

# MAINTENANCE MANUAL

## S-500 SERIES CONTROL UNIT

Single Frequency w/o Options 19D423590G11

Single Frequency with Options 19D423590G12

1-8 Frequency with Options 19D423590G13

1-16 Frequency with Options 19D423590G14



### SPECIFICATIONS \*

#### CONTROLS

OFF-VOLUME  
SQUELCH OR SQUELCH Monitor  
CHANNEL Selector (19D423590G13-14)  
MODE SELECTOR  
Option Switches

#### INDICATORS

Red Transmit Light  
Green Call Light (Optional)  
Yellow Channel Busy Light (Optional)  
Channel Indicator (19D423590G13-14)  
Red Mode Light (Optional)

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

## TABLE OF CONTENTS

|                                             |       |
|---------------------------------------------|-------|
| SPECIFICATIONS .....                        | Cover |
| COMBINATION NOMENCLATURE .....              | iii   |
| DESCRIPTION .....                           | 1     |
| CIRCUIT ANALYSIS .....                      | 1     |
| Channel Selector .....                      | 1     |
| Mode A/B Selector .....                     | 1     |
| OPTIONS .....                               | 2     |
| Channel Busy .....                          | 2     |
| Squelch .....                               | 2     |
| Internal/External Speaker .....             | 2     |
| Public Address .....                        | 3     |
| Type 99 Tone Decoders .....                 | 3     |
| Type 90 Tone Encoder and Decoders .....     | 3     |
| Dual Control .....                          | 3     |
| Universal Tone Jack .....                   | 4     |
| Extender Board .....                        | 4     |
| MAINTENANCE .....                           | 4     |
| Disassembly .....                           | 4     |
| Re-Installation .....                       | 4     |
| OUTLINE DIAGRAMS .....                      | 7-8   |
| SCHEMATIC DIAGRAMS (With Parts Lists) ..... | 9-10  |
| MECHANICAL BREAKDOWN .....                  | 10    |
| OPTION APPLICATION .....                    | 11-13 |
| POWER/CONTROL CABLES .....                  | 14-18 |

## ILLUSTRATIONS

|                                                       |   |
|-------------------------------------------------------|---|
| Figure 1 - Control Unit Layout .....                  | 2 |
| Figure 2 - Using Extraction Tool .....                | 5 |
| Figure 3 - 12-Volt, Negative Ground Connections ..... | 5 |
| Figure 4 - 12-Volt, Positive Ground Connections ..... | 6 |

## WARNING

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

High-level RF energy in the Transmitter Power Amplifier assembly can cause RF burns upon contact. Keep away from these circuits when the transmitter is energized!

## COMBINATION NOMENCLATURE

| DIGITS<br>1 & 2 | DIGIT<br>3                      | DIGIT<br>4                     | DIGIT<br>5                  | DIGIT<br>6           |
|-----------------|---------------------------------|--------------------------------|-----------------------------|----------------------|
| Product<br>Code | Frequency<br>Capacity           | Mode<br>Selection              | Control Unit<br>Application | Configuration        |
| <b>S5</b>       | <b>A</b><br>1-Frequency         | <b>O</b><br>Standard<br>(None) | <b>B</b><br>Delta-S         | <b>O</b><br>STANDARD |
|                 | <b>K</b><br>1-8<br>Frequencies  | <b>1</b><br>Mode<br>A/B        |                             |                      |
|                 | <b>T</b><br>1-16<br>Frequencies |                                |                             |                      |

## STRUCTURED OPTIONS

| DIGIT<br>B                              | DIGIT<br>C                          | DIGIT<br>E                            | DIGIT<br>H               | DIGIT<br>L                    | DIGIT<br>M                          | DIGIT<br>P                      | DIGIT<br>R                               | DIGIT<br>S                      | DIGIT<br>T                      |
|-----------------------------------------|-------------------------------------|---------------------------------------|--------------------------|-------------------------------|-------------------------------------|---------------------------------|------------------------------------------|---------------------------------|---------------------------------|
| Universal<br>Tone Cable                 | Option                              | Carrier<br>Activity Light             | Hangup/<br>Hookswitch    | External<br>Relay             | Microphone                          | Squelch                         | Accessories                              | Speaker                         | Ignition<br>Cable               |
| <b>O</b><br>None                        | <b>O</b><br>None                    | <b>O</b><br>None                      | <b>O</b><br>Hangup Brkt. | <b>O</b><br>None              | <b>O</b><br>Standard                | <b>O</b><br>Fixed<br>(Standard) | <b>O</b><br>Standard                     | <b>O</b><br>Delta<br>Standard   | <b>O</b><br>W/O Ign<br>Standby  |
| <b>A</b><br>Univ. Dec.<br>or Enc. Conn. | <b>A</b><br>Type 90<br>Encoder      | <b>A</b><br>Carrier<br>Activity Light | <b>1</b><br>Hookswitch   | <b>A</b><br>External<br>Relay | <b>1</b><br>Mastr II                | <b>V</b><br>Variable            | <b>1</b><br>3 Mtr. Cable<br>Short Ground | <b>1</b><br>3 x 5<br>Window     | <b>1</b><br>With Ign<br>Standby |
| <b>C</b><br>Univ. Enc./<br>Dec. Cable   | <b>B</b><br>Type 90<br>Decoder      |                                       | <b>2</b><br>Hndst. Hldr. |                               | <b>2</b><br>Mastr II<br>Noise Canc. |                                 | <b>2</b><br>9 Mtr. Cable<br>Short Ground | <b>4</b><br>Delta<br>3 x 5      |                                 |
|                                         | <b>C</b><br>Type 90<br>Enc./Dec.    |                                       | <b>3</b><br>Hndst. Hksw. |                               | <b>3</b><br>Handset                 |                                 | <b>3</b><br>6 Mtr. Cable<br>Long Ground  | <b>5</b><br>Ext. Spkr.<br>8 Ohm |                                 |
|                                         | <b>E</b><br>Type 99<br>Dec. (Ind.)  |                                       |                          |                               | <b>4</b><br>None                    |                                 | <b>N</b><br>No<br>Accessories            | <b>6</b><br>No<br>Speaker       |                                 |
|                                         | <b>M</b><br>Int./Ext.<br>Spkr. Sw.  |                                       |                          |                               |                                     |                                 | <b>C</b><br>No<br>Cables                 |                                 |                                 |
|                                         | <b>N</b><br>Type 99<br>Dec. (Group) |                                       |                          |                               |                                     |                                 |                                          |                                 |                                 |
|                                         | <b>P</b><br>Type 90<br>Enc. (Burst) |                                       |                          |                               |                                     |                                 |                                          |                                 |                                 |
|                                         | <b>R</b><br>Dual<br>Cont. Sw.       |                                       |                          |                               |                                     |                                 |                                          |                                 |                                 |
|                                         | <b>T</b><br>GE-STAR<br>Encoder      |                                       |                          |                               |                                     |                                 |                                          |                                 |                                 |
|                                         | <b>U</b><br>Public<br>Address       |                                       |                          |                               |                                     |                                 |                                          |                                 |                                 |



## DESCRIPTION

S-500 Series Control Units are attractively styled, highly functional units that are enclosed in a two-piece molded Lexan® plastic housing for durability and ease of disassembly. The Control Units are mounted to the vehicle with a Safety Release mounting bracket assembly for passenger safety.

The Control Unit uses a printed wiring board to provide a minimum of wiring. The only internal wires used are on the indicator lights and jumpers for various options.

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

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

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

### NOTE

Delta-S radios must be equipped with Option 'CN', interface board when used with the S-500 Control Unit.

## CIRCUIT ANALYSIS

The Control Units are equipped with an OFF-VOLUME control, SQUELCH control and a CHANNEL selector switch in multiple frequency control units.

When the OFF-VOLUME switch (S709) is in the OFF position, power is removed from the radio except for the transmitter PA, which is connected to the vehicle battery at all times. Turning the switch on applies power to the radio, provides power for the push-to-talk (PTT) circuit and lights the seven-segment Channel Indicator display.

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

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

## CHANNEL SELECTOR SWITCH (S711/S712)

The channel selector switch is an 8-position (S711) or a 16-position (S712) rotary switch with binary output to control channel selection.

The channel selector switch selects the desired channel for transmitting and receiving. One section of the switch connects A- per binary code output to FB1, 2, 3, 4 or 5 in Mode B and thence to the Microcomputer and EEPROM in the radio. The EEPROM and Microcomputer select the channel frequencies according to the binary code (See BCD output in Table 1).

A second section of the rotary switch controls the seven-segment display element(s).

Table 1

| POS | BCD OUTPUT |     |     |     | 7 SEGMENT OUTPUT |
|-----|------------|-----|-----|-----|------------------|
|     | 8'S        | 4'S | 2'S | 1'S |                  |
| F1  | 0          | 0   | 0   | 1   | 1                |
| F2  | 0          | 0   | 1   | 0   | 2                |
| F3  | 0          | 0   | 1   | 1   | 3                |
| F4  | 0          | 1   | 0   | 0   | 4                |
| F5  | 0          | 1   | 0   | 1   | 5                |
| F6  | 0          | 1   | 1   | 0   | 6                |
| F7  | 0          | 1   | 1   | 1   | 7                |
| F8  | 1          | 0   | 0   | 0   | 8                |
| F9  | 1          | 0   | 0   | 1   | 9                |
| F10 | 1          | 0   | 1   | 0   | 10               |
| F11 | 1          | 0   | 1   | 1   | 11               |
| F12 | 1          | 1   | 0   | 0   | 12               |
| F13 | 1          | 1   | 0   | 1   | 13               |
| F14 | 1          | 1   | 1   | 0   | 14               |
| F15 | 1          | 1   | 1   | 1   | 15               |
| F16 | 0          | 0   | 0   | 0   | 16               |

X = COMMON CONNECTED (CLOSED)

BLANK = OPEN TO COMMON

## MODE A/B SELECT SWITCH (S705)

The Mode A/B Select Switch allows the S-500 Control Unit to expand from 8

or 16-frequency control to 16 or 32-frequency control. The rocker switch S705 is pushed either to A or B as marked on front panel nameplate. In the A position the Channel Select Switch will select up to 8 or 16 channels as programmed in the radio (A) EEPROM. In the B position a red LED is illuminated on the lower left side of the front panel. The Channel Select Switch will select a second set of up to 8 or 16 channels as programmed in the radio second (B) EEPROM. In the B Mode, A- (low) is applied through frequency bit 5 (FB5) output to port 26 of Microcomputer U705 in the Delta-S radio.

## NOTE

To utilize the A/B Mode, there must be two EEPROMS in the associated DELTA-S radio. The Mode A channels are controlled by EEPROM 1 and the Mode B channels are controlled by EEPROM 2.

## OPTIONS

S-500 control units may be equipped with different options. All controls and indicator lights (LEDs) are shown in Figure 1.

## CHANNEL BUSY INDICATOR

When no signal is applied to the radio receiver, the Carrier Activity Sensor (CAS) voltage from the receiver squelch IC is near A-. This forward

biases diode CR702 in the control unit, keeping Q701 turned off. When a signal is applied to the receiver (with or without audio), the CAS voltage rises to approximately 10 Volts. This reverse biases CR702, allowing Q701 to conduct, turning on Channel Busy Indicator CR706. The indicator will remain on as long as a signal is applied to the receiver, or until the transmitter is keyed.

## SQUELCH

Squelch control may be used fixed (standard) or variable. The fixed squelch threshold is set in the radio (see radio Maintenance Manual). Jumper N between H97 and H98 in the Control Unit must be present and switch S710 must be closed (CCW).

Variable squelch threshold is set and controlled in the Control Unit. Jumper P between H95 and H96 is present and jumper N is deleted. Also see jumper configuration in the radio Maintenance Manual. Rotating variable resistor R710 clockwise opens switch S710 and adjusts squelch threshold level. Set R710 fully clockwise and adjust noise level with VOLUME control R709. Turn SQUELCH control R710 CCW until receiver is muted.

## INTERNAL/EXTERNAL SPEAKER

For radios equipped with the Internal/External Speaker option, the Control Unit will be equipped with optional SPEAKER switch (marked INT-EXT), an Option indicator light and an Internal/External Speaker component

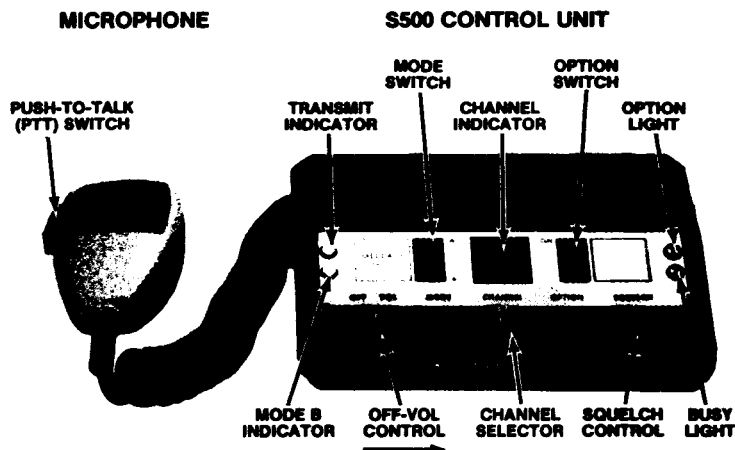


Figure 1 - Control Unit Layout

board. The radio also has an external speaker mounted outside the vehicle passenger compartment (on the roof, under the hood, etc.).

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

Placing the switch in the EXT (External) position turns on the option light, and applies all received messages to both the external and internal speaker. This allows the received messages to be heard while the operator is inside or outside of the vehicle.

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

#### PUBLIC ADDRESS

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

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

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

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

#### TYPE 99 TONE DECODERS

Type 99 Tone equipment eliminates reception of unwanted calls through the use of a Sequential Tone Decoder. The equipment provides individual or group call capability using either two or four Versatone networks. (Versatone networks determine the tone frequencies that the unit responds to.

Decoder operation is controlled by the Monitor/Reset switch and/or Hook-switch. When the microphone or handset is removed from the hookswitch, the

decoder is de-activated and the receiver reverts to noise squelch operation. Replacing the microphone or handset automatically resets the receiver to respond to only those calls properly tone coded. A Decoder Call Indicator will light each time a properly coded call is received.

An optional external alarm relay is controlled by the rocker Option-ON switch. When a properly tone coded call is received and the Option switch is in the ON position, the relay will operate an external horn or light.

For complete details, refer to the Maintenance Manual for the Type 99 Tone Decoder option.

#### TYPE 90 TONE ENCODER AND DECODERS

Type 90 Tone equipment provides tone coded message transmission to eliminate reception of unwanted calls. All Type 90 Tone Encoders and Decoders operate on a single tone selectable from ten standard frequencies between 1000 and 3000 Hz.

A single tone burst automatically precedes the first transmission in the standard unit. The tone burst is initiated by removing the microphone or handset from the hookswitch and keying the PTT. The Pushbutton Tone-On switch allows the tone to be sent manually if desired.

Decoder operation is controlled by the Monitor/Reset switch and/or Hook-switch. When the microphone or handset is removed, the receiver reverts to noise squelch operation. Replacing the microphone or handset, automatically resets the unit to the decode function. A Decoded Call Indicator will light each time a properly tone coded call is received.

An optional External Alarm Relay is controlled by the rocker Option-ON switch. When a properly tone coded call is received and the Option-ON switch is in the ON position, the Relay will operate an external horn or light.

For complete details, refer to the Maintenance Manual for the Type 90 Tone Encoder/Decoder option.

#### DUAL CONTROL

The Dual Control equipment allows the radio to be operated by either of two remotely located control units. Control is transferred between control units by depressing the Control switch on the control unit where control is desired.

When the Control switch is ON, the Control Light indicates the unit with control. Control remains with this unit until the Dual Control switch on the second control unit is operated.

