MOBILE RADIO

MASTR Progress Line

MOBILE CONTROL UNIT MODELS 4EC59A34-41

Maintenance Manual LBI-3507E
****
DF-4070

SPECIFICATIONS *

MODEL NUMBERS	4EC59A34 through 4EC59A41
USED WITH	MASTR Progress Line Mobile Combinations
CONTROLS	VOLUME Control OFF-ON-STBY Switch SQUELCH Control SEARCH-LOCK MONITOR Switch Optional Controls CHANNEL GUARD Monitor Switch Dimmer Control for Pilot Lights
INDICATORS	Transmitter filament-on light: green Transmit light: red

EC-59-A

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

GENERAL ELECTRIC

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ILLUSTRATIONS

WARNING

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

DESCRIPTION

MASTR Progress Line Control Units are compact, highly functional control units that are designed for either Trunk-Mount or Front-Mount MASTR mobile combinations.

In Trunk-Mount installations, a plate is installed on the back of the Control Unit to hold the connectors. A mounting bracket is provided for mounting the Control Unit within convenient reach of the operator. In Front-Mount installations, the Control Unit is attached to the front of the MASTR Two-Way Radio.

Cable connections are secured to the Control Unit by means of captive locking screws.

CIRCUIT ANALYSIS

The OFF-ON-STBY (standby) switch determines whether or not the transmitter and receiver are operative. With the switch in the OFF position, all power is removed from the Two-Way Radio. Turning the switch to STBY applies power to the receiver only, and the green pilot light does not light.

Turning the switch to the ON position applies filament voltage to the transmitter, activates the push-to-talk (PTT) circuit, and lights the green pilot light. After a short warm-up time, the PTT button may be pressed to key the transmitter.

Pushing the PTT button energizes the system relay, which, in turn, starts the power supply, switches the antenna and mutes the receiver. Keying the transmitter also lights the red pilot light.

CONTROLS

All models of the Control Unit have VOLUME and SQUELCH controls, and an OFF-ON-STBY switch. Depending on the model number, some of the Control Units may have one or more of the controls described in the following paragraphs. A chart showing which controls are present on each Control Unit model is provided on the Control Unit Wiring Diagram.

Instructions for adjusting the controls are in the Operator's Manual for the Two-Way Radio.

SEARCH-LOCK MONITOR Switch (S705)

Search-Lock Monitor Switch S705 has three positions: F1, F1-F2 and F2. When the switch is in the F1-F2 position, no voltage is fed from S705 to either receiver crystal switching diode, and the Search-Lock Monitor operates. The Search-Lock Monitor (SLM) then provides two-channel sequential monitoring by alternately switching +10 volts between the two receiver crystal switching diodes at a rate of approximately six times per second. When a signal is received on either channel, the SLM will "lock" on that frequency for the duration of the signal.

Turning S705 to the F1 or F2 position applies +10 volts to the selected crystal switching diode in the receiver oscillator and overrides the SLM. Switching to the F1 or F2 position also connects the crystal switching diode of the transmitter oscillator to ground, so that the radio will operate on the frequency determined by the selected transmitter and receiver oscillator. With S705 in the F1-F2 position, the transmitter will operate on the F1 frequency only.

In radios equipped with Channel Guard, the receiver Channel Guard operates only in the F1 position. The transmitter Channel Guard operates in the F1 and F1-F2 position.

CHANNEL GUARD-OFF Switch (S703)

Placing this switch in the OFF position disables the receiver Channel Guard so that the receiver operates on noise squelch only.

Dimmer Control (R705 - Optional)

The dimmer control is a rheostat in series with the green pilot light. Turning the control adjusts the amount of light given off by the green pilot light.

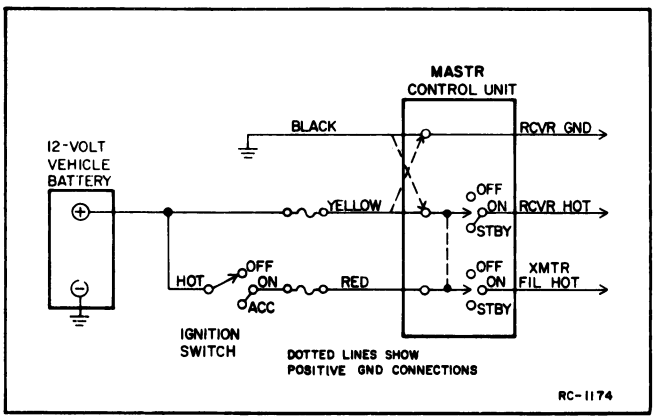


Figure 1 - 12-VDC Connections for Ignition Switch Standby

12-VOLT SYSTEMS

In 12-volt vehicle systems, the Control Unit may be connected for three different modes of operation, depending on the way the three ignition switch cables are connected in the vehicle system. The black ignition switch cable provides the receiver ground connection. The yellow fused lead provides the receiver hot connections, and the red fused lead provides the hot connections for the transmitter filaments. The three types of operation are:

1. Ignition Switch Standby - For this type of operation, the red fused lead (transmitter filament voltage) is connected to the ACCESSORY or ON terminal of the ignition switch. The yellow fused lead (receiver hot) is connected to the hot side of the ignition switch, and the black lead connects to vehicle ground.

   With the ignition switch OFF, the receiver automatically reverts to STBY, ready to receive messages. Turning the ignition switch to the ON or ACCESSORY position turns on the green pilot light and supplies transmitter filament voltage. Turning the OFF-ON-STBY switch to OFF removes all power to the Two-Way Radio.

2. Ignition Switch Control - For ignition switch control, the yellow and red fused leads are connected 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.

3. Ignition Switch Bypass - For ignition switch bypass, the yellow and red fused leads connect 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 can be turned on and off only by the OFF-ON-STBY switch on the MASTR Control Unit.

6- AND 28-VOLT SYSTEMS

In 6- and 28-volt systems, the Control Unit may be connected for two different modes of operation, depending on the way the two ignition switch cables are connected in the vehicle system. The black cable provides the connection from the relay coil on the fuse assembly to the control head. The yellow fused lead provides the hot connection to operate the relay. The two types of operation are:

1. Ignition Switch Control - For ignition switch control, the yellow fused lead connects to the ON or ACCESSORY terminal of the ignition switch. The transmitter and receiver will operate only when the ignition switch is in the ON or ACCESSORY 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 vehicle fuse block assembly. Both the transmitter and receiver operate independently of the ignition switch, and can be turned on and off only by the OFF-ON-STBY switch on the MASTR Control Unit.

MAINTENANCE

DISASSEMBLY

In trunk-Mount installations, access to the inside of the Control Unit is obtained by removing the two Phillips-head screws in the back of the unit and pulling the back panel away from the housing.

In Front-Mount installations, remove the two Phillips-head screws holding the front casting to the frame and move the casting away from the frame. Next, remove the two screws securing the control cable plug to the inside of the front casting. Then remove the two flat-head screws holding the Control Unit to the front casting.

PILOT LIGHT REPLACEMENT

The pilot lights can be easily replaced without disassembling the Control Unit.

First, unscrew the colored lens. Then wrap a small piece of masking tape around the bulb, to give the fingers a firm grip, and unscrew the bulb.

REINSTALLATION

If it becomes necessary to move the Two-Way Radio and Control Unit to another vehicle, the 25-pin control cable plug may need to be disassembled.

Refer to Figure 2 for disassembly of the plug.

> **NOTE**
>
> The plug is assembled so that the cable comes out of the top of the plug when connected to the Control Unit. To have the cable come out of the bottom of the plug, remove the remaining two screws and rotate the metal frame 180 degrees.

