

MASTR II MAINTENANCE MANUAL

ONE-THRU EIGHT FREQUENCY CONTROL UNIT



SPECIFICATIONS *

Control Unit (Common Kit)	19A129576G1
One-Frequency Kit	19A129577G1
or	
One thru Eight Frequency Kit	19A129578G1
Controls	Power-On Volume Squelch Channel Selector Switch Option Switch Optional Blanker Disable Switch
Indicators	Power On Light Transmit Light Optional Channel Busy Light Option Light

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

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OPTIONS

DESCRIPTION	MODEL NUMBER
Internal/External Speaker (Option 1001)	19A129576G1
Public Address (Option 1002)	19A129576G2
Fixed Squelch (Option 1003)	19A129576G3
Squelch Operated Relay (Option 1004)	19A129576G4
Two-Frequency PSLM (Options 1005, 1006, 1007)	19A129576G5
Channel Busy Light (Option 1008)	19A129576G6
Noise Blanker Switch (Option 1009)	19A129576G7

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!

DESCRIPTION

MASTR II Control Units are attractively styled, highly functional units that are enclosed in a two-piece molded Lexan® housing for durability and ease of disassembly. The Control Units are mounted to the vehicle with a Safety Release Lexan® mounting bracket assembly for passenger safety.

The Control Unit uses a printed wiring board to provide a minimum of wiring. The only internal wires used are on the POWER-ON switch and indicator lights.

Cable plugs are secured to the back of the Control Unit by plastic locking clips. The plugs are equipped with indexing tabs to assure connection to the correct jack. The cable is equipped with a strain relief hook that attaches to a steel plate on the bottom rear of the Control Unit.

The microphone plug is secured to a jack on the bottom of the unit by means of a captive locking screw.

All indicator lights are light-emitting diodes (LEDs) for reliability, long life, and low power consumption.

CIRCUIT ANALYSIS

The Control Units are equipped with a VOLUME control, SQUELCH control and a POWER-ON rocker switch. The multi-frequency Control Unit is also equipped with a frequency selector switch.

When the POWER-ON switch (S701) 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 to the ON position applies power to the radio, provides power for the push-to-talk (PTT) circuit and lights the power-on LED in the Power-ON/Frequency Indicator window.

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 un-mutes the receiver. Refer to the Table of Contents for a simplified Transmitter Keying and Power Distribution Diagram.

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

MULTI-FREQUENCY SWITCH (S702)

The frequency selector switch is a 12-position switch with a mechanical stop that limits rotation from one through eight positions as required.

The frequency selector 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.

DC CONVERTER MODIFICATIONS

In radios equipped with the DC converter, the POWER-ON switch is modified so that placing the switch in the ON position applies the input voltage directly to the

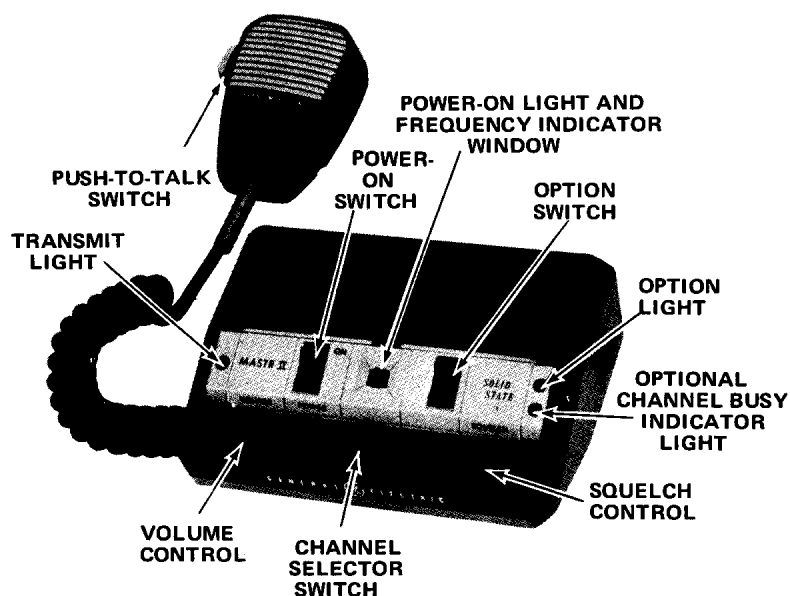


Figure 1 - Control Unit Layout

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

OPTIONS

MASTR II control units may be equipped with different options. All controls and indicator lights (LEDs) are shown in Figure 1.

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.

Noise Blanker Disable Switch

Noise Blanker Disable switch S1 mounts on the back of the control unit (see Outline Diagram). Placing the switch in the "OFF" position applies A- to the blanker disable lead. The A- is connected to pin 4 of the receiver blanker IC (U551), disabling the noise blanker circuit. The A- is connected to the blanker disable circuit by a jumper from H63 to H66 on the system board (see Front Panel & System Board Maintenance Manual).

Placing the switch in the "ON" position removes the A- to pin 4 of the blanker IC, allowing the blanker to operate.

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. The 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 the A- to Pin 2 of the squelch IC, enabling the squelch circuit (and Channel Guard).

Internal/External Speaker

For radios equipped with the Internal/External Speaker option, the control unit

will be equipped with optional SPEAKER switch (marked INT-EXT), an Option indicator light and an Internal/External Speaker component board. The radio also has an external speaker mounted outside of the vehicle passenger compartment (on the roof, under the hood, etc.).

With the switch in the INT (Internal) position, all of the messages received will be heard on the speaker mounted in the vehicle.

Placing the switch in the EXT (External) position turns on the option light, and applies all received messages to both the external and internal speaker. 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.

Public Address

With the Public Address option, the control unit will be equipped with an optional PA-ON switch, an Option indicator light, and a Public Address component board. The vehicle will also have an additional speaker mounted outside of the passenger compartment.

With the PA switch in the "OFF" position, the operator can send and receive messages as he normally does. Placing the PA switch in the ON position lights the Option light, disables the transmitter, and switches the receiver audio output to the external speaker.

Pressing the PTT switch on the microphone switches the microphone output through the receiver audio amplifier circuit so that the amplified message is heard on the external speaker only. No messages can be transmitted in this mode of operation, and all incoming messages will be heard on the external speaker.

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

Priority Search-Lock Monitor

For radios equipped with Priority Search-Lock Monitor, (PSLM), the control unit will be equipped with a SEARCH-ON switch, a Channel Busy light, and a PSLM board.

With the SEARCH switch in the ON position, the PSLM provides two channel monitoring (depending on the PSLM option used) by alternately sampling a priority channel and then a non-priority channel.

When a signal is received on the priority channel, the PSLM stops searching and locks on the priority channel for the

duration of the message. When a signal is first received on the non-priority channel, the PSLM stops on that channel while monitoring the priority channel. If a signal is received on the priority channel while the PSLM is stopped on the non-priority channel, the PSLM reverts to the priority channel and locks on that channel for the duration of the message.

NOTE

The PSLM will operate only when the receiver is squelched. When the receiver is unsquelched, the PSLM will lock on the first channel that receives a message.

The Channel Busy light will glow steadily whenever a message is received on the priority channel. When a message is received on a non-priority channel, the Channel Busy light will flash on and off. Keying the transmitter turns on the red Transmit light, and turns off the Channel Busy light.

Placing the SEARCH switch in the "OFF" position disables the PSLM circuit, and messages can be sent and received only on the channel selected by the frequency selector switch.

For complete details, refer to the Maintenance Manual for the Priority Search-Lock Monitor option.

Squelch Operated Relay

In radios equipped with the Squelch Operated Relay option, the control unit will be equipped with an OPTION-ON switch, an Option light and a Squelch Operated Relay component board.

When the switch is in the ON position, the relay will energize and the Option light will turn on each time a message is received (receiver unsquelches). The relay will remain locked up and the Option light will remain on until the OPTION switch is turned "OFF". The relay can be connected to turn on a light, operate an alarm or perform other functions as desired.