For complete details, refer to the Maintenance Manual for the Dual Control option.

#### UNIVERSAL TONE JACK

The Universal Tone Jack (J750) mounts on the back of the Control Unit (see Outline Diagram). The nine pin jack provides interface connections between the Control Unit and external tone equipment.

#### EXTENDER BOARD

Troubleshooting the component board options in the control unit is facilitated by using Extender Board 19C320588G1 (Option TS01). The Extender Board provides feed through for all connections between the control unit printed wire board and the option component board.

#### 12-VOLT IGNITION SWITCH CONNECTIONS

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

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

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

#### MAINTENANCE

##### DISASSEMBLY

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

To remove the printed wiring board from the Control Unit housing:

1. Remove five screws holding the board and mounting bracket.
2. If Mode A/B or option switches are present, remove one screw in each from housing. (Leave switches fastened to mounting bracket).
3. Remove LED indicators by lifting off mounting clips.
4. Using control knobs, lift upward at the front and then remove the board.

##### RE-INSTALLATION

12-Volt Systems. Delta-S mobile combinations can operate in +12-Volt systems. If the radio is moved to a different vehicle, always check the battery polarity and voltage of the new system before using the radio.

If the radio is moved to a vehicle with different battery polarity, it will be necessary to change the ignition switch leads to the vehicle system plug. Use the extraction tool as shown in Figure 2, and change the leads as shown in Figures 3 or 4 as required.

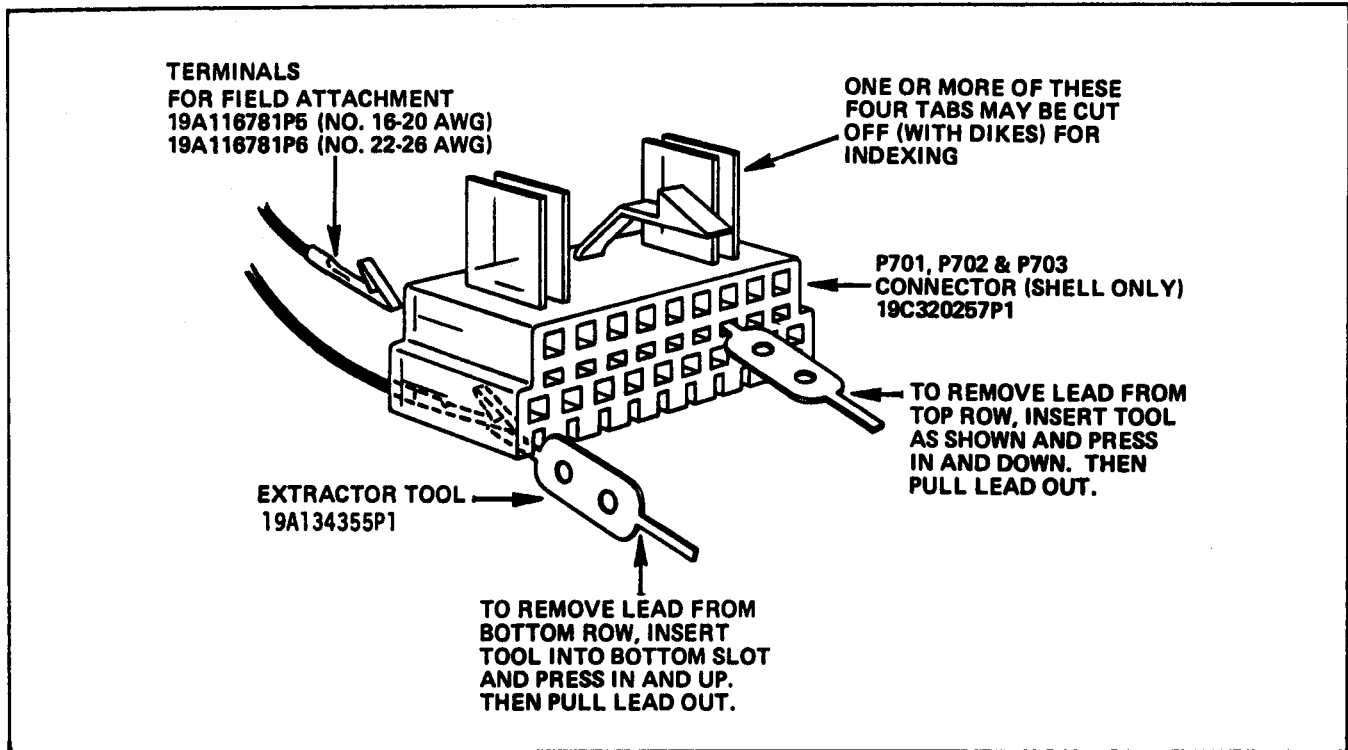


Figure 2 - Using Extraction Tool

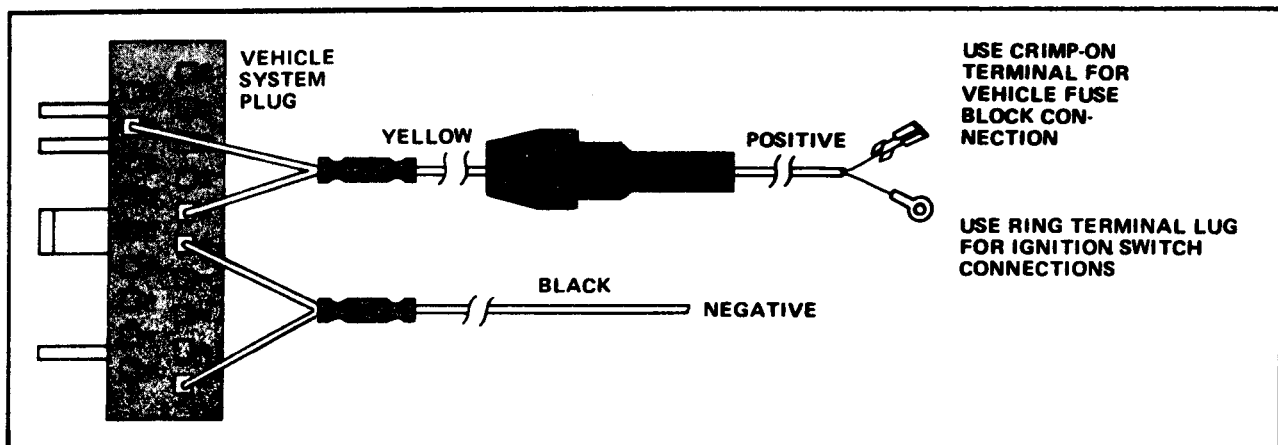


Figure 3 - 12-Volt, Negative Ground Connections

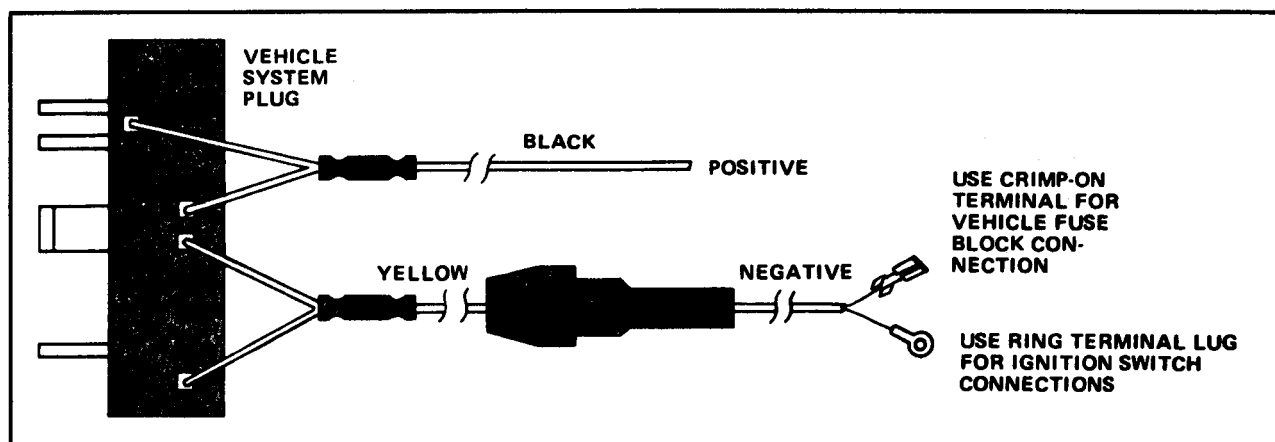
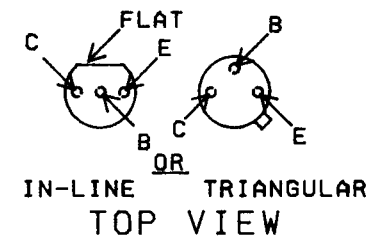


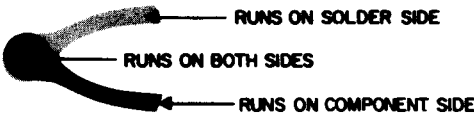
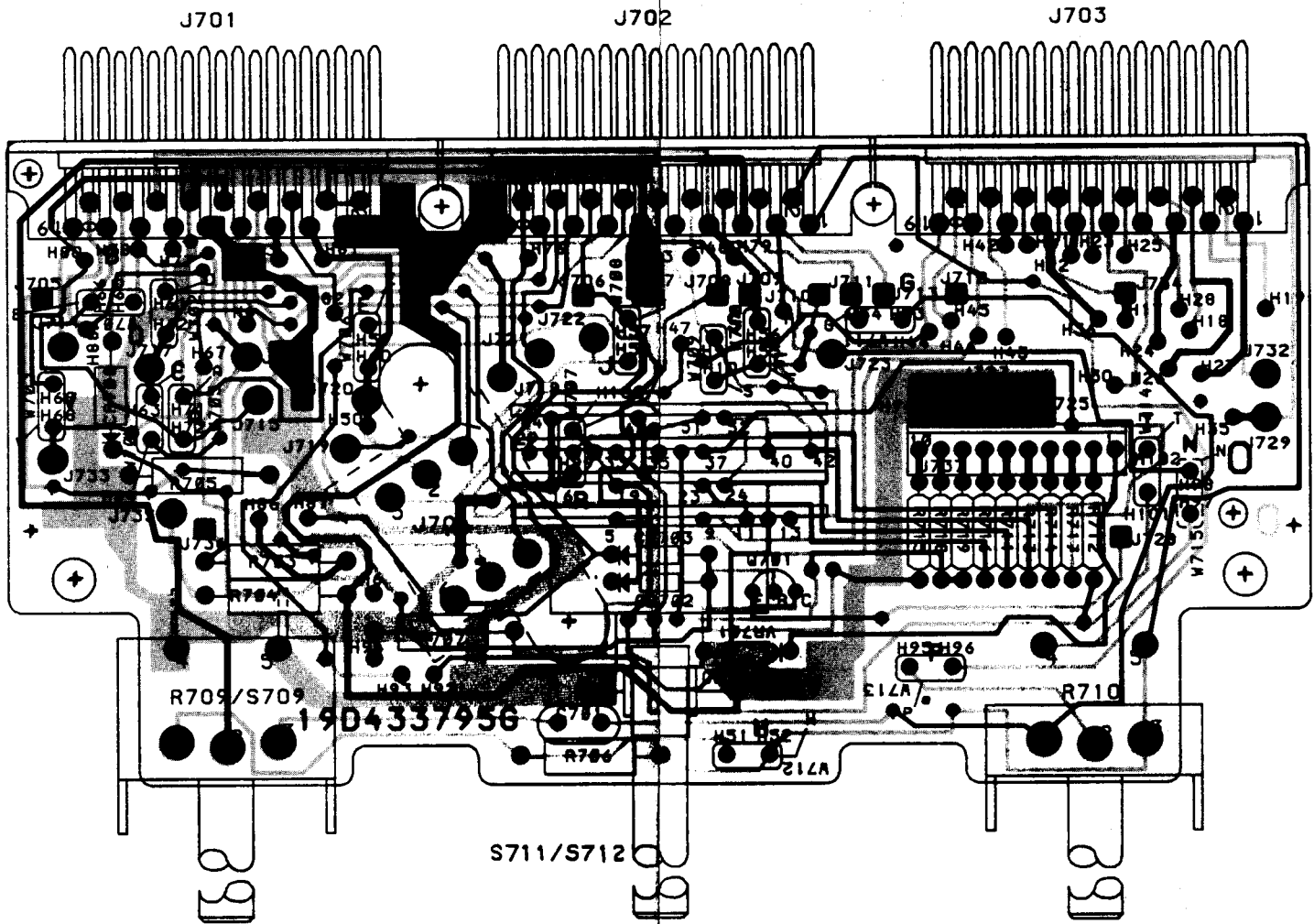
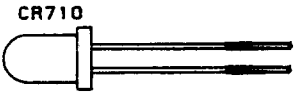
Figure 4 - 12-Volt, Positive Ground Connections

| FROM  | TO  | REMARKS |
|-------|-----|---------|
| CR710 | H06 | BL      |
| CR710 | H07 | BK      |

LEAD IDENTIFICATION  
FOR Q701



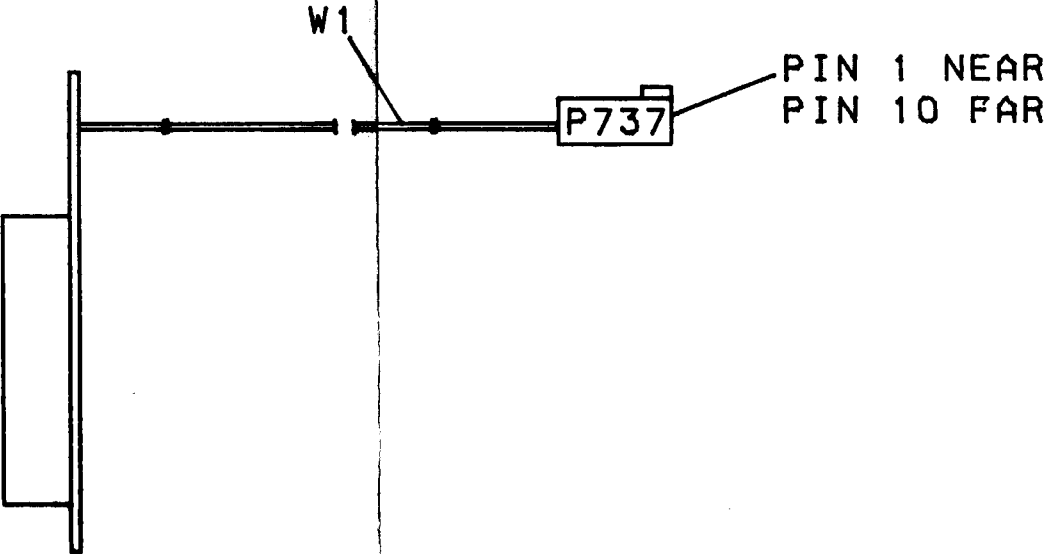
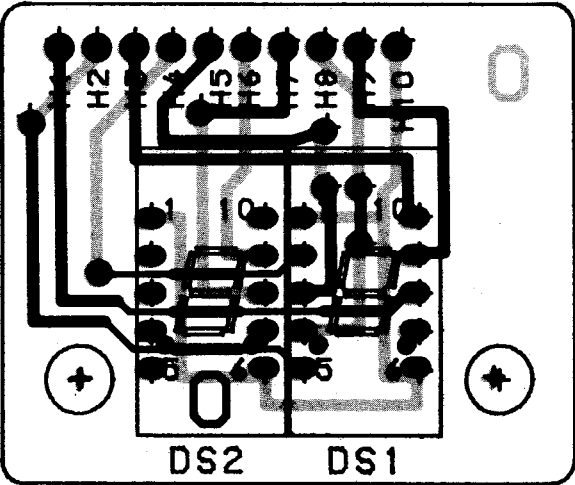
NOTE: LEAD ARRANGEMENT, AND NOT  
CASE SHAPE, IS DETERMINING  
FACTOR FOR LEAD IDENTIFICATION.



