



MAINTENANCE MANUAL
CONTROL UNIT ACCESSORIES
FOR S-550/S-990 SERIES CONTROL UNITS

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DESCRIPTION

This manual contains system application notes and service information for the various microphones, handsets, speakers, and ignition cable assemblies that are used with the S-550 and S-990 Control Units in DELTA and RANGR mobile radio applications.

The interconnection diagram shows the power and control signal connections to the microphone, speaker, handset (when used), programmer interface, and external options. The power/control cable schematic diagram defines the radio interconnections.

RADIO MODIFICATIONS

Before connecting the control unit to the DELTA or RANGR radio, check to verify that proper modifications have been made to the System board in the radio.

The Alert Tone/Rx PA jumper, P610, must be installed in the DELTA radio and P708 must be connected between J708-2 to J708-3 in the RANGR to complete the switch beep tone audio path through the receiver audio circuit for the S-990 and Public Address operation for the S-550.

S-990 DOWNLOAD. In applications where the control unit is NOT programmed for downloading the following modifications are recommended.

- In DELTA radios, install jumper P707 on the System board.
- In RANGR radios, connect P706 between J706-1 and 2.

This disables the EEPROM programming function and prevents any extraneous data from being entered and interfering with normal operations.



In applications where the downloading function is programmed, P707 on the System board in the DELTA radio must be removed. In the RANGR radio, jumper P706 must be connected between J706-2 and 3.

HORN SPEAKER (Option LS1G)

The horn speaker may be used to replace the standard speaker. It may be mounted under the hood, on the vehicle roof, or other suitable location. The Horn Speaker Option includes horn speaker 19B209425P5 and speaker cable assembly.

CAUTION

Be careful to avoid damaging some vital part (fuel tank, transmission housing, etc.) of the vehicle when drilling mounting holes. Always check to see how far the mounting screws will extend below the mounting surface before installing.

INSTALLATION

1. Mount the speaker in the desired location and make the electrical connections indicated in Figure 1.
2. Using the backplate as a template, mark and drill four 1/4-inch holes for the speaker mounting screws.
3. Mount the speaker using four 1/4" x 7/8" screws and lockwashers.
4. Route cable from the control unit to the speaker.
5. Connect the speaker cable leads and the speaker leads using the two splice connectors supplied.
6. Provide strain relief for the speaker cable using a standard cable clamp (not supplied).

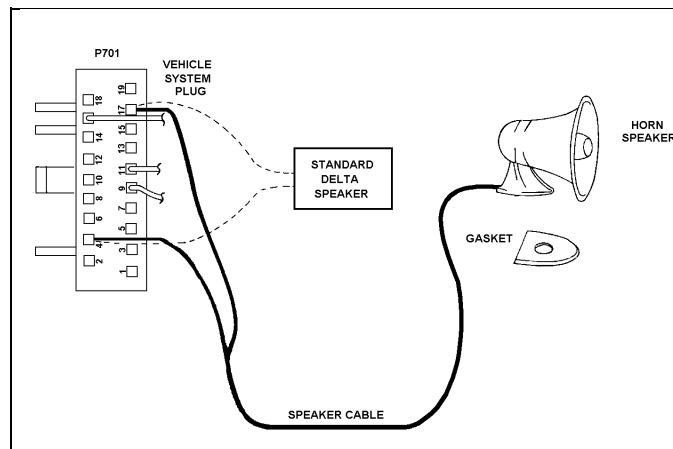


FIGURE 1 - REPLACEMENT OF STANDARD SPEAKER WITH HORN SPEAKER

CAUTION

Do not ground either side of the speaker leads.

CONTROL UNIT MODIFICATIONS

S-550 CONTROL UNIT MODIFICATIONS

Before installing the S-550 Control Unit or making any electrical connections refer to the control unit maintenance manual and de-select any unused options. As shipped from the factory, all options are enabled. For proper operation, only those options used should be enabled to prevent an operator from accidentally activating an unused option and causing the unit to become inoperative. The following options may be applied to the S-550 Control Unit:

- Mode A/B
- Handset Hookswitch
- Internal/External Speaker/Public Address

Handset Hookswitch:

When the handset hookset option is used, jumpers "A" and "C" on the control unit board must be removed. (See control unit Maintenance Manual.) Refer to the interconnection diagram in this manual for electrical connections.

Internal/External Speaker & Public Address:

Mount the horn speaker under the hood, on the roof, or other suitable locations. Mount the standard speaker where it will direct sound to the operator, but not interfere with his vision or be hazardous to passengers in case of an accident.

1. Refer to Horn Speaker installation and mount speaker in desired location.
2. Refer to Figure 2 and connect speaker wires to P701-2 and -19.

Standard Speaker:

The speaker may be mounted on the lower edge of the instrument panel on the firewall, above the windshield in some trucks or behind the built-in grille in others. Use the Safety Release mounting brackets for passenger safety whenever the mounting location requires, or where swivel action is desired.

When installing the speaker, use the mounting bracket as a template to locate the mounting holes, and mount the speaker as shown in Figure 2. Refer to Figure 3 and connect the speaker leads to P701-4 and -17 on the Vehicle System Plug.

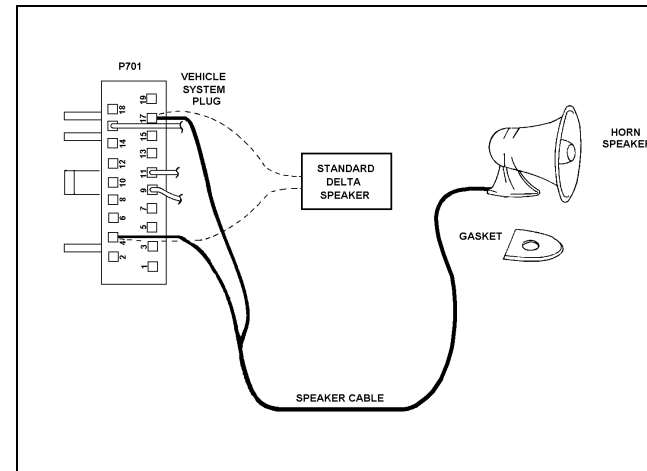


FIGURE 2 - INTERNAL/EXTERNAL SPEAKER AND PUBLIC ADDRESS

S-900 CONTROL UNIT

The S-990 Control Unit is a highly versatile, software controlled unit, that permits the use of several options. These include:

- External Tone
- Handset Hookswitch
- The following modifications must be made when applying these options.

External Tone

When the external tone option is used, external tone cables must be connected to the control unit microprocessor board.

1. Remove the control unit top cover.
2. Remove the rubber plug from the rear of the control unit and insert the encode/decode cable through the hole and the backplane connector board. Connect the tone cables to J5 (decode) and/or J12 (encode) on the microprocessor board.
3. Replace the top cover.

Handset Hookswitch

When the handset hookset option is used, jumpers "A" (W2) and "C" (W1) on the control unit backplane board must be removed. Refer to the appropriate diagram in this manual.

IGNITION CABLE ASSEMBLIES

Two ignition cable assemblies are available to control the operation of the radio: a two-wire and a three-wire assembly. The two-wire cable assembly is standard and is used in systems without ignition switch standby. The three-wire sys-

NOTE

If speaker mute is used with the external decode option remove jumper "C" (W1) on the control unit backplane board.

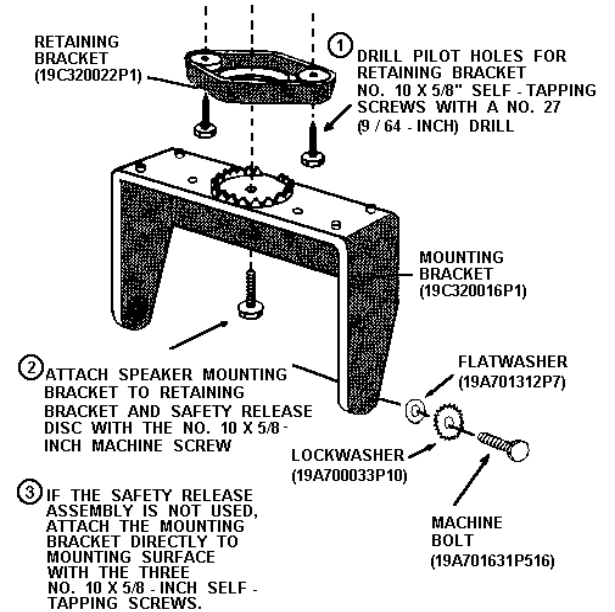


FIGURE 3 - MOUNTING THE STANDARD SPEAKER

tem is optional and is used in systems with ignition switch standby.

Two-Wire Cable Assembly

The two-wire cable may be connected to provide ignition switch control or ignition switch bypass. The black cable is the system ground connection. The yellow fused lead provides the receiver hot and the transmitter enable connections. Refer to Figures 4 and 5 for installation instructions.

NOTE

The speaker connections and other option connections (hookswitches, etc.) are also made to the System Plug. Do not connect the System Plug to the control unit until all connections have been made.

Power to the radio can be controlled by one of two methods shown here. Select the type of control desired and connect the ignition switch cables as shown.

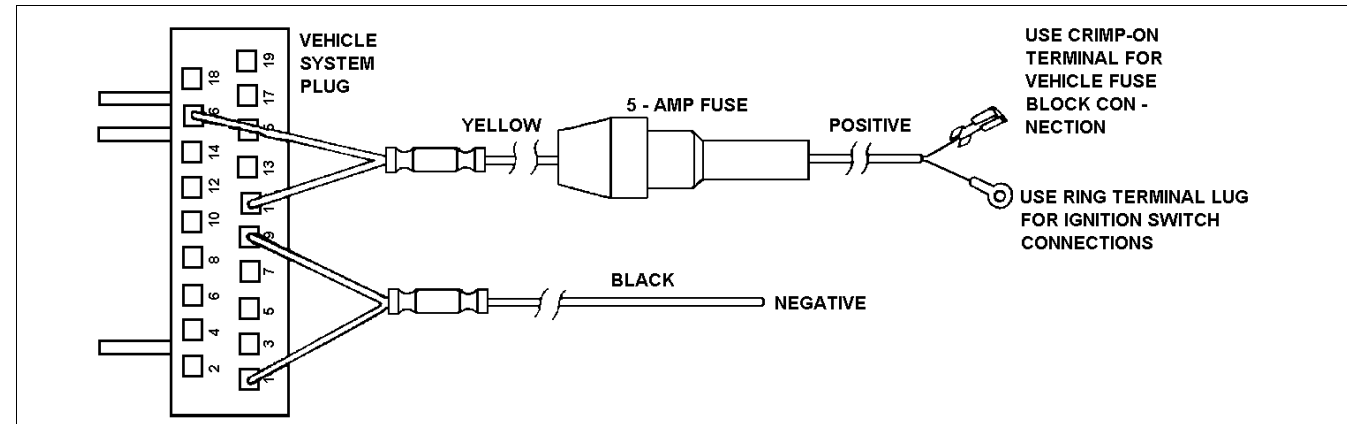


FIGURE 4 - 12-VOLT NEGATIVE GROUND CONNECTIONS

THREE-WIRE IGNITION CABLE ASSEMBLIES

An optional three-wire cable assembly is available. It provides operation with ignition switch standby, ignition switch control or ignition switch bypass. The assembly consists of a "Y" black ground lead, and red and yellow fused lead, and a 19-pin Vehicle System Plug. The yellow fused lead provides the receiver hot connection. The red fused lead provides the transmitter enable connection. Refer to Figures 6 and 7 for installation instructions.

RUNNING CABLES

To assure the feasibility of the cable routings you plan to use, it is suggested that you run the cables before installing the two-way radio and control unit. Be sure to leave some slack in each cable so that the radio and control unit may be pulled out for servicing with the power applied.

Try to route the cables away from locations where they will be exposed to head (exhaust pipes, muffler, tailpipes, etc.), battery acid, sharp edges, or mechanical damage or where they will be a nuisance to automobile mechanics, the driver, or passengers. Keep wiring away from ignition circuits to help prevent noise pickup in the radio equipment.

In addition, try to utilize existing holes in the firewall and trunk wall and the channels above or beneath the doors. You may also use the channels through door and window columns, where they are convenient, unless you plan to install rigid or flexible conduit in which to run the cables.

If an existing hole is not conveniently located for the passage of the power cable through the firewall, drill a 1-1/8-inch hole and insert the rubber grommet provided. Leave at least 18 inches of slack in the plug end of the cables next to the radio. A typical cable routing diagram is shown in Figure 8.

POWER AND CONTROL CABLES

The power/Control Cable plug assembly, as supplied, is wired for negative ground systems. If the radio is to be installed in a vehicle with positive ground, a polarity converter must be used.

NOTE
Terminal 19A115799P15 is available for use with batteries having side terminals. To use the terminal, trim off 1/2 inch of the ridge on the plastic corrosion shield on the battery to allow the terminal to lie flat. Remove the screw in the battery terminal and slide the power cable terminal over the screw. Then replace the screw. Do not strap the power cable within one foot of the battery terminal.

1. Starting with the plug end of the power/control cable, run the black control cable to the control unit location and the red power cable to the vicinity of the battery. Drill a No. 9 (3/16-inch) pilot hole and connect the short black power cable to a good vehicle ground with the 1/4 x 5/8-inch hex-head self-tapping screw and the two external tooth lockwashers. The external tooth lockwashers are placed on each side of the black power cable ring terminal. Refer to Figure 8, Cable Routing Diagram.

2. Connect cable shield terminal to the radio chassis using the hardware supplied.

3. Tape the plug(s) and retaining hook. If it is necessary to disassemble the 19-pin plug(s) to run the cable, use the extractor tool as shown in Figure 9. Mark the plugs for identification and write down the wire colors and hole numbers as the wires are removed from the plug(s).

4. Use the 3-inch cable straps and No. 6 self-tapping screw provided in the Mounting Hardware Kit to secure the cables neatly in place (See Figure 10).

TRANSMITTER FUSE ASSEMBLY

Mount the fuse assembly near the battery (See Figure 11). Cut the red power cable and connect to the fuse assembly with the ring terminals and lockwashers provided. Assemble one lockwasher between each terminal and head of each screw. Refer to Figure 12, Power Cable Connection to Fuse Assembly Diagram.

MICROPHONE

Mount the microphone where it will be within easy reach of the operator, but will not interfere with safe operation of the vehicle. After the microphone bracket is mounted, connect the microphone plug into the microphone jack on the back of the control unit and tighten the retaining screw in the plug. Refer to Figure 13 for mounting instructions.

CHANNEL GUARD HOOKSWITCH

For Channel Guard with automatic monitoring applications, a hookswitch is used in place of the microphone bracket. Mount the hookswitch as shown in Figure 14. After mounting the hookswitch, connect the two pins to holes 10 and 14 on Vehicle Systems Plus, P701.

HANDSET AND HOOKSWITCH (OPTIONAL)

Mount the handset hookswitch as shown in Figure 15. After mounting the handset hookswitch, connect the handset plug to microphone jack on the bottom of the control unit. If the hookswitch has been disconnected, connect the hookswitch cable to the Vehicle Systems Plug as shown in the Table of Figure 15.

