

Figure 1. SYNTOR X Control Head

## 1. Description

The SYNTOR X mobile radio control heads control the radio through a power on/off slideswitch, a volume control potentiometer, a squelch control potentiometer, and a rotary mode-select switch. All controls and switches are connected to and mounted on an internal circuit board. A plastic two-piece housing encloses the circuit board and controls. The knurled volume, squelch, and mode-select controls project both above and below the housing to permit convenient adjustment by the operator. The power switch extends below the housing when off and above the housing when on. All control legends are illuminated, and a red transmit indicator lights whenever the operator pushes the PTT button.

SYNTOR X control cables connect the control head to the radio; power cables carry primary power as well as transmit and receive control power to the radio. The schematic dia-

gram at the end of this section and the Installation Section give details of the radio power control cable connections.

## 2. Control Head Maintenance

### 2.1 DISASSEMBLING

Two captive Phillips screws hold the upper and lower halves of the housing together (Figure 1). Four optical prisms are factory aligned and mounted in the top cover of the housing. These prisms require no service and must not be tampered with for any reason.

### 2.2 REPLACING BULBS

Pilot bulbs can be replaced from the rear of the control head. Rotate the socket counterclockwise 45° and withdraw it from the circuit board. Remove the wedge-type bulb by pulling it straight out of the socket.

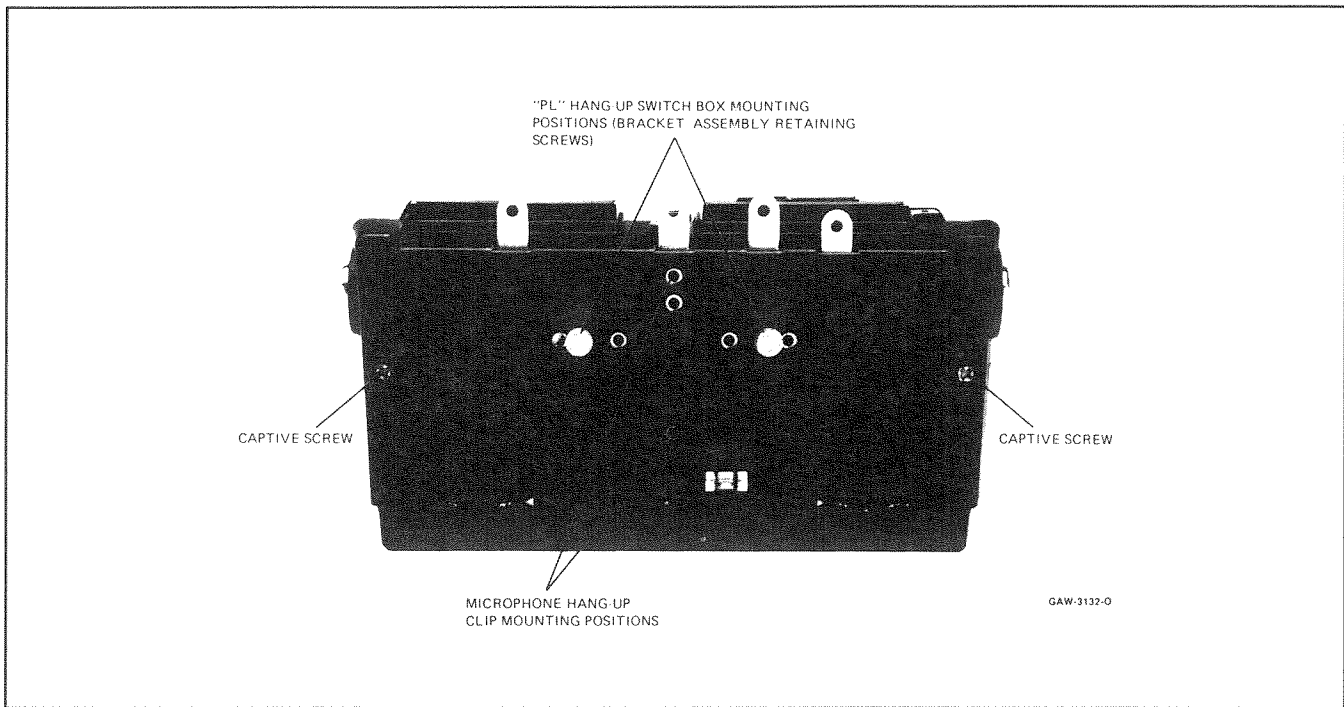


Figure 2. Disassembly Detail

### 2.3 REMOVING CIRCUIT BOARD AND BRACKET ASSEMBLY

- (1) Loosen the two captive screws and remove the top half of the housing (Figure 2).
- (2) Remove the two bracket assembly screws and lift out the assembly (Figure 3).
- (3) Reverse the procedure to replace the assembly.

### 2.4 REMOVING CIRCUIT BOARD

- (1) Remove the circuit board and bracket assembly from the housing (preceding paragraph).
- (2) Remove the circuit board from the bracket assembly (Figure 4).
- (3) Service the components mounted on the circuit board or bracket assembly.
- (4) Reverse the procedure to reassemble (Figure 4).

### 2.5 REMOVING SLIDE SWITCH AND MODE SELECTOR

- (1) Remove the VOLUME and SQUELCH control knobs.
- (2) Remove the mounting nuts and lockwashers from both the VOLUME and SQUELCH controls. (Leave the slide switch and mode-selector switch mounted on the bracket.).
- (3) Slide the circuit board and attached controls out of the bracket.
- (4) Disconnect the leads connecting the slide switch and mode-selector switch to the circuit board.
- (5) Remove the two Phillips screws holding the slide switch to the bracket, and then remove the switch assembly.
- (6) Remove the mode-selector knob, indicator dial, mounting nut, and lockwasher; then remove the selector switch assembly.
- (7) Reverse the procedure to reassemble.

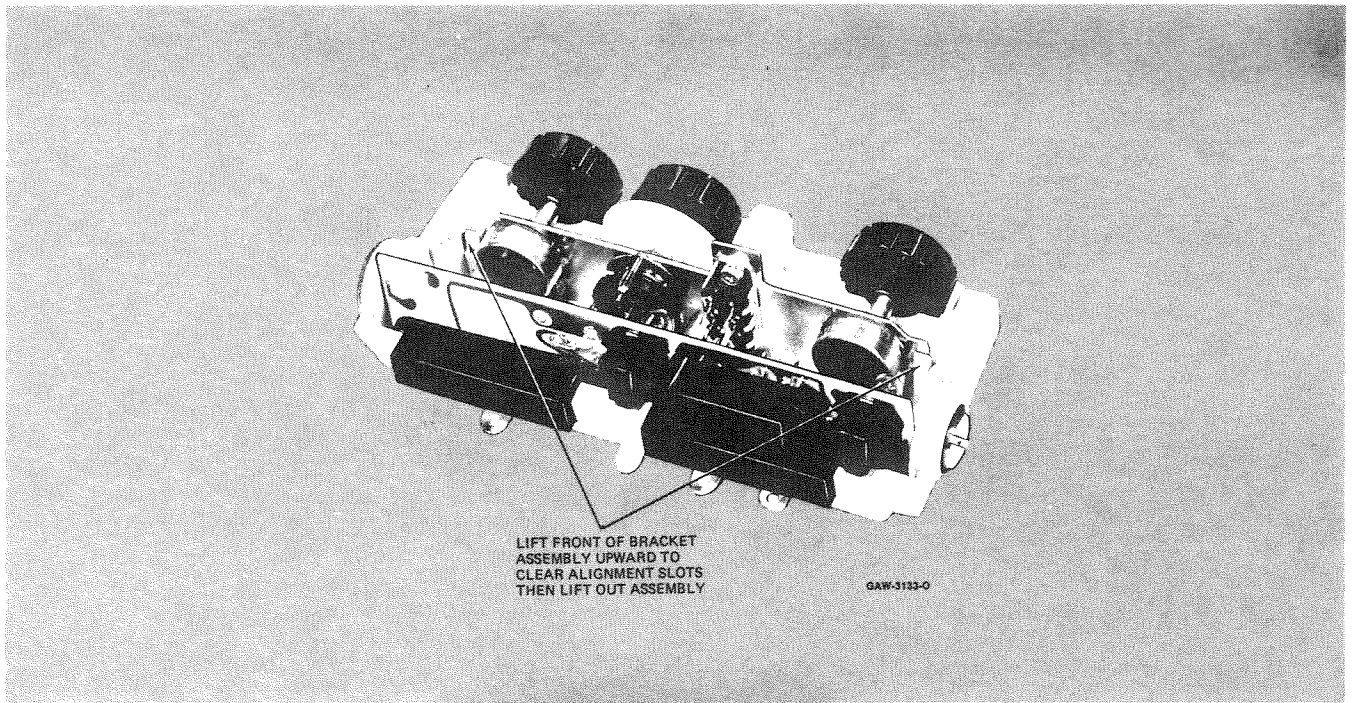


Figure 3. Circuit Board and Bracket Assembly Removal

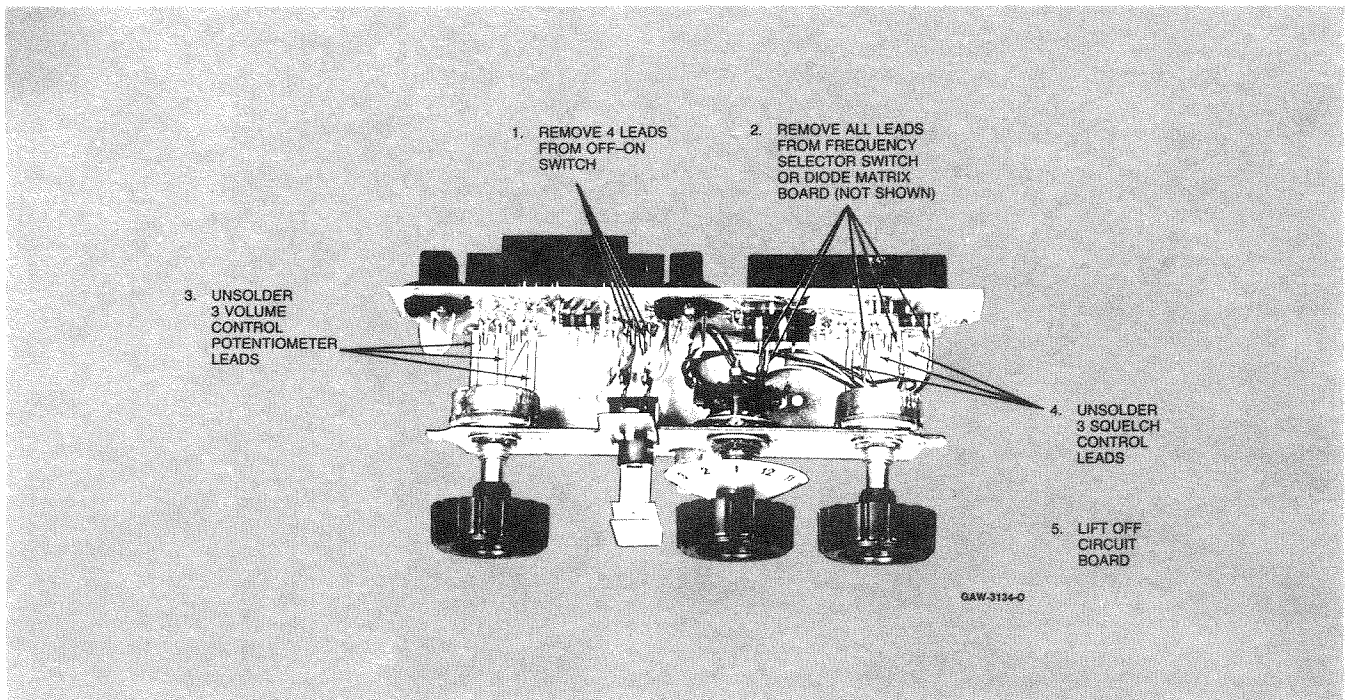
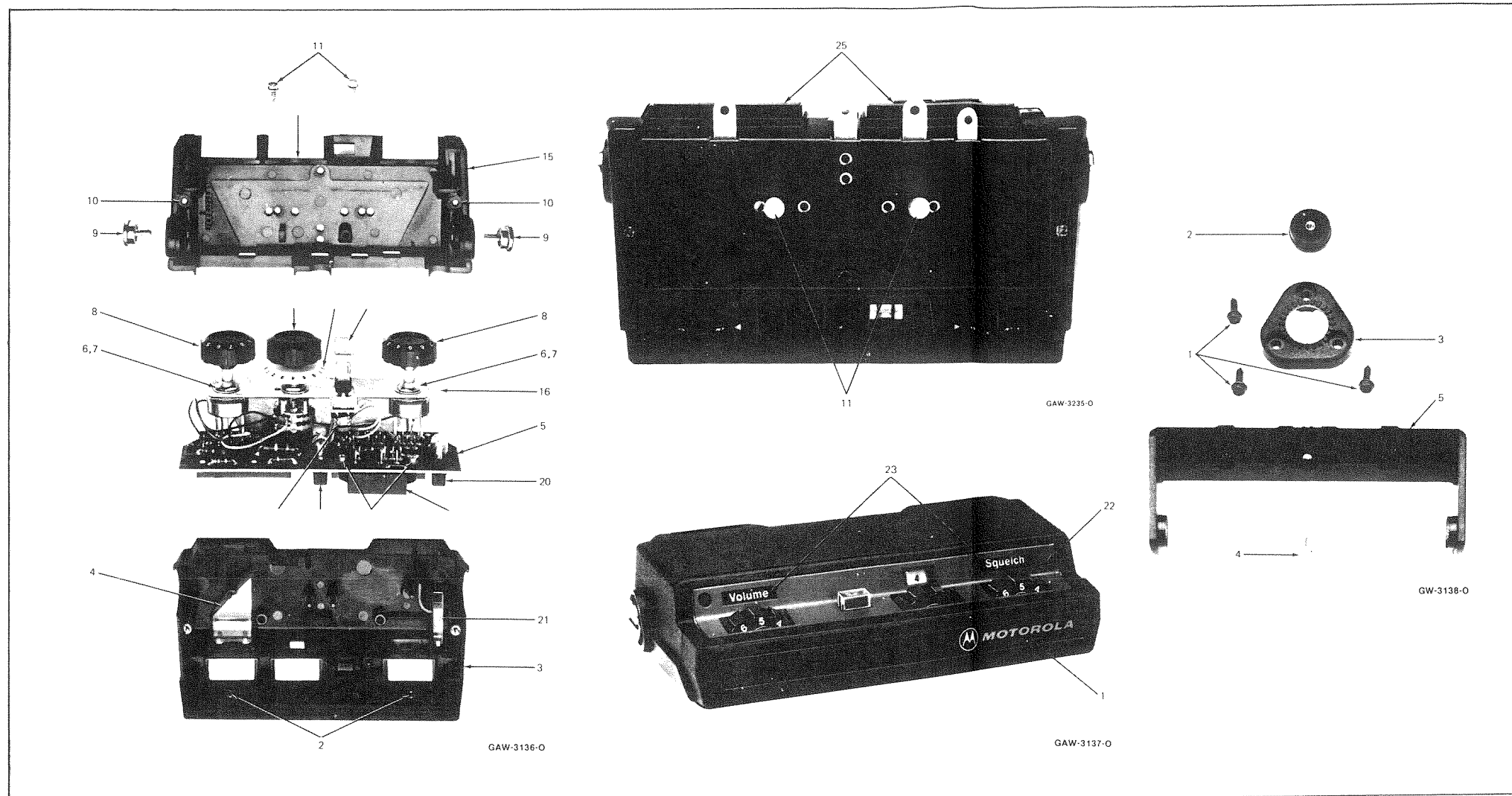