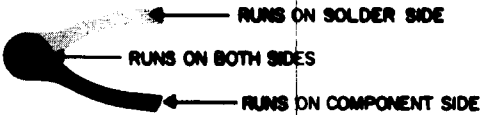
(19D437159, Rev. 2)  
(19A144746, Sh. 1, Rev. 0)  
(19A144746, Sh. 2, Rev. 0)

# OUTLINE DIAGRAM

CONTROL BOARD  
19D433795



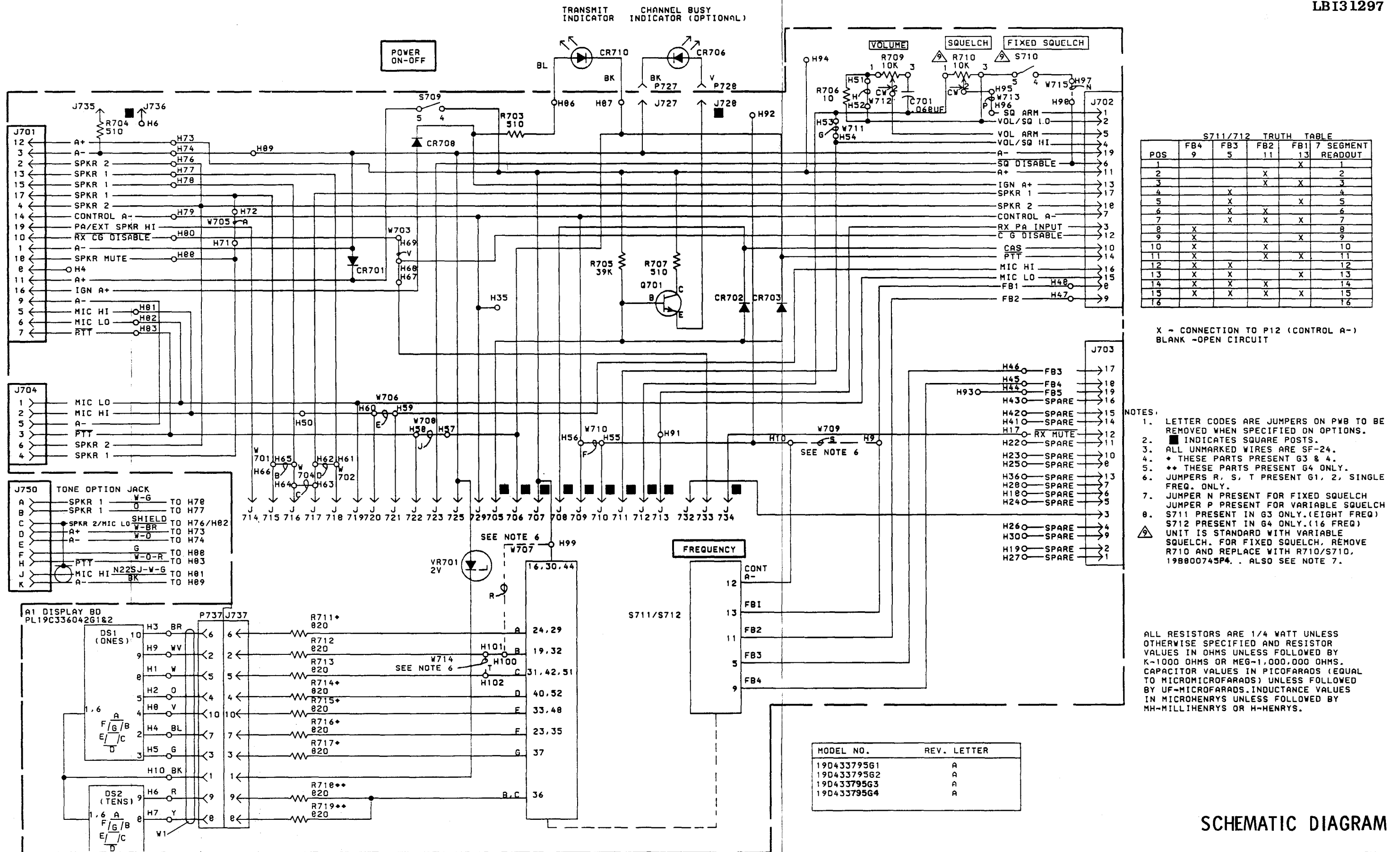
| WIRE CHART |         |          |
|------------|---------|----------|
| FROM       | TO      | WIRE     |
| H1         | P737-5  | SF24-W   |
| H2         | P737-4  | SF24-O   |
| H3         | P737-6  | SF24-BR  |
| H4         | P737-7  | SF24-BL  |
| H5         | P737-3  | SF24-G   |
| H6         | P737-9  | SF24-R   |
| H7         | P737-8  | SF24-Y   |
| H8         | P737-10 | SF24-V   |
| H9         | P737-2  | SF24-W-V |
| H10        | P737-1  | SF24-BK  |



(19C336043, Rev. 2)  
(19A144650, Sh. 1, Rev. 0)  
(19A144650, Sh. 2, Rev. 0)

OUTLINE DIAGRAM

DISPLAY BOARD  
19C336042



### SCHEMATIC DIAGRAM

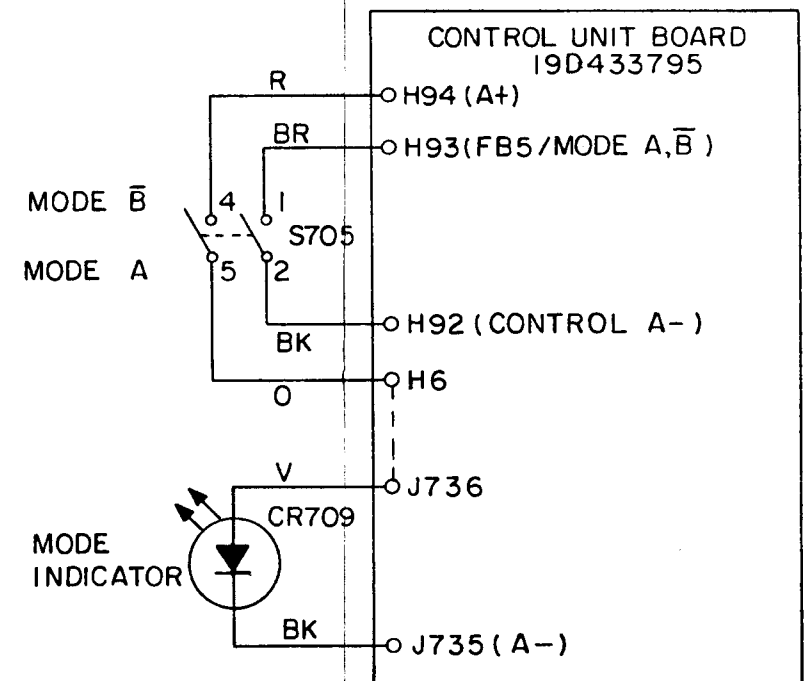
CONTROL UNIT  
19D432590G11-14

## PARTS LIST

S-500 SERIES CONTROL UNIT  
 19D423590G11 1 FREQ NO OPTION  
 19D423590G12 1 FREQ OPTION  
 19D423590G13 1-8 FREQ OPTION  
 19D423590G14 1-16 FREQ OPTION  
 AND  
 ASSOCIATED ASSEMBLIES

| SYMBOL          | GE PART NO.   | DESCRIPTION                                                                                                                                 |
|-----------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------|
|                 |               | COMPONENT BOARD<br>19D433795G1 1 FREQ NO OPTION<br>19D433795G2 1 FREQ OPTION<br>19D433795G3 1-8 FREQ OPTION<br>19D433795G4 1-16 FREQ OPTION |
|                 |               | ----- CAPACITORS -----                                                                                                                      |
| C701            | T644ACP368K   | Polyester: 0.068 uF $\pm 10\%$ , 50 VDCW.                                                                                                   |
|                 |               | ----- DIODES AND RECTIFIERS -----                                                                                                           |
| CR701           | 19A116783P1   | Rectifier, silicon: 100 VDC blocking, 6 amp; sim to MR751.                                                                                  |
| CR702 and CR703 | 19A115250P1   | Silicon, fast recovery, 225 mA, 50 PIV.                                                                                                     |
| CR708           | T324ADP1041   | Rectifier, silicon; general purpose.                                                                                                        |
| CR710           | 19B219800G3   | Diode, red light emitting.                                                                                                                  |
|                 |               | ----- JACKS AND RECEPTACLES -----                                                                                                           |
| J701 thru J703  | 19C320257P2   | Pin wafer assembly: 19 contacts.                                                                                                            |
| J704            | 19B219627G1   | Connector: 6 contacts.                                                                                                                      |
| J705 thru J713  | 19A701785P1   | Contact, electrical; sim to Molex 08-50-0404.                                                                                               |
| J714 thru J723  | 4033513P4     | Contact, electrical: sim to Bead Chain L93-3.                                                                                               |
| J725            | 4033513P4     | Contact, electrical: sim to Bead Chain L93-3.                                                                                               |
| J727            | 4033513P4     | Contact, electrical: sim to Bead Chain L93-3.                                                                                               |
| J728            | 19A701785P1   | Contact, electrical; sim to Molex 08-50-0404.                                                                                               |
| J729            | 4033513P4     | Contact, electrical: sim to Bead Chain L93-3.                                                                                               |
| J732 and J733   | 4033513P4     | Contact, electrical: sim to Bead Chain L93-3.                                                                                               |
| J734            | 19A701785P1   | Contact, electrical; sim to Molex 08-50-0404.                                                                                               |
| J735            | 4033513P4     | Contact, electrical: sim to Bead Chain L93-3.                                                                                               |
| J736            | 19A701785P1   | Contact, electrical; sim to Molex 08-50-0404.                                                                                               |
| J737            | 19A700072P36  | Printed wire: 10 contacts; sim to Molex 22-27-2101.                                                                                         |
|                 |               | ----- TRANSISTORS -----                                                                                                                     |
| Q701            | 19A700023P1   | Silicon, NPN; sim to Type 2N3904.                                                                                                           |
|                 |               | ----- RESISTORS -----                                                                                                                       |
| R703 and R704   | 3R77P511J     | Composition: 510 ohms $\pm 5\%$ , 1/2 w.                                                                                                    |
| R705            | 19A700113P101 | Composition: 39K ohms $\pm 5\%$ , 1/2 w.                                                                                                    |
| R706            | 19A700113P15  | Composition: 10 ohms $\pm 5\%$ , 1/2 w.                                                                                                     |
| R707            | 3R77P511J     | Composition: 510 ohms $\pm 5\%$ , 1/2 w.                                                                                                    |
| R709            | 19B800745P3   | Variable: 20% mod log taper, 10K ohms $\pm 20\%$ , 1/4 w.                                                                                   |
| R710            | 19B800745P6   | Variable: linear taper, 10K ohms $\pm 20\%$ , 1/4 w.                                                                                        |
| R711 thru R719  | H212CRP182C   | Deposited carbon: 820 ohms $\pm 5\%$ , 1/4 w.                                                                                               |

| SYMBOL      | GE PART NO.   | DESCRIPTION                                                                                                                             |
|-------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------|
|             |               | ----- SWITCHES -----                                                                                                                    |
| S711        | 19B800907P2   | Rotary: 2 sections, 8 positions; sim to Oak 5-17481-764.                                                                                |
| S712        | 19B800907P1   | Rotary: 4 sections, 16 positions; contacts rated 200 mA @ 7 VDC; sim to Oak 5-25651-748.                                                |
|             |               | ----- VOLTAGE REGULATORS -----                                                                                                          |
| VR701       | 19A700025P2   | Silicon, zener: 400 mW max; sim to BZX55-C2V7.                                                                                          |
|             |               | DISPLAY BOARD<br>19C336042G1 1-8 FREQ<br>19C336042G2 1-16 FREQ                                                                          |
|             |               | ----- INDICATORS -----                                                                                                                  |
| DS1 and DS2 | 19A702063P2   | Display, optoelectronic: sim to Hew. Packard 5082-7740.                                                                                 |
|             |               | ----- CABLES -----                                                                                                                      |
| W1          | 19C336042G3   | Cable: Includes: 19A700041P36 connector.                                                                                                |
|             |               | ASSOCIATED ASSEMBLIES                                                                                                                   |
|             |               | CHANNEL BUSY OPTION<br>19A129567G6                                                                                                      |
|             |               | ----- DIODES -----                                                                                                                      |
| CR706       | 19B219800G19  | Diode, optoelectronic: yellow; sim to Hew. Packard 5082-4592.                                                                           |
|             | 19A116807P1   | Clip, spring tension. (Secures CR706).                                                                                                  |
|             |               | UNIVERSAL TONE JACK OPTION<br>19A129567G17                                                                                              |
|             |               | ----- PLUGS -----                                                                                                                       |
| P750        | 19B227105G1   | Connector, receptacle: 9 contacts; sim to Winchester M9S-LRN.                                                                           |
|             | N80P9005C6    | Machine screw, phillips head: No. 4-40 x 5/16.                                                                                          |
|             | 7141225P2     | Hex nut: No. 4-40.                                                                                                                      |
|             | N404P11C6     | Lockwasher, internal: No. 4.                                                                                                            |
|             |               | MODE A-B OPTION<br>19A129567G30                                                                                                         |
|             |               | ----- DIODES -----                                                                                                                      |
| CR709       | 19B219800G2   | Diode, light emitting: red.                                                                                                             |
|             |               | ----- SWITCHES -----                                                                                                                    |
| S705        | 19B234364G1   | Push: DPST, contacts rated 0.5 amp DC or 3 amps at 125 VAC; sim to Switchcraft 11K1088.                                                 |
|             |               | MECHANICAL PARTS<br>(SEE RC4424)                                                                                                        |
| 1           | 19A116807P1   | Clip, spring tension.                                                                                                                   |
| 2           | 19A116773P106 | Tap screw, POZIDRIV®: 7-19 x 3/8.                                                                                                       |
| 3           | 19B201074P204 | Tap screw, phillips POZIDRIV®: No. 4-40 x 1/4.                                                                                          |
| 4           | 19C320389G5   | Housing.                                                                                                                                |
| 5           | 19B219825G1   | Knob.                                                                                                                                   |
| 6           | N117P9004C6   | Tap screw, phillips: No. 4-40 x 1/4.                                                                                                    |
| 7           | 19B219578G1   | Safety Release Disc.                                                                                                                    |
| 8           | 19C320022P1   | Retaining bracket.                                                                                                                      |
| 9           | N187P16010C6  | Machine screw: No. 10-32 x 5/8. (Quantity 1 - Used with safety release disc and retaining bracket).                                     |
| 10          | N130P1612C6   | Screw, hexhead, slotted: No. 10-16 x 3/4. (Quantity 3 - Used without safety release disc and retaining bracket).                        |
|             | N130P1624C6   | Screw, thread forming: No. 10-16 x 1-1/2. (Quantity 3 - Used without safety release disc and retaining bracket for extra thick carpet). |



(19B234365, Rev. 1)