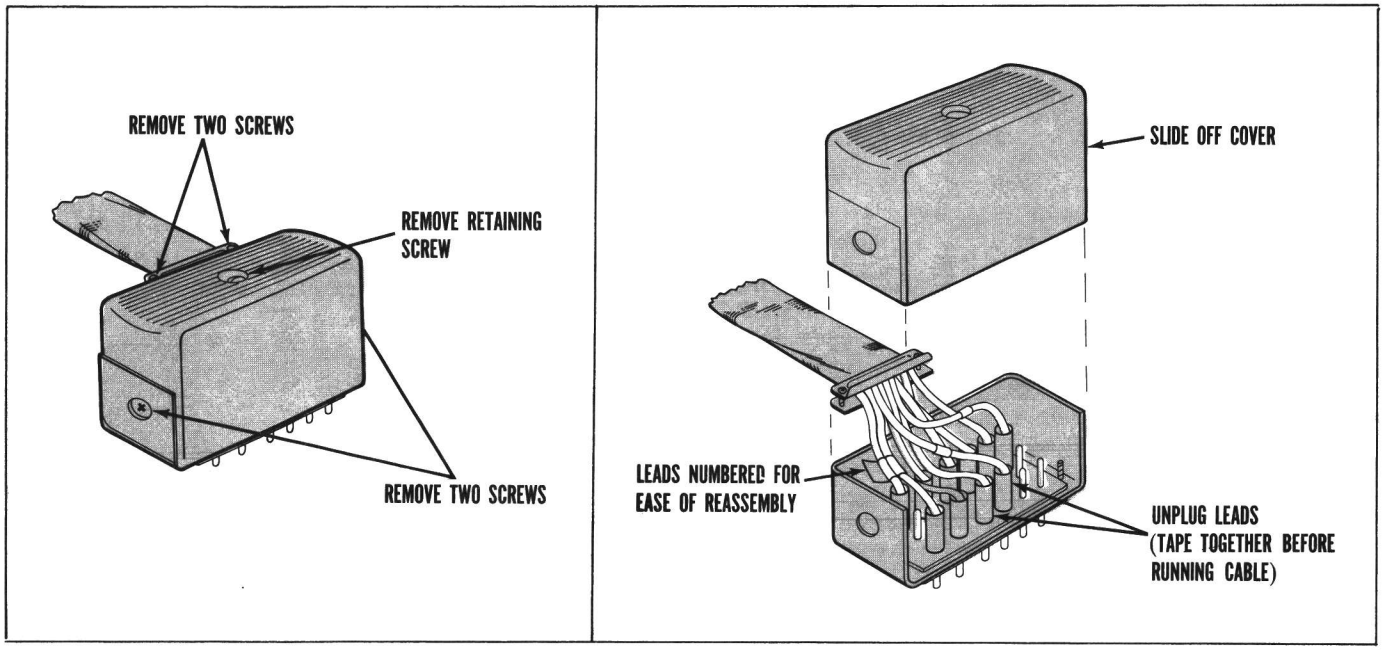
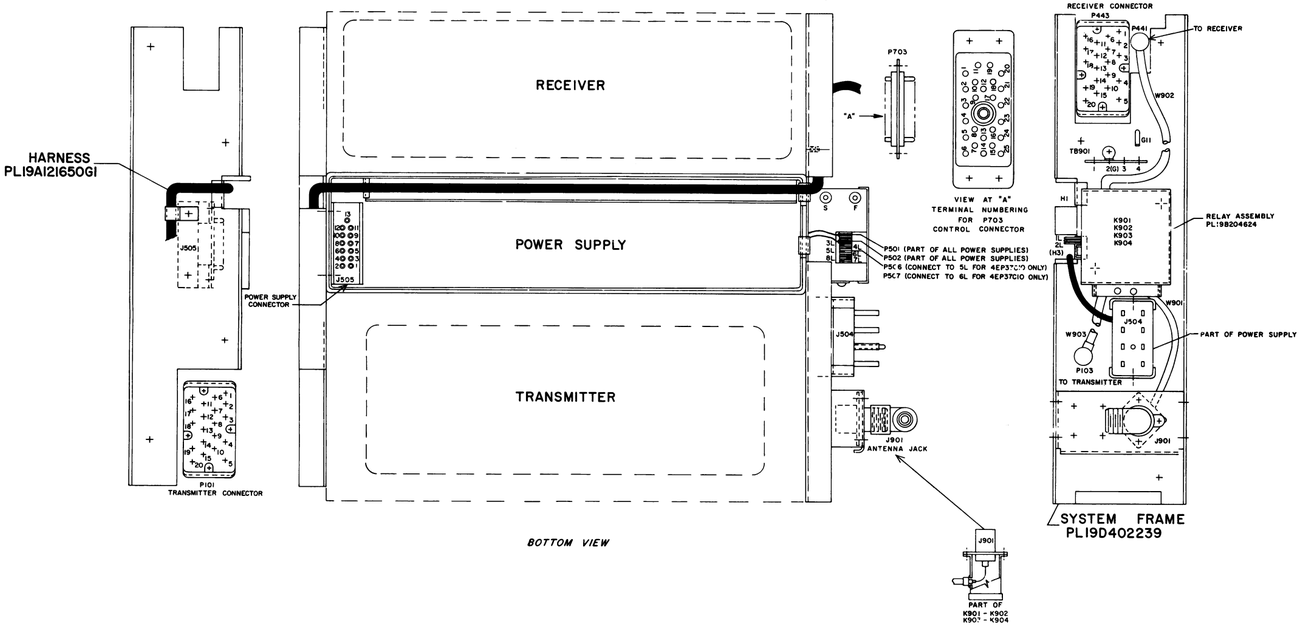


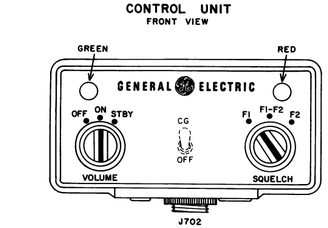
Figure 2 - Disassembly of Control Cable Plug

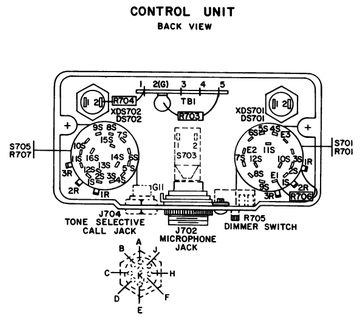
SYSTEM FRAME & HARNESS

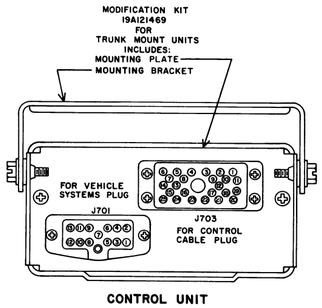


(19D402582, Rev. 3)

CONTROL UNIT







SYMBOL	FUNCTION
R701	VOLUME CONTROL
R707	SQUELCH CONTROL
S701	OFF-ON-STBY CONTROL
S703	CHANNEL GUARD-OFF
S705	FREQUENCY SELECTOR

(19C303817, Rev. 2)

OUTLINE DIAGRAM

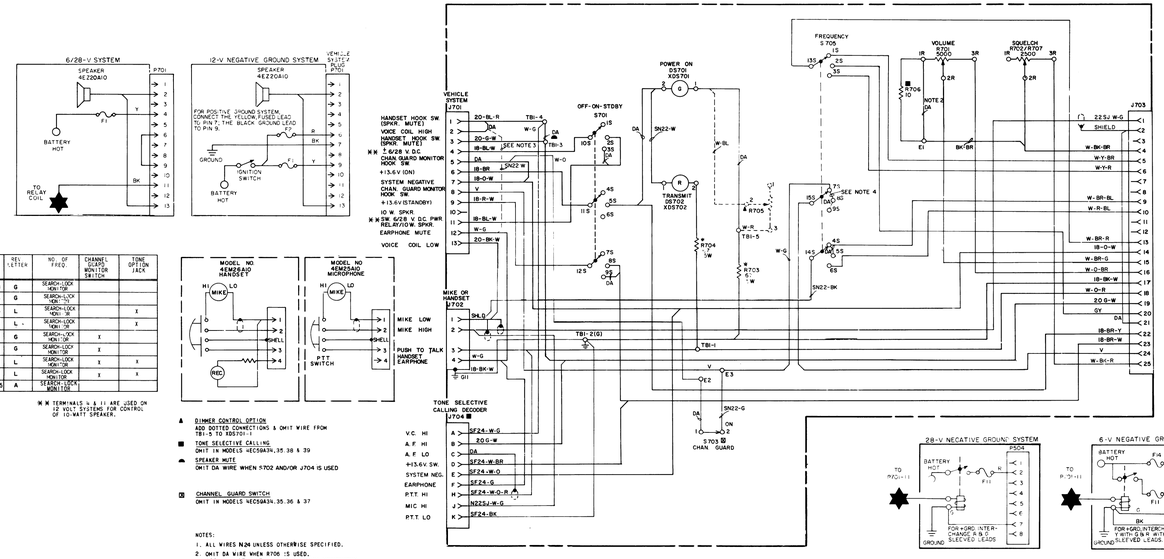
MASTR CONTROL UNIT
MODELS 4EC59A34-41

SCHEMATIC & INTERCONNECTION DIAGRAM

MASTR CONTROL UNIT MODELS 4EC59A34-41

Issue 8

CONTROL UNIT



MODEL NUMBER	REL LETTER	NO. OF FREQ	CHANNEL GUARD MONITOR SWITCH	TONE OPTION JACK
4EC59A34	G	SEARCH-LOCK MONITOR		
4EC59A35	G	SEARCH-LOCK MONITOR		X
4EC59A36	L	SEARCH-LOCK MONITOR	X	X
4EC59A37	L	SEARCH-LOCK MONITOR	X	X
4EC59A38	G	SEARCH-LOCK MONITOR	X	
4EC59A39	G	SEARCH-LOCK MONITOR	X	X
4EC53A40	L	SEARCH-LOCK MONITOR	X	X
4EC59A41	L	SEARCH-LOCK MONITOR	X	X
4EC59A115	A	SEARCH-LOCK MONITOR		

※ ※ TERMINALS 4 & 11 ARE USED ON 12 VOLT SYSTEMS FOR CONTROL OF 10 WATT SPEAKER.

▲ DIMMER CONTROL OPTION
ADD DOTTED CONNECTIONS & WHT WIRE FROM TBI-5 TO 1005701-1

■ TONE SELECTIVE CALLING
OMIT 1 IN MODELS 4EC59A34,35,38 & 39

◓ SPEAKER MUTE
OMIT DA WIRE WHEN S702 AND/OR J704 IS USED

⊠ CHANNEL GUARD SWITCH
OMIT 1 IN MODELS 4EC59A34,35,36 & 37

NOTES:
1. ALL WIRES N.24 UNLESS OTHERWISE SPECIFIED.
2. OMIT DA WIRE WHEN R706 IS USED.
3. ADD W WIRE WHEN PLI9B204970G1 HOOKSWITCH IS USED.
4. FOR CHANNEL GUARD ON F1 ONLY REMOVE DA WIRE FROM 7S TO 8S
5. IN ENCODE ONLY APPLICATION, DA JUMPER FROM TBI-3 TO TBI-4 MUST BE PRESENT

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

ALL RESISTORS ARE 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.