For complete details, refer to the Maintenance Manual for the Squelch Operated Relay option.

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. The black cable provides the system ground connection. The yellow fused lead provides the receiver hot connections and the transmitter Push-To-Talk 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.

DC CONVERTER CONNECTIONS

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 the Control Unit A-. To do so may cause failure of the current limiting circuit in the converter.

MAINTENANCE

DISASSEMBLY

To gain access to the inside of the Control Unit, simply remove the two screws on the bottom of the front edge of the unit, and lift off the top cover.

To remove the printed wiring board from the control unit housing:

1. Remove the two screws holding the microphone jack.
2. Remove the screw between J701 and J702 and remove the screw between J702 and J703.
3. Remove the screw at each end of the switch and control mounting bracket.
4. Remove the screw holding Power-On switch S701 to the bottom housing. Then swing the printed wiring board up from the front and lift the board out.

RE-INSTALLATION

+12-Volt Systems. 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 2, and

change the leads as shown in Figures 3 or 4 as required.

DC Converter Systems

For radios equipped with the DC Converter, no changes are required in the lead to the vehicle system plug.

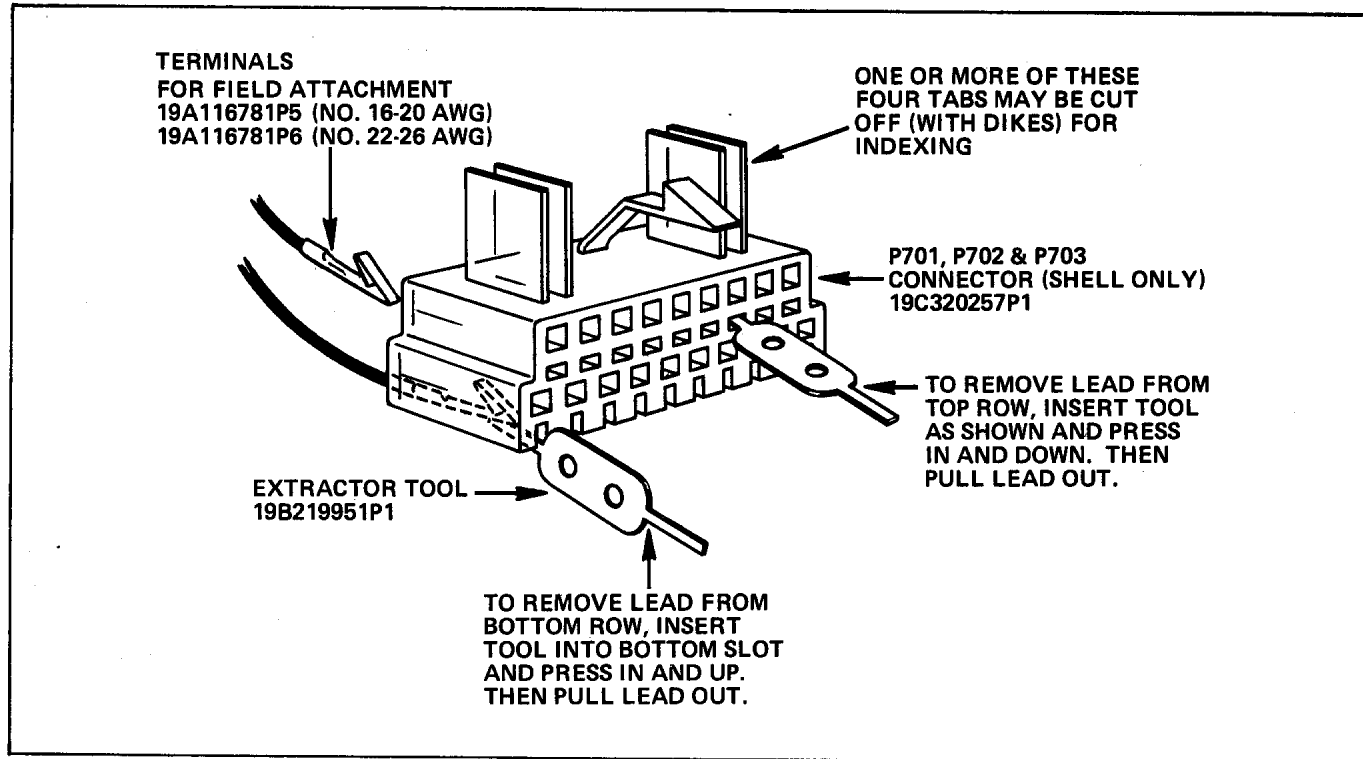


Figure 2 - Using Extraction Tool

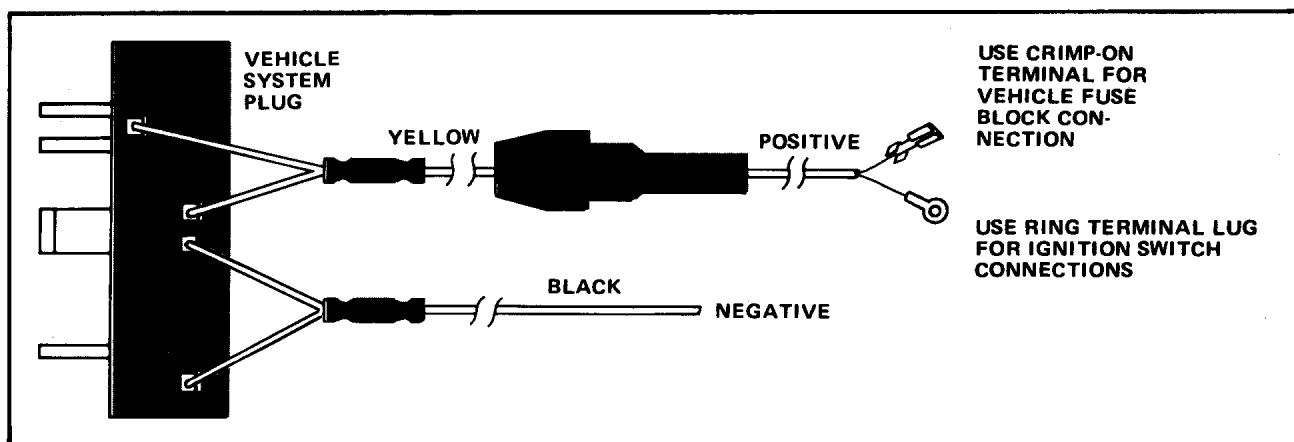


Figure 3 - 12-Volt, Negative Ground Connections

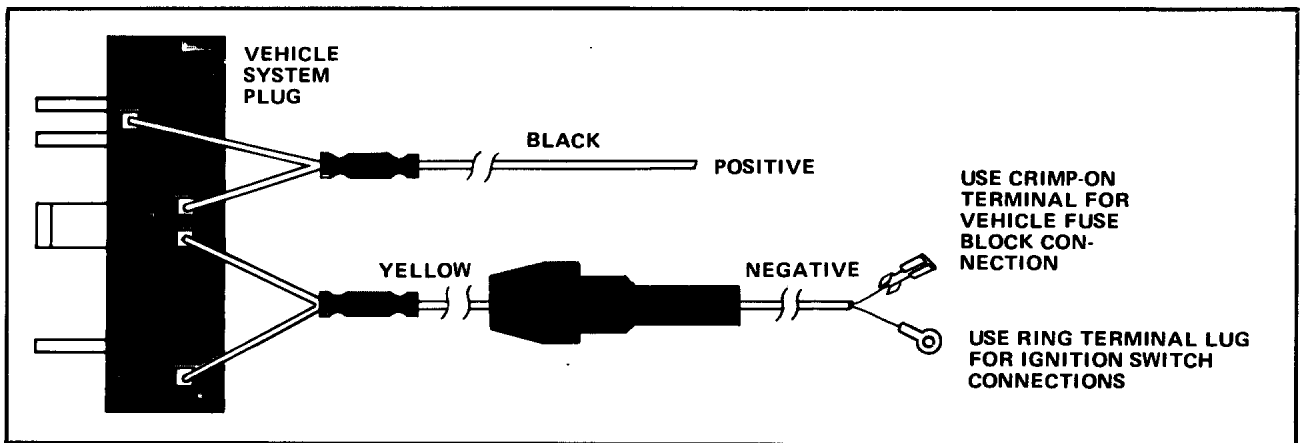
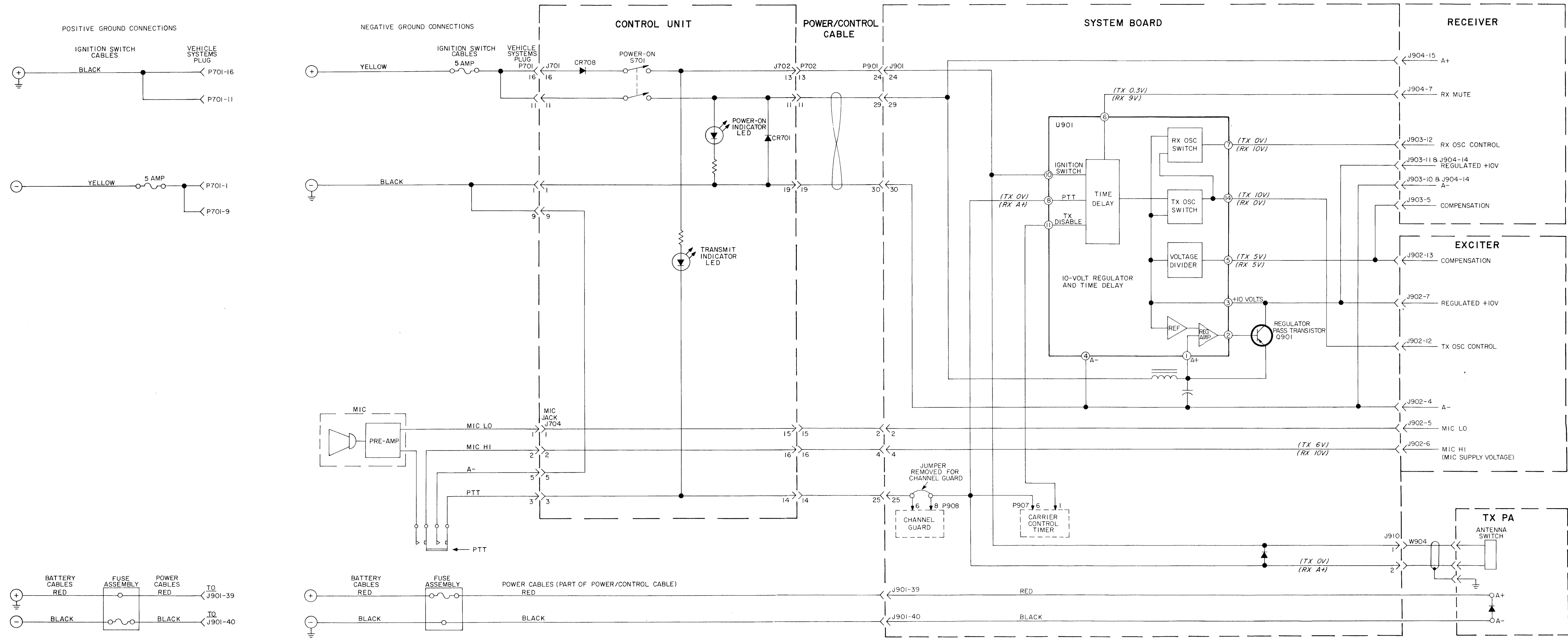
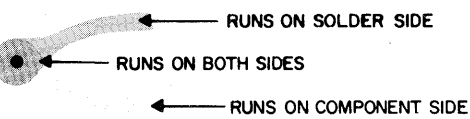


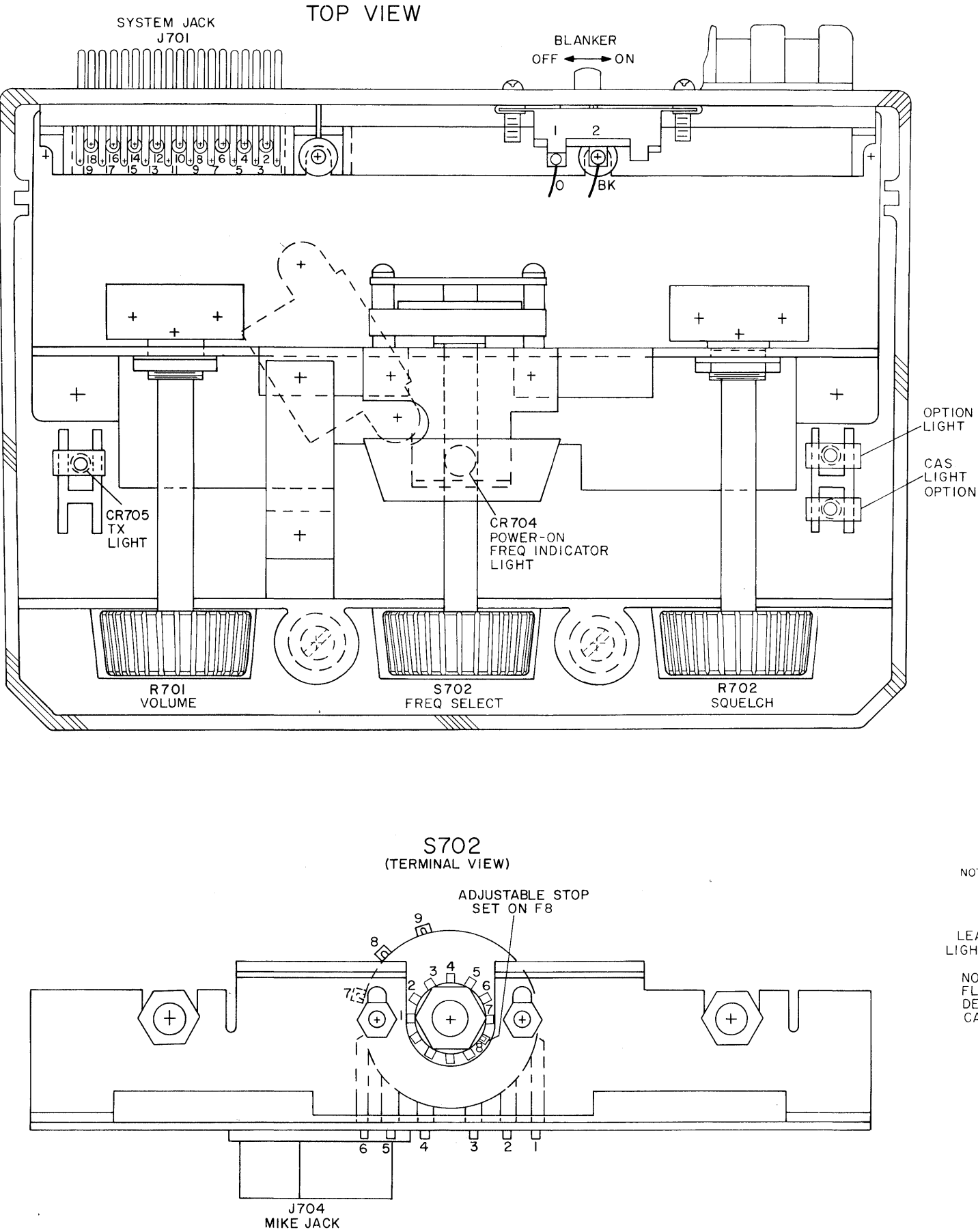
Figure 4 - 12-Volt, Positive Ground Connections



