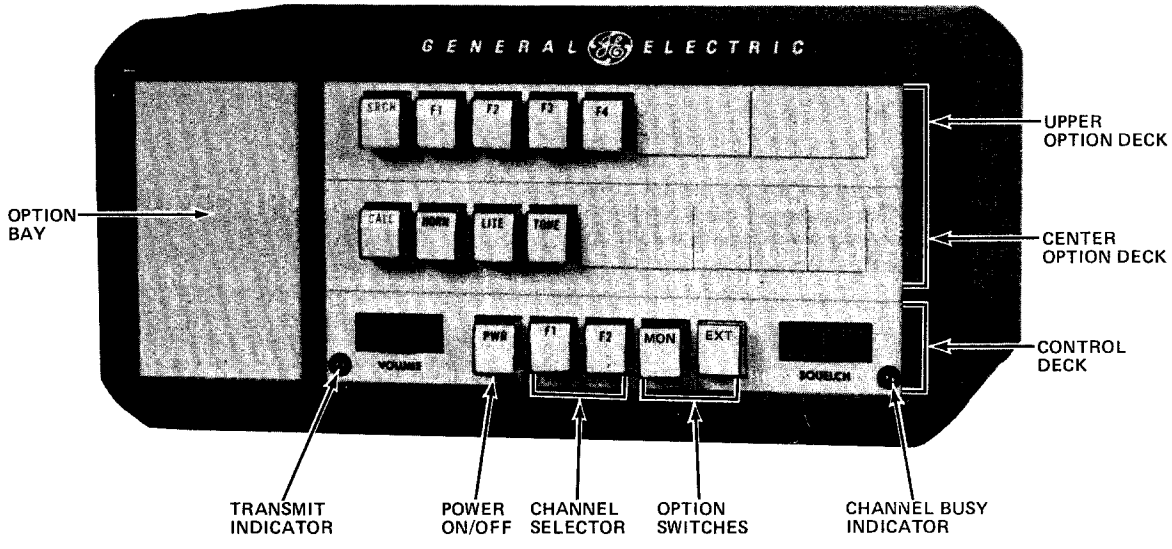


Figure 1 - C-900 (Pushbutton) Control Unit

and universal tone connector. Cable plugs are secured to the rear cover by plastic locking clips. Plugs are equipped with indexing tabs to assure connection to the correct jack. The control cable is equipped with a strain relief hook that attaches to the flange at the bottom of the rear cover.

The microphone plug is secured to the microphone jack located on the rear cover by means of a captive locking screw. A nine pin connector (Optional) is available to permit use of external tone equipment.

The backplane board is attached to the inside of the rear cover, and interconnects the Control and option modules with the control cable and microphone cable.

Power Control Cable connections are made to the connector (J902 and J903) located along the bottom of the backplane board. Three sets of 19 feed-through posts permit connection of the control cable to the control module (plugged in from the front of the housing). These connections are shown on the backplane board and the Control Cable Wiring Diagrams.

CIRCUIT ANALYSIS

The Control Module is equipped with a VOLUME control (R701) SQUELCH control (R702) PWR ON-OFF pushbutton switch and indicator (S701 and CR704), a yellow Channel Busy indicator (CR706), a red transmit indicator (CR705) and Channel Selector pushbutton switches (S702 and S703).

When the PWR ON-OFF switch is in the "off" position, power is removed from the radio except for the transmitter PA, which is connected to the vehicle battery at all times. Pushing the switch in to the "on" position applies power to the radio, and lights the power-on LED behind the pushbutton switch.

CR701 and CR708 are protective diodes and will cause the fuse in the yellow lead to blow if the polarity is reversed.

TRANSMIT INDICATOR

Pressing the PTT switch on the microphone energizes the antenna switch, keys the transmitter, mutes the receiver, and lights the transmit indicator LED.

Releasing the PTT switch turns off the transmitter and transmit indicator, de-energizes the antenna switch and, when receiving, unmutes the receiver.

CHANNEL BUSY INDICATOR

When no signal is applied to the receiver, the Carrier Activity Sensor (CAS) voltage from the receiver squelch IC is near A-. This forward biases diode CR702 in the control unit, keeping Q701 turned off. When a signal is applied to the receiver (with or without audio), the CAS voltage rises to approximately 10 Volts. This reverse biases CR702, allowing Q701 to conduct, turning on Channel Busy Indicator CR706. The indicator will remain on as long as a signal is applied to the receiver, or until the transmitter is keyed.

CHANNEL SELECTOR SWITCH

The Channel Selector pushbutton switch selects the desired channel for both transmitting and receiving. The switch connects A- to the selected transmitter and receiver ICOM so that the radio operates on the selected channel.

PUSHBUTTON AND SWITCH OPTIONS

The pushbutton options identified below consist of a pushbutton switch and associated components.

Pushbutton options

- Channel Guard Monitor
- Internal/External Speaker
- Dual Control

Switch options

- Noise Blanker Disable
- Fixed Squelch

CHANNEL GUARD MONITOR

For radios equipped with the Channel Guard monitor option, the control unit is equipped with a separate pushbutton switch (MON) located just to the right of the channel selector switch. When pressed, the MON switch overides the Channel Guard and permits monitoring the selected channel. The MON pushbutton switch is paralled by an alternate channel guard monitor switch mounted on the microphone hang-up bracket. The switch on the microphone hang-up bracket activates when the microphone is removed. Since these switches operate in parallel, either switch monitors the channel selected.

INTERNAL/EXTERNAL SPEAKER

In radios equipped with the Internal/External Speaker option, the control unit will be equipped with a pushbutton switch marked EXT and an external speaker will be mounted outside of the vehicle passenger

compartment (on the roof, under the hood, etc.).

When the pushbutton switch is not operated, all of the messages received will be heard on the speaker mounted in the vehicle and the pushbutton light will be backlighted at a low level.

Pressing the switch in, applies all received messages to both the external and internal speaker and turns the light on to maximum brightness. This allows the received messages to be heard while the operator is inside or outside of the vehicle.

For complete details, refer to the Maintenance Manual for the Internal/External Speaker option.

DUAL CONTROL

In radio systems with two control units, a Dual Control pushbutton switch, mounted on each control unit, is used to transfer control of the radio from one control unit to the other.

When the pushbutton is pressed, the pushbutton light turns on to indicate control of the radio. Control remains with this control unit until the Dual Control switch on the second control unit is operated. At this time the pushbutton light on the first control unit will turn off and the second control unit will assume control.

FIXED SQUELCH

In radios with the Fixed Squelch option, a two-position rotary switch replaces the standard variable squelch potentiometer. A squelch potentiometer is then mounted on J904 on the system board (see Front Panel & System Board Maintenance Manual).

Turning the optional squelch switch on the control unit to the right applies A- to the squelch disable lead. A- is connected to pin 2 of the receiver audio IC (U604), disabling the squelch circuit (and Channel Guard if present). Turning the switch to the left removes A- from pin 2 of the squelch IC, enabling the squelch circuit (and Channel Guard).

NOISE BLANKER DISABLE (MASTR II ONLY)

In radios with Noise Blanker Disable option, the Noise Blanker Disable switch is mounted on the back of the control unit (see Outline Diagram). Placing the switch in the DISABLE position applies A- to the blanker disable lead, disabling the noise blanker circuit. A- is connected to the blanker disable circuit by a jumper from H63 to H66 on the system board.

Placing the switch in the ENABLE position removes A- from the blanker disable lead allowing the blanker to operate.

COMPONENT BOARD OPTIONS

The component board options are:

- Multi-Frequency Channel Guard Encoder
- Priority Search Lock Monitor
- Type 90 Tone Encoders/Decoders
- Type 99 Tone Decoders
- Public Address
- Auxiliary Switch

PRIORITY SEARCH LOCK MONITOR (PSLM)

In radios with four frequency PSLM, the PSLM board is equipped with five backlighted pushbutton switches (push-push) for control and non-priority channel selection.

The search switch (SRCH) turns the PSLM "on" or "off"; the remaining pushbutton switches select the non-priority channels to be searched. The priority channel is selected by the channel selector switch or strapped to a specific channel. For complete details, refer to the PSLM Maintenance Manual.

PUBLIC ADDRESS (MASTR II ONLY)

In radios equipped with the Public Address option, the component board is equipped with a volume control and two back-lighted pushbutton switches; PA (Public Address) and EXT (External). The volume control for the external speaker is independent of the receiver volume control. A reentrant type speaker with 20-foot of speaker cable is provided with this option.

When neither pushbutton switch is pressed, the radio operates normally.

When the EXT and PA pushbutton switches are pressed, the receiver audio is split between the internal and external speakers. Pressing the PTT switch connects the microphone to the external speaker through the audio amplifier. The transmitter is not keyed.

When only the "EXT" pushbutton switch is pressed, the received audio is split (approximately 30% to internal speaker). Pressing the PTT switch keys the transmitter.

When the PA pushbutton switch is pressed, the received audio is heard only in the internal speaker. Pressing the PTT switch connects the microphone to the external speaker through the audio amplifier. The transmitter is not keyed.

The pushbutton switches are normally backlighted at a low level and become brighter when selected to indicate the selected mode of operation.

For complete details refer to the Maintenance Manual for the Public Address option.

TYPE 90 TONE ENCODERS AND DECODERS

Type 90 Tone equipment provides tone coded message transmissions to eliminate receipt of unwanted calls. A single tone burst preceeds the first transmission. The TONE pushbutton allows the tone to be sent manually if desired. All Type 90 Tone Encoders and Decoders generate or decode a single tone, selectable from ten standard Type 90 tones.

Two pushbutton switches CALL and TONE are used to control the encode and decode functions and are present on all encoder/ decoders. The TONE pushbutton is included on encode only units. The CALL pushbutton is provided on decoders and flashes on and off when a properly tone coded message is received. The CALL pushbutton also provides the manual reset and monitor functions. When momentarily pressed, it resets the decoder; when held in it allows the operator to monitor the receive channel(s). Automatic reset and manual monitoring functions may also be provided by a separate microphone or handset hookswitch.

Optionally, there may be two additional pushbutton switches to control selection of the type of external alarm desired - horn or light. The TONE, HORN and LITE pushbutton are backlighted and become brighter when selected. When the HORN pushbutton is selected and a properly tone coded message is received, the horn will sound for approximately one-second. If the LITE pushbutton is selected the lights will come on and remain on until reset.

TYPE 99 TONE DECODERS

Type 99 Tone equipment provides individual or group call capability using either two or four Versatone networks (Versatone networks determine the tone frequencies). A CALL light normally off, will flash on and off when a properly tone coded message is received. Momentarily pressing the CALL pushbutton switch, provides the manual reset function. When held in it enables the user to monitor the receiver channel(s). Automatic reset and manual monitoring functions may also be provided by a separate microphone or handset hookswitch.

Optionally, there may be two additional pushbutton switches to select the type of external alarm desired - horn or light. Both switches are back-lighted and become brighter when selected.

When the HORN pushbutton is selected and a properly tone coded message is received, the horn will sound for approximately one-second; if the LITE pushbutton is selected the lights will turn on and remain on until reset.

MULTI-FREQUENCY CHANNEL GUARD ENCODERS

Channel Guard is a continuous tone-controlled squelch system that provides communications control by enabling the user to monitor or receive only the tone coded messages intended for him.

One of two Channel Guard encoders may be used to provide two-tone or up to eight-tone capability.

Each Channel Guard encoder consists of a program board mounted on top of the channel selector board. The program board may be programmed for any standard Channel Guard tone frequency in accordance with EIA standard RS-220. It may also be reprogrammed in the field as required.