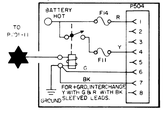
(19D402414, Rev. 23)

CONTROL CABLE TRUNK MOUNT 19C305626-G1&2 (STANDARD) 19C305626-G3&4 (MULT. FREQUENCY)*

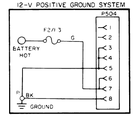
P1		J1
1	MIKE HI	BR
2	MIKE LO	SHLD
3	VOL /SQ CONT LO	R-BK
4	*REC FREQ 1	W-Y-BR
5	*REC FREQ 2	W-Y-R
6	*REC FREQ 3	W-Y-O
7	*REC FREQ 4	W-O-G
8	*XMTR FREQ 1	BR-BL
9	*XMTR FREQ 2	R-BL
10	*XMTR FREQ 3	O-BL
11	*XMTR FREQ 4	G-BL
12	+12V REG	O-R
13	SYSTEM NEGATIVE	BK
14	VOL CONT ARM	G
15	VOL CONT HI	R
16	GRD (PUSH TO TALK)	W-BK
17	PUSH TO TALK	W-R
18	AUDIO FREQ HI	Y
19	AUDIO FREQ LO	G-Y
20	FIL	O
21	+12 VDC	R
22	CHAN GU MONITOR	BL-BK
23	SQ CONT HI	BK-R
24		
25		

28-V NEGATIVE GROUND SYSTEM

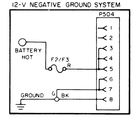
6-V NEGATIVE GROUND SYSTEM



12-V POSITIVE GROUND SYSTEM



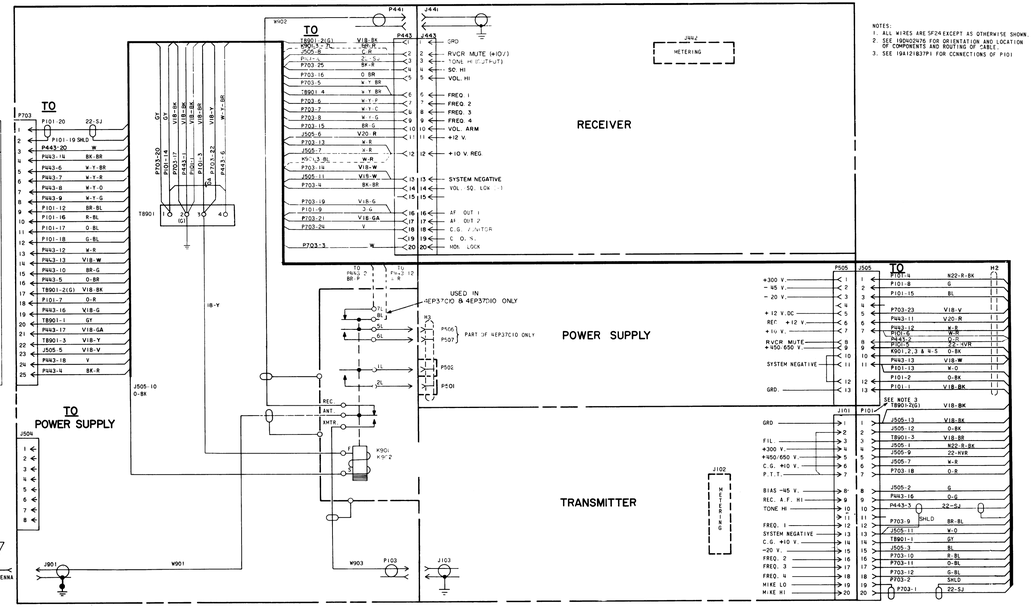
12-V NEGATIVE GROUND SYSTEM



(RC-11868)

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.

SYSTEM FRAME AND HARNESS



NOTES:
1. ALL WIRES ARE SF24 EXCEPT AS OTHERWISE SHOWN.
2. SEE 19D402078 FOR ORIENTATION AND LOCATION OF COMPONENTS AND ROUTING OF CABLE.
3. SEE 19A121837P1 FOR CONNECTIONS OF P101

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.

(19D402338, Rev. 23)