Figure 4. Circuit Board Removal

# CONTROL HEAD AND CABLE KITS



## parts list

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	75-82619M02	front bumper
2	03-00124616	tapping screw (6-20 x 5/16"), 2 used
3	01-80702T37	top cover assembly housing, includes: items 1, 2, 4, 21, and 23 (used on HCN1009A and 1019A)
	or 01-80706T06	top cover assembly housing, includes: items 1, 2, 4, 21, and 23 (used on HCN1020A, 1022A, and 1023A)
4	—	optical prism (see note)
5	TLN4369B	plate circuit board assembly, includes: J1101, 1102, 1103, 1104, and item 25
6	02-00136272	nut (3/8 x 32 x 1/2"), 3 used
7	04-00002636	lockwasher, 3/8 internal, 2 used
8	36-80024B02	control knob (volume & squelch), 2 used
9	03-84548B01	cap screw (trunnion-mount), 2 used
10	03-00135506	tapping screw (4-40 x 1/4"), 2 used
11	03-00138717	tapping screw (6-20 x 3/8"), 3 used
12	36-80024B01	control knob, mode selector
13	36-84006C01	knob, disc, 8-channel switch position indicator
	or 36-80148B02	knob, index, 16-channel
14	45-84004C01	actuator, switch
15	15-84920B02	bottom cover
16	07-84005C03	mounting bracket
17	01-80702T69	switch assembly, includes S1101
18	03-00135084	tapping screw (4-40 x 5/16"), 2 used
19	42-84067C01	connector retainer
20	09-84627B01	lamp holder socket
21	—	optical prism (see note)
22	13-84000C03	bezel (HCN1009A and 1019A)
	or 13-84000C06	bezel (HCN1020A)
	or 13-84000C05	bezel (HCN1022A and 1023A)
23	33-80040B02	nameplate
24	42-84962C02	retainer connector
25	14-80275D01	insulator (HLN4330A), not shown

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**note:** Items 4 and 21 are not replaceable. For field replacement, order Item 3 (top cover assembly).

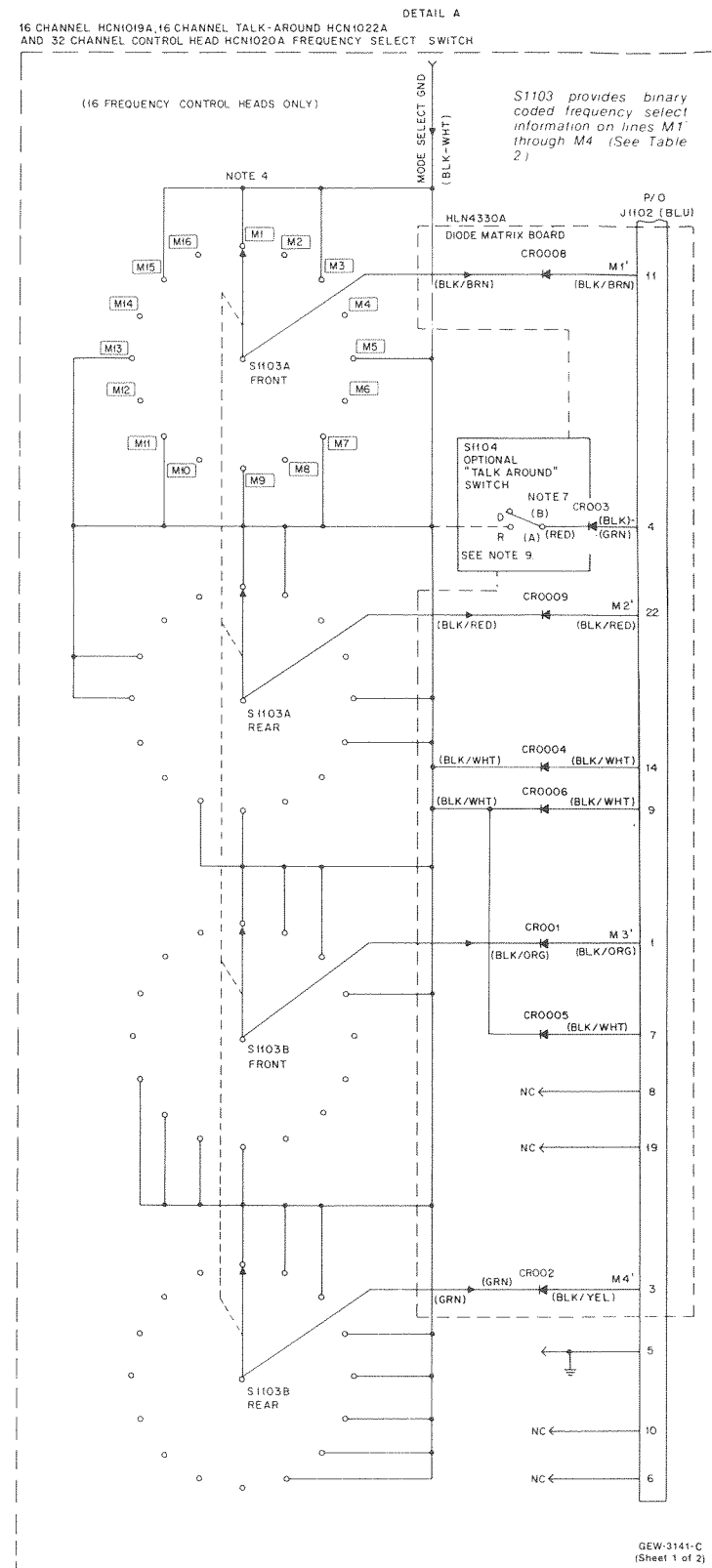
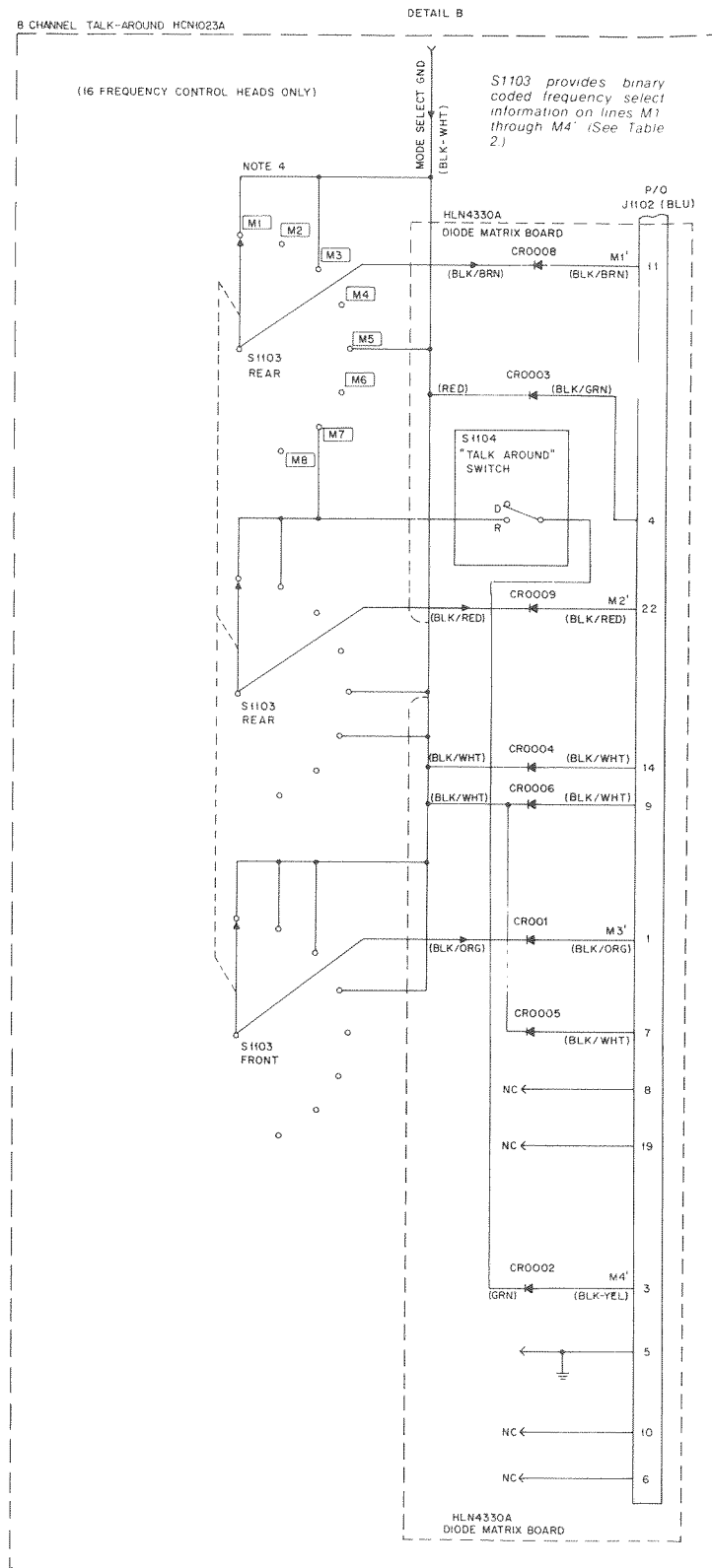
## parts list

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	03-00136756	tapping screw 10-16X5/8
2	49-84961C02	breakaway disc
3	42-84963C02	control head retainer
4	03-00115727	machine screw 10-32X1/2
5	07-84576B02	trunnion bracket
non-referenced parts		
	54-84111D01	mounting template

11/20/88

Schematics, Circuit Board Diagram, and  
Parts Lists for Control Head and Cable Kits  
**PW-3135-B**  
(Sheet 1 of 4)

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### parts list

HKN4100A/TKN8087A/HKN4083A Control Cable, Negative Ground 17'  
 HKN4101A/TKN8088A/HKN4084A Control Cable, Negative Ground 22'  
 HKN4102A/TKN8090A/HKN4085A Control Cable, Positive Ground 22'  
 HKN4103A/TKN8089A/HKN4086A Control Cable, Negative Ground 10' MXW-3139-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
P1	15-80215B01 15-80216B01 36-80220B01 42-80156B01 03-00140079 32-83859M01	<b>connector, plug</b> consists of: front connector housing rear connector housing connector screw retainer ring tapping screw (6-19 x 1/2"), 4 used connector gasket
P1101	14-84556B01 09-84151B03	consists of: black connector housing, 22-position contact receptacle
P1102	14-84556B02 09-84151B03	consists of: blue connector housing, 22-position contact receptacle
P1105	30-80247D01  14-84590B06 09-84151B03	31-conductor cable (HKN4100A-4103A only) consists of: yellow connector housing contact receptacle
W1103	01-80703A58 29-84528B05 30-00851875 30-00812505	<b>cable assembly</b> consists of: black lead and lug assembly, includes: lug, ring tongue cable, battery, #8 ga., black, 66" long battery cable, #8 ga., red
<b>non-referenced items</b>		
	30-84875E01 42-00893468 42-00893464 42-10217A02 29-00812980 29-00840421 54-84032M02	27-conductor cable cable clamp cable clip hook tie strap, 2 used closed-end terminal closed-end terminal positive-ground label

note: These control cable kits are all 12-mode.