The channel selector board contains a Channel Guard control and up to eight push-button switches to select one of the programmed Channel Guard tones for transmission.

When the CG pushbutton switch is pressed, power is applied to the component board and the CG light is at maximum brightness. The tone selector pushbuttons are backlighted at a somewhat lower level to indicate the unit is operable.

When a tone selector pushbutton switch (A-H) is pressed the selected pushbutton will light at maximum brightness to indicate the tone selected for transmission. The tone selector pushbuttons are mechanically interlocked so that only one switch may be operated at a time.

AUXILIARY SWITCH BOARD

The Auxiliary Switch option consists of a component board equipped with five pushbutton switches, an interconnecting cable harness, 20-feet of 15-conductor cable and a sheet of peal-off labels.

The five pushbutton switches, two momentary and three push-push, are all backlighted and increase to maximum brightness when depressed. This arrangement of switches allows the user to select and control external devices.

UNIVERSAL TONE CONNECTOR OPTION 9409

A nine pin jack (J750) is mounted on the rear cover to provide interface connections to external tone equipment. J750 interconnects with J910 on the backplane board through a small cable harness.

DC CONVERTER MODIFICATIONS (MASTR II ONLY)

In radios equipped with the DC converter, the POWER-ON switch is modified so that the input voltage is applied directly

to the DC converter. Instructions for the modification are shown on the control unit Schematic Diagram.

12-VOLT IGNITION SWITCH CONNECTIONS

In 12-Volt vehicle systems, the control unit may be connected for two different modes of operation, depending on the way the ignition switch cables are connected in the vehicle system (See Figures 2 and 3). The black cable provides the system ground connection. The yellow fused lead provides the receiver hot connections and the transmitter PTT hot connection. The two types of operation are:

1. Ignition Switch Control - For ignition switch control, the yellow fused lead connects to the ACCESSORY or ON terminal of the ignition switch. The transmitter and receiver will operate only when the ignition switch is in the ACCESSORY or ON position. Turning the ignition switch OFF removes all power to the radio.

2. Ignition Switch Bypass - For ignition switch bypass, the yellow fused lead connects to the "hot" side of the ignition switch or the vehicle fuse block assembly. Both the transmitter and receiver operate independently of the ignition switch and are turned on and off only by the POWER-ON switch on the control unit.

RE-INSTALLATION

±12-Volt Systems (MASTR II only)

If the radio is moved to a different vehicle, always check the battery polarity and voltage of the new system before using the radio.

If the radio is moved to a vehicle with different battery polarity, it will be necessary to change the ignition switch leads to the vehicle system plug. Use the extraction tool as shown in Figure 4, and change the leads as required.

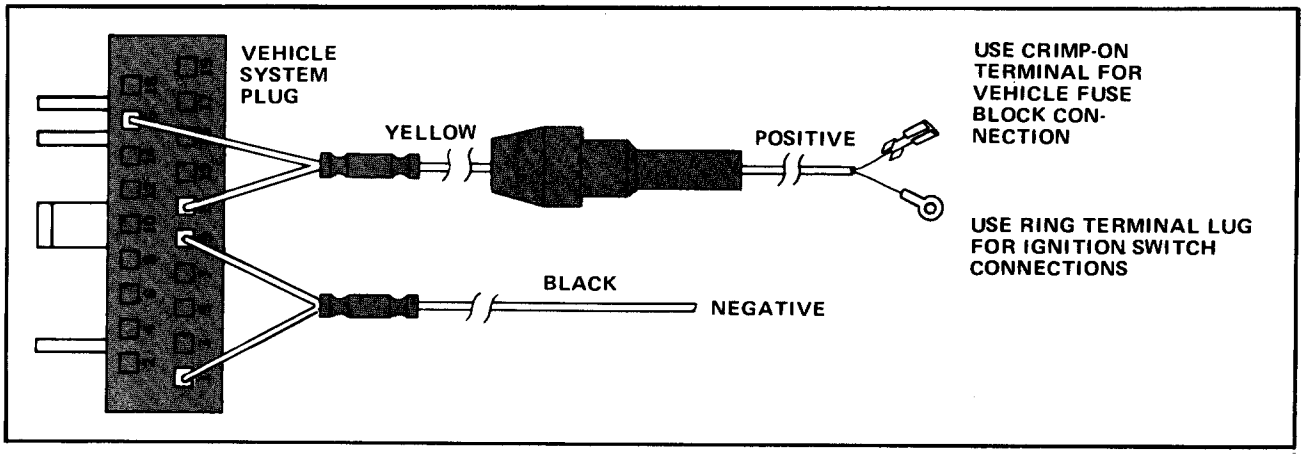


Figure 2 - 12-Volt, Negative Ground Connections

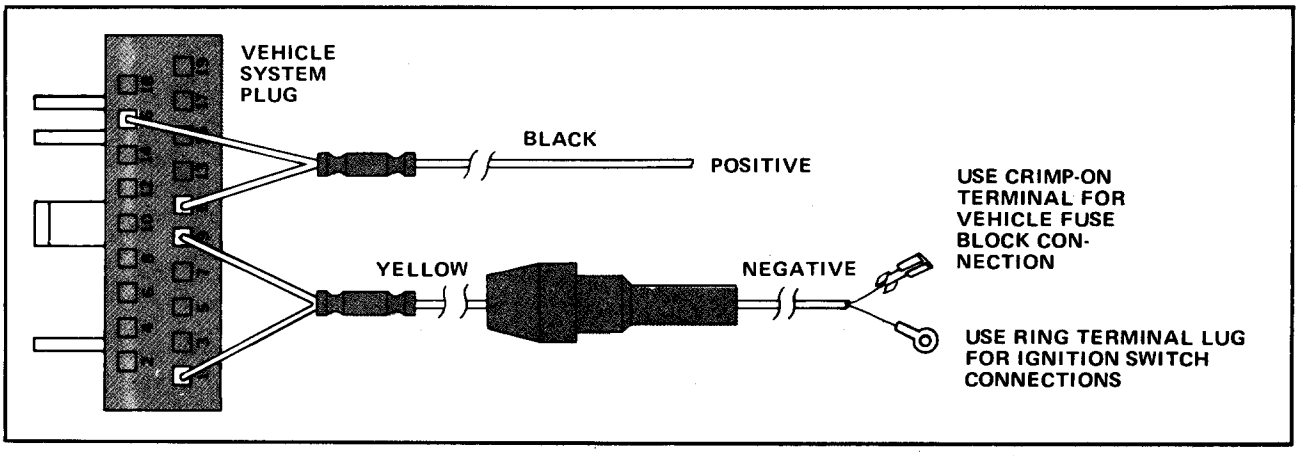


Figure 3 - 12-Volt, Positive Ground Connections

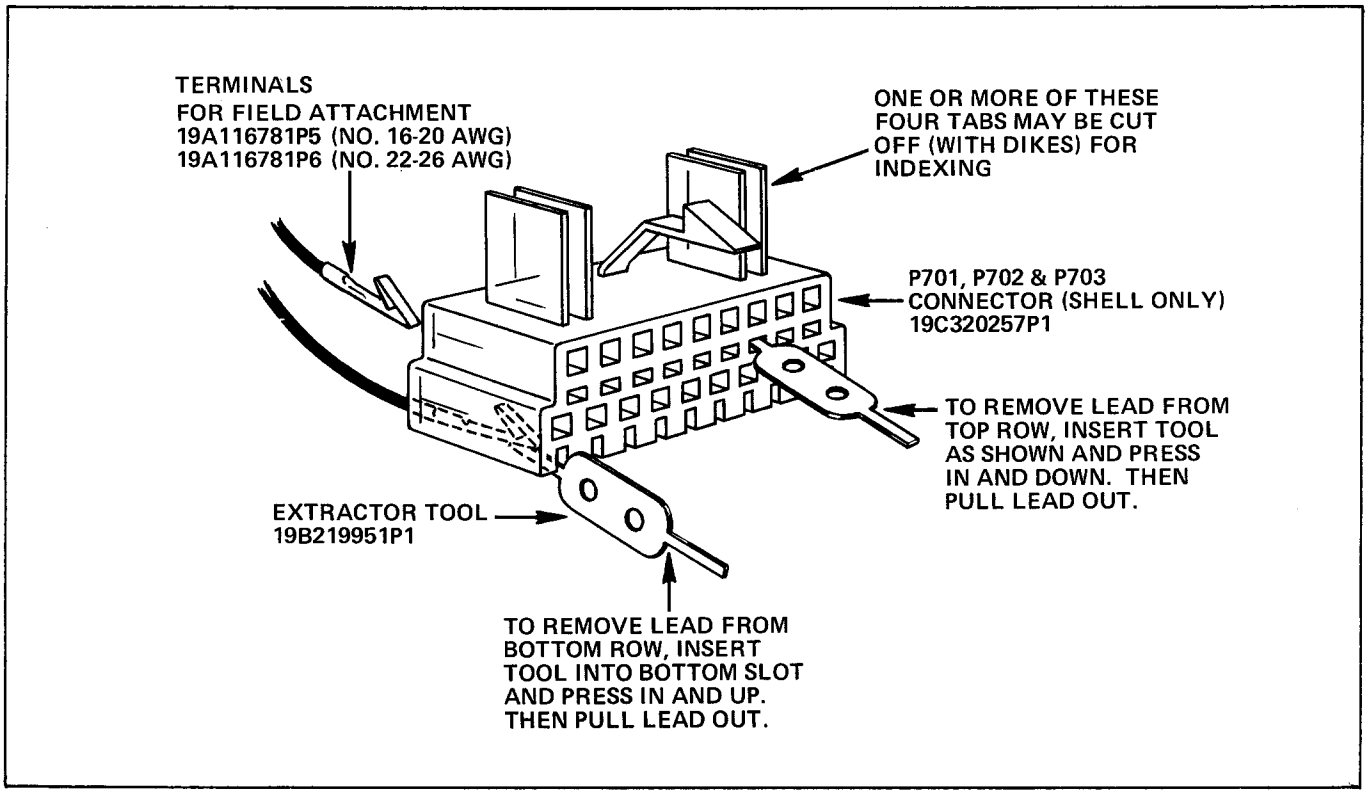


Figure 4 - Using Extraction Tool

DC CONVERTER CONNECTIONS (MASTR II ONLY)

For combinations equipped with the DC converter, a single red fused lead is used. The fused lead always connects to battery plus in either positive or negative ground systems.

CAUTION

When using the DC Converter, do not connect battery ground to control unit A-. To do so may cause failure of the current limiting circuit in the converter.

MAINTENANCE

DISASSEMBLY

To disassemble the control unit, remove the four allen head screws (7/64") from the corners of the front panel and remove front panel.

REMOVAL AND REPLACEMENT OF OPTION MODULES

To remove an option module (center and upper decks), grasp the outer corners of the printed wire board and pull firmly until loose. Slide module out of guide slots. Be careful not to grasp any components or switches when removing module.

NOTE

Each module is notched on the outer right edge. In some instances where the module is seated very tightly, it may be necessary to insert a flat blade screw driver in the notch and, using the side of the control unit as a fulcrum, pry the module loose. It will now slide out easily.

To replace an option module, carefully insert module in appropriate guides slots and, with thumbs positioned on top outer edge of the printed wire board, press firmly until module seats. Be careful not to apply pressure to any components or switches.