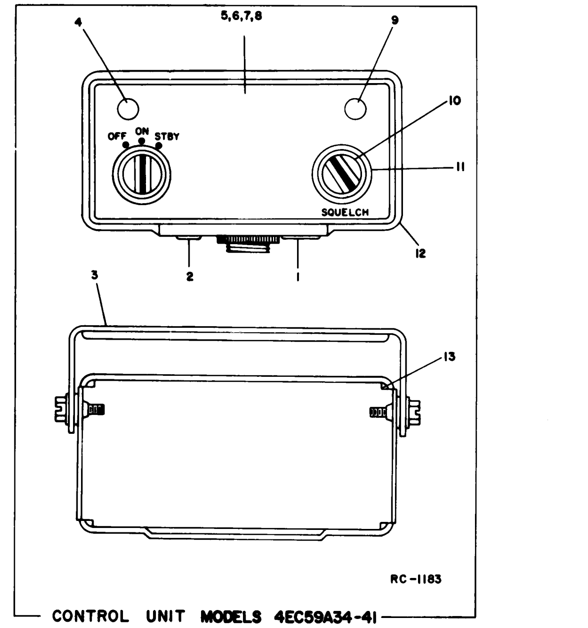
PARTS LIST

LBI-3515F

CONTROL UNIT
MODELS 4EC59A34 thru 4EC59A41
19D413054G6
AND
ASSOCIATED ASSEMBLIES

SYMBOL	GE PART NO.	DESCRIPTION
		CONTROL UNIT
		- - - - - - - - - INDICATING DEVICES - - - - - -
DS701 and DS702	19B201122P1	Light, indicator: miniature, 6 v; sim to GE Type 1768.
		- - - - - - - JACKS AND RECEPTACLES - - - - -
J701	19C303576P1	Socket, phen: 13 contacts rated at 5 amps max.
J702*		Includes:
	19A116061P2	Receptacle: 4 female contacts; sim to Amphenol Type 91-PN4F-1000.
	19A116061P4	Lockwasher.
	19A116061P5	Nut, knurled.
		In Models 4EC59A34, 35, 38, 39 earlier than REV D: In Models 4EC59A36, 37, 40, 41 earlier than REV F:
	7117934P2	Connector, chassis: 4 female contacts.
J703	19D402408P1	Connector, phen: 25 contacts rated at 5 amps max.
J704	19B216279G1	Jack assembly: 9 female contacts rated at 5 amps at 900 VRMS; sim to Winchester M9S-LRN.
		- - - - - - - - - - - RESISTORS - - - - - - - - -
R701		(Part of S701).
R703 and R704	5493035P19	Wirewound: 67 ohms ±5%, 5 w; sim to Hamilton Hall Type HR.
R706*	3R77P100K	Composition: 10 ohms ±10%, 1/2 w.
		In 4EC59A36, 37, 40, 41 of REV B-G:
	3R77P560K	Composition: 56 ohms ±10%, 1/2 w.
		In Models 4EC59A36, 37, 40, 41 of REV A:
	3R77P271K	Composition: 270 ohms ±10%, 1/2 w.
		In Models 4EC59A36, 37, 40,41 earlier than REV A:
	3R77P220K	Composition: 22 ohms ±10%, 1/2 w.
R707		(Part of S705).
		- - - - - - - - - - - SWITCHES - - - - - - - - - -
S701*	19C307089P19	Switch/Resistor: includes Switch, rotary, 3 pole, 3 positions, momentary-shorting contacts, 250 ma at 500 VRMS; Resistor (R701), variable, 5000 ohms ±20%, 1/2 w max; sim to Mallory LC5K.
		In Models 4EC59A34, 35, 38, 39 earlier than REV B: In Models 4EC59A36, 37, 40, 41 earlier than REV D:
	19C307089P1	Switch/Resistor: includes Switch, rotary, 3 pole, 3 positions, non-shorting contacts, 250 ma at 500 VRMS; Resistor (R701), variable, 5000 ohms ±20%, 1/2 w max; sim to Mallory LC5K.
S702 and S703	5491899P5	Toggle: SPST, 3 amps at 250 VAC/VDC; sim to Cutler-Hammer 8280K15.
S705	19C307089P20	Switch/Resistor: includes Switch, rotary, 4 pole, 3 positions, momentary-shorting contacts, 250 ma at 500 VRMS; Resistor (R707), variable, 2500 ohms ±10%, 1 w max; sim to Mallory LC2500.
		- - - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1*	7775500P12	Phen: 5 terminals.
		In 4EC59A34, 35, 38, 39 of REV B and earlier: In 4EC59A36, 37, 40, 41 of REV D and earlier:
	7775500P9	Phen: 5 terminals.
		- - - - - - - - - - - SOCKETS - - - - - - - - - -
XDS701 and XDS702	19B201122P2	Lamp, miniature: sim to Drake Series 121.
		MECHANICAL PARTS
		CONTROL UNIT MODELS 4EC59A34 - 41 (SEE RC-1183)
1	N529P19C13	Plug button. (Used in Models 4EC59A34,35,38,39).
2	N529P5C13	Plug button.
3	19A121521G1	Mounting bracket.
4	19B201122P3	Lens cap: green translucent nylon. (Used with DS701).
5	NP243420	Nameplate: etched aluminum. (Used in Models 4EC59A34 and 36).
6	NP243470	Nameplate: etched aluminum. (Used in Models 4EC59A35 and 37). (SPKR-OFF).
7	NP243468	Nameplate: etched aluminum. (Used in Models 4EC59A38 and 40). (CG-OFF).
8	NP243472	Nameplate: etched aluminum. (Used in Models 4EC59A39 and 41). (CG-OFF, SPKR-OFF).
9	19B201122P4	Lens cap: red translucent nylon. (Used with DS702).
10	19B204443G1	Knob: gray.
11	19C303413P1	Knob: VOLUME/SQUELCH.
12	19D413010P1	Housing.
13	19B204522P1	Mounting plate.
	19A116773P106	Tap screw, Phillips POZIDRIV®: No. 7-19 x 3/8. (Secures housing to mounting surface).
		ASSOCIATED ASSEMBLIES
	19A121469G1	Control unit modification kit (trunk mount).
	19D402239G1	12 volt vehicle frame.
	19D402239G2	6 and 28 volt vehicle frame.
	19A122444P1	Cover, wire channel (on systems frame).
	19C303452G1	Front casting (Front mount).
	19C303452G2	Front casting (Trunk mount).
	4034260P3	Screw: 10-32 x 1-1/8 (Secures Front casting).
	5491682P2	Lock: Yale and Towne. (Part of Front casting).
	5491682P7	Cam. (Used with lock).
		DIMMER CONTROL MODIFICATION KIT 19A121293G1
		- - - - - - - - - - - RESISTORS - - - - - - - - - -
R705	19B209114P1	Variable, wirewound: 75 ohms ±20%, 3 w; sim to CTS Series 112.
		POWER CABLE ASSEMBLY 19C303601G1 (12 VOLT FRONT MOUNT) 19C303601G2 (12 VOLT TRUNK MOUNT)
		- - - - - - - - MISCELLANEOUS - - - - - - - - -
	19B209189P1	Connector, phen: 8 contacts rate at 15 amps at 1100 VRMS; sim to Beauchaine and Sons S-5401-76.
	19D402438P1	Cap, connector.
	19A121444P2	Connector retaining screw.
	19A115313P1	Cable: 3 conductor, approx 9 feet long. (Used in 19C303601G1).
	19A115314P1	Cable: 3 conductor, approx 18 feet long. (Used in 19C303601G2).
		POWER CABLE ASSEMBLY 19C303603G1 (28 VOLT FRONT MOUNT) 19C303603G2 (28 VOLT TRUNK MOUNT)
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B209189P1	Connector, phen: 8 contacts rate at 15 amps at 1100 VRMS; sim to Beauchaine and Sons S-5401-76.
	19D402438P1	Cap, connector.
	19A121444P2	Connector retaining screw.
	19A115313P1	Cable: 3 conductor, approx 9 feet long. (Used in 19C303603G1).
	19A115313P1	Cable: 3 conductor, approx 23 feet long. (Used in 19C30360-G2).
		POWER CABLE ASSEMBLY (6 VOLT FRONT MOUNT) 19C303607G1
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B209189P1	Connector, phen: 8 contacts rate at 15 amps at 1100 VRMS; sim to Beauchaine and Sons S-5401-76.
	19D402438P1	Cap, connector.
	19A121444P2	Connector retaining screw.
	7146477P3	Cable: 2 lengths, approx 9 feet long connected to pins 1 and 7.
	7146477P4	Cable: 2 lengths, approx 9 feet long connected to pins 4 and 6.
		POWER CABLE ASSEMBLY (6 VOLT TRUNK MOUNT) 19C303606G1
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B209189P1	Connector, phen: 8 contacts rate at 15 amps at 1100 VRMS; sim to Beauchaine and Sons S-5401-76.
	19A127581P1	Cap, connector.
	19A121444P2	Connector retaining screw.
	7146477P1	Cable: 2 lengths, approx 22 feet long connected to pins 1 and 7.
	7146477P3	Cable: 2 lengths, approx 22 feet long connected to pins 4 and 6.
		CONTROL CABLE ASSEMBLY 19C303626G1, G2 (1-FREQ) 19C303626G3, G4 (MULTI-FREQ)
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P1	19C303626G5	Plug, male: includes connector 19D402408P3, cap 19C303290P2 and connector retaining screw 19A121444P2.
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J1	19C303626G6	Plug, female: includes connector 19D402408P1, cap 19C303290P1 and connector retaining screw 19A121444P1.
		- - - - - - - - - MISCELLANEOUS - - - - - - -
	19D402408P1	Connector, female phen: 25 contacts rated at 5 amps max.
	19D402408P3	Connector, male phen: 25 contacts rated at 5 amps max.
	19C303290P1	Cap, connector.
	19C303290P2	Cap, connector.
	7139880P11	Cable: 23 conductors. (When ordering specify length). (Used in 19C303626G1 and G2).
	7139880P8	Cable: 13 conductors. (When ordering specify length). (Used in 19C303626G3 and G4).
		VEHICLE SYSTEM CABLE KIT 19A121454G1 (12 VOLT VEHICLES) 19A121454G2 (6/28 VOLT VEHICLES)
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19A121324G1	6/28 volt vehicle jumper. (Used in 19A121454G2).
	19A121429P1	Pin: 1/2 inch long.
	19A121441G1	Plug: 13 contacts.
	19C303574P1	Cover.
		FUSED LEAD ASSEMBLY 19A121314G1 (19A121454G1, G2) 19A121314G2 (19A121454G2)
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	1R16P8	Cartridge, quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussman MTH-5.
	19A115776P2	Fuseholder.
		INTERCONNECTION HARNESS ASSEMBLY 19A121650G1
		- - - - - - - - JACKS AND RECEPTACLES - - - - -
J505	19B204409G1	Plug, male: 13 pin contacts.
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P101	19C303506P1	Connector, phen: 20 contacts.
P443	19C303506P1	Connector, phen: 20 contacts.
P703	19D402408P2	Connector, phen: 25 contacts.
		- - - - - - - - - TERMINAL BOARDS - - - - - - - - -
TB901	7775500P10	Phen: 5 terminals.
		12 VOLT RELAY ASSEMBLY 25-470 MHz 19B209445P1
		Includes J901, K901, P103, P441, W901-W903.
		6/12, 12/28 VOLT RELAY ASSEMBLY 25-470 MHz 19B209445P2
		Includes J901, K902, P103, P441, W901-W903.
		FUSE AND RELAY ASSEMBLY 7487952G19 (28 VOLT VEHICLE) 7487952G20 (6 VOLT VEHICLE)
		- - - - - - - - - - FUSES - - - - - - - - - - -
F11	1R11P4	Quick blowing: 15 amps, 250 v; sim to Bussman NON15.
F12	1R11P7	Quick blowing: 30 amps, 250 v; sim to Bussman NON30. (Used in 7487952G20).
		- - - - - - - - - - RELAYS - - - - - - - - - - -
K1	7486515P1	Armature, enclosed: 6 VDC nominal, 26 ohms ±8% coil res, 1 form A contact rated at 15 amps; sim to RBM 60-108013-3. (Used in 7487952G20).
K3	7486515P3	Armature, enclosed: 28 VDC nominal, 300 ohms ±10% coil res, 1 form A contact rated at 15 amps. (Used in 7487952G19).
		12 VOLT FUSE ASSEMBLY 19B216021G4 (Fuses must be ordered separately)
		- - - - - - - - - - - FUSES - - - - - - - - - - -
F2	1R11P6	Quick blowing: 25 amps, 250 v; sim to Bussman NON25. (Used with medium power transmitters).
F3	1R11P7	Quick blowing: 30 amps, 250 v; sim to Bussman NON30. (Used with high power transmitters).
		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 Specialists 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. 068110-001.
		Whip nut assembly. 068047-001.
		Base nut assembly. 068048-001.
		"O" Ring (LARGE). 007059-122.
		Stud assembly. 068046-001.
		RG58/U Cable, 15 feet. 068115-001.
		HANDSET MODEL 4EM26A10 MODEL 4EM26C10 19B209100G1 (SEE RC-1394)
1		Self tap screw, bind head: No. 4 x 5/16. Shure Brothers 30C640C.
2		Cable clamp. Shure Brothers 53A532.
3		Shield. Shure Brothers RP19.
4		Switch. Shure Brothers RP81.
5		Case. Shure Brothers RP49. (Used in 4EM26A10).
		Case. Shure Brothers 21RP899F. (Used in 4EM26C10).
6		Adapter. Shure Brothers 65A230.
7		Magnetic controlled cartridge. Shure Brothers RP41.
8	3R77P222K	Resistor, composition: 2200 ohms ±10%, 1/2 w.
9		Receiver cap. (Part of item 5).
10		Washer. Shure Brothers 34A321.
11		Escutcheon. Shure Brothers 53A536A.
12		Actuator. Shure Brothers 53A556.
13		Spring. Shure Brothers 44A140.
14		Plunger bar. Shure Brothers RP82.
15		Flat head screw, socket cap: No. 4-40 x 1/4. Shure Brothers 30C557B.
16		Transmitter cap. (Part of RP49).
17		Washer. Shure Brothers 34A309.
18		Magnetic controlled cartridge. Shure Brothers RP13.
19		Cable and plug. Shure Brothers RP48. (Used in 4EM26A10).
		Cable and plug. Shure Brothers 21RP738F. (Used in 4EM26C10).
		HOOKSWITCH ASSEMBLY 19B204867G1
		- - - - - - - - - - MISCELLANEOUS - - - - - - - -
20	4029851P4	Cable clamp; sim to WEC Kesser 3/16-4.
21	19A121612P1	Holder and switch: thermoplastic case, contact rating 1 amp at 125 v.
22	19A121581G1	Cable: approx 8-1/2 feet long.
23	5493035P10	Resistor, wirewound, ceramic: 3.5 ohms ±5%, 5 w; sim to Hamilton Hall Type HR.
24	7775500P55	Terminal board, phen: 5 terminals.
		MILITARY MICROPHONE MODEL 4EM25A10 19B209102G1 (SEE RC-1163)
1		Cable clamp. Shure Brothers 53A532.
2		Switch. Shure Brothers RP26.
3		Case (back) and mounting button: plastic. Shure Brothers RP67.
4		Switch button: red plastic. Shure Brothers RP25.
5		Spring. Shure Brothers RP16.
6		Shield. Shure Brothers RP23.
7		Magnetic controlled cartridge. Shure Brothers RP13.
8		Case (front): plastic. Shure Brothers RP67.
9		Cable and plug: approx 6 feet long. Shure Brothers RP14.
		5 WATT SPEAKER 19C320302G3 4EZ20A10
LS2	19A116910P1	Permanent magnet: 5 inch, 3.2 ohms ±15% imp, 5 w max operating; sim to Pioneer 002009.
W1	19A121546G1	Cable assembly: approx 48 inches long, includes (2) 19A121429P1 pins.
	19D416396P3	Speaker housing.
	19C320016P2	Mounting support.
	5490407P3	Neoprene grommet. (Upper)
	19A115470P1	Rubber grommet. (Lower)
	19B219692G3	Grille.
	19A116985P1	Screw, hex head-slotted: double lead thread, with internal tooth washer, No. 13-16 x 3/4. (Secures housing to mounting bracket).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



CONTROL UNIT MODELS 4EC59A34-41

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 - Models 4EC59A36, 37, 40 and 41. To make compatible with Type 99 decoder. Changed R706.