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### parts list

HKN4051A Cable and Fuse MXW-4224-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
<b>fuse</b>	65-84161B01	40 amp
<b>mechanical parts</b>		
	03-00139931 09-84277B02 29-84528B05 38-84383D02 42-84275B01 54-84708B01	tapping screw, 10-16 x 3/4" fuse receptacle ring lug protective cap fuse retainer label

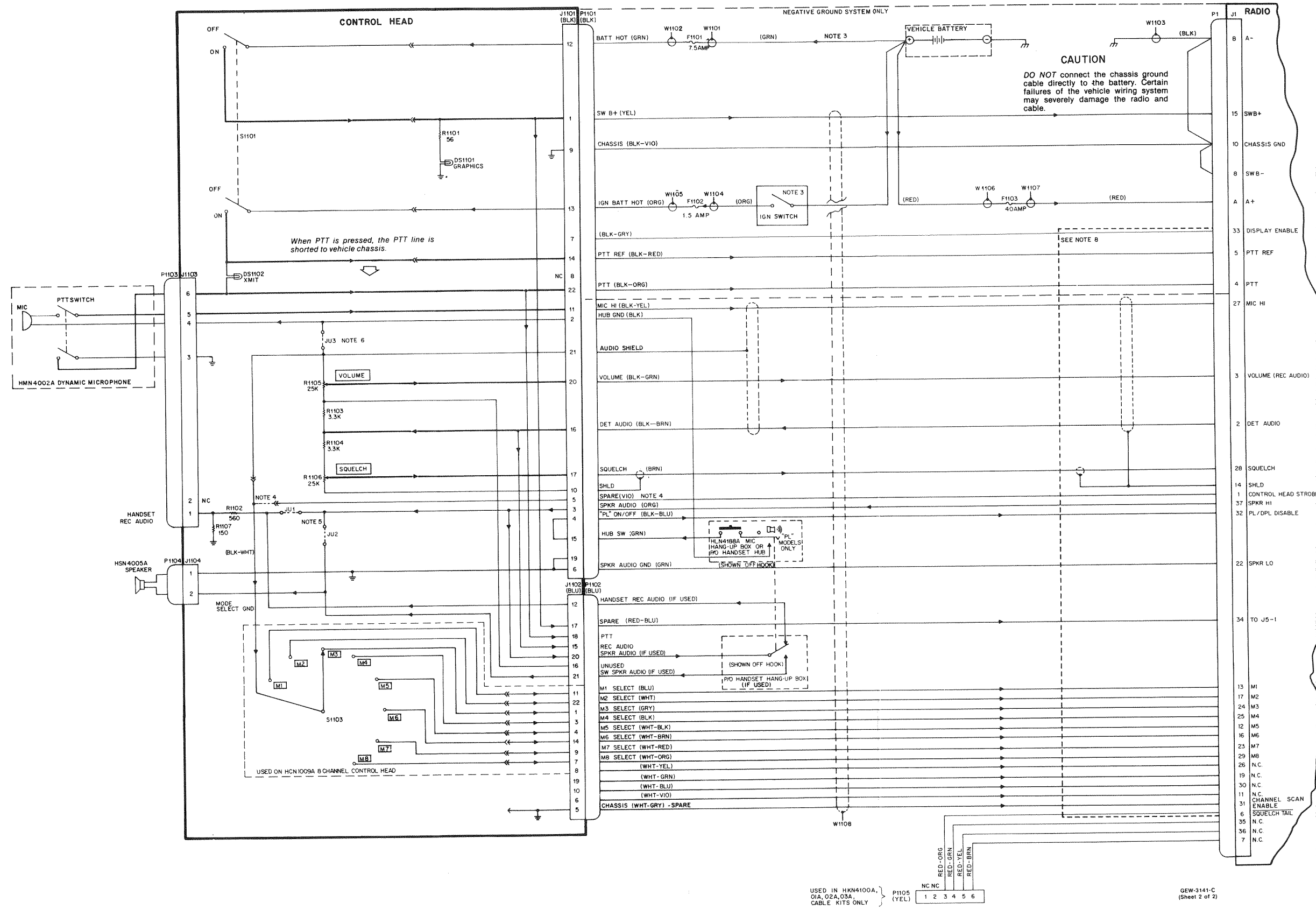
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### parts list

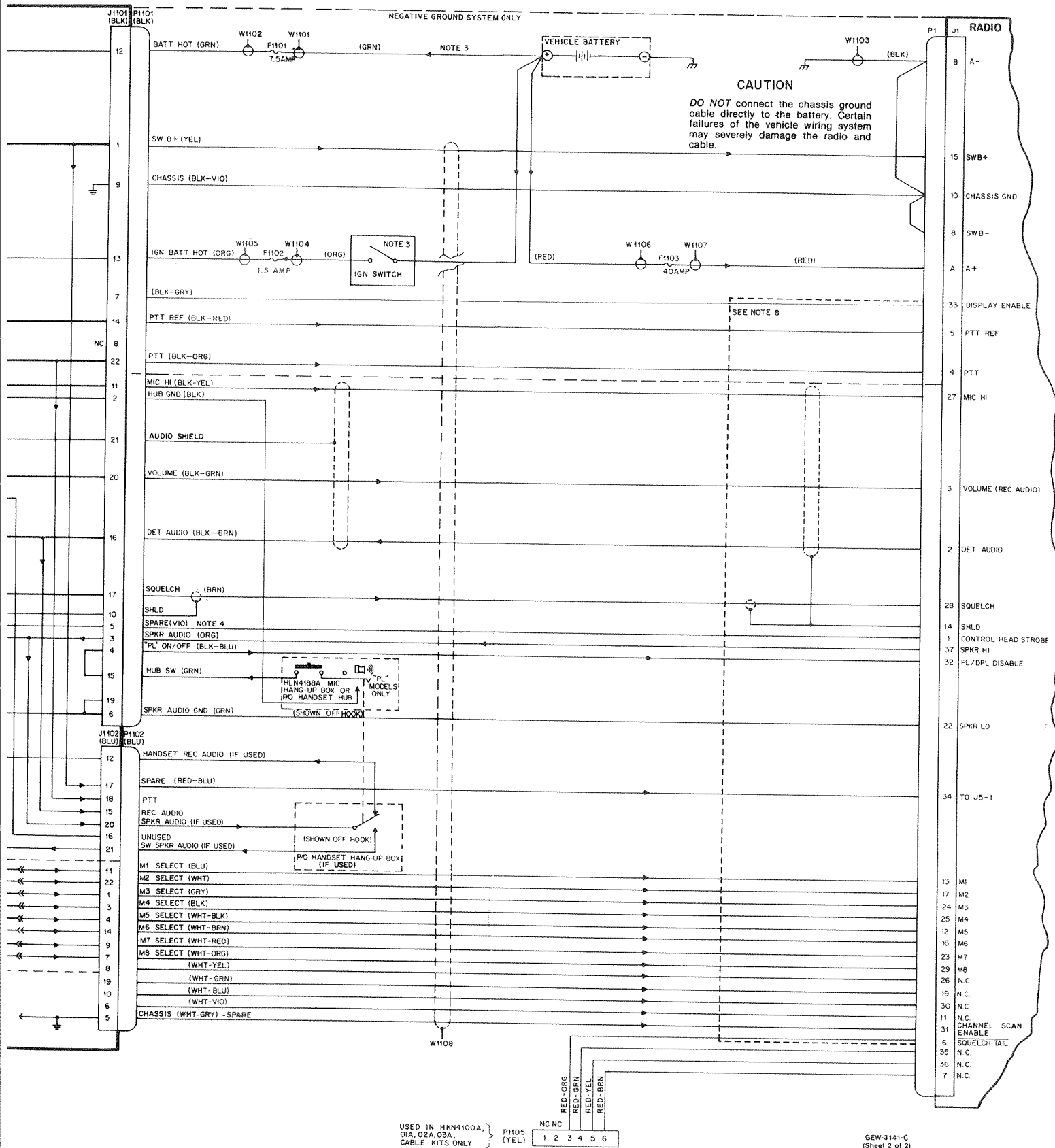
HKN4052A Control Head power Cable MXW-4223-B

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
<b>fuse</b>	F1101 F1102	7.5 amp, 32V 1.5 amp, 250V
<b>cable assembly</b>	W1101	lead and clip assembly (green) includes: wire, #18 ga., str.(green), 1.5' long clip, fuse
	W1102	lead and fuse cap (green) used with W1101, includes: insulator, fuse holder cap clip, fuse
	W1103	lead and clip, assembly (orange), includes: insulator, fuse holder cap clip, fuse
	W1104	lead and fuse cap (orange), used with W1104, includes: insulator, fuse holder cap clip, fuse
	W1105	insulator, fuse holder cap contact receptacle
<b>mechanical parts</b>		
	01-80702T64	fuse and lead assembly (green) includes: ref. items F1101, W1101, W1102
	14-82882A01 41-82885A01 01-80704T69	insulator, fuse holder body spring, fuse compression fuse and lead assembly (orange) includes: ref. items F1102, W1104, W1105
	14-82882A01 41-82885A01 29-00136968 29-00824456 29-00865065	insulator, fuse holder body spring, fuse compression lug, solder, 2 used lug, ring tongue, 2 used lug, ring tongue, 2 used

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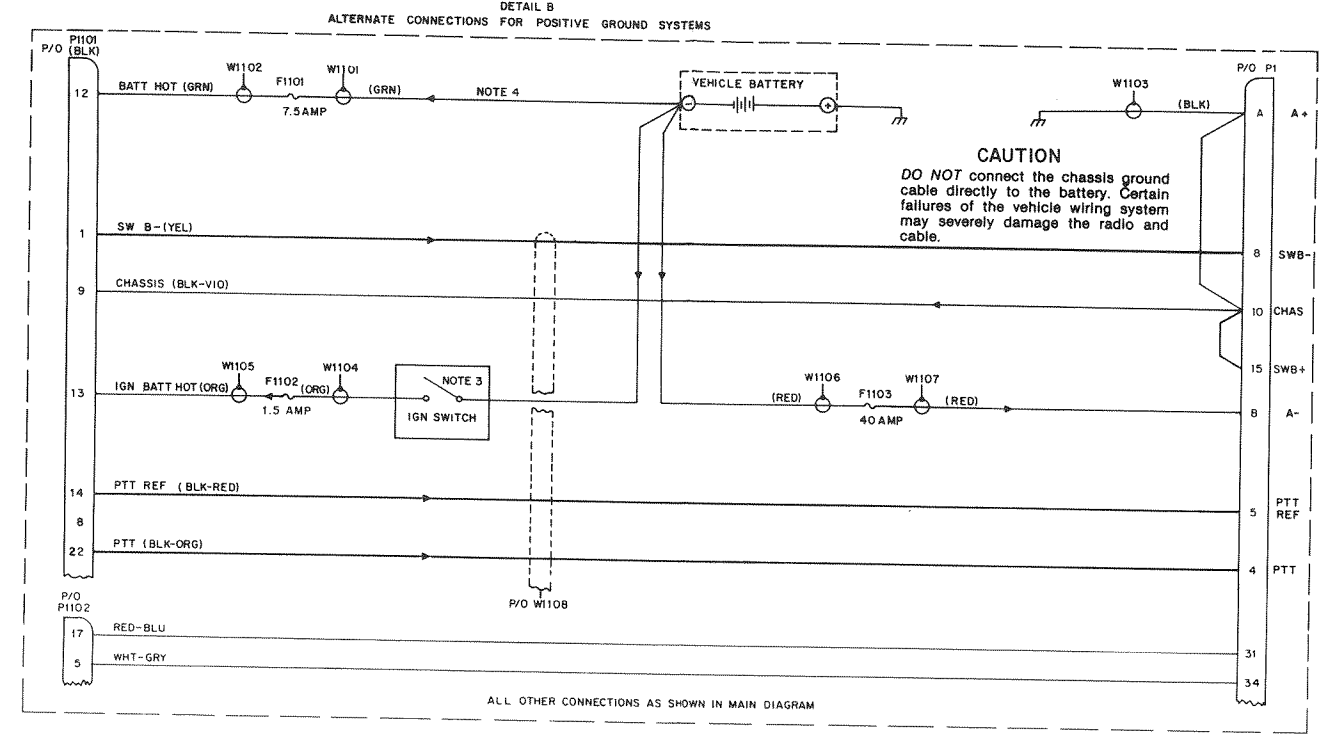