REMOVAL AND REPLACEMENT OF CONTROL MODULE

To remove the control module (lower deck), insert a flat blade screw driver in the notch located on the outer right edge of module and, using the side of the control unit housing as a fulcrum, pry the control module loose. Considerable force may be required since there are three 21-pin connectors making contact with the backplane board.

To replace the control module, carefully insert module in guide slots and make sure connectors mate properly. Hold a dull instrument (such as a flat blade screw

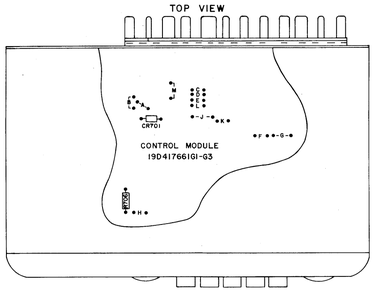
driver) on the edge of the control module directly below the volume and then the squelch control and using your other hand push the module into place. In some instances it may be necessary to drive or tap the module squarely into place.

NOTE

There are two rows of contacts to be engaged. When the module is seated properly, the connectors on the control module will be flush with the backplane board.

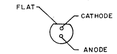
OUTLINE DIAGRAM

C-900 SERIES
PUSHBUTTON CONTROL UNIT



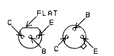
NOTES:
1. WHEN THE UNIVERSAL TONE CONNECTOR IS USED, THE JUMPER "C" (H79-H80) AND JUMPER "H" (H70-H71) ARE REMOVED.
2. WHEN THE STANDARD HANDSET & HOOK-SWITCH IS USED, THE JUMPER "C" (H79-H80), JUMPER "A" (H77-H78) AND JUMPER "H" (H70-H71) ARE REMOVED.
3. LOCKOUT RIVETS MAY BE USED TO LOCK OUT UNUSED CHANNELS. WHEN PLACING THESE CHANNELS IN SERVICE, UNSOLDER AND REMOVE THE LOCK OUT RIVET.

WIRE CONNECTION CHART			
LETTER	FROM	TO	REMARKS
	H7	H10	GROUP 1 ONLY
A	H77	H78	1, 2&3
B	H68	H69	1, 2&3
C	H79	H80	1, 2&3
D	H66	H67	1, 2&3
E	H64	H65	1, 2&3
F	H60	H61	1, 2&3
G	H58	H59	1, 2&3
H	H70	H71	1, 2&3
J	H62	H63	1, 2&3
K	H72	H73	1, 2&3
L	H74	H75	1, 2&3
M	H91	H92	1, 2&3
	H40	H41	2&3
	H42	H43	2&3
	H44	H45	2&3
	H46	H47	3 ONLY
	H48	H49	3 ONLY
	H50	H51	3 ONLY
	H52	H53	3 ONLY
	H54	H55	3 ONLY
	H56	H57	GROUP 3 ONLY
	H7	H136	GROUPS 2 & 3
	H46	H55	GROUP 2 ONLY



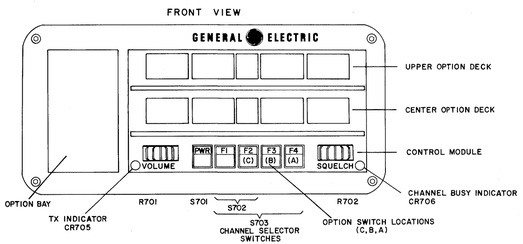
LEAD IDENTIFICATION FOR CR704, CR705, CR706, CR709, CR710, CR711, CR712

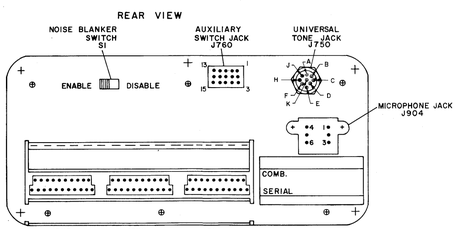
LEAD IDENTIFICATION FOR Q701



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

(19D424221, Rev. 0)

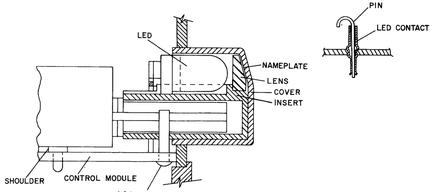


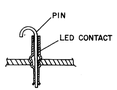


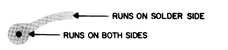
OPTION SWITCH CONNECTION CHART				
OPTION	SWITCH POSITION	WIRE	FROM	TO
CG MONITOR (MON) S706 OPTION 9404	A	SF22-BL SF22-BK	H52 H54 H56	J733 J729 H57
	B	SF22-BL SF22-BK	H49 H50	J733 J729
	C	SF22-BL SF22-BK	H45 H46	J733 J729
DUAL CONTROL (CONT) S704 OPTION 9412	A	SF22-R SF22-BL SF22-BK	J735 H52 H54	J737 J736 H37
INTERNAL/ EXTERNAL SPKR (EXT) S705 OPTION 9413	A	SF22-R SF22-O SF22-BL DA INSTALL R710 REMOVE DA JUMPER "B"	H52 H54 H51 H56 H81 H68	J714 J716 J715 H57 H82 H69
	B	SF22-R SF22-O SF22-BL INSTALL R710 REMOVE DA JUMPER "B"	H49 H50 H47 H81 H68	J714 J716 J715 H82 H69
	C	SF22-R SF22-O SF22-BL INSTALL R710 REMOVE DA JUMPER "B"	H45 H46 H43 H81 H68	J714 J716 J715 H82 H69

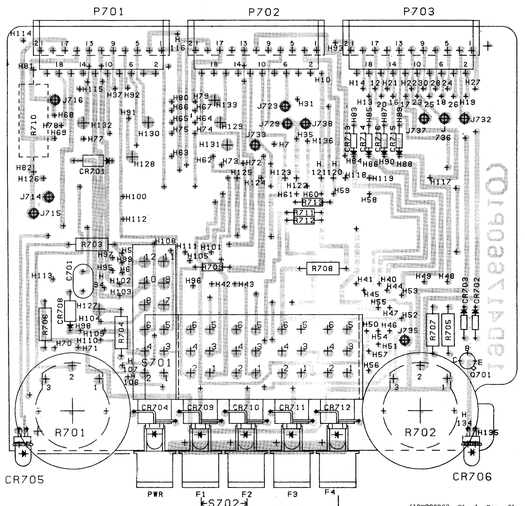
(19D424231, Rev. 0)

OPTION SWITCH INSTALLATION
1. UNSOLDER & DISCARD PIN FROM LED CONTACT. (IDENTIFIED BELOW) DO NOT UNSOLDER OR DAMAGE LED CONTACT. HOLE THRU LED CONTACT MUST REMAIN OPEN.
2. INSTALL & SOLDER SWITCH. SHOULDER OF SWITCH TERMINAL MUST BE TIGHT AGAINST BOARD. .010 MAX GAP AFTER SOLDER. SEE SWITCH CONNECTION CHART FOR SWITCH LOCATION.
3. INSTALL & SOLDER LED.
4. MAKE CONNECTIONS & SOLDER PER CONNECTION CHART. INSULATE DA WIRE WITH INSULATION SLEEVING 4403593P5 SUPPLIED WITH "MON" AND "EXT" SWITCH IF REQUIRED TO PREVENT SHORTS.

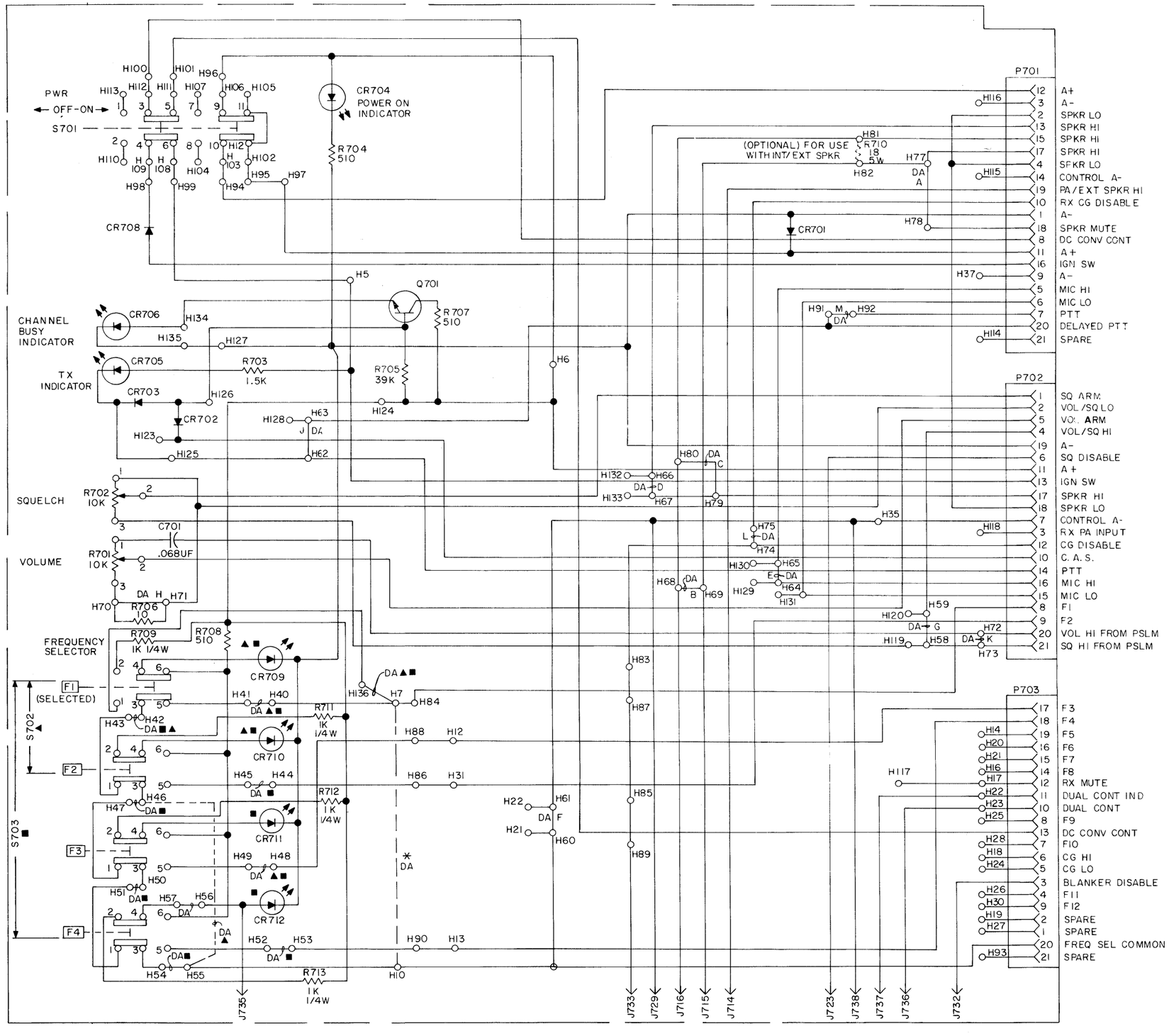








(19B226368, Sh. 1, Rev. 0)
(19B226368, Sh. 2, Rev. 0)



(19D417740, Rev. 3)

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.

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.

THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
19D417661	

NOTES:

1. * PRESENT IN GROUP 1 ONLY (SINGLE FREQ)
2. ▲ PRESENT IN GROUP 2 ONLY (TWO FREQ)
3. ■ PRESENT IN GROUP 3 ONLY (FOUR FREQ)
4. LETTERED DA JUMPERS ON PW BD ARE TO BE REMOVED WHEN SPECIFIED ON OPTIONS.
5. DC CONVERTER MODIFICATIONS. WHEN USED THE FOLLOWING MODIFICATIONS ARE INCORPORATED:

CUT OR REMOVE WIRE RUN BETWEEN	DA WIRE CONNECTED BETWEEN
H95 & H102	H5 & H6
R703 & H108	H103 & H106
	H108 & H111

SCHEMATIC DIAGRAM

C-900 SERIES PUSHBUTTON CONTROL UNIT

Issue 1

PARTS LIST

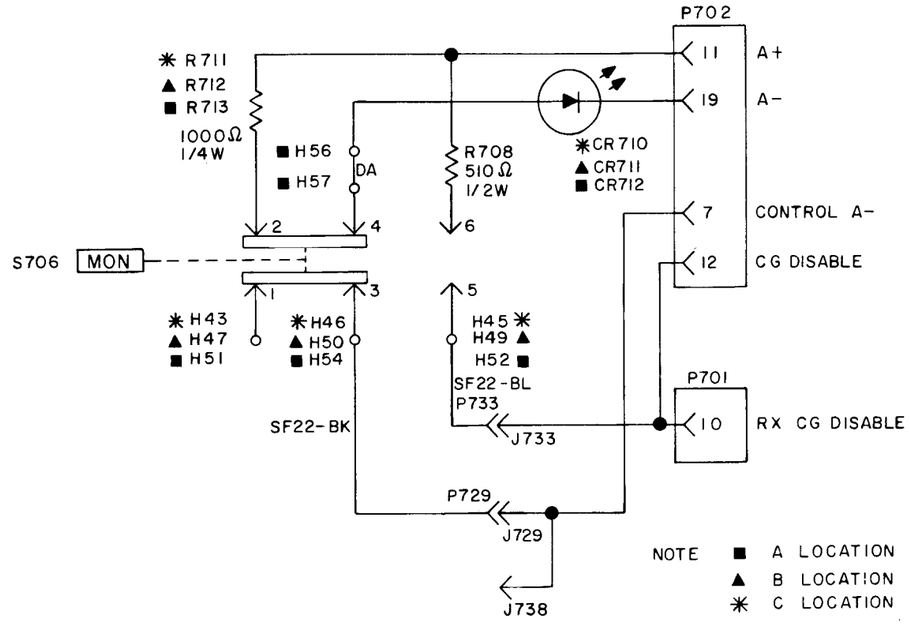
LBI-30225

C-800/C-900 SERIES CONTROL UNIT (PUSHBUTTON)
AND
ACCESSORIES

SYMBOL	GE PART NO.	DESCRIPTION
		CONTROL MODULE 19D417661G1 1 FREQ 19D417661G2 2 FREQ 19D417661G3 4 FREQ
		- - - - - - - - - - - CAPACITORS - - - - - - - - - -
C701	19A116080P106	Polyester: 0.068 µf ±10%, 50 VDCW.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR701	4037822P1	Silicon.
CR702 and CR703	19A115250P1	Silicon.
CR704	19A134146P14	Diode, optoelectronic: yellow.
CR705	19A134146P8	Diode, optoelectronic: red.
CR706	19A134146P15	Diode, optoelectronic: yellow.
CR708	4037822P1	Silicon.
CR709 thru CR712	19A134146P14	Diode, optoelectronic: yellow.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - - -
J714 thru J716	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J723	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J729	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J732 and J733	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J735 thru J738	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
		- - - - - - - - - - - - PLUGS - - - - - - - - - - - -
P701 thru P703	19C321106P1	Connector, printed wiring: 20 terminals rated at 5 amps per terminal.
		- - - - - - - - - - - TRANSISTORS - - - - - - - - -
Q701	19A115910P1	Silicon, NPN; sim to Type 2N3904.
		- - - - - - - - - - - RESISTORS - - - - - - - - -
R701	19B209535P2	Variable, carbon film: 10,000 ohms ±20%, 1/4 w; sim to Mallory Style LCN-TM4.
R702	19B209535P1	Variable, carbon film: 10,000 ohms ±20%, 0.5 w; sim to Mallory Style LCN-TM4.
R703	3R77P152K	Composition: 1500 ohms ±10%, 1/2 w.
R704	3R77P511J	Composition: 510 ohms ±5%, 1/2 w.
R705	3R77P393K	Composition: 39,000 ohms ±10%, 1/2 w.
R706	3R77P100K	Composition: 10 ohms ±10%, 1/2 w.
R707 and R708	3R77P511J	Composition: 510 ohms ±5%, 1/2 w.
R709	3R152P102J	Composition: 1000 ohms ±5%, 1/4 w.
R711 thru R713	3R152P102J	Composition: 1000 ohms ±5%, 1/4 w.
		- - - - - - - - - - - SWITCHES - - - - - - - - - -
S701	19B209563P7	Push: 4PDT, momentary, 1.1 amp at 14 VDC.
S702	19B209563P4	Push: 2PDT, 2 stations, 1.1 amp at 14 VDC.
S703	19B209563P5	Push: 2PDT, 4 stations, 1.1 amp at 14 VDC.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	19C321966G1	Housing (C-800 SERIES).
	19B227016G1	Housing (C-900 SERIES).
	19B227239G1	Rear Cover (C-800 SERIES).
	19C321021G1	Rear Cover (C-900 SERIES).
	19B227248G1	Front Panel (C-800 SERIES).
	19C321085G1	Front Panel (C-900 SERIES WITHOUT FIXED SQUELCH).
	19C321085G3	Front Panel (C-900 SERIES WITH FIXED SQUELCH).
	19A134112P1	Cap screw. (Secures Front Panel to Housing-Part of front panel).
	19B226571G1	Knob. (Used with R701 and R702).
	19C321004P1	Lens. (S701-PWR).
	NP276459P19	Nameplate. (PWR).
	19A130261G1	Contact. (Located between P701, P702, P703 and Control Module Board).
	NP276459P11	Nameplate (F1).
	NP276459P12	Nameplate (F2).
	NP276459P13	Nameplate (F3).
	NP276459P14	Nameplate (F4).
		ASSOCIATED ASSEMBLIES
		POWER/CONTROL CABLE MASTR II INTERFACE 30 CONDUCTOR 19D423424G8
		- - - - - - - - - - - - PLUGS - - - - - - - - - - -
P702		Connector. Includes:
	19B226516P1	Shell.
	19A116781P5	Contact, electrical: wire size No. 16-20 AWG; sim to Molex 08-50-0106.
	19A116781P6	Contact, electrical: wire size No. 22-26 AWG; sim to Molex 08-50-0108.
P703		Connector. Includes:
	19B226516P2	Shell.
	19A116781P6	Contact, electrical: wire size No. 22-26 AWG; sim to Molex 08-50-0108.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - -
	7139880P14	Cable: 27 conductor, 20 feet.
	7142878G1	Clip loop (strain relief).
	19A115799P1	Terminal, solderless: sim to AMP 33460. (Quantity 2).
P901		Connector. Includes:
	19C307162P1	Shell.
	19A134240P1	Contact, electrical: wire size 24-20 AWG; sim to AMP 350657-1. (Quantity 34).
	19A134240P2	Contact, electrical: wire size 20-16 AWG; sim to AMP 350656-1. (Quantity 4).
		POWER/CONTROL CABLE MASTR II INTERFACE 38 CONDUCTOR 19D423424G14
		- - - - - - - - - - - - PLUGS - - - - - - - - - - -
P702		Connector. Includes:
	19B226516P1	Shell.
	19A116781P5	Contact, electrical: wire size No. 16-20 AWG; sim to Molex 08-50-0106.
	19A116781P6	Contact, electrical: wire size No. 22-26 AWG; sim to Molex 08-50-0108.
P703		Connector. Includes:
	19B226516P1	Shell.
	19A116781P5	Contact, electrical: wire size No. 16-20 AWG; sim to Molex 08-50-0106.
	19A116781P6	Contact, electrical: wire size No. 22-26 AWG; sim to Molex 08-50-0108.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - -
	7139880P16	Cable: 34 conductor, 20 feet.
	7142878G1	Clip loop (strain relief).
	19A115799P1	Terminal, solderless: sim to AMP 33460. (Quantity 2).
		POWER/CONTROL CABLE NEGATIVE GRD EXECUTIVE II INTERFACE 19C321890G1
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P1		Connector. Includes:
	19C311409P1	Shell.
	19D413039P1	Connector cover. (Nut side).
	19D413039P2	Connector cover. (Screw side).
P702		Connector. Includes:
	19B226516P1	Shell.
	19A116781P5	Contact, electrical: wire range No. 16-20 AWG; sim to Molex 08-50-0106.
	19A116781P6	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108.
P703		Connector. Includes:
	19B226516P2	Shell.
	19A116781P5	Contact, electrical: wire range No. 16-20 AWG; sim to Molex 08-50-0106.
	19A116781P6	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108.
	7142878G1	Clip loop. (strain relief).
	19A115799P7	Solderless terminal: wire size No. 12-10 AWG; sim to AMP 35772.
	19B209260P27	Terminal, solderless: wire range No. 12-10; sim to AMP 31828- LOOSE PC.
		12-VOLT 2-WIRE IGNITION SWITCH CABLE 19B219537G4
		- - - - - - - - - - PLUGS - - - - - - - - - -
P701		Connector. Includes:
	19B226516P3	Shell.
	19A129504G1	Y Cable. (BLACK).
		FUSED LEAD ASSEMBLY 19A129480G3 (Used with 19B219537G4)
	1R16P8	Fuse, quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussmann MTH-5.
	19A115776P2	Fuseholder, phen: sim to Bussmann Type HHJ.
	19A115776P3	Contact, electrical: sim to Littelfuse 904-83. (Located inside fuseholder).
	7491823P7	Ring terminal, solderless: wire size No. 16-14 AWG.
	7491823P8	Ring terminal, solderless: wire size No. 16-14 AWG.
	4029484P2	Terminal, quick connect: wire size 14-18 AWG, fits 1/4 x .032 tab; sim to AMP 41274.
	19A115579P1	Insulated splice.
	19A116781P5	Contact, electrical: wire size No. 16-20 AWG; sim to Molex 08-50-0106.
		DC CONVERTER IGNITION SWITCH CABLE 19B219537G3
		- - - - - - - - - - PLUGS - - - - - - - - - -
P701		Connector. Includes:
	19B226516P3	Shell.
	19A130117G1	Jumper.
		FUSED LEAD ASSEMBLY 19A129480G1 (Used with 19B219537G3)
	1R16P3	Fuse, quick blowing: 1 amp 250 v; sim to Littelfuse 312001 or Bussmann AGC-1.
	19A115776P2	Fuseholder, phen: sim to Bussmann Type HHJ.
	19A115776P3	Contact, electrical: sim to Littelfuse 904-83. (Located inside fuseholder).
	7491823P7	Ring terminal, solderless: wire size No. 16-14 AWG.
	7491823P8	Ring terminal, solderless: wire size No. 16-14 AWG.
	4029484P2	Terminal, quick connect: wire size 14-18 AWG; sim to AMP 41274.
	19A115579P1	Insulated splice.
	19A116781P5	Contact, electrical: wire range No. 16-20 AWG; sim to Molex 08-50-0106.
		OPTIONAL 12-VOLT 3-WIRE IGNITION SWITCH CABLE 19B219537G1
		- - - - - - - - - - PLUGS - - - - - - - - - -
P701		Connector. Includes:
	19B226516P3	Shell.
	19A129504G1	Y Cable. (BLACK).
		FUSED LEAD ASSEMBLY 19A129480G1 1 AMP (RED) (Used with 19B219537G1)
	1R16P3	Fuse, quick blowing: 1 amp 250 v; sim to Littelfuse 312001 or Bussmann AGC-1.
	19A115776P2	Fuseholder, phen: sim to Bussmann Type HHJ.
	19A115776P3	Contact, electrical: sim to Littelfuse 904-83. (Located inside fuseholder).
	7491823P7	Ring terminal, solderless: wire size No. 16-14 AWG.
	7491823P8	Ring terminal, solderless: wire size No. 16-14 AWG.
	4029484P2	Terminal, quick connect: wire size 14-18 AWG; sim to AMP 41274.
	19A115579P1	Insulated splice.
	19A116781P5	Contact, electrical: wire size No. 16-20 AWG; sim to Molex 08-50-0106.
		FUSED LEAD ASSEMBLY 19A129480G2 5 AMP (YELLOW) (Used with 19B219537G1)
	1R16P8	Fuse, quick blowing: 5 amp 250 v; sim to Littelfuse 312005 or Bussmann MTH-5.
	19A115776P2	Fuseholder, phen: sim to Bussmann Type HHJ.
	19A115776P3	Contact, electrical: sim to Littelfuse 904-83. (Located inside fuseholder).
	7491823P7	Ring terminal, solderless: wire size No. 16-14 AWG.
	7491823P8	Ring terminal, solderless: wire size No. 16-14 AWG.
	4029484P2	Terminal, quick connect: wire size 14-18 AWG; sim to AMP 41274.
	19A115579P1	Insulated splice.
	19A116781P5	Contact, electrical: wire size No. 16-20 AWG; sim to Molex 08-50-0106.
		BATTERY CABLES
	7147499G7	Battery cable. (BLACK), 3 feet.
	7147499G8	Battery cable. (RED), 3 feet.
		NOISE BLANKER DISABLE OPTION 19B227179G1
	19B209261P18	Switch, slide: SPST, 1 pole, 2 positions, .5 amp VDC or 3 amp VAC at 125 v; sim to Switchcraft 46202LH.
	4029840P2	Contact, electrical: sim to Amp 42827-2.
	4032480P1	Nut, sheet spring: sim to Vector Electronic Co. No. 440.
		FIXED SQUELCH OPTION 19A130896G1
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P1723	4033348P1	Contact, electrical: sim to Bead Chain M125-34.
P1729	4033348P1	Contact, electrical: sim to Bead Chain M125-34.
		- - - - - - - - - - - RESISTORS - - - - - - - - - -
R702	3R77P103J	Composition: 10,000 ohms ±5%, 1/2 w.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1701	19A116906P2	Rotary: 1 section, 1 pole, 2 positions, non-shorting contacts, 2 amp at 28 VDC or 1 amp at 110 VRMS; sim to Oak Mfg. 5-11158-210.
		DUAL CONTROL OPTION 19B227037G5
	19B209563P3	Switch, pushbutton: 2PDT, 1 station, momentary action, 1.1 amp at 14 VDC.
	19B226334P1	Pushbutton.
	19C321004P1	Lens.
	19B226331P1	Insert.
	19A134146P14	Diode, optoelectronic: yellow.
	NP276459P22	Nameplate. (CONT).
		CHANNEL GUARD MONITOR OPTION 19B227037G4
	19B209563P2	Switch, pushbutton: 2PDT, 1 station, alternate action, 1.1 amp at 14 VDC.
	19B226334P1	Pushbutton.
	19C321004P1	Lens.
	19B226331P1	Insert.
	19A134146P14	Diode, optoelectronic: yellow.
	NP276459P21	Nameplate. (MON).
		INTERNAL/EXTERNAL SPEAKER OPTION 19B227037G6
	19B209563P2	Switch, pushbutton: 2PDT, 1 station, alternate action, 1.1 amp at 14 VDC.
	19B226334P1	Pushbutton.
	19C321004P1	Lens.
	19B226331P1	Insert.
	19A134146P14	Diode, optoelectronic: yellow.
	NP276459P28	Nameplate. (EXT).
		UNIVERSAL TONE CONNECTOR 19B227159G1
		- - - - - - - - JACKS AND RECEPTACLES - - - - - -
J750	7489183P5	Plug: 9 contacts rated at 7.5 amps max; sim to Winchester M9S-LRN.
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P910		Connector. Includes:
	19A116659P89	Connector, printed wiring: 10 contacts; sim to Molex 09-50-3101.
	19A116781P6	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108.
		25 - 50 MHz ANTENNA
	7491074P1	Antenna: includes stainless steel rod approx 96-1/2 inches long; ball tip; lockwasher; No. 10-32 hex socket set screw; sim to Antenna Specialist ASPA3BGE.
	7102930P3	Adapter, antenna: approx 2-5/16 inches long. (Used with GE Dwg 7491074P1).
	4KY9A1	Loading coil: 25-33 MHz; sim to Antenna Specialists ASPA87.
	19A121577G1	Antenna hook kit.
	7134724P1	Antenna hook.
	19C307172P1	Antenna Package: Includes base and ball assembly, adapter spring assembly, cable assembly, horseshoe plate, and rubber gasket.
		Base and ball assembly. Newtronics 5495.
		Adapter spring assembly. Newtronics 3327.
		Cable assembly. Newtronics 183-RAO.
		Horseshoe plate. Newtronics 3323-3.
		Rubber gasket. Newtronics 3320.
		132-512 MHz ANTENNA 19B209568P1
		Whip assembly. Decibel Products 068110-001.
		Whip nut assembly. Decibel Products 068047-001.
		Base nut assembly. 068048-001.
		"O" Ring (LARGE). 007059-122.
		Stud assembly. 068046-001.
		RG58/U Cable, 15 feet. 068115-001.
		12 VOLT FUSE ASSEMBLY 19B216021G4 (Fuses must be ordered separately)
		- - - - - - - - - - - FUSES - - - - - - - - - -
F1	1R11P4	Quick blowing: 15 amps, 250 v; sim to Bussmann NON15. (Used with low power transmitters, 16-38 w).
F3	1R11P7	Quick blowing: 30 amps, 250 v; sim to Bussmann NON30. (Used with high power transmitters, 66-128 w).
F4	1R11P5	Quick blowing: 20 amps, 250 v; sim to Bussmann NON20. (Used with medium power transmitters, 38-66 w).
		DASH MOUNTING KIT FOR CONTROL HEAD 19A130201G2
	19C321086P2	Mounting bracket. (Mates with dash).
	19C321089G2	Mounting racket. (Mates with C-900 control head).
	N130P1610C6	Tap screw: No. 10-16 x 5/8. (Secures mounting bracket to dash when extended length is not needed).
	N130P1624C6	Tap screw: No. 10-16 x 1-1/2. (Secures mounting bracket to dash when extended length is needed.
	N80P16005C6	Machine screw: No. 10-32 x 5/16. (Secures mounting bracket to control head).
	N403P19C6	Lockwasher: No. 10. (Secures mounting bracket to control head).
	19A115495P1	Machine screw: No. 1/4-20 x 5/8. (Secures the two mounting brackets together).
	N403P25C6	Lockwasher, external tooth: 1/4 inch. (Secures the two mounting brackets together).
		HUMP MOUNTING KIT FOR CONTROL HEAD 19A130201G2 19A130890G1
	19C321086P2	Mounting bracket. (Mates with hump racket).
	19C321089G2	Mounting bracket. (Mates with control head).
	N80P16005C6	Machine screw: No. 10-32 x 5/16. (Secures mounting bracket to control head).
	N403P19C6	Lockwasher: No. 10. (Secures mounting bracket to control head).
	19A115495P1	Machine screw: No. 1/4-20 x 5/8. (Secures 19C321086P2 bracket to 19C321089G2 bracket).
	N403P25C6	Lockwasher, external tooth: 1/4 inch. (Secures 19C321086P2 bracket to 19C321089G2 bracket).
		19A130890G1
	19B227124G1	Mounting bracket. (Mates with floor hump).
	N130P1610C6	Screw, thread forming: No. 10-16 x 5/8. (Secures mounting bracket to hump when extended length is not needed).
	N130P1624C6	Tap screw: No. 10-16 x 1-1/2. (Secures mounting bracket to hump when extended length is needed).
	19B209103P906	Tap screw, thread forming: No. 10-32 x 3/8. (Secures 19C321086P2 to hump bracket).