REV. B - Models 4EC59A36, 37, 40 and 41. To reduce speaker minimum audio level when using Type 99 decoder. Changed R706.

REV. A - Models 4EC59A34, 35, 38 and 39.
REV. C - Models 4EC59A36, 37, 40 and 41. To reduce Transmitter modulation caused by power supply switching noise. Removed black wire from ground lug TB1-2 (other end connected to S706-14S) and connected it to microphone jack J702-1.

REV. B - Models 4EC59A34, 35, 38 and 39.
REV. D - Models 4EC59A36, 37, 40 and 41. To incorporate switch with improved reliability. Changed S701.

REV. C - Models 4EC59A34, 35, 38 and 39
REV. E - Models 4EC59A36, 37, 40 and 41
To facilitate manufacturing. Changed TB1.

REV. D - Models 4EC59A34, 35, 38 and 39
REV. F - Models 4EC59A36, 37, 40 and 41
To ground microphone jack. Added #18 BK-W wire from TB1-2(G) to G11.

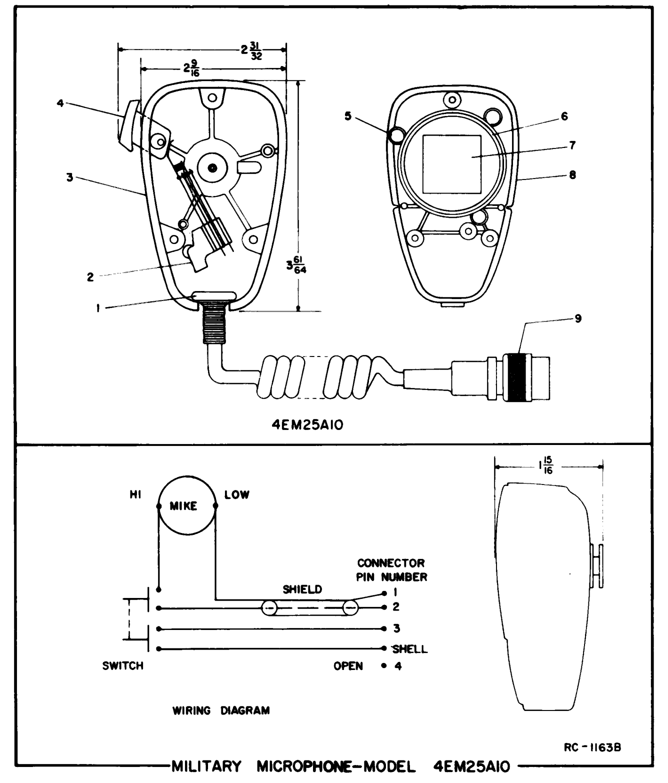
REV. E - Models 4EC59A34, 35, 38 and 39
REV. G - Models 4EC59A36, 37, 40 and 41
Changed control unit housing from metal to Lexan®.

REV. H - Models 4EC59A36, 37, 40, 41
To reduce output level at minimum volume.
Changed R706.

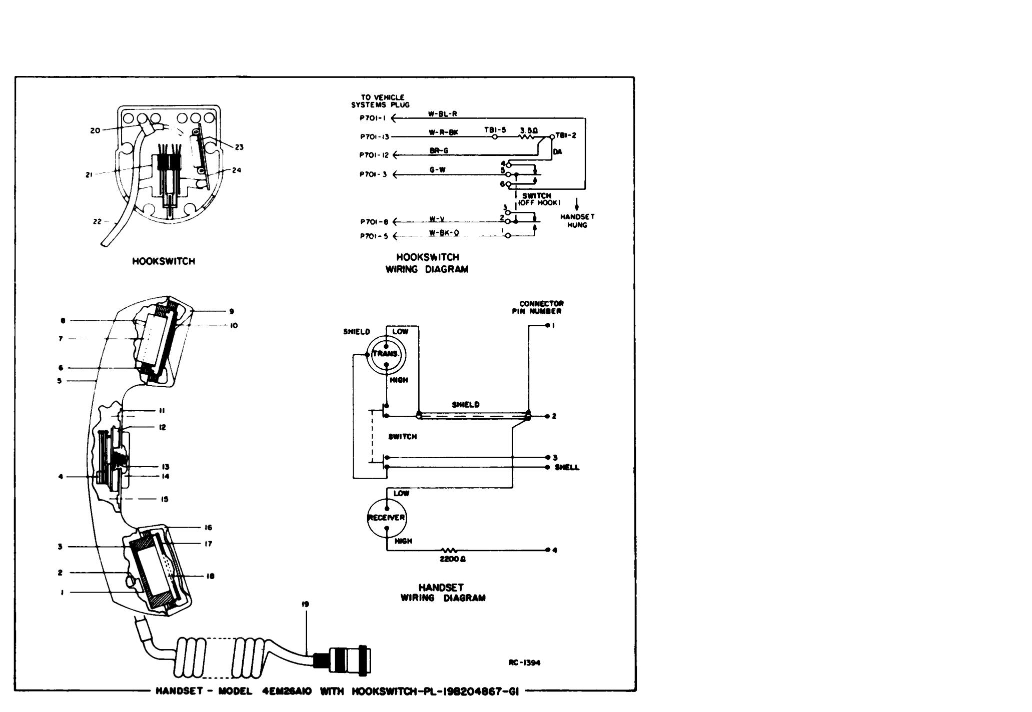
REV. F - Models 4EC59A34, 35, 38, 39
REV. J - Models 4EC59A36, 37, 40, 41
To provide Channel Guard operation on all frequencies.
Add jumper wire to S705.

REV. K - Models 4EC59A36, 37, 40 and 41.
To add MIC HI, PTT, EARPHONE and GROUND to Tone Jack J704.

REV. G - Models A34, A35, A38 and A39
REV. L - Models A36, A37, A40 and A41
To incorporate new housing. Changed housing from 19B216271G1 to 19D413010P1. Changed backplate retaining screw to 19A116773P106.



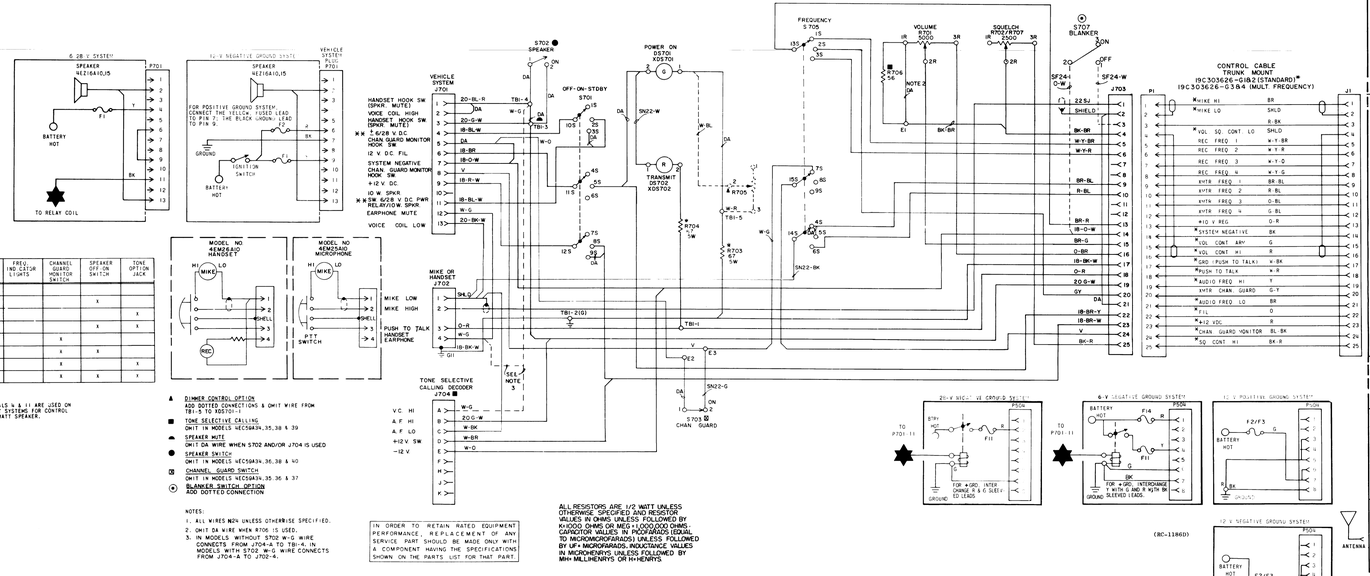
MILITARY MICROPHONE-MODEL 4EM25A10



HANDSET - MODEL 4EM26A10 WITH HOOKSWITCH-PL-19B204867-G1

SYSTEM FRAME AND HARNESS

CONTROL UNIT



MODEL NUMBER	REV. LETTER	NO. OF FREQ.	FREQ. IND. CATOR LIGHTS	CHANNEL GUARD MONITOR SWITCH	SPEAKER OFF-ON SWITCH	TONE OPTION JACK
WE59A34	D		SEARCH-LOCK MONITOR			
WE59A35	D		SEARCH-LOCK MONITOR		X	
WE59A36	F		SEARCH-LOCK MONITOR			X
WE59A37	F		SEARCH-LOCK MONITOR		X	X
WE59A38	D		SEARCH-LOCK MONITOR	X		
WE59A39	D		SEARCH-LOCK MONITOR	X	X	
WE59A40	F		SEARCH-LOCK MONITOR	X		X
WE59A41	F		SEARCH-LOCK MONITOR	X	X	X

* M TERMINALS 9 & 11 ARE USED ON 12 VOLT SYSTEMS FOR CONTROL OF 10-WATT SPEAKER.