## SCHEMATIC DIAGRAM

MODE A/B SELECT  
 19A129567G30

Issue 1

\*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PARTS LIST

POWER/CONTROL CABLE  
30 CONDUCTOR  
19D423424G8  
ISSUE 1

PARTS LIST

MICROPHONE  
19D900141G8  
ISSUE 1

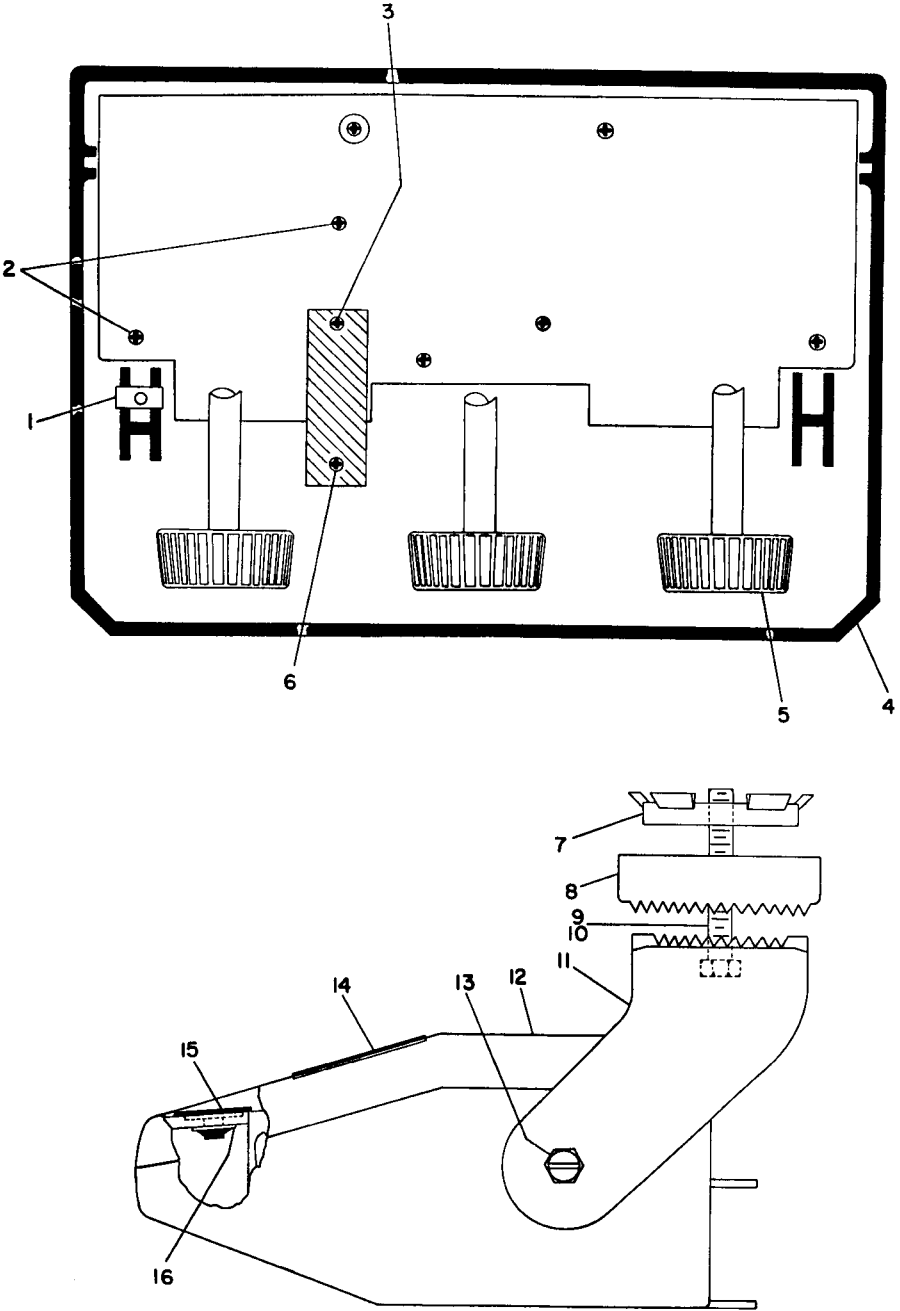
| SYMBOL | GE PART NO.                            | DESCRIPTION                                                                            |
|--------|----------------------------------------|----------------------------------------------------------------------------------------|
| P702   | ----- PLUGS -----                      |                                                                                        |
|        | 19B226516G1                            | Connector. Includes:<br>Shell.                                                         |
|        | 19A116781P5                            | Contact, electrical: wire range No. 18-24 AWG; sim to Molex 08-50-0106. (Quantity 4).  |
| P703   | 19A116781P6                            | Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108. (Quantity 15). |
|        | 19B226516G2                            | Connector. Includes:<br>Shell.                                                         |
|        | 19A116781P6                            | Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108. (Quantity 11). |
| P901   | Connector, special purposes. Includes: |                                                                                        |
|        | 19C307162P1                            | Shell.                                                                                 |
|        | 19A701376P1                            | Contact, electrical rated @ 4 amps; sim to AMP 350657-1. (Quantity 28).                |
|        | 19A701376P2                            | Contact, electrical rated @ 4 amps; sim to AMP 350656-1. (Quantity 4).                 |
|        | 19A701376P3                            | Contact, electrical rated @ 35 amps; sim to AMP 350655-1. (Quantity 2).                |
|        | ----- MISCELLANEOUS -----              |                                                                                        |
|        | 7139880P14                             | Cable: 27 conductor.                                                                   |
|        | 7142878G1                              | Clip loop. (Strain relief).                                                            |
|        | 19B209245P103                          | Spacer.                                                                                |
|        | 19A134241P1                            | Jack screw. (Used with P901).                                                          |
|        | 19C328122P1                            | Adapter. (Located between P901 and mounting surface).                                  |

| SYMBOL | GE PART NO. | DESCRIPTION                                                                                    |
|--------|-------------|------------------------------------------------------------------------------------------------|
|        | 19B800741P1 | Microphone, transistorized, electret; 5% max distortion at 300-3000 Hz.                        |
|        | 19D416767P1 | Connector Cover.                                                                               |
|        | 19D416766P1 | Connector Base.                                                                                |
|        | 19A129435P1 | Pin. (Quantity 4).                                                                             |
|        | 19B219723G1 | Thumb screw: lexan.                                                                            |
|        | 19B219749P1 | Flex relief, cable.                                                                            |
|        | N136AP905Y6 | Tap screw: No. 4-24 x 5/16. (Secures cover to base).                                           |
|        | 19A701289P1 | Retaining ring: 3/16 inches; sim to National Lockwasher WA 510. (Secures thumb screw to cover) |
|        | 19A116937P1 | Cable clamp: sim to Malco 21013-3.                                                             |

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 - CONTROL UNIT 19D433795G1-4  
To eliminate fixed squelch option. Changed R710.  
R710 was: 19B800745P4 variable 10K ohms, 20%, 1/4W



RC-4424

\*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

| SYMBOL | GE PART NO.   | DESCRIPTION                                                                                   |
|--------|---------------|-----------------------------------------------------------------------------------------------|
|        | 19D416767P1   | Connector Cover.                                                                              |
|        | 19D416766P1   | Connector Base.                                                                               |
|        | 19A129435P1   | Pin. (Quantity 6).                                                                            |
|        | 19B219723G1   | Thumb screw: lexan.                                                                           |
|        | 19B219749P1   | Flex relief, cable.                                                                           |
|        | N136AP905Y6   | Tap screw: No. 4-24 x 5/16. (Secures cover to base).                                          |
|        | 19A701289P1   | Retaining ring: 3/16 inches; sim to National Lockwasher WA 510. (Secures thumbscrew to cover) |
|        | 19A116937P1   | Cable clamp: sim to Malco 21012-3.<br><br>MIKE HANGER<br>7141414G1                            |
|        | 7142159P1     | Support.                                                                                      |
|        | 7142156P1     | Spring.                                                                                       |
|        | 7013672P3     | Grommet, metallic.                                                                            |
|        | N193P1408C6   | Tap screw, phillips head: No. 8-18 x 1/2.<br><br>MIKE HANGER<br>7141414G2                     |
|        | 4031457P1     | Support.                                                                                      |
|        | 4031458P1     | Spring.                                                                                       |
|        | N193P1408C6   | Tap screw, phillips head: No. 8-18 x 1/2.<br><br>HANDSET HOLDER<br>7141414G3                  |
|        | 19A115220P1   | Handset holder.                                                                               |
|        | N130P1210C6   | Tap screw, thd forming: No. 6-20 x 5/8.<br><br>MICROPHONE HOOKSWITCH<br>19C320318G3           |
|        |               | ----- SWITCHES -----                                                                          |
| S1     | 19B209261P18  | Slide: SPST, sim to Switchcraft 46202LH.                                                      |
| S6     | 19B219779G1   | Cable: approx 4 ft. long. Includes: (5) 4036634P1 & (2) 19B209288P2 contacts.                 |
|        |               | ----- CABLES -----                                                                            |
| W1     | 19A129414G1   | 2 conductor cable: approx 5 feet long, includes (2) 19A116781P5 contacts.                     |
|        |               | ----- MISCELLANEOUS -----                                                                     |
|        | 19C320301P1   | Box.                                                                                          |
|        | 19B219693P2   | Spring, hookswitch.                                                                           |
|        | 19B227589P1   | Support.<br><br>DASH MOUNT SPEAKER<br>19C850550G1                                             |
|        |               | ----- SPEAKERS -----                                                                          |
| LS1    | 19A702080P3   | Permanent magnet: 76 x 1 mm, 8 ohms $\pm$ 10% imp at 400 Hz, 18 w.                            |
|        |               | ----- CABLES -----                                                                            |
| W1     | 19A129414G1   | 2 conductor cable: approx 5 feet long, includes (2) 19A116781P5 contacts.                     |
|        |               | ----- MISCELLANEOUS -----                                                                     |
|        | 19B800534G1   | Housing.                                                                                      |
|        | 19C850549P1   | Grille.                                                                                       |
|        | 19C320016P1   | Mounting bracket.                                                                             |
|        | 19A701354P2   | Nameplate. (GENERAL ELECTRIC).                                                                |
|        | 19A701631P516 | Machine screw: M5-.8 x 16. (Secures mounting bracket to housing).                             |

| SYMBOL | GE PART NO.   | DESCRIPTION                                                                                                          |
|--------|---------------|----------------------------------------------------------------------------------------------------------------------|
|        | 19A700033P10  | Lockwasher, external tooth: No. 10. (Secures mounting bracket to housing).                                           |
|        | 19A701312P7   | Lockwasher: No. 10. (Secures mounting bracket to housing).                                                           |
|        | 19A116986P112 | Screw, thd forming, assembled washer: Phillips POZIDRIV®, HI-LO thread, No. 7-19 x 3/4. (Secures grille to housing). |
|        |               | WINDOW MOUNT SPEAKER<br>19C850550G1                                                                                  |
|        |               | ----- SPEAKERS -----                                                                                                 |
| LS1    | 19A702080P3   | Permanent magnet: 76 x 1 mm, 8 ohms $\pm$ 10% imp at 400 Hz, 18 w.                                                   |
|        |               | ----- CABLES -----                                                                                                   |
| W2     | 19B226189G1   | Window mount: approx. 17 inches retracted, 84 inches extended. (Includes 2 19A116781P5 contacts).                    |
|        |               | ----- MISCELLANEOUS -----                                                                                            |
|        | 19B800534G2   | Housing.                                                                                                             |
|        | 19C850549P1   | Grille.                                                                                                              |
|        | 19C320016P1   | Mounting bracket.                                                                                                    |
|        | 19A701354P2   | Nameplate. (GENERAL ELECTRIC).                                                                                       |
|        | 19A702464P3   | Bushing, strain relief: sim to Heyco SR-5P-4. (Used with W2).                                                        |
|        | 19A701631P516 | Machine screw: M5-.8 x 16. (Secures mounting bracket to housing).                                                    |
|        | 19A700033P10  | Lockwasher, external tooth: No. 10. (Secures mounting bracket to housing).                                           |
|        | 19A701312P7   | Lockwasher: No. 10. (Secures mounting bracket to housing).                                                           |
|        | 19A116986P112 | Screw, thd forming, assembled washer: Phillips POZIDRIV®, HI-LO thread, No. 7-19 x 3/4. (Secures grille to housing). |
|        |               | HUMP MOUNTING HARDWARE KIT<br>19A130890G1                                                                            |
|        | 19B227124G1   | Mounting bracket. (Mates with floor hump).                                                                           |
|        | N130P1610C6   | Screw, thread forming: No. 10-16 x 5/8. (Secures mounting bracket when extended length is not needed).               |
|        | N130P1624C6   | Screw, thread forming: No. 10-16 x 1-1/2. (Secures mounting bracket to hump when extended length is needed).         |
|        | 19B209103P506 | Tap screw, hex head: No. 10-32 x 3/8. (Secures 19C321086P2 bracket to hump bracket).                                 |
|        | N403P19C6     | Lockwasher: No. 10. (Quantity 8).                                                                                    |

| PARTS LIST                                                  |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| POWER/CONTROL CABLE<br>19D900447G1-6, G10-15<br><br>ISSUE 1 |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| SYMBOL                                                      | GE PART NO.   | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                             |               | 19D900447G1 30 CONDUCTOR, 3 METER, SHORT A-<br>19D900447G2 30 CONDUCTOR, 3 METER, LONG A-<br>19D900447G3 30 CONDUCTOR, 6 METER, SHORT A-<br>19D900447G4 30 CONDUCTOR, 6 METER, LONG A-<br>19D900447G5 30 CONDUCTOR, 9 METER, SHORT A-<br>19D900447G6 30 CONDUCTOR, 9 METER, LONG A-<br>19D900447G10 18 CONDUCTOR, 3 METER, SHORT A-<br>19D900447G11 18 CONDUCTOR, 3 METER, LONG A-<br>19D900447G12 18 CONDUCTOR, 6 METER, SHORT A-<br>19D900447G13 18 CONDUCTOR, 6 METER, LONG A-<br>19D900447G14 18 CONDUCTOR, 9 METER, SHORT A-<br>19D900447G15 18 CONDUCTOR, 9 METER, LONG A- |
|                                                             |               | ----- PLUGS -----                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| P1                                                          | 19D900037P1   | Connector. Includes:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                             | 19D900015P1   | Shell.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                             | 19C850508P1   | Housing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                             | 19C800882P1   | Cover.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                             | 19A701312P6   | Thumbscrew.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                             | 19A701488P4   | Flatwasher: 1.7 - 1.85 ID. (Located under thumbscrew).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                             | 19B800513P1   | Retaining ring. (Secures thumbscrew to cover).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                             | 19A701376P1   | Gasket.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                             | 19A701376P2   | Contact, electrical rated @ 4 amps; sim to AMP 350657-1. (Located on pins 1-17, 22-28, 30-35).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                             | 19A701376P3   | Contact, electrical rated @ 4 amps; sim to AMP 350656-1. (Located on pins 18-21).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                             | 19A701376P3   | Contact, electrical rated @ 35 amps; sim to AMP 350655-1. (Located on pins 37 & 38).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                             | 19A701077P1   | Cable clip.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                             | 19A700031P425 | Machine screw. (Used with cable clamp).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                             | 19A700034P4   | Nut, hex: No. M3 x 0.5MM. (Used with cable clamp - Quantity 2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                             | 19A700032P5   | Lockwasher, internal tooth: No. 3MM. (Used with cable clamp - Quantity 2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| P2                                                          |               | Connector. Includes:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                             | 19B226516G1   | Shell.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                             | 19A116781P6   | Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108. (Located on pins 1-10, 12-16).                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                             | 19A116781P5   | Contact, electrical: wire range No. 18-24 AWG; sim to Molex 08-50-0106. (Located on pins 11, 17-19).                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                             |               | Connector. Includes:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| P3                                                          | 19B226516G2   | Shell.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                             | 19A116781P6   | Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108. (Located on pins 1-8, 12, 13, 15, 17-19).                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                             |               | ----- MISCELLANEOUS -----                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                             | 19B800629P1   | Solderless terminal. (Used with Short A-).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                             | 19B800629P3   | Solderless terminal. (Used with Long A-).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| PARTS LIST                                                        |               |                                                                                        |
|-------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------|
| POWER/CONTROL CABLE<br>30 CONDUCTOR<br>19D423424G8<br><br>ISSUE 1 |               |                                                                                        |
| SYMBOL                                                            | GE PART NO.   | DESCRIPTION                                                                            |
|                                                                   |               | ----- PLUGS -----                                                                      |
| P702                                                              |               | Connector. Includes:                                                                   |
|                                                                   | 19B226516G1   | Shell.                                                                                 |
|                                                                   | 19A116781P5   | Contact, electrical: wire range No. 18-24 AWG; sim to Molex 08-50-0106. (Quantity 4).  |
|                                                                   | 19A116781P6   | Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108. (Quantity 15). |
| P703                                                              |               | Connector. Includes:                                                                   |
|                                                                   | 19B226516G2   | Shell.                                                                                 |
|                                                                   | 19A116781P6   | Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0108. (Quantity 11). |
| P901                                                              |               | Connector, special purposes. Includes:                                                 |
|                                                                   | 19C307162P1   | Shell.                                                                                 |
|                                                                   | 19A701376P1   | Contact, electrical rated @ 4 amps; sim to AMP 350657-1. (Quantity 26).                |
|                                                                   | 19A701376P2   | Contact, electrical rated @ 4 amps; sim to AMP 350656-1. (Quantity 4).                 |
|                                                                   | 19A701376P3   | Contact, electrical rated @ 35 amps; sim to AMP 350655-1. (Quantity 2).                |
|                                                                   |               | ----- MISCELLANEOUS -----                                                              |
|                                                                   | 7139880P14    | Cable: 27 conductor.                                                                   |
|                                                                   | 7142878G1     | Clip loop. (Strain relief).                                                            |
|                                                                   | 19B209245P103 | Spacer.                                                                                |
|                                                                   | 19A134241P1   | Jackscrew. (Used with P901).                                                           |
|                                                                   | 19C328122P1   | Adapter. (Located between P901 and mounting surface).                                  |