USED IN HKN4100A,  
O1A, O2A, O3A,  
CABLE KITS ONLY } P1105  
(YEL) 1 2 3 4 5 6



USED IN HKN4100A, O1A, O2A, O3A, CABLE KITS ONLY } P1105 (YEL) 1 2 3 4 5 6

GEW-3141-C (Sheet 2 of 2)



ALL OTHER CONNECTIONS AS SHOWN IN MAIN DIAGRAM

Table 1. Radio Cabling

Model Number	Description	Polarity	Length
HKN4051A	Control Head Power Cable		
HKN4052A	Radio Power Cable & Fuse		
HKN4100A, TKN8087A, and HKN4083A	Negative Ground		17 Feet
HKN4101A, TKN8088A, and HKN4084A	Negative Ground		22 Feet
HKN4103A, TKN8089A, and HKN4086A	Negative Ground		10 Feet
HKN4102A, TKN8090A, and HKN4085A	Positive Ground		22 Feet

NOTES:

- Unless otherwise stated, all resistor values are in ohms.
- For proper operation of control heads with a voice privacy adapter (VPA) or with a handset and handset hangup box, refer to the associated instruction manual.
- The radio input power connections are shown in the recommended configuration. In this configuration, the receiver portion of the radio is operable at any time the control head is switched ON but the transmitter is disabled unless the vehicle ignition switch is turned on to prevent excessive battery drain. See the installation instructions for other configurations.
- The mode select ground lead (BLK-WHT) is normally connected to SHLD GND (J1101-21) but is connected to J1101-5 in SYSTEMS 90+S channel scan and certain other special applications.
- Jumpers JU1 through JU3 modify the operation of the control head as follows:  
 JU1 and JU2 are normally in and may be removed when a handset and handset hangup box are used. Removal of JU1 mutes the handset speaker when the handset is on-hook. Removal of JU2 mutes the external speaker when the handset is off-hook.  
 JU3 is normally in but may be removed in special applications.
- For proper operation of the hangup box JU3 must be present.
- Switch S1104 is labeled A/B on 32-mode control head.
- Black/Gray goes to P1-33 on all standard cable kits (TKN8087A, HKN4083A, TKN8088A, HKN4084A, TKN8089A, HKN4086A, TKN8090A, and HKN4085A). Black/Gray goes to P1-5 on cable kits (used on 16 or 32-mode select with scan display control heads and EMS options). In applications where Black/Gray goes to P1-6 and display is desired, Display Enable (J1-33) must be internally jumpered to SWB- (J1-8) in radio on the personality board.

Table 2. Sixteen Frequency Channel Select Line Outputs

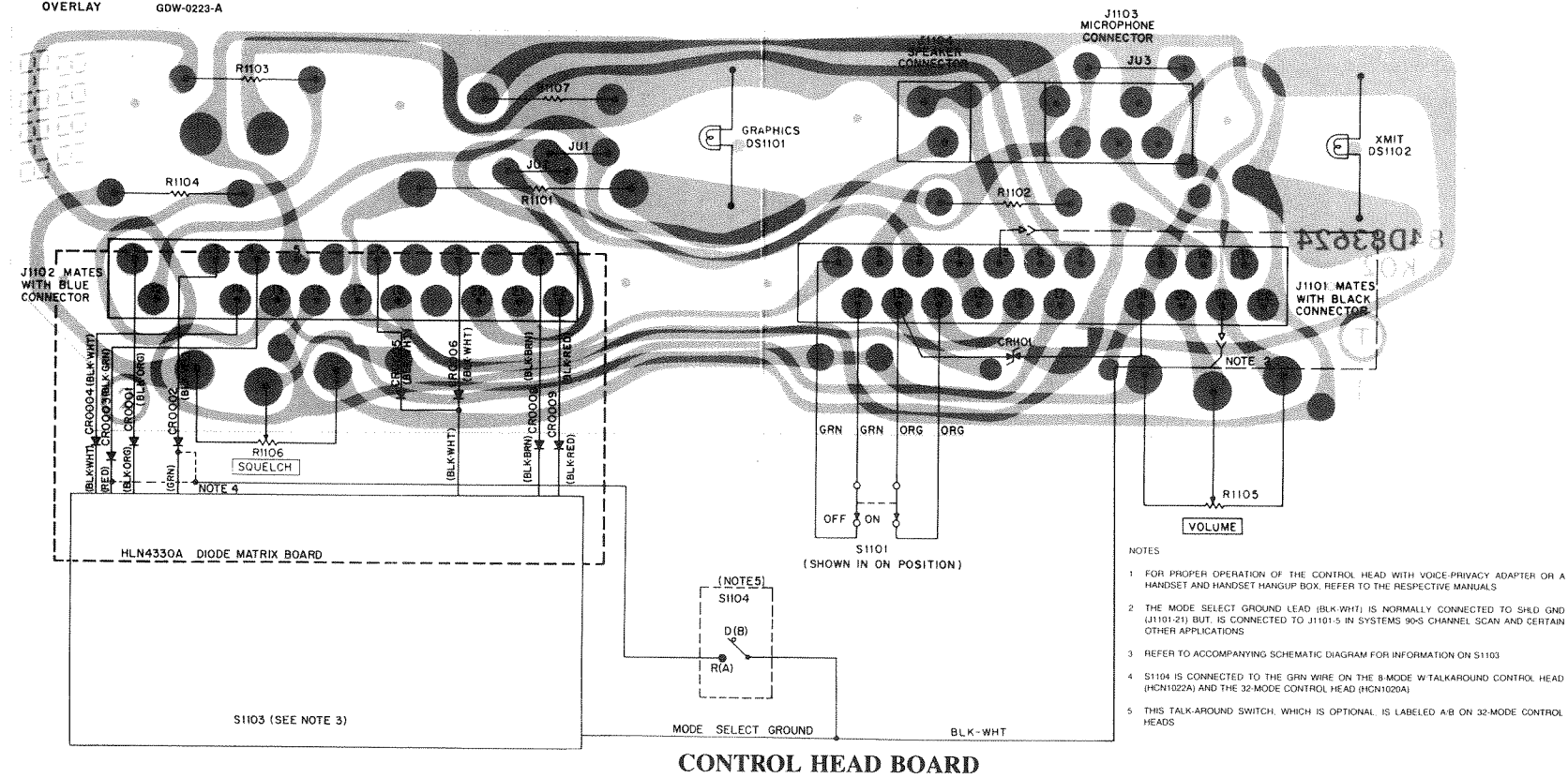
Selected Channel	M1'	M2'	M3'	M4'
1	*	*	*	*
2	*	*	*	*
3	*	*	*	*
4	*	*	*	*
5	*	*	*	*
6	*	*	*	*
7	*	*	*	*
8	*	*	*	*
9	*	*	*	*
10	*	*	*	*
11	*	*	*	*
12	*	*	*	*
13	*	*	*	*
14	*	*	*	*
15	*	*	*	*
16	*	*	*	*

\* = Connection Made To Channel/Select GND

ROTARY-MODE-SELECT CONTROL HEAD

SOLDER SIDE ● GDW-3144-A  
 COMPONENT SIDE ● GDW-3145-A  
 OVERLAY ● GDW-0223-A

SHOWN FROM COMPONENT SIDE



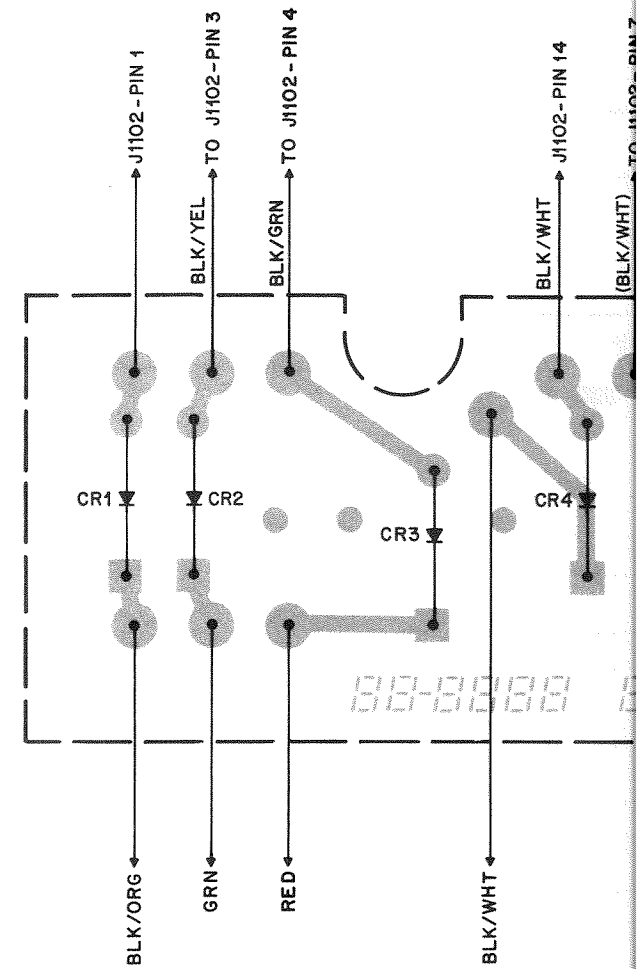
CONTROL HEAD BOARD

parts list

HCN1009A Control Head, 8-Mode  
 HCN1019A Control Head, 16-Mode  
 HCN1020A Control Head, 32-Mode  
 HCN1022A Control Head, 16-Mode with Talkaround  
 HCN1023A Control Head, 8-Mode with Talkaround MXW-3142-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
<b>lamp</b>		
DS1101,1102	65-83554G01	12V
<b>connector, plug</b>		
J1101,1102	29-84547B01	terminal pin, male (20 used)
J1103	29-84547B01	terminal pin, male (5 used)
J1104	29-84547B01	terminal pin, male (2 used)
<b>resistor, fixed ohm, +10%, 1/2 watt (unless otherwise stated)</b>		
R1101	06-00127C19	56, 2W
R1102	06-11045A43	560, +5%
R1103,1104	06-11045A61	3.3K
R1105,1106	18-84584A02	25K, variable
R1107	06-11045A29	150
<b>switch</b>		
S1101	40-84622B02	slide, dpst
S1103	40-84149C02	rotary, 8-position, non-shorting includes mounting hardware (HCN1009A) or:
	40-80281B01	rotary, 16-position, includes: mounting hardware (HCN1019A, and HCN1022A) or:
	40-80191G02	rotary, 8-position, includes mounting hardware (HCN1023A)
S1104	40-84698K02	toggle, spst, includes mounting hardware (HCN1020A, HCN1022A, & HCN1023A)
<b>non-referenced parts</b>		
	33-80035B01	bumper nameplate