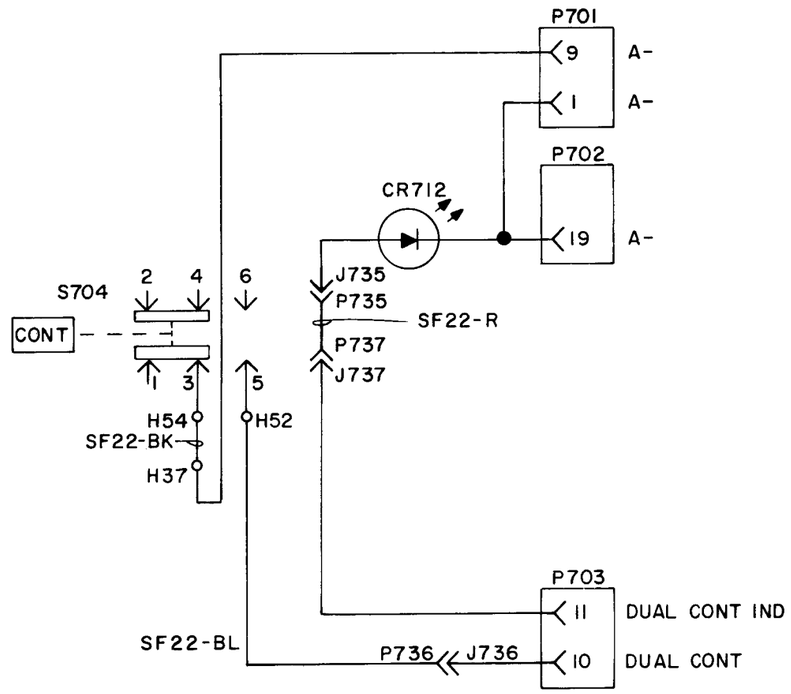
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

CHANNEL GUARD MONITOR OPTION



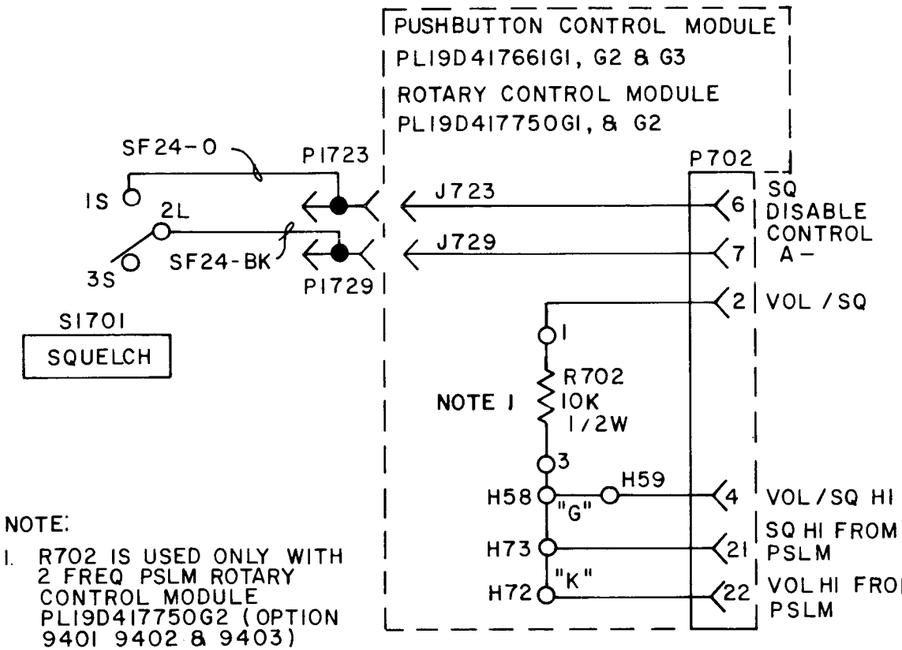
(19B227170, Rev. 1)