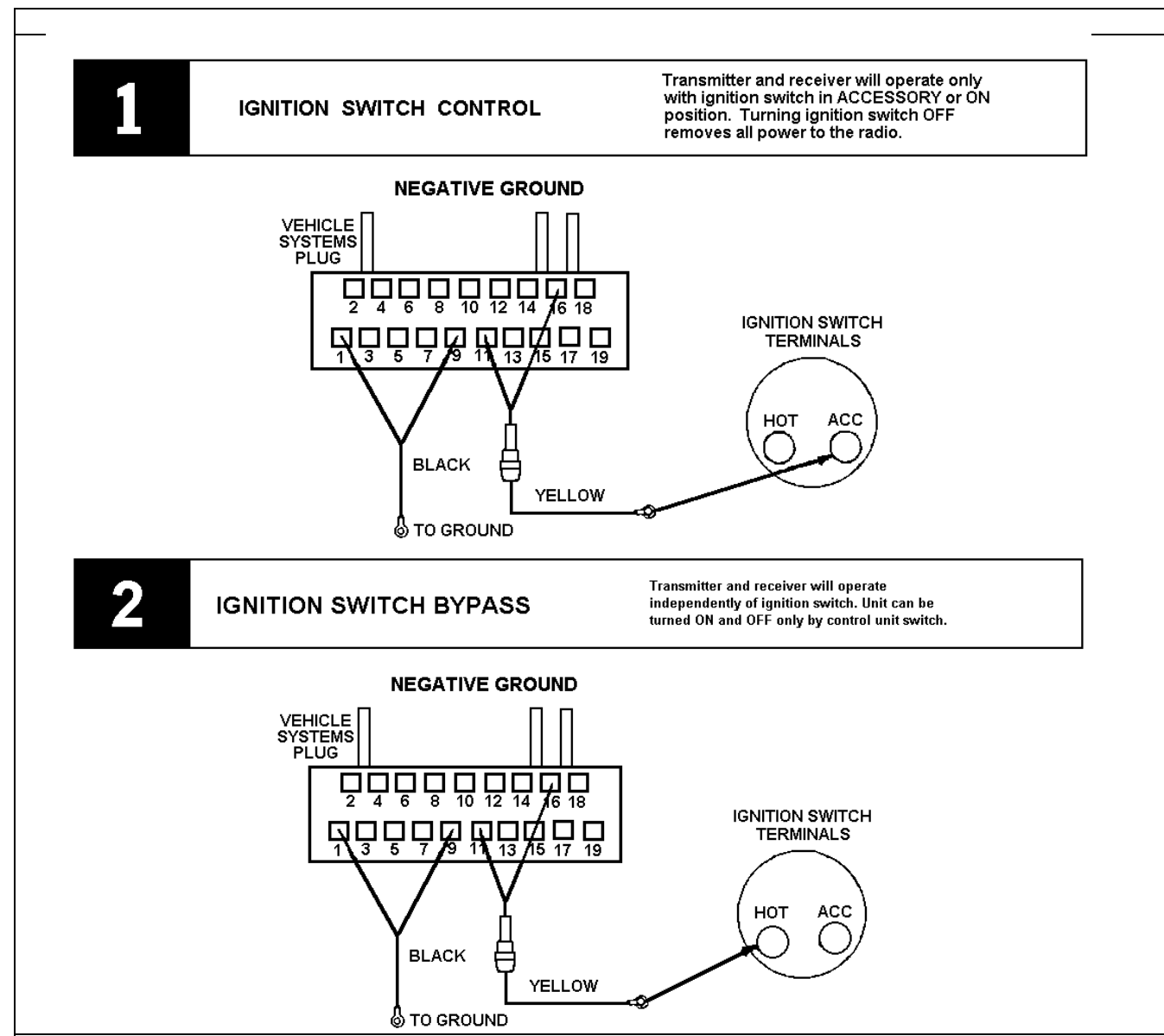


FIGURE 5 - CONNECTIONS FOR IGNITION SWITCH CONTROL

ANTENNA

Installation instructions for the antenna are packaged with the antenna. The antenna must be installed in accordance with good engineering practices for optimum results.

For the 138-512 MHz antenna, the most effective mounting position is usually in the center of the roof of the vehicle. The antenna cable will normally run from the front of the two-way radio, behind sections of the interior trim to a door or window post, and then up between the roof and headliner in the passenger compartment to the antenna base.

Try to route the cable away from locations where it will be exposed to heat, sharp edges or mechanical damage, and where it will be out of the way of the driver, passengers or vehicle mechanics.

Wherever possible, existing holes in the trunk wall, and the channels above or beneath doors and window columns should be utilized. Generally, the left side of the vehicle has more usable space.

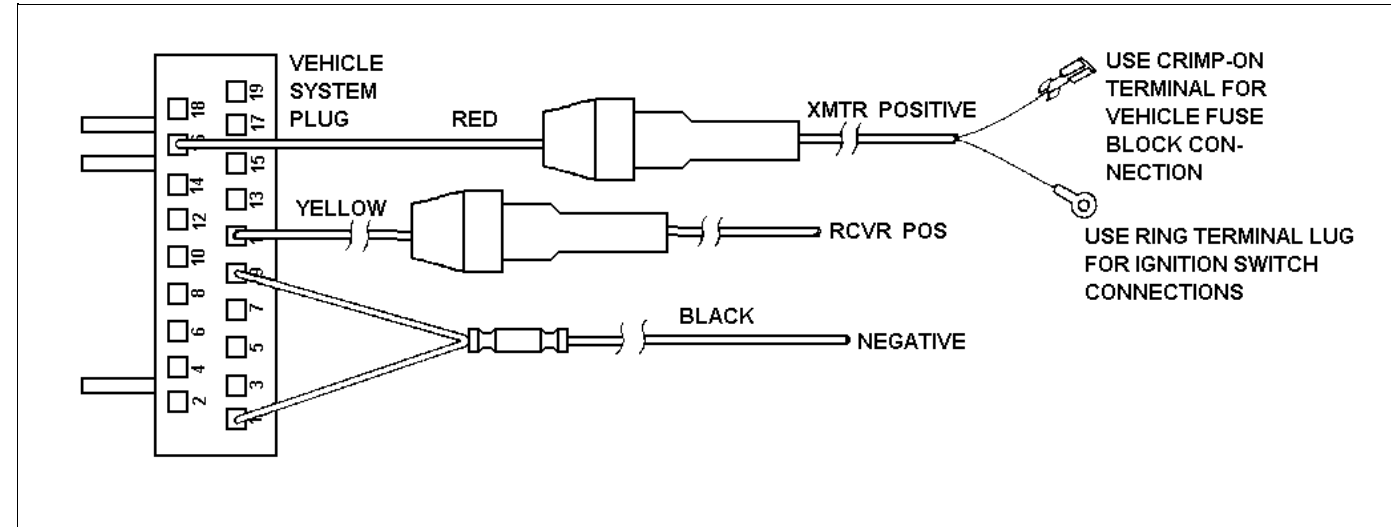
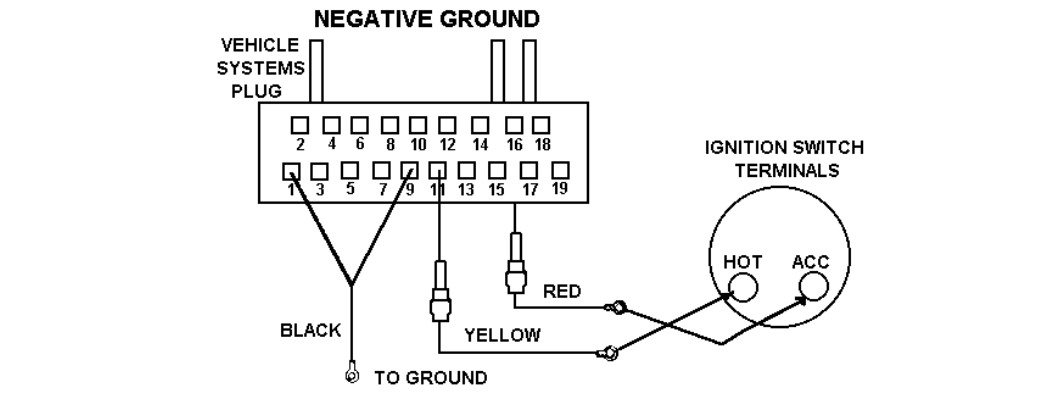


FIGURE 6 - 12-VOLT NEGATIVE GROUND CONNECTIONS

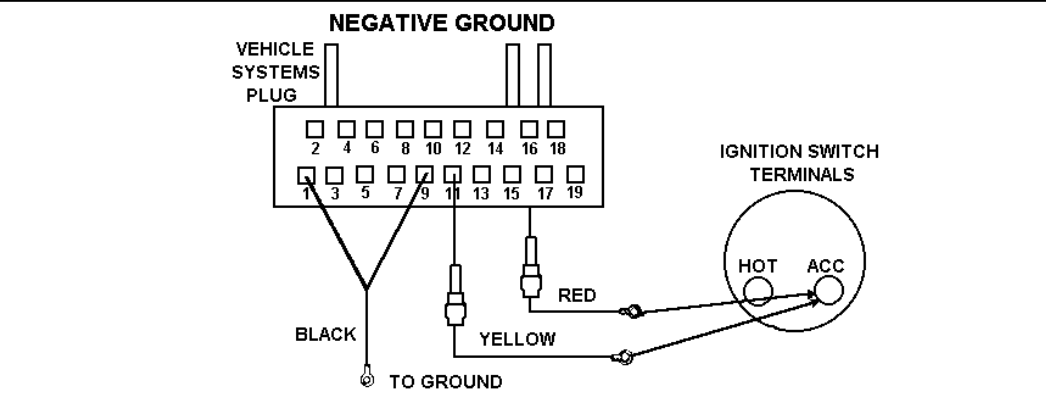
1 IGNITION SWITCH STANDBY

Receiver will operate independently of ignition switch. Transmitter will operate only with ignition switch in ACCESSORY or ON position.



2 IGNITION SWITCH CONTROL

Transmitter and receiver will operate only with ignition switch in ACCESSORY or ON position. Turning ignition switch OFF removes all power on the radio.



3 IGNITION SWITCH BYPASS

Transmitter and receiver operate independently of ignition switch. Unit can be turned ON and OFF only by control unit switch.

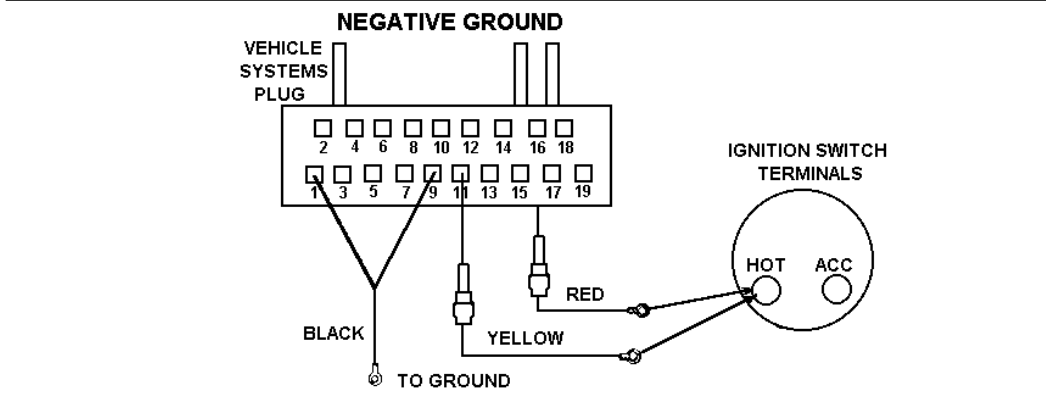


FIGURE 7 - CONNECTION FOR 12-VOLT IGNITION SWITCH CABLES

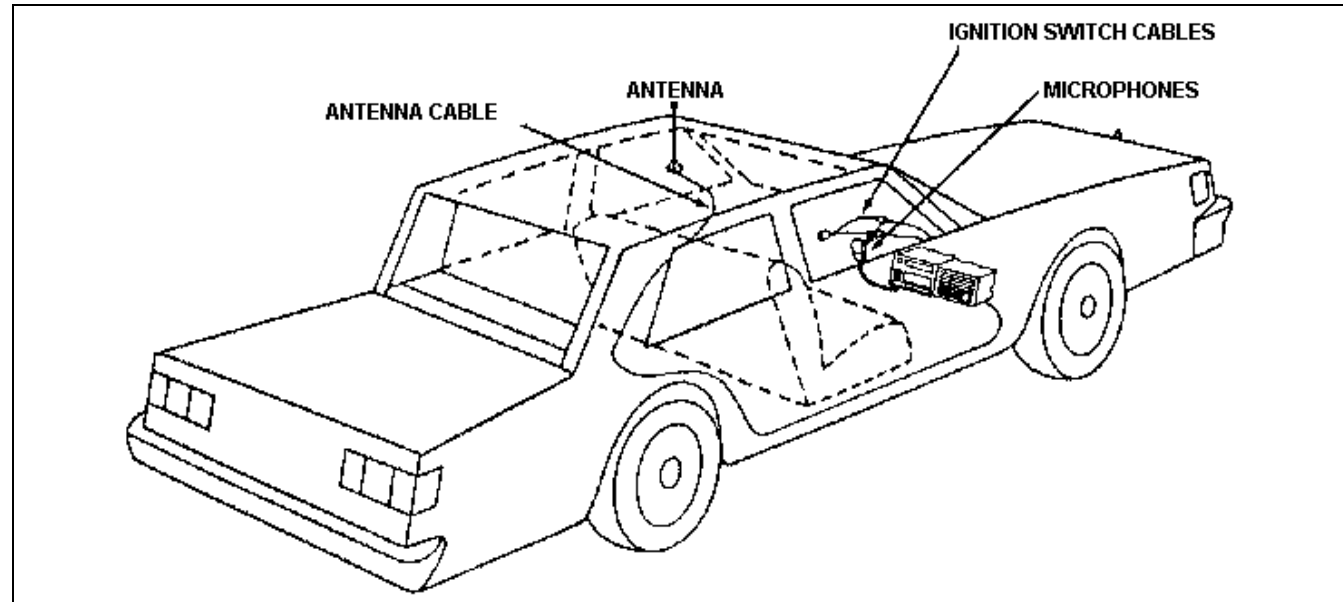


FIGURE 8 - TYPICAL CABLE ROUTING

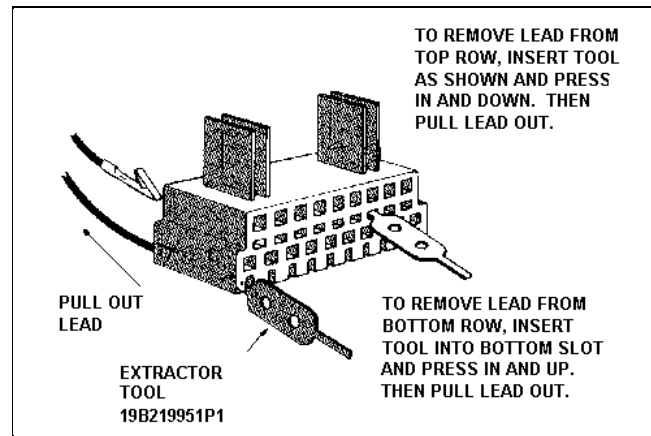


FIGURE 9 - USING EXTRACTION TOOL

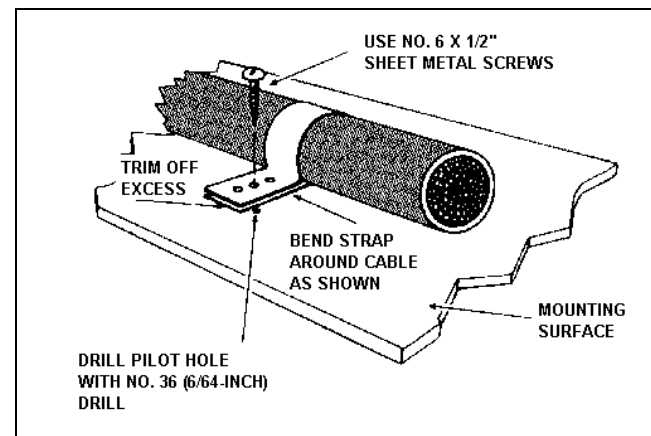


FIGURE 10 - INSTALLING CABLE STRAPS

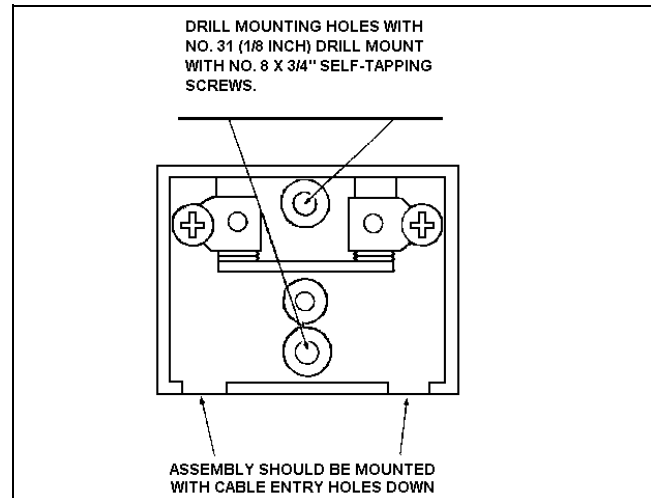


FIGURE 11 - INSTALLATION OF 12-VOLT FUSE ASSEMBLY

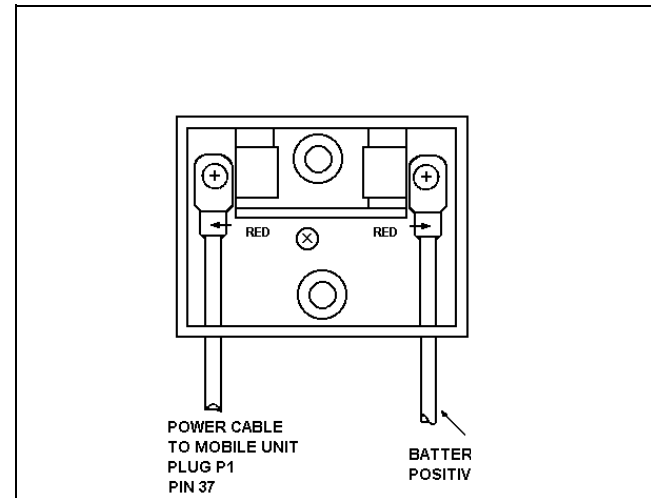


FIGURE 12 - POWER CABLE/FUSE ASSEMBLY CONNECTIONS

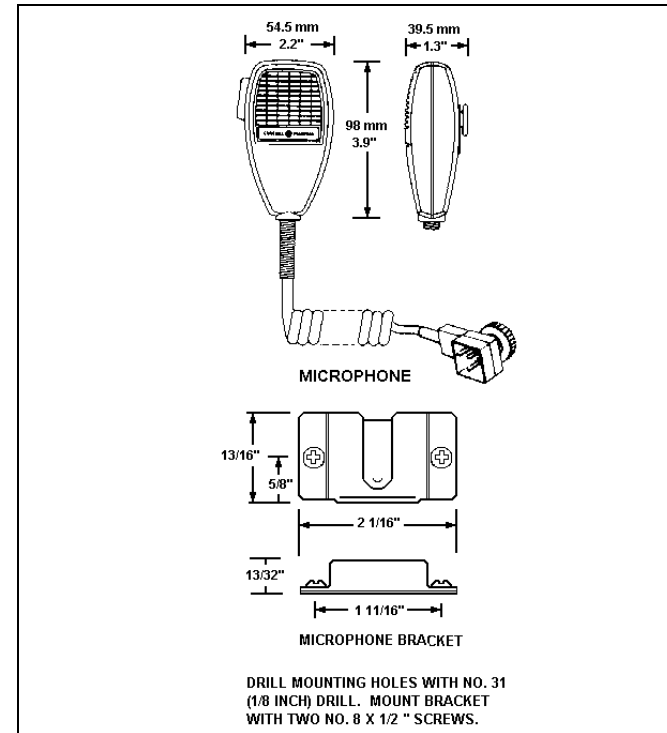


FIGURE 13 - MICROPHONE BRACKET MOUNTING

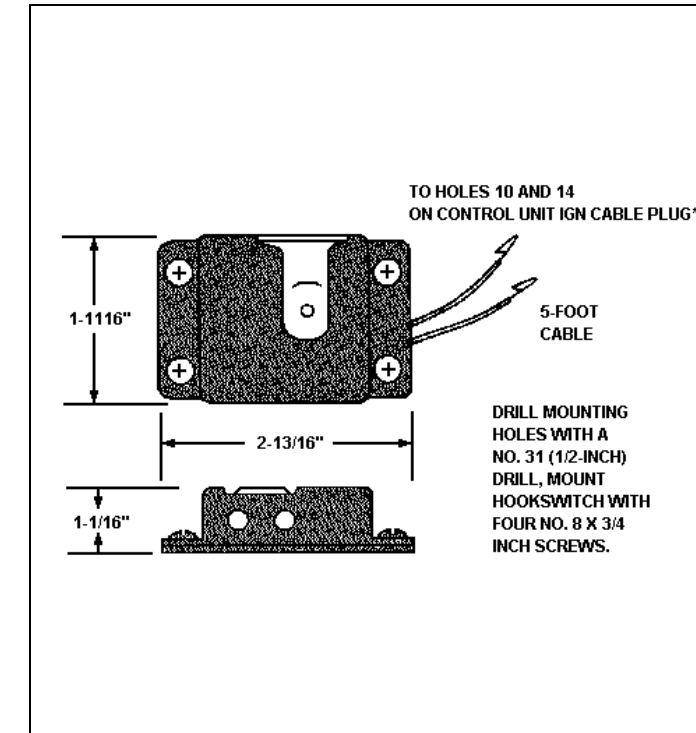
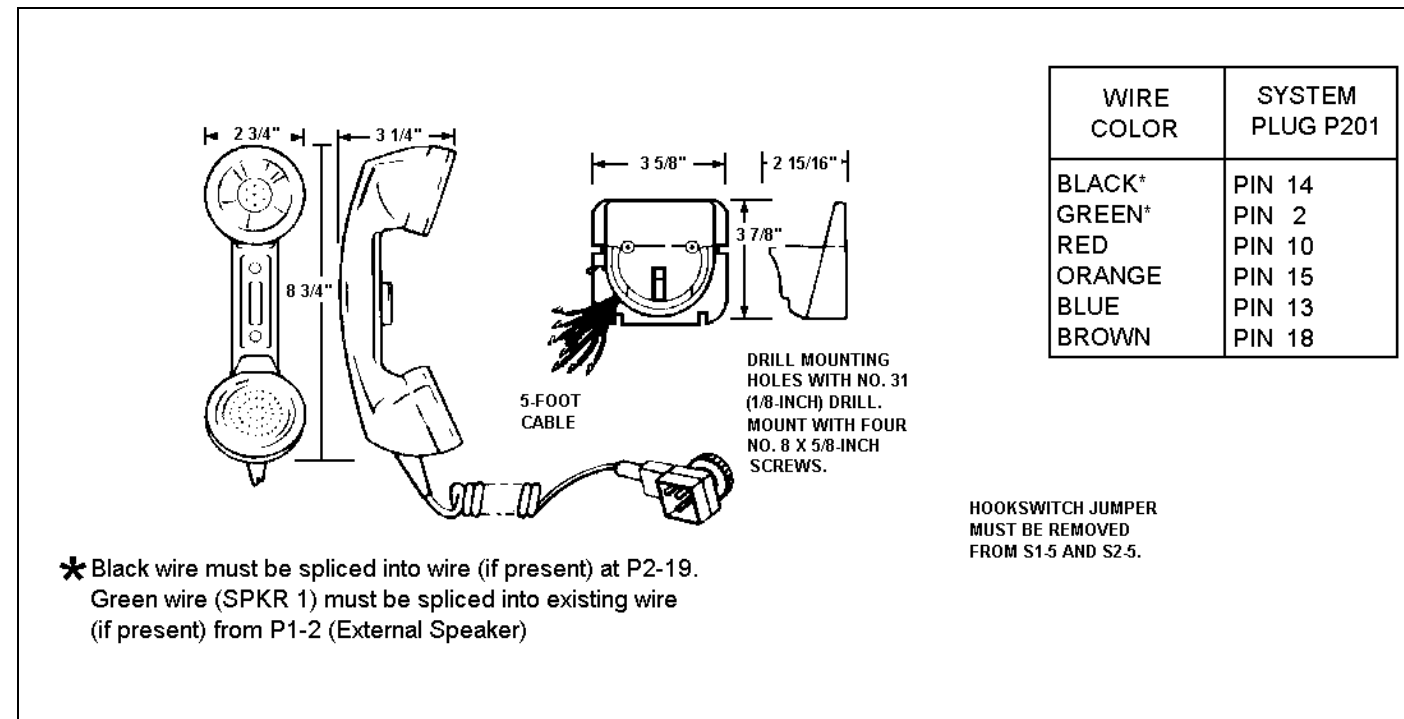


FIGURE 14 - HOOKSWITCH MOUNTING

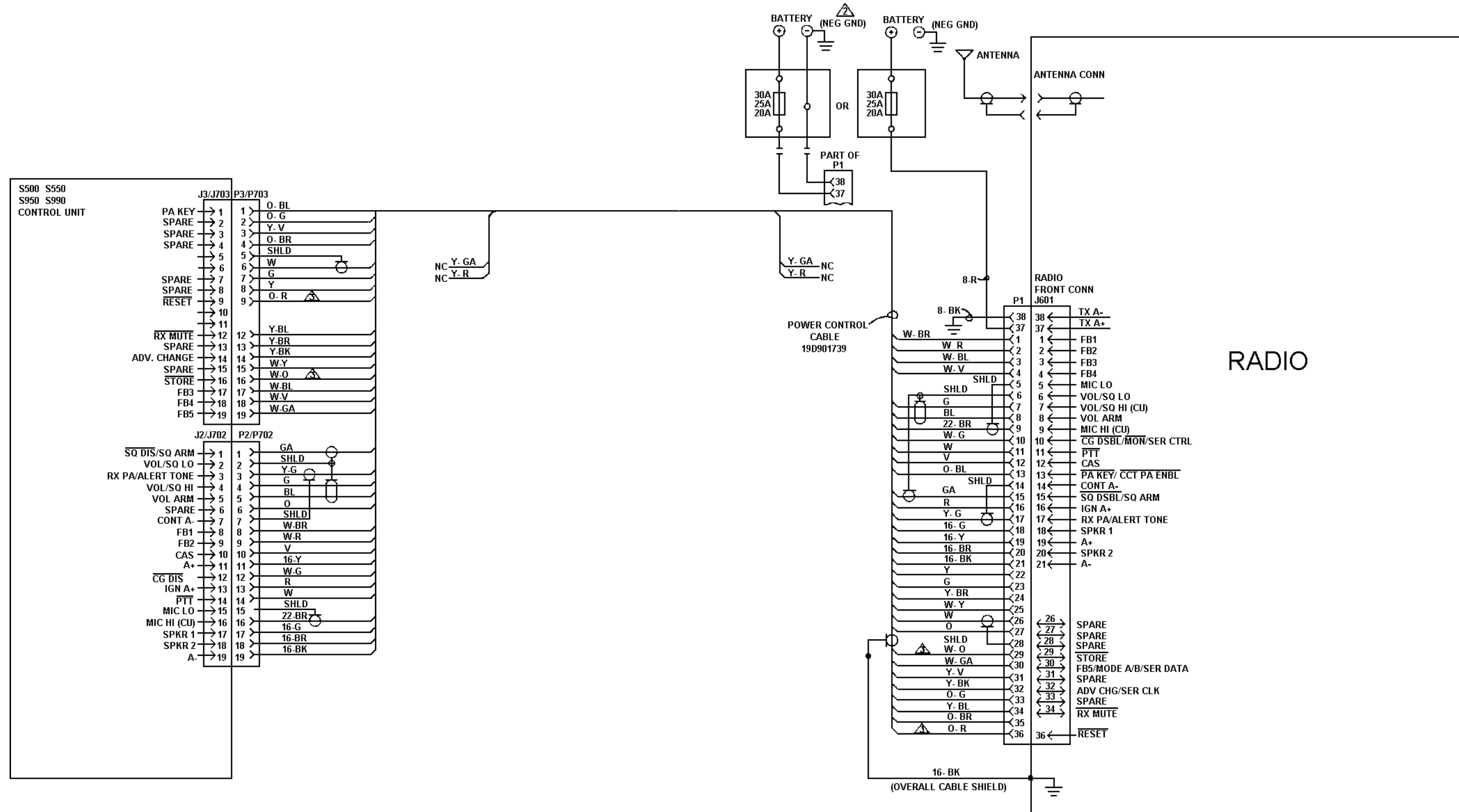


* Black wire must be spliced into wire (if present) at P2-19.
Green wire (SPKR 1) must be spliced into existing wire (if present) from P1-2 (External Speaker)

HOOKSWITCH JUMPER MUST BE REMOVED FROM S1-5 AND S2-5.

WIRE COLOR	SYSTEM PLUG P201
BLACK*	PIN 14
GREEN*	PIN 2
RED	PIN 10
ORANGE	PIN 15
BLUE	PIN 13
BROWN	PIN 18

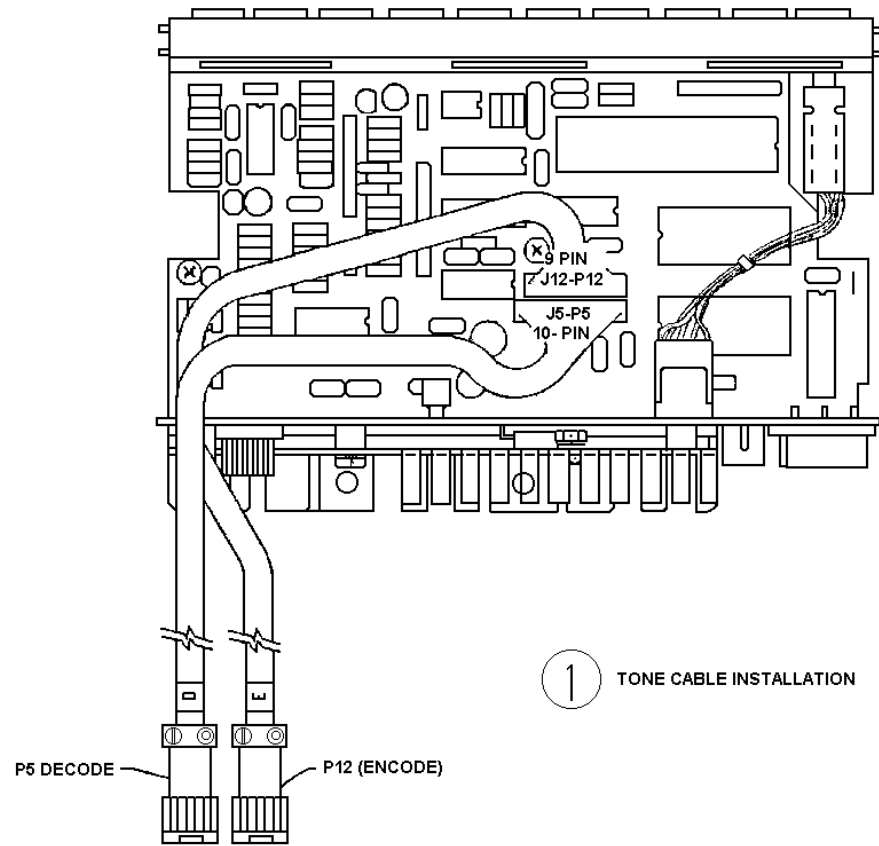
FIGURE 15 - HANDSET HOOKSWITCH MOUNTING



- NOTES:
- 1. SEE SHEET 2 FOR ACCESSORY, OPTION, AND CONTROL UNIT POWER INTERCONNECTION.
 - ▲ FOR POSITIVE GROUND APPLICATIONS, REFER TO RADIO INSTALLATION MANUAL.
 - ▲ FOR S500 OR S550 CONTROL UNITS, O-R AND W-O WIRES ARE NOT CONNECTED.

(19D901581, Sh. 1, Rev. 2)

S500/S-900 SERIES CONTROL UNITS

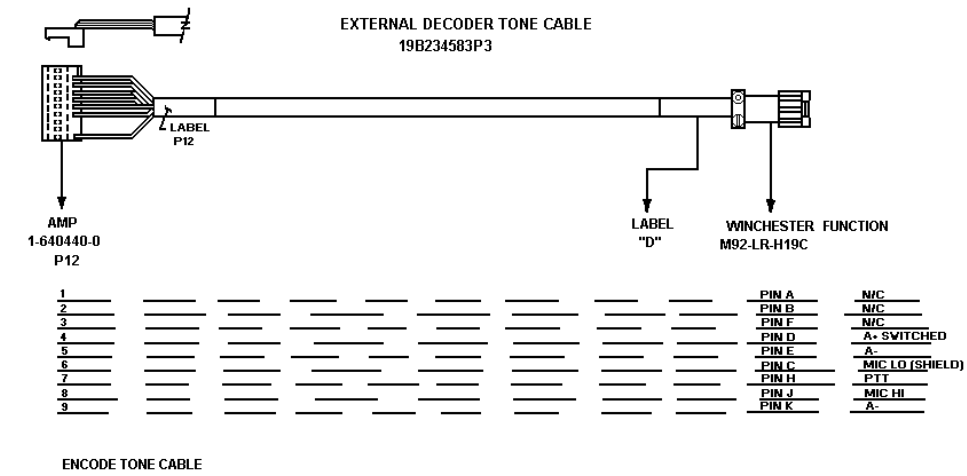
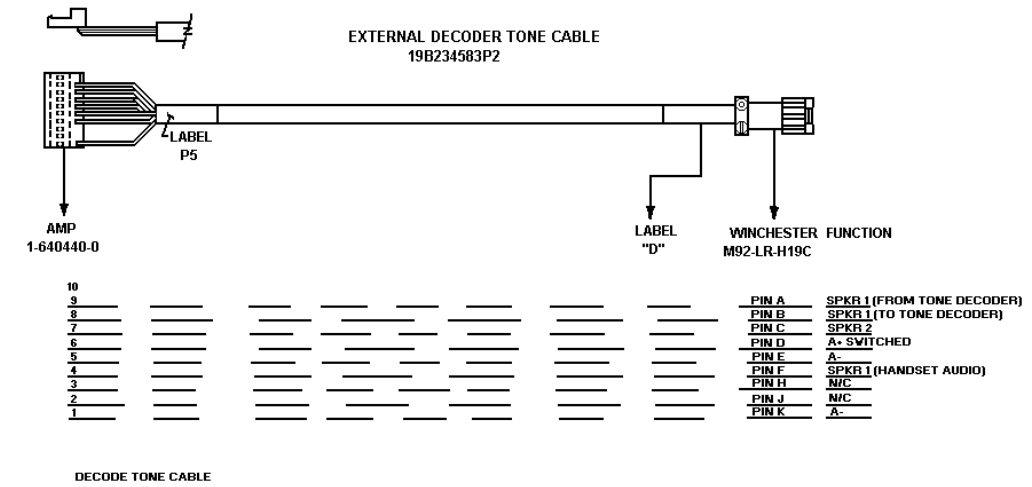
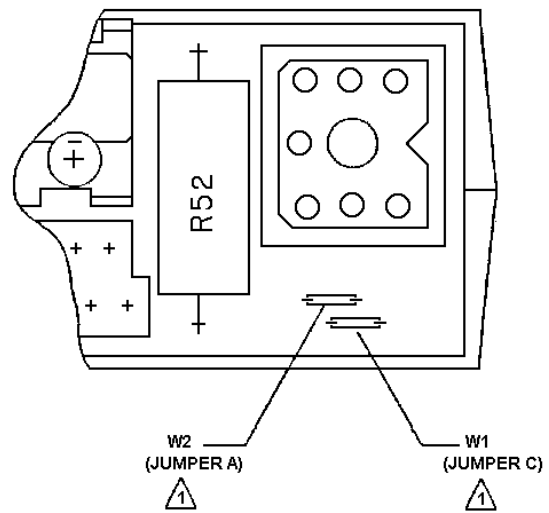


1 TONE CABLE INSTALLATION

2 HANDSET HOOKSWITCH

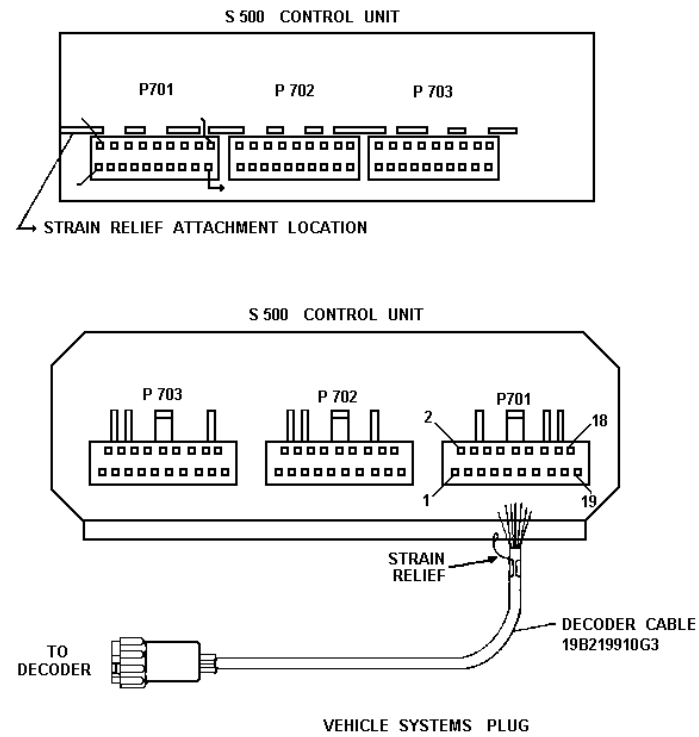
NOTES:

⚠ REMOVE JUMPERS "A" (W2) AND "C" (W1)



UNIVERSAL DECODER

- ② THESE INSTRUCTIONS COVER THE INSTALLATION OF DECODER CABLE PL19B219910G3.
1. ASM CABLE PL19B219910G3 AS SHOWN IN DIAGRAM.
 2. CONNECT STRAIN RELIEF AS SHOWN
 3. FOR SPEAKER MUTE WITH UNIVERSAL DECODER, CUT JUMPER "C" IN CONTROL UNIT.
 4. TO DECODE AT MINIMUM VOLUME, IT MAY BE NECESSARY TO REMOVE JUMPER "H" IN CONTROL UNIT.

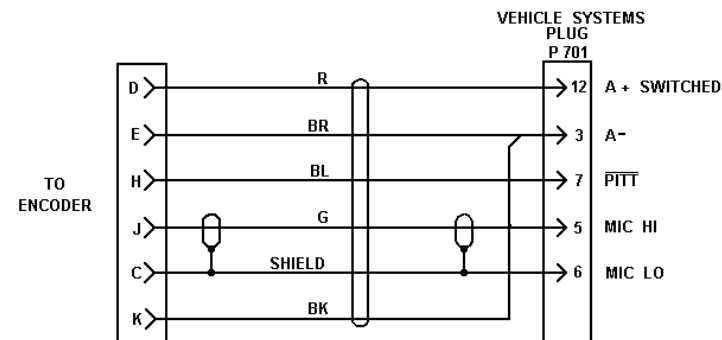
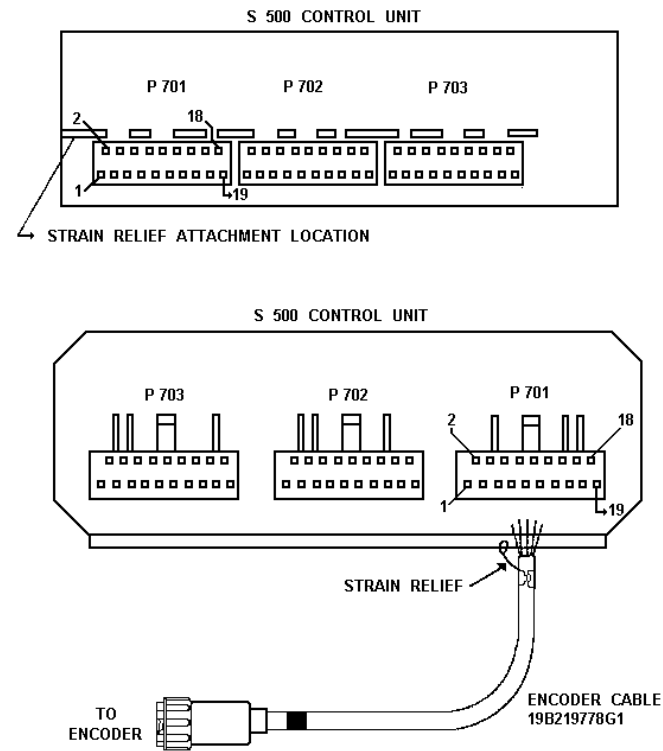


(19C320745, Sh. 2, Rev. 0)

EXTERNAL TONE-ENCODER/DECODER
2-500/S-550 CONTROL UNITS

UNIVERSAL ENCODER

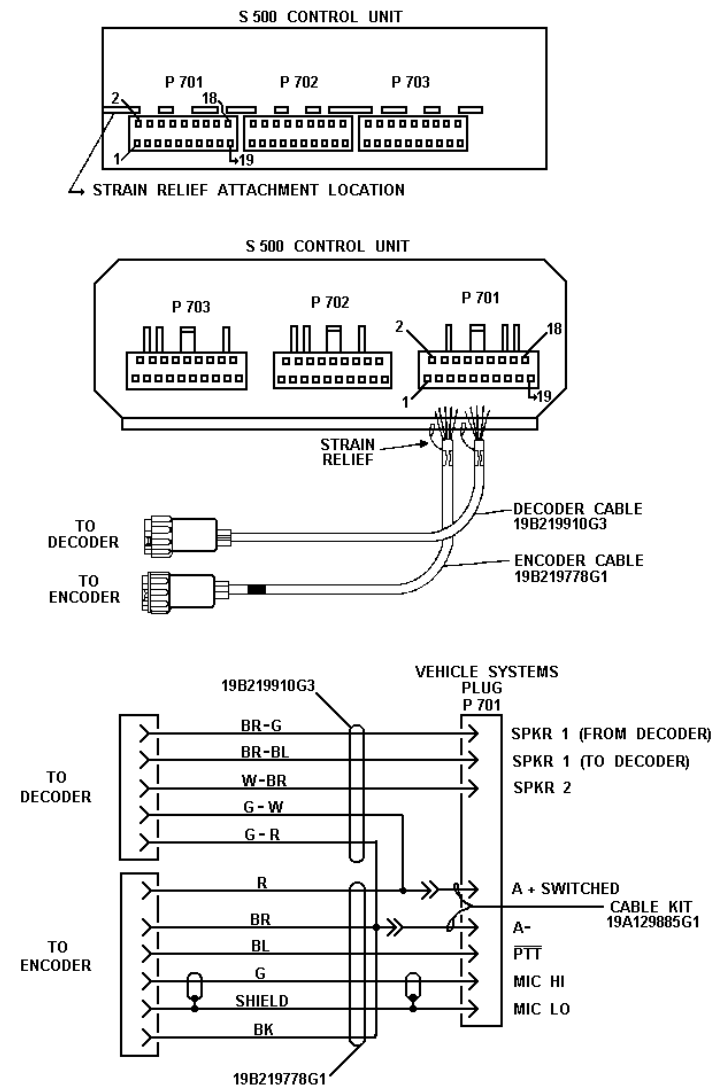
- ② THESE INSTRUCTIONS COVER THE INSTALLATION OF ENCODER CABLE PL19B219778G1.
- INSTRUCTIONS:
1. INSTALL CABLE PER ABOVE DIAGRAM.
 2. CONNECT STRAIN RELIEF AS SHOWN.