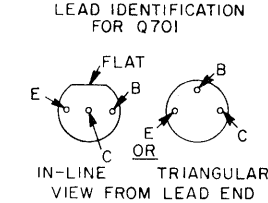
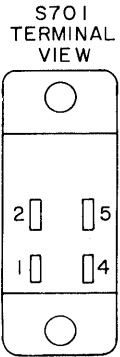
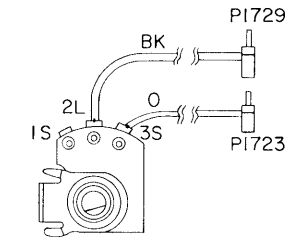
TRANSMITTER KEYING & POWER DISTRIBUTION DIAGRAM



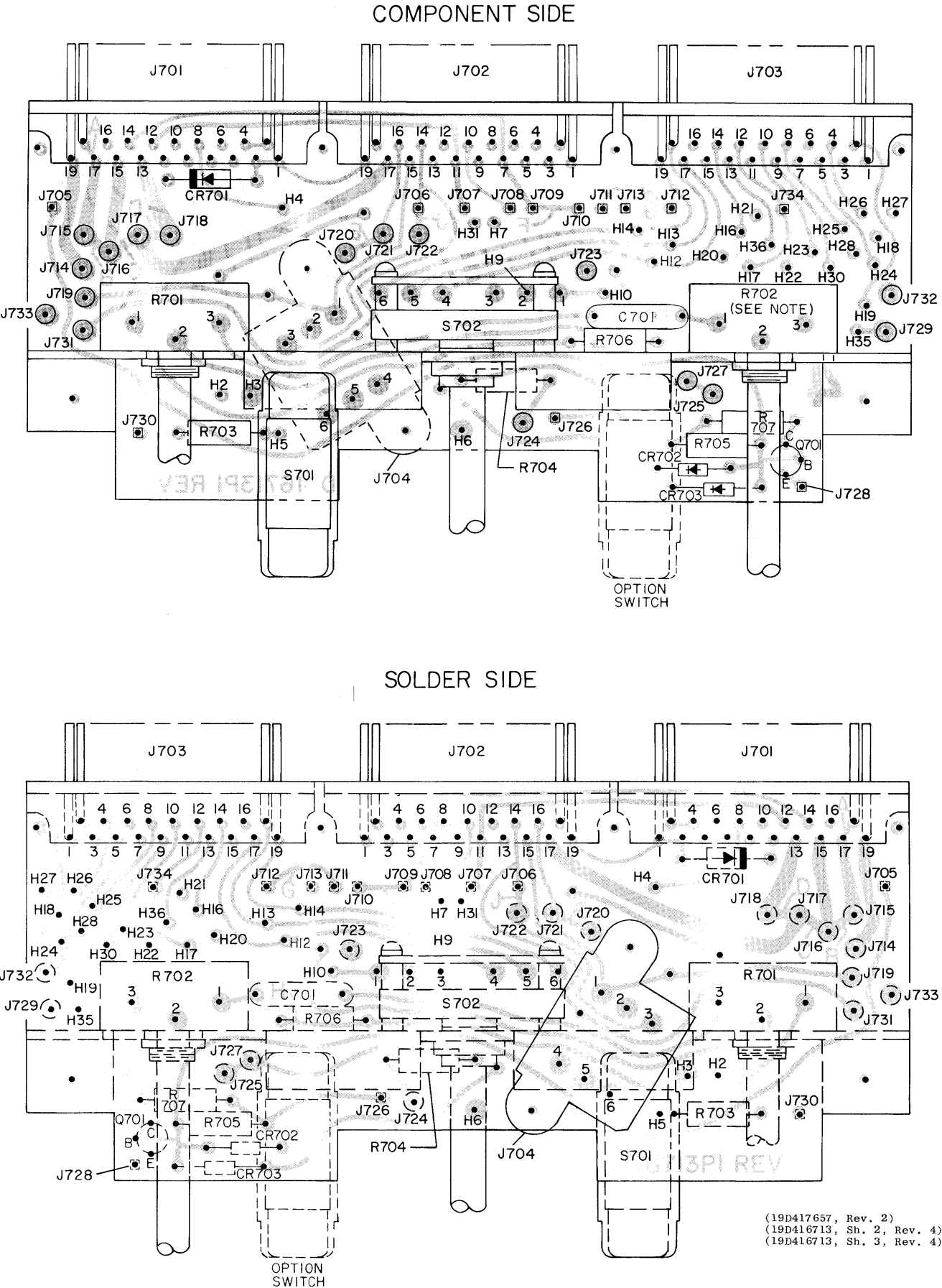
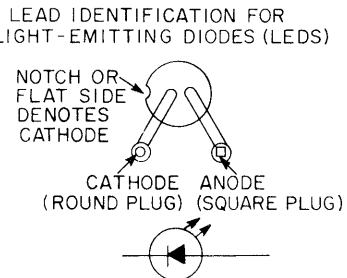
OUTLINE DIAGRAM
1 THRU 8-FREQUENCY
CONTROL UNIT



NOTE:
FOR FIXED SQUELCH OPTION,
R702 IS REPLACED BY S1701.



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



PARTS LIST

LB1-4817
1-8 FREQUENCY CONTROL UNIT,
AND
ASSOCIATED ASSEMBLIES

SYMBOL	GE PART NO.	DESCRIPTION
		CONTROL UNIT INCLUDES: COMMON KIT 19A129576G1 AND ONE FREQ KIT 19A129577G1 1-8 FREQ KIT 19A129578G1
		COMMON KIT 19A129576G1
		----- DIODES AND RECTIFIERS -----
CR705	19B219800G1	Diode, light emitting.
		----- RESISTORS -----
R702	19A116687P1	Variable, carbon film: 10,000 ohms $\pm 20\%$, 1/2 w; sim to Mallory LC-1A(10K).
		COMPONENT BOARD 19D16737G3
		----- CAPACITORS -----
C701	19A116080P106	Polyester: 0.068 μ f $\pm 10\%$, 50 VDCW.
		----- DIODES AND RECTIFIERS -----
CR701	4037822P1	Silicon.
CR702 and CR703	19A115250P1	Silicon.
CR708	4037822P1	Silicon.
		----- JACKS AND RECEPTACLES -----
J701 thru J703	19C320257P2	Pin wafer assembly: 19 contacts.
J704	19B219627G1	Connector: 6 contacts.
J705 thru J713	19A116779P1	Contact, electrical: sim to Molex 08-54-0404.
J714 thru J725	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J726	19A116779P1	Contact, electrical: sim to Molex 08-54-0404.
J727	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J728	19A116779P1	Contact, electrical: sim to Molex 08-54-0404.
J729	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J730	19A116779P1	Contact, electrical: sim to Molex 08-54-0404.
J731 thru J733	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J734	19A116779P1	Contact, electrical: sim to Molex 08-54-0404.
		----- TRANSISTORS -----
Q701	19A115889P1	Silicon, NPN; sim to Type 2N2712.
		----- RESISTORS -----
R701	19A116687P2	Variable, carbon film: 10,000 ohms $\pm 20\%$, 1/4 w; sim to Mallory M204.
R703 and R704	3R77P152K	Composition: 1500 ohms $\pm 10\%$, 1/2 w.