DUAL CONTROL OPTION



(19B227167, Rev. 1)

SQUELCH SWITCH



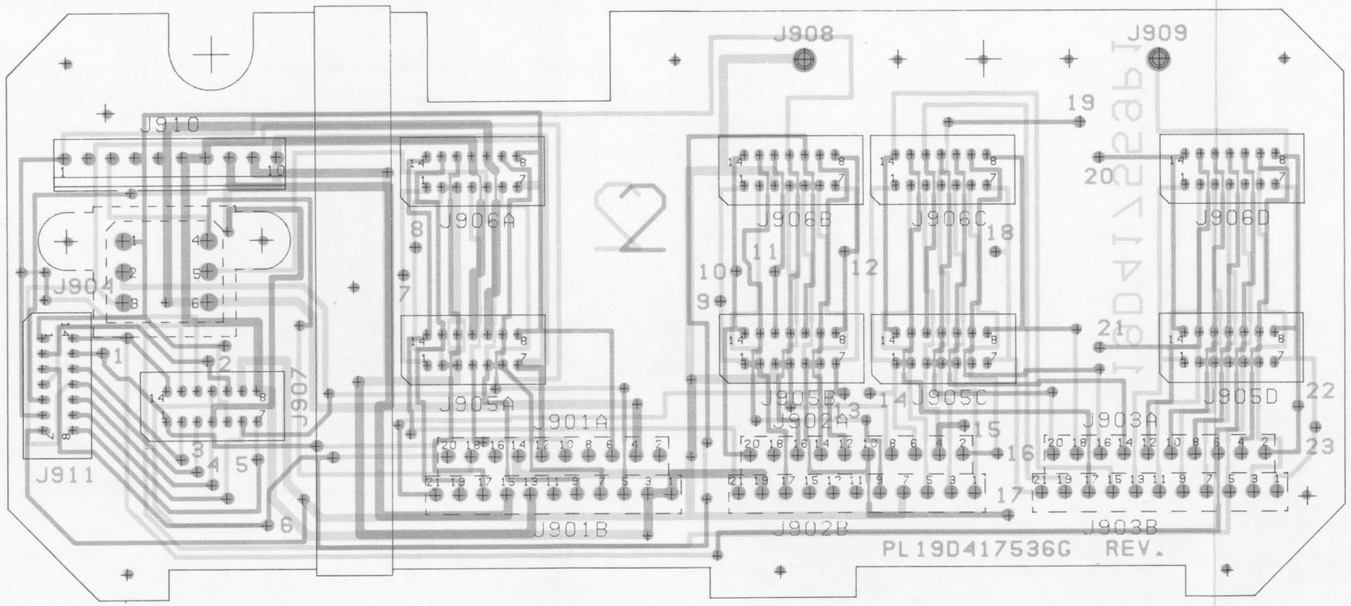
NOTE:

1. R702 IS USED ONLY WITH 2 FREQ PSLM ROTARY CONTROL MODULE PLI9D41775OG2 (OPTION 9401 9402 & 9403)

(19A130899, Rev. 1)

SCHEMATIC DIAGRAM

CHANNEL GUARD MONITOR, DUAL CONTROL AND FIXED SQUELCH OPTIONS

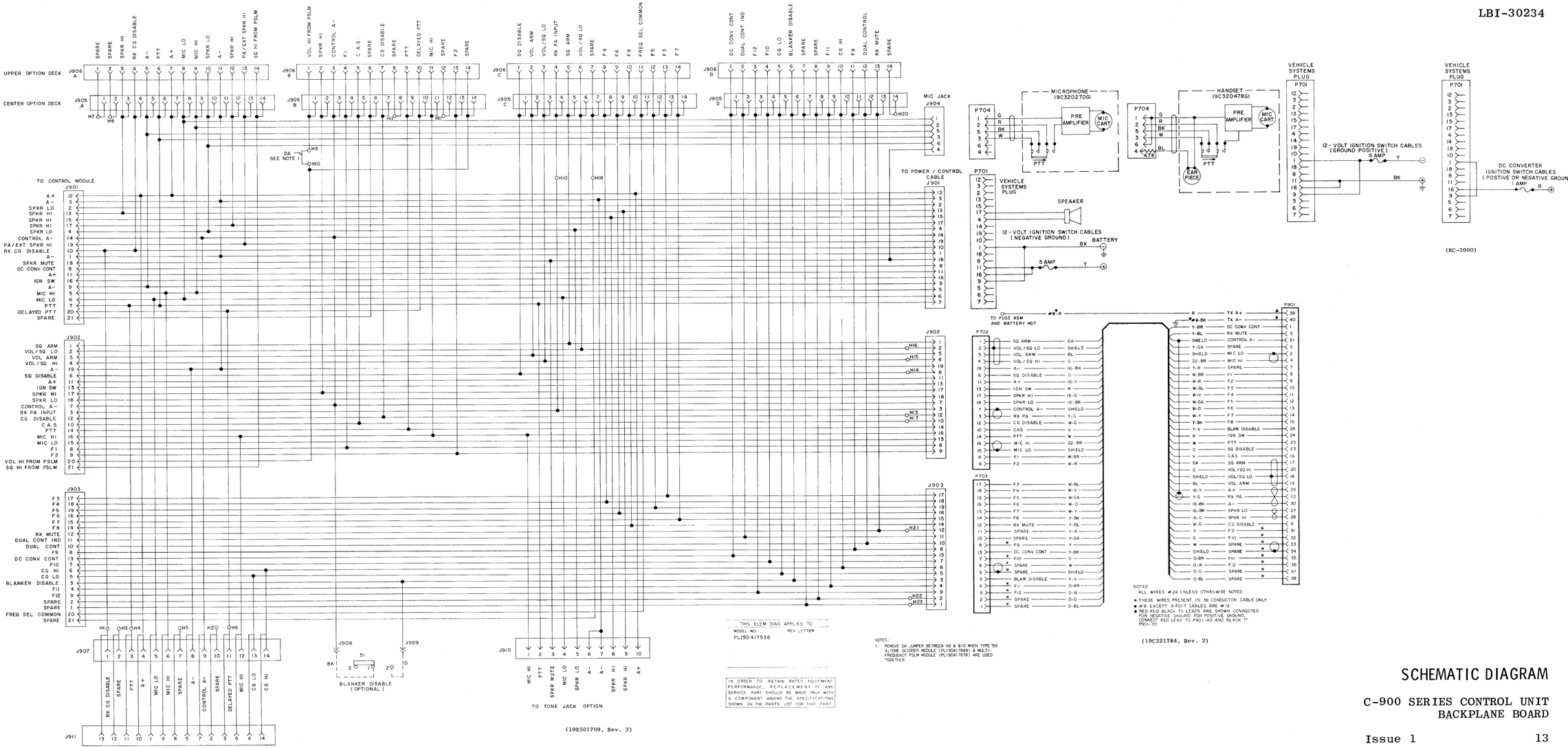


(19D424213, Rev. 0)
(19B226257, Sh. 1, Rev. 0)
(19B226257, Sh. 2, Rev. 0)

RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON COMPONENT SIDE

OUTLINE DIAGRAM

C-900 SERIES CONTROL UNIT
BACKPLANE BOARD



SCHEMATIC DIAGRAM

C-900 SERIES CONTROL UNIT BACKPLANE BOARD

PARTS LIST

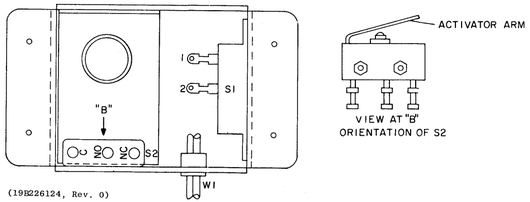
LBI-30220

C-900 SERIES BACKPLANE BOARD
19D417536G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J901A	19A116659P34	Connector, printed wiring: 10 contacts; sim to Molex 2402-10.
J901B	19A116659P35	Connector, printed wiring: 11 contacts; sim to Molex 2402-11.
J902A	19A116659P34	Connector, printed wiring: 10 contacts; sim to Molex 2402-10.
J902B	19A116659P35	Connector, printed wiring: 11 contacts; sim to Molex 2402-11.
J903A	19A116659P34	Connector, printed wiring: 10 contacts; sim to Molex 2402-10.
J903B	19A116659P35	Connector, printed wiring: 11 contacts; sim to Molex 2402-11.
J904	19B219627G1	Connector: 6 contacts.
J905A	19A116446P5	Connector, printed wiring: 14 contacts.
J905B	19A116446P5	Connector, printed wiring: 14 contacts.
J905C	19A116446P5	Connector, printed wiring: 14 contacts.
J905D	19A116446P5	Connector, printed wiring: 14 contacts.
J906A	19A116446P5	Connector, printed wiring: 14 contacts.
J906B	19A116446P5	Connector, printed wiring: 14 contacts.
J906C	19A116446P5	Connector, printed wiring: 14 contacts.
J906D	19A116446P5	Connector, printed wiring: 14 contacts.
J907	19A116446P5	Connector, printed wiring: 14 contacts.
J908 and J909	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J910	19A116659P54	Connector, printed wiring: 10 contacts; sim to Molex 09-65-1101.
J911	19A116446P5	Connector, printed wiring: 14 contacts.
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	N80P13004C6	Machine screw: No. 6-32 x 1/4. (Secures Backplane Board).

