MOBILE RADIO

MAINTENANCE MANUAL
FOR
MULTI-TONE CHANNEL GUARD ENCODER
MASTR® EXECUTIVE II LOCAL OR LOCAL/REMOTE STATIONS
(OPTIONS 9925 THROUGH 9928)

TABLE OF CONTENTS

DESCRIPTION

The Multi-Tone Channel Guard Encoder consists of a housing assembly and encoder board 19D417862G1 and G2. The different encoder options are described in the following chart.

OPTION NO.	DESCRIPTION
9925	2-Frequency Encoder
9926	8-Frequency Encoder
9927	2-Frequency Encoder with 1-Frequency Decoder
9928	8-Frequency Encoder with 1-Frequency Decoder

ENCODER HOUSING ASSEMBLY

The assembly consists of a front panel, a printed wire board backplane, a rear cover and an interconnection cable. The front panel is made of molded Lexan® plastic and contains space for inserting the Channel Guard board. The metal housing is equipped with a mounting base for mounting the assembly on a desk or table. The backplane board is attached to the ins e of the rear cover, and provides a jack (J920) for connecting the multi-tone Channel Guard encoder board through an interconnection cable (approximately 66 inches) to the station system board. Cable connections to the system board are shown on the Cable Schematic Diagram and the Installation Instructions as listed in the Table of Contents.

CHANNEL GUARD ENCODER

The multi-tone Channel Guard Encoder employs a continuous tone-coded Squelch System encoder for use in controlling remote equipment that utilizes CT-CSS decoders. Encoder 19D417862G1 provides up to eight encoder tones, and Encoder 19D417862G2 provides up to two encoder tones.

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

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

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

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

Complete instructions for the multi-tone Channel Guard encoder are contained in LBI-30242.

CIRCUIT ANALYSIS

DISASSEMBLY

To disassembly the encoder assembly, remove the four allen head screws (7/64") from the corners of the front panel and remove front panel.

REMOVAL AND REPLACEMENT OF ENCODER BOARD

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

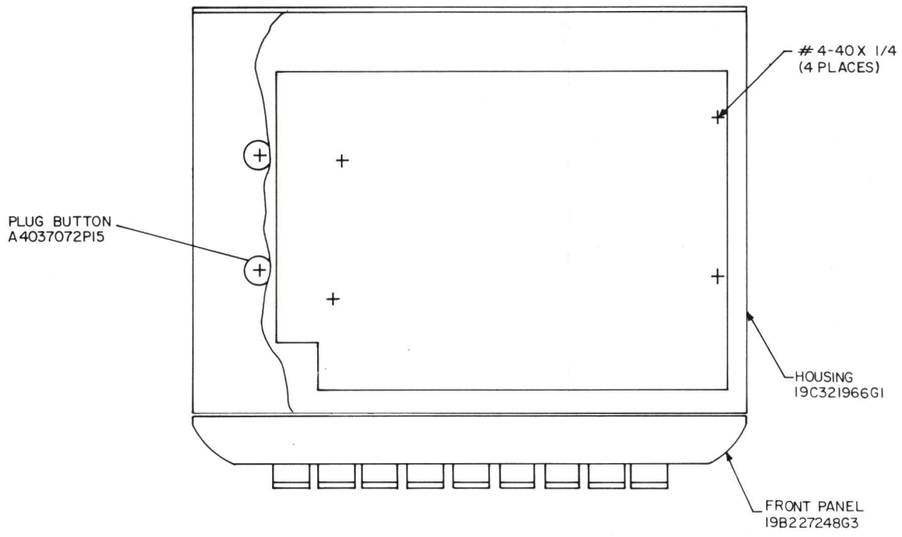
NOTE

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

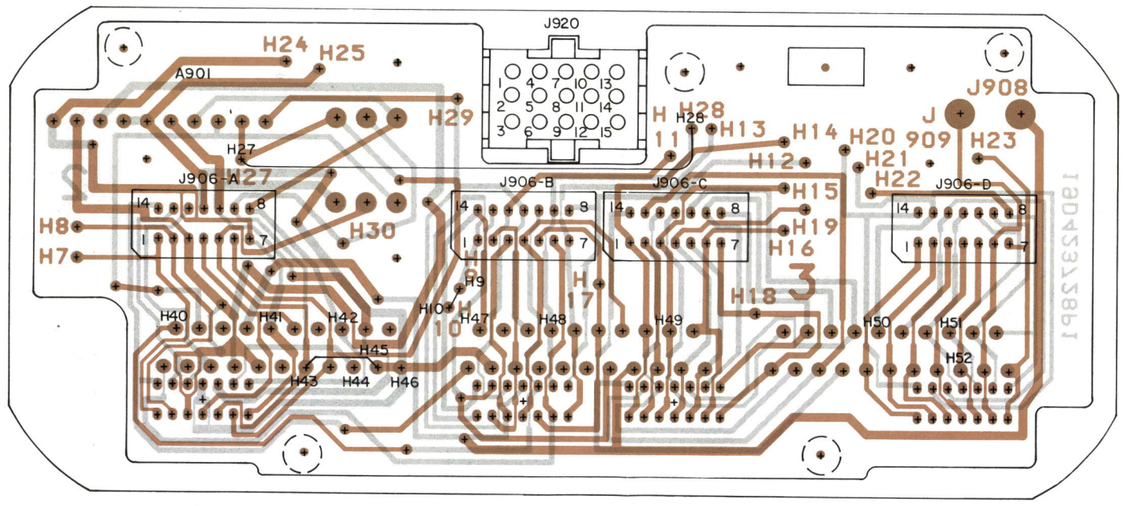
To replace the encoder board, carefully insert the board in appropriate guide slots and, with thumbs positioned on top edge of board, press firmly on the printed wire board until the module seats. Be careful not to apply pressure to any components or switches.

MOBILE RADIO DEPARTMENT
GENERAL ELECTRIC COMPANY • LYNCHBURG, VIRGINIA 24502

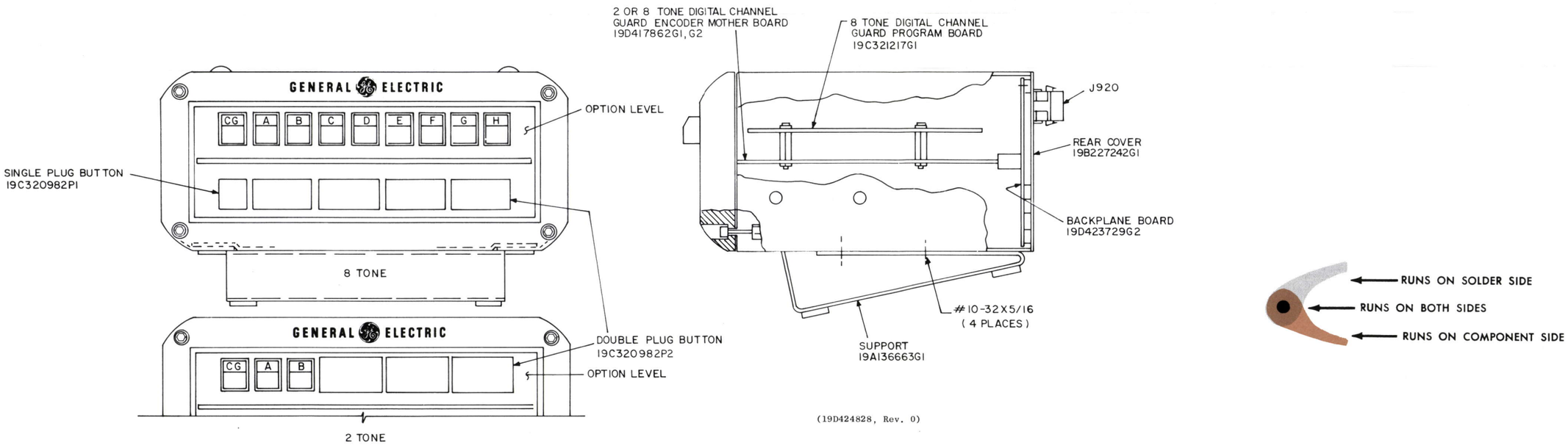
GENERAL ELECTRIC



BACKPLANE BOARD ASSEMBLY



(19C327799, Rev. 0)
(19B227238, Sh. 1, Rev. 3)
(19B227238, Sh. 2, Rev. 2)

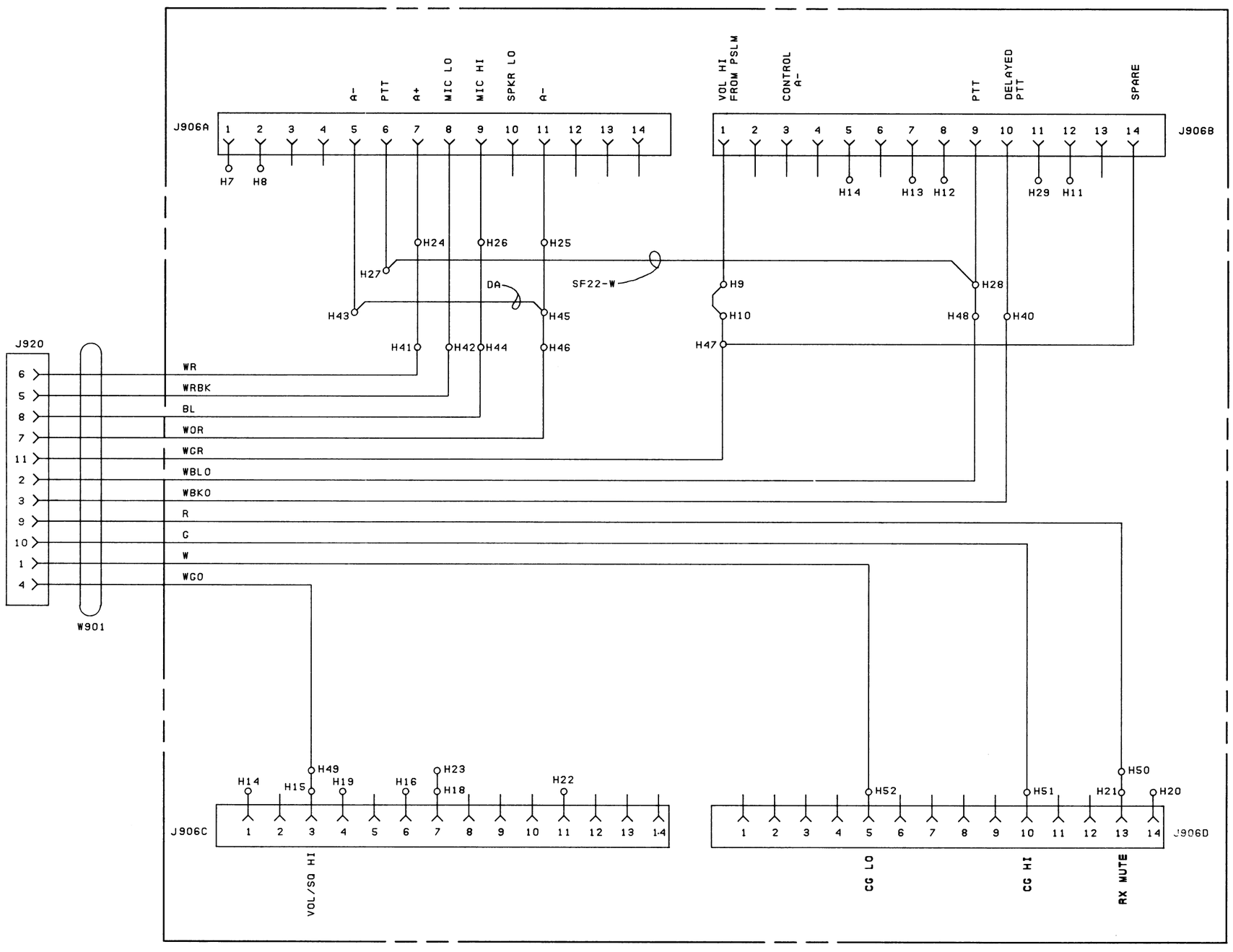


(19D424828, Rev. 0)

OUTLINE DIAGRAM

MULTI-TONE CHANNEL GUARD ASSEMBLY

BACKPLANE BOARD
PL19D423729G2



MODEL NO	REV LETTER
PL19D423990G1	

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 WIRES ARE SF22 UNLESS OTHERWISE SPECIFIED

(19D423979, Rev. 2)