11/20/88



parts list

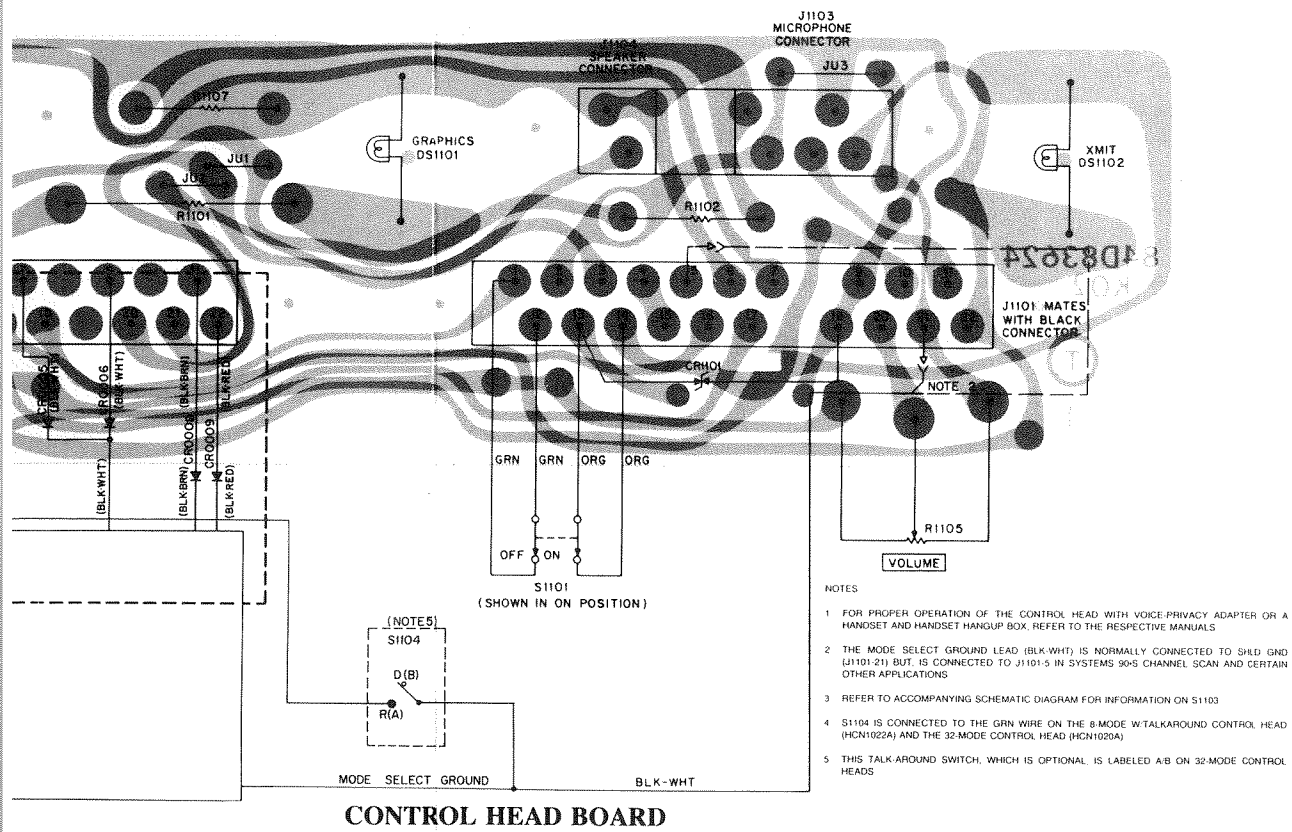
HLN4330A Diode Matrix Board MXW-3142-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
<b>diode (see note)</b>		
CR1-6	48-82392B03	silicon
CR8,9	48-82392B03	silicon
<b>mechanical parts</b>		
W2	01-80734T46	wire & lug
W3	01-80734T49	wire & lug
W4	01-80734T50	wire & lug
W5	01-80734T51	wire & lug
W6-8	01-80734T55	wire & lug
W9	01-80734T53	wire & lug

note: For best performance, order diodes, transistors, and integrated circuit devices by Motorola part number.

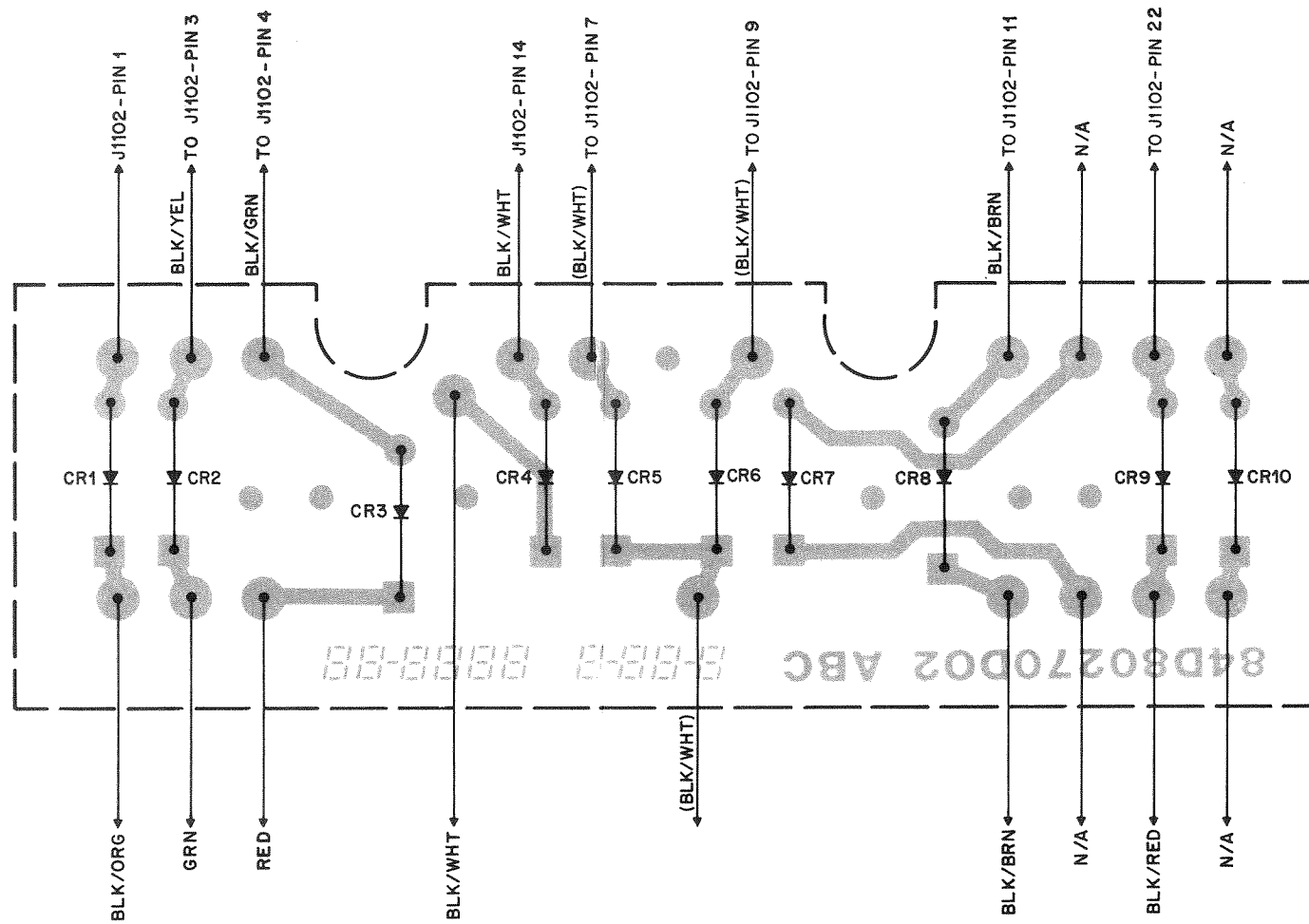


SHOWN FROM COMPONENT SIDE



CONTROL HEAD BOARD

- NOTES
- 1 FOR PROPER OPERATION OF THE CONTROL HEAD WITH VOICE-PRIVACY ADAPTER OR A HANDSET AND HANDSET HANGUP BOX, REFER TO THE RESPECTIVE MANUALS
  - 2 THE MODE SELECT GROUND LEAD (BLK/WHT) IS NORMALLY CONNECTED TO SLD GND (J1101-21) BUT IS CONNECTED TO J1101-5 IN SYSTEMS 50S CHANNEL SCAN AND CERTAIN OTHER APPLICATIONS
  - 3 REFER TO ACCOMPANYING SCHEMATIC DIAGRAM FOR INFORMATION ON S1103
  - 4 S1104 IS CONNECTED TO THE GRN WIRE ON THE 8-MODE W/TALKAROUND CONTROL HEAD (HCN1022A) AND THE 32-MODE CONTROL HEAD (HCN1020A)
  - 5 THIS TALK-AROUND SWITCH, WHICH IS OPTIONAL, IS LABELED A/B ON 32-MODE CONTROL HEADS



SOLDER SIDE GCW-0242-0  
 OL - GCW-0243-0  
 SHOWN FROM SOLDER SIDE

DIODE MATRIX BOARD

parts list

HLN4330A Diode Matrix Board MXW-3146-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
<b>diode (see note)</b>		
CR1-6	48-82392B03	silicon
CR8,9	48-82392B03	silicon
<b>mechanical parts</b>		
W2	01-80734T46	wire & lug
W3	01-80734T49	wire & lug
W4	01-80734T50	wire & lug
W5	01-80734T51	wire & lug
W6-8	01-80734T55	wire & lug
W9	01-80734T53	wire & lug

11/20/88  
 note: For best performance, order diodes, transistors, and integrated circuit devices by Motorola part number.

Talkaround MXW-3146-A  
 Talkaround

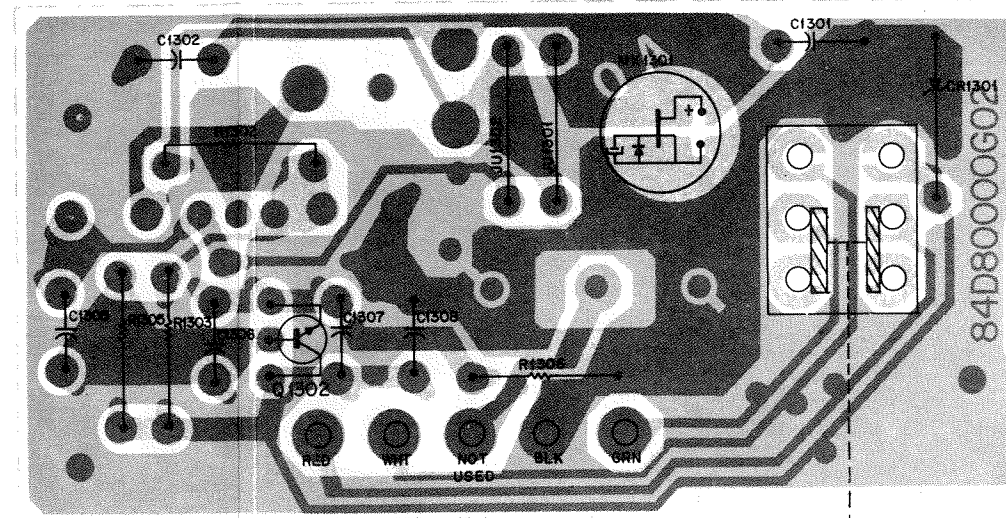
DESCRIPTION
12V
terminal pin, male (20 used)
terminal pin, male (5 used)
terminal pin, male (2 used)
resistor, 56, 2W
560, +5%
3.3k
25K, variable
150
slide, dpst
rotary, 8-position, non-shorting
includes mounting hardware (HCN1009A) or:
rotary, 16-position, includes:
mounting hardware (HCN1019A, and HCN1022A) or:
rotary, 8-position, includes
mounting hardware (HCN1023A)
toggle, spst, includes
mounting hardware (HCN1020A, HCN1022A, & HCN1023A)