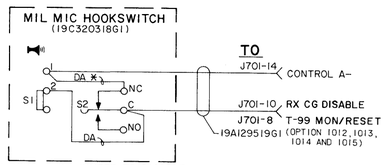
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

OUTLINE DIAGRAM



(19B226124, Rev. 0)

SCHEMATIC DIAGRAM



* REMOVE DA JUMPER TO DISABLE AUTOMATIC CHANNEL GUARD MONITOR
S2 - SHOWN OFF HOOK
S1 - SHOWN OFF MONITOR

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

(19A129660, Rev. 3)

PARTS LIST

LBI-4483A

MICROPHONE HOOKSWITCH
19C320318G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	19B219698G1	Slide: SPST, 3 amp at 125 VAC, 2.2 amp at 14 VAC; sim to Switchcraft 46202LH. (S1 includes switch and housing).
S2	19A116676P1	Sensitive: SPDT, 5 amp at 24 VDC or 5 amp at 250 VRMS; sim to Microswitch 11SM1-T2.
		- - - - - - - - - - CABLES - - - - - - - - - -
W1	19A129414G1	2 conductor cable: approx 5 feet long, includes (2) 19A116781P3 contacts.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19A116768P6	Strain relief: sim to Heyco SR-3P-4. (Used with W1).
	N193P1410C	Tap screw, phillips: No. 8 x 5/8.
	N84P5008C6	Screw, phillips: No. 2-56 x 1/2. (Secures S2).
	N210P5C6	Hexnut: No. 2-56. (Secures S2).
	N404P8C6	Lockwasher, internal tooth: No. 2. (Secures S2).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

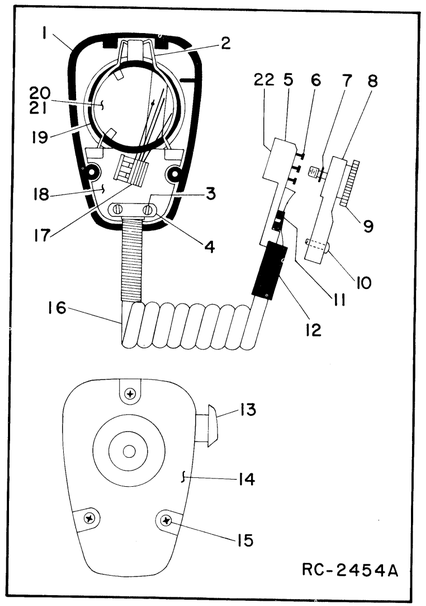
PARTS LIST

LBI-4481A

TRANSISTORIZED DYNAMIC MICROPHONE
19C320270G1
(SEE RC-2454)

SYMBOL	GE PART NO.	DESCRIPTION
1		Front Case Assembly. RP127. (includes items 14, 15).
2		Retaining spring. (Part of item 18).
3		Tap screw, phillips. (Part of item 16).
4		Retaining bar. (Part of item 16).
5	19D416766P1	Connector base.
6	19A129435P1	Contact.
7	7109043P1	Retaining ring.
8	19D416767P1	Connector cover.
9	19B219723G1	Screw.
10	N136AP905C	Tap screw, phillips: No. 4 x 5/16.
11	19A116937P1	Cable clip.
12	19B219749P1	Strain relief.
13		Switch button kit. RP126.
14		Rear Case Assembly. (Part of item 1).
15		Tap screw, phillips. (Part of item 1).
16	19C321016G1	Cable assembly: Includes items 3-12 and cable RP129.
17		Switch Assembly. RP128.
18		Grille Assembly. RP130. (includes items 2, 19, 21).
19		"O" Ring. (Part of item 18).
20		Transistorized Cartridge. RP117.
21		Washer. (Located under cartridge- part of item 18).
22	19C321016G3	Connector assembly: Includes items 5-12.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

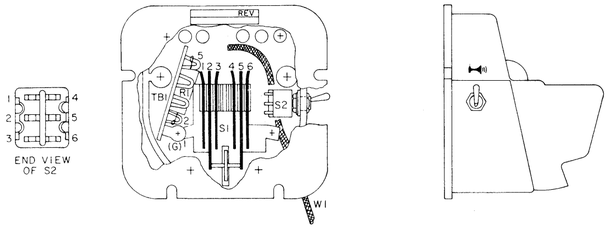


SERVICE SHEET

MICROPHONE & HOOKSWITCH

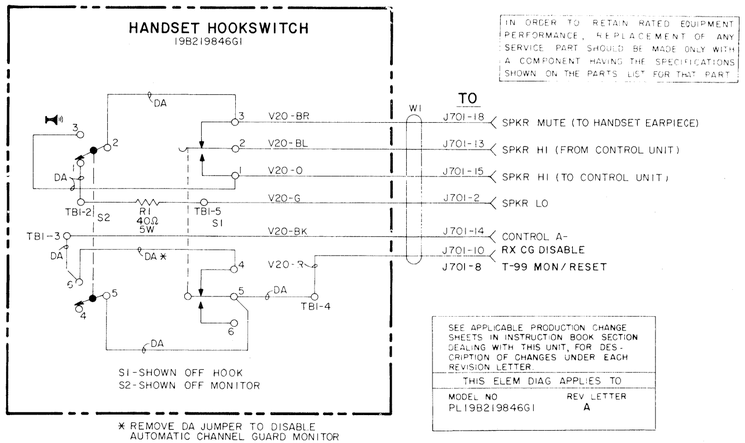
Issue 1

OUTLINE DIAGRAM



(19B226131, Rev. 0)

SCHEMATIC DIAGRAM



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.

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
PL19B219846G1	A

(19B219842, Rev. 4)

SERVICE SHEET

HANDSET & HOOKSWITCH

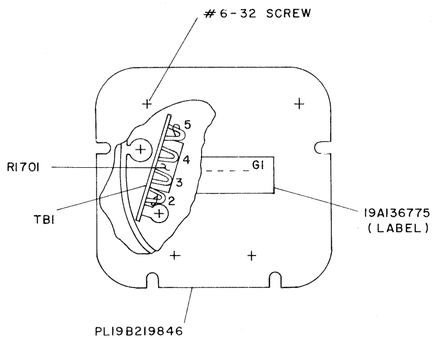
16 Issue 1

PARTS LIST

LBI-4484A

HANDSET HOOKSWITCH
19B219846G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	5493035P11	Wirewound; 40 ohms ±5%, 5 w; sim to Hamilton Hall Type HR.
		Earlier than REV A:
	5493035P12	Wirewound; 60 ohms ±5%, 5 w; sim to Hamilton Hall Type HR.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	19A129585P1	Holder and switch: Thermoplastic case, contact rating 1 amp at 125 v.
S2	19A116877P6	Toggle: DPDT, 1 ma at 6 VDC; sim to C and K Components 7201G. (CHANNEL GUARD DISABLE).
		- - - - - - - - - - TERMINAL BOARDS - - - - - - - - - -
TB1	7775500P203	Phen: 5 terminals.
		- - - - - - - - - - - - CABLES - - - - - - - - - - - -
W1	19B219841G1	6 conductor, 5 feet long.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - - -
	N190AP1312C	Tap screw, phillips pozidriv: No. 6 x 3/4. (Secures housing to base plate).
	N101P1310P	Tap screw, phillips: No. 8 x 5.8. (Used for mounting base plate).
	19A129586P1	Bumper, rubber. (2).



THESE INSTRUCTIONS COVER THE MODIFICATION OF MASTR II HANDSET HOOKSWITCH TO BE APPLIED TO EXEC II

INSTRUCTIONS:

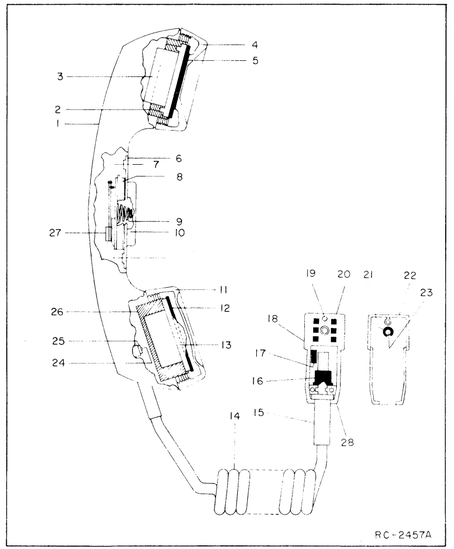
1. REMOVE FOUR #6-32 SCREWS AND COVER.
2. REMOVE R1 RESISTOR (40 OHM) AND DISCARD. REPLACE WITH R1701 RESISTOR (8.2 OHM) AND SOLDER TO TBI-5 AND TBI-2 AS SHOWN.
3. REPLACE COVER AND SCREWS.
4. ADD LABEL (19A136775) AS SHOWN.

(19B227530, Rev. 1)

PARTS LIST

LBI-4482A

TRANSISTORIZED DYNAMIC HANDSET
19C320478G1



SYMBOL	GE PART NO.	DESCRIPTION
1		Case Assembly. Includes items 1, 2, 4, 5, 11, 12, 26. Shure Brothers RP142.
2		Adapter. Part of item 1.
3		Receiver Cartridge. Shure Brothers RP140.
4		Receiver Cap. Part of item 1.
5		Washer. Part of item 1.
6		Escutcheon. Part of item 27.
7		Flat head screw, socket cap: No. 4-40 x 1/4. Part of item 27.
8		Actuator. Part of item 27.
9		Spring. Part of item 27.
10		Plunger bar. Part of item 27.
11		Transmitter cap. Part of item 1.
12		Washer. Part of item 1.
13		Transmitter cartridge. Shure Brothers RP139.
14	19C321016G2	Cable assembly: Includes items 14-23 and cable RP141.
15	19B219749P1	Flex relief.
16	19A116937P1	Cable clamp: sim to Malco 21012-3.
17	3R77P472K	Resistor, (R1) Composition, 4700 ohms ±10%, 1/2 w.
18	19D416766P1	Connector case.
19	N136AP905C	Screw.
20	19A129435P1	Pin contact.
21	7109043P1	Retaining ring. 3/16 inch, sim to National Lockwasher WA 510.
22	19D416767P1	Connector Cover.
23	19B219723G1	Screw. (Secures cover, item 22 to case, item 18).
24		Screw. Part of item 14.
25		Cable clamp. Part of item 14.
26		Shield. Part of item 1.
27		Switch Assembly. Includes items 6-10. Shure Brothers RP143.
28	19C321016G3	Connector assembly: Includes items 15, 16, 18-23. Does not include resistor, item 17.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

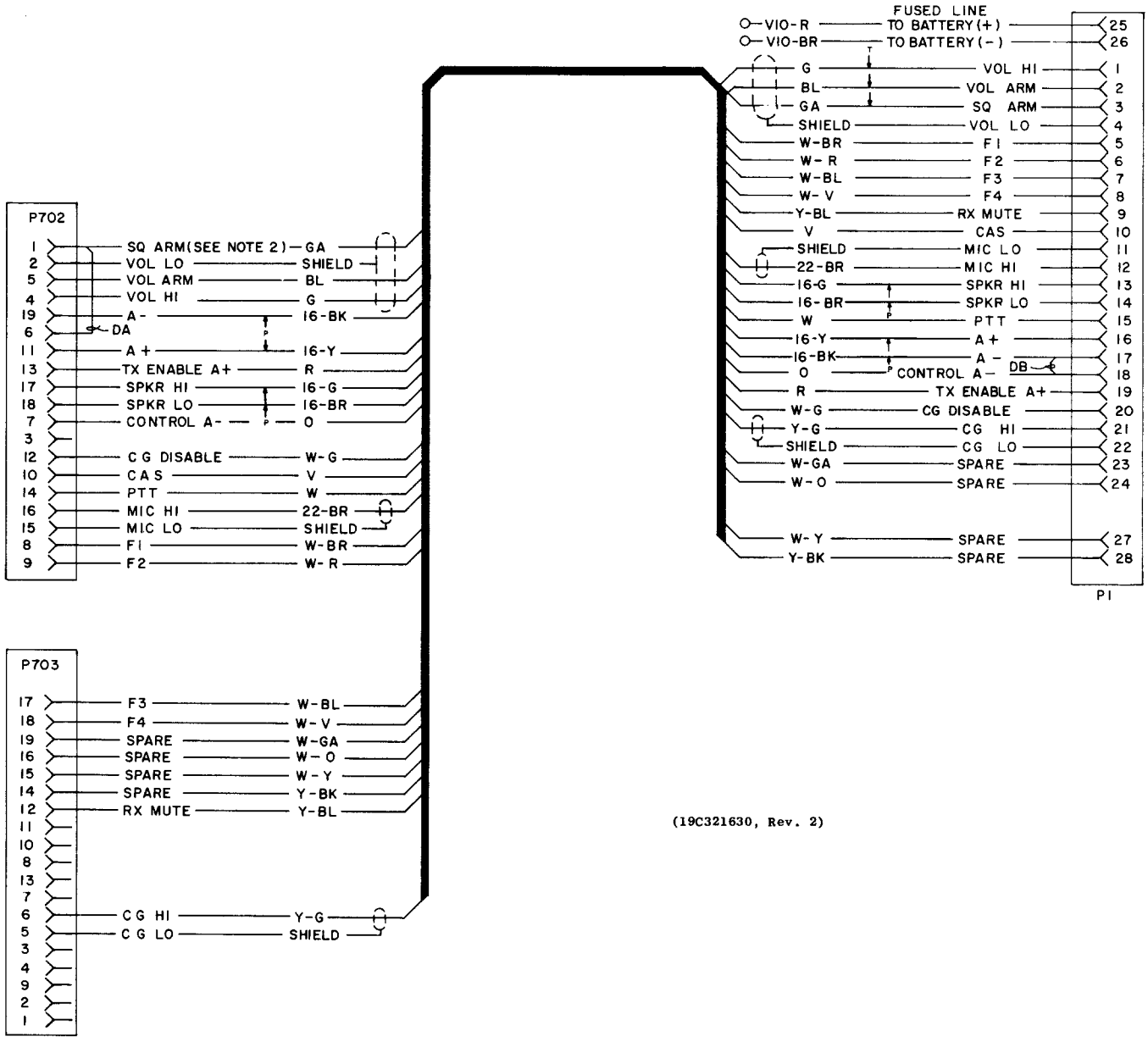
REV. A - Handset Hookswitch 19B219846G1
To improve the operation of the audio output stage by lowering the off-hook terminating resistance. Changed R1.