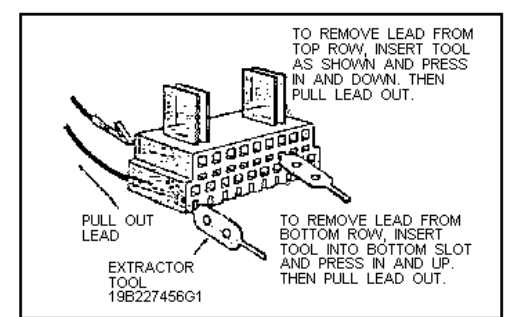
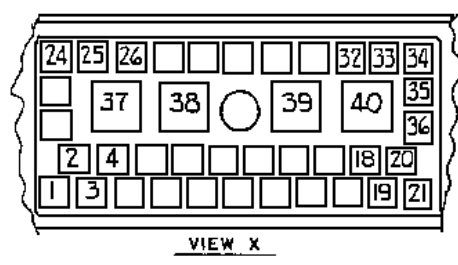
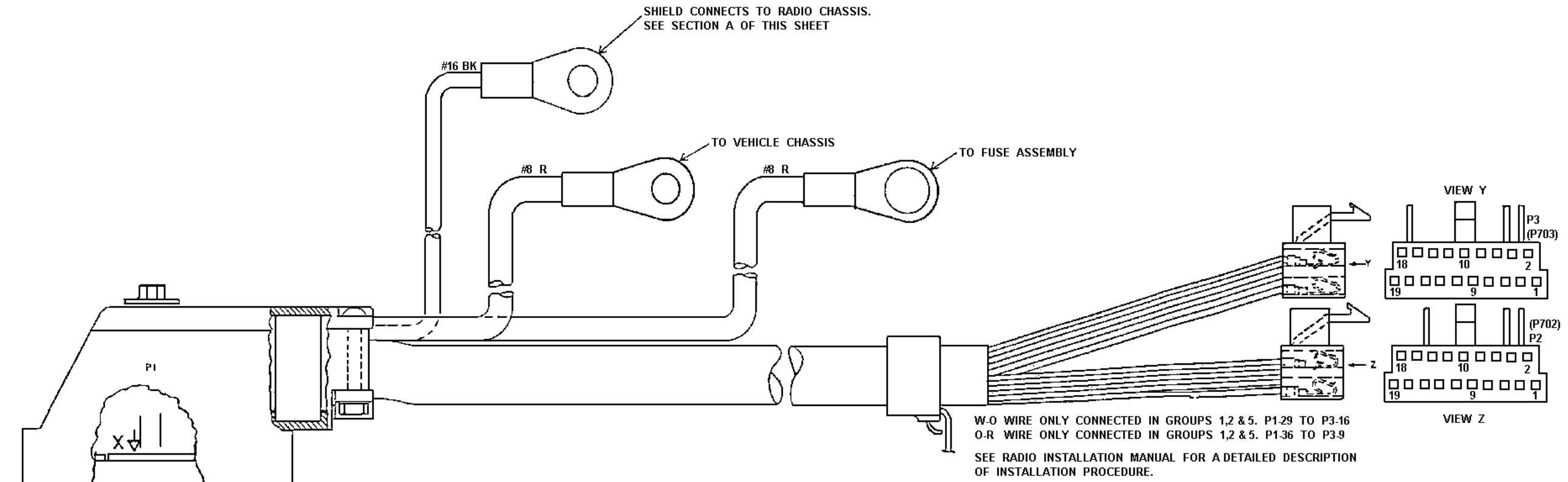
(19B226065, Sh. 2, Rev. 0)

UNIVERSAL DECODER & ENCODER

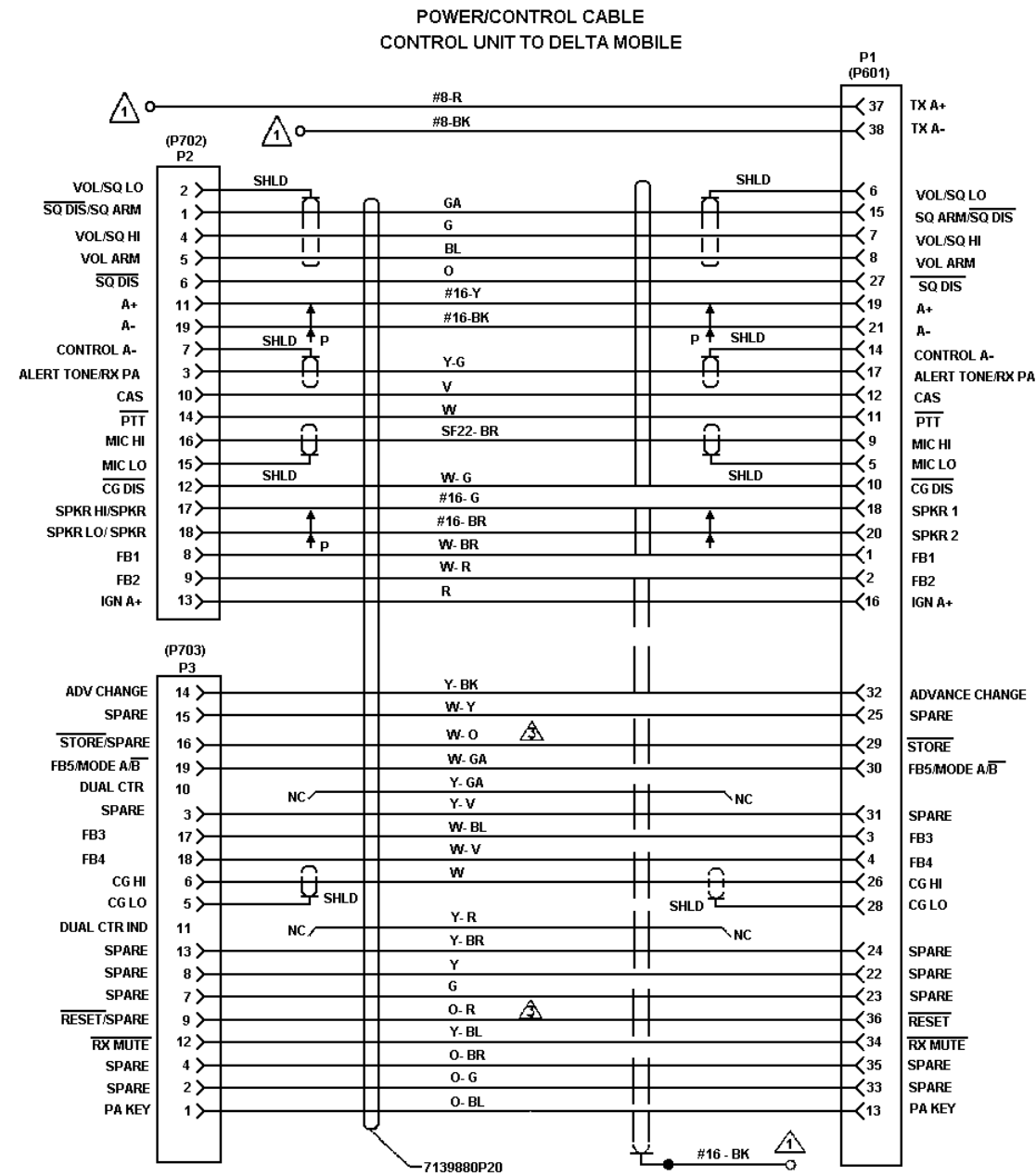
- ② THESE INSTRUCTIONS COVER THE INSTALLATION OF DECODER CABLE PL19B219910G3. ENCODER CABLE PLB 219778G1, CABLE KIT PL19A129885G1.
1. REMOVE CONTACTS FROM 19B219910G3 GREEN WHITE AND GREEN RED WIRES AND FROM 19B219778G1 RED, BLACK, AND BROWN WIRES, CUT OFF 2.00 INCHES ± .25. CRIMP WIRES PER DIAGRAM INTO SLEEVE OF 19A129885G1 CABLE KIT.
 2. ASM ENCODER AND DECODER CABLE AND CABLE KIT AS SHOWN IN DIAGRAM.
 3. CONNECT STRAIN RELIEFS AS SHOWN.
 4. FOR SPEAKER MUTE WITH UNIVERSAL DECODER, CUT JUMPER "C" IN CONTROL UNIT.
 5. TO DECODE AT MINIMUM VOLUME, IT MAY BE NECESSARY TO REMOVE JUMPER "H" IN CONTROL UNIT.



(19C320746, Sh. 2, Rev. 0)



19D901739 S-990 G1, 2, 5 S-550 G3, 4, 6



- 1. ELECTRICALLY UNCONNECTED UNTIL INSTALLED BUT TERMINATED PER ASM 19D901739.
- 2. ALL WIRES ARE # SF24 AWG UNLESS OTHERWISE SPECIFIED.
- 3. FOR GROUPS 3, 4 & 6 W-O AND O-R WIRES ARE NOT CONNECTED AT EITHER END.

(19D901742, Rev. 0)

PARTS LIST

POWER / CONTROL CABLES
30 CONDUCTOR SHORT GRD.
STANDARD (S990)
19D701739G1 30 FT. CABLE (S990)
19D901739G2 18 FT. W/O RESET STORE LEADS (S550)
19D901739G3 30 FT. W/O RESET STORE LEADS (S550)
19D901739G5 10 FT. CABLE (S990)
19D901739G6 10 FT. W/O RESET STORE LEADS (S550)
ISSUE 4

SYMBOL	PART NO.	DESCRIPTION
P1		PLUGS
		Connector. Includes:
		Shell.
		Housing.
		Cover.
		Contact, electrical rated @ 4 amps; sim to AMP 350657 - 1. (P1 - 1 thru 17, 22 thru 36.)
		Contact, electrical rated @ 35 amps; sim to AMP 350656 - 1 (P1 - 37, 38).
		Contact, electrical rated @ 35 amps; sim to AMP 350656 - 1. (P1 - 18 thru 21).
		Thumbscrew; thd. size M4 x 0.7. (Secures P1 to radio).
		#8 reg., steel, plain washer, zinc w/chromate plated.
		Retaining ring. (Contains thumbscrew).
		Gasket. (Used with P1 cable clamp).
		Cable clamp.
		Machine screw, No. M3 - 0.5 x 25. (Secures P1 cable clamp).
		Nut, hex; No. M3 x 0.5MM. (Secures P1 cable clamp).
	Lockwasher, internal tooth; No. 3MM. (Secures P1 cable clamp).	
P2		Connector. Includes:
		Shell.
P3		Contact, electrical; wire range No. 18 - 24 AWG; sim to Molex 08 - 50 - 0108.
		Contact, electrical; wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0108. (P2 - 1 thru 5, 6 thru 10, 12 thru 16).
	Connector. Includes:	
	Shell.	
	Contact, electrical; wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0108. (P3 - 1 thru 9, 12 thru 19).	
	MISCELLANEOUS	
	Cable, red; sim to GK S1 - 57528.	
	Cable, black.	
	Solderless terminal. (Located on black ground wire).	
	Solderless terminal. (Located on red + wire).	
	Screw, thd forming; M3.5 - 1.27 x 9.60. (Secures J1 cover to housing).	
	Screw, thd. forming; No. 3.5 - 1.27 x 12.7. (Secures J1 connector to housing).	
	Extraction tool.	
	GROUND CABLE KIT (5 1/2 TO 33 FT MOD) 19A136690G1	
	Cable, black. (Approx. 33 feet).	
	Contact, electrical rated @ 35 amps; sim to AMP 350655 - 1.	
	Solderless terminal.	
	Solderless terminal. (Optional terminal for cable).	

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

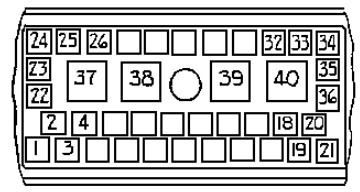
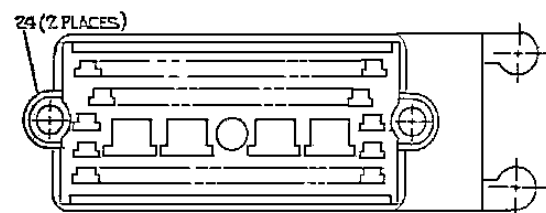
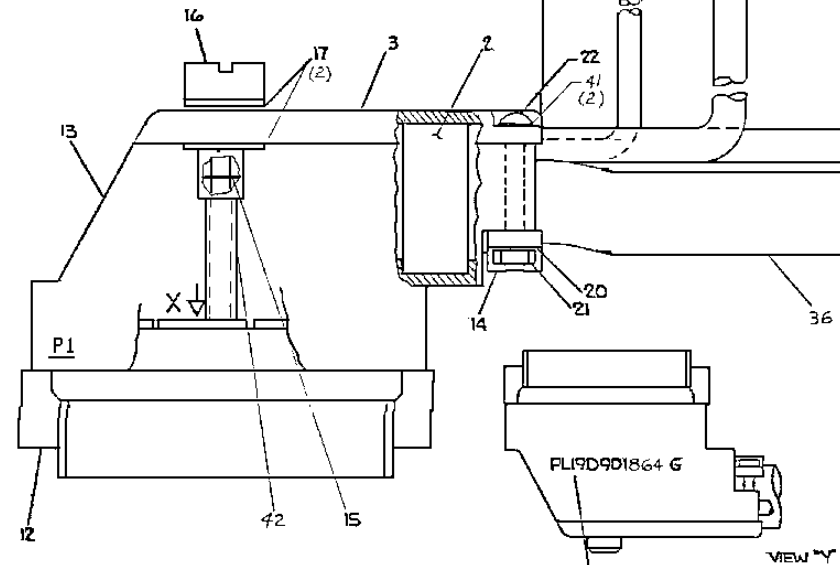
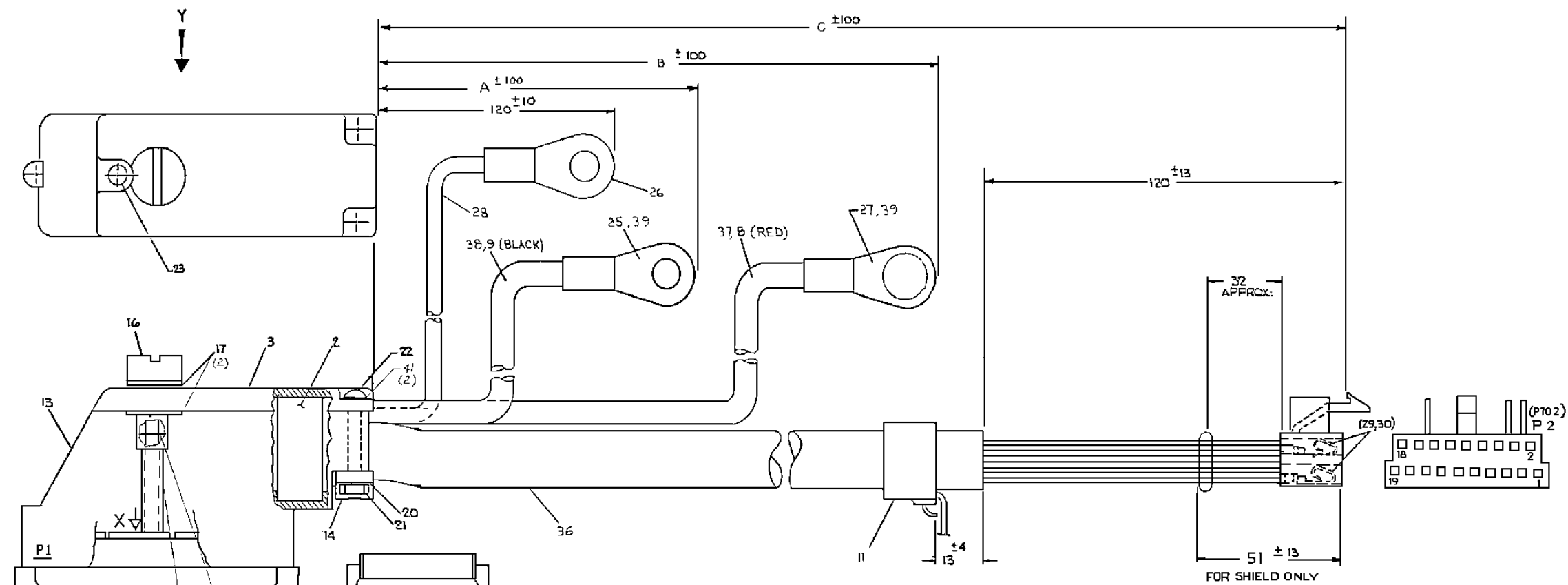
PRODUCTION CHANGES

Changes in the equipment to improve 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 - POWER CONTROL CABLES 19D901739G1-6

To eliminate cracking in the cable system connector housing a support sleeve was added. The following change has been made: N402 P38B6 replaced 19A701312P6.

**POWER CONTROL CABLE
19D901739G1-6**



MARK AS SHOWN PLUS APPLICABLE GROUP NO. CHARACTERS 3.2 HIGH COLOR - WHITE PER - 19A700154P1

WIRE	TERMINATIONS AT F1		TERMINATIONS AT F2		FUNCTION
	TERMINATE WITH ITEM	PLUGS INTO	TERMINATE WITH ITEM	PLUGS INTO	
ITEM 36 YG	5	P1-1	30	P2-8	VG RX DATA
ITEM 36 SHIELD	5	P1-5	30	P2-15	VG DATA SHIELD
ITEM 36 SHIELD	5	P1-2	30	P2-9	VG TX DATA
ITEM 36 SHIELD	5	P1-6	30	P2-2	MIC LO/AUDIO SHIELD
ITEM 36 G	5	P1-8	30	P2-5	NOT USED
ITEM 36 BL	5	P1-15	30	P2-1	MIC HI
ITEM 36 GA	5	P1-16	30	P2-1	VG AUDIO
ITEM 36 V/R	5	P1-9	30	P2-16	MOB TX DATA
ITEM 36 V/Y	5	P1-10	30	P2-12	AUX
ITEM 36 V/B	5	P1-11	30	P2-14	MOB RX DATA
ITEM 36 V/O	5	P1-12	30	P2-10	SER RGST
ITEM 36 V/EL	5	P1-16	30	P2-13	IGN A-
ITEM 36 V/V	5	P1-17	30	P2-3	UNSV A-
ITEM 36 G	7	P1-18	29	P2-17	SPKR 1
ITEM 36 Y	7	P1-19	29	P2-11	SV A-
ITEM 36 BR	7	P1-20	29	P2-18	SPKR 2
ITEM 36 BK	7	P1-21	29	P2-19	A-
ITEM 36 V/G	5	P1-27	30	P2-7	SPARE
ITEM 36 V/GA	5	P1-7	30	P2-4	SPARE
ITEM 8	6	P1-37			TX A-
ITEM 9	6	P1-38			TX A-
ITEM 36 SHIELD	28	⚠	30	P2-6	⚠ SHIELD DRAIN

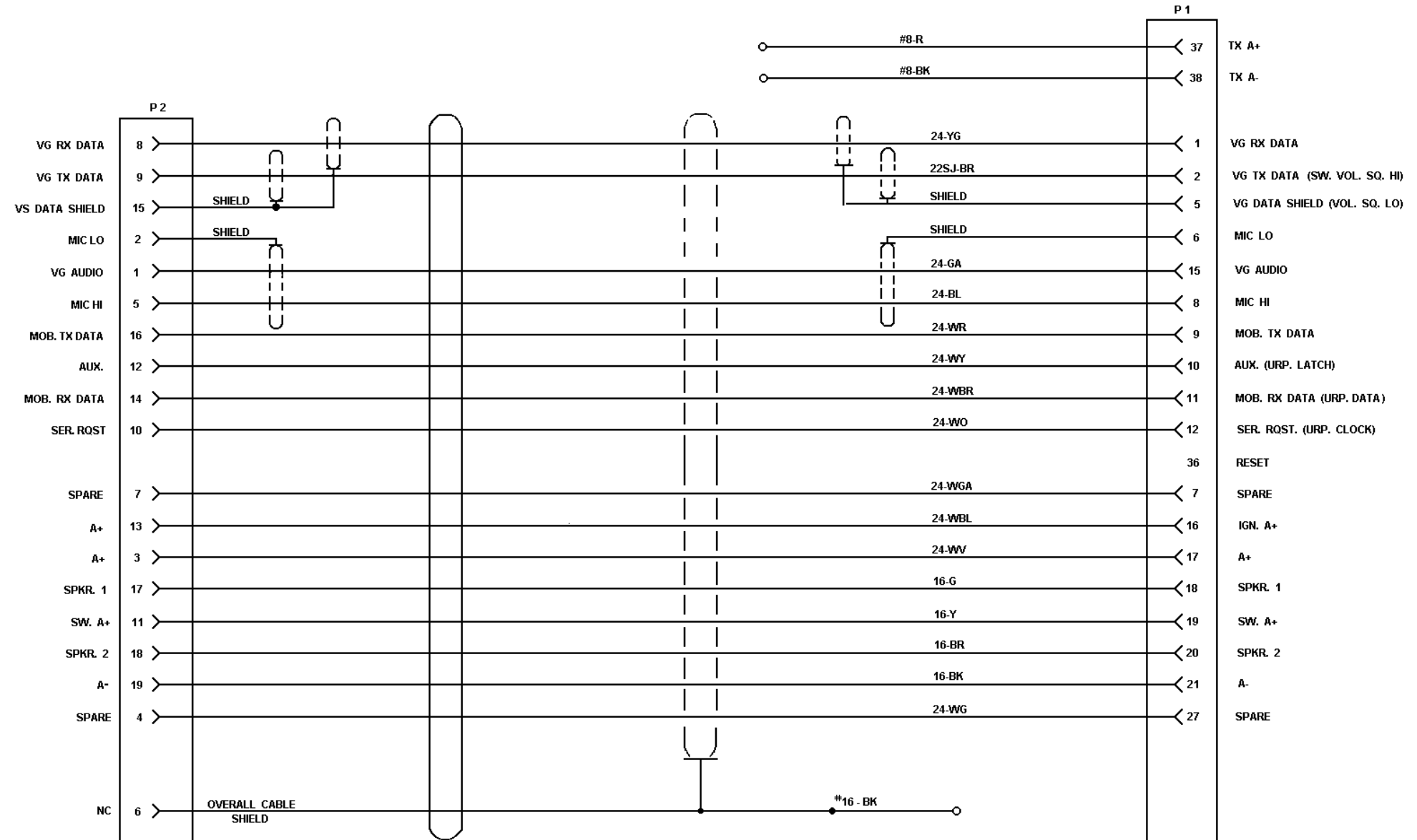
TABLE A			
GROUP NO	"A" DIM	"B" DIM	"C" DIM
1	500	500	460
2	1700	4800	3000
3	1700	7800	5500
4	1700	10 500	9000
5	—	—	460

(19D901864, Sh. 1, Rev. 1)

POWER / CONTROL CABLES

19D901864G2 17 CONDUCTOR, 10 FOOT WITH A+ 16 FOOT
 19D901864G3 17 CONDUCTOR, 18 FOOT WITH A+ 26 FOOT
 19D901864G4 17 CONDUCTOR, 30 FOOT WITH A+ 35 FOOT
 ISSUE 3

SYMBOL	PART NO.	DESCRIPTION
		----- PLUGS -----
P1	19C850508P1	Connector. Includes: Cover.
	19D900037P1	Shell.
	19D900015P1	Housing.
P2	19B226516G1	Shell: 19 - Position; sim to Molex 15-04-0221.
		----- MISCELLANEOUS -----
	19C320257P1	Shell: 19 - Position; sim to Molex 15-04-0221. (Used in G1).
	19B800513P1	Gasket.
	19A701376P1	Contact, electrical rated @ 4 amps; sim to AMP 350657-1.
	19A701376P3	Contact, electrical rated @ 35 amps; sim to AMP 350655-1.
	19A701376P2	Contact, electrical rated @ 4 amps; sim to AMP 350658-1.
	19A701460P2	Cable, red; sim to GE S1-57528.
	19A115799P1	Terminal, solderless: sim to AMP 33460. (Used with cable above)
	19A701631P610	Machine bolt: M6-1x10, (used with 19A701480P2)
	19A700033P12	Wash. Lok (used with 19A701460P2)
	19A701460P10	Cable, black.
	7142878G1	Clip loop.
	19A701077P1	Clip.
	19A701488P4	Retaining ring.
	19A705055P1	Thumbscrew.
	N402P38B6	Wash. Pin
	19J706152P8	Retaining strap: sim to Dennison Bar-lok 08470.
	19J706152P9	Retaining strap: sim to Dennison Bar-lok 08471.
	19A700035P5	Lockwasher, Internal tooth: No. 3MM.
	19A700034P4	Nut, hex: No. M3 x 0.5MM.
	19A700031P425	Machine screw, No. M3-0.5 x 25.
	19A701507P606	Screw, thd forming: M3.5 -1.27 x 9.60.
	19A701507P608	Screw, thd forming: M3.5 -1.27 x 12.7.
	19B800629P1	Solderless terminal.
	19B800629P6	Solderless terminal: wire range No. 14-16 AWG; sim to AMP 42751-2.
	19B800629P3	Solderless terminal.
	19A701462P10	W. Strd
	19A116781P3	Contact: 16-20 AWG; sim to Molex 08-50-0105.
	19A116781P4	Contact: 22-26 AWG; sim to Molex 08-50-0107.
	7139880P21	Ca Sp
	N402P5B6	Washer: narrow, steel.
	19C337474P1	Sleeve support

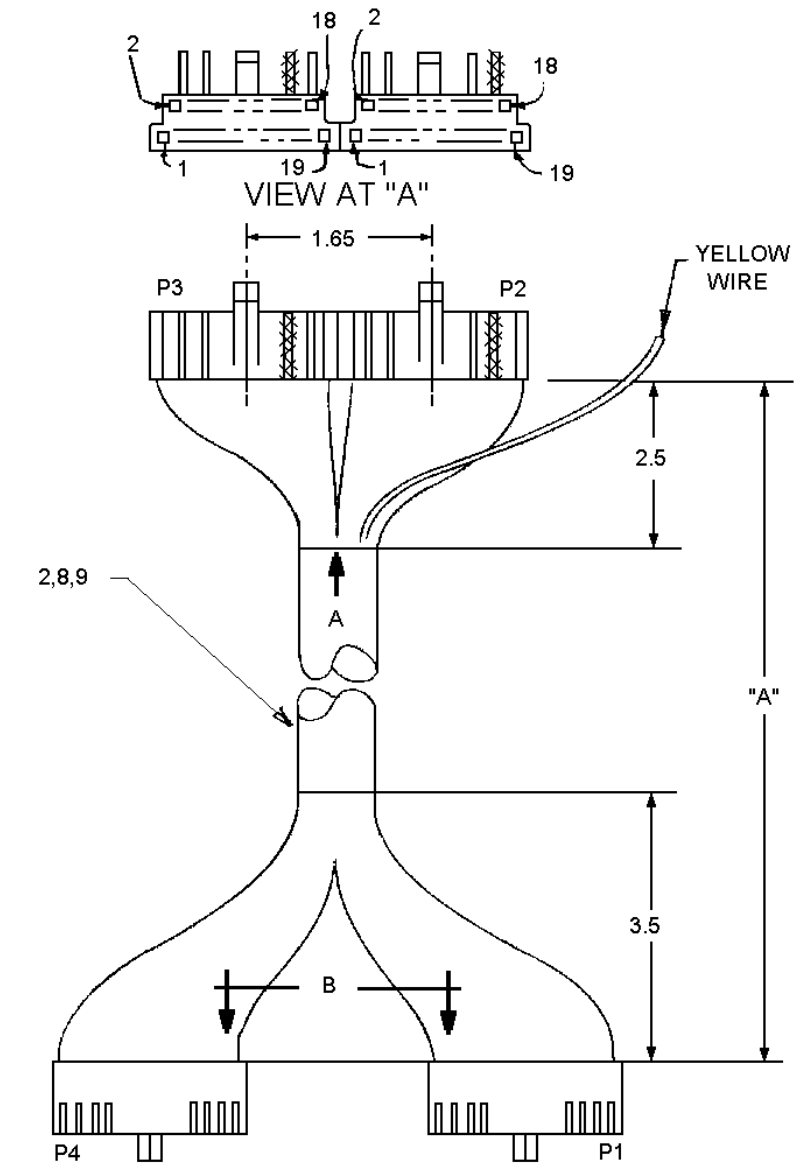


*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

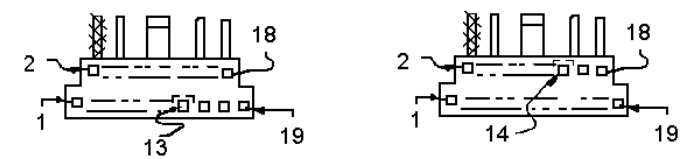
(19D901979, Sh. 1, Rev. 0)

POWER CONTROL CABLE
 19D901864 G2-4

WIRE NO.	WIRE	FROM FROM	"FROM" TERM ITEM NO.	TO	"TO" TERM ITEM NO.	REMARKS
1	#16Y	P2.11	3	P1.19	3	
2	#16BK	P2.19	3	P1.1	3	
3	#16BR	P2.18	3	P1.2	3	
4	#16G	P2.17	3	P1.3	3	
5	SF24.R	P2.13	4	P1.7	4	
6	SF24.GA	P2.1	4	P1.19	4	
7	SF24.G	P2.4	4	P1.16	4	
8	SF24.BL	P2.5	4	P1.15	4	2
9	SHIELD	P2.2	4	P1.18	4	
10	SF24.O	P2.6	4	P4.17	4	
11	SF24.YG	P2.3	4	P1.17	4	2
12	SHIELD	P2.7	4	P1.13	4	
13	SF24.V	P2.10	4	P1.10	4	
14	SF24.W	P2.14	4	P1.6	4	
15	SF22.BR	P2.16	4	P1.4	4	2
16	SHIELD	P2.15	4	P1.5	4	
17	SF24.WG	P2.12	4	P1.8	4	
18	SF24.WBR	P2.08	4	P1.12	4	
19	SF24.WR	P2.9	4	P1.11	4	
22	SF24.YBK	P3.14	4	P4.6	4	
23	SF24.WY	P3.15	4	P4.5	4	
24	SF24.WO	P3.16	4	P4.4	4	
25	SF24.WGA	P3.19	4	P4.1	4	
26	SF24.YGA	P3.10	4	P4.10	4	
27	SF24.WV	P3.18	4	P4.2	4	
28	SF24.YR	P3.11	4	P4.9	4	
29	SF24.Y4	P4.7	3			3
30	#16.Y	P3.9	4	P4.11	4	
31	SF24.YV	P3.12	4	P4.8	4	
32	SF24.YBR	P3.1	4	P4.19	4	
33	SF24.WBL	P3.17	4	P4.3	4	



	GROUP 1	GROUP 2	GROUP 3
"A" DIM	15 IN.	9 FT.	18 FT.
WIRE ITEM 3	18 IN.	9 FT. & 3.5 IN.	18 FT. & 3.5 IN.



VIEW AT "B"

VOICE GUARD INTERCONNECT CABLE
19C336637 G1-3

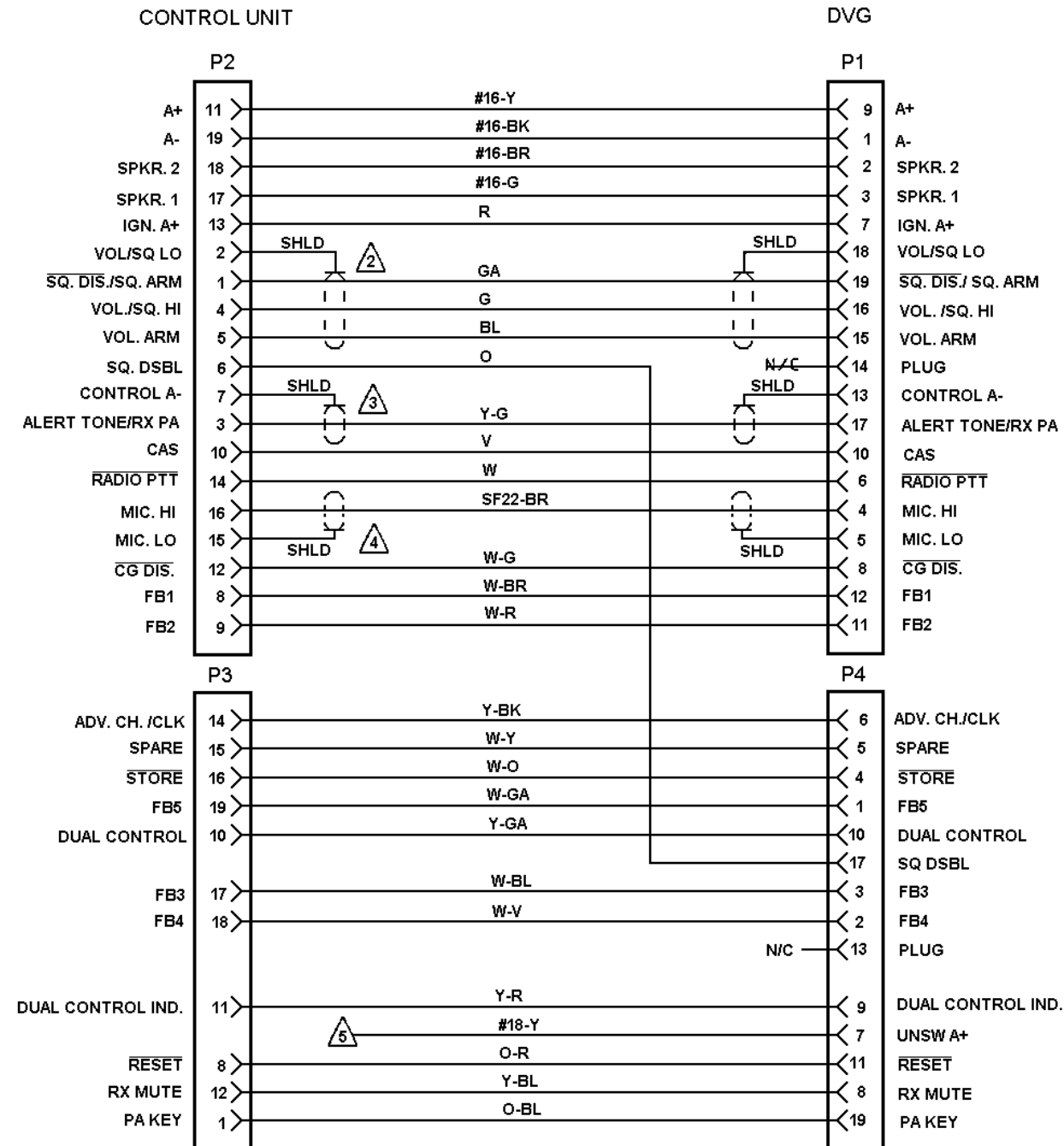
(19C336637, Sh. 1, Rev. 4)

PARTS LIST

VOICE GUARD
INTERCONNECT CABLE
19C336637G1 1 FT
19C336637G2 9 FT
19C336637G3 18 FT
ISSUE 2

SYMBOL	PART NO.	DESCRIPTION
----- PLUGS -----		
P1	19C32025P1	Shell. Uses following contacts:
P1 - 1 thru P1 - 3	19A116781P3	Contact, electrical: wire range No. 16 - 20 AWG; sim to Molex 08 - 50 - 0105.
P1 - 4 and P1 - 5	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P1 - 7 and P1 - 8	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P1 - 9	19A116781P3	Contact, electrical: wire range No. 16 - 20 AWG; sim to Molex 08 - 50 - 0105.
P1 - 10 thru P1 - 13	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P1 - 15 thru P1 - 19	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P2	19C32025P1	Shell. Uses following contacts:
P2 - 1 thru P2 - 10	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P2 - 11	19A116781P3	Contact, electrical: wire range No. 16 - 20 AWG; sim to Molex 08 - 50 - 0105.
P2 - 12 thru P2 - 16	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P2 - 17 thru P2 - 19	19A116781P3	Contact, electrical: wire range No. 16 - 20 AWG; sim to Molex 08 - 50 - 0105.
P3	19C32025P1	Shell. Uses following contacts:
P3 - 1	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P3 - 9 thru P3 - 12	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P3 - 14 thru P3 - 19	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P4	19C32025P1	Shell. Uses following contacts:
P4 - 1 thru P4 - 6	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P4 - 7	19A116781P3	Contact, electrical: wire range No. 16 - 20 AWG; sim to Molex 08 - 50 - 0105.
P4 - 8 thru P4 - 11	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P4 - 17	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
P4 - 17	19A116781P4	Contact, electrical: wire range No. 22 - 26 AWG; sim to Molex 08 - 50 - 0107.
----- MISCELLANEOUS -----		
	7139800P16	Lacing for Cable.
	19A116889P4	Yellow Stranded Wire.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.



(19C336658, Sh. 1, Rev. 1)

PARTS LIST

LBI4481G
TRANSISTORIZED DYNAMIC MICROPHONE
(MASTR II STYLE)
19C320270G1
(SEE RC2454A)

SYMBOL	PART NO.	DESCRIPTION
1	RP127	Front Case Assembly. (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 case.
6	19A129435P1	Pin contact.
7	19A701289P1	Retaining ring: 3/16 inches; sim to National Lockwasher WA 510.
8	19D416767P1	Connector Cover.
9	19B219723G1	Thumb screw: lexan.
10	N136AP905Y6	Tap screw: No. 4 - 24 x 5/16.
11	19A116937P1	Cable clamp: sim to Malco 21012 - 3.
12	19B219749P1	Flex relief.
13	RP126	Switch button kit.
14		Rear Case Assembly. (Part of item 1).
15		Tap screw, phillips. (Part of item 1).
16	19C321016G1	Cable assembly: Includes items 3 - 12 & cable RP129.
17	RP128	Switch assembly.
18	RP130	Grille Assembly. (Includes items 2, 19, 21).
19		"O" Ring. (Part of item 18).
20	RP117	Transistorized cartridge.
21		Washer. (Located under cartridge - Part of item 18).
22	19C321016G3	Connector Assembly: Includes items 5 - 12.
		MIKE HANGER 7141414G2, 3
	4031457P1	Support.
	4031458P1	Spring.
	N193P1408C6	Tap screw, Phillips head: No. 8 - 18 x 1/2.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

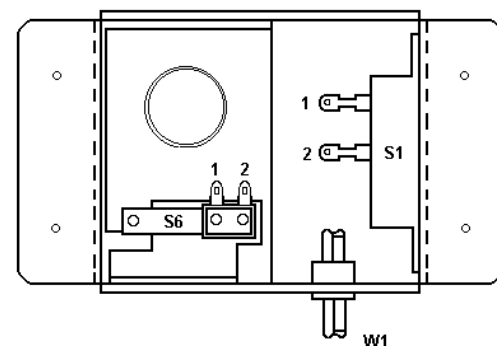
PARTS LIST

MIKE HANGER / HOOKSWITCH
19C320328G1, G3, & G4
ISSUE 5

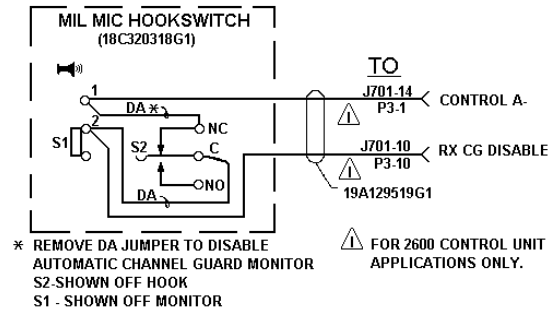
SYMBOL	PART NO.	DESCRIPTION
		----- SWITCHES -----
S1		Part of housing.
S2	19A116676P1	Sensitive: SPDT, 5 amps at 24 VDC or 5 amps at 250 VRMS; sim to Microswitch 111SM1 - T2.
S6	19A134398P1	Push: sim to Chicago Switch S - 1527 - 1.
		----- CABLES -----
W1	19A129414G1	2 conductor cable: approx 5 feet long, includes (2) 19A116781P5 contacts.
		----- MISCELLANEOUS -----
	19B219698G1	Housing. (Used with G1).
	19B219694P1	Base plate.
	19A702464P2	Strain relief.
	N193P1410B6	Tap screw, phillips head: No. 8 - 18 x 5/8.
	19A134398P101	Metal plate.
	19B219698G4	Housing. (Used with G3).
	19B219698G5	Housing. (Used with G4).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

OUTLINE DIAGRAM



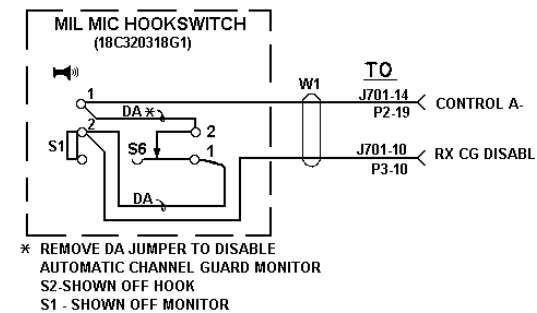
(19B227626, Rev. 0)



* 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

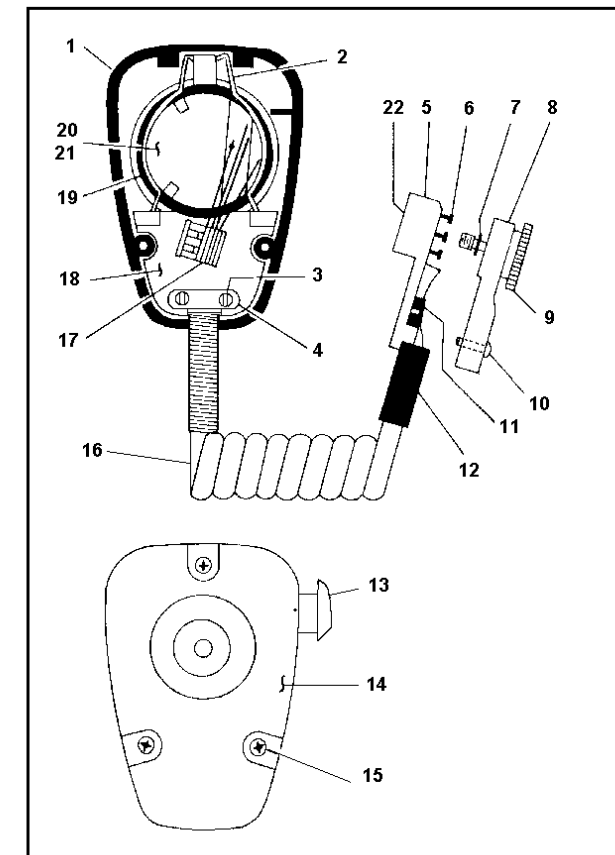
SCHEMATIC



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

MODEL NO. REV LETTER

(19A136836, Rev. 2)



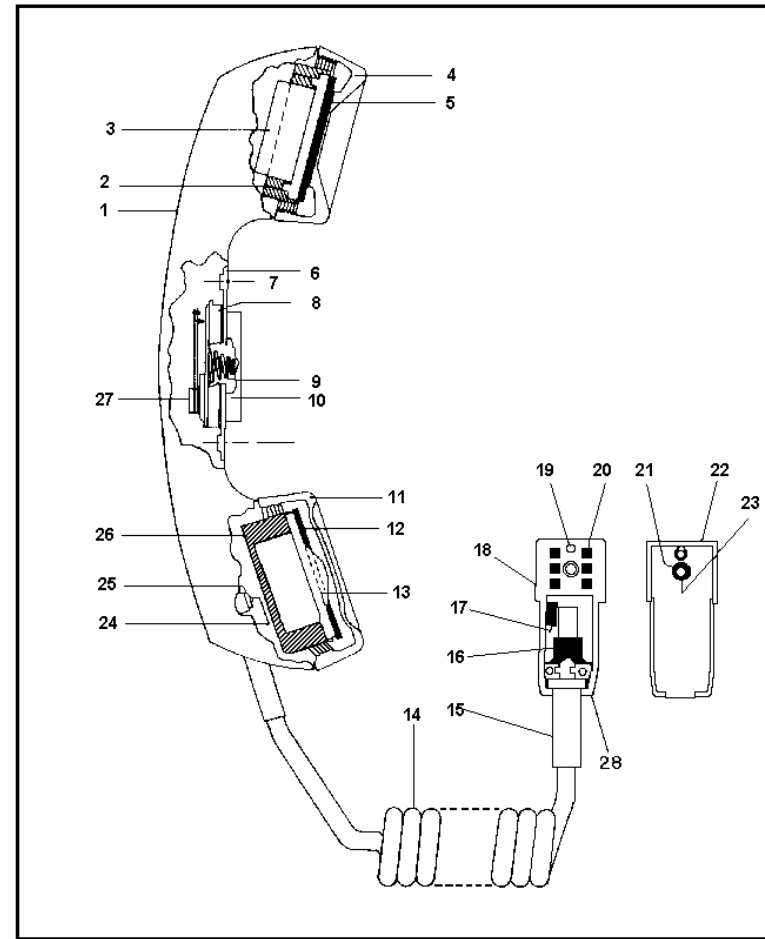
MICROPHONE & HOOKSWITCH

PARTS LIST

HANDSET HOOKSWITCH
19B219846G1

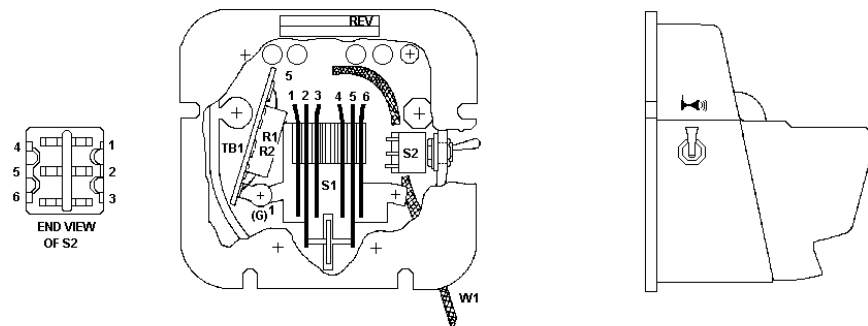
ISSUE 1

SYMBOL	PART NO.	DESCRIPTION
----- RESISTORS -----		
R1	549303P55	Wirewound: 20 ohms $\pm 5\%$, 5 w; sim to Hamilton Hall Type HR.
----- SWITCHES -----		
S1	19A129585G1	Holder and switch; Thermoplastic case, contact rating 1 amp at 125 v; sim to Telephone Components Inc.
S2	19A700189P6	Toggle, DPDT, contacts rated 5 amps at 28 VDC or 115 VAC; sim to C&K Components 7201G. (CHANNEL GUARD DISABLE).
----- TERMINAL BOARDS -----		
TB1	7775500P203	Phen: 5 terminals.
----- CABLES -----		
W1	19B219841G1	Cable: 6 conductor, 5 feet long.
----- MISCELLANEOUS -----		
	N190P1312C	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).
	19A129588G1	Bumper, rubber. (2).
	19B219852P1	Base plate.