Accessories  
 bumper nameplate

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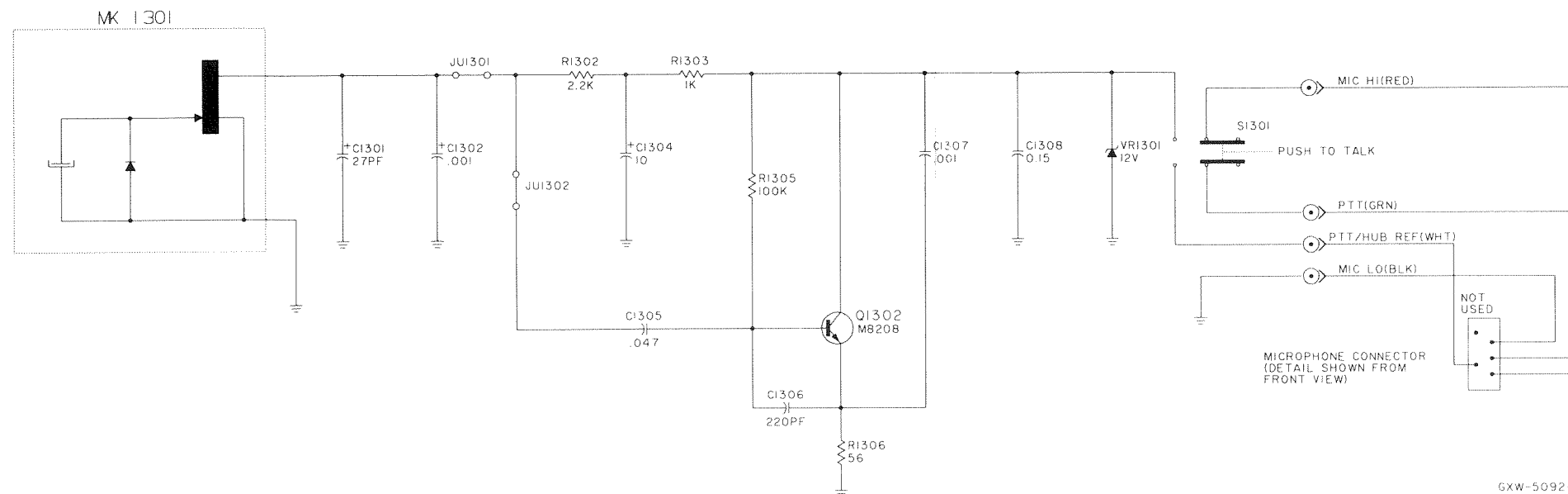
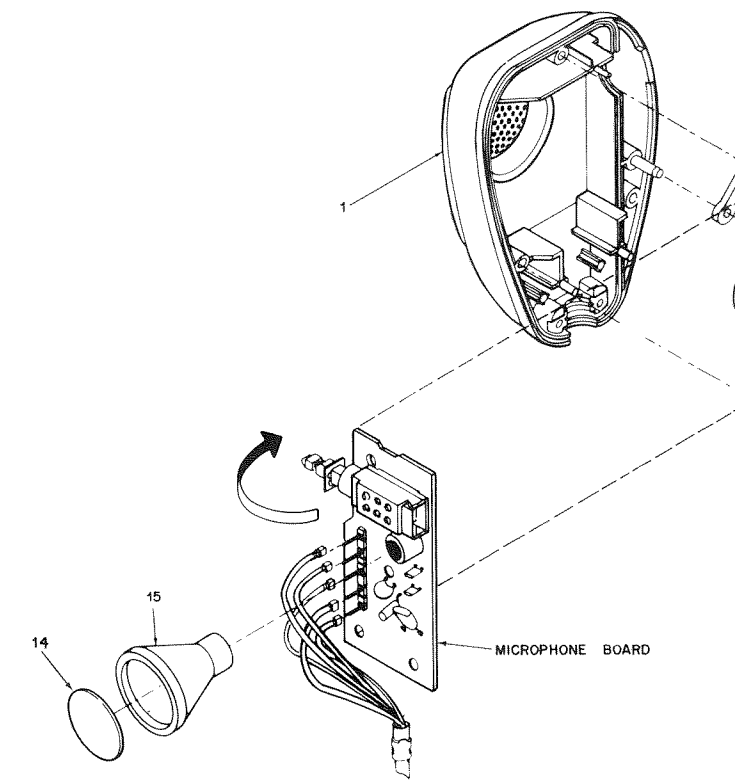
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
<b>capacitor, fixed uF, ±5%, 50V (unless otherwise stated)</b>		
C1301	21-11038H35	24 pF
C1302	21-11039B13	.001 ±10%
C1304	23-11019A20	10 ±20% 25V, electrolytic
C1305	08-11017A14	.047
C1306	21-11038P50	220 pF
C1307	21-11039B13	.001 ±10%
C1308	08-11051A14	.15 63V
<b>diode (see note)</b>		
CR1301	48082256C25	12V zener ±5% 400mW
<b>connector receptacle</b>		
JU1301,1302	06-11009B23	0 ohm jumper
<b>microphone</b>		
MK1301	50-80258E04	electret cartridge
<b>transistor (see note)</b>		
Q1302	48-80182D08	NPN
<b>resistor, fixed ohm, ±5%, 1/4 watt (unless otherwise stated)</b>		
R1302	06-11009C57	2.2k
R1303	06-11009C49	1k
R1305	06-11009C97	100k
R1306	06-11009C19	56
<b>switch</b>		
S1301	40-80652E02	momentary switch
<b>mechanical part</b>		
	14-80652E01	switch insulator

4/19/88  
 note: For best performance, order diodes, transistors, and integrated circuits by Motorola part number.



SHOWN FROM SOLDER SIDE

COMPONENT SIDE - GBW-3447-A  
 SOLDER SIDE - GBW-3448-A  
 OVERLAY - GBW-3449-A



GXW-5092-0

parts list

Microphone Hardware MXW-50

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	15-80137D05	microphone front housing
2	38-80144D03	microphone button
3	30-80147H04	microphone cable
4	05-80221K01	PTT switch grommet
8	32-80058H03	housing gasket
10	01-80710T70	rear housing
11	03-80076E04	hi-lo screw
14	35-80089D01	felt baffle
15	05-80148D01	microphone grommet

**DESCRIPTION**

value stated)  
 24 pF  
 .001 ±10%  
 10 ±20% 25V, electrolytic  
 .047  
 220 pF  
 .001 ±10%  
 .15 63V

12V zener ±5% 400mW

0 ohm jumper

electret cartridge

NPN

(value stated)

2.2k

1k

100k

56

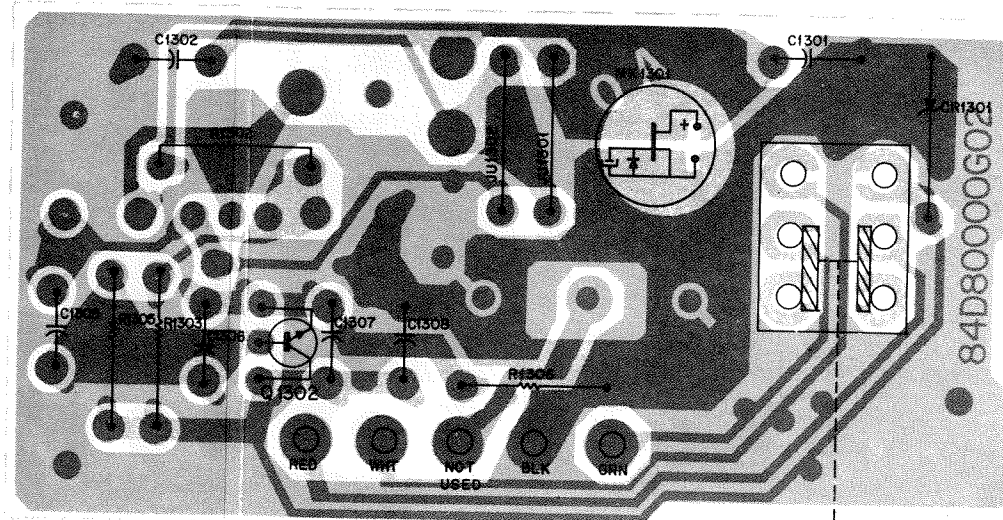
momentary switch

1 part

switch insulator

4/19/88

resistors, and integrated circuits by Motorola



SHOWN FROM SOLDER SIDE

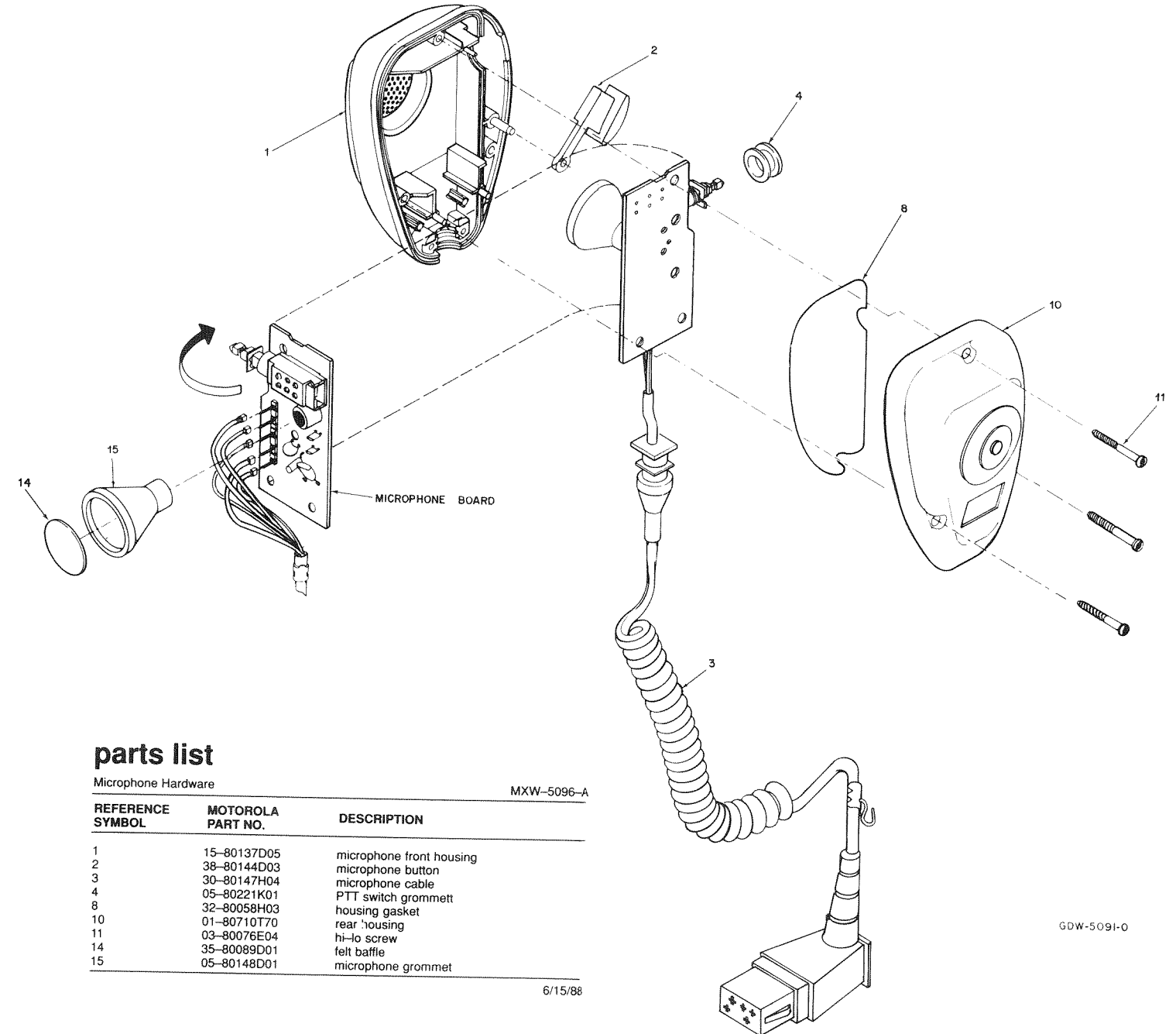
S1301  
RT.T.

COMPONENT SIDE ⊕ GBW-3447-A  
 SOLDER SIDE ⊕ GBW-3448-A  
 OVERLAY ⊖ GBW-3449-A

# HMN1015A WEATHER RESISTANT MICROPHONE (EARLY VERSION)

## FUNCTION

The palm microphone contains an amplifier to provide the radio with a high-level, noise-free audio input. The microphone also provides push-to-talk transmit control for the radio.



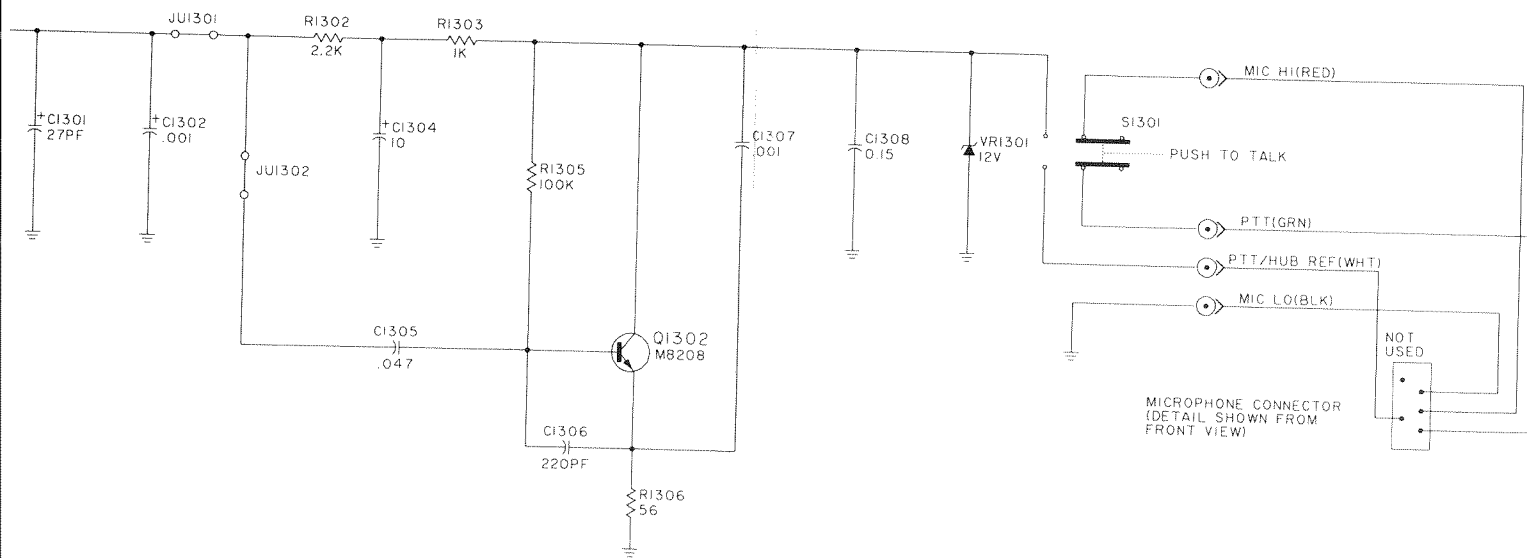
## parts list

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	15-80137D05	microphone front housing
2	38-80144D03	microphone button
3	30-80147H04	microphone cable
4	05-80221K01	PTT switch grommet
8	32-80058H03	housing gasket
10	01-80710T70	rear housing
11	03-80076E04	hi-lo screw
14	35-80089D01	felt baffle
15	05-80148D01	microphone grommet