LBI-4488

SPEAKER
19C320302G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - LOUDSPEAKERS - - - - - - - - -
LS1	19A116694P1	Permanent magnet, 5 inch: 20 watts, 8 ohms ±10% imp, 100 to 10,000 Hz response; sim to Oaktron T2877.
		- - - - - - - - - - - CABLES - - - - - - - - - -
W1	19A129414G1	2 conductor cable: approx 5 feet long, includes (2) 19A116781P3 contacts.
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B219692G1	Grille.
	19D416396P1	Housing.
	19C320016P1	Mounting bracket. (Located between housing and retaining bracket).
	19C320022P1	Retaining bracket. (Located between mounting bracket and safety release disc).
	19B219578G1	Safety Release Disc.
	19A116986P108	Tap screw, with lockwasher: No. 7-19 x 1/2. (Secures speaker to housing).
	19A116986P112	Tap screw, with lockwasher: No. 7-19 x 3/4. (Secures grille to housing).
	19A116985P1	Tap screw, with lockwasher: No. 13-16 x 3/4. (Secures mounting bracket to housing).
	N187P16010C6	Screw, hexhead, slotted: No. 10-32 x 5/8. (Quantity 1- used with safety release disc and retaining bracket).
	N710P16012C6	Screw, hexhead, slotted: No. 10-16 x 3/4. (Secures mounting bracket or retaining bracket).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

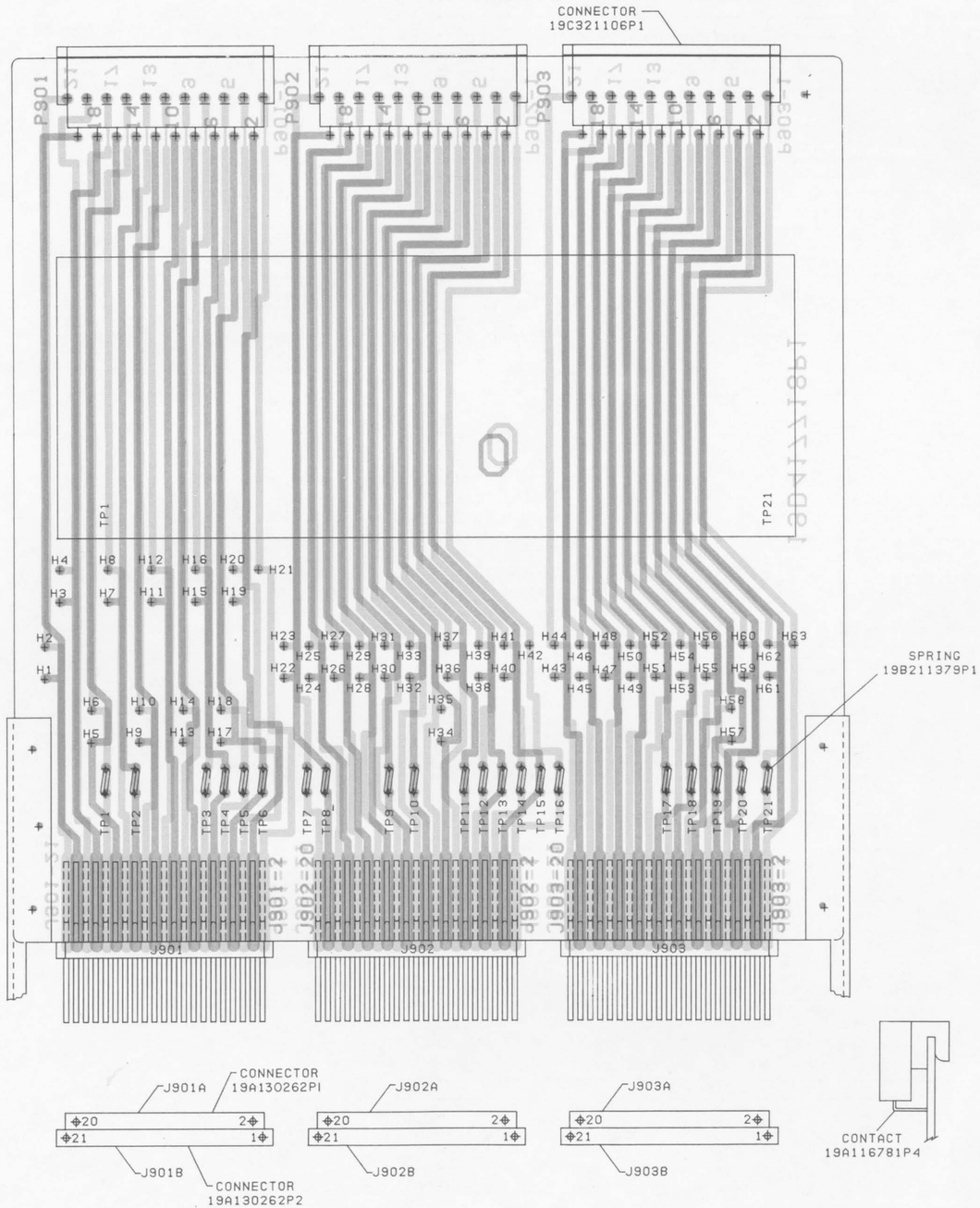


(19C321630, Rev. 2)

SCHEMATIC DIAGRAM

POWER/CONTROL CABLE (MASTR EXECUTIVE II INTERFACE)

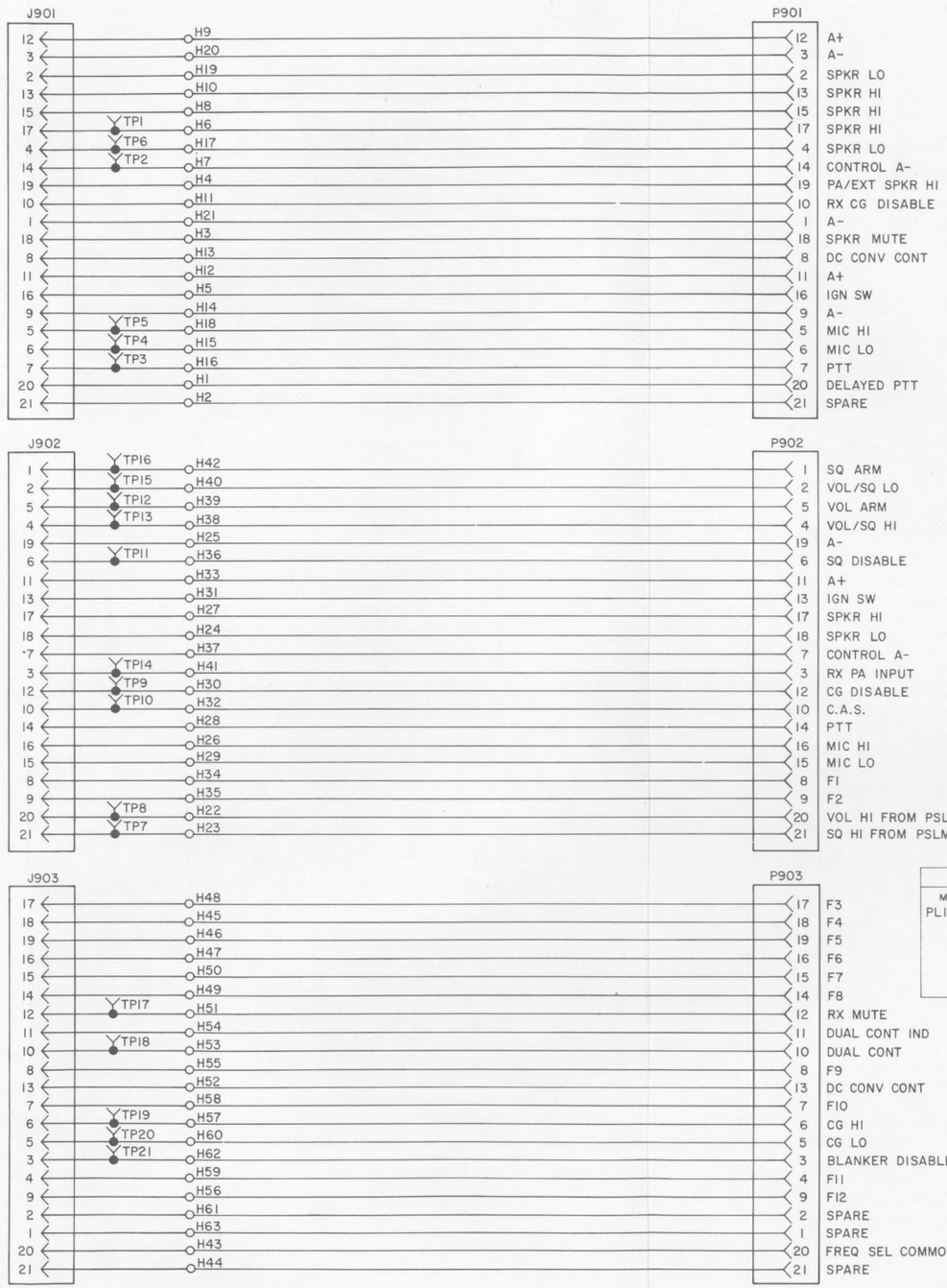
OUTLINE DIAGRAM



(19D424212, Rev. 0)
(19C321093, Sh. 1, Rev. 0)
(19C321093, Sh. 2, Rev. 0)

RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON COMPONENT SIDE

SCHEMATIC DIAGRAM



THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PLI9D417768GI	

(19D417789, Rev. 1)

SCHEMATIC & OUTLINE DIAGRAM

CONTROL MODULE EXTENDER BOARD

Issue 1

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 its 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-30234

DF-4104

MOBILE RADIO DEPARTMENT
GENERAL ELECTRIC COMPANY • LYNCHBURG, VIRGINIA 24502

GENERAL ELECTRIC

PRINTED IN U.S.A.