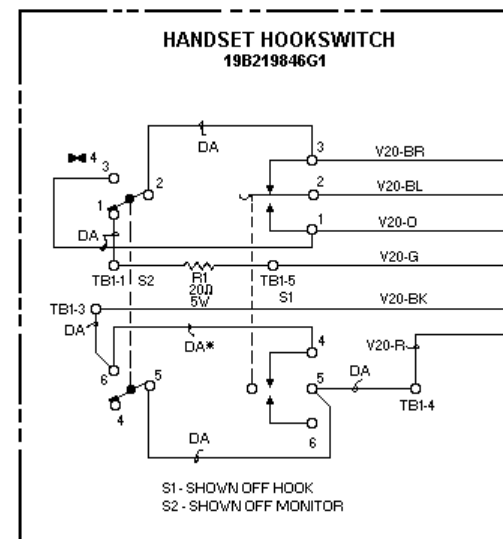


SCHMATIC

OUTLINE DIAGRAM



(19B226131, Rev. 3)



* REMOVE DA JUMPER TO DISABLE AUTOMATIC CHANNEL GUARD MONITOR

(193219847, Rev. 11)

PARTS LIST
TRANSISTORIZED DYNAMIC HANDSET
19C320478G6
(RC2457A)
ISSUE 1

SYMBOL	PART NO.	DESCRIPTION
1	RP142	Case Assembly. Includes items 1, 2, 4, 5, 11, 12, & 26.
2		Adapter. Part of item 1.
3	RP140	Receiver Cartridge.
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	RP139	Transmitter cartridge.
14	19C321016G2	Cable assembly: Includes items 14 - 25 and cable RP141.
15	19B219749P1	Flex relief.
16	19A116937P1	Cable clamp: sim to Malco 21012 - 3.
17	H212CRP233C	Resistor, Deposited carbon: 3.3K ohms $\pm 5\%$, 1/4 w.
18	19D416766P1	Connector case.
19	N136AP905Y6	Tap screw: No. 4 - 24 x 5/16.
20	19A129435P1	Pin contact.
21	19A701289P1	Retaining ring: 3/16 inches; sim to National Lockwasher WA 510.
22	19D416767P1	Connector Cover.
23	19B219723G1	Thumb screw: lexan. (Secures cover, items 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	RP143	Switch Assembly. Includes items 6 - 10.
28	19C321016G3	Connector Assembly: Includes items 15, 16, 18 - 23. Does not include resistor, item 17.
		HANDSET HOLDER 7141414G3
	19A115220P1	Handset holder.
	N130P1210C6	Tap screw, thd. forming: No. 6 - 20 x 5/8.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

HANDSET HOOKSWITCH

PARTS LIST

NOISE CANCELLING MICROPHONE
MASTR II STYLE (MOONSTONE BR.)
19C320477G1

ISSUE 1

SYMBOL	PART NO.	DESCRIPTION
	19D416767P1	Connector Cover.
	19D416766P1	Connector case.
	19A129435P1	Pin contact.
	19B219723G1	Thumb screw: Lexan.
	19B219749P1	Flex relief.
	N1361P905Y6	Screw, self tap, phillips: No. 4 - 24 x 5/16.
	19A701289P1	Retaining ring: 3/16 inches; sim to National Lockwasher WA 510.
	19B209467P1	Noise Cancelling Microphone, Transistorized.
	19A116937P1	Cable clamp: sim to Malco 21012 -3.

PARTS LIST

MICROPHONE
19D900141G12
ISSUE 2

SYMBOL	PART NO.	DESCRIPTION
		----- MISCELLANEOUS -----
	19D416767P1	Connector Cover.
	19D416766P1	Connector case.
	19A129435P1	Pin contact. (Quantity 4).
	19B219723G1	Thumb screw: Lexan.
	19B219749P1	Flex relief.
	N1361P905Y6	Screw, self tap, phillips: No. 4 - 24 x 5/16.
	19A701289P1	Retaining ring: 3/16 inches; sim to National Lockwasher WA 510.
	19A116937P1	Cable clamp: sim to Malco 21012 -3.
	19B800741P17	Microphone, transistorized electret cartridge.
C9 and C10	19A702061P61	Ceramic, 100pF - 5%, 50 VDCW, temp coef 0 - 30 PPM.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PARTS LIST

STANDARD DELTA SPEAKER (DK. GREY)
19C850550G8 DASH MOUNT
19C850550G8
ISSUE 2

SYMBOL	PART NO.	DESCRIPTION
		----- LOUDSPEAKERS -----
LS1	19A702080P3	Permanent magnet: 3 x 5 inch, 4 ohms + or - 10% imp at 400 Hz, 18 w.
		----- CABLES -----
W1	19A129414G1	2 conductor cable: approx 5 feet long, includes (2) 19A116781P5 contacts.
		----- MISCELLANEOUS -----
	19A116986P112	Screw, thread forming, assembled washer: Phillips POZIDRIV, HI - LO thread, No. 7 - 19 x 3/4. (Quantity 4).
	19A701631P516	Machine screw: M5 - .8 x 16.
	19A700033P10	Lockwasher, external tooth: No. 10.
	19A701312P7	Lockwasher: No. 10.
	19A701354P2	Nameplate. (GENERAL ELECTRIC).
	19A129461G7	Hardware.
	19C850549P2	Grille.
	19B800534G6	Housing.
	19C320016P6	Mounting.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PARTS LIST

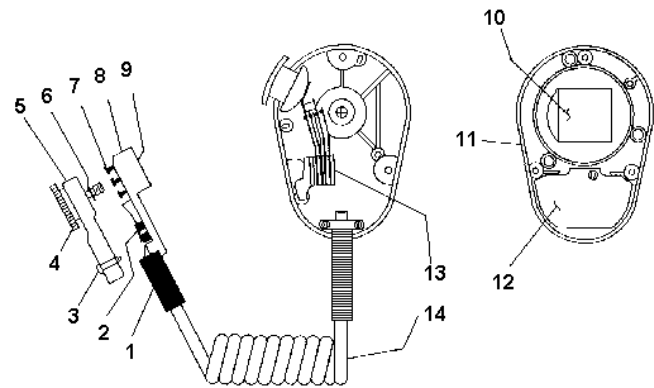
LBI -31563
EXTERNAL HORN SPEAKER OPTION
FOR
S990 CONTROL UNIT

SYMBOL	PART NO.	DESCRIPTION
	19B209426P1	Loudspeaker, permanent magnet: 4 ohms ± 10% coil imp. 3.2 ohms ± 15% DC res., 25 watt, freq range 300 to 13,000 Hz; sim to Atlas SA -340.
		SPEAKER CABLE 19B219826G1
	19A116781P5	Contact, electrical: wire range No. 18 - 24 AWG; sim to Molex 08 - 50 - 0106.
	4029484P11	Terminal, quick disconnect: 22 - 18 AWG; sim to AMP 41772.
	5490407P10	Grommet, neoprene.
	19A122633G1	Plate.
	19A701963P7	Clip loop.
	19B201074P206	Tap screw, Phillips POZIDRIVE®: No. 4 - 40 x 3/8. (Secures clip loop).
	N22P21008C13	Cap screw, hex head: No. 1/4 - 20 x 1/2. (Mounts speaker with thin mounting surface).
	N22P21014C13	Cap screw, hex head: No. 1/4 - 20 x 7/8. (Mounts speaker with thick mounting surface).
	N404P25C13	Lock washer, internal tooth: 1/4 inch. (Used to mount speaker).
	N210P21C13	Hex nut: No. 1/4 - 20. (Used to mount speaker).

MASTR II STYLE SPEAKER
MOONSTONE BR.
19C320302G1

ISSUE 1

SYMBOL	PART NO.	DESCRIPTION
		----- LOUDSPEAKERS -----
LS1	19A116694P1	Permanent magnet: 5 inch, 8 ohms ± 10% imp, 20 w. max operating; sim to Oaktron 5EU2189 -2.
		----- CABLES -----
W1	19A129414G1	2 conductor cable: approx 5 feet long, includes (2) 19A116781P5 contacts.
		----- MISCELLANEOUS -----
	19B219692G1	Grille.
	19B227593G1	Housing.
	19C320016P1	Mounting bracket.
	19A116986P108	Screw, thread forming, assembled washer: Phillips POZIDRIV, HI - LO thread, No. 7 - 19 x 1/2.
	19A116989P112	Screw, thread forming, assembled washer: Phillips POZIDRIV, HI - LO thread, No. 7 - 19 x 3/4.
	N187P16010C6	Machine screw: No. 10 - 32 x 5/8.



PARTS LIST

IGNITION SWITCH CABLES
19B219537G1
19B219537G4
ISSUE 4

SYMBOL	PART NO.	DESCRIPTION
P701		12 -VOLT 2 -WIRE IGNITION SWITCH CABLE 19B219537G4 (W/O IGNITION STANDBY)
		----- PLUGS -----
		Connector. Includes: Shell. Y Cable. (BLACK).
		FUSED LEAD ASSEMBLY 19A129480G3 (Used with 19B219537G4)
		1R16P8 Cartridge, quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussmann MTH -5. Contact, electrical.
		19A115776P8 Contact, electrical.
		19A115776P7 Spring: sim to Bussmann 1A1853.
		19A115776P6 Fuseholder: sim to Bussmann 9935.
		19A115776P5 Knob assembly: sim to Bussmann 9953 1/2.
		19A115776P3 Contact: sim to Littelfuse 904 -88. (Located inside fuseholder).
		7491823P7 Solderless terminal: wire size No. 16 -14 AWG; sim to AMP 30993. 31256.
		7491823P8 Solderless terminal: wire size No. 16 -14 AWG; sim to AMP 31256.
		4029484P2 Terminal, quick disconnect: wire size 14 -18 AWG; sim to AMP 41279 (LP).
		19A116849P1 Insulated splice.
		19A116781P5 Contact, electrical: wire range No. 18 -24 AWG; sim to Molex 08 -50 -0106.
	19A116781P3 Contact, electrical: wire range No. 16 -20 AWG; sim to Molex 08 -50 -0105.	
	19A129480G2 Lead, fused.	
	OPTIONAL 12 -VOLT 3 -WIRE IGNITION SWITCH CABLE 19B219537G1 (W /IGNITION STANDBY)	
	----- PLUGS -----	
	Connector. Includes: Shell. Y Cable. (BLACK).	
	FUSED LEAD ASSEMBLY 19A129480G1 1 AMP (RED) (Used with 19B219537G1)	
	1R16P3 Quick blowing: 1 amp at 250 v; sim to Littelfuse 312001 or Bussmann AGC -1. Contact, electrical.	
	19A115776P8 Spring: sim to Bussmann 1A1853.	
	19A115776P7 Fuseholder: sim to Bussmann 9935.	
	19A115776P6 Knob assembly: sim to Bussmann 9953 1/2.	
	19A115776P3 Contact: sim to Littelfuse 904 -88. (Located inside fuseholder).	
	7491823P7 Solderless terminal: wire size No. 16 -14 AWG; sim to AMP 30993.	
	7491823P8 Solderless terminal: wire size No. 16 -14 AWG; sim to AMP 31256.	
	4029484P2 Terminal, quick disconnect: wire size 14 -18 AWG; sim to AMP 41279 (LP).	

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

SYMBOL	PART NO.	DESCRIPTION
	19A116849P1	Insulated splice.
	19A116781P5	Contact, electrical: wire range No. 18 -24 AWG; sim to Molex 08 -50 -0106.
	19A116781P3	Contact, electrical: wire range No. 16 -20 AWG; sim to Molex 08 -50 -0105.
		FUSED LEAD ASSEMBLY 19D129480G2 5 AMP (YELLOW) (Used with 19B219537G1)
	1R16P8	Cartridge, quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussmann MTH -5. Contact, electrical.
	19A115776P8	Contact, electrical.
	19A115776P7	Spring: sim to Bussmann 1A1853.
	19A115776P6	Fuseholder: sim to Bussmann 9935.
	19A115776P5	Knob assembly: sim to Bussmann 9953 1/2.
	19A115776P3	Contact: sim to Littelfuse 904 -88. (Located inside fuseholder).
	7491823P8	Solderless terminal: wire size No. 16 -24 AWG; sim to AMP 30993.
	7491823P8	Solderless terminal: wire size No. 16-24 AWG; sim to AMP 41279 (LP).
	19A116849P1	Insulated splice.
	19A116781P5	Contact, electrical: wire range No. 18 -24 AWG; sim to Molex 08 -50 -0106.
	19A116781P3	Contact, electrical: wire range No. 16 -20 AWG; sim to Molex 08 -50 -0105.
		12 VOLT FUSE MOUNTING ASSEMBLY 19B216021G3 HIGH POWER 19B216021G6 MEDIUM POWER (Fuses must be ordered separately)
	1R11P7	Quick blowing: 30 amps, 250 v; sim to Bussmann NON30. (HIGH POWER).

PARTS LIST

132 -512 MHz ANTENNA
19B209568P1
ISSUE 2

SYMBOL	PART NO.	DESCRIPTION
		Whip assembly. Decibel Products 068110 -001.
		Whip nut assembly. Decibel Products 068047 -001.
		Base nut assembly. Decibel Products 068048 -001.
		"O" Ring (LARGE). Decibel Products 007059 -122.
		Stud assembly. Decibel Products 068046 -001.
		RG /58 Cable, 15 feet. Decibel Products 068115 -001.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PARTS LIST

LBI31197
29.7 - 50 MHz ANTENNA
ISSUE 1

SYMBOL	PART NO.	DESCRIPTION
	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 ASP -121.
	19C307172P1	Antenna Package: Includes base & ball assembly, adapter spring assembly, cable assembly, horseshoe plate, and rubber gasket.
	7134724P1	Antenna hook.
	N135P130C13	Tap screw, slot head, No. 6 -18 x 3/8.
	N401P7C6	Flatwasher: No. 6.

PARTS LIST

ANTENNA KIT
19A121577G1
ISSUE 1

SYMBOL	PART NO.	DESCRIPTION
	7134724P1	Hook.
	N135P130C13	Screw, thd. form, slot head: No. 6 -20 x 3/8.
	N401P7C6	Flatwasher: No. 6.

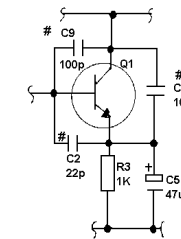
PRODUCTION CHANGES

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 Lists for descriptions of parts affected by these revisions.

REV. A - MICROPHONE 19D900141G12

To improve RFI performance at UHF frequencies, added C9 and C10.

ADD C9 AND C10 AS SHOWN BELOW:



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