\*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

\*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGE

| SYMBOL | GE PART NO.  | DESCRIPTION                                                                            |
|--------|--------------|----------------------------------------------------------------------------------------|
| 11     | 19D416594P1  | Mounting bracket.                                                                      |
| 12     | 19C331834G3  | Cover.                                                                                 |
| 13     | N187P16010C6 | Machine screw: No. 10-32 x 5/8.                                                        |
| 14     | 19D437260P1  | Nameplate. (CHANNEL-SQUELCH).                                                          |
|        | 19D437260P2  | Nameplate. (MODE-CHANNEL-SQUELCH).                                                     |
|        | 19D437260P3  | Nameplate. (CHANNEL-SPEAKER-SQUELCH).                                                  |
|        | 19D437260P4  | Nameplate. (CHANNEL-PA-SQUELCH).                                                       |
|        | 19D437260P5  | Nameplate. (CHANNEL-CONTROL-SQUELCH).                                                  |
|        | 19D437260P6  | Nameplate. (CHANNEL-OPTION-SQUELCH).                                                   |
|        | 19D437260P7  | Nameplate. (CHANNEL-TONE-SQUELCH).                                                     |
|        | 19D437260P8  | Nameplate. (MODE-CHANNEL-SPEAKER-SQUELCH).                                             |
|        | 19D437260P9  | Nameplate. (MODE-CHANNEL-PA-SQUELCH).                                                  |
|        | 19D437260P10 | Nameplate. (MODE-CHANNEL-OPTION-SQUELCH).                                              |
|        | 19D437260P11 | Nameplate. (MODE-CHANNEL-TONE-SQUELCH).                                                |
|        | 19D437260P12 | Nameplate. (MODE-CHANNEL-CONTROL-SQUELCH).                                             |
|        | 19D437260P13 | Nameplate. (CHANNEL-SEARCH-SQUELCH).                                                   |
|        | 19D437260P14 | Nameplate. (MODE-CHANNEL-SEARCH-SQUELCH).                                              |
|        | 19D437260P15 | Nameplate. (CHANNEL-MONITOR-SQUELCH).                                                  |
|        | 19D437260P16 | Nameplate. (MODE-CHANNEL-MONITOR-SQUELCH).                                             |
|        | 19D437260P17 | Nameplate. (CHANNEL-RESET-SQUELCH).                                                    |
|        | 19D437260P18 | Nameplate. (MODE-CHANNEL-RESET-SQUELCH).                                               |
| 15     | 19B219626P2  | Knob plug.                                                                             |
| 16     | 7140578P6    | Nut, push on: sim to Tinnerman C318-012-67. (Used with item 23).                       |
| P701   |              | 12-VOLT 2-WIRE<br>IGNITION SWITCH CABLE<br>19B219537G4                                 |
|        |              | ----- PLUGS -----                                                                      |
|        |              | Connector. Includes:                                                                   |
|        | 19B226516G3  | Shell.                                                                                 |
|        | 19A129504G1  | Y Cable. (BLACK).                                                                      |
|        |              | FUSED LEAD ASSEMBLY<br>19A129480G3<br>(Used with 19B219537G4)                          |
|        | 1R16P8       | Cartridge, quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussmann MTH-5. |
|        | 19A115776P6  | Fuseholder: sim to Bussmann 9835.                                                      |
|        | 19A115776P5  | Knob assembly: sim to Bussmann 9953 1/2.                                               |
|        | 19A115776P7  | Spring: sim to Bussmann 1A1853.                                                        |
|        | 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 No. 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.                |
|        |              | OPTIONAL 12-VOLT 3-WIRE<br>IGNITION SWITCH CABLE<br>19B219537G1                        |
|        |              | ----- PLUGS -----                                                                      |
|        |              | Connector. Includes:                                                                   |
|        | 19B226516G3  | Shell.                                                                                 |
|        | 19A129504G1  | Y Cable. (BLACK).                                                                      |

| SYMBOL | GE PART NO.  | DESCRIPTION                                                                            |
|--------|--------------|----------------------------------------------------------------------------------------|
|        |              | FUSED LEAD ASSEMBLY<br>19A129480G1 1 AMP (RED)<br>(Used with 19B219537G1)              |
|        | 1R16P3       | Quick blowing: 1 amp at 250 v; sim to Littelfuse 312001 or Bussmann AGC-1.             |
|        | 19A115776P6  | Fuseholder: sim to Bussmann 9835.                                                      |
|        | 19A115776P5  | Knob assembly: sim to Bussmann 9953 1/2.                                               |
|        | 19A115776P7  | Spring: sim to Bussmann 1A1853.                                                        |
|        | 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 No. 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.                |
|        |              | FUSED LEAD ASSEMBLY<br>19A129480G2 5 AMP (YELLOW)<br>(Used with 19B219537G1)           |
|        | 1R16P8       | Cartridge, quick blowing: 5 amps at 250 v; sim to Littelfuse 312005 or Bussmann MTH-5. |
|        | 19A115776P6  | Fuseholder: sim to Bussmann 9835.                                                      |
|        | 19A115776P5  | Knob assembly: sim to Bussmann 9953 1/2.                                               |
|        | 19A115776P7  | Spring: sim to Bussmann 1A1853.                                                        |
|        | 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 No. 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.                |
|        |              | 132-512 MHZ ANTENNA<br>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 ft. 068115-001.                                                       |
|        |              | 12 VOLT FUSE ASSEMBLY<br>19B216021G4<br>(Fuses must be ordered separately)             |
|        |              | ----- FUSES -----                                                                      |
| P2     | 1R11P6       | Quick blowing: 25 amps, 250 v; sim to Bussmann NON25. (Used with low power).           |
| P3     | 1R11P7       | Quick blowing: 30 amps, 250 v; sim to Bussmann NON30. (Used with high power).          |
| P4     | 1R11P5       | Quick blowing: 20 amps, 250 v; sim to Bussmann NON20. (Used with medium power).        |
|        |              | HANDSET<br>19C320478G6                                                                 |
| R1     | 19A700019P43 | Deposited carbon: 3.3K ohms $\pm 5\%$ , 1/4 w.                                         |
|        | 19B209468P5  | Handset.                                                                               |

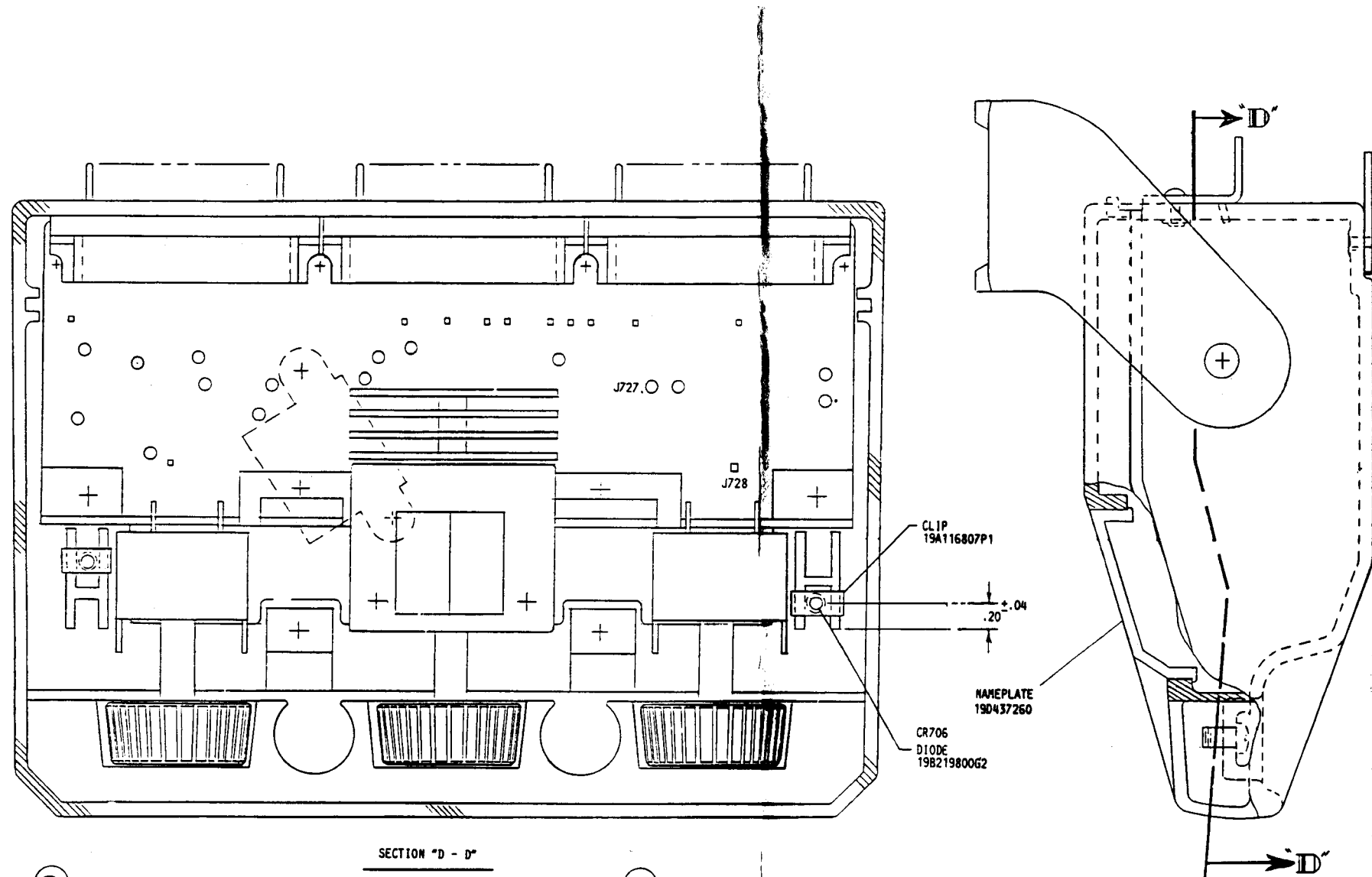
| SYMBOL | GE PART NO.   | DESCRIPTION                                                                                   |
|--------|---------------|-----------------------------------------------------------------------------------------------|
|        | 19D416767P1   | Connector Cover.                                                                              |
|        | 19D416766P1   | Connector Base.                                                                               |
|        | 19A129435P1   | Pin. (Quantity 6).                                                                            |
|        | 19B219723G1   | Thumb screw: lexan.                                                                           |
|        | 19B219749P1   | Flex relief, cable.                                                                           |
|        | N136AP905Y6   | Tap screw: No. 4-24 x 5/16. (Secures cover to base).                                          |
|        | 19A701289P1   | Retaining ring: 3/16 inches; sim to National Lockwasher WA 510. (Secures thumbscrew to cover) |
|        | 19A116937P1   | Cable clamp: sim to Malco 21012-3.                                                            |
|        |               | MIKE HANGER<br>7141414G1                                                                      |
|        | 7142159P1     | Support.                                                                                      |
|        | 7142156P1     | Spring.                                                                                       |
|        | 7013672P3     | Grommet, metallic.                                                                            |
|        | N193P1408C6   | Tap screw, phillips head: No. 8-18 x 1/2.                                                     |
|        |               | MIKE HANGER<br>7141414G2                                                                      |
|        | 4031457P1     | Support.                                                                                      |
|        | 4031458P1     | Spring.                                                                                       |
|        | N193P1408C6   | Tap screw, phillips head: No. 8-18 x 1/2.                                                     |
|        |               | HANDSET HOLDER<br>7141414G3                                                                   |
|        | 19A115220P1   | Handset holder.                                                                               |
|        | N130P1210C6   | Tap screw, thd forming: No. 6-20 x 5/8.                                                       |
|        |               | MICROPHONE HOOKSWITCH<br>19C320318G3                                                          |
|        |               | ----- SWITCHES -----                                                                          |
| S1     | 19B209261P18  | Slide: SPST, sim to Switchcraft 46202LH.                                                      |
| S6     | 19B219779G1   | Cable: approx 4 ft. long. Includes: (5) 4036634P1 & (2) 19B209288P2 contacts.                 |
|        |               | ----- CABLES -----                                                                            |
| W1     | 19A129414G1   | 2 conductor cable: approx 5 feet long, includes (2) 19A116781P5 contacts.                     |
|        |               | ----- MISCELLANEOUS -----                                                                     |
|        | 19C320301P1   | Box.                                                                                          |
|        | 19B219693P2   | Spring, hookswitch.                                                                           |
|        | 19B227589P1   | Support.                                                                                      |
|        |               | DASH MOUNT SPEAKER<br>19C850550G1                                                             |
|        |               | ----- SPEAKERS -----                                                                          |
| LS1    | 19A702080P3   | Permanent magnet: 76 x 1 mm, 8 ohms $\pm 10\%$ imp at 400 Hz, 18 w.                           |
|        |               | ----- CABLES -----                                                                            |
| W1     | 19A129414G1   | 2 conductor cable: approx 5 feet long, includes (2) 19A116781P5 contacts.                     |
|        |               | ----- MISCELLANEOUS -----                                                                     |
|        | 19B800534G1   | Housing.                                                                                      |
|        | 19C850549P1   | Grille.                                                                                       |
|        | 19C320016P1   | Mounting bracket.                                                                             |
|        | 19A701354P2   | Nameplate. (GENERAL ELECTRIC).                                                                |
|        | 19A701631P516 | Machine screw: M5-.8 x 16. (Secures mounting bracket to housing).                             |

⑧ CHAN BUSY LIGHT OPTION PL19A129567G6

THIS UNIT CONTAINS THE FOLLOWING  
OPTION KITS:

PL19A1Z9567G1 ☐ G2 ☐ G3 ☐ G4 ☐ G5 ☐  
G6 ☒ G7 ☐ G8 ☐ G9 ☐ G10 ☐ G11 ☐ G12 ☐  
G13 ☐ G14 ☐ G15 ☐ G16 ☐ G17 ☐ G18 ☐ G19 ☐  
G20 ☐ G21 ☐ G22 ☐ G23 ☐ G24 ☐ G25 ☐ G26 ☐  
19A1Z0817 REV. 9 G27 ☐ G28 ☐ G29 ☐ G30 ☐ G31 ☐