Microphone Hardware

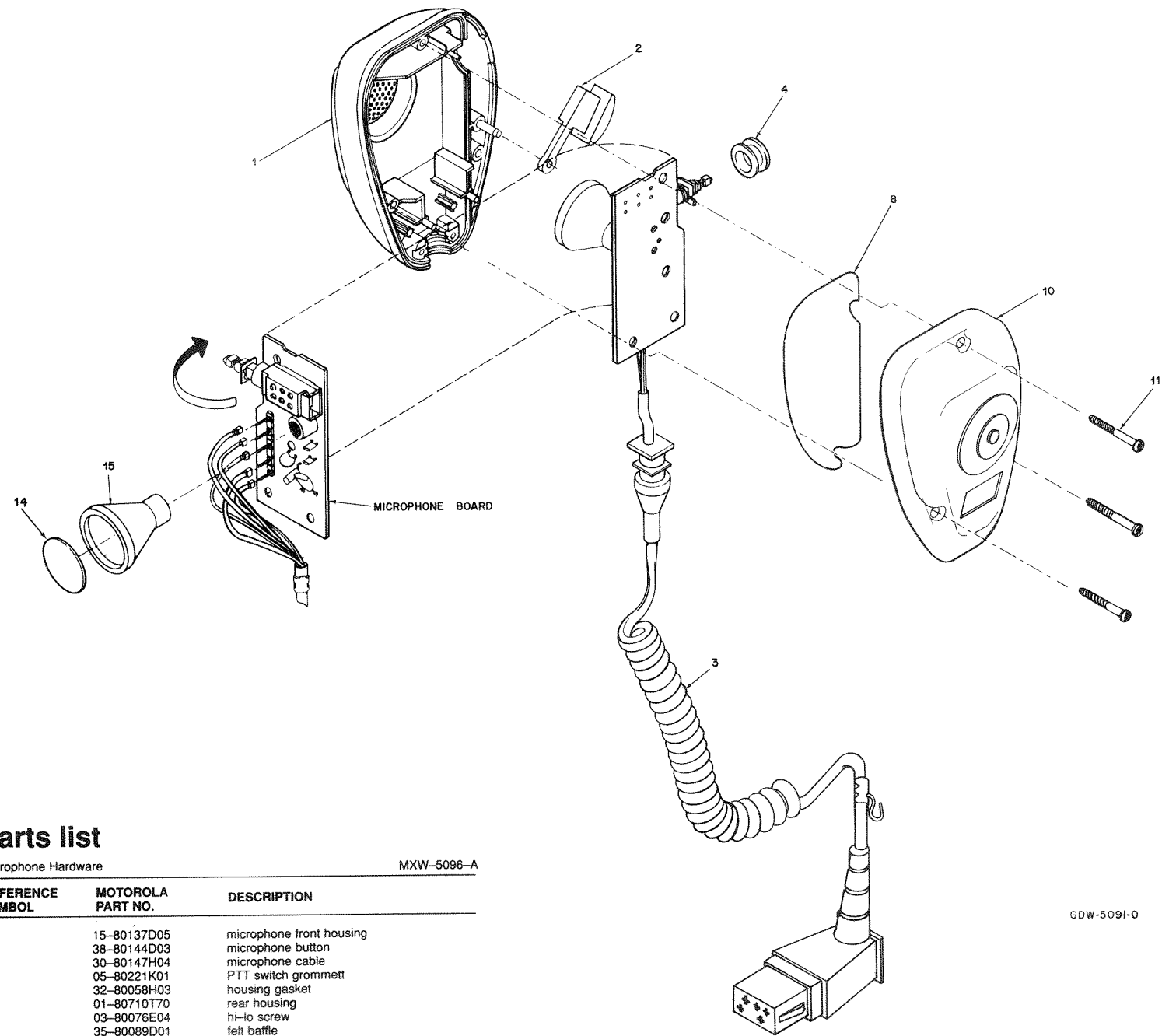
MXW-5096-A

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GXW-5092-0

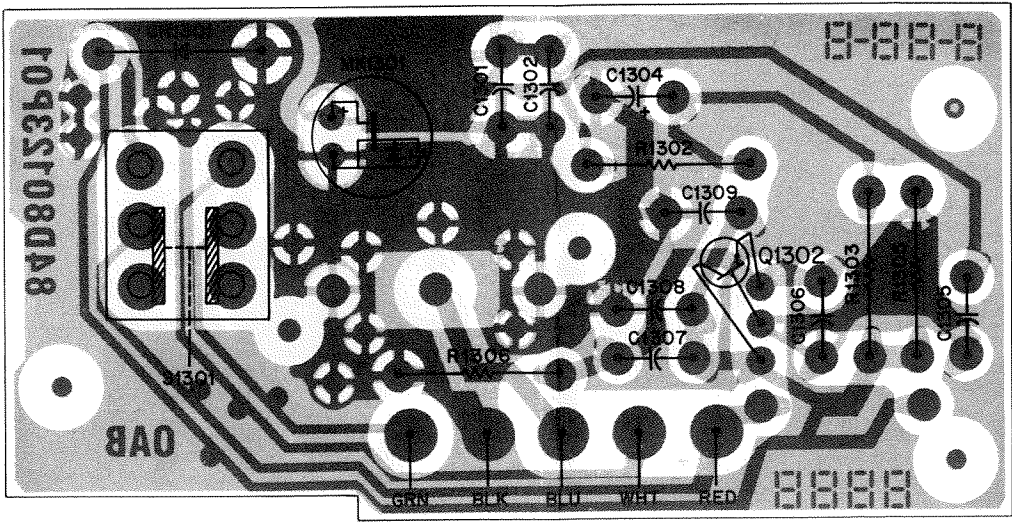
# HMN1015A WEATHER RESISTANT MICROPHONE (LATER VERSION)



**parts list**  
Microphone Hardware MXW-5096-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	15-80137D05	microphone front housing
2	38-80144D03	microphone button
3	30-80147H04	microphone cable
4	05-80221K01	PTT switch grommet
8	32-80058H03	housing gasket
10	01-80710T70	rear housing
11	03-80076E04	hi-lo screw
14	35-80089D01	felt baffle
15	05-80148D01	microphone grommet

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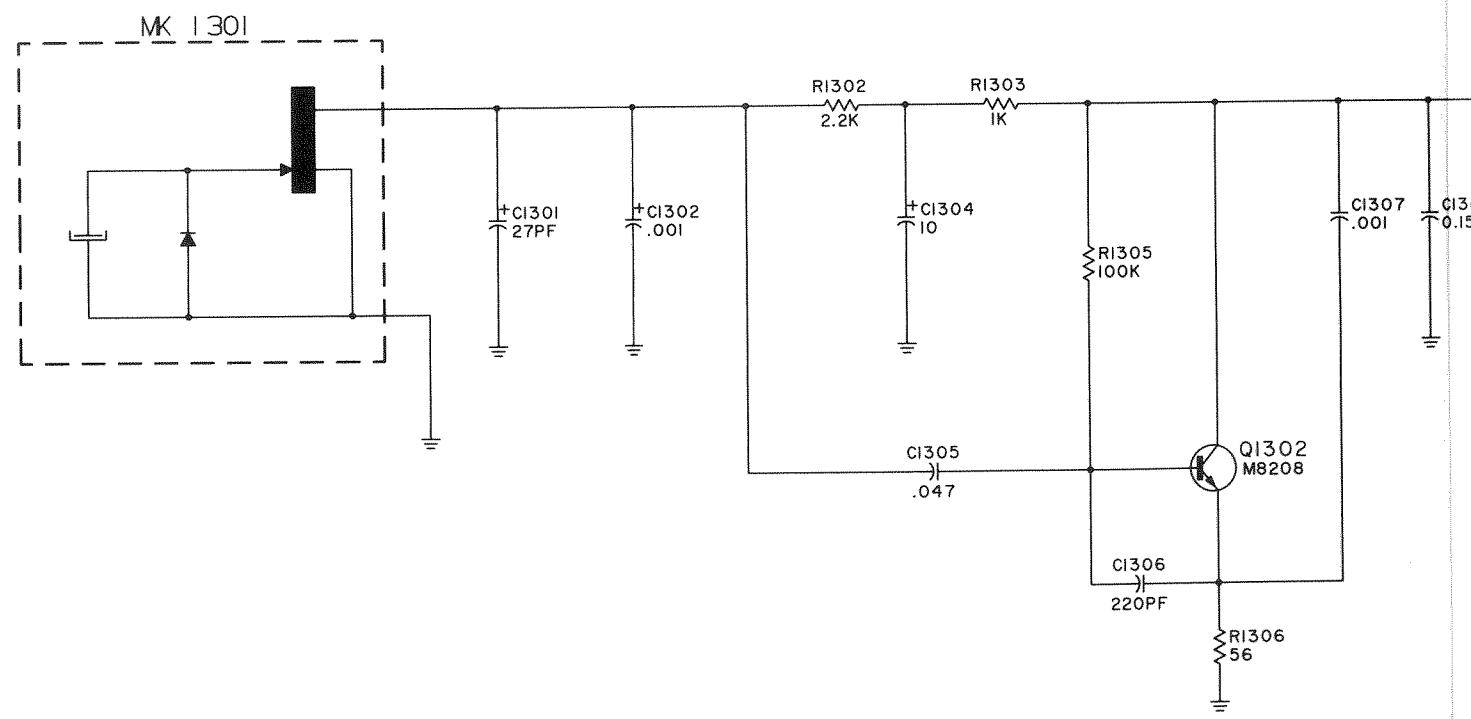


SOLDER SIDE -> GBW-6287-0  
COMPONENT SIDE -> GBW-6288-0  
OVERLAY -> GBW-6289-0

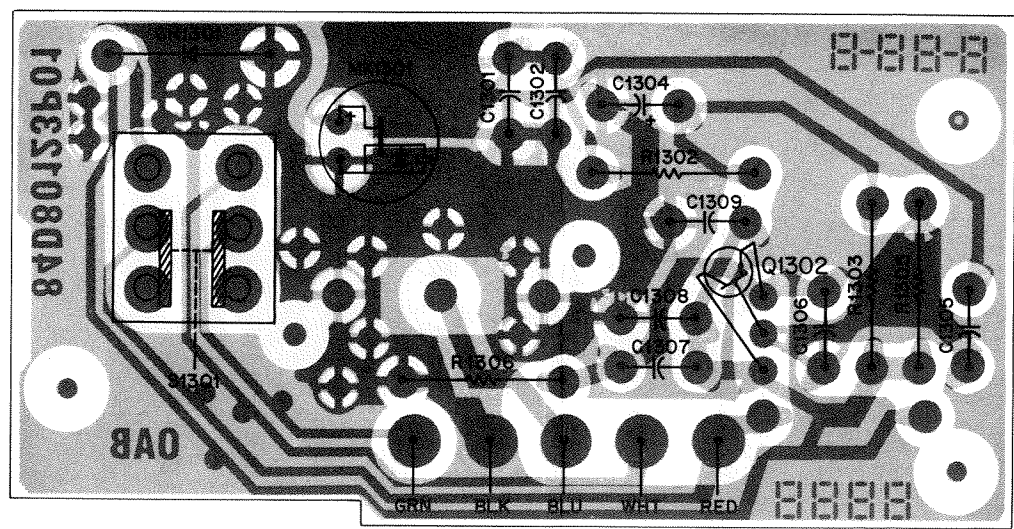
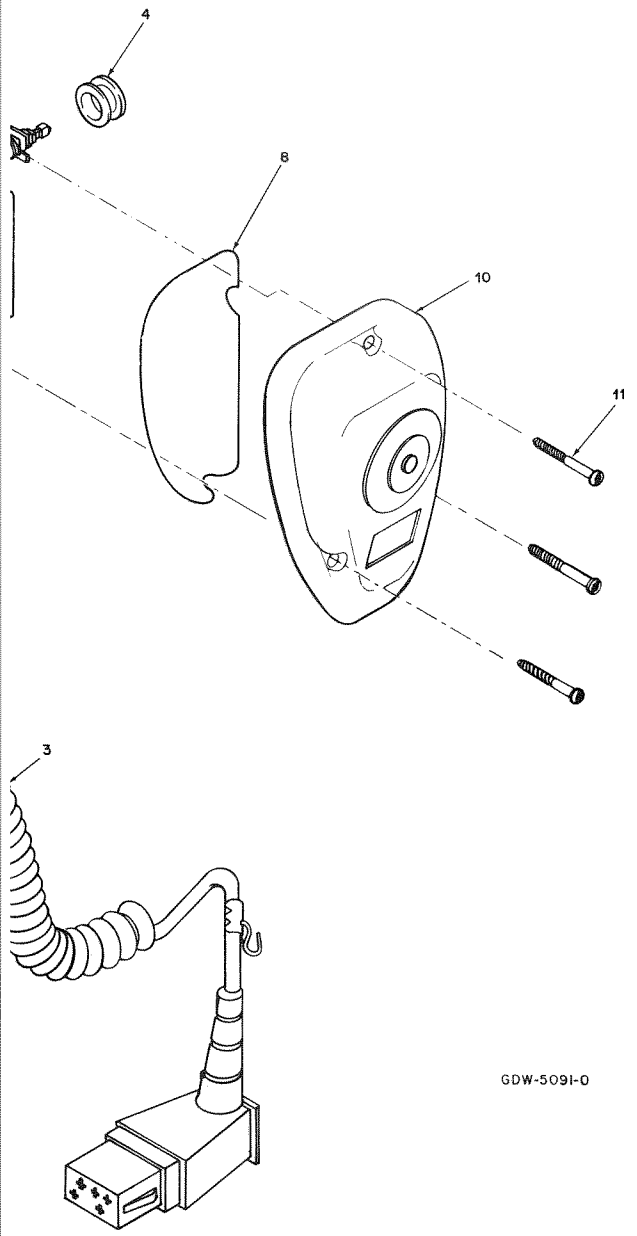
HLN5459A Micro

REFERENCE SYMBOL	DESCRIPTION
C1301	capacitor, fixed
C1302	capacitor, fixed
C1304	capacitor, fixed
C1305	capacitor, fixed
C1306	capacitor, fixed
C1307	capacitor, fixed
C1308	capacitor, fixed
C1309	capacitor, fixed
CR1301	diode (see note)
MK1301	microphone
Q1302	transistor (see note)
R1302	resistor, fixed
R1303	resistor, fixed
R1305	resistor, fixed
R1306	resistor, fixed
S1301	switch

note: For best part number.



# MICROPHONE



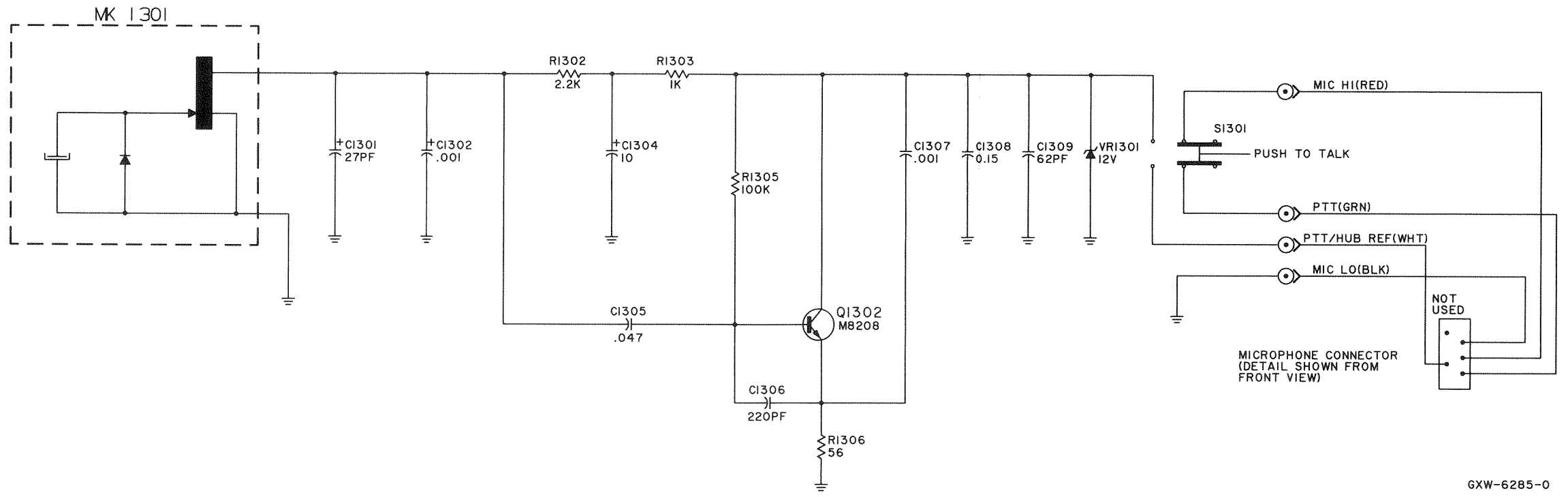
SOLDER SIDE • GBW-6287-0  
 COMPONENT SIDE • GBW-6288-0  
 OVERLAY — GBW-6289-0

HLN5459A Microphone Circuit Board MXW-6286-0

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
<b>capacitor, fixed uF, ±5%, 50V (unless otherwise stated)</b>		
C1301	21-11038H35	24 pF
C1302	21-11039B13	.001 ±10%
C1304	23-11019A20	10 ±20% 25V, electrolytic
C1305	08-11051A11	.047
C1306	21-11038P50	220 pF
C1307	21-11039B13	.001 ±10%
C1308	08-11051A14	.15 63V
C1309	21-11014H44	62pF, 100V
<b>diode (see note)</b>		
CR1301	48-11034A36	12V zener ±5% 400mW
<b>microphone</b>		
MK1301	50-80258E04	electret cartridge
<b>transistor (see note)</b>		
Q1302	48-11043C05	NPN
<b>resistor, fixed ohm, ±5%, 1/4 watt (unless otherwise stated)</b>		
R1302	06-11009A57	2.2k
R1303	06-11009A49	1k
R1305	06-11009A97	100k
R1306	06-11009A19	56
<b>switch</b>		
S1301	40-80065E02	momentary switch
<b>mechanical part</b>		
	14-80652E01	switch insulator

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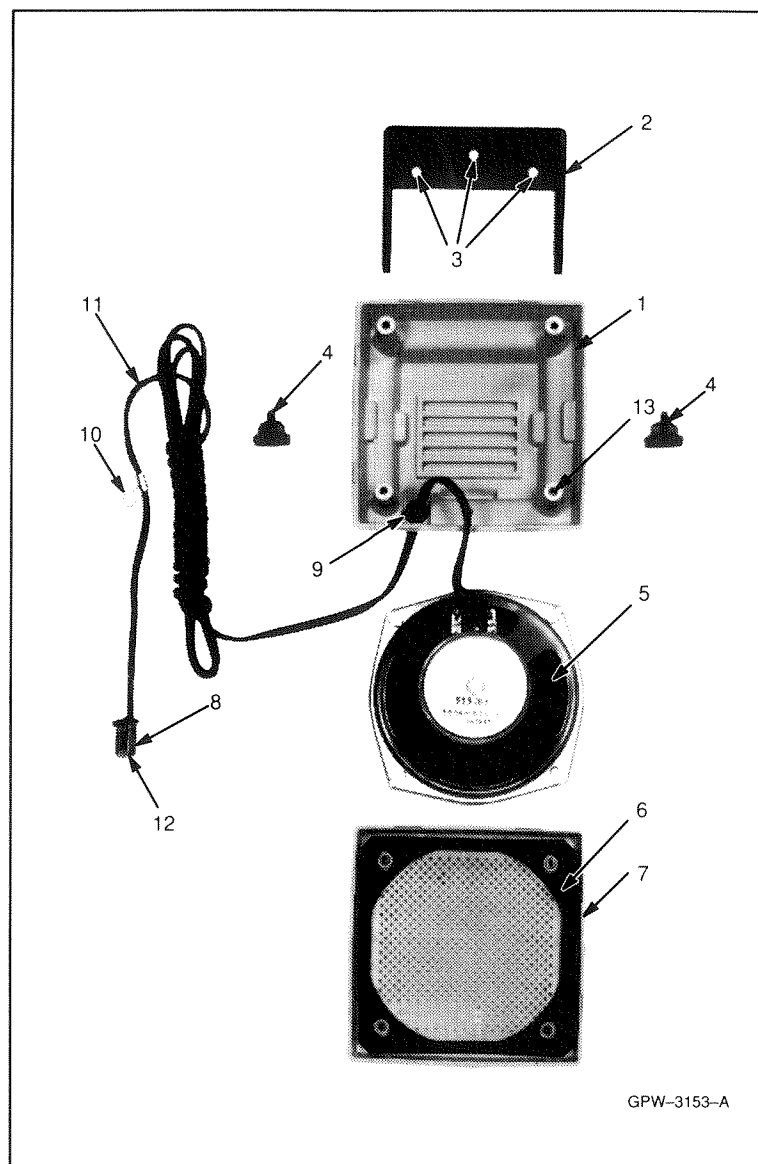
**note:** For best performance, order diodes, transistors, and integrated circuits by Motorola part number.



GXW-6285-0

## SPEAKER

The mobile speaker provides the audio output from the radio. It is equipped with its own trunnion bracket and may be mounted on the firewall or dashboard near the radio. The speaker is mounted in a strong, weather-resistant housing.



## parts list

HSN4005A Speaker

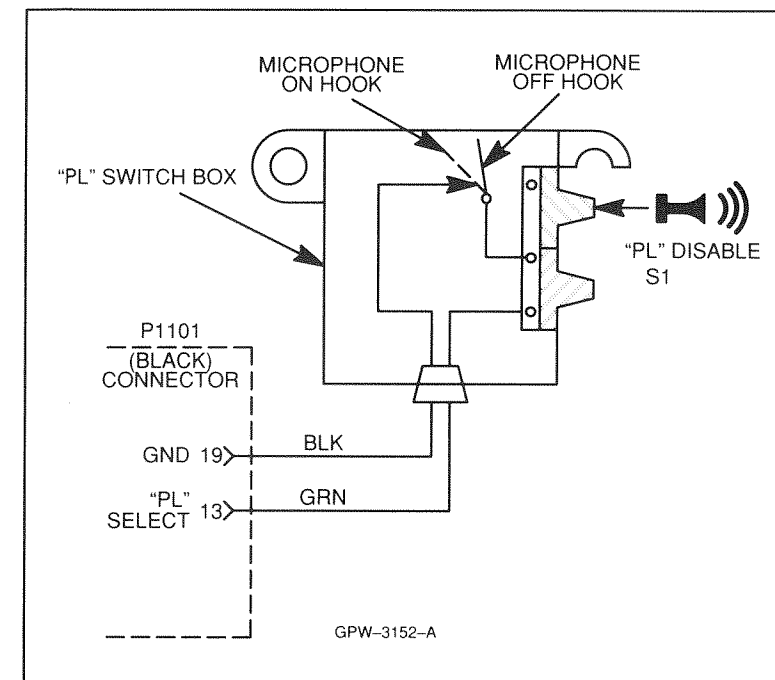
MXW-5477-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	15-84981B07	rear housing
2	07-80200E01	trunnion bracket
3	03-12002B14	self drilling (10-16x1") hex washer head (3 used)
4	03-84244C03	wing screw (2 used)
5	50-80122N01	speaker
6	32-84564B01	speaker mounting gasket
7	13-82671M04	bezel
8	14-84566B01	body connector
9	42-82018H05	cable entrance retainer
10	42-84081A03	cable clamp, includes S hook
11	30-83155H01	cable, 2-conductor
12	09-84151B03	terminal contact (2 used)
13	03-00140001	tapping screw (6-19X7/8) (4 used)

4/15/89

## MICROPHONE HANGUP BOX

The Model HLN4188A Microphone Hangup Box is used with *Private-Line* and *Digital Private-Line* radios to automatically place the radios in the monitor (carrier squelch) mode when the microphone is lifted off-hook. The hang-up box also contains a slide switch to place the radio in the monitor mode with the microphone still onhook.



## parts list

HLN4188A Microphone Hangup Box

MXW-3154-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
<b>switch</b>		
S1	40-84622B04	slide, spst
<b>mechanical parts</b>		
	01-80155N03	hangup box assembly
	03-00135495	machine screw (2-56x3/8"), 2 used
	04-00008406	lockwasher, #2 int., 2 used
	40-84198C02	stack switch
	42-82018H07	cable retainer
	64-80240E01	pressure plate switch
	03-00139913	tapping screw (8-18x1/2"), 2 used
	05-00136654	rivet (122x1/8) 4 used
	05-00140185	rivet (088x3/16) 2 used
	15-82579M02	housing
	64-84199C01	mounting plate
	04-00400136	flat washer
	41-00867668	plated spring
	30-10136A15	2-conductor cable, 3 used
	09-84151B03	female terminal contact, 2 used

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Accessories  
PW-5476-A

4/15/89