▲ DIMMER CONTROL OPTION
ADD DOTTED CONNECTIONS & OMIT WIRE FROM TBI-5 TO XDS701-1

■ TONE SELECTIVE CALLING
OMIT IN MODELS WE59A34,35,38 & 39

◓ SPEAKER MUTE
OMIT DA WIRE WHEN S702 AND/OR J704 IS USED

● SPEAKER SWITCH
OMIT IN MODELS WE59A34,35,38 & 40

⊠ CHANNEL GUARD SWITCH
OMIT IN MODELS WE59A34,35,36 & 37

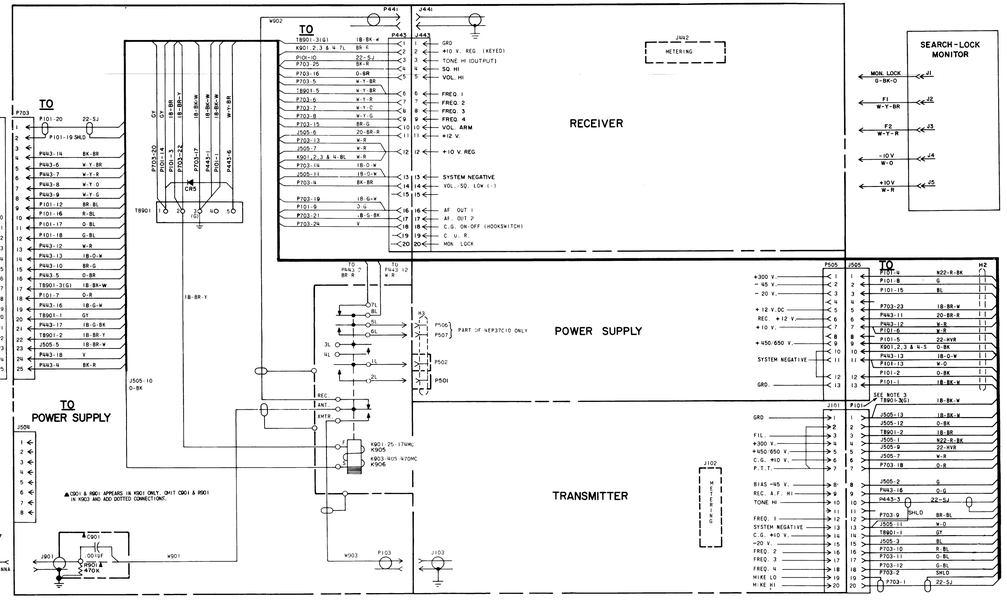
⊙ BLANKER SWITCH OPTION
ADD DOTTED CONNECTION

NOTES:
1. ALL WIRES #24 UNLESS OTHERWISE SPECIFIED.
2. OMIT DA WIRE WHEN R706 IS USED.
3. IN MODELS WITHOUT S702 W-G WIRE CONNECTS FROM J704-A TO TBI-4. IN MODELS WITH S702 W-G WIRE CONNECTS FROM J704-A TO J702-4.

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

ALL RESISTORS ARE 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

(19D402414, Rev. 13)



4070 4040 4087

SCHEMATIC & INTERCONNECTION DIAGRAM

MASTR CONTROL UNIT MODELS 4EC59A34-41

Issue 4

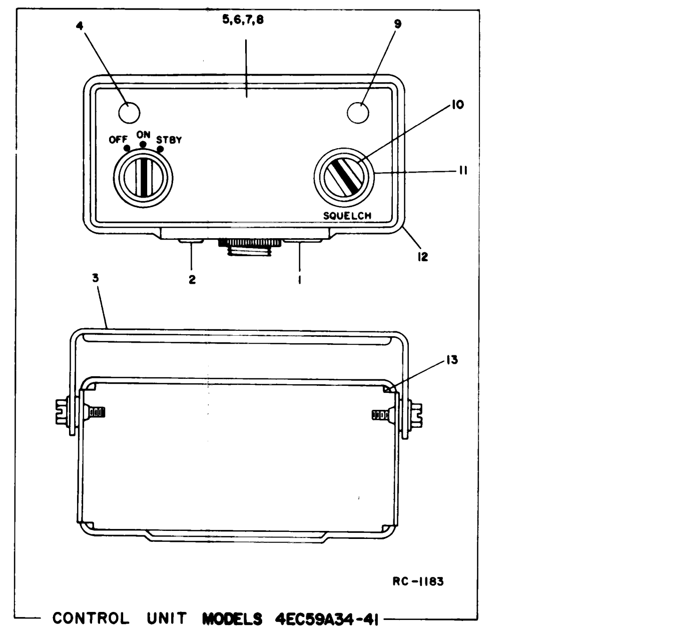
PARTS LIST

LBI-3515C

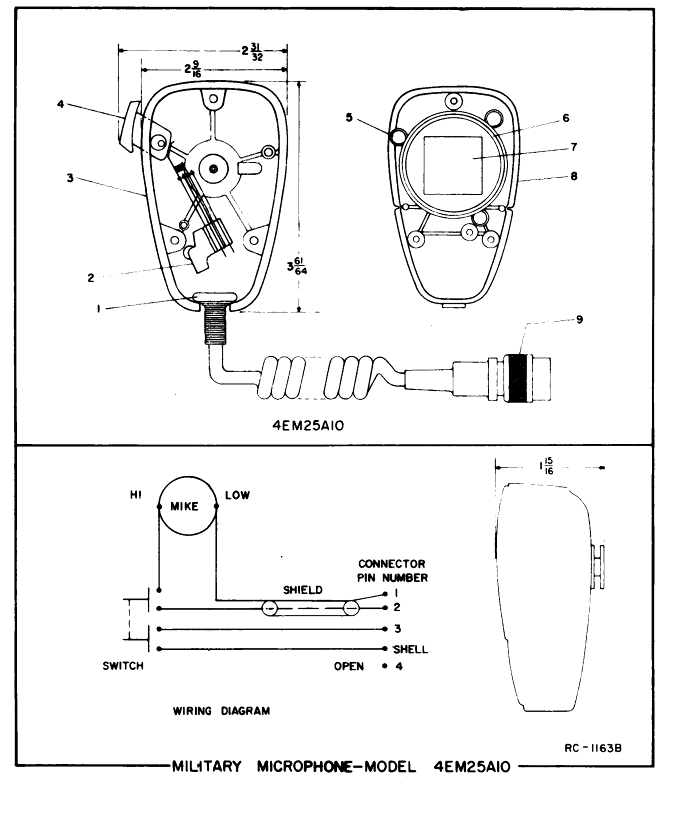
CONTROL UNIT
MODELS 4EC59A34 and 4EC59A35 REV E
MODELS 4EC59A36 and 4EC59A37 REV G
MODELS 4EC59A38 and 4EC59A39 REV E
MODELS 4EC59A40 and 4EC59A41 REV G

SYMBOL	G-E PART NO.	DESCRIPTION
		- - - - - - - - - INDICATING DEVICES - - - - - -
DS701 and DS702	19B201122-P1	Light, indicator: miniature, 6 v; sim to GE Type 1768.
		- - - - - - - - JACKS AND RECEPTACLES - - - - -
J701	19C303576-P1	Socket, phen: 13 contacts rated at 5 amps max.
J702*	19A116061-P1	Connector, chassis: 4 female contacts.
	7117934-P2	In Models 4EC59A34, 35, 38, 39 earlier than Rev D: In Models 4EC59A36, 37, 40, 41 earlier than Rev F: Connector, chassis: 4 female contacts.
J703	19D402408-P1	Connector, phen: 25 contacts rated at 5 amps max.
J704	7489183-P5	Connector, miniature, melamine: 9 female contacts rated at 5 amps at 900 VRMS; sim to Winchester M9S-LRN.
		- - - - - - - - - - - RESISTORS - - - - - - - -
R701		(Part of S701).
R703 and R704	5493035-P19	Wirewound, ceramic: 67 ohms ±5%, 5 w; sim to Tru-Ohm Type X-60.
R706*	3R77-P560K	Composition: 56 ohms ±10%, 1/2 w.
	3R77-P271K	In Models 4EC59A36, 37, 40,41 earlier than Rev B: Composition: 270 ohms ±10%, 1/2 w.
	3R77-P220K	In Models 4EC59A36, 37, 40,41 earlier than Rev A: Composition: 22 ohms ±10%, 1/2 w.
R707		(Part of S705).
		- - - - - - - - - - - SWITCHES - - - - - - - -
S701*	19C307089-P19	Switch/Resistor: includes Switch, rotary, 3 poles, 3 positions, momentary-shorting contacts, 250 ma at 500 VRMS; Resistor (R701), variable, 5000 ohms ±20%, 1/2 w max; sim to Mallory LC5K.
	19C307089-P1	In Models 4EC59A34, 35, 38, 39 earlier than Rev B: In Models 4EC59A36, 37, 40, 41 earlier than Rev D: Switch/Resistor: includes Switch, rotary, 3 poles, 3 positions, non-shorting contacts, 250 ma at 500 VRMS; Resistor (R701), variable, 5000 ohms ±20%, 1/2 w max; sim to Mallory LC5K.
S702 and S703	5491899-P5	Toggle: SPST, 3 amps at 250 VAC or 250 VDC; sim to Cutler-Hammer 8280K15.
S705	19C307089-P20	Switch/Resistor: includes Switch, rotary, 4 poles, 3 positions, momentary-shorting contacts, 250 ma at 500 VRMS; Resistor (R707), variable, 2500 ohms ±10%, 1 w max; sim to Mallory LC2500.
		- - - - - - - - - TERMINAL BOARDS - - - - - -
TB1	7775500-P9	Phen: 5 terminals.
		- - - - - - - - - - - SOCKETS - - - - - - - - -
XDS701 and XDS702	19B201122-P2	Lamp, miniature: sim to Drake Series 121.
		- - - - - - - - ASSOCIATED ASSEMBLIES - - - -
	19A121469-G1	Control unit modification kit (trunk mount).
	19D402239-G1	12 volt vehicle frame.
	19D402239-G2	6 and 28 volt vehicle frame.
		DIMMER CONTROL MODIFICATION KIT 19A121293-G1
		- - - - - - - - - - - RESISTORS - - - - - - -
R705	19B209114-P1	Variable, wirewound: 75 ohms ±20%, 3 w; sim to CTS Series 112.
		POWER CABLE ASSEMBLY 19C303601-G1 (12 VOLT FRONT MOUNT) 19C303601-G2 (12 VOLT TRUNK MOUNT)
	19B209189-P1	Connector, phen: 8 contacts rated at 15 amps at 1100 VRMS; sim to Beauchaine and Sons S-5401-76.
	19D402438-P1	Cap, connector.
	19A115313-P1	Cable: 3 conductor, approx 9 feet long. (Used in 19C303601-G1).
	19A115314-P1	Cable: 3 conductor, approx 18 feet long. (Used in 19C303601-G2).
		POWER CABLE ASSEMBLY 19C303603-G1 (28 VOLT FRONT MOUNT) 19C303603-G2 (28 VOLT TRUNK MOUNT)
	19B209189-P1	Connector, phen: 8 contacts rated at 15 amps at 1100 VRMS; sim to Beauchaine and Sons S-5401-76.
	19D402438-P1	Cap, connector.
	19A115313-P1	Cable: 3 conductor, approx 9 feet long. (Used in 19C303603-G1).
	19A115313-P1	Cable: 3 conductor, approx 23 feet long. (Used in 19C303603-G2).
		POWER CABLE ASSEMBLY (6 VOLT FRONT MOUNT) 19C303607-G1
	19B209189-P1	Connector, phen: 8 contacts rated at 15 amps at 1100 VRMS; sim to Beauchaine and Sons S-5401-76.
	19D402438-P1	Cap, connector.
	7146477-P3	Cable: 2 lengths, approx 9 feet long connected to pins 1 and 7.
	7146477-P4	Cable: 2 lengths, approx 9 feet long connected to pins 4 and 6.
		POWER CABLE ASSEMBLY (6 VOLT TRUNK MOUNT) 19C303606-G1
	19B209189-P1	Connector, phen: 8 contacts rated at 15 amps at 1100 VRMS; sim to Beauchaine and Sons S-5401-76.
	19D402438-P1	Cap, connector.
	7146477-P1	Cable: 2 lengths, approx 22 feet long connected to pins 1 and 7.
	7146477-P3	Cable: 2 lengths, approx 22 feet long connected to pins 4 and 6.
		CONTROL CABLE ASSEMBLY 19C303626-G1, G2 (1-FREQ) 19C303626-G3, G4 (MULTI-FREQ)
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P1	19C303626-G5	Plug, male, includes: connector 19D402408-P3, cap 19C303290-P2.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1	19C303626-G6	Plug, female, includes: connector 19D402408-P1, cap 19C303290-P1.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - - -
	19D402408-P1	Connector, female phen: 25 contacts rated at 5 amps max.
	19D402408-P3	Connector, male phen: 25 contacts rated at 5 amps max.
	19C303290-P1	Cap, connector.
	19C303290-P2	Cap, connector.
	19A115437-P1	Cable: approx 18 feet long. (Used in 19C303626-G1).
	19A115437-P1	Cable: approx 23 feet long. (Used in 19C303626-G2).
	19A115437-P2	Cable: approx 18 feet long. (Used in 19C303626-G3).
	19A115437-P2	Cable: approx 23 feet long. (Used in 19C303626-G4).
		VEHICLE SYSTEM CABLE KIT 19A121454-G1 (12 VOLT VEHICLES) 19A121454-G2 (6/28 VOLT VEHICLES)
	19A121324-G1	6/28 volt vehicles jumper. (Used in 19A121454-G2).
	19A121249-P1	Pin: 1/2 inch long.
	19A121441-G1	Plug: 13 contacts.
	19C303574-P1	Cover.
		FUSED LEAD ASSEMBLY 19A121314-G1 (19A121454-G1, G2) 19A121314-G2 (19A121454-G2)
	1R16-P8	Fuse, cartridge, quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussmann MTH-5.
	7124109-P3	Fuseholder: sim to Bussmann Type HDJ-B.
	7112178-P7	Cable: approx 8-3/4 feet long. (Used in 19A121314-G1).
	7112178-P4	Cable: approx 8-3/4 feet long. (Used in 19A121314-G2).
		INTERCONNECTION HARNESS ASSEMBLY 19A121650-G1
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J505	19B204409-G1	Plug, male: 13 pin contacts.
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P101	19C303506-P1	Connector, phen: 20 contacts rated at 5 amps max at 600 VDC.
P443	19C303506-P1	Connector, phen: 20 contacts rated at 5 amps max at 600 VDC.
P703	19D402408-P2	Connector, phen: 25 contacts rated at 5 amps max.
		- - - - - - - - TERMINAL BOARDS - - - - - - - - -
TB901	7775500-P11	Phen: 5 terminals.
		RELAY ASSEMBLIES 19B204624-G1, G3 (STANDARD)
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C901	19B209141-P1	Ceramic disc: .001 µf ±10%, 500 VDCW. (Used with K901).
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J901	2R22-P3	Receptacle, panel, coaxial: mica-filled insert, UHF contact. Signal Corps SO-239 or sim to Amphenol 83-1R. (Used with W901).
		- - - - - - - - - - - RELAYS - - - - - - - - - -
K901	19C307107-P1	Armature, coaxial-power: 12 VDC nominal, 2.5 w max operating, 80 ohms ±10% coil res, 3 form A, 1 form B and 1 form C coaxial contacts. (Used in 19B204624-G1).
K903	19C307107-P3	Armature, coaxial-power: 12 VDC nominal, 2.5 w max operating, 80 ohms ±10% coil res, 3 form A, 1 form B and 1 form C coaxial contacts with connector plug 7104941-P17. (Used in 19B204624-G3).
P103		(Part of W903).
P441		(Part of W902).
W901	19B209044-P4	Cable, antenna, RF: 1900 VRMS max, approx 4-1/2 inches long; sim to Amphenol 21-199.
W902	5491689-P47	Cable, receiver, RF: includes phono type plug (P441), 350 VRMS max, approx 6-3/4 inches long.
W903	5491689-P47	Cable, transmitter, RF: includes phono type plug (P103), 350 VRMS max, approx 6-3/4 inches long.
	2R22-P2	Adapter, right angle, coaxial: polystyrene, UHF contact. Signal Corps M-359; sim to Amphenol 83-1AP.
		FUSE AND RELAY ASSEMBLY 7487952-G19 (28 VOLT VEHICLES) 7487952-G20 (6 VOLT VEHICLES)
		- - - - - - - - - - - FUSES - - - - - - - - - - -
F11	1R11-P4	Quick blowing: 15 amps, 250 v; sim to Bussman NON15.
F12	1R11-P7	Quick blowing: 30 amps, 250 v; sim to Bussman NON30. (Used in 7487952-G20).
		- - - - - - - - - - - RELAYS - - - - - - - - - -
K1	7486515-P1	Armature, enclosed: 6 VDC nominal, 36 ohms ±8% coil res, 1 form A contact rated at 15 amps; sim to RBM 60-108013-3. (Used in PL-7487952-G20).
K3	7486515-P3	Armature, enclosed: 28 VDC nominal, 300 ohms ±10% coil res, 1 form A contact rated at 15 amps. (Used in 7487952-G19).
		12 VOLT FUSEHOLDER 19B216021-G4
	19D413045-P1	Base.
	19D413046-P1	Cover.
	19B205950-P1	Fuse clip.
		- - - - - - - - - - - FUSES - - - - - - - - - - -
F2	1R11-P6	Quick blowing: 25 amps, 250 v; sim to Bussman NON25. (Used with medium power transmitters).
F3	1R11-P7	Quick blowing: 30 amps, 250 v; sim to Bussman NON30. (Used with high power transmitters).
		130 - 470 MHz ANTENNA MODEL 4EY12A13 (5490969-P13)
		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.
	5490969-P4	Whip: stainless steel, approx 20 inches long; ball tip.
	5490969-P5	Socket, whip: with (2) No. 6-32 set screws.
	5490969-P6	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 2R22-P1 and GE Dwg 7105381-P1).
	7105381-P1	Adapter, cable: approx 1 x 7/16 inches dia. Type UG-175/U. (Used with GE Dwg 2R22-P1 and Type RG-58/U cable).
	2R22-P1	Plug, coaxial: mica-filled insert, UHF contact. Signal Corps PL-259; sim to Amphenol 83-1SP. (Used with GE Dwg 7105381-P1 and Type RG-58/U cable).
		25 - 88 MHz ANTENNA
	7491074-P1	Antenna: includes stainless steel rod approx 96-1/2 inches long; ball tip; lockwasher; No. 10-32 hex socket set screw; sim to Antenna Specialists ASPA3BGE.
	7102930-P3	Adapter, antenna: approx 2-5/16 inches long. (Used with GE Dwg 7491074-P1).
	4033101-G1	Antenna package: includes base; adapter spring; cable and plug.
	7472880-G5	Antenna base. (Used in 4033101-G1).
	7476632-G4	Adapter spring. (Used in 4033101-G1).
	5492239-P1	Cable, antenna: includes Type RG-58/U cable approx 15 feet long; PL-259 coaxial plug; mounting clip; ring tongue terminal; sim to Antenna Specialists 15A43. (Used in 4033101-G1).
	2R22-P1	Plug, coaxial: mica-filled insert, UHF contact. Signal Corps PL-259; sim to Amphenol 83-1SP. (Used with GE Dwg 5492239-P1 in 4033101-G1).
	4KY19A1	Coil, loading: 25 to 33 MHz; sim to Antenna Specialists ASPA87.
	19A121577-G1	Antenna hook kit.
	7134724-P1	Antenna hook. (Used in 19A121577-G1).
		MECHANICAL PARTS CONTROL UNIT MODELS 4EC59A34 - 41 (19D402303-G34 - 41) (SEE RC-1183)
1	N529P19C13	Plug button. (Used in Models 4EC59A34,35,38,39).
2	N529P5C13	Plug button.
3	19A121521-G1	Mounting bracket.
4	19B201122-P3	Lens cap: green translucent nylon. (Used with DS701).
5	NP243420	Nameplate: etched aluminum. (Used in Models 4EC59A34 and 36).
6	NP243470	Nameplate: etched aluminum. (Used in Models 4EC59A35 and 37). (SPKR-OFF).
7	NP243468	Nameplate: etched aluminum. (Used in Models 4EC59A38 and 40). (CG-OFF).
8	NP243472	Nameplate: etched aluminum. (Used in Models 4EC59A39 and 41). (CG-OFF, SPKR-OFF).
9	19B201122-P4	Lens cap: red translucent nylon. (Used with DS702).
10	19B204443-G1	Knob: gray.
11	19C303413-P1	Knob: VOLUME/SQUELCH.
12	19B216271-G1	Casting.
13	19B204522-P1	Mounting plate.
		HANDSET MODEL 4EM26A10 (19B209100-G1) (SEE RC-1158)
1		Self tap screw, bind head: No. 4 x 5/16. Shure Brothers 30C640C.
2		Cable clamp. Shure Brothers 53A532.
3		Shield. Shure Brothers RP-19.
4		Switch. Shure Brothers RP-81.
5		Handle. Shure Brothers RP-49.
6		Adapter. Shure Brothers 65A230.
7		Magnetic controlled cartridge. Shure Brothers RP-41.
8	3R77-P222K	Resistor, composition: 2200 ohms ±10%, 1/2 w.
9		Receiver cap. Shure Brothers 65A199A. (Part of RP-49).
10		Washer. Shure Brothers 34A321.
11		Escutcheon. Shure Brothers 53A536A.
12		Actuator. Shure Brothers 53A556.
13		Spring. Shure Brothers 44A140.
14		Plunger bar. Shure Brothers RP-82.
15		Flat head screw, socket cap: No. 4-40 x 1/4. Shure Brothers 30C557B.
16		Transmitter cap. Shure Brothers 65A197A. (Part of RP-49).
17		Washer. Shure Brothers 34A309.
18		Magnetic controlled cartridge. Shure Brothers RP-13.
19		Cable and plug. Shure Brothers RP-48.
		HOOKSWITCH ASSEMBLY 19B204867-G1 (See RC-1394)
20	4029851-P4	Cable clamp; sim to Weckesser 3/16-4.
21	19A121612-P1	Holder and switch: thermoplastic case, contact rating 1 amp at 125 v.
22	19A121581-G1	Cable: approx 25 inches long, includes five 19A121429-P1 pins.
23	5493035-P10	Resistor, wirewound ceramic: 3.5 ohms ±5%, 5 w; sim to Tru-Ohm Type X-60.
24	7775500-P55	Terminal board, phen: 5 terminals.
		MILITARY MICROPHONE MODEL 4EM25A10 19B209102-G1 (SEE RC-1163)
1		Cable clamp. Shure Brothers 53A532.
2		Switch. Shure Brothers RP-26.
3		Case (back) and mounting button; plastic. Shure Brothers RP-67.
4		Switch button: red plastic. Shure Brothers RP-25.
5		Spring. Shure Brothers 44A113.
6		Shield. Shure Brothers RP-23.
7		Magnetic controlled cartridge. Shure Brothers RP-13.
8		Case (front) plastic. Shure Brothers RP-67.
9		Cable and plug: approx 6 feet long. Shure Brothers RP-14.
		5 WATT SPEAKER 4EZ16A15 19D402449-G8
C1	19B209233-P2	Electrolytic, non-polorized: 25 µf ±20%, 25 VDCW; sim to Sprague 44DC.
L33	19B209422-P1	Permanent magnet: 5 inch, 3.2 ohms ±10% imp, 2.98 ohms ±15% DC res, 7.5 w max operating.
W1	19A121546-G1	Cable assembly: approx 48 inches long, includes (2) 19A121429-P1 pins.
		MECHANICAL PARTS
	19C303504-G1	Speaker housing.
	19A121550-G1	Cover.
	19C303500-P1	Grille, aluminum.
	19A121521-G1	Mounting support.
	5490407-P3	Neoprene grommet. (Upper)
	19A115470-P1	Rubber grommet. (Lower)

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.



CONTROL UNIT MODELS 4EC59A34-41



MILITARY MICROPHONE-MODEL 4EM25A10

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 - Models 4EC59A36, 37, 40 and 41. To make compatible with Type 99 decoder. Changed R706.

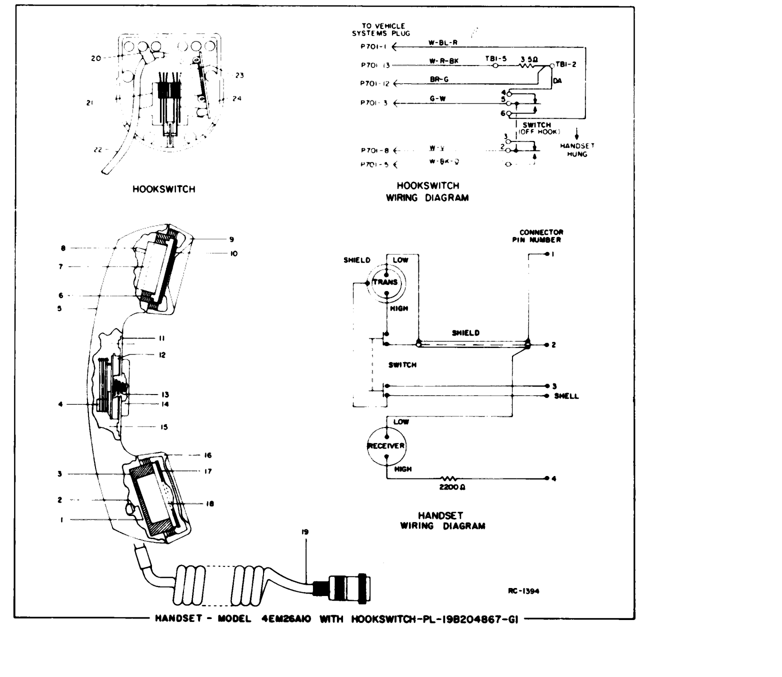
REV. B - Models 4EC59A36, 37, 40 and 41. To reduce speaker minimum audio level when using Type 99 decoder. Changed R706.

REV. A - Models 4EC59A34, 35, 38 and 39.
REV. C - Models 4EC59A36, 37, 40 and 41. To reduce Transmitter modulation caused by power supply switching noise. Removed black wire from ground lug TB1-2 (other end connected to S706-14S) and connected it to microphone jack J702-1.

REV. B - Models 4EC59A34, 35, 38 and 39.
REV. D - Models 4EC59A36, 37, 40 and 41. To incorporate switch with improved reliability. Changed S701.

REV. C - Models 4EC59A34, 35, 38 and 39
REV. E - Models 4EC59A36, 37, 40 and 41
To facilitate manufacturing. Changed TB1.

REV. D - Models 4EC59A34, 35, 38 and 39
REV. F - Models 4EC59A36, 37, 40 and 41
To ground microphone jack. Added #18 BK-W wire from TB1-2(G) to G11.



HANDSET - MODEL 4EM26A10 WITH HOOKSWITCH-PL-19B204867-G1

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-3507

DF-4070

MOBILE RADIO DEPARTMENT
GENERAL ELECTRIC COMPANY • LYNCHBURG, VIRGINIA 24502

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