MARK THIS SQUARE  
AS SHOWN  
PER 19A115740P1

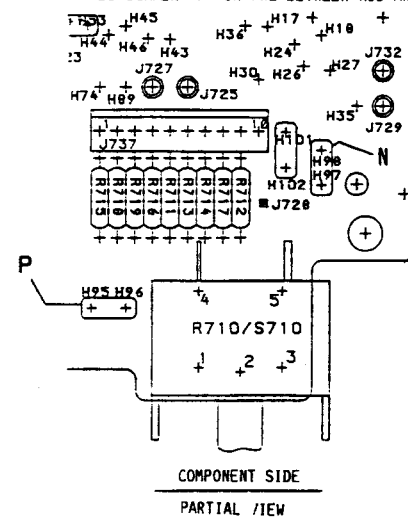


SECTION "D - D"

⑨ VARIABLE SQUELCH (CONVERT FROM FIXED SQUELCH)

**NOTE:**

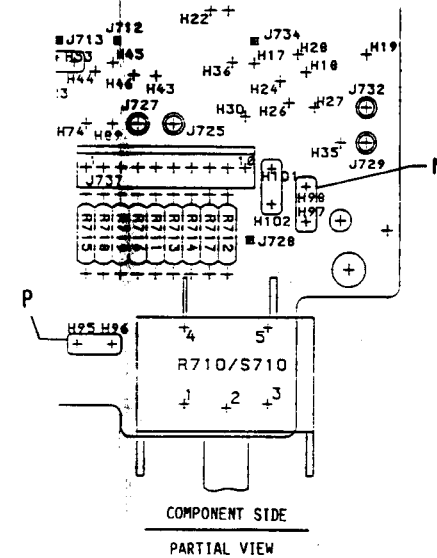
APPLY OUTWARD PULL TO SHAFT OF R710/S710 AND  
ROTATE IN CLOCKWISE DIRECTION TO OVERRIDE  
STOP. THIS OVERRIDE CONVERTS FROM FIXED  
SQUELCH (ON-OFF) TO AN ADJUSTABLE SQUELCH.  
CUT JUMPER "N" ON PWB BETWEEN H97 AND H98.  
ADD JUMPER "P" ON PWB BETWEEN H95 AND H96.



⑩ FIXED SQUELCH (CONVERT FROM VARIABLE SQUELCH)

**NOTE:**

REMOVE R710 AND REPLACE WITH R710/S710  
(19B80074SP4).  
CUT JUMPER "P" ON PWB BETWEEN H95 AND H96.  
ADD JUMPER "N" ON PWB BETWEEN H97 AND H98.



| JUMPER | FIXED | VARIABLE |
|--------|-------|----------|
| P      | OUT   | IN       |
| N      | IN    | OUT      |

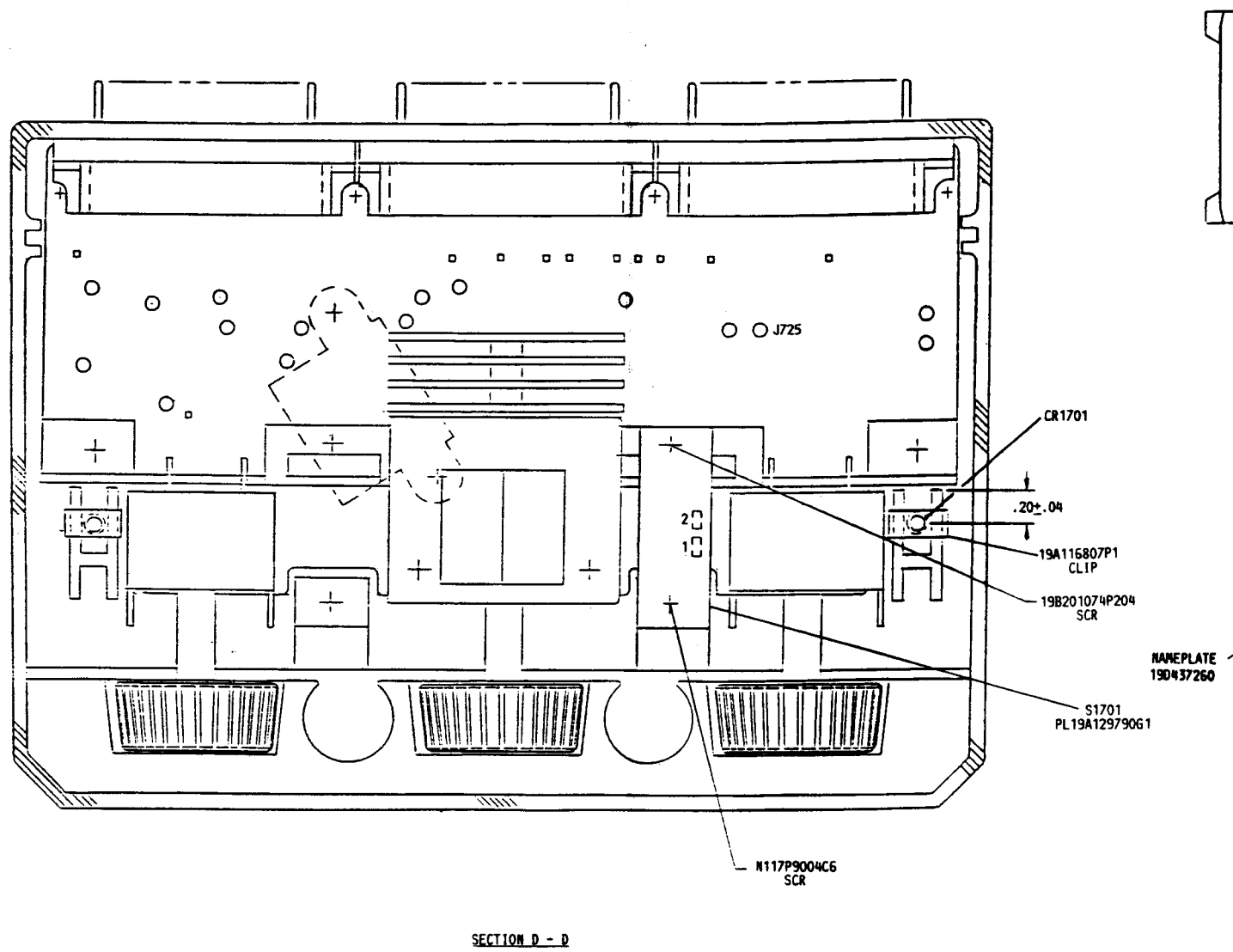
| CONNECTION CHART |      |        |
|------------------|------|--------|
| FROM             | TO   | WIRE   |
| CR706            | J727 | SF24-B |
| CR706            | J728 | SF24-V |

(19D437185, Sh. 6, Rev. 2)

## OPTION APPLICATION

Issue 2

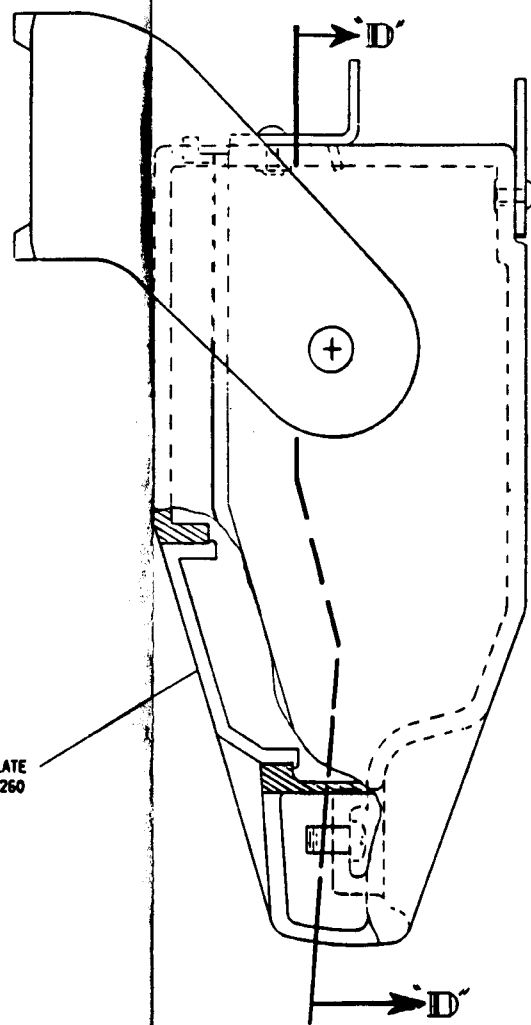
1



| CONNECTIONS |          |         |
|-------------|----------|---------|
| FROM        | TO       | WIRE    |
| H22         | CR1701-2 | SF24-R  |
| H23         | S1701-2  | SF24-W  |
| S1701-1     | J725     | SF24-BK |

(19D437185, Sh. 7, Rev. 0)

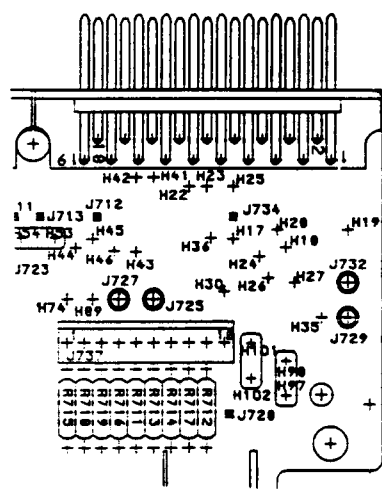
OPTION APPLICATION



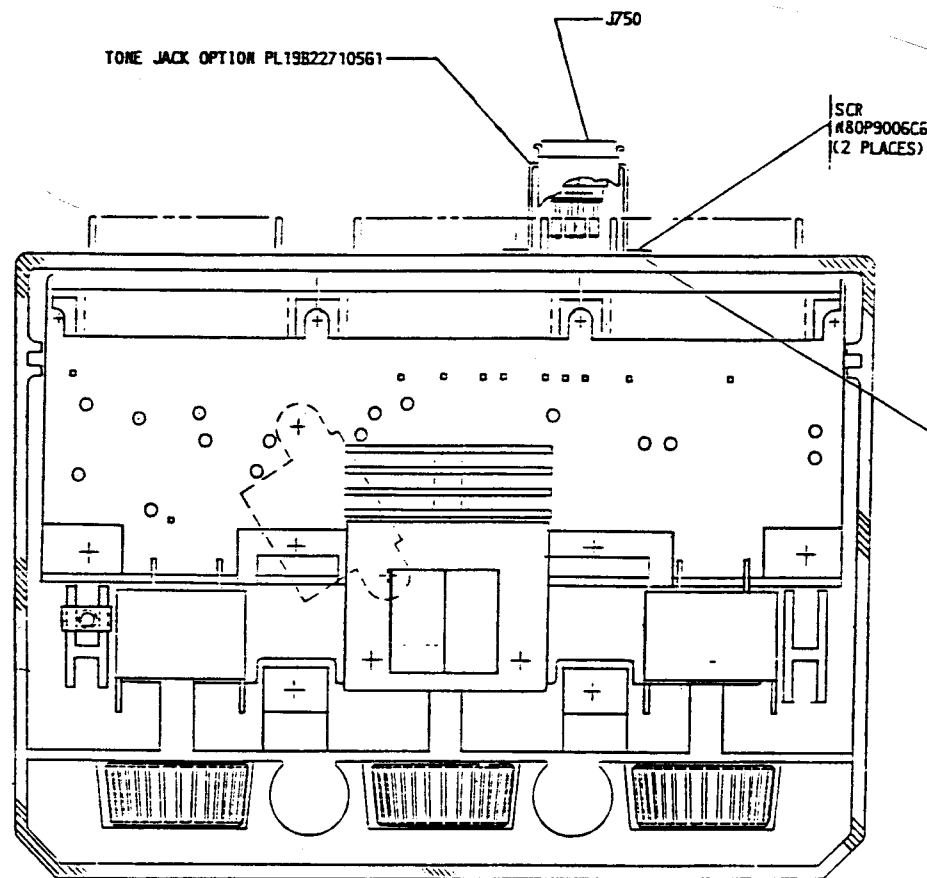
11 DUAL CONTROL PL19A129567G27

THIS UNIT CONTAINS THE FOLLOWING  
OPTION KITS:  
PL19A129567G1, G2, G3, G4, G5, G6, G7, G8, G9, G10, G11, G12, G13, G14, G15, G16, G17, G18, G19, G20, G21, G22, G23, G24, G25, G26, G27, G28, G29, G30, G31.

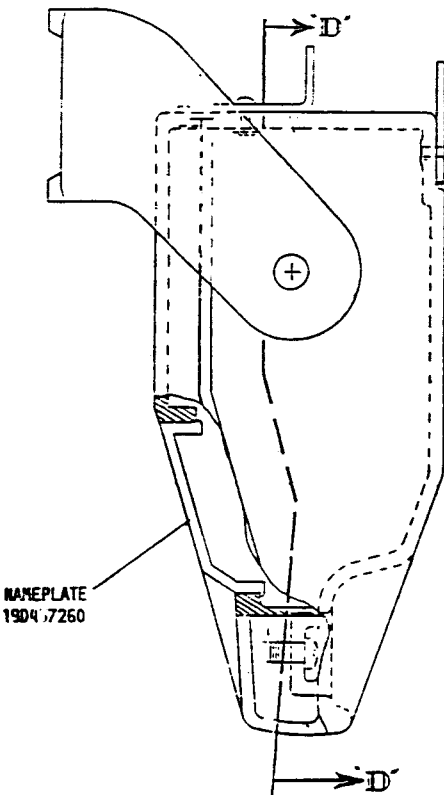
MARK THIS SQUARE  
AS SHOWN  
PER 19A115740P1



CPNT SIDE  
(PARTIAL VIEW)

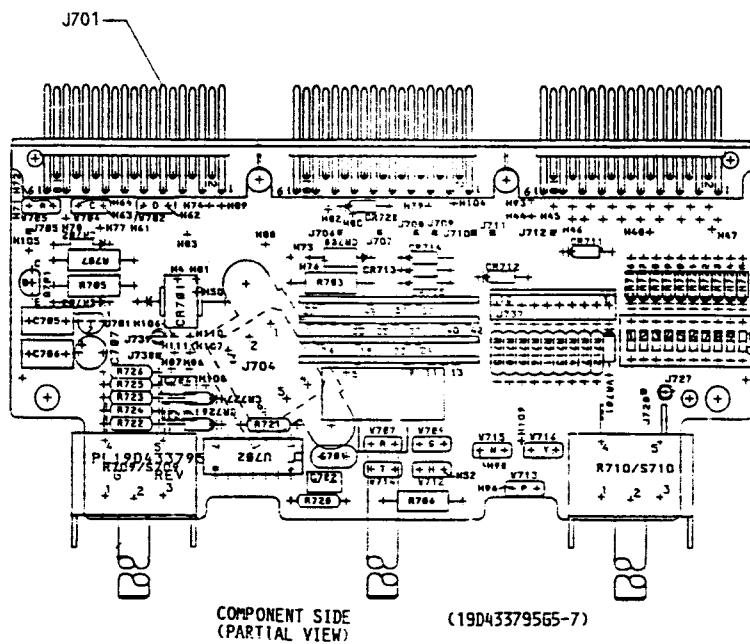


SECTION D-D



- 16 HANDSET HOOKSWITCH (OPTION H3, H5)  
NOTES:  
1. CUT JUMPER "A" (H71 TO H72) AND "C" (H53 TO H54).

- 27 EXTERNAL DECODER CABLE  
NOTES:  
1. CUT JUMPER "H" (H51 TO H52).