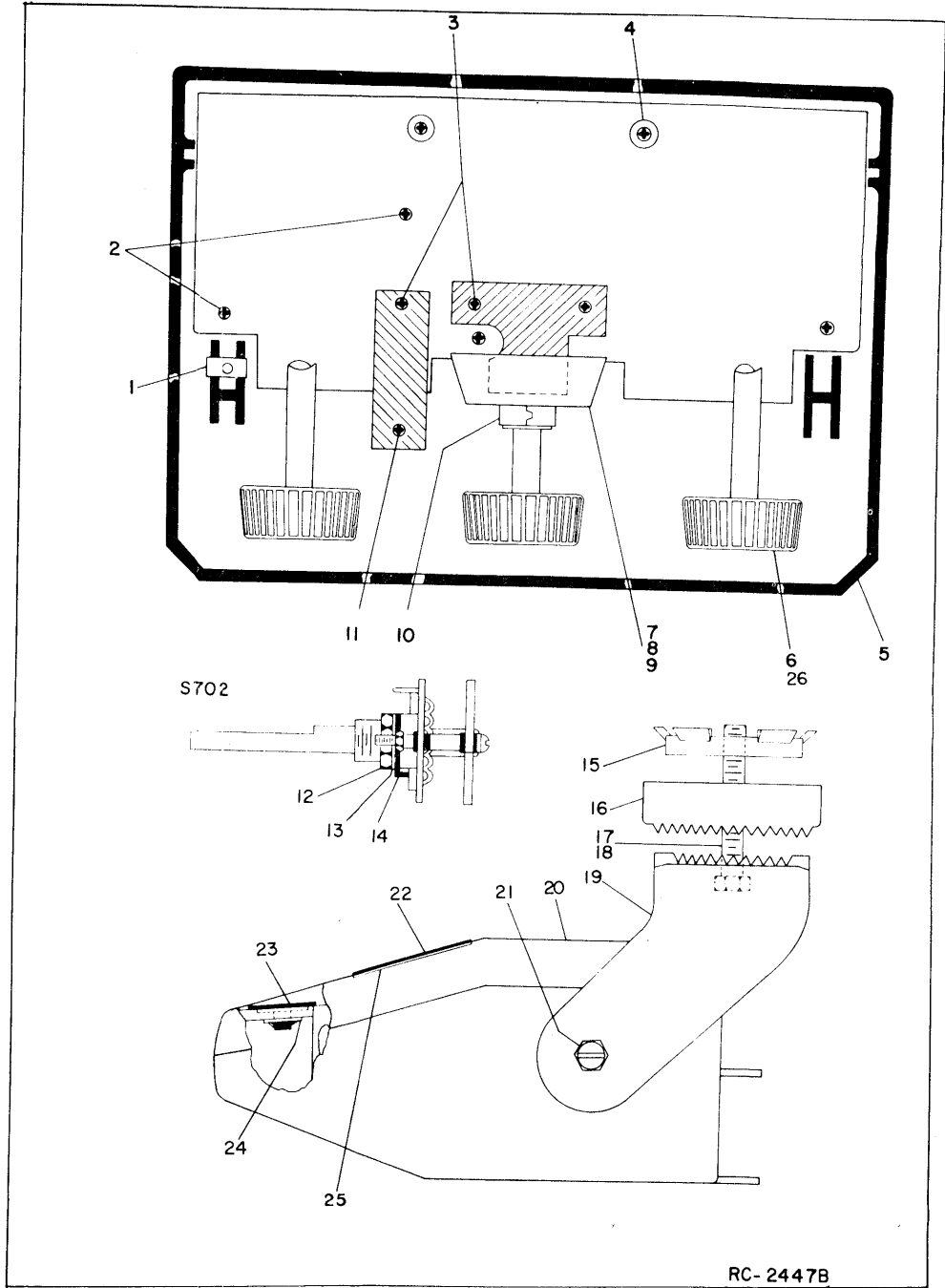
SYMBOL	GE PART NO.	DESCRIPTION
R705	3R77P993K	Composition: 39,000 ohms $\pm 10\%$, 1/2 w.
R706	3R77P100K	Composition: 10 ohms $\pm 10\%$, 1/2 w.
R707	3R77P152K	Composition: 1500 ohms $\pm 10\%$, 1/2 w.
		----- SWITCHES -----
S701	19A116622P5	Push: DPST, 0.5 amp VDC or 3.0 amps at 125 v; sim to Switchcraft 11K1040.
		FREQUENCY INDICATOR LIGHT ASSEMBLY 19B219696G2
		----- DIODES AND RECTIFIERS -----
CR704	19A120291P3	Diode, light emitting: red.
P724	4029840P2	Contact, electrical: sim to Amp 42827-2.
P726	19A127042P2	Terminal, solderless: sim to Malco 12093-10.
		----- PLUGS -----
		ONE FREQUENCY KIT 19A129577G1
		19B219626P1
	7140578P4	Nut, push on: sim to Tinnerman C1259-014-27. (See RC-2447 item 24).
	19A130009P1	Diffuser. (See RC-2447 item 25).
		1-8 FREQUENCY KIT 19A129578G1
		----- DIODES AND RECTIFIERS -----
S702	19A116697P1	Rotary: 1 section, 1 pole, 8 positions (supplied with adj stop), non-shorting contacts, 2 amps at 28 VDC or 1 amp at 110 VMS; sim to Oak Wfg Type "Y".
	19B219825G1	Knob. (See RC-2447 item 6).
	19B219699G1	Frequency Indicator. (Includes items 7-10 on RC-2447).
	7141225P2	Hex nut: No. 4-40.
	7165075P2	Hex nut, brass: No. 3/8 - 32. See RC-2447 item 12.
	N404P11C6	Lockwasher: No. 4.
	7115130P9	Lockwasher: sim to Shakeproof 1220-2. See RC-2447 item 13.
		CHANNEL BUSY OPTION 19A129567G6
		----- DIODES AND RECTIFIERS -----
CR706	19B219800G2	Light emitting.
	19A116807P1	Clip, spring tension. (Secures CR706).
		NOISE BLANKER DISABLE OPTION 19A129567G7
		----- SWITCHES -----
S1	19B219988G1	Slide: SPST, 1 pole, 2 positions, .5 amp VDC or 3 amps VAC at 125; sim to Switchcraft 46202LH.
	4032480P1	Nut, sheet spring. (Secures S1).
		FIXED SQUELCH OPTION
		----- SWITCHES -----
S1701		SWITCH ASSEMBLY 19A129567G3
		----- PLUGS -----
P1723	4033348P1	Contact, electrical: sim to Bead Chain M125-34.
P1729	4033348P1	Contact, electrical: sim to Bead Chain M125-34.

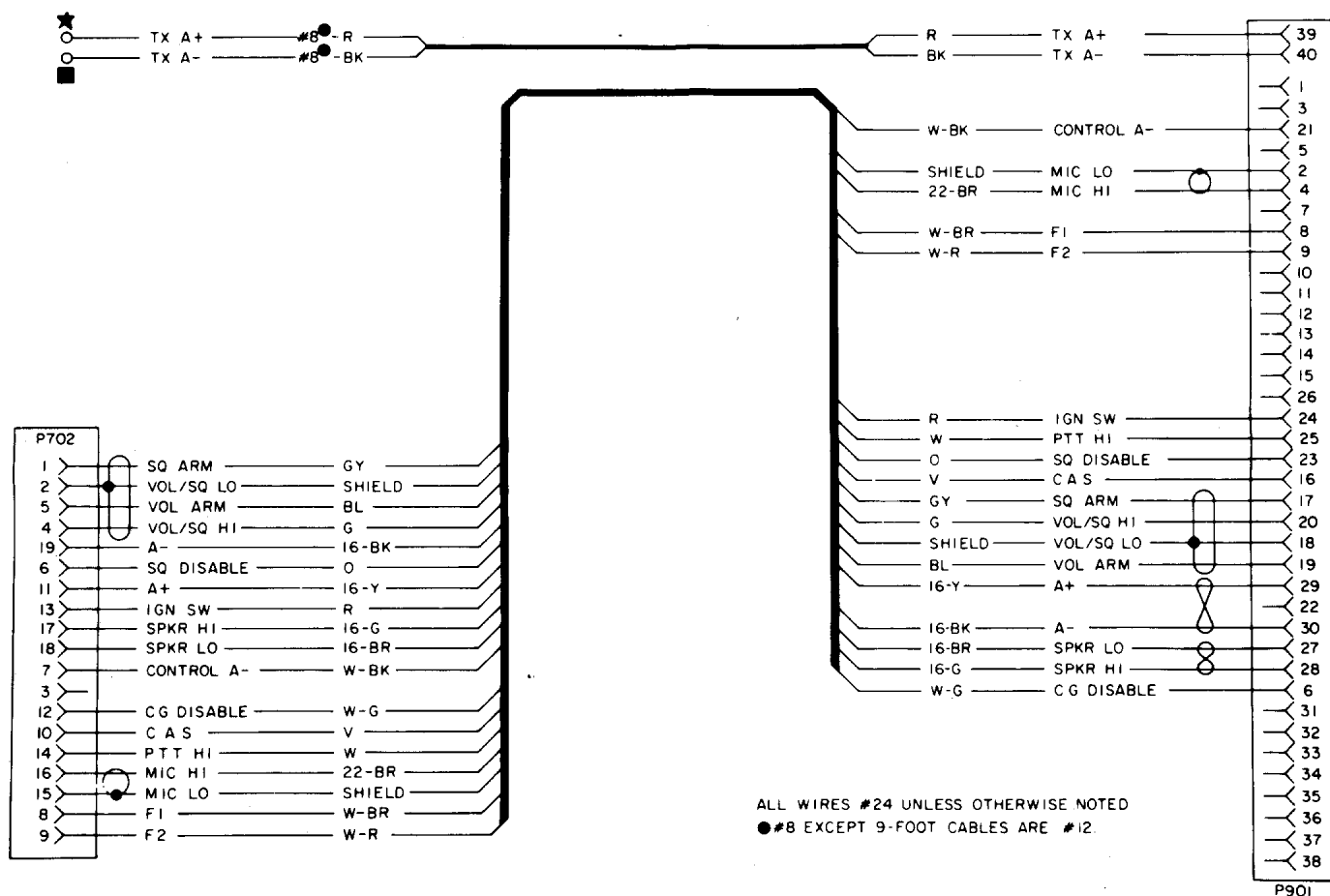
SYMBOL	GE PART NO.	DESCRIPTION
		MECHANICAL PARTS (SEE RC-2447)
1	19A116807P1	Clip, spring tension.
2	19A116773P106	Tap screw: thd size No. 7-19 x 3/8.
3	19B201074P204	Tap screw, Phillips POZIDRIV®: No. 4-40 x 1/4.
4	N402P8C6	Washer: No. 8.
5	19C320389G1	Housing.
6	19B219825G1	Knob.
7	19C320175P1	Frequency indicator.
8	NP270754A	Nameplate. (1-12).
9	NP270754B	Nameplate. (OFF, A-H).
10	4029006P1	Retainer strap: sim to Tinnerman C2386-020-1.
11	N117P9004C13	Tap screw: No. 4-40 x 1/4.
12	7141225P2	Hex nut: No. 4-40.
13	N404P11C6	Lockwasher, internal tooth: No. 4.
14	19A134017P1	Adjustable stop.
15	19B219578G1	Safety release disc.
16	19C320022P1	Retaining bracket.
17	N187P16010C6	Screw, hexhead, slotted: No. 10-32 x 5/8 (Quantity 1, used with safety release disc and retaining bracket).
18	N710P16012C6	Screw, hexhead, slotted: No. 10-16 x 3/4. (Quantity 3, used without safety release disc and retaining bracket).
19	19D416594P1	Mounting bracket.
20	19E500988P1	Cover.
21	19A116985P1	Tap screw, assembled washer: No. 13-16 x 3/4 with No. 10 hexhead.
22	NP270753P1	Nameplate. (MASTER II SOLID STATE).
23	19B219626P1	Knob plug. (Frequency switch S702).
24	7140578P4	Nut, push on: sim to Tinnerman C1259-014-27. Used with item 23).
25	19A130009P1	Diffuser.
26	7160815P4	Washer, spring: sim to Shakeproof 3544-1-00.
		POWER/CONTROL CABLE 30 CONDUCTOR 19D416716G5
		----- PLUGS -----
P702		Connector. Includes: Shell.
	19B226516P1	Contact, electrical: wire size No. 16-20 AWG; sim to Molex 08-50-0106. (Quantity 7).
	19A116781P5	Contact, electrical: wire size No. 22-26 AWG; sim to Molex 08-50-0108. (Quantity 12).
		Connector. Includes: Shell.
P703		19B226516P2
	19A116781P6	Contact, electrical: wire size No. 22-26 AWG; sim to Molex 08-50-0108. (Quantity 11).
		----- MISCELLANEOUS -----
	19D416352P5	Cable: 30 conductor, 20 feet, includes P601.
	7142878G1	Clip loop (strain relief).
	19A115799P2	Terminal, solderless: sim to AMP 33461. (Quantity 2).
		12-VOLT 2-WIRE IGNITION SWITCH CABLE 19B219537G4
		----- PLUGS -----
P701		Connector. Includes: Shell.
	19B226516P3	Y Cable. (BLACK).
	19A129504G1	

SYMBOL	GE PART NO.	DESCRIPTION
		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 HMJ.
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: Shell.
	19B226516P3	Jumper.
19A130117G1		
		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 HMJ.
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.
		OPTIONAL 12-VOLT 3-WIRE IGNITION SWITCH CABLE 19B219537G1
		----- PLUGS -----
P701		Connector. Includes: Shell.
	19B226516P3	Y Cable. (BLACK).
19A129504G1		
		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 HMJ.
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.

SYMBOL	GE PART NO.	DESCRIPTION
	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 19B219537G2)
1R16P8		Fuse, quick blowing: 5 amp 250 v; sim to Littelfuse 312005 or Bussmann MTH-5.
19A115776P2		Fuseholder, phen: sim to Bussmann Type HMJ.
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.
		BATTERY CABLES
	7147499G7	Battery cable. (BLACK), 3 feet.
	7147499G8	Battery cable. (RED), 3 feet.
		25 - 50 MHZ ANTENNA
		----- MISCELLANEOUS -----
	7491074P1	Antenna: includes stainless steel rod approx 98-1/2 inches long; ball tip; lockwasher; No. 10-32 hex socket set screw; sim to Antenna Specialists ASPA38GE.
	7102830P3	Adapter, antenna: approx 2-5/16 inches long. (Used with GE Dwg 7491074P1).
	4033101G1	Antenna package: includes base; adapter spring; cable and plug.
	7472880G5	Antenna base.
	7476632G4	Adapter spring.
	5492239P1	Cable, antenna: includes Type RG-58/U cable approx 15 feet long; PL-259 coaxial plug; mount- ing clip; ring tongue terminal; sim to Antenna Specialists 13A45.
	2R22P1	Plug, coaxial: mica-filled insert, UHF contact. Signal Corps PL-259; sim to Amphenol 83-1SP. (Used with GE Dwg 5492239P1).
	4KY9A1	Coil, loading: 25 to 33 MHz; sim to Antenna Specialists ASPA87.
	19A121577G1	Antenna hook kit.
	7134724P1	Antenna hook.
		132-512 MHZ ANTENNA MOLEX 45Y12A13 (5490969P13)
		----- MISCELLANEOUS -----
		Antenna: includes stainless steel whip approx. 20 inches long; ball tip; whip socket; No. 6-32 set screw; rubber mounting gasket; antenna cable; cable adapter; PL-259 coaxial plug; sim to Antenna Specialists ASPD201GE or Danbury-Knudsen Type Pa-25.
	5490969P4	Whip: stainless steel, approx 20 inches long; ball tip.
	5490969P5	Socket, whip: with (2) No. 6-32 set screws.
	5490969P6	Whip and whip socket: stainless steel whip approx 20 inches long with ball tip; whip socket with (2) No. 6-32 set screws.
		Cable, antenna: approx 15 feet long. Type RG-58/U. (Used with GE Dwg 2R22P1 and GE Dwg 7105381P1).

SYMBOL	GE PART NO.	DESCRIPTION
	7105381P1	Adapter, cable: approx 1 x 7/16 inches dia. Type UG-175/U. (Used with GE Dwg 2R22P1 and Type RG-58/U cable).
	2R22P1	Plug, coaxial: mica-filled insert, UHF contact. Signal Corps PL-259; sim to Amphenol 83-1SP. (Used with GE Dwg 7105381P1 and Type RG-58/U cable).
		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).
F2	1R11P6	Quick blowing: 25 amps, 250 v; sim to Bussmann NON25. (Used with medium power transmitters, 38-66 w).
F3	1R11P7	Quick blowing: 30 amps, 250 v; sim to Bussmann NON30. (Used with high power transmitters, 66-128 w).

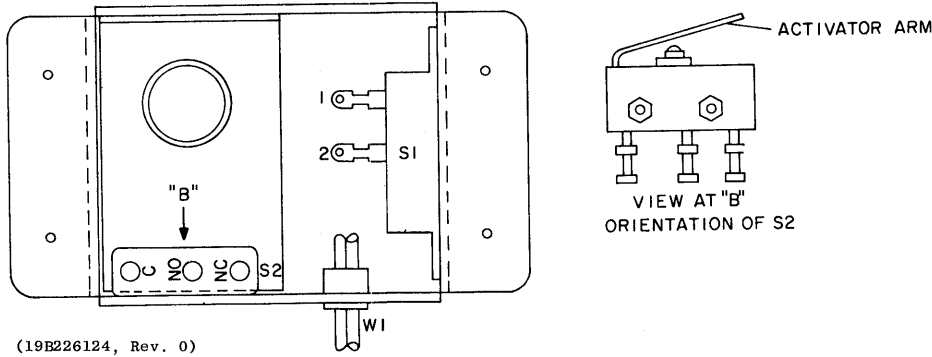




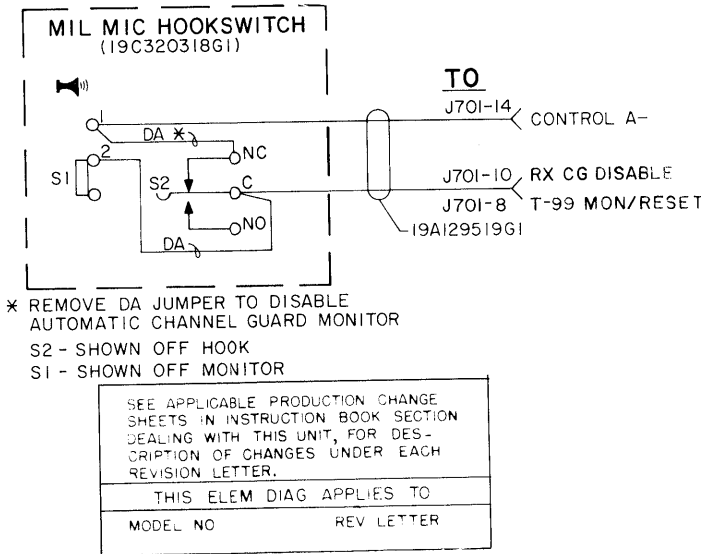
(19C320397, Rev. 2)

WIRING DIAGRAMOPTIONAL 18-CONDUCTOR
POWER/CONTROL CABLE

OUTLINE DIAGRAM



SCHEMATIC DIAGRAM



(19A129660, Rev. 2)

PARTS LIST

LBI-4483A
MICROPHONE HOOKSWITCH
19C320318G1

SYMBOL	GE PART NO.	DESCRIPTION
S1	19B219698G1	Slide: SPST, 3 amp at 125 VAC, 2.2 amp at 14 VAC; sim to Switchcraft 46202LH. (S1 includes switch and housing).
	19A116676P1	Sensitive: SPDT, 5 amp at 24 VDC or 5 amp at 250 VRMS; sim to Microswitch 111SM1-T2.
W1	19A129414G1	2 conductor cable: approx 5 feet long, includes (2) 19A116781P3 contacts.
	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).

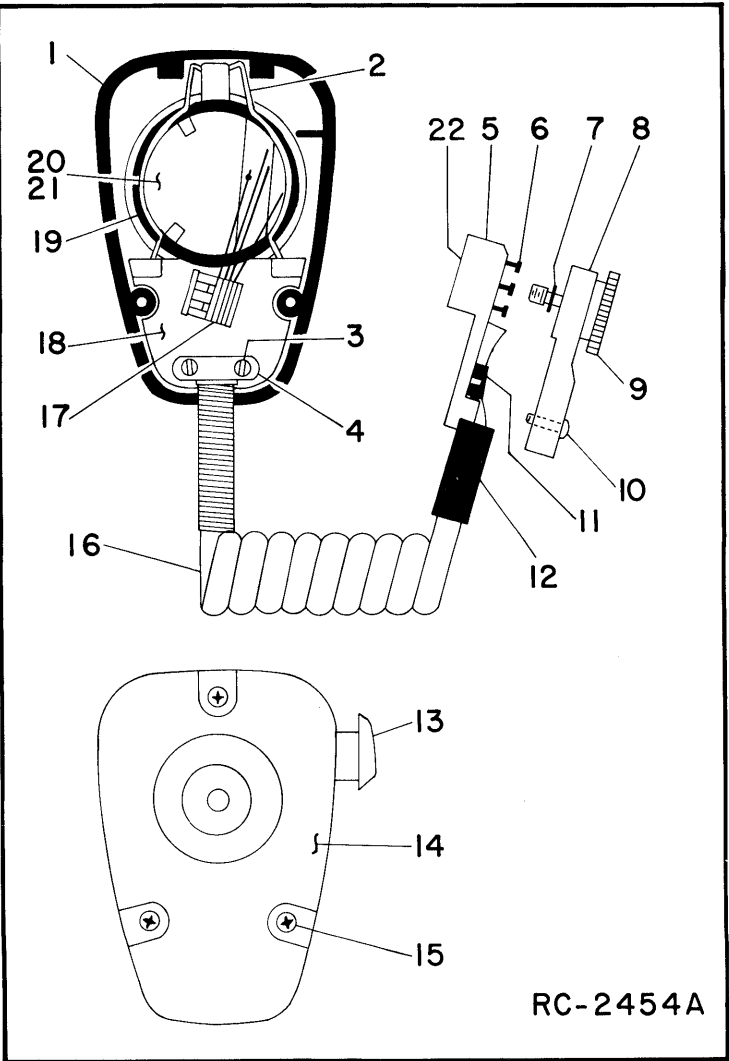
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

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.

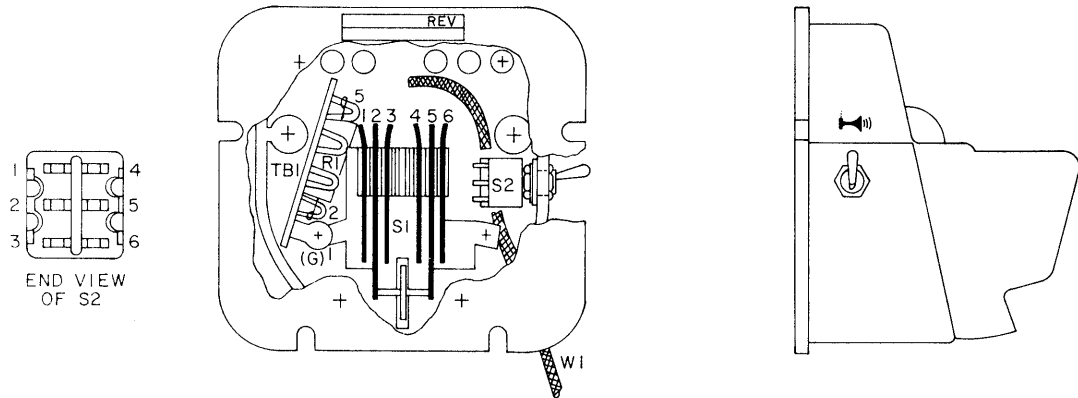
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



SERVICE SHEET

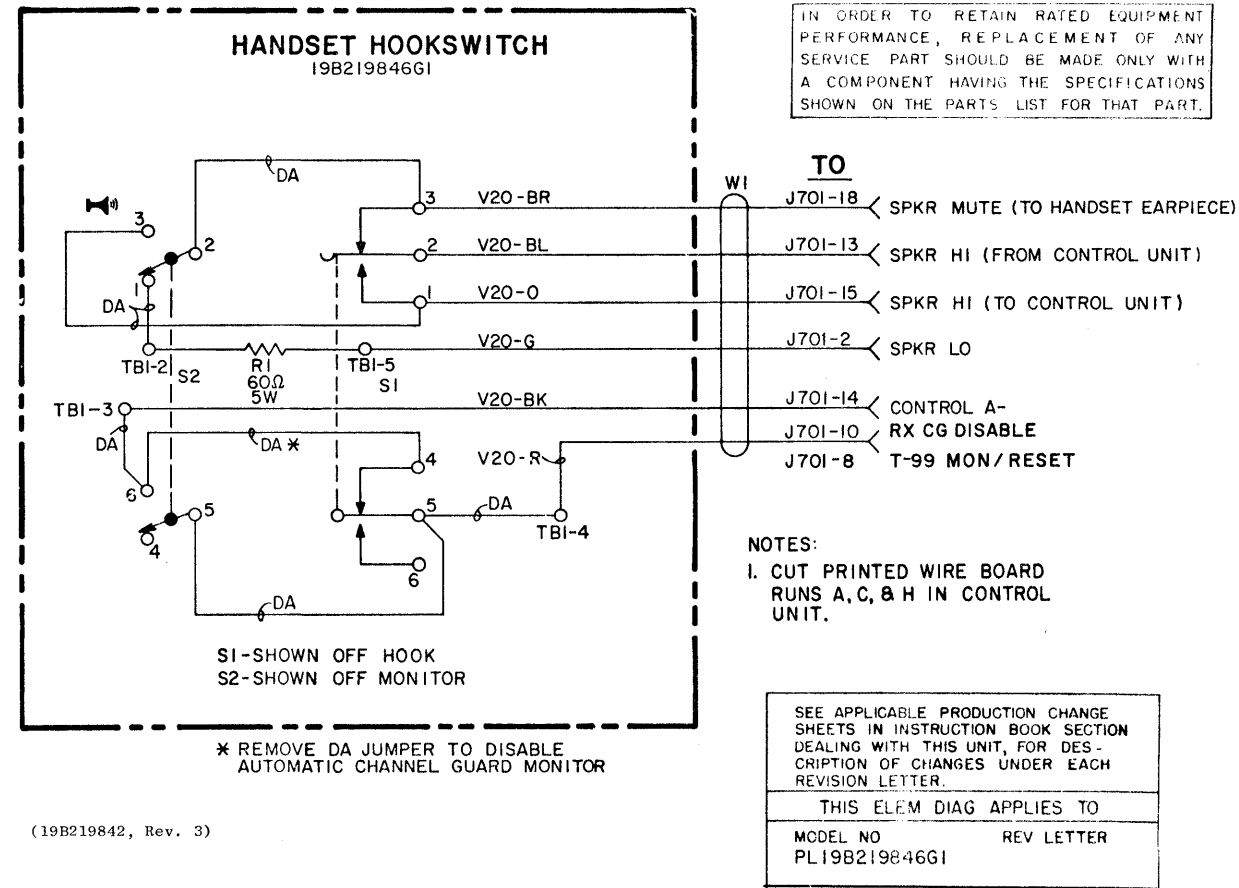
MICROPHONE & HOOKSWITCH

OUTLINE DIAGRAM



(19B226131, Rev. 0)

SCHEMATIC DIAGRAM



(19B219842, Rev. 3)

SERVICE SHEET

HANDSET & HOOKSWITCH

PARTS LIST

LBI-4484
HANDSET HOOKSWITCH
19B219846G1

SYMBOL	GE PART NO.	DESCRIPTION
R1	5493035P12	----- RESISTORS ----- Wirewound: 60 ohms $\pm 5\%$, 5 w; sim to Hamilton Hall Type HR.
S1	19A129585P1	----- SWITCHES ----- 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).
TB1	7775500P203	----- TERMINAL BOARDS ----- Phen: 5 terminals.
W1	19B219841G1	----- CABLES ----- 6 conductor, 5 feet long.
	N190AP1312C	----- MISCELLANEOUS ----- Tap screw, phillips pozidriv: No. 6 x 3/4. (Secures housing to base plate).
	N101P1510P	Tap screw, phillips: No. 8 x 5/8. (Used for mounting base plate).
	19B219852P1	Base plate.
	19A129586P1	Bumper, rubber, (2).

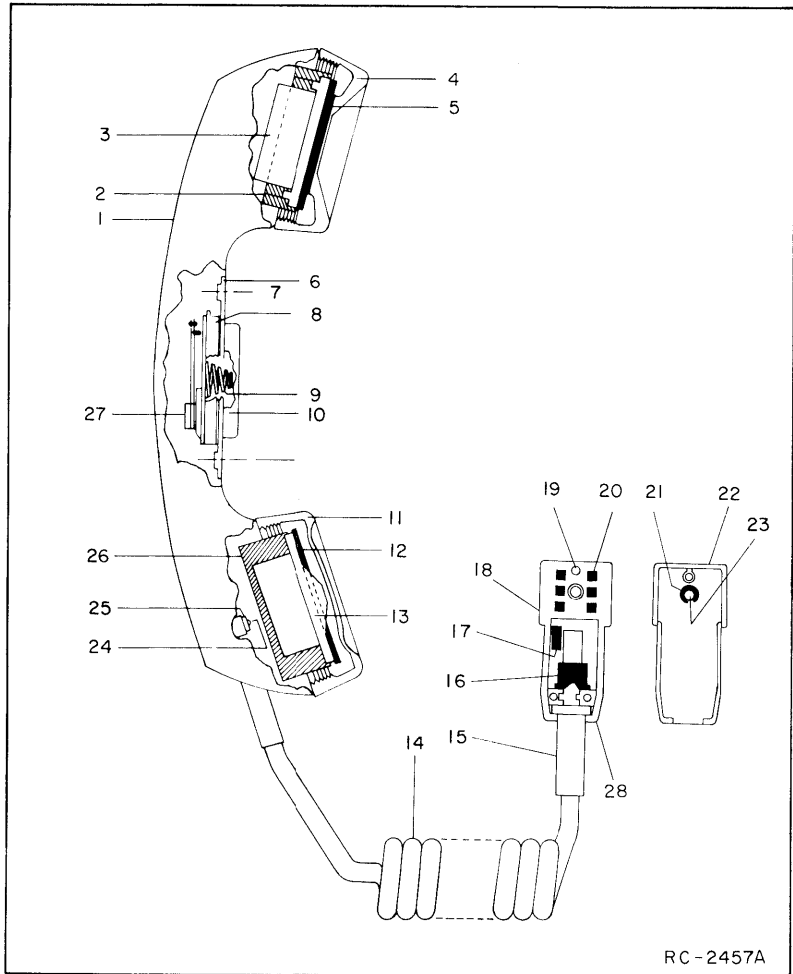
*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

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 $\pm 10\%$, 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



PARTS LIST

LBI-4760

LBI-4488

SPEAKER
19C320302G1

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

*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 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-4760

DF-4093

MOBILE RADIO DEPARTMENT
GENERAL ELECTRIC COMPANY • LYNCHBURG, VIRGINIA 24502

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