SCHEMATIC DIAGRAM

MULTI-TONE CHANNEL GUARD
BACKPLANE ASSEMBLY

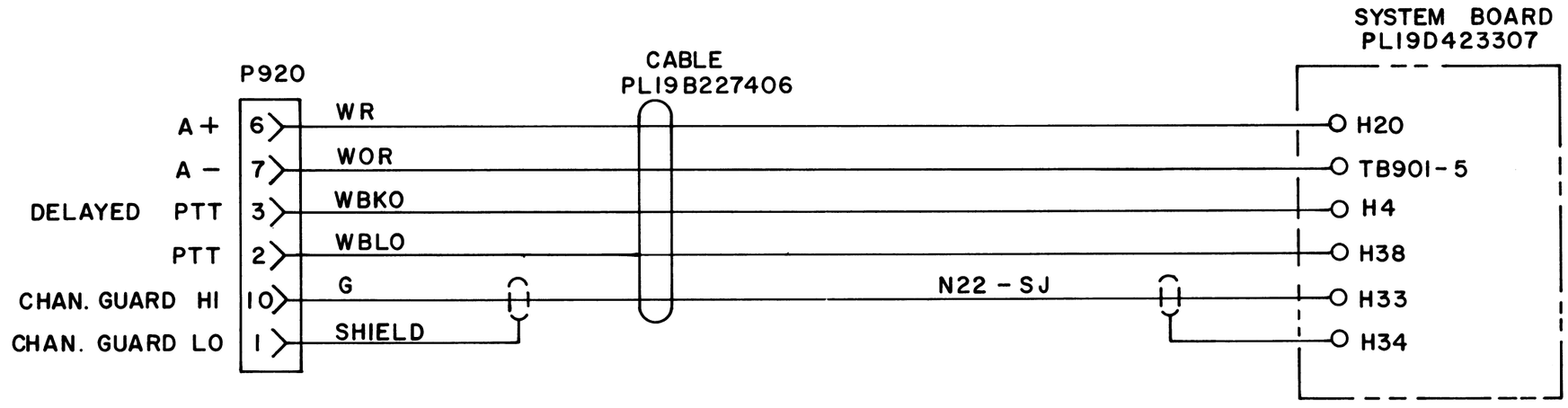
PARTS LIST

LBI-30411

EXECUTIVE II STATION
2 AND 8 FREQUENCY CHANNEL GUARD ENCODER HOUSING
19D423990G1

SYMBOL	GE PART NO.	DESCRIPTION
A901		BACK PLANE BOARD 19D423729G2
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J906A thru J906D	19A116446P5	Connector, printed wiring: 14 contacts.
		- - - - - - - - - - - CABLES - - - - - - - - - -
W901		HARNESS ASSEMBLY 19D423990G2
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J920		Connector. Includes:
	19A134253P1	Shell.
	19A134254P3	Contact, electrical: wire size No. 26-18; sim to AMP 350037-1.
		ASSOCIATED ASSEMBLIES
		66 INCH INTERCONNECTION CABLE 19B227406G2
		- - - - - - - - - - - PLUGS - - - - - - - - - -
P920		Connector. Includes:
	19A134253P2	Shell.
	19A134254P1	Contact, electrical: wire size No. 26-18; sim to AMP 350036-1.
		- - - - - - - - - - MISCELLANEOUS - - - - - - - -
	19B227242G1	Back Cover.
	19C321966G1	Housing.
	19B227248G3	Front Panel.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



(19B227409, Rev. 1)

SCHEMATIC DIAGRAM

INTERCONNECTION CABLE

THESE INSTRUCTIONS COVER THE INSTALLATION OF 2 AND 8 TONE CHANNEL GUARD CABLE TO MASTR EXEC II STATION.

INSTRUCTIONS:

REFER TO WIRING DIAGRAM 19B227409.

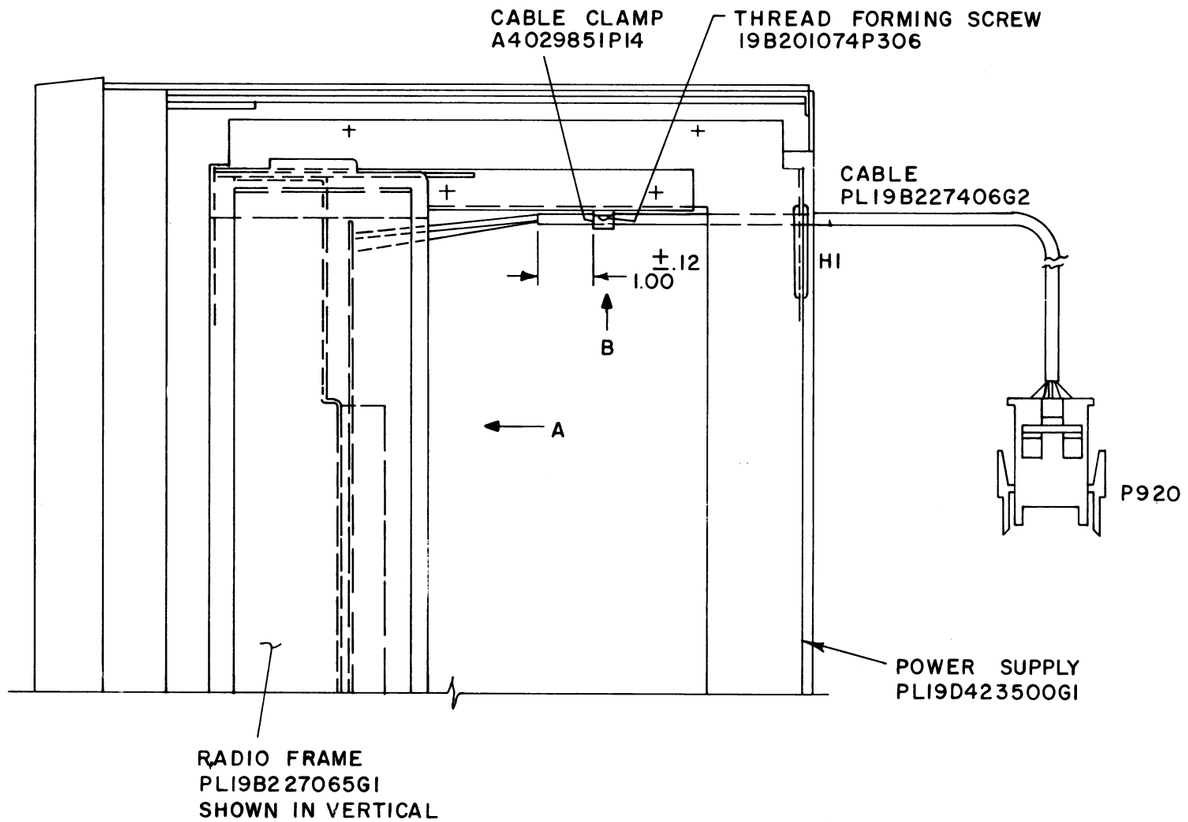
1. LOOSEN THE 2 SCREWS IN THE REAR OF LARGE COVER AND REMOVE COVER.
2. MOVE RADIO TO UPRIGHT POSITION AND REMOVE SYSTEM BD. (19D423307).
3. REMOVE THE FOLLOWING JUMPERS ON THE SYSTEM BD:

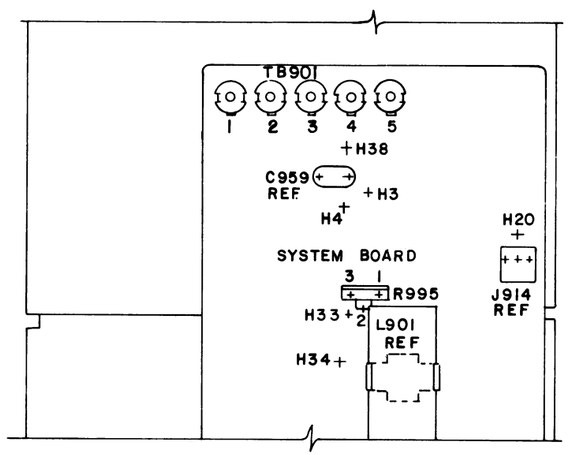
FROM:	TO:
H3	H4

4. ROUTE CABLE PL19B227406G2 THRU HOLE 1 AND SECURE WITH CABLE CLAMP AS SHOWN, VIEW AT B.
   CONNECT W-O-R LEAD WITH TERMINAL TO TB901-5 ON SYSTEM BOARD VIEW AT A.
   SOLDER R995 AS SHOWN ON SYSTEM BOARD VIEW AT A.
   SOLDER W-R LEAD FROM P901-6 TO H20 ON SYSTEM BD VIEW AT A.
   SOLDER W-BK-O LEAD FROM P901-3 TO H4 ON SYSTEM BD VIEW AT A.
   SOLDER W-BL- O LEAD FROM P901-2 TO H38 ON SYSTEM BD VIEW AT A.
   SOLDER G LEAD FROM P901-10 TO H33 ON SYSTEM BD VIEW AT A.
   SOLDER SHIELD LEAD FROM P901-1 TO H34 ON SYSTEM BD VIEW AT A.
5. INSTALL SYSTEM BD. (PL19D423307).
6. MOVE RADIO TO HORIZONTAL POSITION AND REPLACE COVER.
7. PLUG P920 INTO J920 ON REAR OF CONTROL UNIT.

NOTE:

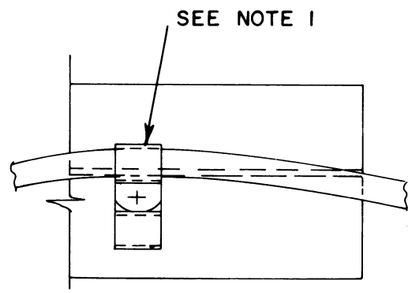
1. ROTATE CABLE CLAMP 180° WHEN OTHER OPTIONS ARE NOT USED.





VIEW AT "A"

PARTIAL



VIEW AT "B"

PARTIAL
ENLARGED

(19C327183, Rev. 1)

INSTALLATION INSTRUCTIONS

MULTI-TONE CHANNEL GUARD