- 17 UNIVERSAL TONE DECODER JACK PL19A129567G17  
NOTES:  
1. CUT JUMPER "H" (H51 TO H52).

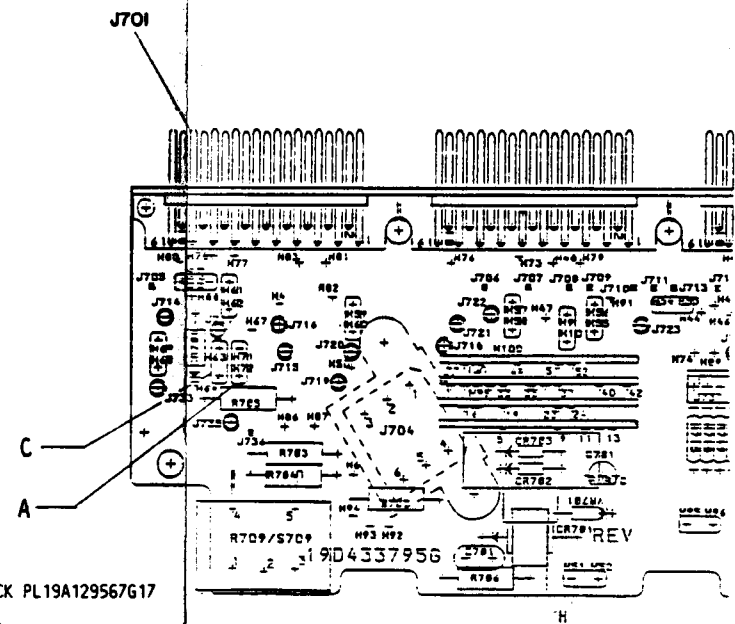
| UNIVERSAL TONE DECODER JACK |        |             |              |                                            |
|-----------------------------|--------|-------------|--------------|--------------------------------------------|
| FROM                        | WIRE   | TO P17 ONLY | TO P17 & P25 | TO P17 AND P5,6,7,P12 THRU 15, P18 THRU 23 |
| J750-A                      | W-G    | H78         | J701-15      | H78                                        |
| J750-B                      | Q      | H77         | J701-13      | H77                                        |
| J750-C                      | SHIELD | H76         | J701-2       | H76                                        |
| J750-D                      | W-BR   | H73         | J701-12      | H73                                        |
| J750-E                      | W-O    | H74         | H74          | J701-1                                     |
| J750-F                      | G      | H88         | J701-18      | J701-18                                    |
| J750-H                      | W-O-R  | H83         | J701-7       | H83                                        |
| J750-J                      | 22SJ-G | H81         | J701-5       | H81                                        |
| J750-K                      | BK     | H89         | H89          | J701-1                                     |

(19D437185, Sh. 9, Rev. 4)

- 28 UNIVERSAL TONE ENCODER JACK PL19A129567G17  
SAME AS 17 CHART EXCEPT:  
1. CONNECT SHIELD FROM J750-C TO H82 OR J701-6 INSTEAD OF H76 OR J701-2  
2. DO NOT CUT JUMPER "H".

THIS UNIT CONTAINS THE FOLLOWING  
OPTION KITS:  
PL19A129567G1, G2, G3, G4, G5, G6, G7, G8, G9, G10, G11, G12, G13, G14, G15, G16, G17, G18, G19, G20, G21, G22, G23, G24, G25, G26, G27, G28, G29, G30, G31.

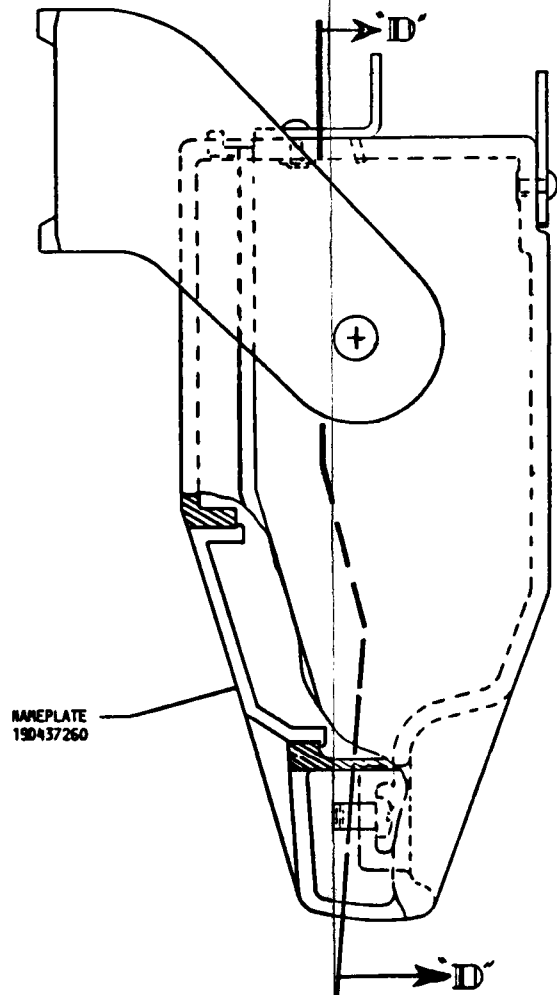
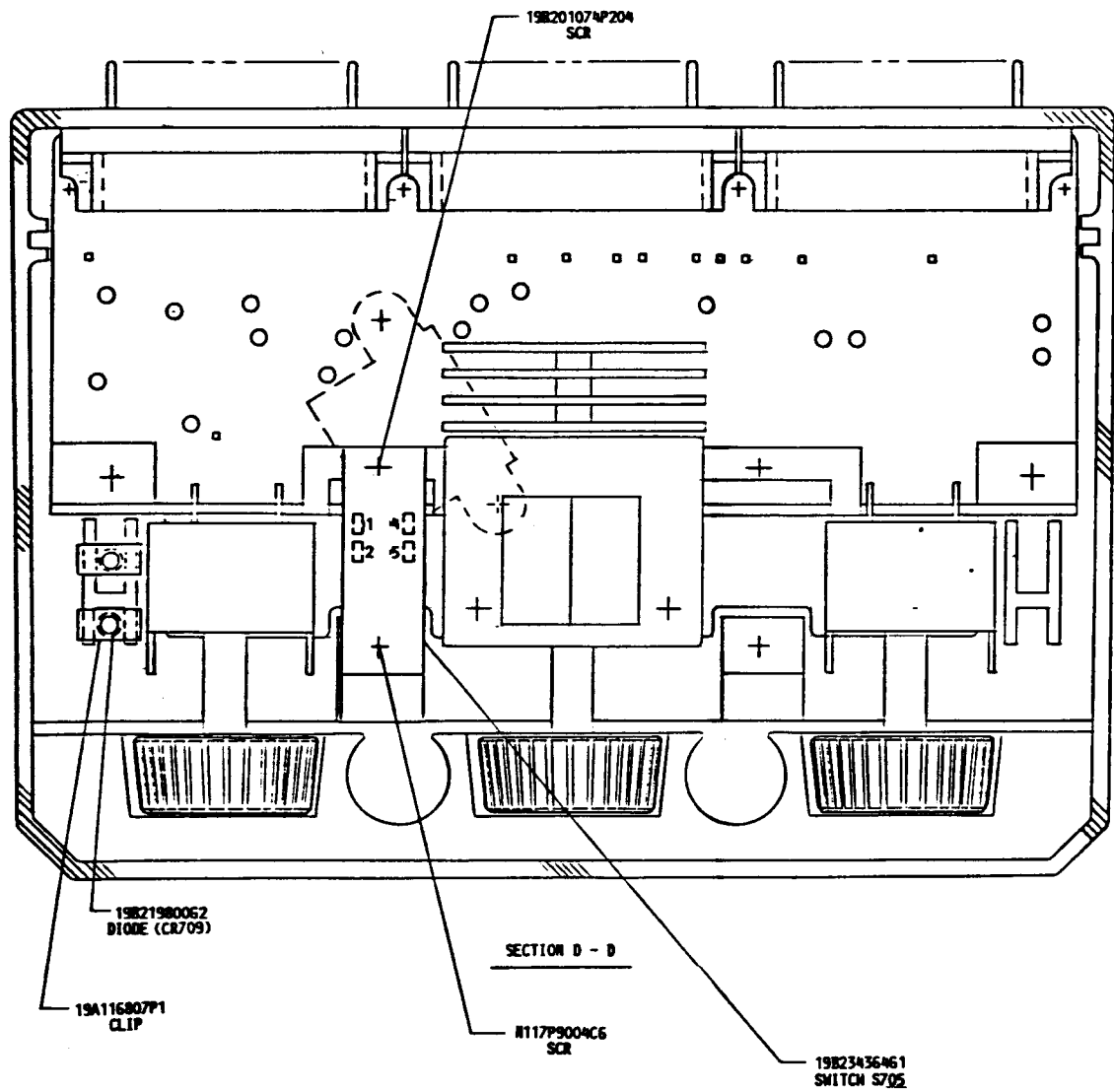
MARK APPROPRIATE SQUARE  
AS SHOWN  
PER 19A115740P1  
WHEN GP. 17 IS USED



COMPONENT SIDE  
(PARTIAL VIEW)  
(19D4337956-4)

## OPTION APPLICATION

Issue 4



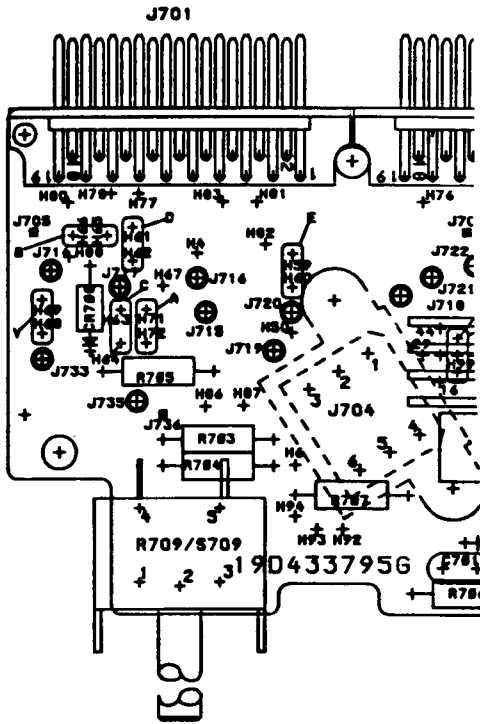
(19D437185, Sh. 11, Rev. 1)

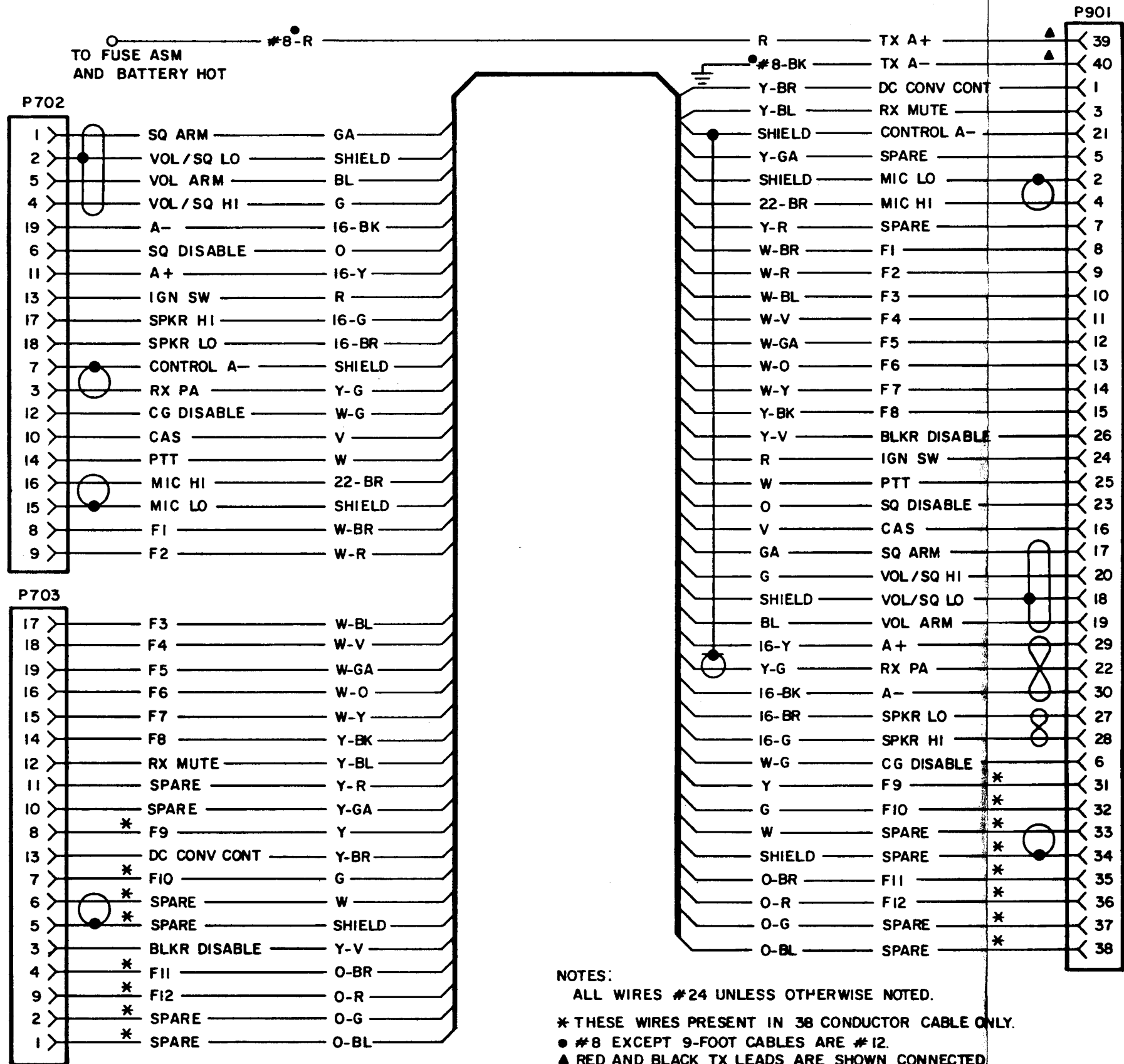
24

THESE INSTRUCTIONS COVER THE INSTALLATION OF THE 19A129567630  
MODE "A-B" OPTION INTO A S-500 CONTROL UNIT.

| CONNECTIONS FOR MODE A/B<br>SWITCH AND INDICATOR |      |      |
|--------------------------------------------------|------|------|
| FROM                                             | TO   | WIRE |
| S705-1                                           | H93  | BR   |
| S705-2                                           | H92  | BR   |
| S705-4                                           | H94  | R    |
| S705-5                                           | H6   | O    |
| CR709                                            | J736 | V    |
| CR709                                            | J735 | BR   |

- NOTES:
1. SOLDER ALL ELECTRICAL CONNECTIONS.





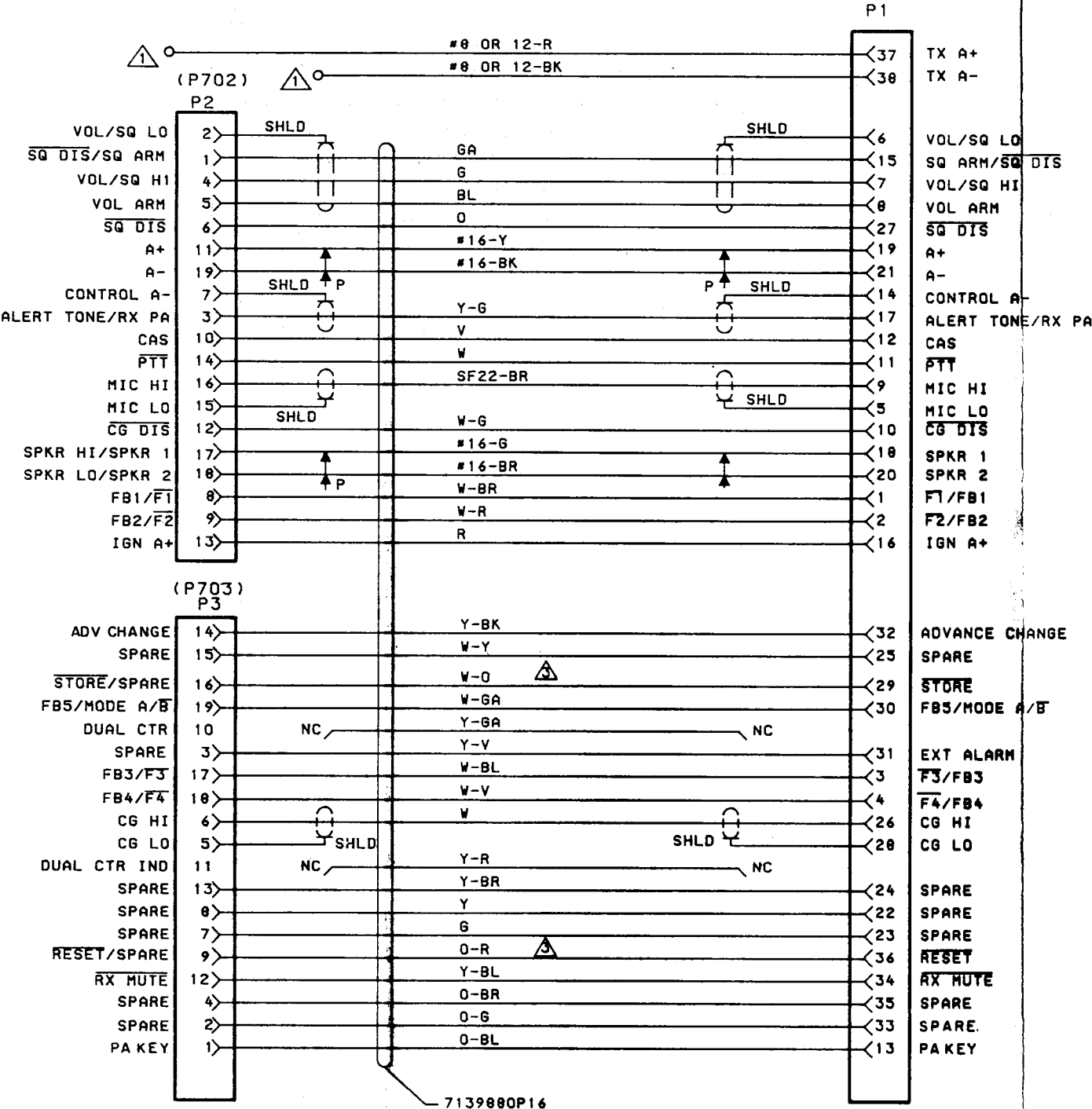
NOTES:

ALL WIRES #24 UNLESS OTHERWISE NOTED.

\* THESE WIRES PRESENT IN 38 CONDUCTOR CABLE ONLY.

● #8 EXCEPT 9-FOOT CABLES ARE #12.

▲ RED AND BLACK TX LEADS ARE SHOWN CONNECTED FOR NEGATIVE GROUND. FOR POSITIVE GROUND, CONNECT RED LEAD TO P901-40 AND BLACK TO P901-39.

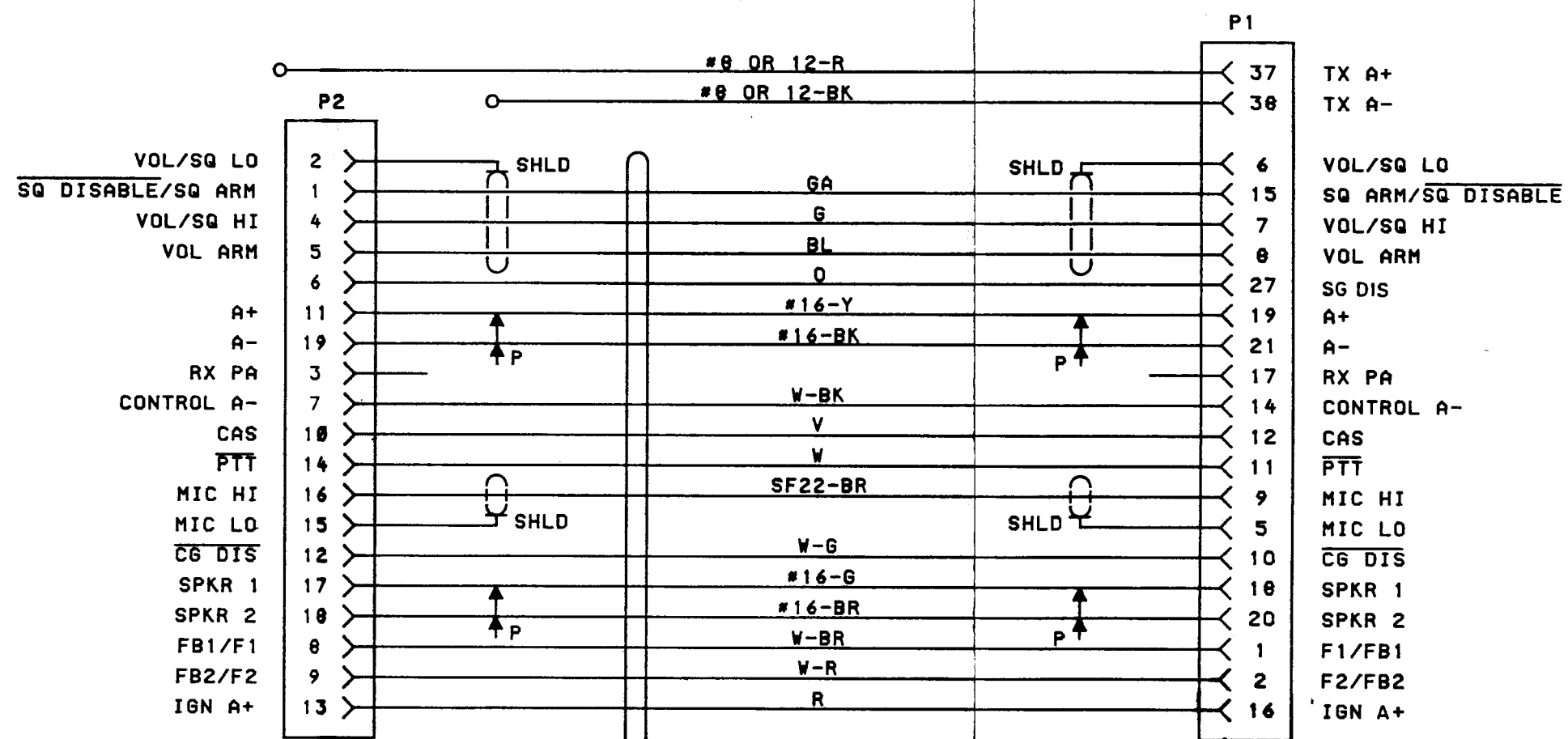


1. ELECTRICALLY UNCONNECTED UNTIL INSTALLED BUT TERMINATED PER ASM 19D900447.
2. ALL WIRES ARE #SF24 AWG UNLESS OTHERWISE SPECIFIED.
3. FOR GROUPS 1-6, W-O AND O-R WIRES ARE NOT CONNECTED AT EITHER END.

WIRING DIAGRAM

POWER/CONTROL CABLE  
19D900447G1-6

(19D433081, Sh. 1, Rev. 7)



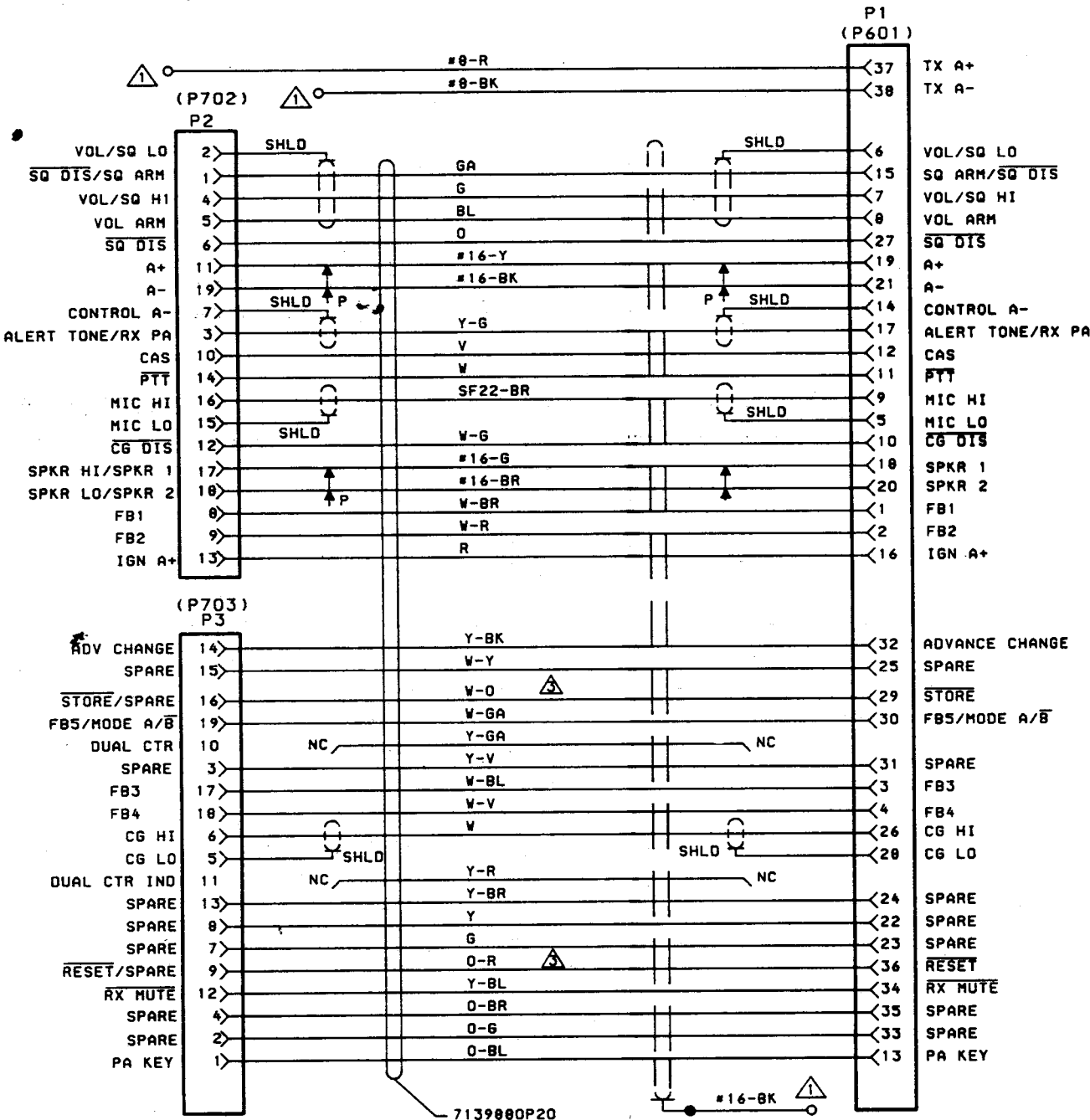
ALL WIRES ARE #SF24 AWG UNLESS OTHERWISE SPECIFIED.

(19C331426, Rev. 3)

## WIRING DIAGRAM

POWER/CONTROL CABLE  
19D900447G10-15

\*\*\*\*\* 17



- 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.

WIRING DIAGRAM

(19D901742, Sh. 1, Rev. 0)

Power/Control Cable  
19D901739G1, 2, 5

PARTS LIST

POWER/CONTROL CABLES  
30 CONDUCTOR SHORT GRD.  
19D901739G1 STANDARD  
19D901739G2 30 FT. CABLE  
19D901739G5 10 FT. CABLE

ISSUE 2

| SYMBOL | GE PART NO.                                             | DESCRIPTION                                                                                                     |
|--------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| P1     | ----- PLUGS -----                                       |                                                                                                                 |
|        | Connector. Includes:                                    |                                                                                                                 |
|        | 19D900037P1                                             | Shell.                                                                                                          |
|        | 19D900015P1                                             | Housing.                                                                                                        |
|        | 19C850508P1                                             | Cover.                                                                                                          |
|        | 19A701378P1                                             | Contact, electrical rated @ 4 amps; sim to AMP 350657-1. (P1 - 1 thru 17, 22 thru 36).                          |
|        | 19A701378P3                                             | Contact, electrical rated @ 35 amps; sim to AMP 350655-1. (P1 - 37, 38).                                        |
|        | 19A701378P2                                             | Contact, electrical rated @ 4 amps; sim to AMP 350656-1. (P1 - 18 thru 21).                                     |
|        | 19B800882P1                                             | Thumbscrew: thd. size M4 x 0.7. (Secures P1 to radio).                                                          |
|        | 19A701312P8                                             | Flatwasher: 1.7 - 1.85 ID. (Used with thumbscrew).                                                              |
|        | 19A701488P4                                             | Retaining ring. (Contains thumbscrew).                                                                          |
|        | 19B800513P1                                             | Gasket. (Used with P1 cable clamp).                                                                             |
|        | 19A701077P1                                             | Cable clamp.                                                                                                    |
|        | 19A700031P425                                           | Machine screw, No. M3-0.5 x 25. (Secures P1 cable clamp).                                                       |
|        | 19A700034P4                                             | Nut, hex: No. M3 x 0.5MM. (Secures P1 cable clamp).                                                             |
| P2     | 19A700032P5                                             | Lockwasher, internal tooth: No. 3MM. (Secures P1 cable clamp).                                                  |
|        | Connector. Includes:                                    |                                                                                                                 |
|        | 19B226516G1                                             | Shell.                                                                                                          |
|        | 19A116781P5                                             | Contact, electrical: wire range No. 18-24 AWG; sim to Molex 08-50-010C. (P2 - 11, 17 thru 19).                  |
|        | 19A116781P6                                             | Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-010B. (P2 - 1 thru 5, 6 thru 10, 12 thru 16). |
| P3     | Connector. Includes:                                    |                                                                                                                 |
|        | 19B226516G2                                             | Shell.                                                                                                          |
|        | 19A116781P6                                             | Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-010B. (P3 - 1 thru 9, 12 thru 19).            |
|        | ----- MISCELLANEOUS -----                               |                                                                                                                 |
|        | 19A701460P2                                             | Cable, red; sim to GE S1-57528.                                                                                 |
|        | 19A701460P10                                            | Cable, black.                                                                                                   |
|        | 19B800629P1                                             | Solderless terminal. (Located on black ground wire).                                                            |
|        | 19B800629P3                                             | Solderless terminal. (Located on red + wire).                                                                   |
|        | 19A701507P606                                           | Screw, thd forming: M3.5-1.27 x 9.60. (Secures J1 cover to housing).                                            |
|        | 19A701507P608                                           | Screw, thd. forming: No. 3.5-1.27 x 12.7. (Secures J1 connector to housing).                                    |
|        | 19B227456G1                                             | Extraction tool.                                                                                                |
|        | GROUND CABLE KIT<br>(5 1/2 TO 33 FT MOD)<br>19A136690G1 |                                                                                                                 |
|        | 19A701460P10                                            | Cable, black. (Approx 33 feet).                                                                                 |
|        | 19A701378P3                                             | Contact, electrical rated @ 35 amps; sim to AMP 350655-1.                                                       |
|        | 19B800629P3                                             | Solderless terminal.                                                                                            |
|        | 19A115799P4                                             | Solderless terminal. (Optional terminal for cable).                                                             |

\*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES